Megaliths of the World

Volume I

edited by
Luc LAPORTE, Jean-Marc LARGE
Laurent NESPOULOUS, Chris SCARRE, Tara STEIMER-HERBET

ARC HAE O PR ESS

Megaliths of the World

Volumes I and II

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Jean-Marc LARGE

and

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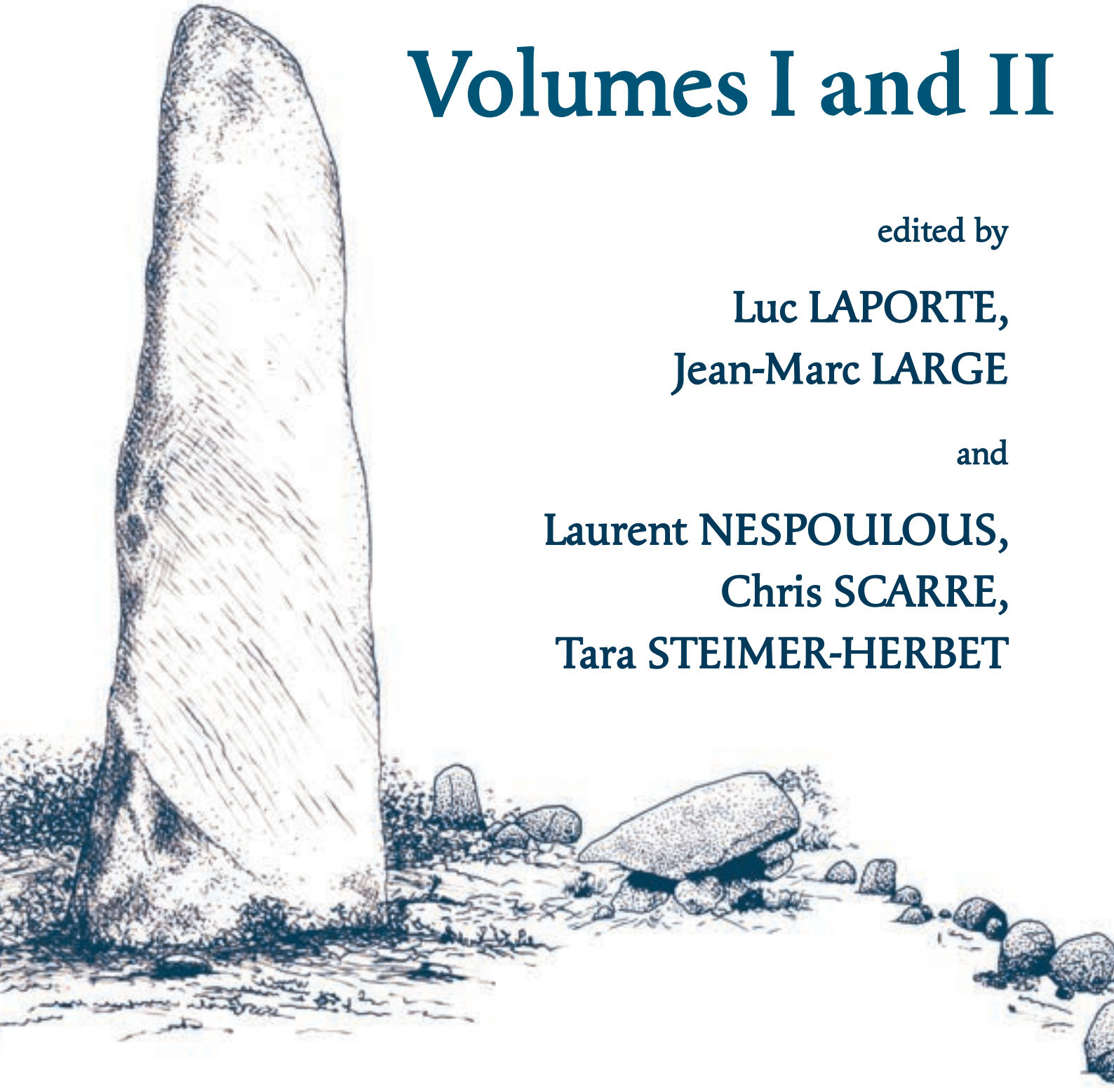
Tara STEIMER-HERBET



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During the preparation of this publication we learned of the death of Alain Gallay, Emeritus Professor at the University of Geneva, who has made such a major contribution to the discipline. His participation in the international conference on The Megaliths of the World, and his membership of the Steering Committee, was a great honour for us. The whole of the editorial team pay tribute to him.

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Preface

It was only in the second half of the 19th century of our era that the study of megalithic monuments, that is to say, monuments built with large stones, began throughout the world, although what the weight of these large stones had to be in order for the monuments to be considered megalithic was not specified. At that time, these monuments were of two types:

1 - Standing stones, isolated 'menhirs' or groups of these together in straight or curved – sometimes multiple – lines, such as the alignments of Carnac in France, those of Hartashen in Armenia, Doring in Tibet or Mohandid al-Hamli in Yemen; or even in closed lines, as in numerous enclosures in the British Isles, and sometimes erroneously named 'cromlechs'. The meaning and social role of all these standing stones are not yet fully understood by archaeologists, but many interpretations have been put forward.

2 - Funerary chambers, or 'dolmens' with circular or polygonal layouts, or even with multiple cells, entirely or partially built with large stone blocks, and covered with an earthen tumulus or stone mound (cairn) with a variable circular, rectangular, or trapezoidal base, which can

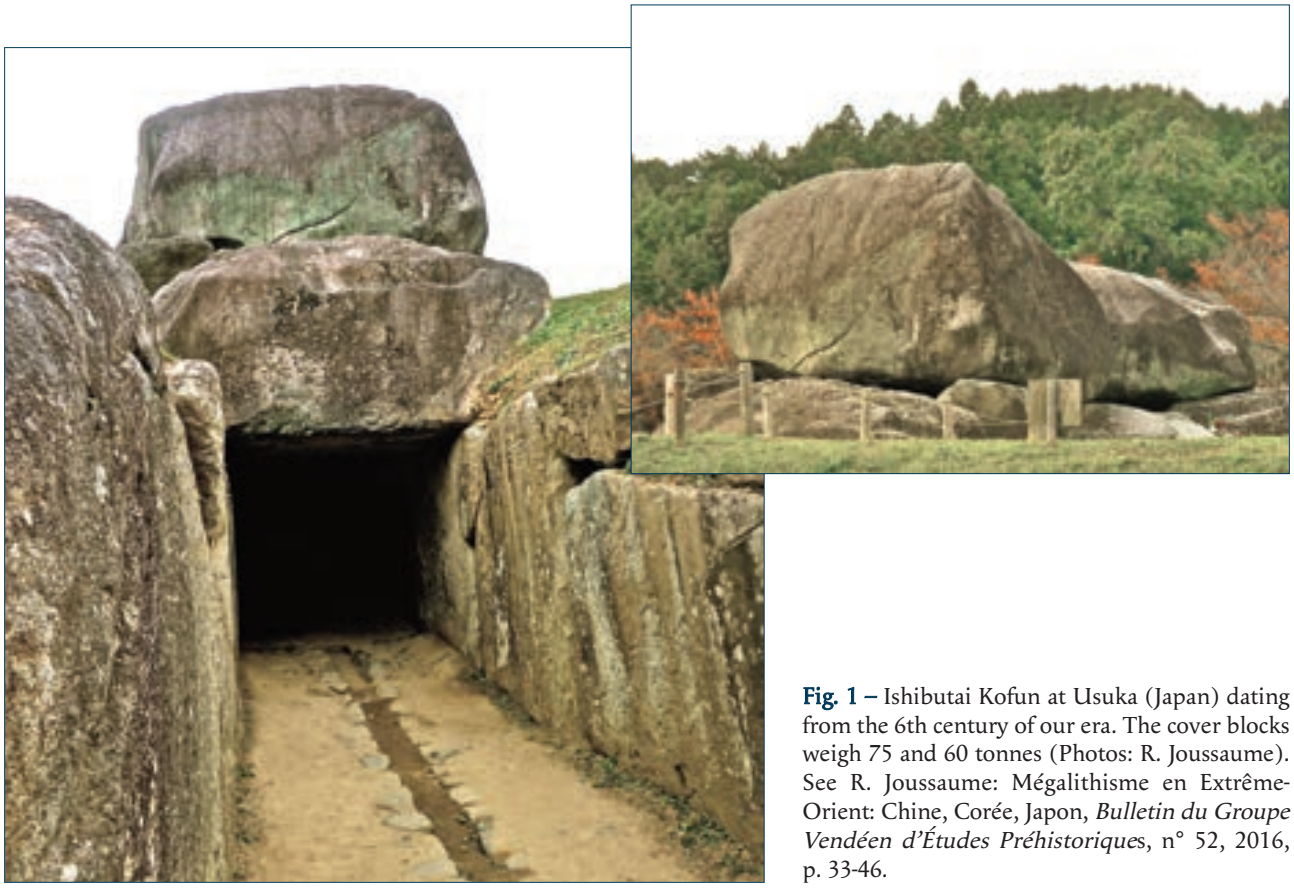


Fig. 1 – Ishibutai Kofun at Usuka (Japan) dating from the 6th century of our era. The cover blocks weigh 75 and 60 tonnes (Photos: R. Joussaume). See R. Joussaume: Mégalithisme en Extrême-Orient: Chine, Corée, Japon, *Bulletin du Groupe Vendéen d'Études Préhistoriques*, n° 52, 2016, p. 33-46.

be more or less elongated, sometimes even disproportionately so, and with a domed, pyramidal or even a flat roof. These chambers were accessed by moving a side slab which was removable when it was a low wall or by a corridor of variable length. The dolmen-corridor ensemble was therefore invisible from the outside before the deterioration of the enveloping tumulus, a notion that has rarely been taken into account in the description of the appearance of these architectures at the time of their use.

The concept of the 'megalithic monument' was later extended to other types of architecture across the world. In addition to aniconic menhirs, some standing stones bear engraved or painted symbols and are therefore known as 'stelae', which are numerous in southern Ethiopia for example. They frequently accompany single, double or even multiple burials.

The oldest megalithic monuments date from the Neolithic period at the beginning of the 5th millennium BCE, and even earlier for the site of Göbekli Tepe in Turkey, which is considered to be a temple dating from the 10th millennium BCE; they are still erected today in certain regions of the world, particularly in East Africa. Large stones were sculpted to form the Easter Island statues, which are neither menhirs nor dolmens, but also the much smaller menhir statues in the South of France, as well as many other stelae with human (anthropomorphic) forms throughout the world.

To these must be added monuments specific to certain regions, such as the Giants' Tombs of Sardinia: genuine megalithic gallery graves headed by a large, sculpted stone erected in the entrance, in the middle of two curved antennae of joined slabs outlining a forecourt. And many more...

In addition to these megalithic monuments, there are many others that are often assimilated but which would be better grouped together in a separate category, since their architecture does not comprise any truly megalithic elements. These include many structures built with small stones, particularly in the northern half of Africa. Some form imposing tumuli but we know nothing about what they cover; a few may contain a dolmen that remains invisible without excavation. Other assemblages of stones on the ground form circular or crescent-shaped platforms, some with antennae. These are limited to a few levels of small, superimposed stones covering burials. There are also, particularly in the Arabian Peninsula, tower tombs, associated with a row of small stone mounds, which it would be preferable to classify

Fig. 2 – Funerary monument of Nefas Mawcha at Axum (Ethiopia) dated to the 3rd century of our era. The cover slab measures 17.30 m long, 6.50 m wide and 1.30 m thick for a weight of about 300 tonnes (Photo: R. Joussaume). See S.C. Munro-Hay: *Excavations at Aksum, an account of research at the ancient Ethiopian capital directed in 1972-4 by the late Dr Neville Chittick.* London: The British Institute in Eastern Africa, 1989, p. 116-120.

with many others as 'paramegalithic monuments' to dissociate them from authentic megalithic monuments as we have defined them.

I am grateful to the organizers of this international meeting on megalithism in the world for asking me to write a short preface to this important book which takes stock of recent works by the scientific community involved in research. There is still a lot of progress to be made on this subject and especially on the occupants of the dolmens, who are beginning to be revealed thanks to very promising work, particularly that on ancient DNA. It will become easier to approach the social role of all these structures when we have enhanced our knowledge of those who were deposited in such well protected places.

Some publications by R. Joussaume

Des dolmens pour les morts. Les mégalithismes à travers le monde. Paris : Hachette, 1985, 398 p.

Dolmens for the Dead. Megalithic Building throughout the World. London: B.T. Batsford Ltd., 1988, 320 p., 26 photos (translation of the French edition).

Les charpentiers de la pierre. Monuments mégalithiques dans le monde. Paris : La Maison des Roches, 2003, 128 p.

Palets et minches de Gargantua. Mégalithisme dans le Centre-Ouest de la France. Chauvigny : Association des Publications Chauvinoises (*Memoria momenti,* 39), 2016, 388 p.

Fig. 1 – Poster of the International Meeting on Megalithisms in the World (RIMM). The logo was created by © Florent Large.

Jean-Paul CROS, Sophie CORSON,
Jean-Marc LARGE, Luc LAPORTE

Introduction

The concept of a collective synthesis on the megaliths of the world emerged at the beginning of 2010 through exchanges between Luc Laporte and, successively, Chris Scarre, Primitiva Bueno Ramírez, Hamady Bocoum, and also Roger Joussaume, to whom we owe so much. From 2014 onwards, a course on Megaliths in the World, taught consecutively in the universities of Rennes (France), Trujillo (Peru) and Evora (Portugal), enabled us to begin preliminary work. But the idea truly came to fruition during informal discussions between Jean-Paul Cros and Luc Laporte, on a roof terrace and beneath the starry sky of the African night. It finally materialized in two distinct forms. The first was the International Meetings held at L'Historial de Vendée in France, from 9 to 14 September, 2019; the second is this publication. A word of thanks will therefore be addressed first to those colleagues who agreed to share their knowledge with us and to participate in what, at the outset, seemed like a significant challenge. We all have so much to learn and exchange.

The state of knowledge had grown considerably since the publication by Roger Joussaume, in the mid-1980s, of the book entitled Des dolmens pour les morts (Dolmens for the dead), which is still a reference on the subject today. This first work was updated in 2003 in the form of a small book entitled *Les charpentiers de la pierre* (Carpenters of stone). It now seemed necessary to add knowledge, to combine points of view, and to bring together – for the first time, apart perhaps from the 2003 Meeting on Megalithic Culture in Nara, Japan – those involved in this archaeological research from each of the continents concerned. Indeed, and particularly over the last 20 years, research in this field has sometimes emerged in previously neglected geographical areas. Elsewhere, it has been totally renewed. But the state of knowledge remains very disparate across the globe. Academic traditions are not the same, each object of study is different, and each is part of a distinct archaeological, historical, cultural, and geographical context. Although the term 'megalith' is familiar to everyone, it is not construed in the same way by researchers (or the public) in different places. On a global scale, we now know that megaliths were erected at different times, sometimes in very remote areas and often by people who did not know each other. In a way, this is also true for the various researchers and archaeologists who study them today.

The chosen format for the meetings in September 2019, i.e., halfway between a symposium and a round table, was the one we used with Roger Joussaume and Chris Scarre for the Bougon symposium in 2002, and then with Chris Scarre for the Rennes symposium in 2012, which both dealt exclusively with megaliths in Europe. The 2019 meetings could not have been held without the unfailing investment of Sophie Corson, as well as the entire staff of L'Historial de Vendée, and Jean-Marc Large, as well as his friends from the Groupe Vendéen d'Études Préhistoriques. Jean-Baptiste Barreau, UMR 6566, took charge of the website. During the first preparatory meetings for this event, we also wanted to surround ourselves

Fig. 2 – Members of the Steering Committee together on the stage during the International Meeting, Megaliths of the World at the Historial de Vendée (France), September 9 to 14, 2019 (Photo: J. Oliver).

with young researchers, such as Tara Steimer-Herbet and Laurent Nespoulous, and their enthusiasm was precious given the scale of the task ahead! The Scientific Committee was then enlarged: at each stage, we could always count on each of its members. In addition to the names already mentioned, they were Bruno David, Nicolas Cauwe, Alain Gallay (†), Yoshio Kikuchi, Rabindra Mohanty, Johannes Müller, Isabel Rivera-Collazo and Viktor Trifonov (**Fig. 2**). The organizing committee was composed of Sophie Corson, Jean-Paul Cros, Luc Laporte and Jean-Marc Large. All of this would clearly not have been possible without the partners who supported this event, first and foremost the Vendée Department. The support of the Direction Régionale des Affaires Culturelles (SRA) and the Pays de la Loire Region was also strategic, as was that of the CNRS, IFRAE, UMR 6566, the University of Rennes 1, the Ethnology and Prehistory team at the Arscan Laboratory, and INRAP.

The International Meetings on Megaliths in the World gave rise to 72 oral presentations, including 51 conference sessions and 21 posters, by some 60 researchers (44 of whom were invited) of 25 different nationalities and from all continents (**Fig. 3**). Three inaugural lectures were given by Richard Bradley (Professor Emeritus at the University of Reading), Alain Gallay (Professor Emeritus at the University of Geneva) and Jean Guilaine (Professor at the Collège de France). These lectures opened four long days of sessions where particularly assiduous, numerous and fruitful scientific exchanges unfolded in a warm atmosphere, in the Historial de la Vendée, which made its museographic space and its staff available. Often for the first time, the participants discovered the quality of work previously unknown to them, thanks also to the simultaneous translation provided by Emmanuel Sombsthay and his colleague. The reception of the participants was greatly facilitated by the Hotel Campanile in La Roche-sur-Yon, the transport company Sauvetours, and the caterer of the Délices de la Forge. However, a shadow loomed over us as our late colleague Gordon McEwan was unable to join us, struck by an illness that sadly carried him away a few months later. The excursion day, which included visits to several large regional megalithic sites, was attended by 80 people (**Fig. 4**). For many of our colleagues, these meetings were an opportunity to become truly aware of the extent of the phenomenon under study: an enthusiasm also widely shared with the public through various activities and a conference organized by the Historial de la Vendée. All of them left with the promise that such encounters should be materialized by the publication of a book on megaliths in the world.

No sooner had the first challenge been met than a second was presented. The deadline for submission of the texts had been set for March 2020, at the time when the terrible Covid-19 pandemic broke out, and which subsequently followed us throughout the preparation of this manuscript. Here again, we must pay tribute to the perseverance of the

Fig. 3 – All the participants the International Meeting, Megaliths of the World, on the steps of Historial de Vendée (Photo: Historial de Vendée).

Fig. 4 – Visit to one of the menhirs from Le Plessis (a) and the dolmen of La Frébouchère (b), Vendée (Photos: S. Labroche).

authors who all produced the promised articles, despite sometimes difficult conditions. Some were not always able to access the University or remained stranded far from home for a long time, and others underwent the harsh ordeal of this illness. A small team formed around Luc Laporte and Jean-Marc Large, supported by the wise counsel of Chris Scarre and the dynamism of Tara Steimer-Herbet and Laurent Nespoulous. Of course, first we had to make sure that the required financial means were available. Once again, we could count on the Vendée department, as well as the DRAC of the Pays-de-la-Loire. The support of Inalco and GVEP was also invaluable and the support of the CNRS UMR 6566 went way beyond the financial aspect alone. After some contact, it was decided that Editions Chauvinoises (Association des Publications Chauvinoises - APC) would take charge of the design and layout of a volume in two languages, to be published in French by Editions Chauvinoises and in English by Archaeopress.

At each stage, we were able to count on the advice of the Scientific Committee which had presided over the international meetings, enhanced by the arrival of José Oliver. At the same time, an even wider reading committee was set up to ensure that each contribution was peer-reviewed by two other colleagues independently. Their constructive and generous remarks also contributed to the quality of some of the manuscripts. Primitiva Bueno Ramírez, Nicolas Cauwe, Jean-Paul Cros, Anke Hein, Christian Jeunesse, Roger Joussaume, Luc Laporte, Jean-Marc Large, Carl Langebaek Rueda, Miguel Molist, Laurent Nespoulous, Chris Scarre and Tara Steimer-Herbet took on this task. Many of the texts were only available in English, and had to be translated. This was the work of Jean-Marc Large with help from Luc Laporte, Roger Joussaume, Jean-Paul Cros, Christian Jeunesse, Noémie Vergote, Michel Riffé, Tara Steimer-Herbet and Jacques Robin. Jean-Pierre Tortuyaux, who had been so involved in the organization of the meetings as President of GVEP, was not able to intervene much, as he departed too soon. About 15 articles were received only in French, and were translated into English by Louise Byrne, or by Elsa Chanez for yet another article. We wish to particularly thank the authors who submitted their articles in both languages, sometimes with the help of other translators. Finally, some texts were translated from Japanese into French by Laurent Nespoulous. Kate Sharpe then reviewed all the English texts, especially when they were written by speakers of such different mother tongues. Again, Chris Scarre's experience was invaluable. For the Association des Publications Chauvinoises, the same operation was carried out on the French texts by Sylvie Clément-Gillet, who also worked on the layout, under the guidance of Max Aubrun. We are very grateful to D. Davison for the English edition.

Rather than publishing the proceedings of the meetings, we collectively chose to write a state of our knowledge about megaliths in the world. This work comprises 62 chapters. It is divided into eight parts. The first part deals with megaliths in general and comprises five chapters. The following parts present what is generally understood by the term megalith over very far-reaching geographical areas. All the continents are included. Each part begins with a few, often very instructive, pages of introduction. We have endeavoured to maintain a certain balance in the number of contributions on the most up-to-date developments in archaeological research in this field for each geographical area. We deemed it useful to place each of these studies in the broader context of their own research history, with an extensive bibliography compiled at the end of each section. However, the resulting volumes are not intended to be completely exhaustive, either in terms of the studied phenomenon or the type of studies carried out. We nonetheless hope that, considering the high quality of the contributions, they will be of interest both to leading specialists and to those wishing to learn more about the data available on geographical areas with which they are perhaps less familiar. There is no doubt that this book is also accessible to an even wider public, as for the first time it presents a general framework for reflection in a form that did not previously exist.

For this world tour, we wanted to avoid starting with Europe, where this type of study was initiated more than two centuries ago. The second part therefore focuses on the American continent where, for a long time, megaliths were considered practically non-existent; four of the chapters presented here will certainly change many people's minds. The third part then takes us on a journey across the Pacific Ocean, from Easter Island to Indonesia. It comprises eight chapters, from island to island, without forgetting the Australian continent. The ten chapters of the fourth part deal with South and Southeast Asia, where India has sometimes been presented as a megalithic continent par excellence. The fifth part presents an even larger geographical area, ranging from the Japanese archipelago to Central Asia, including China and Korea. It contains eight chapters presenting an incredible diversity of megaliths, sometimes from very different periods. The sixth part begins on the shores of the Black Sea, and extends to the confines of the Arabian Peninsula, via the Levant. It is here that writing appeared, along with the first traces of agriculture and animal husbandry, and the oldest megaliths known to date. This part includes seven chapters. The seventh part deals with megaliths in Africa. Certainly, but which Africa? There are so many. Nine chapters are devoted to these African megaliths. Enriched by so much remarkable information, it is now time to return to Europe where these meetings were held. This is the eighth and final part, consisting of ten chapters. It is difficult to reach a conclusion after bringing together so much knowledge, diversity and wonder. Indeed, in the world of scientists and archaeologists alike, hardly any conclusion is truly definitive – if only to ensure the opportunity and pleasure of meeting again.

Roger Joussaume, who is owed so much, has honoured us by prefacing a volume that brings together a genuine forest of knowledge, for a field of investigation where some have sometimes considered that everything had already been said. To those, and to the everyone else, we wish you pleasant reading!

Part I

Megaliths

1

Luc LAPORTE

From the architectural project to megalithic ruins: a dynamic vision of 'petrified' remains

Abstract: Megaliths often appear in the landscape as very large stones, either simply erected pointing towards the sky, resting on the ground, or carefully arranged within larger structures, but always appearing to defy gravity. The size or weight of the stones placed fires contemporary imagination, despite the somewhat rudimentary character that many, even today, implicitly attribute to such ruins. This concept of 'primitivism', born in the depths of the history of archaeological research, has long stifled any truly detailed study of megalithic architectures. Beyond their undisputed heritage value, and contrary to their too frequent perception as being petrified for eternity, megaliths have a more dynamic aspect.

Keywords: *megaliths, ruins, architecture*

The title of this international meeting was intended to focus our discourse, within a thematic framework, on the object of study (the megaliths), rather than on a field of study that is, after all, quite different depending on each individual theoretical approach and academic background – whether these are based on technical systems, cultures, history, religions, societies or humanity as a whole. The presence of megalithic ruins in the landscape is what initially motivated interest in this subject. They were, at least partly, composed of very large blocks of stone with, at first glance, a rather rudimentary appearance, although they were moved by humans and then erected towards the sky and/or assembled as part of larger constructions. Scholars later learned to identify the whole structure into which these blocks were set, to recognize the different uses that were made of them, and to reconstruct the various architectural projects that sometimes followed on from one another in the same place. The consideration of the whole lifetime of the construction will form the guiding thread of this article, creating a dynamic approach to a form of heritage that is too often perceived as frozen for eternity.

1. Very large blocks of stone

Among the very large blocks of stone that contribute to the megalithic structure, many are arranged in such a way as to highlight their individual, unique characteristics: their shape and curvature or their roughness or surface colour, for example. Some, such as those transported by glaciers in the plains of Northern Europe, were used without human modification, whereas many others present totally transformed surfaces. More generally in Europe, there are few examples that do not bear at least some

traces of shaping or extraction (**Fig. 1**). Elsewhere in the world, even greater diversity is observed for structures described as 'megalithic' throughout the history of research. Today, the term still covers monolithic troughs and even some statuary elements.

The great maritime expeditions at the end of the 18th century led Captain James Cook as far as the confines of Easter Island, only a few decades before an expeditionary force were sent to Egypt during the French Revolution. The former contributed to the discovery of stone giants which are now very widely incorporated into studies of megaliths, while the latter revealed to scholars of the western world imposing remains that, at the time, were considered to be at the source of civilization. As early as the middle of the 19th century, and well before the discovery of the decorated Upper Palaeolithic caves in Europe, parietal art engraved on the walls of artificial chambers, such as that found at Gavrinis in Morbihan (France), was included in debates on the cognitive capacities of a 'primitive' humanity. Towards the end of that century, one of the first syntheses devoted to megaliths throughout the world was entitled *Rude Stones Monuments in All Countries* (Fergusson 1872), a title that clearly referred not only to the coarseness of the building materials but also, implicitly, to the coarseness of the past – or present – populations who built them.

Subsequently, and in addition to an appreciation of the unique nature of each of these particular megalithic expressions, the rejection of such presuppositions was doubtless not totally unrelated to the desire to exclude from this field of study several other forms of architecture, e.g., the sepulchral chamber of certain *Kofun* in Japan during the first half of the 20th century although they too were mainly comprised of large, assembled stones. The term 'megalith' cannot be totally dissociated from the historical context in which it first appeared, as early as 1849, at the University of Oxford (Mohen 1989: 42). Yet, almost two centuries later, the term is still used to describe an intuitive reality for most of our peers, leading to perplexity or admiration when they are faced with the apparent simplicity of structures that seem to defy the most elementary laws of gravity. For conversely, this term also carries the seed of a universal ingenuity specific to the human race, the only species capable of leaving a lasting mark on the landscape through such constructions made of inert material, some of which were built as early as prehistory. Any irregularity, any unique characteristic, is thus assessed rather in terms of the necessary economy of means applied with what is judged to be rudimentary technical knowledge.

All these assumptions, be they negative or positive, hardly concur with the necessary rigour of scientific

Fig. 1 – '*Pierre close*/Closed stone' from Charras (Charente-Maritime, France) with a roof slab placed on a monolithic trough perforated by a porthole opening (Photo: J.-S. Pourtaud) (Pourtaud & Olivet 2015).

terminology. Indeed, some colleagues have at times tried to set numerical limits for what is classified as 'a very large block', in terms of weight, for example. But these approaches have always come up against locally observed diversity, for each type of structure concerned. They overlook, for example, the fact that in the famous alignments of Carnac, as in the whole of the Morbihan department (France), more than 80% of the erected stones are little more than a metre high. We now also know that most of the megaliths in the world were erected by populations who mastered metallurgy, and by a few others contemporaneous with the emergence of writing or even, in places, the State (Joussaume 1985; Gallay 2006). Nevertheless, the visual appearance of the very large blocks used in construction, as well as those implanted vertically, is no more or less coarse than those of previous societies. We observe only a greater diversity in the chosen technical solutions.

Refuting the rudimentary character of megalithic constructions, and of the people who built them, is therefore not sufficient to explain how the large stone blocks composing such megalithic structures differ from any other form of masonry. It seems to us that one of the criteria that could be retained is, rather, that aspect that makes each stone unique, and which often leads to the description of the edifice as rudimentary. The preservation, by its inclusion, of a little of the original character of each individual block is, primarily, a choice. This choice is significant (Scarre 2004). It is independent of a history of techniques, or of either the type of society concerned or its economy. It is a choice between two modes of human action on matter: that of transforming a raw material to obtain a finished product that only the human mind can conceptualize, or that which is more concerned with appropriating a 'natural' entity (or any other form of entity that would be related to this material envelope) and all of its specific singularity (Laporte & Dupont 2019).

We will take just one example. When describing the quarry from which were extracted some of the most imposing blocks erected in the Alentejo (Portugal) during the Neolithic period, Calado (2004) notes how each of them already seems to take shape in the geological outcrop. A similar observation was also made at the Roh-Coh-Coët quarry at Saint-Jean-de-Brévelay (Morbihan, France). It is as if, far beyond any mechanical action, extraction primarily involved revealing what the outcrop intrinsically contained within it (**Fig. 2**). From Nigeria to the Burmese mountains, and on the Polynesian islands and the Caribbean islands, the unique nature of each block is often sufficient to identify the mythical entity attached to it; an entity that does not always need to be expressed by an explicit representation. At most,

Fig. 2 – The extraction of a block sometimes involves no more than revealing the intrinsic character of the outcrop, as in this example of the quarrying of large standing stones of Roh-Coh-Coët (Saint-Jean-de-Beverlay, Morbihan, France), built secondarily as a 'gallery grave' (After Gouézin 2017; photo: L. Laporte).

Fig. 3 – Expression of an entity linked to each block of stone, and human representations: Neolithic and Chalcolithic examples in France. a. Human face sculpted on one of the cover slabs of the 'passage grave' of Déhus in Guernsey (United Kingdom) [Photo: C. Scarre (2011)]; b. Pairs of breasts carved on the backstone slab of the 'gallery grave' of Prajou-Menhir in Trébeurden (Côtes-d'Armor, France) (Photo: L. Laporte) ; c. 'Statue-Menhir' of Saint-Sernin-sur-Rance (Aveyron, France) (© Musée Fenaille - coll. Société des lettres, sciences et arts de l'Aveyron). The idea that 'passage graves' could display on their walls a 'gallery of ancestors' (Bueno Ramírez *et al.* 2018) would be a specific case in terms of the possible nature of the entity concerned.

Fig. 4 – Expression of an entity attached to each block of stone, and human representations: examples from the Bronze Age in the Altai, China. Standing stones and 'menhir statue' on the façades of the funerary monuments of Kaynar no 1 (Hainar) (a) and Karatas 2 no. 1, in Xinjiang (China) (b-c) (Photos: A. Kovalev; Kovalev 2007, 2012).

the appearance on a rough stone of a face, a pair of breasts, a necklace or any other attribute, contributes to its characterization (**Figs. 3** and **4**). In contrast, the phallic stelae of Sidamo in Ethiopia (Joussaume & Cros 2017) are primarily representations: the similarity to these in the shape of other erected stones, for example in Northern Iran (Stronach & Royce 1981) or in the Tafi Valley in Argentina (Ambrosetti 1897; Bruch 1911), is due only to their own resemblance to the anatomy of the represented organ.

Egyptian obelisks and certain Mayan stelae are monoliths with superior sizes or weights to many of the standing stones erected throughout the world. Each of the elements of the Cyclopean Andean constructions, made with very carefully fitted blocks, as in Mycenaean or Sardinian cities around the Mediterranean, preserves a certain identity (Pozzi 2013). But, from the first glance, they cannot be confused with the arrangement of these same materials in a megalithic structure, where sometimes certain stones (of all sizes) were used as raw materials, but where others retain a roughness, a shape, a colour, and a unique character that distinguishes them from all the others. The individuality of at least some of the very large blocks of stone used for the construction of a megalith, as well as the notion of durability linked to the material of which it is made, is the first point that we wish to stress here.

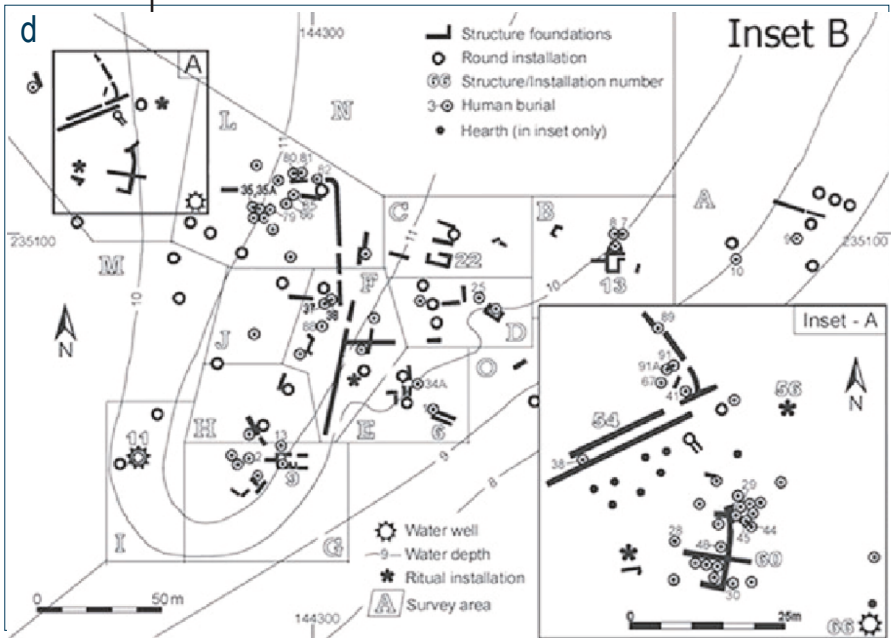
2. The megalithic ruins

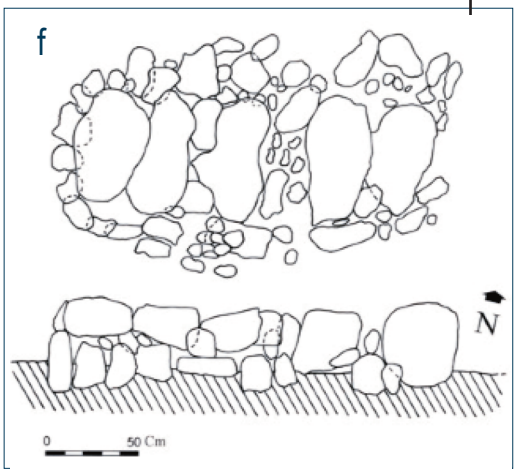
Many of these large boulders appear in the landscape today in a somewhat chaotic form that has often been compared to a natural outcrop, with which they can sometimes be confused (Bradley 1998a). Indeed, random groups of natural blocks forming imposing rocky peaks have been described as megaliths in the archaeological literature, either because of their remarkable astronomical orientation (Volcevska 2011), because they served as sanctuaries (Maglova & Stoev 2014), or because they are covered with petroglyphs. We will reserve the term for those material constructions that have been shaped or displaced by humans, which in no way excludes any explicit reference to remarkable natural features in the landscape, as is sometimes the case in the oral traditions of those who built the megaliths (Tchandeu 2009: 67). In prehistoric times in Europe, some of the slabs that were reused in the walls of sepulchral chambers seem to have been brought from previously sacred places and from outcrops that already bore numerous engravings (Cassen 2009a; Scarre 2015).

The purpose of many archaeological works during the past two centuries was to moving beyond a romantic vision of ruins that appear, at first sight, to be frozen for eternity. We now know that many of these very large blocks were part of much larger constructions. However, could what we see today, and what sometimes also confers all monumentality to the whole structure, have been completely alien to the intentions of builders in the past? This type of questioning still drives some of the most recent research in Europe, on for example the 'portal dolmens' of Ireland and Wales (Cummings & Richard 2014), as well as a number of '*dolmens*' in Denmark (Eriksen & Andersen 2016). But there is no longer any question of denying that these are ruins, generally part of a monumental mass of which only the framework of the burial chamber was composed of very large stone slabs. This notion of 'ruin' (Schnapp 2015) also applies to single, isolated stones raised towards the sky, as it is often impossible to determine whether such stones were once part of a larger structure that has now disappeared (Hinguant & Boujot 2009).

In all cases there are at least some perishable materials that may have disappeared (**Fig. 5a**), including any artificial colours, while the environment into which these stones were inserted has largely been transformed (**Fig. 5b**). In the Near East, and among the oldest structures of erected stones known to date, are those discovered at Atlit Yam (**Fig. 5c-e**) off the coast of Israel, in a village attributed to the PPNC (between 7400 and 6000 BC), a site that is now engulfed by the sea to a depth of about 10 m (Galili *et al.* 2020: 452). This is also the case for many Neolithic megaliths on the coast of western France, to the extent that some were even cited by early geologists when they had no other means of dating past fluctuations in sea levels (Boisselier 1893). In the history of research, particularly in Europe, these are thus the ruins that archaeologists first tried to list and describe, sometimes systematically, by comparing them and naming them

Fig. 5 – Megalithic ruins: a. Tombe d'un guerrier Gewada en Éthiopie (Photo: J.-P. Cros) ; b. Site mégalithique partiellement submergé de Er Lannic (Morbihan, France) (Photo: P. Gouézin) ; Submerged megaliths off the coast of Israel. Standing stone circle (c) in the Neolithic settlement site of Atlit-Yam (PPNC), with the location marked by an asterisk on the plan of the archaeological site (d), as well as one of the stone cists (e) excavated at the Neolithic site of Neve-Yam (f) (After Galili *et al.* 2020; plates: I. Grindberg and E. Galili).





differently, that is, by classifying them. To consider that such an intellectual approach is definitively complete would suppose, for example, that we could avail of an accurate map listing the stones erected by humans on this continent which is still not possible.

There are many other regions of the world where this process has barely begun. To take just one example, the megalithic circles of Senegal and Gambia were, until very recently, presented as small 'cromlechs': a now largely obsolete classification which was abandoned when scholars of megalithic research in Europe learned to distinguish between the remains of standing stone circles erected in the open air and those originally implanted along the walls of a funerary chamber (Laporte *et al.* 2011: 305). Although the African megalithic ruins in question are rather similar in appearance to European examples (number of erected stones, size, diameter of the structure, etc.), they are ancient funerary platforms, some of which may have been covered by a roof, like the many 'houses of the dead' built in perishable materials in those regions up to the present day. Megaliths of similar appearance today may thus reflect totally different past realities: in one case, the wall delimiting the empty space of a room where the floor is intended to receive the remains of the deceased; in another, the façade of a small monument built above the tomb (**Fig. 6**).

Perhaps because these ruins are among the most commonly accessible elements of the archaeological record, the literature concerning them is extremely abundant. On the other hand, the fact that these are ruins is rarely explicitly mentioned within such publications. Example include the geological study of each of the very large blocks of stone integrated into a larger construction, in Europe (Patton 1995; Carrion Mendez *et al.* 2009; etc.) or in Japan (*Tondabayashi-shi Kyōiku i.inkai* 2003, etc.), or studies dealing with intervisibility between megaliths (Laporte *et al.* 2016). The geomorphological study

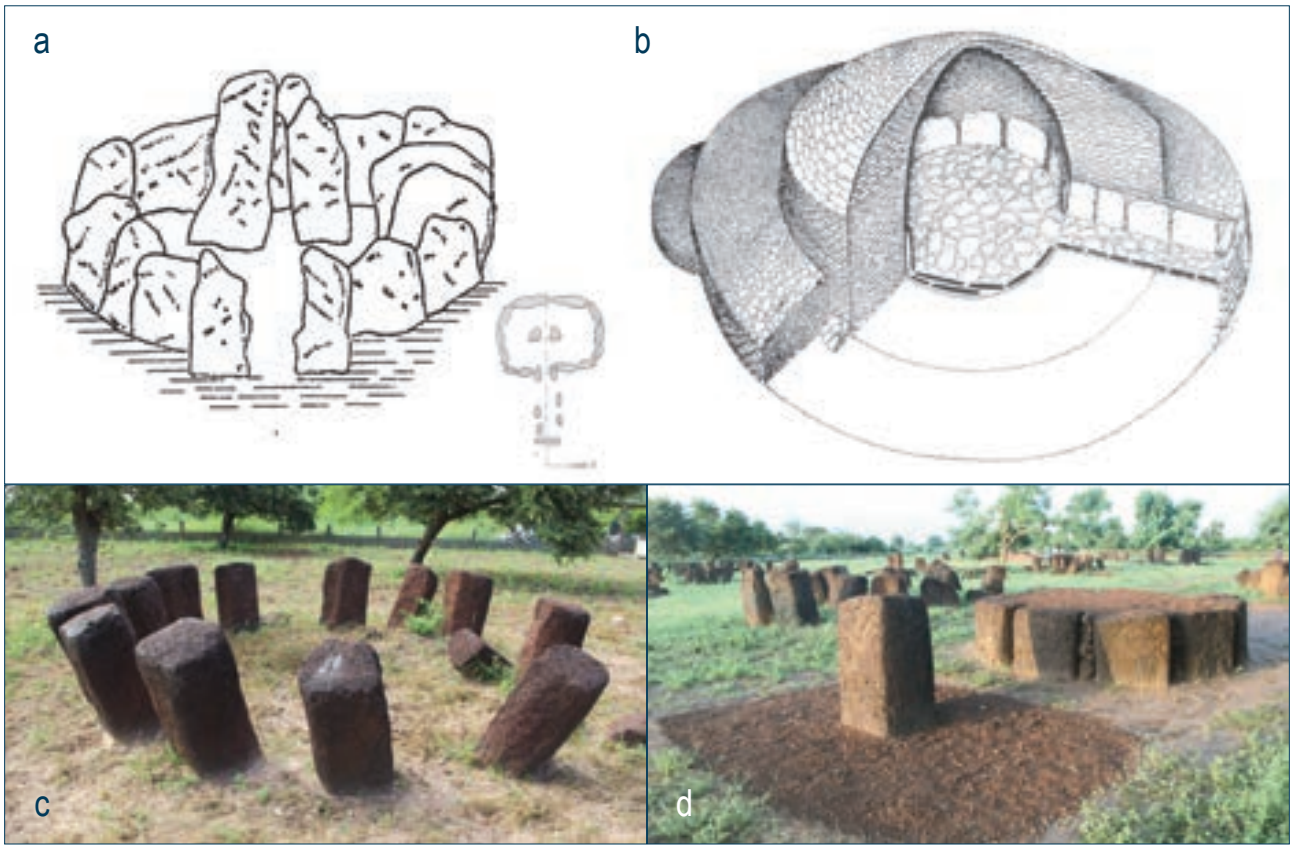


Fig. 6 – Megalithic ruins are sometimes very similar for very different structures. In Europe, among the circles of standing stones (a), the history of research has taught us to distinguish between those initially placed on the periphery of a burial chamber (b). In Africa, similar circles of standing stones (c) can just as well represent the collapse of a burial platform (d) (a, after Laporte *et al.* 2011; b, after Joussaume 1981, 2016; c-d, after Laporte & Bocoum 2019; plates: L. Laporte).

of the traces of erosion visible on the blocks erected in the alignments of Carnac, France, is facilitated by the fact that they were erected in the open air (Sellier 2013). This is also useful for the technological study of each block forming the framework of a funerary chamber when the latter, in ruins, is now devoid of any tumulus mound (Mens 2008). When these blocks are inserted into an imposing monumental mass, many researchers regret not being able to observe each side of a given stone (Cassen *et al.* 2012), approaching them as pieces of movable art (Robin 2010) in studies that could have been carried out very differently had these remains not been preserved within more complete constructions.

To take another example, in the Andean areas of South America, the attention paid to the mediums used in parietal art, whether natural or displaced by humans, remains completely marginal in relation to the discourse developed on the symbolic representations, to the point that the use of the term 'megalith' is still an exception there. Elsewhere and, notably, within what appears at first glance to be a scatter of blocks, attention would have been drawn above all to an artificial chamber known to yield abundant movable remains, also likely to reflect the corresponding populations.

3. Uses

The question of the function of megaliths has been present from the earliest writings on the subject in the scientific literature, as well as in many mythological accounts throughout the world. At the turn of the 19th and 20th centuries AD, in Europe, two main types of interpretations tend to emerge. Several groups of very large standing stones were perceived as astronomical observatories, erected by communities who were trying to measure time, which was particularly vital for establishing the agricultural calendar. Other structures composed of very large stones were buried beneath what appeared to be a simple mound, creating an artificial chamber where the presence of many human bones indicated multiple burials. Subsequently, and elsewhere in the world, such a distinction required refining, at the very least.

Here, the term 'uses' is preferred to the term 'functions', which suggests a prior intention. For example, the use of the Menga dolmen in Andalusia (Spain), for the out-of-sight execution of prisoners during the Spanish Civil War does not imply any prior intention for such a function for this particular place (García Sanjuán & Lozano 2016), but the cartridges collected from the site by archaeologists reflect a use specific to the singular biography of the location (Bradley 1998b). Just by considering a monument to be a memorial place we imply a form of reappropriation by successive generations, which often results in different uses and constantly renewed functions, both for the structure as a whole and for each of its parts (Furholt & Müller 2011: 16). Too often, these monuments, just like the 'petrified' megaliths, are perceived as a series of snapshots. The larger (and therefore more likely unexplored) the surviving mound, the more often the various associated megalithic areas are considered contemporaneous with the final stage of the edifice (Laporte 2010).

The material vestiges of their uses enable us to link the megalithic ruins to the past populations who built them. Almost everywhere around the world, megaliths were erected in distinct places, at different times, and by human groups who often did not know each other. The dating of such buildings, made of inert material, initially relied on the analysis of material remains resulting from their immediate use and after their construction (Joussaume 1985). Such reasoning has proved valuable, at least as a first approximation, and more refined chronologies are now possible, providing *ante quem* and *post quem* dates (Schulz-Paulsson 2019) for each stage of transformation undergone by these monuments during their individual histories. The presence of organic material in the form of birch bark interwoven between the base of walls within the Maglehoj Megalithic Chamber in Denmark (Dehn & Hansen 2006: 44) is an exception here (**Fig. 7**), allowing direct dating of the monument. In some cases, however, later use may have erased all material traces of the monument builders.

The presence – or absence – of human remains in the immediate vicinity of megaliths has often influenced interpretations, although a funerary

function is sometimes confirmed for present-day standing stones devoid of such remains, as among the Toradja in Indonesia or the Gewada in Ethiopia. Conversely, the basements of many religious buildings, such as churches in western Europe, are full of burials or reliquaries. Further, the function of each individual megalithic block is sometimes inferred a little too quickly from its position within the construction. Thus, for Neolithic megaliths in western France for example, the same line of erected stones will often be interpreted differently depending on whether it stands in the open air or is

Fig. 7 – Difficulties in accurately dating the construction of megalithic remains made of inert matter. a. Birch bark, which can be dated by radiocarbon, inserted between each foundation stone of the walls built between the megalithic blocks forming the burial chamber of the passage tomb of Maglehoj, Denmark; b. On the other hand, it is still very difficult to accurately date each part of the large Neolithic mounds of the Carnac region (France), often presented as an indivisible whole, as they were explored in the 19th and early 20th centuries through mine galleries ; c. In the same way, the period of construction of the alignments of standing stones located at the exit of the village of Willong Khullen (India) (already noted by Hutton in the 1930s) is still very poorly dated although they are claimed by the Naga inhabitants, who still practise slab burials (Photos: L. Laporte).

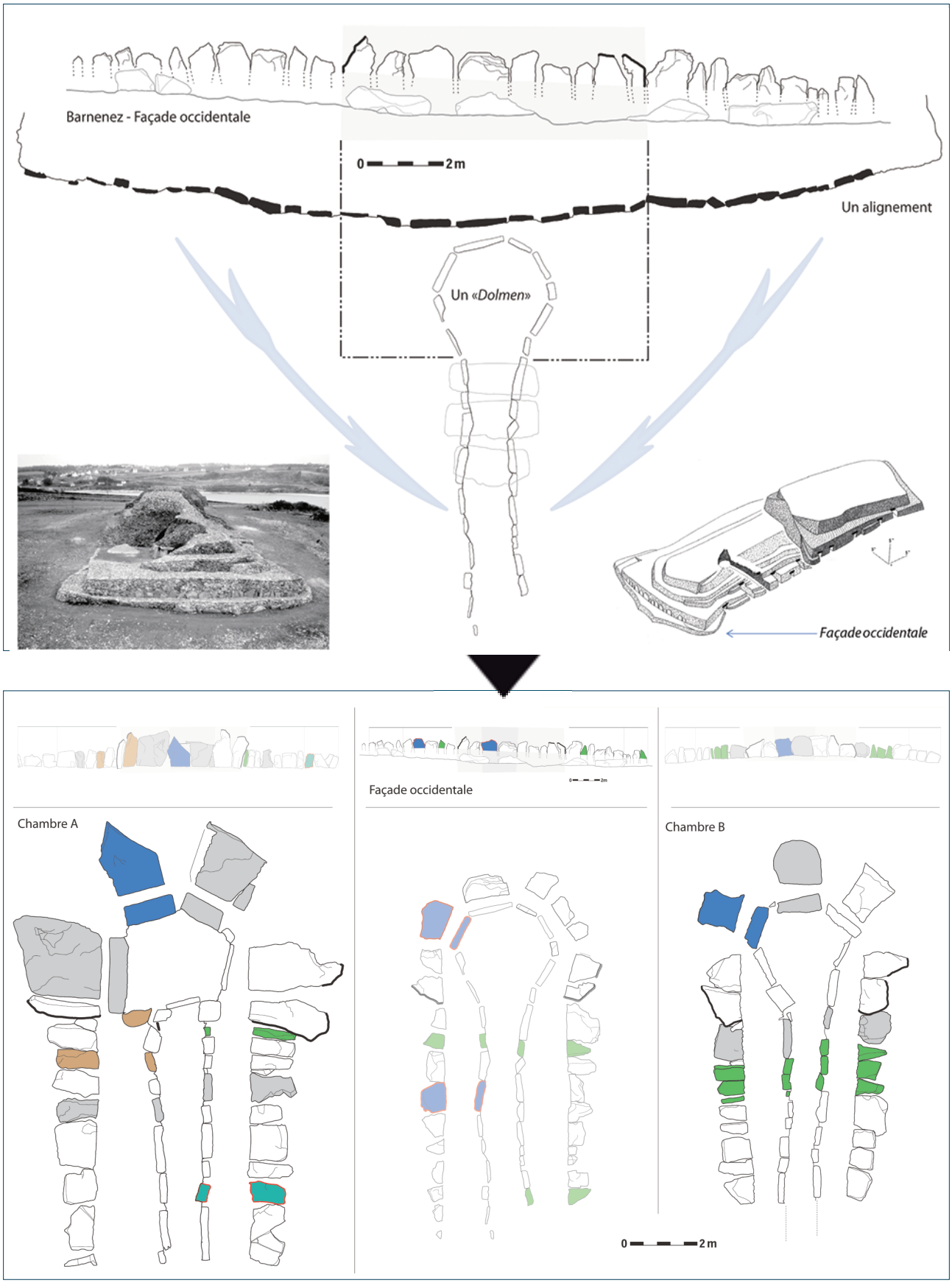


Fig. 8 – Barnenez, Western France: The alignment of blocks erected in the western façade of the Neolithic funerary monument of Barnenez at Plouézoc'h (Finistère, France), exposed to public view as an unrolling of the blocks positioned along the walls of the corridor and the chamber of artificial cavities in the tumulus mound (After Laporte *et al.* 2017; photo Archives of the Laboratoire Archéosciences-UMR 6566).

part of a dry-stone wall supporting the roof of a narrow corridor (**Fig. 8**). The first would be ascribed only a symbolic function and the second would be considered to have been constructed exclusively as an architectonic support (Laporte 2015a). Conversely, the function attributed by contemporary populations to other, equally megalithic remains sometimes leads to their exclusion from our field of investigation, thereby thwarting the study of a whole range structures built in a much more distant past.

Among the structures that cannot be interpreted either as astronomical observatories or as burials, the 'merit stones' scattered in a landscape of rice fields cultivated by the Naga people have for a long time, and rightly so, attracted the attention of many foreign observers (Hutton 1929). But here, as for many other populations of Northern India, localized ethnographic studies often highlight the diversity of functions attributed to other stones erected by the same populations (Binodini Devi 2005). Archaeologists of the future will probably have great difficulty in distinguishing these others from those considered as the main case. Some serve as boundary markers. In Japan, several large standing stone blocks are directly associated with the establishment of new plots of land during the 7th century CE, and are never cited in studies of megaliths. However, '*In the pre-modern era, monumentum, refers to any edifice that evokes a specificity of a place and recalls its memory. It can be a landmark [...] that serves to mark a limit. The word has been used in Anglo-Saxon surveying, where monumentation designates boundary marking.*' (Chouquer 2008: 85).

We could even say, in an outrageously caricatural way, that the more significant the function of a megalith in contemporaneous societies, the less it will be as ascribed such a function by archaeologists. This is, of course, the case of the abundant '*huancas*', honoured at every feast of the dead in the Peruvian and Bolivian Andes, the study of which is so often relegated to the observation of folkloric practice. In Africa, numerous stones erected in sacred woods, accessible only to initiates, represent a form of – sometimes very well-concealed – ostentation (**Fig. 9**). Somewhat more anecdotally, the function of a seat, or more precisely that of a backrest for the person seated, has been unduly bestowed on many standing stones, such as those around small circular monuments in Liberia and Sierra Leone (Haselberger 1960), although this function has, indeed, been proven by the permanence of oral traditions for some of the stones erected on the vast platforms of certain *Marae*, in Polynesia, among many other functions (Garanger 1973).

Fig. 9 – A sometimes well-hidden ostentation: when they have real importance for the functioning of contemporary societies, some megaliths are rarely named as such and are sometimes even difficult to access for the layman (A), thus preventing the study of a whole section of those erected in the past from the actualist reference framework. The example shown is in Cameroon with the monoliths of the initiatory society Ngumba, surrounded by rafia mats, having a religious function (after Notué 2009: 47).

A number of authors (Gallay 2011; Jeunesse 2018; Renfrew 1974; Wunderlich 2017; etc.) prefer to emphasize the social role attributed to the organization of the energies required for the construction of the edifice, which is then interpreted differently in terms of competition or even coercion, or assistance and emulation, according to broader starting assumptions. The transport of very heavy slabs of stone by means of human traction has often been presented as an indirect measure of the capacity of a human group to mobilize sufficient effort for a task that is not strictly necessary for its subsistence (Laporte 2019). A careful interpretation of the entire architectural structure, rather than only the part indicated by the presence of megalithic ruins, can also inform us about the human societies that built the structure and then, over time, frequented and sometimes destroyed it (Laporte *et al.* 2020).

4. Materializations

As soon as archaeological excavations go beyond the megalithic ruins themselves, they bring to light other remains, other structures, other architectures that are not in any way ancillary. More generally still, taking account of changes in the landscape sometimes also helps to better define what is specific to the monumentalization of each particular place. An entire network then takes shape, always moving in space, changing continually over time, and linking points that are sometimes very far apart. The sequence of the different operations that take place as the construction of a site progresses is a good example of this. Nevertheless, we prefer the term 'materializations' over 'constructions', which seems more ambiguous. The latter, for example, can just as easily refer to exclusively intellectual or symbolic constructions such as some natural scatters of sacred blocks as mentioned above. For the purposes of this article, it thus seems preferable to limit the discussion to structures that result from material construction.

Some very large blocks were unquestionably raised towards the sky in the exact place from which they were extracted (Cummings & Richards 2016: 53), but most were transported, involving diverse technical knowledge. Sometimes, this transportation is the only human action, for example, when a block is placed over a burial site (**Fig. 10**). Many materials other than stone were used, at least during construction, justifying the title *Les charpentiers de la pierre* (*The Carpenters of Stone*) in one of several works by Joussaume (2013) devoted to megaliths around the world. This is another of the ambiguities surrounding the use of the term 'megaliths' in scientific literature, especially when they are considered to be just one form of monument among many others (Gronenborg 2006). It thus seems legitimate to broaden these studies by including other types of structures, such as other architectures with similar forms – at least when they were built by the same populations in the same place and at the same time but with different techniques. For there can be no megalith without the presence of a very large stone.

The quarries from which many of these large blocks of stone were extracted have been widely studied. In contemporary traditional societies, as in societies from a much more remote past, these quarries are rarely more than a few kilometres away from the site where the stones were erected. The stones may be simple blocks found at the bottom of a slope, as is the case for some of the blocks moved above the slab burials of Hwasun in Korea (Gon Gy 1981) or may be cut from an outcrop of basaltic prisms already naturally raised towards the sky, as at the 'pillar sites' of Tanzania (Grillo & Hildebrand 2013) or extracted from actual quarries, as is also very common (Zangato 1999). The study of the operational chains involved allows a reconstruction of all the techniques used. In Madagascar (Joussaume & Raharijaona 1985), the use of fire to detach large limestone slabs from the substrate is well documented, whereas in Senegal, for slightly earlier periods, the exploitation of laterite crusts seems to have led, at times, to the genuine mechanization of extraction (Laporte *et al.* 2012). The extraction processes used for Ramiriqui stelae in Colombia (Lleras Perez 1989) seem much better understood than any other aspect of these rather poorly-dated megaliths.

In the Mandara Mountains in Cameroon, the oral traditions of the Mafa report transport of up to 50 km, five centuries earlier, of stones erected as phallic forms during the re-foundation of a village

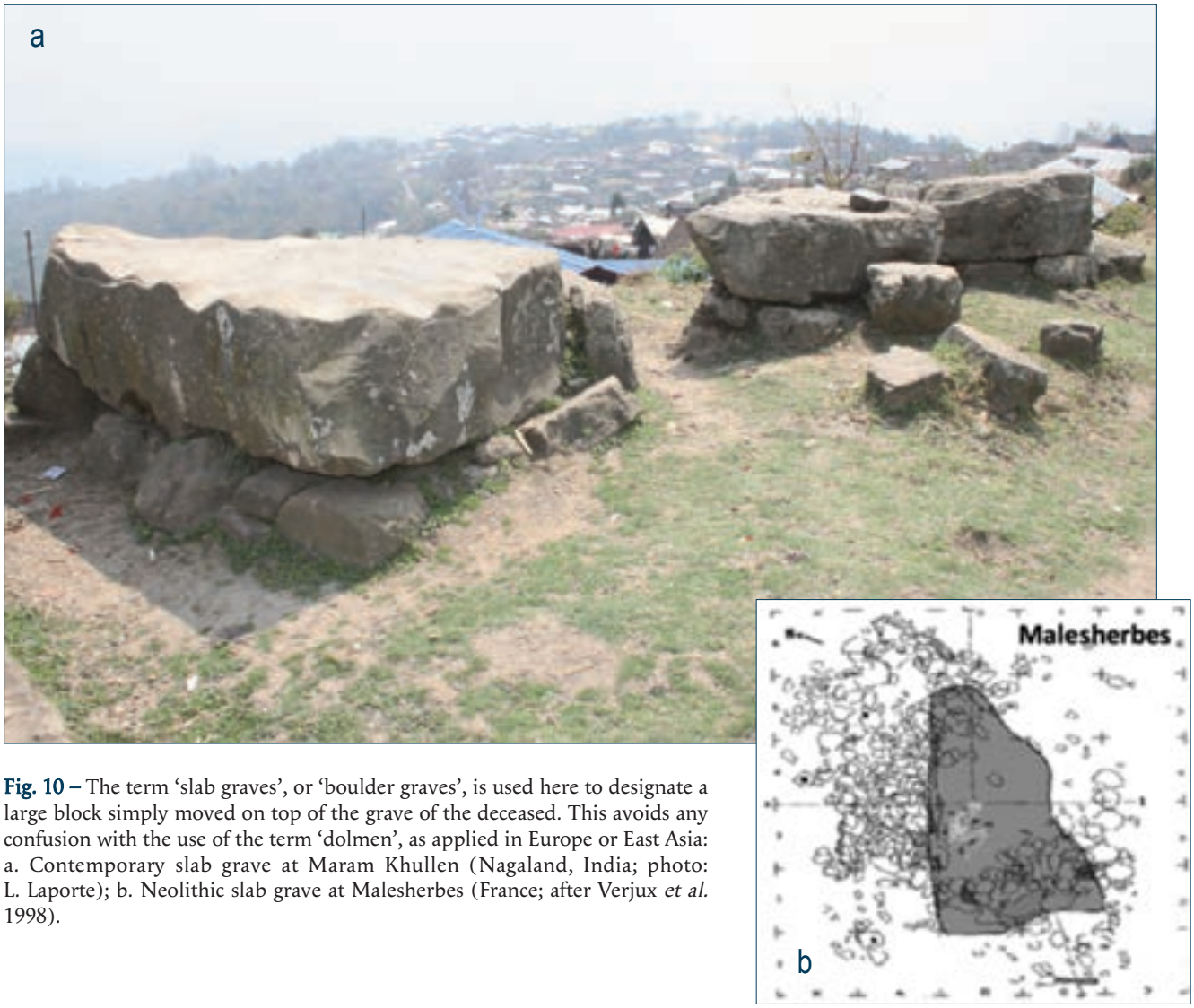


Fig. 10 – The term 'slab graves', or 'boulder graves', is used here to designate a large block simply moved on top of the grave of the deceased. This avoids any confusion with the use of the term 'dolmen', as applied in Europe or East Asia: a. Contemporary slab grave at Maram Khullen (Nagaland, India; photo: L. Laporte); b. Neolithic slab grave at Malesherbes (France; after Verjux *et al.* 1998).

(Tchandeu 2009: 68). This distance extends up to 100 km for what are sometimes much more imposing blocks moved by the Khasi communities of northeast India (Mitri 2016). As regards prehistoric Europe, 'bluestone' quarries in Wales (United Kingdom) initially provided the necessary materials for local monuments, before one was moved nearly 200 km away to Stonehenge and to the centre of a larger circle of standing stones (Parker Pearson *et al.* 2019). Transport by water is indeed demonstrated for the Neolithic, for example by the geological nature of several standing stones on some Breton islands (Cassen 2011). For much more recent periods, in Micronesia, the chemical study of rock composition has allowed the precise identification of each of the quarries distributed around the periphery of the small island of Pohnpei, where the city of Nan Madol is located (McCoy & Athens 2012).

For transport by land, when the slab weighs only a few tonnes, the use of 'stretchers' is sometimes sufficient, these being carried by a few dozen people who take turns regularly (Ethiopia, Nagas – e.g., Cros *et al.* 2018: Fig. 1). In this case too, the application of a pole system, where large logs are pulled across the ground, can be hypothesized when the distance to be covered is only a few hundred metres and the route is marked by broken blocks, as is the case for at least some of the megaliths of Senegal and Gambia (Laporte *et al.,* forthcoming). The addition of hydromorphic silt, which is very slippery when wet, can help to limit friction, as can the addition of small river pebbles, like those used

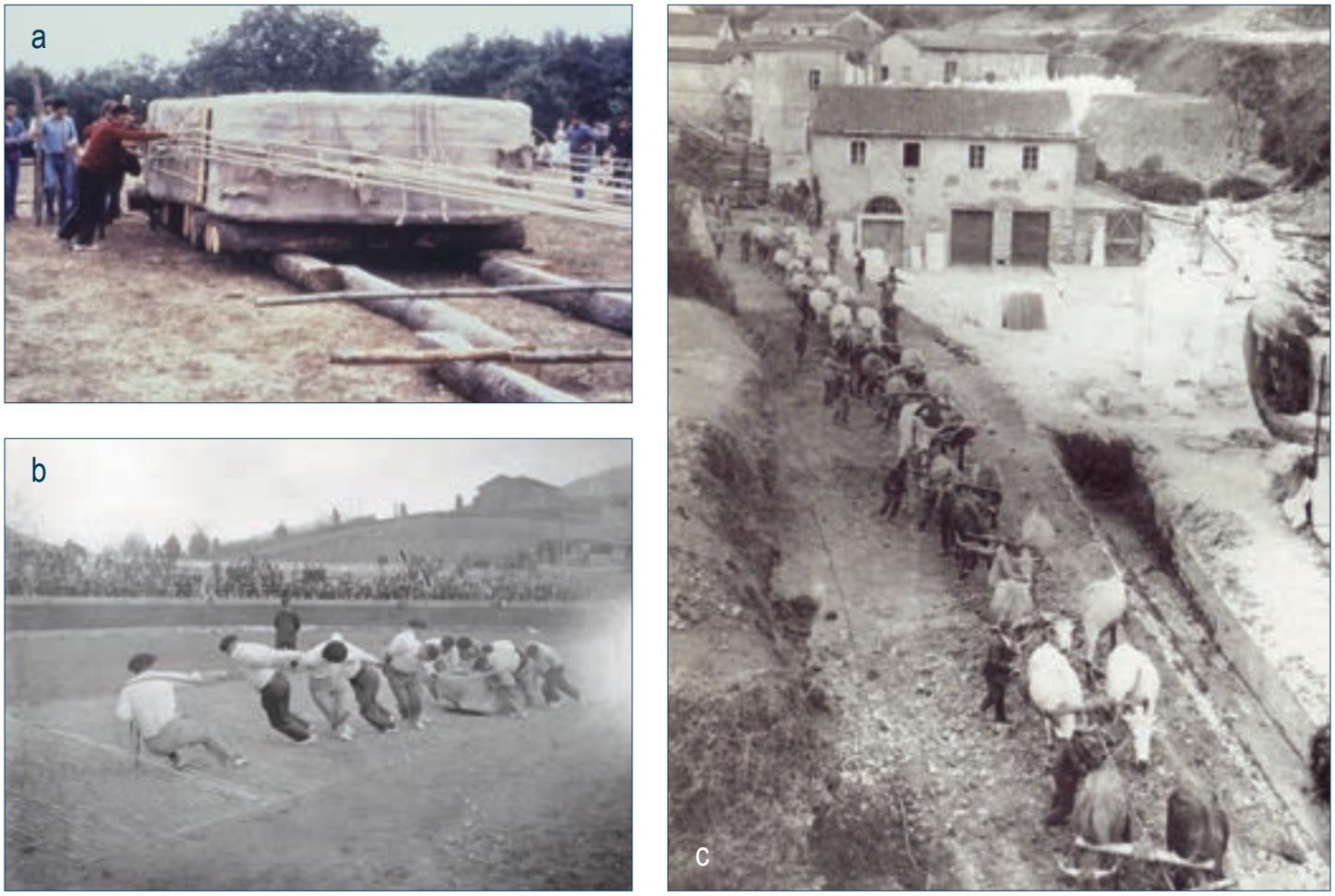


Fig. 11 – The hypothesis of transport on wooden logs is generally advanced for the heaviest slabs used in the construction of Neolithic megaliths in Europe, but many other techniques are also possible. a. Experimental archaeology carried out at Bougon under the leadership of J.-P. Mohen in the 1970s (Photo: P.-R. Giot); b. Traditional games in Spanish Basque country which consist in pulling a heavy stone over a surface of river pebbles, illustrated here by a photograph taken by I. Ojanguren at Eibar in 1940; c. Despite the discovery of a wooden yoke in early Neolithic levels at La Draga in Catalonia, the use of animal traction is rarely put forward, as animals are considered more difficult to coordinate than a large number of people. The image of multiple pairs of oxen pulling a cart on which the obelisk that Mussolini wanted to offer to his capital city lies demonstrates at least that it is materially possible (After Baini 1987).

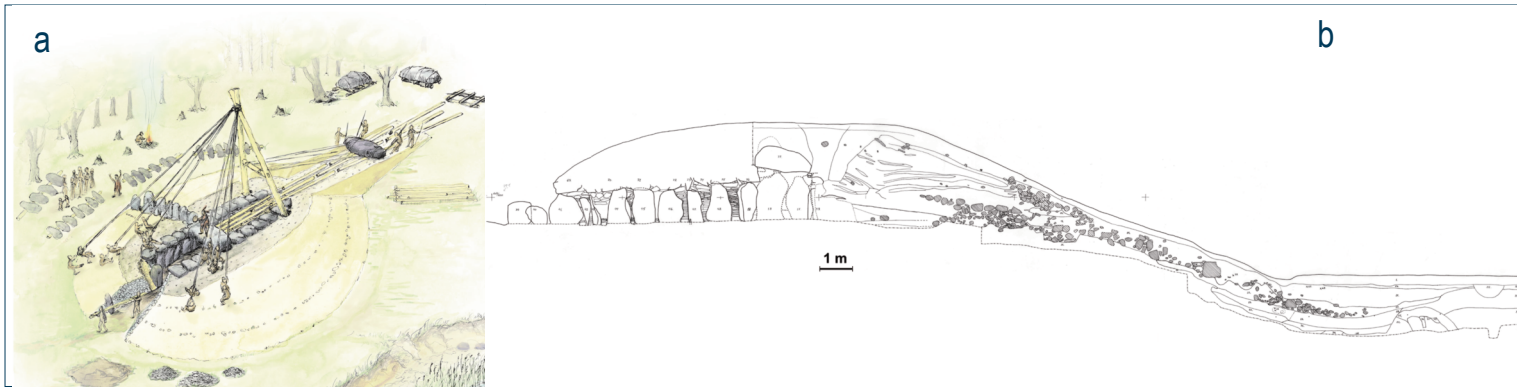


Fig. 12 – Ramp constructed for placing the cover slabs of the passage tomb at Klekkendehoj (b), then sealed under the upper levels of the tumulus mound, and proposed reconstruction at Birkehoj (a), Denmark (After Dehn 2016).

even today for traditional games in the Spanish Basque Country (**Fig. 11**). For slightly larger blocks, the use of sledges, widely represented in the frescoes of ancient Egypt, is also attested in contemporaneous populations, for example in northeast India or Indonesia (Hutton 1929; Perry 1918). Others may have been moved on wooden logs, akin to the way large boats are moved on the beach. This hypothesis has probably given rise to the greatest number of experiments in Europe, leading to the proposal of multiple variations (Poissonnier 1996).

It would be naïve to imagine that such undertakings would not have required the prior construction of roads, highways, or bridges. In England, a wide avenue connects Stonehenge to the banks on which the Sarsen blocks used for its construction were probably offloaded (Allen *et al.* 2016). For much more recent periods, wooden embankment structures in Japan may also have been used for this purpose in the Motodaka Necropolis (Tottori, Bunkachō 2012), while rails carved into the rock helped to transport stones extracted from quarries next to the Nara Necropolis (Nespoulous 2003). Traditional leverage and handling techniques are not well documented (and rarely illustrated) by early 20th century ethnographic associations. The sledge technique is often cited, but there are many other theoretically conceivable techniques that would have left no material traces (Adam 1977). We will note here only the discovery of a ramp, sealed in the tumulus mound of the prehistoric monument of Klekkendehoj in Denmark (**Fig. 12**), leading to the top of the walls of the megalithic chamber, and potentially used to slide the cover slabs into their elevated position (Dhen 2009).

In addition to wood mentioned above, other types of materials that contributed to the materialization of the whole structure, include – depending on the context – the use of dry-stone or raw earth constructions, as well as the addition of considerable masses of fill. It would be wrong to overlook the contribution of the study of such structures to our knowledge of megaliths (**Fig. 13**). As with large blocks of stone, this is primarily a question of examining provisioning strategies and quarries, which are sometimes no less distant from the edifice than those for stone (Laporte 2013). In Europe, in the west of France during the second half of the 5th millennium BC, the hollows of the lateral quarries carved out on each side of elongated tumulus constructions greatly contributed to the monumentalization of the site, enhancing the elevated structures. These could perhaps represent the clay quarries dug along the mud walls of large trapezoidal houses built by the first farmers of the region a few hundred years earlier (Laporte *et al.* 2018). It is difficult to understand the entire sequence if certain types of materials are excluded from the analysis, and the construction techniques of these features are often less well documented than for the megalithic ruins themselves. The detailed excavation of the Takamatsuzuka Kofun, at Asuka (Nara) in Japan, has made it possible to identify the imprint of the wooden tools used to compact the sediments while new fill was added (Bunkachō 2008).

It is true that in terms of survival, these alternative materials can hardly rival those parts of the structure constructed with very large blocks of stone, and the notion of increased durability linked to the latter is patently obvious in the landscape. Several megaliths mark out the paths taken by nomadic peoples, or traders, and were formerly interpreted as the only enduring landmarks in the territories they crossed. This was the case, for example, for the dolmens built at the end of the Neolithic in Languedoc (province of southern France) by the 'shepherds of the plateaus' dear to Arnal (1963), for the standing stones erected in the Levant and in the Arabian Peninsula (Stelekis 1961; Steimer-Herbet 2011), and as far as the Mongolian plains during the Bronze Age (Magail 2003). For more sedentary groups, the Tyssen polygons drawn by Renfrew (1983) to explain the territorial location of megaliths on the Isle of Arran in Scotland may also be worth applying to the island of Bioko in the Gulf of Guinea, where groups of standing stones are found in each valley (Olisly 2007).

In the Solomon Islands, in Melanesia, the construction of megaliths – perhaps as early as the 9th century AD – appears to precede the appearance of large, trade circuits involving goods with very high added value, such as the Kula (Bickler 2006). This is the converse of models currently advanced to explain Neolithic megalithism in the Gulf of Morbihan (France), in Europe, on the basis of

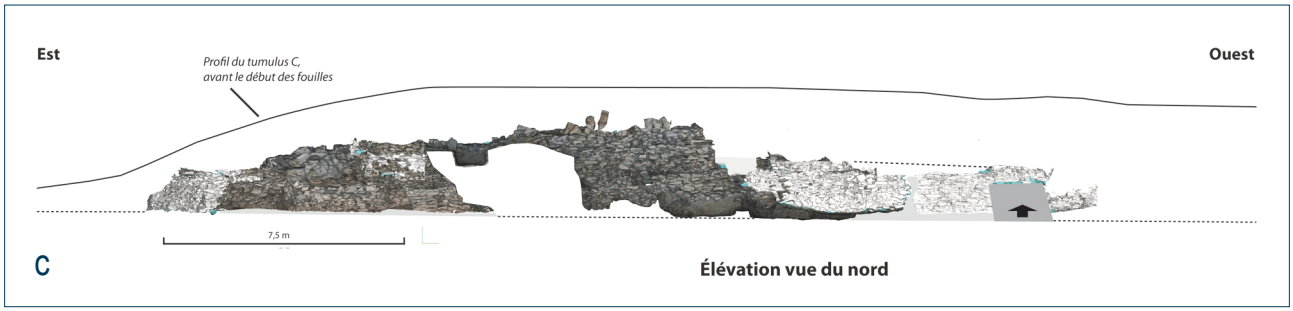


Fig. 13 – Standing stones (a) at the end of sloping surface (b), made during construction (c), then covered at the western end by a tumulus mound (d) which also contains two megalithic chambers with an access corridor (Tumulus C from Péré to Prissé-la-Charrière, Deux-Sèvres, France). The study of the Neolithic construction reveals the existence of multiple technical structures, built in drystone and hitherto totally overlooked, which can sometimes be described using a vocabulary borrowed from classical architecture (After Laporte *et al.* 2014; photos: L. Laporte & Ballonet.com).

general anthropological models however developed in this very distant region of the world (Godelier 2009). Clearly, none of these architectures can be approached without regard for their specific cultural contexts. Only a better understanding of the constraints and, indeed, the degrees of freedom, imposed on those who materialized the entire structure makes it possible to attempt to reconstruct the nature of their project.

5. Architectural projects

Any technical action is generally guided by a previously developed 'conceptual project'. Gaining access to at least some of the aspects that define the nature of this conceptual project, as well as its implementation methods, provides information on immaterial aspects of the life of the human groups in question, many of which have disappeared forever. This notion of a conceptual project is used by prehistorians, through the analysis of operational chains, as well as by archaeologists and historians studying much more recent buildings. We will use this term, which we do not need to reinvent, whatever the period in question. For the funerary megalithic monuments of Neolithic Europe, the formal demonstration that their plan was materialized on the ground prior to any construction is, in fact, quite recent: at the Pey-de-Fontaine in Vendée (France), the plan was marked by regularly spaced white stones at the base of the outer walls (Joussaume 1999). Many other 'details', on the other hand, have been attributed to rudimentary technical knowledge (Laporte 2016).

Thus, for a long time, many studies ascribed a limited degree of elaboration to these architectural projects, due to the persistence of a certain 'primitivism' which, against all expectations, was difficult to discard, even until very recently. We saw above, for example, that the apparently coarse character of each block often resulted from the deliberate choice to preserve the unique character of each stone by limiting mechanical action on the material, rather than being due to a necessary economy of means. Such observations also apply to our way of perceiving the whole structure, to which we sometimes add tenacious 'evolutionist' presuppositions. So many writings on megaliths resemble a 'palaeontology' of these architectures with, for example, an access corridor that purportedly to lengthened over time, much as the fins of a mammal might adapt to marine environments (Laporte 2012: Fig. 10). Exactly what the study of megaliths gained from its traditional anchorage in prehistoric archaeology, and from what appeared to be fruitful conceptual transfers from the natural sciences, becomes a little more questionable when we consider the fact that products of the human mind can never be organized in a totally linear fashion over time.

Of course, the way we consider each of these architectural projects depends very closely on cultural factors specific to each human group, in a given place and at a given time. The verticalization of a very large stone (Cassen 2009b) cannot, for example, be interpreted in the same way everywhere. For some nomadic peoples of the Mongolian plains, it refers to a conception of space and time centred on the central axis of the yurt around which the world moves, and which cannot be universal (Parker Pearson & Richards 1994). In the same way, other authors have shown how surfaces that appear to us to be frozen come to life in the eyes of certain observers when they change their viewpoint (Ferando 2016). What applies to the helical representations engraved on deer stones (**Fig. 14**), will be perceived in a similar way for certain stone statues in the Marquesas, albeit in other forms. In Europe and for much earlier periods, we have demonstrated that certain irregularities systematically present among the very first stone funerary monuments already owed much to the use of real effects that were at least optical corrections, if not perspective (**Figs. 15** and **16**). These basic principles were later used again for the anamorphosis of the columns of the Parthenon in Greece (Laporte 2015b).

Previously, Le Roux (1997) has highlighted a similar aspect present in the standing stone alignments at Carnac, in Morbihan, France, which Sellier (1991) attributes rather to the geomorphological nature of the substratum. In any case, the very organization of these alignments, which barricade so many tributary valleys towards the present-day Gulf of Morbihan, sometimes over more than 10 km, is barely perceptible to us today other than through

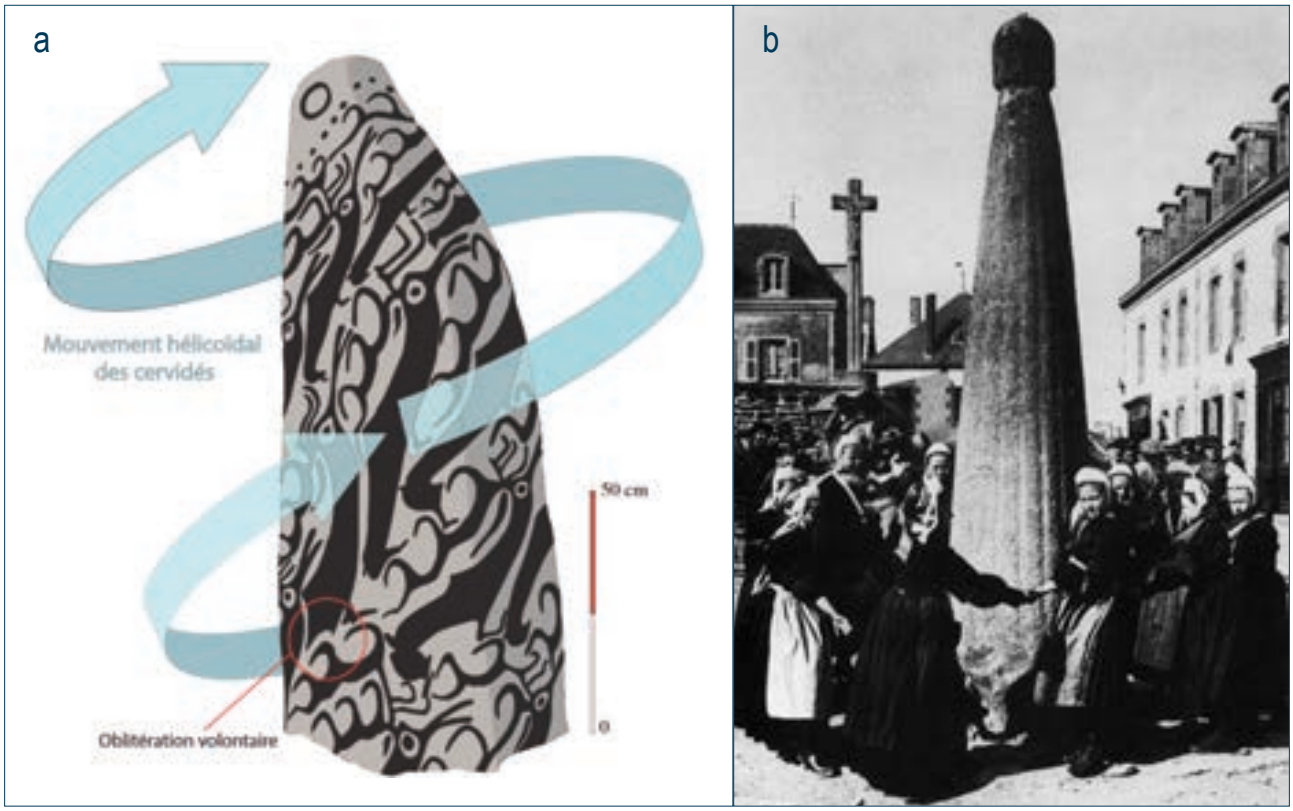


Fig. 14 – The 'petrified' surface – in our eyes – of a monolith sometimes becomes animated by the movement conveyed on it by the observer. a. Helical movement of representations on deer stones in the Mongolian plains (After Magail 2008); b. Breton dances around an Iron Age stele in Finistère in France, on a 1900 postcard (After Mohen 1989: 22; Coll. Abbaye de la Source; photo: J.-L. Charmet).

the use of cartographic techniques, or aerial photography, to which Neolithic populations clearly did not have access. What was this curious way of perceiving space that allowed them to materialize a structure that escapes any tangible visualization in the field? For this particular case such questions on the very nature of the architectural project converge with modes of representation of space and time that may, perhaps, have elements in common with those of the diverse human groups who materialized so many geoglyphs on the ground, such as the White Horse during the Iron Age in England.

Attempting to restore at least a small part of the nature of each of these architectural projects is therefore a very perilous undertaking. It proved particularly difficult, for example, to link the extension of oviparous myths along the entire seafront of East Asia, as far as India, with the distribution area of the megaliths, in the way this term is generally used for this region of the world (Komoto 2003). Such attempts, at least, draw our attention to the fact that the construction of these megaliths is sometimes also related to the history of religions. In Japan, the use of very large natural blocks, which were placed above the burials of a few deceased individuals, seems to have occurred at about the same time as the emergence of Shintoism on the island, in around the 3rd century AD (Nespoulous 2007). Throughout the world, we cannot ignore the fact that many contemporaneous human groups who built megaliths in the recent past were 'animistic', regardless of the diversity of beliefs and practices that this term encompasses (Descola 2005, 2010; Lézy & Chouquer 2006 [1]). We

(1) Some of these debates curiously refer to those we already pointed out concerning the history of research on megaliths. Lézy & Chouquer (2006), after their reading of Descola (2005), state that: "*Better known, the 'primitive' remains nevertheless 'primitive' in that it has not been able to pose itself on the horizon of western thought, which remains 'modern' as plants remain 'modest' and animals remain 'humble'.*"

Fig. 15 – Optical correction effects, intrinsic to the architectural design of this Neolithic monument, induce a distortion of space for observers moving around Tumulus C of Péré (Prissé-la-Charrière, Deux-Sèvres, France), following similar principles to those described by Choisy (1899) in his *Histoire de l'architecture* (classique).

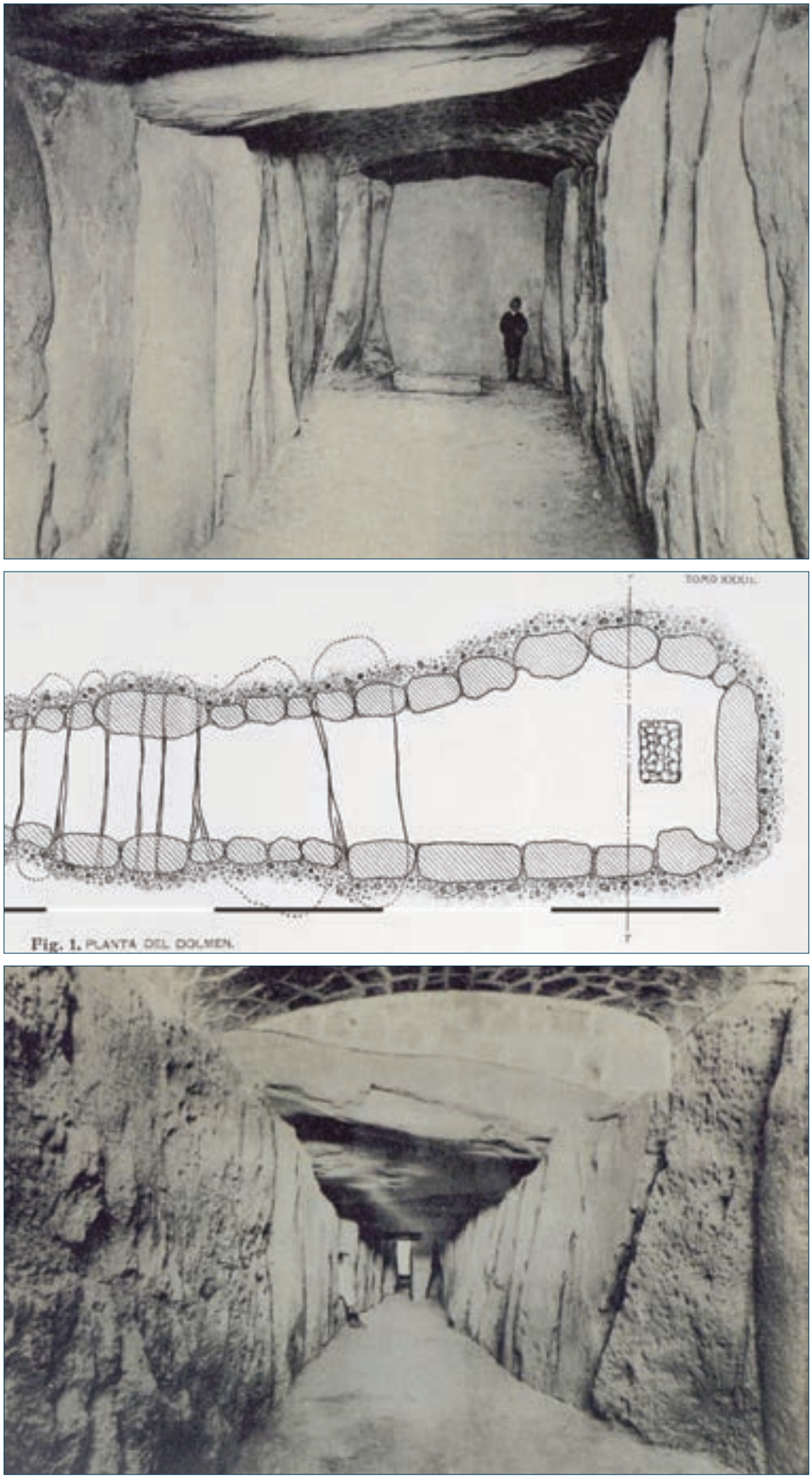


Fig. 16 – Photos published by Obermaier (1924) from the entrance and the back of the megalithic chamber of the Soto dolmen (Huelva, Spain). The vanishing lines of obliquely arranged orthostats in the south wall induce optical effects.

should, however, avoid making such general statements, especially for past populations whose beliefs have disappeared forever.

Other widely emphasized social factors, such as the political organization of the human groups in question, must of course also be considered. However, it seems to us that they must first be evaluated within large regional sequences, as part of historical processes that are, unfortunately, not always well established for peoples without writing, and often described through ethnographic comparisons. To offer just one example, should we systematically interpret as structural elements (of universal value) a few recurring social traits observed among very different contemporaneous peoples who erect megaliths from India and Southeast Asia through Indonesia and the Philippines to the most isolated islands of the Pacific? Such island environments are so often presented as laboratories isolated from the rest of the world and as juxtaposed, instantaneous snapshots, sometimes arbitrarily ordered based on an evolutionary logic of the social body. Is it not likely that some of these large-scale recurrences may also have resulted from quite recent movements of populations – one of the last human explorations of hitherto unknown lands?

Would it not, thus, be somewhat premature to try to compare them with apparently similar traits in terms of the social organization of human groups building megaliths on other continents, also with debatable chronologies (cf. e.g., Joussaume 2018 vs. Gallay 2018, for the case of the Konso in Ethiopia). For the archaeologist confronted solely with the material remains of multiple past moments, it is not so much the form that the megalithic ruins take, but the supposed nature of the architectural project that allows such comparisons. In the absence of oral traditions, it might not have been possible to establish a link between long funerary mounds spiked with standing stone slabs, and the *ahu* laid at the end of a much more recently constructed, wide platform in the Polynesian Marae (Emory 1933; Solsvick & Wallin 2010; Valentin & Molle 2016). The same is true of the wooden statues in Hawaii or the stone figures in Rapa Nui, which overlie Cyclopean type constructions (**Fig. 17**). We began this article by citing the erroneous reasoning which, in the history of research, first led to the inclusion of the Easter Island stone giants in a number of studies on megaliths, only to find other examples which are, in our opinion, much more substantiated, and which fully justify consideration, at least on a local and more indirect basis.

6. Conclusions

The study of megaliths came into being in the curiosity cabinet of scholars who often practised a form of comparativism which seems outrageous to us today. It developed in the context of colonial Europe, notably through diffusionist theories with widely questioned foundations. Over the past fifty years, the multiplication of regionalist approaches has highlighted the singular aspects of megalith builders in time and space, for example through their material cultures or their sepulchral practices. However, this carries the risk of seeing only one of these 'collections of butterflies', at the sources of the natural sciences. For several present-day authors, megaliths are only one form of monument among many others, built at different times and almost everywhere on the surface of the Earth. Others see them rather as a field of investigation to corroborate some theory of general anthropology. The disarray present at the end of

Fig. 17 – Another example where monolithic megaliths and statuary are found side by side, in San Agustín (Colombia), albeit in the form of a largely restored structure (Photo: L. Laporte).

a research cycle together with the enthusiasm generated by a burgeoning revival will probably inspire new avenues of study – but these remain to be collectively invented. Through this article we wish only to underline what is so singular about these megaliths, and to illustrate some of the sometimes-overlooked richness of studies carried out on all continents over the past few decades, or in some cases the past hundred years. What emerges is a plea for a detailed study of these architectures.

Translated from French
by Louise Byrne

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Alain GALLAY (†)

Megalithism and monumentalism: a plea for broadening the debate

Abstract: The international meeting held at the Historial de la Vendée in September 2019 made it possible to highlight a distinct number of difficulties as regards the definition of what should be understood by the term 'megalithism'. It is, indeed, impossible to separate a so-called megalithic architectural practice from other types of architecture that do not include 'huge stones'". The limit of 15 tonnes proposed by Boulestin (2016) to define megalithism in the strict sense, which would imply coercive authority, also prompts a number of questions. The proposal is based on the contributions of two anthropologists who were responsible for stunning breakthroughs with regard to comparative anthropology: Alain Testart and Philippe Descola. The proposal is also based on cladistics regarding the dynamic development of the phenomenon. From this perspective, societies related to megalithism in the broad sense can be placed in the space left free between societies without material wealth, called 'achrematistic societies' by Testart, and despotic states. These latter are defined by the practice of storage: they have generated material wealth but also distinct instability among societies. The understanding of 'megalithism' requires a complete overthrow of the way in which we approach the phenomenon by imperatively incorporating an anthropological vision. We are dealing here with a crucial change of perspective with regard to the vision we had developed previously in our book on megalithic societies, which remained partially dependent on an architectural definition of the phenomenon.

Keywords: *megalithism, monumentalities, Alain Testart, Philippe Descola, comparative anthropology, political structures, cladism, iconography, evolutionism*

The very comprehensive overview presented at the international meeting held in Vendée, on the megaliths of the world, made it possible to highlight a distinct number of difficulties as regards the definition of what should be understood by the term 'megalithism'. The first point, which I have emphasized for a long time (Gallay, forthcoming), is the fact that it is impossible to separate so-called megalithic architectural practice from other architectural traditions that do not include 'huge stones', and which should be grouped together with other types of non-megalithic monumentalities. Many speakers at the meeting therefore preferred to refer to 'funerary monumentalism' to define a culturally relevant historic domain. However, the term 'funerary' appeared to be too restrictive because many of the monuments presented were not directly linked to funerary practices.

On a second level, the question arises as to the definition of 'megalithism' in the strict sense. Boulestin (2016) had proposed that the limit between a megalithic and a non-megalithic stone be set at about 15 tonnes. According to this author,

the handling of blocks exceeding this weight is significant at the political level because such an operation requires coercive authority able to mobilize many people whereas lighter stones can be handled by an extended family or a small clan. According to this conception, megalithism would then be restricted to Indonesia, Polynesia and Japan. This opposition should be better defined based on more detailed actualist observations, particularly focusing on Indonesia.

In this situation it is understandable that most of the speakers restricted themselves to a badly defined reflective framework, mainly based on the factual description of the monumentalities. Ontologies are situated between animism and primacy of analogism. The animal figurations of Göbekli Tepe clearly illustrate animist beliefs. It would be interesting to re-analyse so-called 'megalithic rock art' from a perspective of analogism.

Here, we ask whether it is possible to define a more explicit reflective framework that makes it possible to frame appropriate questions as regards the historical developments of this multifaceted phenomenon. Our proposal is based on the contributions of two anthropologists who are behind stunning breakthroughs in comparative anthropology: Alain Testart (2012) and Philippe Descola (2005, 2010-2011, 2017).

The diagram presented below (**Fig. 1**) incorporates the respective approaches of these two anthropologists, approaches that have never previously been compared. The diagram is organized according to a cladistic approach acknowledging the presence of primitive and derived characters (Gallay 2012), evidence that is present in an impressionistic way in the work of Testart and completely absent from the reflections of Descola. This perspective by no means resurrects former evolutionism, which is rightly outdated. The cladogram, shown as a tree diagram, merely organizes the information at a structural level and has no concrete historical intention, at least in this initial stage.

Some distinctions should be briefly discussed before we return to the issue of the definition of the so-called megalithic phenomenon. Two distinctions not mentioned by these authors have been added to the diagram: the presence of despotic states and the presence of industrial cultures in the Anthropocene.

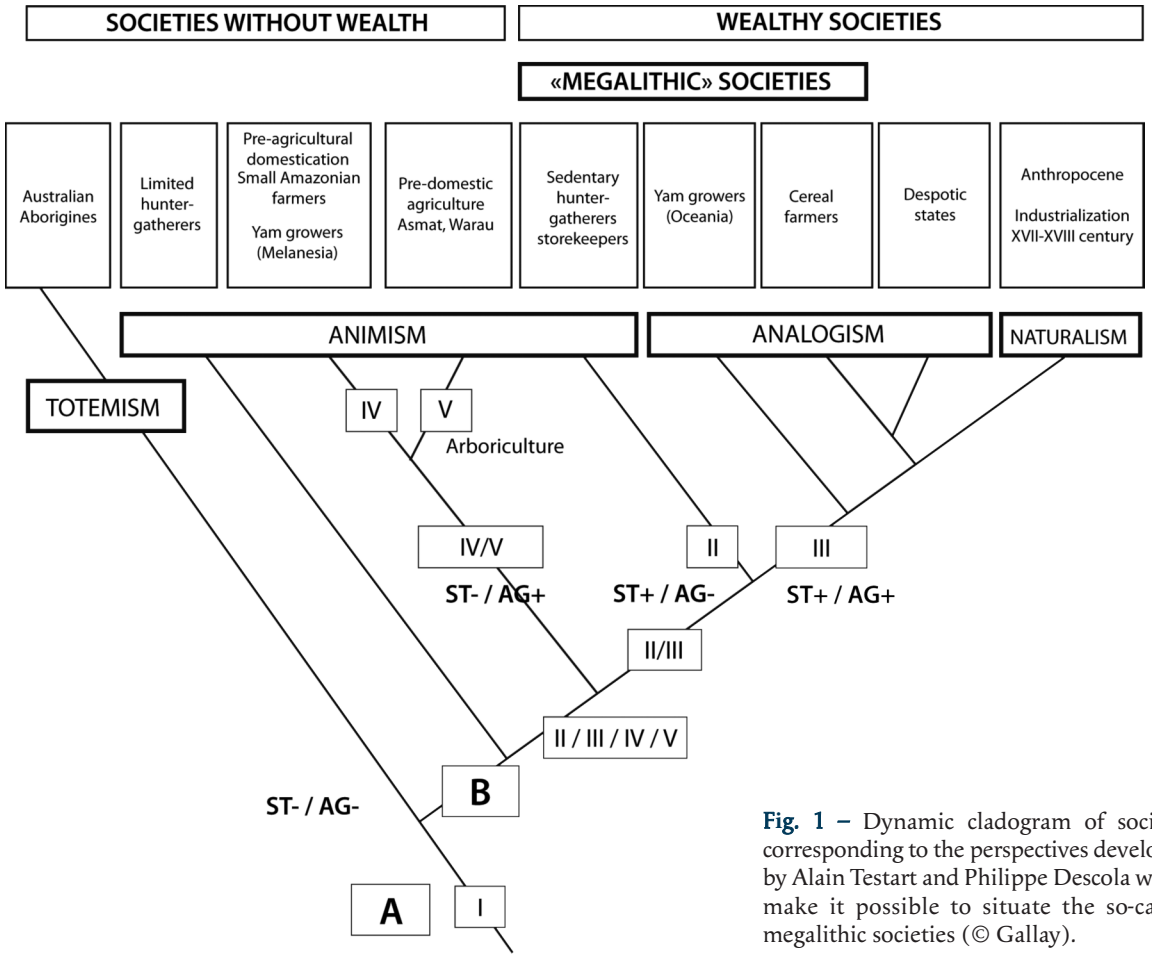

Fig. 1 – Dynamic cladogram of societies corresponding to the perspectives developed by Alain Testart and Philippe Descola which make it possible to situate the so-called megalithic societies (© Gallay).

Despotic states

According to Testart (2005, 2004-2010) the state can be defined as follows:

- an authority the decisions of which are imperative for all the individuals and/or groups that comprise the community over which the state has full authority,

- an authority which in that respect possesses coercive power that no other member of this community or of its components could seriously override,

- its power resulting the separate organisation, under its exclusive control, of the violence of which this community is in fact capable, either in that it claims to have a monopoly or in that it subordinates various residual forms. The monopoly of violence does not mean the monopoly of weapons, but it is a properly organisational factor. The State has removed violence in society in such a way that members of the society would no longer have the means to organize themselves using violence (or would have only limited means).

The spatial organisation of the territory first and foremost serves to identify the community over which authority is held. Whereas non-state power can have a territorial basis, state power must, crucially, possess a territorial basis. There can be nomadic states, as is the case for the inter-lacustrine kingdoms of Africa, that are not defined by boundaries but rather by the idea of a centre, with some uncertainty regarding the geographic delimitation of the power.

The state can be defined as the holder of the sovereignty in a political community when this sovereignty constitutes an indivisible whole. By contrast, a society whose sovereignty is multiple or simply divisible is a non-state society. However, Boulestin (personal communication) stresses that this issue may have two different and incompatible interpretations, which does not facilitate the understanding of the phenomenon. It can be considered that the criterion is that no one can dispense justice on his or her own behalf, either to exercise by himself/herself a sentence which was decided by a judicial authority or to exercise his/her proper justice within a framework provided by this authority (Roman case). In this case the issue of separate organisation does not apply to this authority: there must be a particular authority within the society (judiciable authority as regards Western European society, but this can also be an assembly of elders elsewhere) which is not the society as a whole. Alternatively, it can be considered that the judicial authority must possess, in addition, the executive power, which should not be left to the individual parties.

Finally, there are three intermingled levels which Testart has never distinguished:

1. *The decision for (or the prohibition of) violence:* right/prohibition to dispense justice on his or her own behalf or to go to war on his/her own initiative.

2. *The constraint:* is it possible to force the implementation of a judiciable sanction, to go to war?

3. *The organization:* the means implemented to apply the decision, public or private means, organized separately or not.

The definition of the state therefore changes depending on whether the unavailability of the violence alone is considered (1), or (1 + 2) or (1 + 2 + 3) (**Fig. 2**).

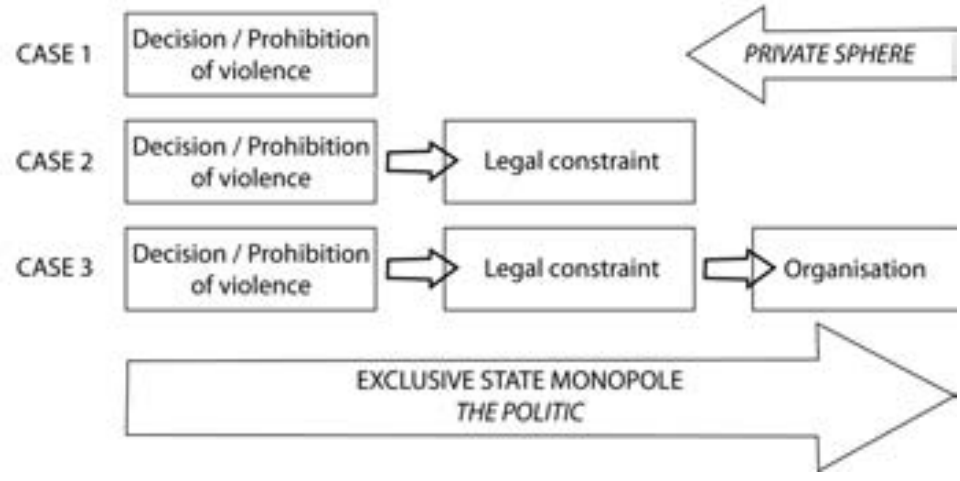

Fig. 2 – Criteria for the identification of a state formation (© Gallay according to the proposition of Bruno Boulestin).

The despotic state corresponds to case 3 above. It groups together, for instance, military tyrannies, trading states and the Islamic states in Africa (Gallay 2011). By contrast, cases 1 and 2 characterize pre-state formations that may be linked to city-states.

Industrialisation and the emergence of the Anthropocene

In February 2000, at the International Geosphere-Biosphere conference held at Cuernavaca, Paul Crutzen, atmospheric chemist and Nobel Prize winner for his work on the ozone layer, announced: 'We are no longer in the Holocene but in the Anthropocene!' He proposed the start date of this new age to be 1784, the year in which James Watt patented his steam machine, a symbol of the start of the industrial revolution and the carbonisation of our atmosphere because of the combustion of charcoal sampled in the lithosphere. This fatal evolution was analysed in depth in the book written by Bonneuil and Fressoz (2017), *The Shock of the Anthropocene*. This is referred to only to set the general framework of reflection.

1. Alain Testart: A perspective oriented towards an evolutive dynamic

Some distinct general principles should first be detailed. In his book *Avant l'histoire* (*Before history*), Testart (2012) incorporates archaeology and ethnography with the aim of sketching a synthetic overview of the transformations of societies though history. The proposed taxonomies acknowledge the existence of primitive and derived characters, the successions of which are historically identified:

Glacial climate conditions > climate conditions of the Holocene

The Holocene climate conditions (derived character) favoured more abundant resources that made possible food storage and the creation of territories suitable for agriculture.

A-type societies > B-type societies

The hunter-gatherer societies of type B (derived character) originate from hunter-gatherer societies of type A (primitive character). The opposition between societies of type A and B is based on the terminology used by Testart.

Storage of resources > agriculture

The storage of resources (primitive character) precedes agriculture (derived character).

B-type societies > agriculture

The social structures of type B triggered humans to invent agriculture. In cases in which the ancient social structures of type A hindered technical development, it was unblocked by the structures of type B.

Sedentism > agriculture

Sedentism (primitive character) associated with the B-type societies prepares these for agriculture (derived character).

Societies without material wealth > societies with material wealth

Human societies necessarily originate from a society without material wealth (primitive character). Wealth (derived character) emerged when the father agreed to let his daughter go with the person who provided him with a significant number of goods. Wealth emerged with the bride price and wergild (man price).

Usufund property > fundiary property

Fundiary property (derived character) originates from usufund property (primitive character). The diagram in **Fig. 3** provides an overview of the distinctions proposed by Testart. The evolutive model is not a model of parallel evolutions set up as an absolute principle nor a tree model because it recognizes, in contrast to the unilinear model, the divergence and in contrast to the tree model, the confluence, i.e., the merging of two evolutive branches that are of different origin into one branch.

The overview proposed here aims to incorporate the various distinctions made by Testart (**Fig. 3**). Five groups can be identified according to the terminology employed. Type 1 corresponds to societies of type A whereas the other types can be grouped together as societies of type B (see **Fig. 1**).

Societies of type I: hunter-gatherers, i.e., Australian Aborigines and circumscribed hunter-gatherers such as the San.

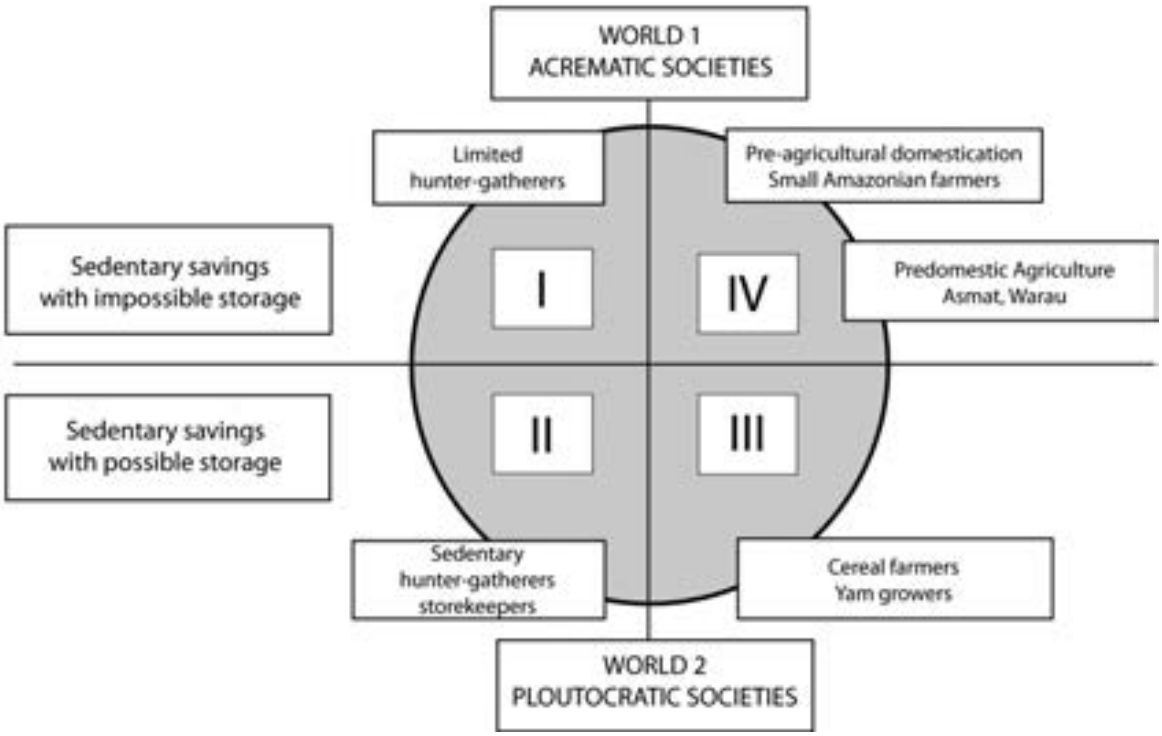

Fig. 3 – Logical relationships between storage and agriculture (Testart 2012: fig. 26).

Societies of type II: sedentary-storage hunter-gatherers, e.g., the Northwest Coast Indians.

Societies of type III: fully developed agriculture, i.e., crop growing agricultural societies and horticultural societies (e.g., Melanesia and Oceania).

Societies of type IV, i.e., pre-agricultural domestication, e.g., among Amazonian Indians.

Societies of type V, i.e., pre-domestic agriculture of which the Asmat people and the Warau Indians of Guiana and Venezuela would be representative according to Testart. The Warau practise horticulture and do not hunt. In this context arboriculture was developed by the Asmat people centred on the exploitation of sago palm sap.

In a more general manner, storage can only appear in levels II and III as a premise of societies based on wealth (**Fig. 4**).

	Agriculture : economic sense	
Domestication : Biological sense	Absence	Presence
Absence	Hunter-gatherers (I) Sedentary-storage hunter-gatherers (II)	Pre-domestic agriculture (V) Agriculture without transformation of cultivated species
Presence	Pre-agricultural domestication (IV) Simple hunter-gatherers or small cultivators	Fully developed agriculture Crop cultivators and horticulturalists (III)

Fig. 4 – Matching and mismatching between the biological criteria on the vertical axis and the economic situations on the horizontal axis (Completed after Testart 2012: table 7).

2. Philippe Descola: Towards a definition of the various ontologies

Descola (2005, 2010-2011, 2017) advances the hypothesis that a limited number of ideological frameworks were developed during history by various cultures and that these positions are expressed through their artistic expressions. The publications of this author make it possible to classify the various relationships to nature.

There are a limited number of frameworks regulating the relations between humans and nonhumans. Nonhumans are everywhere in the heart of social life, which implies an embracing movement.

A large part of nature has been incorporated into social life. Many of the so-called 'primitive' societies never envisaged the establishment of a rigid borderline between humans and non-humans.

Among humans and nonhumans physicality and interiority should be distinguished. The similarities and differences recognized at this level between humans and nonhumans make it possible to identify four types of relationships defining as many distinct ontologies.

Depending on what characteristics humans discern in existing beings, judging on the basis of their idea of the physical and spiritual properties of their own people, continuities and discontinuities of varying proportions are established between the entities of the world, and classifications based on identity and similarity become evident. The recognized formulae for expressing the combination of interiority and physicality are very limited (**Fig. 5**).

Each of these ontologies defines different collectives at the social level.

A collective does not necessarily coincide with a 'society', a 'tribe', or a 'class'. Rather, it is primarily characterized by the discontinuity introduced in its circumference as a result of the ostensible close presence of other principles of schematisation of the relations between existing beings.

Types of identification and types of relations ensuring their integration can be distinguished within these collectives. The identification schemes enable the collectives to display the singularity of their ethos and to differentiate themselves from one another. Relational schemas can be classified according to whether or not that alter is or is not equivalent to me on an ontological level and whether the connections that I establish with it are or are not mutual. Each schema of collective organisation individualizes through specific modes of figurations.

It is plausible to suggest that the systems of properties themselves are not very numerous, at least in terms of cognitive economy.

2.1 Totemism

The identity of a totemic group is based on a specific collection of physical and moral attributes shared by all its human and nonhuman members, a kind of ontological prototype of which the totemic species is the emblematic expression.

From Durkheim (1912 [1968]) to Freud (1912 [1973]) passing by Frazer (1910 [1968]), all are

Similar interiorities Dissimilar physicalities	ANIMISM + / -	TOTEMISM + / +	Similar interiorities Dissimilar physicalities
Dissimilar interiorities Similar physicalities	NATURALISM - / +	ANALOGISM - / -	Dissimilar interiorities Dissimilar physicalities

Fig. 5 – Identification of the four types of relations or ontologies connecting humans and non-humans (Descola 2005: 221, fig. 7).

struck by the fact that totemic identification is based on the sharing, in the sense of a named class, by existing entities of a collection of physical and moral properties that reach beyond the barrier of species. In this continuum the core properties characterising the totemic class are known to derive from a primordial prototype, the dream-being.

Humans and nonhumans present interspecific continuity of physicalities and interiorities. The oneness of life is shared by man and natural species.

The types of hybridisation evidenced by linguistic analysis confirm Elkin's intuitions and seem to prove the existence of a mode of identification based on the interspecific continuity of physicalities and interiorities. Any person regards their totem as being the same thing as him/herself.

The time of Dreaming makes it possible to identify the relationships between humans and non-humans and to organize the structure of the collectives.

Dreaming is neither a remembered past nor a retroactive present, but rather an expression of the eternity that is confirmed in space, an invisible framework for the cosmos that guarantees the permanence of its ontological subdivisions. The dream-beings, both engenderers and prototypes of social and physical reality, are generally represented as hybrids, part humans and part non-humans, already subdivided into totemic groups at the time of their arrival. They are humans with respect to their behaviour, their mastery of language, the intentionality of their actions, and the social codes that they respect and institute, but they have the appearance of, or bear the names of plants and animals and are the origin of the stocks of spirits deposited at the sites where they themselves disappeared. These spirits have since been embodied in individuals of the species or of the objects as their totem.

As a rule, totemism is limited to Australia although it is possible to define distinct comparable elements on other continents such as North America.

Australian totemism originates from a long tradition probably dating back over 60,000 years. It developed in isolation with minimum contacts with the outside world.

In North America, more particularly among the Objibwa people, the typical animist relationship that links a human being and an animal being is compounded by a special relationship between that human being and the animal species. This clearly suggests a totemic aspect, especially when the latter relationship is prefigured by the fact that at birth the human has been given the name of an animal species whose 'onomastic twin' he/she then becomes.

According to A. P. Elkin, Australian totemism presents undeniable heterogeneity.

By splitting Australian totemism into a dozen distinct forms, A. P. Elkin (1933) invalidates the idea that this latter could constitute a single regulating mechanism at the level of the continent, and that it was associated with a certain type of institution or marriage rule. It therefore becomes difficult to maintain the interpretation proposed by Lévi-Strauss for Australia in *Le totémisme aujourd'hui* (1962), i.e., the idea that totems are borrowed from the natural kingdom because the ostensible differences between species with regard to their appearance and behaviour would provide a suggestive model for conceptualising the segmentation of human groups. The primary difference here is between aggregates and attributes that are common to both humans and nonhumans within classes designated by abstract terms.

Aboriginals use three figurative strategies, which are as many transformations the ones of the others: 1. The order updated by the event (Yolngu), 2. The order embodied in the beings (X-ray paintings, north-western part of Arnhem Land), 3. The order embodied in places (central desert).

The most literal of these combines figurations of totemic prototypes while accomplishing an instituting action, figurations of places which are both the framework and the result of this action, and figurations of emblems associated with the totemic groups stemming from these events.

Two transformations are possible based on this figurative schema of totemic order which is about to

be completed. One is to show this order using the image of those who have caused it without showing the result of their actions. This initial concept corresponds to the X-ray paintings of the peoples of the north-western part of Arnhem Land.

The other, in contrast, is to show exclusively this result while overlooking those who have caused it. This second concept refers to the paintings of the Aboriginals of the Central Desert. The paintings on canvas (recent) of the Central Desert represent segments of itineraries of the dream-beings and the traces their adventures left in the current landscape. They continue a rich iconographic tradition proper to the Pintupi people, the Walbiri people, the Pitjatjanjdars people and the various Aranda groups. This tradition was previously expressed on other media; some short-lived, such as drawings in sand or the corporal paintings and ornaments worn during ceremonies; others are longer-lasting, such as painted and incised designs on sacred objects, more particularly *tjurungas* and ceremonial shields.

2.2 Animism

Animism is an ontology that is common among the Indians of Amazona and of the northern part of North America, in the Arctic region and in Northern Siberia, for example, among distinct peoples of South-East Asia, Melanesia and Japan.

The shaping of the forest ecosystem that was pursued over millennia in a large part of Amazonia has certainly greatly contributed to the legitimisation of the idea that the forest can be regarded as a domestic space in the same way as a garden. In the High North as well as in South America, nature is not opposed to culture but extends and enriches it as part of a cosmos wherein everything is subordinated to the measures of humanity.

Most of the animals are regarded as being people endowed with a soul, which confers on them attributes that are identical to those of humans, for example reflective consciousness, intentionality, emotions or a respect for ethical precepts. The relationships between humans and non-humans are mostly of a personal nature and are maintained and consolidated throughout the existence of every member of society.

Among the Indians of the Northwestern Coast, wooden totem poles are linked with animist beliefs (Descola 2010-2011); in New Guinea, despite their strong impact on the environment, the inhabitants do not regard themselves as being surrounded by a natural environment and there is no suggestion that the inhabited spaces were claimed from a wild area; in New Caledonia, the environment is perceived as being fundamentally indistinct from the self and it is regarded as an ambience in which collective identity disappears; and in Japanese thought there is no place for a conscious objectivization of nature or for a withdrawal of man from all that surrounds him.

Animism reveals the emergence of 'natural' discontinuities based on an original 'cultural' continuum in which humans and non-humans were not clearly distinguished. Any existing being endowed with a soul can have a meaningful social life such as the life attributed to Homo sapiens.

Amerindian myths do not evoke an irreversible passage from nature to culture but rather the emergence of 'natural' discontinuities based on an original 'cultural' continuum in which humans and nonhumans were not clearly distinguished. It therefore becomes difficult to ascribe to these peoples an awareness or presentiment of the distinction between nature and culture with which we are familiar but which everything in their ways of thinking seems to refute.

Animism is the attribution by humans to non-humans of an interiority that is identical to their own one.

However, this humanisation is not complete because these kinds of disguised humans that are plants and animals are distinct from humans precisely by reason of their feathers, fur, scales or bark, in other words, their physicality.

Animism fits into the complex relationships each human collective maintains with neighbouring collectives.

Exocannibalism, head-hunting, the appropriation of various parts of the enemy's body, taking captives

from neighbouring tribes: all these pheno-mena, inextricably linked to warfare in the lowlands of South America, are responses to one single need: the only way to construct a self is by concretely assimilating foreign people and bodies, not as life-giving substances, trophies that bestow prestige or captives who carry out labour, but as indicators of the external view that they have of me because of their own provenance.

At a figurative level the Indians of Amazonia rather tried to transform human bodies themselves into images by borrowing the modes and attributes of animal bodies – in particular feathered headdresses – or by exhibiting body paintings imitating the designs of animal furs.

The most plausible explanation for this lack of interest in figurative representations is a structural one. Rather than creating images of human or animal bodies resembling their models, the Indians of Amazonia focused on the transformation of the human bodies themselves into images and in doing so they borrowed the modes and attributes of animal bodies. The addition of animal parts – feathers, fuzz, teeth, fur, bones, claws, elytra, scales – is not simple ornamentation: in this way the Indians tried to recreate the physical completeness of a lost past. Humans do not only take parts from animals but also borrow images, i.e., the designs that adorn the bodies of various species and which were used by the Amerindians to adorn their own bodies.

In the Arctic area, masks show the particular relationships that unite humans and nonhuman spirits within a process of metamorphosis (Yup'ik people of Alaska, Kwakiutl people of the north-western Pacific coast).

In Alaska, each mask in the great range of masks of the Yup'ik people, who are related to the Inuit, illustrates a singular event, a myth or the tale of a particular relationship with an animal spirit. Two major categories are distinguished: masks of shamans figuring their auxiliary spirits and masks of animal spirits which were presented publicly in the group to be honoured.

2.3 Analogism

Analogism is a mode of identification that divides up the whole collection of existing beings into a multiplicity of separated essences, forms, and substances. These are sometimes arranged on a graduated scale linked with a dense network of analogies which makes it possible to incorporate the intrinsic properties of the entities that are distinguished.

Resemblance becomes the only means of introducing order into the intangible world of analogism, a world that is a priori chaotic since it contains an infinite number of different things. For example, analogy finds expression in the correlations between microcosm and macrocosm that are established by Chinese geomancy and divination, in the idea, common in Africa, that social disorders may cause climatic catastrophes or in the medical theory of signatures that bases the therapeutic aetiology of illnesses on resemblances between substances or natural objects on the one hand and symptoms or parts of the human body on the other.

Interiority and physicality are here fragmented in every being, into multiple components that are mobile and partly extracorporeal, the unstable and haphazard grouping of which produces a permanent flux of singularities. Instead of humans and non-humans being merged within a class because they share common essence and substances, on the contrary, these are all the components of the world, all the situations and properties it contains, all the parts from which existing beings are made that distinguish one from another and differentiate them as many single elements.

Analogical representations can feature hybrid beings, networks that illustrate the correspondences, and also metonymic repetitions of an image at different levels of enrichment providing a fractal appearance to the representation.

The classical figure of analogical ontology is the chimera, a being composed of elements that belong to different species but that present distinct consistency at the anatomical level. One of the central issues of analogical thought is to dilute, over and over, the theme of the correspondences between macrocosm, universe and microcosm and the human person seen as a world in miniature.

The unity of the Universe is embodied by a despot of divine essence. The sacred is often related to one or several divine figures. The connection is refreshed through sacrifices.

In contrast to Australian totems and to the spirits that inhabit animist universes, analogical deities are the object of a real cult that takes place in precise places: these receive offerings; sacrifices and prayers are addressed at specified times. Their immanence is thus partly counterbalanced by their material presence at a particular site and in a particular object. The miracle of monotheism is to have fused all these particularities into one polyvalent God unattached to any particular place or any segmentary membership, an operation so extraordinary that it did not take Catholicism, with its cult of the saints, long to restore the functional distribution peculiar to animism.

Analogy can be observed in Polynesia within horticultural societies.

Fractal dispositions can be identified, for example, in which deities such as the god A'a on the island of Rurutu (Austral islands, French Polynesia) are composed of relational networks represented by a multitude of small figures. This is a perceptible way of showing that the fact that a human or divine person is constituted by all the relationships with other people or with him/herself provides him/her with social consistency (Descola 2010-2011: 182, Fig. 112; Lavondès 1969).

Analogism can be identified in state formations: Inca Empire, ancient China, India, Roman Empire. Analogical ontology can be found again in numerous state civilisations of the Old and New World: Inca Empire, ancient China, India, Roman Empire.

In ancient China, society, man, and the world formed the object of an all-encompassing knowledge constituted solely by the use of analogy. Chinese philosophy most fully reveals what appears to be a central feature of any analogical ontology, namely the difficulty of distinguishing in practice among the components of existing beings between that which stems from interiority and that which stems from physicality.

In sidestepping the upsetting issue of cultural relativism, Zen, Buddhism or Taoism offer a universalist alternative. By selecting the Han civilisation as the principal illustration of an analogical ontology, or indeed India, which is thought to exhibit similar properties, the risk would be to reduce this mode of identification to an 'oriental' paradigm coextensive with a vast and hypothetical domain of Asiatic 'high cultures' suggesting a kind of unity.

Analogism is well documented in Mesoamerica, notably amongst the Nahua peoples.

The Mexico of the Spanish Conquest presents a rare case of an analogical system of knowledge that has been transmitted to us by observers who were themselves already immersed in an analogical way of thinking, that of 16th century Europe. The Nahua people who occupied the central plateau of Mexico presented a remarkable homogeneity in their conceptions of a universe in which macrocosm and microcosm were closely interlinked. This analogical organisation of thought can be found again among the Maya of Yucatan (Baudez 2002).

Analogism can also be identified in West Africa, notably among the Mandé-speaking people and the Dogon people.

In the part of West Africa which corresponds roughly to the Mandé-Voltaic area, each individual is comprised of a multiplicity of components in movement, the combinations of which, all different, produce unique identities. Immense frameworks connect each human with a multiplicity of existing beings through a small number of common elements, real chains of beings enfolding any singularity in an interweaving of mirrored determinisms and attributes under the control of their ancestors. The Dogon people have without doubt developed the farthest this obsession of correspondences between macrocosm and microcosm (Griaule & Dieterlen 1965 [1991]).

In Europe, analogism culminated during the Renaissance but continued up to the 17th century in metaphorical form and up to the present day in vestigial form.

During the Middle Ages and the Renaissance exceptional emphasis is placed on the relationship between macrocosm and microcosm, which was particularly noticeable during the Renaissance in its Neo-Platonic form. From the beginning of the 17th century onwards, the scale of beings gradually lost its analogical dimension and was soon employed only as a familiar metaphor in the service of naturalist ontology. Analogism only survives in a fragmentary state, nostalgic remnants of an enchanted epoch on which horoscope watchers and followers of New Age sects all tend to draw.

Analogical collectives are not necessarily empires or state-like formations but are collectives in which the political function becomes significant.

The most common hypostasis takes a metonymic form: one exceptional singularity comes to embody not so much the whole collection of other similarities, but rather the permanence of the ordered totality that structures it. It may be the Inca, the divine being, the vital centre of the cosmos and the original model of all things; or it may be the Pharaoh, the son of the sun and the mediator between gods and humans, the guarantor of justice, prosperity, and victory, or it may be God, the architect of the chain of being and the preserver of its integrity. A similar metonymic movement may result in one segment of a collective becoming responsible for representing the bases of the socio-cosmic order and maintaining the conditions in which it operates. The role played by ancestors in West Africa or in Japan, those dead who are still active in the existence of the living, comes to mind. Or it may be that one particular class of humans is invested with the mission of maintaining the world through their liturgical activities, for example the Brahmins in India.

2.4 Naturalism

One can cast doubt upon the idea that the naturalisation of the world results inevitably from the progress of knowledge made possible by writing and the increasing complexity of means of social integration. Naturalism gradually established the idea that the cosmos is explicable and organized in accordance with laws that can be discovered so that divine arbitrariness and the superstitions of ancient times no longer have a place.

In Greek thought and particularly in Aristotle's work humans are still a part of nature. Their destiny is not dissociated from an eternal cosmos. So, for the nature of the Moderns to come into being, a second operation of purification was necessary. Christianity was at the origin of this second upheaval with its twofold idea of Man's transcendence and a universe created from nothingness by God's will. During the Middle Ages, with the divine transcendence, the uniqueness of humankind, and the exteriority of the world, all the parts of the mechanism were then united for the classical period to invent nature as we know it.

From the 17th century, a conception of nature was formed as a balanced totality and unity, completed by the 'idea' of cultural human diversity in the 19th century.

Alongside Bacon, Descartes and Spinoza, who rejected the idea of an intentional nature, a more discreet trend of thought continued to be linked to finalist convictions and to the idea of a nature organized in accordance with an overall plan the understanding of which would make it possible to better account for the action of the elements that composed it. Kepler, Boyle and Leibnitz were staunch advocates of this conception of nature as a balanced totality and unity and in this they were followed later by Buffon, von Humbolt and Darwin.

The initial definition of culture which Kroeber (1952) and Kluckholm (Kluckholm & Kroeber 1952) described as 'humanist' regards culture as being the distinctive characteristic of the human condition; its canonical formulation by Tylor in 1871, was acknowledged as the birth certificate of the field of modern anthropology: culture or civilization, regarded in its widest ethnographic sense, is that complex whole including knowledge, beliefs, art, morals, law, customs, and any other capabilities or habits acquired by Man as a member of society. General jurisdiction will carve out the space in which 20th century anthropology will develop: the study of cultural realities as opposed to the study of natural realities.

A naturalist point of view begins to emerge in the texts of 17th century Europe and takes on a final form two centuries later with the emergence of the notion of culture and of the corresponding sciences. The justification in Genesis makes it possible to explain the specific place of humans compared to nature.

If Man, and only he, is capable of intelligence and this is because God created him last of all and after his own image, unlike anything similar created before, in order that his faculties should enable him to know and glorify his creator, an exceptional status that constitutes the 'true difference' between him and the other animals, which are nothing but brute beasts.

Man has a specific interiority which distinguishes him from nonhumans but a physicality he shares with nature.

The formula of naturalism reverses that of animism: humans are distinguished from nonhumans by their spirit and not by their body, more particularly by this intelligence of self-reflection.

Despite all the 'changes of paradigm' and the 'epistemological ruptures' between the Renaissance and the classical period, one conception remains unchanged: that the elementary materials of the world have the same knowable properties everywhere and that the different combinations that they allow are valid everywhere.

Descartes proclaims absolute separation between the spirit (the interiority) and the matter (the physicality). Today physicalist explanations struggle to identify the links which can connect both fields.

Theories of knowledge that postulate a direct connection of the body with the environment thus seem to topple the entire edifice of naturalism. However, even by giving the benefit of the doubt to physicalist explanations, we are still a long way from the moment in which they will be able to link all the properties of human interiority to neuronal mechanisms.

Cultural relativism is only tolerable, even interesting to study when set against the massive background of natural universalism.

Because they have become entrenched under the effect of polemics, the extreme positions reveal in a purified form all the contradictions within which anthropology has been trapped because of its adhesion to the postulate that the world can be divided between two types of reality whose interdependence needs to be shown.

Humans are distributed within collectives that are differentiated by their languages and their morals – their cultures – and exclude what exists independently of them, nature. Hunter-gatherers, farmers and stockbreeders organize their relations to nature and nonhumans in a specific way.

It is not possible to adhere to philosophies of knowledge that tend to oppose the relativity of bodies to the universality of the mind or to combine objective materiality and moral subjectivities as two relativisms or two universalisms. In these circumstances, how can one extract oneself from the dilemma of naturalism and its all-too-predictable oscillation between the monistic hope of natural universalism and the pluralist temptation of cultural relativism? Above all, how can one turn away from the comforting idea that our culture would be the only one that has opened up a privileged access to a real understanding of nature while other cultures would only have representations.

From an iconographic perspective the autonomy of the landscape gradually emerges.

In Asiatic state societies, the figuration of the landscape and the mountains remains embodied in an analogical problematic.

The aestheticization of the mountain in Chinese landscape painting may be seen as a kind of recognition of spiritual characteristics that run in parallel to the emphasis of the plains by agriculture. The mountain, the domain of deities and an expression of their essence, provides a necessary complement to the urban and village world.

2.5 An evolutionary perspective?

Descola has constantly refused to assign the various ontologies to an evolutionary framework or a diffusionist perspective. Speaking of 'archipelagos' in order to describe the geographic spread of distinct ontologies does not resolve the issue of their origins. This legitimate caution must be honoured. Totemism, animism, analogism and naturalism thus appear to be the diverse solutions adopted by humans in their relations with the world without really raising the question of the historical causes of this configuration.

The cladistic perspective makes it possible to extend this view. We suggest, as a hypothesis, that totemism appears as an isolated phylum located at the roots of the cladogram. We couldn't help but correlate this configuration with our knowledge about the peopling of Australia. This continent was settled over 60,000 years ago and has since developed in isolation with minimum contacts with the outside world, notably with New Guinea. The originality of totemism may be linked to this historical configuration.

Animism can be correlated with hunter-gatherer societies whether they practise storage or not. This situation explains the vast distribution of this ontology from the Amazonian forest to the Arctic regions.

Analogism can be rooted in the Neolithic revolution and the social and political transformations introduced by this new relationship to nature. Analogism is linked with state societies within which various forms of despotism can develop. The identification of analogism in West Africa in a Mandé context does not negate this assimilation if state developments of these societies are acknowledged (Gallay 2011).

Lastly, naturalism forces us to complete the cladogram by introducing a new phylum arising from the societies of type III and corresponding to the western industrial societies that emerged in 19th century England.

3. How can megalithism be situated?

We now have the tools that make it possible to set 'megalithism' in its widest perspective. First, this list excludes the rock shelters featuring prehistoric paintings in Australia, the stone figures of Lepenski Vir assigned to the Mesolithic, and the travelling stones of the Papuan Gulf, which do not match the presented problem although stone blocks are handled in these three cases.

We are now able to better describe the societies related to megalithism that are situated in the void between societies without wealth, called 'achrematistic' by Testart, and despotic states. The variability of monumental architecture remains very important, a situation the origin and difficulties of which lie in a definition that is exclusively restricted to the material aspects of these manifestations, and as proposed by most of the archaeologists at the meeting in Vendée.

3.1 Societies without wealth and animism

As a first step, all those societies without wealth and that are dominated by totemism and animism, can be excluded from our field of study. Some groups of the Indians of Amazonia exemplify this situation (Descola 2010). These are societies without wealth and 'chiefs without power', a condition that, according to Clastre (1974), is destined to prevent the emergence of the State. The title of 'chief' is confers the prestige attached to the function but is without the coercive means to command other people. There is no monumentality at this level.

3.2 Societies with storage, incipient wealth and animism

The emergence of material wealth, inequalities and conflicts generated by this new condition completely changes the situation. At the economic level, we are dealing with hunter-gatherers, hunters of marine mammals, or sedentary fishers, among which storage can play a crucial role. The site of Göbekli Tepe in Turkey attests to a society in transition between hunter-gatherers and farmers that exhibits spectacular monumentalism. The engravings on the pillars group together numerous animal figures, including birds. These figurations of animals clearly indicate animist beliefs. In the Atacama Desert in Chile, sites were built that were probably destined for ceremonial purposes and can

be related to mobile hunter-gatherers. Likewise, the hypothesis has been advanced that megalithism in Brittany could have emerged within societies specialized in marine mammal hunting. Monumentalism, therefore, can emerge in societies who are still engaged in foraging, where it is linked to animist beliefs.

3.3 Societies with wealth and analogism

The common situation, beyond economic infrastructures, is the presence of the combination of storage and wealth, which generates instability and multiple conflicts among populations. Political power emerges but remains weak and is not capable of overcoming vendettas. It is also incapable of controlling endemic instability which occurs, at least periodically, only at the level of the despotic state.

Here, we are dealing with horticulturalists who cultivate yams, using small irrigation systems as in Oceania, and of course with farmers of various cultigens such as corn, rice, and millet, in the broad sense during the formative phases of these practices, which roughly corresponds to our concept of the Neolithic. These are also the societies of horse breeders, notably in central Asia, or of cattle breeders. The deer stones of Mongolia illustrate analogical beliefs. The association of a solar symbol, deer, and rare human figures mirrors the representations in the Trentino-Alto Adige region in Italy which date back to the Final Neolithic and are related to analogism. In Ethiopia, the Tiya stelae present the same analogical iconography (Joussaume 1995), and in East Africa the Namoratunga monuments of Lake Turkana in Kenya are related to cattle breeders.

In contrast, spectacular monumentalism can be identified in pre-state societies that probably correspond to unstable city-states, as is the case for the Kofuns in Japan or the Natchez cultures and the mounds of the Mississippi basin.

With regard to ontologies, we are somewhere between animism and the primacy of analogism. It would be interesting to reconsider here the analysis of the so-called megalithic rock art from an analogical perspective.

3.4 Analogism and despotic societies

In contrast, we can eliminate the despotic states which bring with them the disappearance of megalithic practices, a situation that is reinforced by the monotheistic religions of Judaism, Christianity, Islam, and Buddhism. With the emergence of Islam, funerary monumentalism in Sahara and Sahel ends. Nonetheless, the relationship between state despotism and funerary monumentalism, whether megalithic or not, remains complex. In the Antilles, the Taino culture established areas for ball games under the influence of the Central American Maya cultures. These mirror the presence of grades connecting both cultural areas. In Indonesia, the expansion of Hindu-Buddhist kingdoms prompted the emergence of autochthonous megalithism in the hinterland, which was generated by wealth stemming from commercial transactions with the new maritime powers. In India, Iron-Age megalithism is associated with the emergence of rare signs of an undeciphered writing on potteries, although writing is associated with the emergence of despotic states. In Arabia, the monumentalism associated with the tomb towers reveals close trade connections with Mesopotamian civilisations, and in Sudan Pharaonic influence is marked by the emergence of pyramids as opposed to the local traditions of tumuli (Gallay 2016). In Northern Africa (Saharan Africa), the wealth of the Garamantes, founded on trans-Saharan trade and contacts with the Roman Empire, is at the root of the emergence in Libya of an original monumentality merging autochthonous models (*basinas*) and Punic influences.

3.5 Conclusion

As a conclusion, the approach outlined here indicates that megalithism, in the strict sense including various forms of monumentalism – and whether funerary or non-funerary – can be situated at the level of societies with wealth but apart from despotic state societies. At the figurative level, its iconography reveals first and foremost analogism but may equally reflect an animist view as regards hunter-gatherer societies practicing storage.

Translated from French
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3

François MACÉ, Laurent NESPOULOUS

From the rock throne to the burial chamber. History, myths and megaliths in Japan

Abstract: In contrast to European megaliths, the cultural context of which we know very little other than that revealed by archaeological research, those of the Korean peninsula and the Japanese archipelago allow us to better understand these otherwise silent monuments. In Japan, particularly, the interval between the first texts (*Kojiki* 712; *Nihon shoki* 720) and the end of the great funerary monuments of Protohistory is quite short. Not only do these texts shed some light on the construction of burial mounds of the Kofun period (from the middle of the 3rd century CE to the beginning of the 7th century CE), but they also, in their mythical dimension, give insights into the specific role of stone in the imaginary landscape of the elite of the time. This aspect will be the focus of this chapter. In the myths, *Iwa*, the rock, relates to the notion of what is unchanging and majestic, such as in *Iwa kura*, the 'rock throne of the gods', or in *Iwanaga Hime*, the 'Princess wielder of immortality'. *Iwa* is also found in association with death in the expression 'to hide in the rock' and relates to two different myths: that of the celestial cave where the sun disappears, and that of the Land of Yomi, the land of death. Hence the interpretation of considering the stone corridor chambers appearing during the 5th century as a transposition of such myths. But another interpretation is also possible, grounded in both archaeological and textual documentations, and points towards the majestic and access to the unchanging, the immutable.

Keywords: *monument, megaliths, texts, mythology, Japan,* kofun*, Kofun period, burial, death, afterlife*

In contrast to Europeans megaliths, for which we completely ignore any cultural context over what has been revealed by archaeology, the circumstances of the megaliths of Eastern Asia allows us to better understand the monuments in this region. Until the beginning of the 20th century, China continued to lay the bodies of its sovereigns, and a significant proportion of its population, into monumental tombs with burial chambers. However, to the best of our knowledge, even in the most ancient texts, there are no mentions of the stones from which these tombs were made – tombs that were often dug out more than they were built. This is not case in the Korean peninsula and, more especially, in the Japanese archipelago. Even though, in the case of the peninsula, burial mounds were still being built during antiquity, the earliest texts, *History of the Three Kingdoms* (*Samguk sagi* 1145 CE) or *Memorabilia of the Three Kingdoms* (*ca.* 1280 CE) are relatively recent and, more importantly, post-date the changeover of the Korean kingdoms into the orbit of Chinese civilization.

The importance of the Japanese case hinges on the relatively short gap between the first texts and the end of the great funerary monuments (6th-

7th century CE, depending on the typo-chorological criteria). This, ironically, coincides with the adoption of the Chinese model of government. One of the last great burial mounds built for an emperor in Japan was that of Tenmu who died in 686 CE. It spans 68 m from East to West and 45 m from North to South, with a height of 9 m. The mound of his grandson Monmu, who died in 707 CE, is probably the Nagao mound, and it only spans 20 m in length and 4 m in height. Subsequent empresses did not have burial mounds built for themselves. The first complete codes, enacted in 701 CE, were the Taihō codes, which were directly inspired by the codes used during the Chinese Sui dynasty (581-618 CE) and Tang dynasty (618-907 CE).

Our primary sources for this period are the *Kojiki* (*Records of Ancient Matters*, composed of three books) completed in 712 CE and the *Nihon shoki* (*The Chronicles of Japan*, composed of twenty books) that was presented to court in 720 CE. The writers of these works directly witnessed the construction of the great burial mounds. More importantly, they retained memories of numerous facts of an era where these monuments were probably at the centre of the lives of social elites (Nespoulous 2008). Tens of thousands of the mounds, which are called *kofun* in Japanese archaeology, were constructed during the Kofun (1) period, primarily between the end of the 5th century and the 7th century CE. They held an important position in the landscape of the archipelago at the beginning of antiquity. Rather than highlighting technical means of their construction, the early Japan texts shed light on the prevailing representations of these monuments and their megalithic burial chambers.

The principal written source about funeral practices in Archaic Japan (Macé 1986) and thus for burial mounds, is the *Nihon shoki*, begun in 680 CE and completed in 720 CE. This is an official record, inspired by Chinese histories not only in its conception as a project but also in its language. Indeed, it is written in Chinese, which assumes the use of formulas and expressions derived from the classics or dynastic histories. These expressions overlap with the native local realities.

An additional work, the *Kojiki*, completed eight years prior, gives a concise retelling of the Age of Gods and the beginning of the Age of Men, but very little information about the most recent funeral rites. This is because the account ends with the 23rd sovereign, Kenzō, whose reign remains shrouded in legend. Thus, the information contained within the text ends well before the completion of the text itself, under the reign of Genmei (707-715 CE), the 43rd *tennō* (2).

The last important source, the *Man'yōshū*, is a poetic anthology finished during the second half of the 8th century CE and contains many poems with connections to death and funeral rites, including some that date back to the 7th century CE.

On one hand, these texts give some precise information on the construction of funeral mounds, such as the choosing of the location and the use of pebble cladding. On the other hand, the accounts of the Age of Gods and the myths highlight the place held by stone in the imagination of the archipelago's elites. Given the chronological proximity between these written sources and the funeral practices that they recount, this article is intended to be a preliminary assessment, based on the particular case of the *kofun*, of the relationship between the texts, the mythology, and the megalith monuments.

1. Facts

Let us start with facts and the *Nihon shoki* to see what they can teach us about the great burial mounds.

1.1 The burial mounds

We must first highlight something obvious. For the writers of these texts, it was as essential to describe the imperial tombs of sovereigns as it was to record

(1) *Kofun* literally means 'old funerary mound' in Japanese and lends its name to the Kofun period (*kofun jidai* in Japanese, literally 'old funerary mound period'). This period lasted from the middle of the 3rd century to the 7th century CE, thus encompassing the last protohistoric phase of the archipelago.
(2) *Tennō* is the word used to refer to the Japanese sovereigns among the political system that was established during the last third of the 7th century CE.

the names and the locations of their palaces. This concern is present even before the reign of the first human sovereign, the Heavenly Grandchild, the first of his lineage to die on Earth, during period between the Age of Men and the Age of Gods. These texts record that the Heavenly Grandchild, Ho ninigi no mikoto, was entombed in the burial mound of Takayama in Himuka, which is located in the southeast of Kyūshū island (*Nihon shoki*, Sakamoto *et al.* 1973: vol. 1, 142).

Starting with the first human sovereign, Jinmu, the *Nihon shoki* and the *Kojiki* meticulously recorded the names and the locations of these tombs. It is highlighted that Jinmu's burial mound is located in Unebiyama (*Nihon shoki*, Sakamoto *et al.* 1973: 216). His first successors, about which these sources tell us almost nothing besides the names of their spouses and children, are also given burial mounds which are named and located.

Under the influence of the Chinese model of ancestor worship, the official powers took good care of the imperial tombs during antiquity (from the end of the 7th century until the 11th or 12th century CE), long after they ceased constructing such tombs. The *Regulations and Laws of the Engi Era* (*Engishiki*, 10th century CE) retained the list of imperial burial mounds and logged their names, locations, sizes, and the number of households charged with preserving them. These tombs were maintained, in theory, as mentioned in the *Shoku nihongi* (*Supplementary Chronicles of Japan*), which notes the repairs that were done in 699 CE on the burial mound of Tenji, who died in 671 CE (*Shoku nihongi*, Aoki *et al.* 1989: vol. 1, 5).

It seems that this management was not very rigorous and could not prevent pillaging. Never-theless, it appears that as recently as the 13th century, the desecration of the burial mound of sovereigns Tenmu and Jitō resulted in an investigation and a report (*Aoki no sanryōki*).

In referring to the tombs, the two texts use the sinogram 陵 *ling*. In Chinese, this word refers to hills and, by extension, to the imperial tombs. In Japanese texts, it means 'imperial burial mound of the *tennō*'. This term continued to be used for the imperial tombs even when the custom to build burial mounds was abandoned. The notion of hills appears even more clearly in the compound 山陵 *shanling* (Jap. *sanryō*) where ling is preceded by the character for mountain. Alone or with the mountain sinogram or the honorific *go* 御陵 (Jap. *goryō*), the Japanese reading alternated in the most ancient texts between *haka*, the tomb (Kōnoshi makes a distinction between the reading *haka*, *mihaka* and *misazaki*, cf. *Kojiki*, Yamaguchi & Kōnoshi 1998: 165, note 2, 213, note 8) and *misasaki or misazaki* (*misasagi* in contemporary Japanese), the etymology of which remains obscure, aside from the honorific *mi*. Whether in the Chinese reference or in the reality of the Japanese burial mound, the image of a mountain remains real, and it can also be found in the poems of the *Man'yōshū*.

However, these funerary mountains had to be built with earth and stones. It would have been helpful if these early texts clarified more about these construction processes. Unfortunately, they make almost no comments on these large-scale, relatively complex earthmoving projects.

Yet, we can find the first mention of the work done on a burial mound for Jinmu under the reign of his son, Suizei. The *Nihon shoki* (*Ninon shoki*, Sakamoto *et al.* 1973: vol. 1, 220) notes that the construction work ended in the 11th year of the reign of Suizei. We should not, of course, accept this information uncritically. The figure of Jinmu is legendary, but for writers at the beginning of the 8th century, this eleven-year delay must have appeared plausible.

There is another allusion to the construction of a burial mound in the legend of Princess Yamato toto bime (*Ninon shoki*, Sakamoto *et al.* 1973: vol. 1, 247). In this story, men carried stones during the day while gods did the same at night. These stones came from the other side of the Nara plain. Though we can have some doubts regarding the participation of gods, the transportation of stones across long distances has been proven archaeologically. Finally, the tomb, named 'Chopsticks Tomb', or *Hashi haka* 箸墓 in Japanese (mid-3rd century CE), is considered one of the first examples of a burial mound in the shape of a 'keyhole', or a *zenpōkōenfun* 前方後円墳 (**Fig. 1**).

Sometime later, it is noted that the Emperor Nintoku (dates traditionally given as 313-399 CE) went searching to decide on the location of his

Fig. 1 – Hashihaka *Kofun*, Nara prefecture, *zenpōkōen-fun* mid 3rd century CE (*Google Maps*).

tomb. Building works started twenty years before his passing. This emperor's burial mound, named by archaeologists as Daisenryō (**Fig. 2**), is one of the largest in Japan and one of the largest tombs in the world (first half of the 5th century CE). With ditches spanning 840 m by 654 m, the mound covers 525 m by 370 m and has a height of 39 m. This funerary monument, and the Mozu-Furuichi necropolis (Ōsaka Prefecture, Sakai city) in which it is located, have been listed as UNESCO World Heritage Sites since July 2019. The *kofun* of Daisenryō has to this day retained its special status as property of the imperial family since the last third of the 19th century.

The *Nihon shoki* (*Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 384) notes that at the very end of the Kofun period and at the beginning of antiquity, in 672 CE, the people in charge of building Tenji's burial mound took up weapons. This event occurred immediately before the civil war of Jenshi, a brief conflict in the summer of 672 CE where crown prince Ōtomo was overthrown and replaced by his uncle, Tenmu. Of interest here is the fact that the construction work must have gathered a great number of people, and therefore, a form of army was mobilized. In addition, Tenji's burial mound is one of the few *kofun* with an attribution that is almost guaranteed. It is the octagonal burial mound (*hakkaku-fun*) in Yamashina (Kyōto).

Besides the legend of the 'Chopsticks Tomb' and the mention of the makers of the stone sarcophagus, *ishiki tsukuri* (*Kojiki*, Kurano & Takeda 1970: 203), texts do not refer to the great stones of the burial chambers, even though their transportation must have constituted an important part of the construction work and required a lot of manpower (**Fig. 3**). However, several passages mention long-lasting construction works, either for Jinmu's or Nintoku's tombs. It is surprising that the enormous stones of

Fig. 2 – Daisenryō Kofun, Ōsaka prefecture, first half of the 5th century CE (*Google Maps*).

Fig. 3 – Burial mound with horizontal lateral corridor entrance from Noda necropolis and large rock blocks. End of the 6th century - beginning of the 7th century CE, Hyōgo prefecture (Photo: L. Nespoulous).

the Ishibutai burial mound (Nara prefecture, Asuka, **Fig. 4**) are not mentioned even though they must have impressed people at the time, who critiqued only the scale of the tomb. The square burial mound of Ishibutai, with its impressive burial chamber, is normally considered to be the tomb of Soga no Emishi, an aristocrat who supposedly lived from the end of the 6th century to the middle of the 7th century CE and who served as minister under two successive reigns. According to the *Nihon shoki*, in 642 CE he gathered 180 be (groups of workers) to build two burial mounds: a large one for himself and a smaller one for his son, Iruka. He was accused of wanting to put himself on the same level as the sovereign (reign of Kōgyoku 1-1, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 244).

1.2 *Haniwa*

Our source is a little more verbose when it comes to the exterior of the burial mound, especially when discussing the terracotta cylinders (**Fig. 5a**), or *haniwa* 埴輪, which are arranged on and along the perimeter of the tumulus. Not only do they appear several times in the *Nihon shoki*, but the text also tries to justify their existence through an etiological tale (*Nihon shoki*, Sakamoto *et al.* 1973: vol. 1, 272). This tale mentions the presence of funerary retinues for which the *haniwa* are a substitute. Yet, archaeology reveals that *haniwa* adorned with or representing various objects, such as shields or sun umbrellas, only appeared secondarily after simple cylinders and that the animal and human representations appeared much later, at the end of this evolution (**Fig. 5b**). Not only has archaeological research in

Fig. 4 – Ishibutai tomb, first half of the 7th century CE, Nara prefecture, Asuka (Photo: L. Nespoulous).

Fig. 5 – a. Reconstruction showcasing the cylindrical *haniwa* on the Imashiro-zuka burial mound (5th century CE), Ōsaka Prefecture, Takatsuki; b. *Haniwa* figures, Imashiro-zuka, Ōsaka Prefecture, Takatsuki (Photos: L. Nespoulous).

a

b

Japan failed to verify that the practice of burying a funerary retinue was a reality, but in addition, the placement of tall terracotta figures does not seem to echo such a practice. Evidently, even if the writers of the tale still had the opportunity to see *haniwa* on the burial mounds, they no longer understand their significance. Without the memory of the presence of *haniwa* figures, the fantastical anecdote that is supposed to have happened under the reign of Yūryaku (Yūryaku 9-7, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 1, 484) could not have occurred. That anecdote depicts the replacement of a real horse for a red clay horse *hanima* (instead of the *wa* of the word *haniwa*, ma refers to the horse sinogram) of the burial mound of the Emperor Ōjin whose officially attributed burial mound is almost as large as that of Nintoku.

Furthermore, the word *haniwa* is one of the rare archaeological terms which originated from a text that is relatively close to the origin of the object it names, even though, during the beginning of the 8th century CE, *haniwa* were not produced anymore.

It is possible that the reference to the funerary retinues, of which there are other echoes in the *Nihon shoki*, was an embellishment added by a scholar well-versed in Chinese literature.

The fact remains that the clan responsible for the *haniwa*'s fabrication, the Hajibe, drew prestige from this specialization for a while, from the point that they became responsible for the sovereign's funerals until the beginning of the 8th century CE and the complete disappearance of tumulus tombs.

1.3 Pebble cladding on tumuli

In 620 CE, the burial mound of Hinokuma was covered with small stones. Earth from around the circumference was used to create a mound, into which a burial chamber was established. Each clan placed a pole on top. A person named Yamato no aya nosaka no uhe placed the largest pole, which suggests that there was a degree of competition between the participants. This was the tomb of Kinmei, who died in 571 CE, in which the queen consort Kitashihime was reburied in 612 CE (reign of Suiko 28-10, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 202). The pebble cladding (**Fig. 6**) is archaeologically well documented. It is, however, possible

Fig. 6 – Restoration of the burial mounds of the Hotoda necropolis. Shown here is the Yahatazuka kofun (second half of the 5th century CE), Gunma Prefecture, Takasaki (Photo: L. Nespoulous).

that it may not have been visible at the time of the writing of the *Nihon shoki* (in 720 CE), since vegetation develops rapidly in the humid and warm climate of Japan.

Kofun did not always have the same appearance that they have had in recent centuries, namely that of hills or tall, densely forested mountaintops. The dressing of pebbles could be interpretated as the transformation of the burial mound, made of a pile of soil (except in very rare, regional exceptions), into a huge stone that ensured the deceased's longevity. One could be tempted to make a connection between the white pebbles that are placed on the area where the Ise sanctuary will be rebuilt every twenty years, a manner of rendering visible the rock foundation that supports the posts that supposedly extend to the sky. Isn't that the very meaning of the posts of the Hinokuma burial mound?

1.4 Multiple burials

The Hinokuma burial mound contained at least two bodies. This was far from being an exception. This practice was made possible, or at least greatly facilitated by the advent, during the second part of the Kofun period, of the burial chamber, with large stone slabs and an access corridor. It appears that there was no hesitation in the manipulation of corpses. Excavations found numerous such cases in 'non-imperial' burial mounds. It is, thus, not surprising that there are references to several examples of secondary burials and reburials in the *Nihon shoki*.

Under the reign of Ankan (4-12-17, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 56), three people were buried in the same tomb: the sovereign, his queen consort, and his sister. Under the reign of Senka (4-11-17, *Nihon shoki,* Sakamoto *et al.* 1973: vol. 2, 60), once again this sovereign is buried with his great royal spouse and one child. The Emperor Bidatsu is buried in the tomb of his mother (reign of Sushun 4-4-13, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 169). Suiko had asked to be buried in the tomb of her son, Prince Takeda (reign of Suiko 36-9-20, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 214). In the *Kojiki* (*Kojiki*, Kurano & Takeda 1970: 343), it is highlighted that she was later reburied in a burial mound that was dedicated to her. In 658 CE, Empress Saimei asked for her grandson to be buried in the same tomb as herself. In 667 CE she was buried with her daughter and her granddaughter was buried nearby.

In 703 CE, following her cremation, Jitō's remains were buried in the tomb of her spouse, Tenmu. This cremation, the first in the imperial family, was accomplished according to one of the best-documented archaic funeral rites, that of the *mogari*. The corpse was temporarily stored in a building that was built for the occasion, before the burial in a tomb. Jitō's *mogari* lasted almost one year while her husband Tenmu's was extended to almost two and a half years. This practice allowed for multiples ceremonies: laments, eulogies, offerings, dances, and the composition of poems, some of which were recorded in the *Man'yōshū*. These diverse ceremonies were meticulously documented in the *Nihon shoki* (*Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 480-493). It is quite likely that the *mogari* involved some specific body manipulations, including disembowelment, but these are not mentioned in texts. The sovereigns' *mogari* pavilions were built in the courtyards of palaces and did not leave any remains (Macé 1986), however some indications of light construction on and near some of the burial mounds have been found.

1.5 Rites in front of the tombs

In addition to some of finishing work discussed above, there are mentions of rites conducted in front of imperial burial mounds. The first recorded example happened, to the best of our knowledge, in 672 CE. It consisted of the placement, by the future Tenmu, of offerings in front of the burial mound of the first human sovereign, Jinmu (*Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 404). This event occurred in the middle of a civil war, and the gesture was probably done for its political impact. This practice would not be much replicated. During the Heian period (794-1185 CE), the regular offerings made by the court were only meant for ancestors that were relatively close to the sovereign, the oldest being that of Tenji (reign 661-671 CE). The same Tenmu went, in 680 CE, to the burial mound of Saimei, where his mother was laid to rest, in order to revere it (reign of Tenmu 8-3-7, *Nihon shoki*, Sakamoto *et al.* 1973: vol. 2, 434).

Offerings made to the imperial burial mounds continued throughout antiquity, however it is difficult to make a distinction between the continuation of old rites and the partial adoption of Chinese ancestor worship. The information available might appear underwhelming, yet ancient sources not only hold scriptural confirmation of archaeological realities but also provide insights into the imagination of Japanese elites at the very dawn of their recorded history, a period that coincides with the dusk of the megaliths.

2. Words

We will now look at mythical tales and poems where there is, paradoxically, more potential to explore. Our purpose is clearly not to use these tales to find descriptions of tombs or even a reliable echo of the rites. Instead, we can use them to see the place that rocks occupied in the Japanese imagination at the dawn of their history. Two myths have been interpretated as reflecting ancient funerary customs of depositing bodies in burial chambers of rock.

2.1 The Land of Yomi

The first of these myths concerns a visit to the Land of Yomi, the land of death. The goddess Izanami, who died after giving birth to fire, must go to the sinister Land of Yomi. Her spouse, Izanagi, goes to meet her, but when he discovers her lighting herself with a torch, he realizes that her body is covered with maggots. He runs away horrified and blocks the passage between the other world and ours with an enormous stone that only one thousand men could move (*chibiki no iwa*).

And so he took a giant boulder that it would take a thousand men to pull and heaved it across the Gentle Decline.

Koko ni chibiki no iwa wo sono yomotsu hirasaka ni hikisahete

(*Kojiki*, Kurano & Takeda 1970: 87; *The Kojiki: An Account of Ancient Matters*, Heldt 2014: 16).

The same image is parodied by Ōtomo no Yakamochi (718-785 CE):

Let my longing be as great
as seven boulders
each a thousand men must haul
all hung upon my neck-
I leave it to the gods.

Waga koi ha
chihiki no iwa wo nana bakari
kubi ni kakemumo
kami no mani mani.

(*Man.yōshū I*, Takagi *et al.* 1981, poem number 743, p. 309; *The Ten Thousand Leaves: A Translation of Man.yōshū, Japan's Premier Anthology of Classical Poetry*, Hideo Levy: 1981, poem number 743: 327).

Some have seen in this poem the image of the function of a tomb with a corridor (3). We believe, however, that this explanation is not appropriate. We have seen previously that, during the historical period, there were no qualms about manipulating corpses. The passages do not seem to have been built in order to be closed permanently but, on the contrary, to allow for deposits that happened gradually over time, even in the case of imperial tombs. Above all, the texts do not mention tombs but rather a land of darkness. However, in the prayer of the celebration of the appeasement of fire, *Hoshizume no matsuri*, it is said that Izanami hid inside the rock, or *iwa gakurimashite* (*Kojiki*, Kurano & Takeda 1970: 429). It is possible that, in this prayer, the expression is taken as an equivalent to dying. We will return to this later.

In contrast, the decorated tombs of the 6th and 7th century CE have nothing to do with the representation of a shadow world (**Figs. 7** and **8**). They showcase an explosion of colours (Macé 1997). Finally, one of the variants of the myth in the *Nihon shoki* mentions the palace of the temporary burial, or *araki no miya*. As such, it does not concern a tomb as such, but rather the measures that preceded the burial, the rite of *mogari* that ensured the transition between life and postmortem destiny can be completed, a moment where death's contagion was the most severe.

(3) In Japanese, *yokoanashiki sekishitsu*, literally a stone chamber with horizontal, lateral entrance.

Fig. 7 – Burial chamber of the Kiyotosaku tomb (7th century CE), Fukushima Prefecture, Futaba (Photo: L. Nespoulous).

Fig. 8 – Replica of the painted chamber of the Keisen-Ōzuka kofun (mid-6th century CE), Fukuoka (Photo: Museum of Ornated Ōzuka-kofun).

It is important to note that the role of stones seems, ultimately, to work in only one direction. One cannot exit the Land of Yomi nor enter it while alive. But death cannot be abolished, and one must eventually go there. The stone prevents all communication with the Land of Yomi. It is its protective, but also unshakable and definitive aspects, that must be considered.

2.2 The Celestial Cave

The second myth is as well-known as the first. It is the myth of the Celestial Cave, in which the sun goddess, Amaterasu, locks herself, and is an inversion of the first myth:

[…] opening the heavenly rock-cave door,
went in and shut herself inside

Ame no iwayato wo hirakite sashi komori mashiki

(*Kojiki*, Kurano & Takeda 1970: 81;
Kojiki, Philippi 1979: 81).

Here, we can see a euphemism for her death. It is not her body that is decomposing but the entire universe. The stone gate that seals the cavern stops the light from shining out onto the world. In order to escape the catastrophic situation, she must this time open the gate and keep it open instead of closing it permanently. The connection with tombs is not immediately apparent, unless one links this situation with the colourful decorations of the 6th century tombs. Yet, poetry can allow for the creation of a new connection. When Amateratsu opens the gate of the celestial cave, the *Kojiki* states that she 'open[ed] the heavenly rock-cave door (*ame no iwayato wo*) and shut herself inside (*komorimashiki*).'

This 'stone gate' motif is repeated in poems at the very end of the 7th century CE that clearly record the passing of a prince. The poem composed by Kakinomoto no Hitomaro for the passing of Prince Kusakabe in 689 CE begins with an allusion to the father of Emperor Tenmu. To discuss the passing of the emperor, it states:

(…) he opened heaven's gate of stone
and rose, godlike, to these fields
dwelling of Emperors

Ama no hara
iwato wo hirakikamu agari
agari imashinu

(*Man.yōshū*, Takagi *et al.* 1981: 97;
Levy 1981: 115).

The reference to the myth of the celestial cave is evident. In addition, this opening of the stone gate recalls the opening that preceded the descent to Earth of the Heavenly Grandchild, a remote ancestor of the sovereign:

[The Heavenly Grandchild] opened the celestial stone gate and, pushing aside the eight-piled clouds of heaven, descended from Heaven.

Ama no iwato wo hikiake ame no yahe tanagumo wo oshiwakete amakudashimatsuru.

(*Nihon shoki*, Sakamoto *et al.* 1973: vol. 1, 156;
English translation based on Nihongi, Chronicles of Japan from the earliest Times to A.D
Aston 1896: 78).

This passage gives the impression that the celestial cave extended over the entirety of the Plain of High Heaven and that the rock gate now ensures communication between Heaven and Earth.

2.3 Enclosing oneself in the rock

The same expression can be found in a clearly funerary context in three poems composed by Princess Tamochi during the burial of Prince Kahuchi on Mount Kagami in the land of Toyo after his death in 694 CE:

Did it suit my Prince's spirit well,
that he should choose Kagami Mountain,
in the land of Toyo,
as his eternal shrine?

It seems he has raised a door of stone ihato tate
before his tomb on Kagami Mountain,
in the land of Toyo,
and concealed himself inside komori ni kerashi.
Though I wait for him, he will not come.

Oh, that my arms had strength
to smash this door of stone!

But I am a weak-limbed woman,
I do not know what to do.

(*Man.yōshū*, Takagi *et al.* 1981: 201; Levy 1981: 214).

The third poem expresses regret at not being able to open this door, just as happened in the tale during the Age of Gods. The deceased is thus assimilated by the goddess or, in other words, deified. His tomb is a palace. This is far from the shadows of the Land of Yomi. It is more likely that the poet is playing with the name of this locale, the land of Toyo, which can be translated as 'the land of abundance'. But this is also reminiscent of the Toyoko, the country of eternity, which refers to one of the worlds of the afterlife for the ancient Japanese. This phrasing can also be connected to the expression *iwakakure*, which means 'to hide oneself in stone', that is also present in the poem composed in honour of Prince Takechi who died in 696 CE.

and, godlike, has secluded himself
in the rocks there.

Kamusabu iwagakurimasu.

(*Man.yōshū I*, Takagi *et al.* 1981, book II, 199 *banka* v. 11-12: 109; Levy 1981: 127).

Here, the great poet Kakinomoto no Hitomaro uses the same image that plays as much on the reality of tombs of this era, which were closed by a rock gate, as it does on the myth of the Age of Gods and the celestial cave. Since the sovereign, Tenmu, died in 686 CE, his father is assimilated to a divinity hidden in the rock.

Sieffert translates this passage as, '*And divine by nature / in the rock has hidden himself*', distancing himself from the Japanese commentaries to see in this expression only a retreat to Mount Yoshino at the time of the civil war (Sieffert 1997-2002: vol. 1, 199).

A similar expression is used in poem 3806 of the *Man.yōshū*:

If need be, I'd follow you
Even to the rock vault
In the Ohatsusé Mountains
And be together with you
(*iwaki nimo komoraba tomoni*)
Be not troubled, dearest!

(*Man.yōshū IV*, Takagi *et al.* 1981, book XVI, 3806: 131; *Man.yōshū: the Nippon Gakujutsu Shinkokai translation of One Thousand Poems*, Keene 1969: 273).

The translation of 'rock vault' for *iwaki* might, here, seem a little too specific. *Ki* refers to a delineated space without any other connotation. *Iwaki* can thus refer to a natural or human-made cavity.

2.4 Mountain

Poem 3806 also links the cave to a mountain, Mount Ohatsuse. Yet numerous works of the *Man.yōshū* make an association between death and mountains. Katō Akira counts fifteen such connection (Katō 2012). The example of Mount Kagami ('mirror mountain') was mentioned previously, and there is another in Poem 420 of Book III, which is unfortunately not dated but probably from the end of the 7th century CE. There is no information about the author of the poem, i.e., whether they are male or female or whether they are the prince or the princess of Nifu; nor are we given information about the deceased, whose name could be Prince Ishida or Iwada. This long poem ends with:

But now our Lord lies enshrined
above the cliffs
of a towering mountain.

Taka yama no
iwaho no ue ni
imasetsurukamo.

A similar expression is used in an identical manner in the first envoy (421):

That you lie above the cliffs
of a towering mountain.

Taka yama no
iwaho no ue ni
kimi ga koyaseru

(*Man.yōshū I*, Takagi *et al.* 1981: 201-203; Levy 1981: 215-216).

It is unlikely, as some authors have suggested, that the body of a prince was placed on a mountain rock to justify the use of the expression *iwaho*, the *ho* suggesting the idea of a summit or of height, such as the tip of a stalk. Even if one cannot exclude that the practice of abandoning corpses on a mountain might have been used for a specific category of the general population, it would be better to assume that, in this case, the poem does not mean the literal body of the prince. Instead, it refers to one of his souls which is now residing on the rock, or is perhaps an allusion to a rock tomb, meaning a burial chamber in a burial mound, pompously referred to as *taka yama*, literally 'high mountain' in Japanese. Whether it is meant literally or figuratively, the poem makes a connection to the mountain rocks.

On the topic of the relationship between mountains and the world of the afterlife, Hori Ichiro has largely broken new ground (Hori 1971). Among the numerous examples possible in this category, here is the second envoy of a long poem that highlights the pain of losing one's loved one:

Oh [How] sad that [your] family
would wait for you,
who lodged [forever] at the mountain,
where the coloured autumn leaves will fall!

(*Man.yōshū IV*, Takagi *et al.* 1981, 87, XV - 3693; *Man'yōshū. Book 15: A new translation containing the original text, Kana transliteration, romanization, glossing and commentary*, Vovin 2009, vol. 15, p. 143, 15. 3693).

Furthermore, to express death, poems of the *Man.yōshū* also use the expressions *yamakushi*, 'hidden in the mountain', and *yamakakuru*, 'to hide oneself in the mountain'. Thus, in the same envoy series:

Did my lord for whom his dear spouse and children wait impatiently, hide himself in these mountains?

(*Man.yōshū IV*, Takagi *et al.* 1981: 87, livre XV, 3692, English translation based on Vovin 2009, vol. 15, p. 142, 15. 3692).

Note: opinions of editors on the reading of manuscript variants are divergent. The Inawami edition (and Vovin originally) use *shimagakure*, 'to hide on an island', while Sieffert uses *yamagakure*, 'to hide oneself in the mountain'. The latter meaning has been retained in the English translation offered above.

A similar expression is used in the following poem:

My wife departed from our home.
I could not hold her back,
so I have hidden her
in the mountain, (*yamakakushitsure*)
and my heart has lost its bearing.

(*Man.yōshū I*, Takagi *et al.* 1981: 221, book III, 471; Levy 1981: 235).

It is impossible to know if these poems are referring to the image of a body laid in the rock, if the mountain is to be taken literally, or if they are making direct allusion to burial chambers and tombs. It is also possible that they are referring to the sojourn of one of the souls on the rocks or in the mountains. What is clearly, however, is the close relationship between rocks, mountains, and tombs, with the twofold dimension of depth given by rocks and the elevation of the mountains, a dimension that was mentioned above in our discussion of posts.

2.5 Rock throne

In the mountains, some rocks of particular shapes, often clusters of boulders, are still nowadays called *iwakura* (**Fig. 9**). Sinograms used to transcribe these toponyms can be misleading. They mean 'storeroom' or 'storehouse' (*kura*) 'made of stone' (*iwa*), which makes little sense since these storerooms are generally made of earth or plaster but never stone. By contrast, in the early Japanese texts, the expression *iwa kura* refers to the rocks where gods would sit. Thus, when the Heavenly Grandchild is sent to Earth, he leaves his rock throne (*Kojiki*, Kurano & Takeda 1970: 129, *ama no iwa kura wo hanare*). *Iwa*, 'stone' or 'rock', is often combined with other words to convey the notion of solidity or immutability. We cannot exclude the possibility that *iwa* was understood literally. There are no strong objections to the idea of gods sitting on rock thrones.

The *iwakura* in the mountains were seen as places where gods lived. Many traces of rites have been found at their bases and, more rarely, at their

Fig. 9 – *Iwakura*, natural stone blocks used as a place of worship, Shizuoka Prefecture (Photo: L. Nespoulous).

summits, as on Oki island. The boulder cluster on Mount Miwa, like that on Oki Island, remains to this day a place that one can reach only after purification. Traces of rites have been found there dating to the era of the great burial mounds.

It is well known that, besides sanctuaries, specific trees and rocks are venerated in Japan as places where the divine was actualized. If trees have a strong connection with the idea and, for the most imposing specimens, with longevity, then rocks are clearly associated with the notion of permanence and majesty. In one version of the myth of the Heavenly Grandchild's descent to Earth, his grandfather, the god Takamimusubi, declared:

I will establish a celestial grove (*amatsu himoroki*) and a celestial stone compound (*amatsu iwasaka*) so that the Heavenly Grandchild can perform celebrations there.

(*Nihon shoki*, Kojima *et al.* 1994-1998, vol. 1: 137, Age of Gods, 9th episode, 2nd variant, English translation based on the original French translation provided by F. Macé).

Iwasaka seems to be a ceremonial area surrounded by rocks – one of the most ancient forms of the ritual arrangement, of which few examples remain, such as that in the Munakata sanctuary in Kyūshū. It is to this type of area, surrounded by rocks, that gods can descend. One can imagine that the stones of the burial chambers surrounding the deceased could have played a parallel role, allowing for an ascension toward the Plain of High Heaven and the home of the gods.

2.6 Everything made of rock

In the stories of the Age of Gods, the seats of the gods are not the only elements that are made of rock. Numerous objects are also described as 'rocky' or 'rock-like'. In addition to the stone kitchenware sometimes found in tombs, a connection with *haniwa* (clay figures) is apparent, even more so since stone statues that use the same motifs as *haniwa* were found in Kyūshū, for example in Iwatoyama (Fukuoka prefecture).

Some texts describe shields in this way:

At this place Futsunushi stitched up a rip in his sturdy shield of heaven (*Ame no iwatate*). Thus it was named Tatenuhi, meaning 'shield fastening'.

(*Records of Wind and Earth: A Translation of Fudoki, with Introduction and Commentaries*, Michiko Yamaguchi Aoki 1997: 83).

They also mention arrow quivers. The two gods who accompany the Heavenly Grandchild in his descent to Earth carry on their backs a quiver made of stone: *ama no iwa yuki* (*Nihon shoki*, Sakamoto *et al.* 1973, vol. 1, Age of Gods II, 9th episode, 4th variant, p. 156).

Even more surprising, they name the ship that secures their passage between the Plain of High Heaven and the world below the *tori iwa* (*kusu*) *fune*, or 'rock bird vessel' (*Kojiki*, Kurano & Takeda 1970: 59; *Nihon shoki*, Sakamoto *et al.* 1973, vol. 1, p. 87).

To a pragmatic mind, *iwa* can only be understood figuratively, whether referring to shields, quivers, or a ship. In addition, in the *Kojiki*, the ship is also referred to as being made of *kusu*, in other words, wood from a camphor tree. But how can the hard nature of stone reinforce the image of the bird ship? If one can understand that Saint Brendan could cross the sea in a stone trough, why couldn't the gods build a stone ship, sew shields, and carry quivers made of the same material?

It is a vessel of the same kind that was used, according to the *Nihon shoki*, to get rid of Hiruko, the first failed child of the primordial couple (*Nihon shoki*, Sakamoto *et al.* 1973, vol. 1, Age of Gods I, 4th episode, p. 87). The *Man.yōshū* contains at least two poems that include the expression *Iwa fune*. In the poem of Ōtomo no Yakamochi (718-785), the phrasing clearly describes the vessel that enables the passage between Heaven and Earth:

As they row the rock-built boat,
[…] Through the clouds of Heaven
ama kumo ni iwa fune ukabe

(*Man.yōshū IV*, Takagi *et al.* (eds) (1957) 1981, book XIX, 4254, p. 373; Keene 1969: 170).

Similarly, in this poem by Tsu no Maro:

The boat of sone,
in which rode Sagume
(…) ama no sagume no/iwa fune no hateshi

(*Man.yō-shû I*, Takagi *et al.* (eds) (1957) 1981, livre III, 292, p. 161; Levy 1981: 170).

The poem probably follows a tradition noted by the *Fudoki* of Settsu Province, of which only a few fragments remain:

When Ame wakahiko went down to Earth, he was accompanied by the goddess Ame no Safuge, whose stone vessel anchored itself in this place (Takatsu).

(*Fudoki*, Akimoto 1969: 429-430, English translation based on the original French translation by F. Macé).

The *Nihon shoki* clearly links this stone vessel with a route connecting Heaven and Earth. When discussing the god Nigihayahi:

Moreover, there is there one who flew down riding in a Heavenly Rock-boat

Ama no iwafune ni norite tobikudaru mono ari.

There was formerly a child of the Heavenly Deity, who came down from Heaven

to dwell here, riding in a Rock-boat of Heaven.

Ama no iwa fune ni norite ame yori kudari idemaseri

(*Nihon shoki*, Sakamoto *et al.* 1973: vol. 1, 189 et 208; Aston 1896: 110, 128).

Even though this expression is rarely used by archaeologists nowadays, a certain type of stone sarcophagus was, for a while, called a *funagata sekkan*, or 'stone sarcophagus in the shape of a boat'. This came from the transition to making stone versions of the wooden caskets that were fashioned from one continuous piece of wood, just like the oldest known type of boat that was used for a long time during ritual races at the Miho sanctuary, next to Izumo.

Fig. 10 – a. Headstone of the chamber of the Mezurashi-zuka kofun (second half of the 6th century CE), Fukuoka Prefecture, Ukiha; b. Details of the painted headstone of the Mezurashi-zuka kofun (Photos: Ukiha Town Comity for Education and National Museum of Japanese History).

The image of a boat used as a psychopomp and associated with a bird can be found in the famous painting of the Mezurashizuka *kofun* (6th century CE, Fukuoka; **Fig. 10**). This painting decorated the large headstone at the back of the burial chamber; this stone is itself probably as important as the painting that decorates it.

2.7 Stone vessels

The layout described above can be found in the majority of the burial mounds in the second half of this period. The selection of the large stones cannot be explained solely through the need to produce a large surface area that could be decorated. It is also possible that the stones were, themselves ascribed a specific value. They were prestigious, of course, but also held a sacred significance. Designs of concentric circles of stones, as in Hi no oka (Fukuoka), only served to enhance the power of the enormous stone at the rear of the burial chamber.

In this way, the magnificent, house-shaped stone sarcophagi (*iegata sekkan*) prove that stone cutting techniques were well mastered during this period. Not only were blocks of rock still used that were only slightly crafted, but the size of these rocks also continued to increase. The burial mound of Ōzuka (Fukuoka prefecture, Kyūshū, 7th century CE), famous for its burial chamber entirely covered in multi-coloured motifs, contains enormous stone blocks. The large end chamber is composed of three blocks: two orthostats each measuring 4 m in length and the backstone measuring almost 3 m; two further blocks frame the entrance. The pictorial design depends largely on symmetry and alignments, however, the top line of the shields on the left stone wall follows the top-most edge of the stone, creating a curve. In addition, the two blocks that stand at the entrance are adorned with horses confronting each other, but there are two on one block, while the larger stone has three. Instead of trimming the blocks so that they would have identical dimensions, it seems it was decided that the blocks would remain as large as possible and as close as possible to the natural stone.

New techniques arriving from the continent during the 5th and 6th century CE, which can be seen in the making of pottery and ironworks and also in paintings, seem to have been used in the service of a finality that does not belong to imitation but to the pursuit of new means, notably transportation means, of a pre-existing purpose, the exaltation of stone.

3. Rock conclusion

We should insist that the image of rock is always seen as positive in the tales about the Age of Gods. Thus, even in the myth of the visit to the Land of Yomi, the rock is present to prevent the pollution of death contaminating the world. Conversely, in the cavern myth, the rock encloses light while the world is plagued by obscurity and chaos. Finally, in the myth of the origin of mortality (*Kojiki*, Kurano & Takeda 1970: 131-132), the Heavenly Grandchild rejects Iwanaga hime, who has a lifespan as long as

that of rock and is, unfortunately, ugly. Instead, he keeps the beautiful lady of the blossoming trees, Konohana no Sakuya hime. As explained by their father, the lady of the rock would have given him a limitless lifetime. In *norito* prayers, proclaimed during court rituals, the expression *kakiwa ni tokiwa ni*, or 'like the hard rock, the immutable rock', is used to wish a long reign to the sovereign (*Kojiki*, Kurano & Takeda 1970: 389, 407).

The vast majority of ancient Japanese burial mounds were made of earth. Early pits were converted, little by little, into rock burial chambers. This usage of stone, which improved over time, can only be understood to have been used for the sake of durability. It is remarkable that these very structures are the only ones from the period of the great burial sites which have stood the test of time. Palaces, houses, and even sanctuaries, if they were erected, were built in wood and left behind only their post-holes. Ancient Egypt experienced a similar fate, its pyramids and temples being made of stone, while its palaces were built of mud bricks.

We should stress that, for the final burial mounds built during the Kofun period, there is a tendency to use larger and larger stone blocks, before a transition to cut stones. The burial mound of Ishibutai (Nara), attributed to Soga no Imako and dated to the beginning of the 7th century CE, is a perfect example to illustrate this choice of enormous blocks. This choice was clearly made not only because of the prestige or the physical property of stone to resist the ravages of time but also due to the power perceived to emerge from stone, especially in the case of large blocks.

Written sources come from an era where, under the influence of Buddhism – which gradually acquired a monopoly over the funeral industry – great burial mounds were no longer built for the elite but the imagery of the rocks remained in poetry and myths. In the latter, the rock gate separated two worlds: one of death and disaster and one of life and harmony. This image is repeated in poetry where the gate creates a passage between the ephemeral world down here and the Plain of High Heaven, which is unchangeable like rock.

There is an analogous function with the stone used to close the entrance to the Land of Yomi. We saw

Fig. 11 – Cover slab of a burial chamber made of dry stone, which are generally placed at the summit of the burial mound. This was the primary way of creating access to the chamber until the end of the 5th century CE (Photo: L. Nespoulous).

how this land of death and decay has sometimes been transposed to interpret burial chambers with corridors. In this case, the famous stone pulled by a thousand men becomes the door that closes the corridor leading to a place of decay. Our point here is not to refute this interpretation. The closing stone of the Land of Yomi could equally be understood as the stone slabs that were laid to permanently cover the entrance chambers of burial mounds (pit-style stone chamber *tate ana shiki sekishitsu*) (**Fig. 11**). Nevertheless, this interpretation seems unlikely. This kind of chamber, with its much less imposing cover slabs, was common until the end of the 5th century and could be interpreted as an opening toward the Plain of High Heaven. Clearly, funerary practices evolved during the Kofun period. Rather than placing burial mounds with vertical access chambers made of dry stones in opposition to burial chambers with lateral corridors it would be more useful to consider both within a spectrum of practices and gestures based on a common conceptual universe. Further, at the end of the period, the care shown in

the decoration of burial chambers makes it difficult to interpret sepulchral spaces simply as places of decay. Like all doors, those made of stone open as often as they close. They stand between two worlds: that of Man and that of eternity; one of ephemeral beings and another that is unchangeable.

Even by the enclosing of bodies inside stone burial chambers, we cannot exclude all ideas of repulsion toward the decay of death, but we should not be limited by this negative approach, however common it is. Shintō, as we know it during the historical era following the Kofun period, should not be used as a standard by which to infer the sentiment that death and dead people inspired several century earlier. Neither should the substantial dread associated with the defilement brought by death that appears throughout Japanese elite culture during antiquity, guide all interpretation of what structured the wider attitudes to death and funerals, particularly in a cultural context where the ancient texts themselves no longer seem to fully understand it. To explain the use of enormous blocks of stones for these tombs within that perspective, one might suppose a proportional fear toward the deceased such that they needed to be completely neutralized under a mass of rocks. Egyptian pyramids show that there are other possible interpretations.

Archaeological data, just like most texts, guide us in another direction: one of immutability and majesty. Burial chambers thus become a transposition of the Plain of High Heaven. The deceased, lying on their stone resting place, or *iwa toko*, would, thus, take their place among gods. As they lay on the rock, their gaze would naturally be turned upward. The ceiling of the Ōzuka burial mound was painted in red ochre with multiple white dots that are easily interpreted as stars. In essence, the tomb and its stone blocks seem to have had the same function as sanctuaries, which were described thus:

[…] plant the pillars of my mighty halls firmly down into the base of the bedrock and raise the roof beams as high as the high plains of heaven.

Sokotsu iwane ni miyabashira futoshiri, Takama no hara ni higi takashirite

(*Kojiki*: 123; Heldt 2009: 47).

Let us not forget that, for the sovereigns placed in the underground rock chambers, the phrase of *kamu agaru*, or 'to climb divinely', was used to describe their passing.

Translated
by Elsa Chanez

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4

Tara STEIMER-HERBET

Megalithic genesis: construction of a cultural identity for better goods circulation

Abstract: Megaliths in the world, from Prehistory to history are the work of communities capable of generating, managing and commercializing merchandise. In the Near and Middle East, the appearance of tower tombs in the 4th millennium BCE is a particularly interesting example to illustrate the link between megalithism and the enrichment of communities. Several factors indicate that the pastoral economy, combined with the hunting and agriculture of the megalithic communities, contributed to the provisioning of Mesopotamian and Egyptian state entities. Installed within marginal zones, these local communities controlled strategic and commercial crossroads by using the depth of the desert space to which they were perfectly adapted. Megalithism, in this context, functions as a common cultural code. From a transactional point of view, adopting similar cultural codes from the Yemen to the Sinai, offered significant advantages. Namely, by increasing the trust capital inherent in communities adopting identical codes of conduct, the risks linked to exchanges were reduced. The construction of a common ostentatious cultural identity, such as megalithism, allowed these communities, which developed essentially thanks to merchandise transactions, to benefit from a clear augmentation of their financial and economic resources.

Keywords: *megalithism, tower-tomb, exchange, Arabia*

From Europe to the Orient, in the oldest forms of megalithism, societies adopted architectural codes and beliefs linked to stone when they underwent deep social transformations. This was the case at the start of the Neolithic, when hunter-gatherers became sedentary agropastoral communities, and at the end of the Chalcolithic, when villagers settled large urban centres. This was also true in Indonesia, where the ancestors' cult and stone worship sharply increased when the Indo-Buddhist states of the 2nd-4th centuries CE and European equivalents of the 16th-20th centuries CE met the local tribes to acquire rare goods. Whether in Europe, The Orient, or Asia, the appearance of the megalithic phenomenon is linked to the organisation and geographical expansion of networks of commercial exchanges, covering important distances and bringing into contact protagonists previously unknown to one another. All 'megalithic phenomenon' identified throughout the world are linked to a rapid increase in wealth, even to the present day.

Arabia, with its thousands of megalithic monuments appearing simultaneously from one end of the peninsula to the other, is the perfect ground to study why some communities adhered to megalithic practices. Ethnological observations in the Sahel have shown that by adopting common visible codes, communities accelerate exchanges by increasing the rate of confidence inherent in any transaction and so gain better access to the market. As such, cultural identity is not only the result of the permanence of these practices, but the subject of a true strategical construct aimed at ameliorating goods circulation.

Interface between Africa and Eurasia, Arabia has been a zone of interaction since as mankind appeared on Earth. The *Rub' al-Khali* is perhaps one of the greatest sand deserts of the world, having an area of 650,000 km^2, and located in the most meridional third of Arabia. The rest of the Peninsula, however, is a patchwork of diverse landscape, with mountains, valleys, and oases. During the upper Palaeolithic, site distribution followed two main axes: from the horn of Africa through the *Bab al Mandeb* towards Southwest Anatolia, and from Northern Africa towards Arabia and the Sinai (Petraglia *et al.* 2015, 2019; Zboray 2013). Archaeological sites are also more frequent around palaeolakes and near palaeorivers (Lézine *et al.* 1998). For the period of concern here, i.e., the end of the Neolithic and the Bronze Ages (from the end of the 5th millennium to the 3rd millennium BCE), the distribution of sites remains the same in the Palaeolithic (Steimer-Herbet 2004). Their ramifications, however, are densified, with secondary route-ways that are later used by caravans from South Arabia (Potts 1988) (**Fig. 1**).

During the 5th millennium BC, Arabian landscapes were strongly impacted by the communities that inhabiting them, the same communities who built the first prehistoric architectures called 'megaliths',

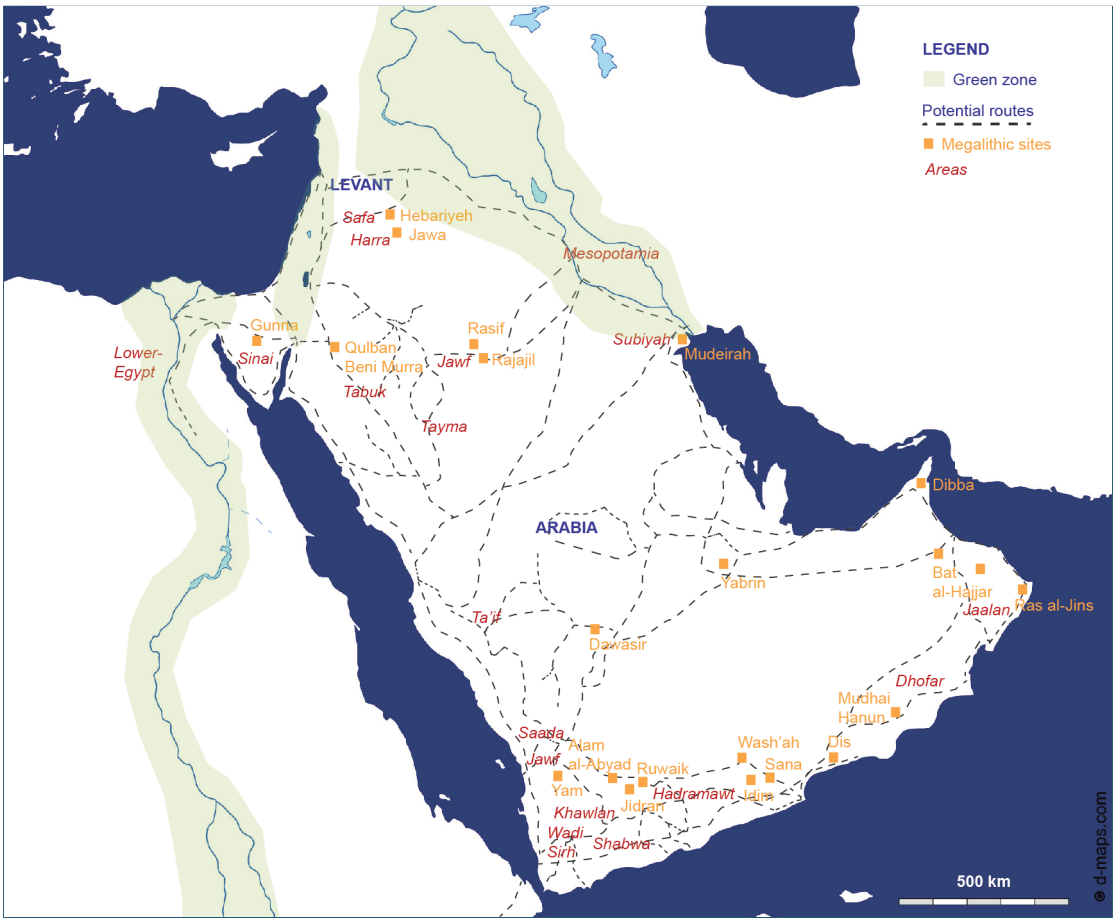

Fig. 1 – Localisation of major sites and circulation axes (inspired from Petraglia *et al.* 2015: 676, fig. 1; © Steimer-Herbet).

the tower-tombs. There are also enclosures, habitat structures, traps (called '*kites*'), walls, raised stones, and menhir-statues (Steimer-Herbet 2004; Steimer-Herbet *et al.* 2007). In the valleys with their oases, in the mountains, or in semi-desert areas, no space is devoid of human markers.

The appearance of these stone architectures coincides with the emergence of Mesopotamian, Pharaonic, and Levantine state societies (Forest 1996; Glassner 2000; Huot 2005). Despite their deep imprint on the Arabian landscape, these communities are ignored by researchers working on city-states. In their eyes, the areas at the periphery or on the margins of the alluvial plains of the Euphrates, Tiger, and Nile are considered, at best, refuge areas. This vision is too narrow and does not give justice to the complex cultural phenomenon that we wish to highlight here. While the communities that peopled Arabia were few in number, they are worth studying for two reasons. First, they were settled in areas that allowed them to control the circulation axes used from the Upper Palaeolithic onwards. Terrestrial routes were punctuated by strategic points, the control of which conferred economic and political advantages to those that held them. Second, these societies had access to rare and varied resources that city-state societies needed. These two factors made the communities of the Arabian Peninsula vital trading partners for city-states. Their invisibility within the archaeological landscape is therefore questionable.

Though the architectural description of tower-tombs – omnipresent monuments – we will approach the organisation and subsistence modes of their patrons and those that built them. The structural effects the augmentation of exchanges with city-states had on Arabian communities will then be demonstrated.

1. A funerary architecture: tower-tombs

Between 4100 and 3400 BCE, the 'tower-tomb' architectural model was adopted by several groups in Arabia (**Fig. 2**). A good number of radiocarbon dates confirm this chronological range (Bar-Yosef *et al.* 1983; Braemer *et al.* 2001; McCorriston *et al.* 2011, 2014; Orchard 2008). The sites of tower-tomb architecture have been observed in Yemen and Oman in the shape of trapezoidal or subcircular platforms (**Fig. 3**), for which the calibrated radiocarbon dates for the Dhofar region in Oman are 5619-5486 BCE (AA95064), 4797-4500 BCE (AA38544), 4683-4374 BCE (AA38547) and 4303-4123 BCE (AA90335) (McCorriston *et al.* 2011, 2014). These platforms, the function of which is unknown, are located in the Wadi Wash'ah, Wadi Sana in Yemen and at al-Mudhai and Hanun in Oman. They lie close to tower-tombs, but there is no way to tell whether they are contemporaneous or post-date the tombs. Contrary to the tower-tombs, the platforms did not have a large distribution limited to the Hadramawt and the Dhofar, two neighbouring regions. The omnipresence of tower-tombs in this vast geographical area indicates that the shape of the tomb is independent of the construction material: the development of construction techniques allowed the material to be adapted to build the desired shape. The tower-tomb therefore represents an archetypal model that is shared and reproduced over several generations, resulting in their characteristic homogeneity (Steimer-Herbet & Besse 2020).

These tombs, as their name indicate, are circular monuments, 3-4 m in diameter. The better-preserved examples reach 2 m in height (cf. **Fig. 2**). In elevation, they are composed of a megalithic chamber formed by regularised rock slabs resting upon a drystone wall, one or two layers thick. They can be associated with trains made of rock piles and boxes. They are tombs constructed with drystone walls, the material for which was sourced from the immediate surroundings of the sites (Bar-Yosef *et al.* 1983; De Maigret 1996; Ingraham *et al.* 1981; Steimer-Herbet 2004, 2010b; Yule & Weisberger 1998). Tower-tombs were built a certain distance away from settlements, on the upper terraces that frame the large valleys (Steimer-Herbet *et al.* 2006). Made visible to the living, their topographical situation allowed for the dead to be presented and marked in the landscape while communicating a clear message to visitors about the settled inhabitants of the area.

2. Organisation structures and cultural practices of tower-tomb patrons

This was not a homogenous ensemble of beliefs and practices, on a territory covering half of Southwest

Fig. 2 – Photographs of tower-tombs: a. Kuwait ; b. Fujeira ; c. Saudi Arabia ; d. Sinai ; e. Yemen (Photos: T. Steimer-Herbet).

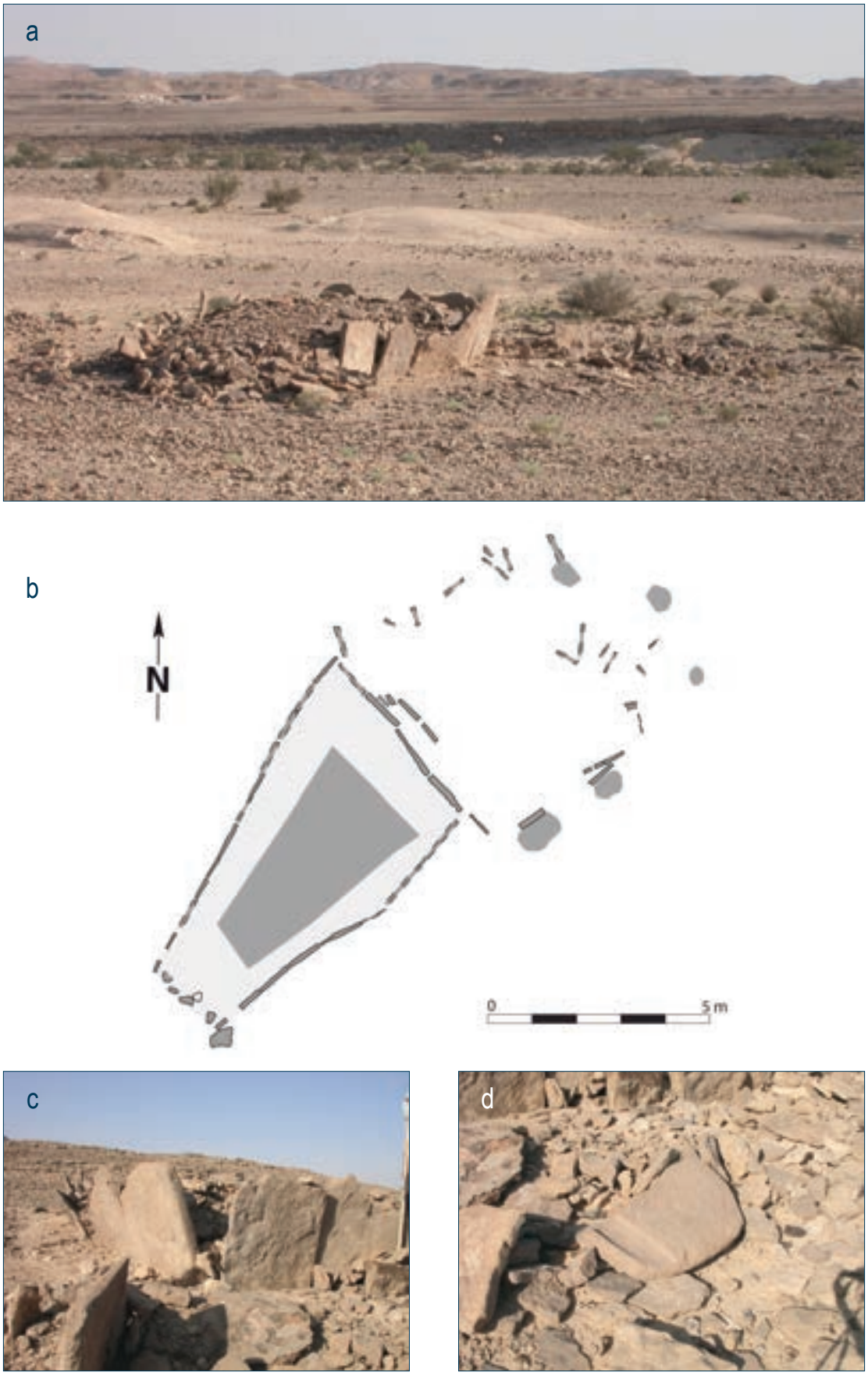

Fig. 3 – Photographs of Wash'ah's platform (Yemen) : a-b. View from South-East and sketch of the platform; c. Detail of the part of the monument; d. Carving on the angle slabs (Photos: T. Steimer-Herbet; draw from V. Bernard).

Asia (Bar-Yosef *et al.* 1983; Cleuziou *et al.* 1992; McCorriston *et al.* 2011, 2014; Newton & Zarins 2000; Orchard 2008; Steimer-Herbet 2004; Zarins 1989, 1992). There must have been differences in languages, traditions, food consumption habits (meat, dairy, or cereal, perhaps even raw-food based diets; Scott 2013), or in social organisation. This potential diversity is invisible to archaeologists. Very discernible in the landscape, however, is the shift in funerary tradition that occurred at the end of the 5th millennium BCE. Individual inhumations were abandoned in favour of stone receptacles placed above ground: tower-tombs. Despite our incomplete understanding of the emergence of these monuments, is it clear that this transition was rapid on both sides of Arabia, from the Sinai to Oman and from Syria to Yemen. Not only was the adoption of this funerary practice extremely swift, it endured for 2000 years, which is remarkable.

The excavation of several dozen tower-tombs demonstrates that these are 'familial' structures, with the minimum number of individuals not exceeding twenty (Steimer-Herbet 2004). Analogy with ethnographic examples in the modern megalithic societies of Indonesia suggest that the clans or kinship groups of Arabia were organised according to patrilinear descendance from a common ancestor (Adams 2011; Steimer-Herbet 2018). This hypothesis is supported by the numerous male representations on menhir-statues and statuettes discovered in Arabia (Steimer *et al.* 2007; Orchard 2008; Steimer-Herbet 2010a).

In order to function, clans must have had a limited number of individuals, under the authority of a chief. The larger the clan, the higher the number of kinship lineages, and consequently the more likely disputes would arise relating to the legitimacy of one chief or another (Gallay 2006; Testart 2014). It is perhaps due to this competition that funerary architectures became a means of expression. Behind the unified appearance of the tower-tombs, architectural archaeology has shown that tomb patrons did not all invest equally in these monuments. Some tombs are more imposing than others, or better situated, the topography of the landscape playing an important role. Extra care put into the construction of the walls must have extended the building time and monopolised experienced builders, who must have had access to wood for scaffolding and to rock slab extraction areas (Steimer-Herbet & Besse 2020).

A certain level of equality is, however, maintained between families despite the competition, visible through the seemingly unified architecture. This is also visible through the artefacts found within the tombs and meant that a single clan could not control all the power. Various elements define these egalitarian societies described as 'tribes' by anthropologists, and their strategic alliances are still, today, the basis for economic and social interactions in Arabia. For archaeologists, collective tombs and the omnipresent tower-tombs in the landscape are vestiges of these tribes and of their decentralised organisation system (Cleuziou 2002; Cleuziou & Tozi 2018; Lancaster & Lancaster 1992).

3. Subsistence strategies of tribes

Climate studies of Arabia have shown a climatic degradation that worsens in around 3400 BC. The populations that inhabited this territory must have faced challenges, but this did not result in them abandoning the most arid areas (Lézine *et al.* 1998, 2010; Sanlaville 1992, 2002; Wellbrock *et al.* 2011). These communities adapted, overcame the conditions, and even took advantage of the new situation. A study on the Tayma region in Saudi Arabia did, however, reveal that the climate at the time was more humid than the current conditions (Dinies *et al.* 2011, 2015; Engels *et al.* 2012). Palaeolakes favoured the presence of ligneous species (Tamarix, Acacia and Sumac) that are not impacted by climatic variations and were useful as firewood and for the tower-tomb's scaffoldings. This study also revealed that, during this period, the first traces of the exploitation of fruit trees (grapes, figs) and also flax, cappers, olive trees, pistachios, and oaks (Dinies *et al.* 2016: 12).

The subsistence strategies adopted by Arabian tribes were intrinsically linked to the regions they occupied. Located within desert and semi-desert areas, tower-tombs have often been attributed to nomadic or semi-nomadic pastoral communities. Researchers do not envisage other ways of life in this area (Braemer *et al.* 2001, 2004; Cleuziou *et al.* 1992). De Maigret (1996) was the first to propose the idea that these tower-tomb necropolises were

situated along commercial routes, linking the large city-states of South Arabian kingdoms. His chronological attribution of tower-tombs to the South Arabian period is erroneous, but his vision of necropolises, implemented at strategic locations and playing a role in a large communication network, corresponds to a reality that is now well-documented, thanks to surveys undertaken in Arabia over the past 20 years.

Geomorphological surveys in the Yemen demonstrate the existence of palaeorivers linking the Jawf to the Hadramawt (Cleuziou *et al.* 1992; Lézine *et al.* 1998). No remains were identified during surveys in these regions, but Orchard (2008) proposes the existence of oases that would have been supplied by irrigation systems such as *ghayl falaj* or *qanat falaj*, common in the al-Hajjar in Oman (Orchard & Stanger 1999).

Even if traces of irrigation systems remain elusive, recent work by Müller-Neuhof (2012) demonstrates that terraced gardens near Jawa, in the Harra in Jordan were exploited while they were received below the isohyet of 250 mm of annual precipitation. Water and its management are determining factors in human settlements. Several articles mention a mastering of water systems thanks to wells and rainwater collection systems into natural or artificial cisterns, allowing communities to live in conditions that appear improbable to us today (Gebel 2013; Meister *et al.* 2017; Mithen 2010; Müller-Neuhof 2014a-b). It is also likely that more oases were present and offered favourable conditions for date productions (Cleuziou 1988: 37).

Agriculture and horticulture were indeed possible in these regions, at the periphery of large rivers. It is also likely that the tribes who built the tower-tombs did not live solely from agriculture or horticulture. As Testart notes, not all societies aspire to sedentariness and fertile areas (Testart 2012).

Arabian communities had access to a large choice of resources that ensured that they functioned well and produced wealth. Vestiges of diverse activities are visible in the thousands of traps (*kites*) that bear witness to intensive hunting, dated to the 7th millennium BCE. Smaller traps for selective hunting, such as for cheetah, must have been essential to acquire hides, furs, and meat (Crassard *et al.* 2015; Fujji 2010; Kennedy 2012; Porat *et al.* 2013). Large enclosures or modified gazelle traps have also been found, perhaps used to triage animals (Brunner 2008; Skorupka 2010). The intensification of pastoralism at the end of the 4th millennium BC allowed for a capitalisation based on cattle, offering an alternative to those societies that could not accumulate vegetal surpluses. Communities living on the coastlines practiced fishing. Artisanal products such as textiles made of wool and diverse vegetal fibres must have been an important activity. Moreover, Arabia has several ecological niches where precious minerals and other luxury goods can be acquired, e.g., copper at Jebel Hafit in Oman (Sanlaville 1988: 21-22) and in the Sinai with a first exploitation dated to 4400 BCE (Ben-Yosef 2018: 209, 215; Tallet *et al.* 2013), as well as sulphur, asphalt, amber, lapis-lazuli, flint, obsidian, cornelian (Yemen – Gwinnett & Gorelick 1991; Insoll 2005; Saudi Arabia – Hausleiter 2011; Oman – Couturaud 2016), and manganese and chert at al-Hesnah (Oman – Orchard 2008: 108). Other resources such as wood, incense, myrrh (Yemen and Oman), medicinal plants, feathers, wax, turtle scales, shells, and fine pearls (coming from the Indian Ocean, the Red Sea, or the Persian Gulf – Couturaud 2016) constituted either exceptional products, or necessary ingredients that were probably very appreciated and fiercely negotiated.

4. Wealth and exchanges with city states

All these resources were accessible within the tribal system that ruled the peninsula. From the 5th millennium BC onwards, the periphery or margins of the alluvial plains were transformed into territories with a high 'market' value. Cleuziou was the first to describe this production economy as a dynamic reality in Arabia (Cleuziou 2003; Cleuziou & Tosi 2018). Tribes represented indispensable commercial partners for the acquisition of resources (food networks and rare products).

Slavery probably played an important role, but these practices are not visible in the archaeological record for these periods. An analogy can be made with modern megalithic societies, in which the slave trade with Dutch merchants greatly contributed to the wealth of the Nias societies of Indonesia, where slave capture was still intensively practiced during

the 17th century CE (Steimer-Herbet 2018). We know through texts that, during the 4th millennium BCE, city-states were confronted with a demographic problem linked to the need for an ever-growing workforce to sustain sedentary agricultural labour, and also due to living conditions and the close promiscuity of people and animals that left both exposed to epidemics and famines.

Mesopotamian, Pharaonic, and Levantine states were consumption societies with huge material needs. As a result, the tribes of Arabia, with their solid knowledge of the landscape, were able to provide food and exotic materials that were inaccessible to the city-states. A mutually beneficial co-existence was therefore established, transforming the nomadic tribes into efficient commercial operators.

With the slow but constant accumulation of wealth, and thanks to exchange networks operating from the inland to the coastline within an area stretching from Egypt to Oman, and from the high Anatolian plateaus to the heart of central Asia, in Southern Turkmenistan (Cleuziou 1988: 33; Iesinger 1983; Marcus 2002; Michalowski 2013; Rowland 2014), the Arabian communities grew alongside the city-states, to which they became partners (Akkermans 2014) while preserving the control of their own economic growth.

5. Power plays, territory control and security, and the role of the ancestors

In order to compete with various rivals, it is likely that city-states tried to make the tribes submit to their authority. Meanwhile, tribal societies had their own power struggles. In his book *Avant l'Histoire* (*Before History*), Testart writes that megalithic societies are permeated and structured by dependency and/or power plays (Testart 2012: 413-414). Exchanges were controlled by tribal chiefs. Fear of being invaded could have led tribes to reinforce their power by controlling resources or reducing the cost of merchandise. For two thousand years, megalithic societies managed to avoid the various form of controls that city-states aimed to impose on them: slavery, taxes, forced labour, epidemics, and wars (Scott 2013, 2017). If city-states had succeeded in subjugating these tribes, traces of their existence would appear in written texts. Interestingly, tribal territory begins where taxes and territorial sovereignty no longer apply. For a very long time, desert and mountain areas were considered refuge zones, but this holds true only if living away from the city, and in a non-sedentary manner, is considered to be a punishment. This perspective is reversed if we accept the idea that Arabian tribes deliberately elected to live within these territories.

The existence of a relationship between exchange networks and the population of a given area implies the notion of control. Between the 5th and 4th millennium BC, Arabian tribes needed a network in order to trade the rare goods that their territory held. They needed powerful commercial partners to link groups to one another. For merchants, security within the trading territory was of primary importance. Access to water sources, for example, must be ensured (Potts 1988: 128). The price of merchandise reflected the difficulty of acquiring it, which might involve violence, perhaps war. The economic logic of the merchant social class determined the mentality and practices of society and could even shape the elite. This was the case in Sumba and Nias in Indonesia, where tribal chiefs of the 16th and 17th century oversaw communications with the European merchants (Steimer-Herbet 2018). The accumulation of wealth was in opposition to the economic logic of the tribal system, and therefore had to be managed. During a first phase, this wealth was used to build splendid tombs. Once a certain wealth threshold was reached, however, internal competition favoured the emergence of economic monopolies, and was therefore in contradiction to the social networking and solidarity that allowed these precious resources to be exploited in the first place.

6. Cultural role of tower-tombs

Tower-tombs were ostentatious, by both their form and their topographic location. Their presence bore witness to the fact that their sponsors were able to create wealth and capitalise on it through symbolic constructions. Why abandon simple individual inhumations at the end of the Neolithic and during the Bronze Age? Why invest considerable wealth into stone architecture dedicated to ancestors?

Tower-tombs do not have a solely social function, as an outlet for ostentatious behaviour and competi-

tion or as an economic regulator. The cultural dimension of the tombs is fundamental. Despite addressing a different topic, Ahmad's observations (2017) are particularly interesting concerning the mechanisms linking ideology and business. Part of her fieldwork took place in the Sahel in 2012, at a time when jihadist groups took control of part of Mali. She describes how a merchant class chose to support one armed party in order to end increasing goods prices and people circulation, themselves caused by the fragmentation of territorial control. Thanks to this support, some Islamist armed groups were able to lower prices of merchandises and services. Within the rather destructured context of the Malian conflict, the use of Islam as a common system allowed for a shortening of the time necessary to reach a level of trust required for economic exchanges. Behavioural norms based on religion simplified transactions, increased predictability and lowered transaction costs while augmenting competition and, in the long term, consolidating a form of power. Adopting a common identity also favoured links between individuals, with the construction of a network from which some could be excluded.

Let us leave Africa and return to prehistoric Arabia. It seems that here, also, the adhesion of tribes to a codified architecture of tower-tombs and to common beliefs linked to stones (litholatry) was connected to the growing wealth generated by commercial exchanges. It can be envisaged as a symbolic expression, understood by all beyond ethnic and regional belonging. The architecture, and also the stelae, constituted a common cultural foundation for a relatively homogenous population, of which tower-tombs are the most pronounced architectural manifestation. The tower-tomb sponsors did not use them to mark sedentariness, but rather as a gestion of the landscape, of access to resources, and of the exchange of merchandises. Displaying their 'megalithic' identity helped merchants to reinforce cooperation, reduce transaction costs, and to have proper access to resources and markets.

This strange association between commercial exchanges and megalithism is found in a recurring manner in several areas of the world. In Southern India, metalwork prompted the first megalithic societies, in Indonesia the slave and patchouli trades were the basis of the phenomenon in Nias, sandalwood in Sumba, sulphur in Java, gold in Kalimantan, and benzoin stimulated megalithic forms in Sumatra. Dissociating spirituality and business is counterproductive. In the megalithic villages of Indonesia, the chief is the richest and most influent man in the village, but also the shaman.

Translated from the French
by Claudine Abegg

Acknowledgements

I am very aware that the link between megalithic tribal states and commercial dynamics is far from being completely clear, and that proposing cultural identity as a facilitator to business is still based on fragile foundations. Archaeology alone, or at least archaeology as it is currently practiced, still based on classical studies, cannot (yet!) prove the hypothesis using its own resources alone. The ideas presented here are not entirely my own, they represent discussions and readings from a variety of very diverse sources. I have an intellectual debt towards Serge Cleuziou, who opened the doors for me with audacious interpretations on non-literate societies. I also owe Irénée Herbet for his knowledge of non-state groups in marginal areas of Africa. I have also been inspired by Pierre Clastres regarding people without history, Maurice Godelier for *Tribus dans l'Histoire et face aux États*, and Alison Betts, a pioneer in the study of isolated people in Arabia, and by the invisible, the stealthy, those that leave no traces in written sources.

5

Chris SCARRE

Stones in the landscape: Megalithic monuments in their wider setting

Abstract: Megalithic monuments have for many years drawn both popular and scholarly attention through their prominence and monumentality, yet they cannot be understood in isolation. They were situated within wider landscapes that were both natural and cultural in their formation. Those landscapes had a particular role in furnishing the materials from which megalithic monuments were built, and indeed stony natural landscapes may have been the inspiration for the construction of cultural megaliths. There is also the significance of place to consider. Ethnography reminds us that many societies invest 'natural' features of land, sea and sky with cultural and cosmological meaning. At a more immediate level, issues of topography and intervisibility can be addressed through GIS analysis. More generally, however, landscape was the arena of lived experience, and the relationship of monuments to the settlements of those who built them is a key issue. Taken together, these approaches may help to explain why megalithic monuments were built in particular places, but we must also shift our gaze upwards, and consider the relevance of archaeoastronomy and the movements of celestial bodies – sun, moon and stars – in that choice.

Keywords: *megalith, geology, landscape, ethnography, GIS analysis, archaeoastronomy*

Megalithic monuments had a particularly close relationship with the landscapes in which they were built. Through their size they were visible and often highly conspicuous, and their presence impacted upon those landscapes in significant and often permanent or long-enduring ways. Indeed, they created places of special significance in themselves, and continue to affect patterns of activity around them through subsequent millennia. As geographer Yi-Fu Tuan observed 'To build is a religious act, the establishment of a world in the midst of primeval disorder' (Tuan 1977: 104). The use of large blocks of stone, the defining feature of 'megalithic' monumentality, heightens that sense of importance and intentionality. Building a megalithic monument necessarily entailed the modification of the landscape, through the transport of monolithic blocks quarried from cliffs or outcrops or collected from the scatters of stone with which many prehistoric landscapes were originally covered (Bakker & Groenman-van Waateringe 1988; Field 2005; Gillings & Pollard 2016; Scarre 2011). Millennia of

human clearance have altered those landscapes in profound and irreversible ways, removing stones and woodlands, replacing them with settlements and fields. Natural processes such as shifting river courses, eroding coastlines, and rising sea-level have also played their part. Hence the landscapes in which megalithic monuments stand today will, in most cases, be very different from those that prevailed when they were first built, and landscape reconstruction is essential in seeking to understand them.

Megalithic monuments are, of course, only one component of the much broader category of prehistoric monuments, not all of which incorporate megalithic elements. Many of those monuments involve mounds, cairns or banks formed of earth, chalk or rubble. Non-megalithic monuments of this kind can achieve considerable dimensions. One of the largest of all, Poverty Point in Louisiana, consists of concentric arcs of earthen banks incorporating an estimated 750,000 m^3 of material (Sassaman 2005: 339). Where uprights were involved, they might have been of timber as well as stone, while the structures that they cover or enclose, notably burial chambers, may consist partly or wholly of dry stonework, or again be built of timber or turf. Megalithic architecture, nonetheless, has a particular resonance, not only as a demonstration of effort and skill, but in connecting structures to places: to the cliffs or outcrops from which the monolithic blocks had been detached, or the boulder spreads from which they had been collected.

1. The power of place

Megalithic monuments are not the exclusive product of agricultural or more complex societies but have been created by a wide range of communities, from hunter-gatherers and mobile pastoralists to populous farming societies and complex polities. The largest of all pre-modern monoliths are associated with early state societies: the decorated stelae of Axum in Ethiopia (the largest, now broken, weighing an estimated 517 tonnes); the obelisks of New Kingdom Egypt (up to 455 tonnes); or the massive blocks of Baalbek in Lebanon (800 tonnes) (Adam 1977: 55; Arnold 1991: 62; Phillipson 1994: 192). These were quarried, transported, and employed in the construction of temple and tomb complexes, serving to project royal and institutional power at the special places where they were set up and displayed.

The use of megalithic blocks to mark places of importance is not associated purely with complex societies, however, but appears also in hunter-gatherer, pastoralist and early farming contexts. Among these are the *inuksuit* of the Canadian Arctic (Fitzhugh 2017; Hallendy 2000): piles or pillars of stones intended to create a vaguely human form. They are still venerated by Inuit communities and were probably built mainly during the last 1000 to 1500 years although some may be older (Hallendy 2000).

Inuksuit are cultural monuments, but the places venerated by traditional Arctic societies also include natural features such as rocks, springs and waterfalls. The Nenets of northern Siberia, for example, established holy places on the shores of rivers and lakes, near large boulders, and on mountain summits and passes, where they performed seasonal sacrifices. They marked these places with simple structures of stone and wood. Direct archaeological evidence for the veneration of natural boulders is sometimes found, as at the Holy Stone on the Kanin Nos peninsula, where a series of offerings had been placed beneath a large glacial boulder (Ovsyannikov & Terebikhin 1994). In other landscapes, too, natural stones have taken on a sacred character, and sometimes been invested with mythical significance. In the Petermann Ranges of Central Australia, for example, one Dreamtime story tells of a fight that broke out between Mala people visiting Tingara at a ceremony. A line of stones shows where the men sat down to talk, and living individuals were able to point out individual stones that are identified with their fathers. A large stone shaped like a double cylinder marks the place where one man and his nephew were killed by the *tjukur* (Dreamtime avatar) of another of those present (Layton 1995).

Could the veneration of natural boulders lie at the origin of megalithic traditions? Are megalithic traditions a direct outcome of living within landscapes littered with blocks and outcrops? That would not seem unreasonable, and it was indeed proposed by earlier European prehistorians. Thus, for the Iberian Peninsula, Pedro Bosch Gimpera

argued '*the creation of the kind of megalithic tomb ... is not difficult to imagine among a people of mountain shepherds that gradually developed the cult of the dead . . . and that moved in a territory rich in large stones.*' (Bosch Gimpera 1932: 84) (**Fig. 1**).

It is indeed possible that many of the separate traditions of megalithic architecture in different parts of the world, whether they take the form of standing stones, burial chambers, or other kinds of monument, not only drew upon stony landscapes for their materials, but were inspired by those landscapes and the sacred places within them. The construction of monuments was nonetheless a cultural act.

2. Location and visibility

The cultural impact of a megalithic monument depends heavily upon the choice of location. Most were built where suitable raw materials were close to hand. It has been observed, for example, that the megalithic monuments of western Europe generally drew their materials from within a range of 1-2 km, and rarely more than 5 km (Thorpe & Williams-Thorpe 1991). The emphasis placed on prominence and visibility, by contrast, was highly variable. Western Europe illustrates the wide range of possibilities. Megalithic tombs are sometimes found in upland locations where not only are they highly visible, but they were also relatively remote from the realm of everyday activity. The passage tombs of Ireland, for example, were often situated on hilltops affording broad vistas, where they were visible from afar. They might hence have been '*sited to capture the high spiritual ground*', in places regarded as liminal and special, away from the domain of everyday life (Cooney 2000: 145).

Elsewhere in Europe, by contrast, megalithic monuments might be situated directly among the

Fig. 1 – Granite blocks and outcrops in the Extremadura region of southwest Spain; the concept of the megalithic monument may have developed in stony landscapes such as these (Photo: C. Scarre).

settlements and fields of living communities. Systematic survey and excavation on the island of Funen (Denmark) has revealed a high density of megalithic tombs that, in some cases, were built directly over the post-hole outlines of earlier houses. At Damsbo, excavation of a cluster of nine megalithic tombs revealed remains of two-aisled halls beneath three of them. In two cases, the megalithic chamber had been placed between the roof-bearing posts; in the third, the chamber was built immediately to the east of the house (Andersen 2016). A similar succession, of house followed by tomb, has been documented at Ballyglass in western Ireland (Ó Nualláin 1972). The house may have been demolished, probably by burning, to make way for the tomb, and the sequence suggests a direct connection between the two (Cooney 2000: 93). Further tombs are scattered among the nearby Céide Fields, generally believed to date to the 4th millennium BC (Caulfield *et al.* 1998; Smyth 2014: 102; although see also Whitefield 2017), suggesting that here again, the worlds of the dead and the living overlapped.

Alongside settlements and field systems, pathways of movement through the landscape must also be considered. Here, GIS analysis and digital terrain modelling provide useful tools. In the Gallura region of northern Sardinia, for example, Least-Cost Path Analysis established that megalithic tombs were located close to pathways through this rugged landscape, and in positions that were prominent and highly visible from those pathways (Cicilloni & Cabras 2019). GIS analysis has also been applied to the movement of megalithic blocks themselves. In the Olmec area of coastal Veracruz in Mexico, 17 colossal basalt heads weighing up to 26 tonnes were set up in the later 2nd millennium BC. The basalt itself came from the Tuxtla mountains some 80 km to the north, and transport was complicated by gradients, gullies, watercourses and swamps. Creation of a digital elevation model followed by GIS analysis of the intervening area identified two potential routeways for movement of the stones, based on steepness of gradient and avoidance of obstacles (Hazell & Brodie 2012).

Where prominent upland locations were chosen for the construction of megalithic monuments, intervisibility may have had particular cultural or cosmological significance. In northwest France, Cumulative Viewshed Analysis demonstrated that Neolithic megalithic monuments were placed in locations offering greater levels of intervisibility than Mesolithic or Early Bronze Age sites. Visibility from the sea appeared to be particularly important (López-Romero 2008a-b). Tree cover must be considered, but vegetation modelling, drawing on palynological analysis, can also be incorporated in Digital Terrain Models (Laporte *et al.* 2016). These allow researchers to map the field of view (viewshed) visible from specific points within the landscape, as well as establishing direct lines of sight between individual monuments. Ethnography illustrates the lengths to which mound-building societies might go to ensure a visual connection with important landscape features. In southern Chile, the distant visibility of burial mounds, and the clearance and preparation of the sacred landscapes around them, was important in ensuring the participation of dispersed lineages in the public ceremonies that were held there (Dillehay 2007: 147). Sight lines were cut through the forest in order to connect mounds visually with each other and to allow the spirits within them to move between them. Views of distant volcanic mountains where deities resided were also important (Dillehay 2007: 242, 288). Relationships to mountains are a widespread factor in the choice of monument location. In Japan, for example, Jōmon sites at Nakanoya Matsubara and Akyu in central Honshu included standing stones aligned on distant mountains, in the former case a single stone associated with burials, in the latter, two parallel stone rows (Kobayashi 2004: 176).

The connection between megalithic monuments and specific features of the natural landscape was one of the central issues explored in the post-processual study of prehistoric landscapes that developed, particularly in Britain and North America, in the 1990s. That approach argued that prehistoric monuments must not be considered as individual points within a neutral landscape, but as parts of three-dimensional lived experience, both for the communities that built them, and for those who visit and study them today (Tilley 1994). The post-processual study of landscapes was applied in a series of case studies, many of them focused on British prehistoric monuments including megalithic tombs and related structures (e.g., Cummings 2002;

Cummings *et al.* 2002; Cummings & Whittle 2004; Tilley 2004, 2008; Tilley & Cameron-Daum 2017; Watson 2001). It encouraged field workers to move beyond a map-based approach, and to consider prehistoric monuments in the context of natural landforms and the possible worldviews of the communities who built them.

3. Geology, landscape and materials

To understand megalithic monuments as part of prehistoric lived experience, we need to understand how they would have appeared when newly built. Some may have been designed to blend with their environment; but others, perhaps the majority, would have been strikingly artificial. Timber posts may have been carved and painted, like the totem poles of the Northwest Coast of North America. The engraved motifs on decorated prehistoric standing stones, too, may have been picked out in colour. Analysis of megalithic monuments in Atlantic Europe, from Iberia to Orkney, has successfully identified traces of the original painted motifs (Bueno Ramírez *et al.* 2019). Painted decoration (simple geometric designs) has also been found within the burial chambers of megalithic tombs in the Caucasus region (Sagona 2018: 291-292). Colour could have operated at a larger scale, creating contrasts between the stones themselves. Differently coloured stone, for example, was a key feature of the stone rows of Saint-Just in central Brittany (Scarre 2011a: 199-201), and in the famous statues of Rapa Nui, with red scoria employed for the *pukao* (topknots) and yellow tuff for the *moai* (statues) themselves, while the inlaid eyes were of white coral with obsidian or red scoria pupils (Martinsson-Wallin 1996).

Shape and surface must also be taken into account. Neolithic chalk mounds such as Silbury Hill in southern England would have been a brilliant white before turf began to form on their sides. The structures themselves may also have had distinctive forms. In southwest England, the Neolithic long mound of Belas Knap is today a neat, grass-covered dome edged by tidy dry-stone walling (**Fig. 2**). As such, however, it is essentially a creation of the earlier 20th century, when extensive consolidation work was undertaken. Excavations between 1929 and 1930 revealed large quantities of thin stone slabs around the edges of the mound, and from watermarks and wear around their edges it was deduced that these had been laid in overlapping fashion to form a roofing or covering (Berry 1929, 1930). The original cairn of Belas Knap may, hence, have had a ridged roof of overlapping slabs, similar to that recently proposed for the neighbouring Cotswold-Severn mound of Hazleton North (Saville 1990: 246-248). Far from blending into the background, such carefully modelled stone cairns would have had a powerful visual impact on their local landscapes. The same applies still more to the striking *kofun* burial mounds of Japan. Impressive in their dimensions, in their numbers, and in their distinctive morphologies, they survive today mostly as grass- and tree-covered knolls but were originally stepped and terraced structures with stone-faced

Fig. 2 – Belas Knap, a Neolithic long mound in southwest England, as restored and consolidated after excavations in the early 20th century (Photo: H. George).

Fig. 3 – a. Aerial photograph of the Daisen keyhole *kofun* tomb near Osaka in Japan, with its triple moat; b. Reconstructed *kofun* tomb of Hotoda-Hachiman-zuka in Takasaki City, Gunma prefecture, Japan; late 5th century AD (Photos: C. Scarre).

sides, surrounding moats, rows of symbolically protective *haniwa* (terracotta cylinders or figurines), and a summit platform (**Fig. 3**).

It is not only the monuments that have been changed by the passage of time, but also their surroundings. Modern stone clearance has, of course, entirely transformed the character and appearance of prehistoric landscapes. To some extent, the construction of megalithic monuments will itself have altered the original stony character of the locales in which they were built. This makes it all the more important to reconstruct, as far as possible, the presence of stone within those landscapes.

Boulder fields still survive in some regions including, for example, formerly glaciated areas of North America, where the Foothills Erratic Train of Alberta stretches for 580 km across the landscape (Jackson 2017). Even here, however, human action is rapidly depleting the boulder fields and it is likely that other erratic trains of similar scale may have been entirely removed by clearance of land for agriculture. That is certainly the case for northern Europe, where the megalithic tombs of the North European Plain depended almost entirely on glacial erratics for their orthostats and capstones. Hence the landscape in which these megalithic tombs were constructed included areas strewn with glacial erratics, most of which have since been removed, either to clear land for agriculture, or as raw material for building (Bakker & Groenman-van Waateringe 1988).

In the Pacific islands, lava flows and coral provided the material for building *marae* (ceremonial platforms). On Ra'itea in the Society Islands of eastern Polynesia, the *marae* of Taputapuātea incorporates large coral blocks of distinctive shape and weighing up to 2-3 tonnes in its outer walls. These blocks are 'microatolls' formed by corals living in shallow coastal waters. U/Th dating of the microatolls, however, has shown that they predate the arrival of the first colonists by several millennia, and that rather than being gathered from living corals on the foreshore, they were probably fossil formations taken from the immediate vicinity of the site where Taputapuātea was built (Salvat *et al.* 2019). Once again, there is a close connection between the monument and the local geology.

Returning to Europe, geological study of megalithic tombs in southern Portugal has shown the particular way in which the granite outcrops were dismantled for their construction, exploiting natural cleavage planes (**Fig. 4**). Much can be deduced from the blocks themselves. Capstones with a flat, unweathered under surface and a convex, weathered upper surface were once the domed tops of outcrops. Orthostats, by contrast, could be extracted from the lower part of the outcrop, exploiting vertical cleavage planes. Hence the structure of the tomb replicates the original position of the constituent megalithic blocks within the source outcrop (Dehn *et al.* 1991; Vortisch 1999). Overall, we are faced with the inevitable conclusion that the many megalithic tombs of the Central Alentejo replace an original landscape much richer in granite outcrops, and that those outcrops were dismantled in order to build the tombs. Similar conclusions have been drawn from the study of granite outcrops and megalithic monuments in southern Brittany (Mens 2006, 2008, 2009, 2013; Sellier 1995). In these landscapes, natural features were systematically dismantled for conversion or incorporation into cultural monuments.

In other cases, the megalithic slabs may not have come from the immediate vicinity but been brought from a distance. The Stonehenge bluestones, transported some 230 km to Salisbury Plain from the uplands of southwest Wales, offer what is probably

Fig. 4 – The Anta do Sobral, a megalithic chambered tomb in the Alentejo region of southern Portugal, showing the distinctive shapes of the blocks selected for the orthostats and the capstone (Photo: C. Scarre).

the most famous example (Bevins & Ixer 2018). It is not only in Europe, however, that the construction of megalithic monuments sometimes involved long-distance megalithic transport. In the Tongan archipelago, for example, the megalithic tombs of chiefly lineages were built of slabs quarried from beaches and offshore islands that were carried to the tomb site by canoe. Some of these slabs weighed up to 20 tonnes. Slabs from the beach quarry on Motutapu island travelled up to 16 km in this way (Clark *et al.* 2020). Hence, the quarrying of megalithic blocks sometimes had impacts on landscapes far away from the monument for which they were intended.

4. Landscapes and skyscapes

Megalithic monuments were fixed to the earth, and their materials were taken from the earth, but the sky, too, formed part of their setting, and may have influenced both their location and their design. The significance of solar and lunar phenomena to prehistoric societies hardly needs special pleading. The night sky, in particular, would have had a much greater presence before the introduction of large-scale artificial lighting. The significance of skyscapes on ceremonial and sacred performance and belief is demonstrated both by ethnography and by specific features of the associated monuments, especially their orientation. This is the realm of archaeo-astronomy.

The study of archaeoastronomy has a long history. In August 1721 antiquarian William Stukeley noted that the avenue leading to Stonehenge was oriented '*where abouts the sun rises, when the days are longest*' (Chippindale 1994: 75). This led him to conclude that, for the monument as a whole '[t]*he intent of the founders of Stonehenge, was to set the entrance full north east, being the point where the sun rises, or nearly, at the summer solstice*' (Stukeley 1740: 56). Stukeley was perhaps the first to record the astronomical orientation of a European megalithic monument. His observation stands at the beginning of a long line of enquiry and conjecture extending to the present day and addressing prehistoric and more recent monuments of various kinds. In a megalithic context that includes circles and rows of standing stones, ceremonial platforms, and burial chambers with an entrance or major axis pointing in a particular direction.

Stone circles and alignments very naturally lend themselves to astronomical analysis (Ruggles 1999). Rows of standing stones, in particular, might be taken to direct attention towards points on the horizon or in the heavens. It was in the late 19th century and first decades of the 20th century that systematic studies began to measure these orientations across large numbers of monuments. In France, Félix Gaillard wrote a succession of short articles on the megalithic monuments of Brittany which were drawn together and published as *L'astronomie préhistorique* in 1897. His studies included analysis of the famous Carnac alignments, but also chambered tombs and other stone settings (Gaillard 1897).

In Britain, one of the leading protagonists was Sir Norman Lockyer, an astronomer and chemist whose interest began with the temples of Greece and Egypt but soon switched to Stonehenge and other British prehistoric stone circles and stone rows. In his later articles he included megalithic chambered tombs, arguing that most were aligned on the May and August sunrises (Lockyer 1897, 1898, 1906). The importance of solar orientations in Neolithic western Europe has since been persuasively demonstrated by large-scale studies of megalithic tomb alignments in Iberia and in western and southern France (Chevalier 1984; Hoskin 2001).

Such enquiries were not restricted to European megaliths. In West Africa, Pierre Jouenne noted the shadow effects built into the stone circles of Sénégal. He argued that stone rows (*'lignes frontales'*) placed a few metres east or south-east of the main circle were designed to cast shadows from the rising sun that moved progressively along the stones of the circle itself as the sun rose and as the seasons changed. The distinctive nature of this phenomenon left Jouenne in little doubt that this was evidence of a solar cult and, furthermore, one that was linked to a particular period of the year: the dry season between November and February (Jouenne 1918).

The summer and winter solstices have been shown to have had special significance for megalithic monuments at several different regions and periods. In Europe, the major passage tombs of Newgrange

in Ireland and Maeshowe on Orkney were aligned respectively on midwinter sunrise and sunset (MacKie 1997; Patrick 1974). At Nabta Playa in the Nubian Desert of southern Egypt, a stone circle of the 5th millennium BC has sightlines aligned on the direction of sunrise around the June solstice (Malville 2015). In Japan, a solar orientation has been demonstrated at the Manza and Nonakado stone settings at Oyu in northern Honshu. Each of the two double concentric rings, dated to the Late Jōmon period (2nd millennium BC) incorporates a 'sundial' setting, with a single standing stone, located between the inner and outer ring. A line drawn between the 'sundials' points directly towards midsummer sunset and also crosses the centres of the two circles (Kobayashi 2004: 180-183) (**Fig. 5**). At Chankillo in coastal Peru, from the 4th century BC, thirteen towers spaced at regular intervals along a mountain ridge span the entire annual rising and setting arcs of the sun (Ghezzi & Ruggles 2007). Here again, an early solar cult is suggested.

In other cases, celestial orientations may have referenced not the movements of the sun but those of the moon or stars. A number of Korean megalithic tombs of Bronze Age date (1st millennium BC) have patterns of cup marks on their capstones that have been identified with major constellations such as Ursa Major and Ursa Minor (Yang 2015). These are more difficult to evaluate than orientations based on solar and lunar phenomena, but the ritual and cosmological significance of the night sky is widely demonstrated in ethnography.

Where archaeology and ethnography can be combined, a more nuanced reading of the evidence becomes possible. It has been shown, for example, that the orientations of *heiau* (temple platforms) on the island of Maui in Hawai'i were linked to a combination of astronomical and topographical features. Some *heiau* are aligned on prominent mountains, others align east towards sunrise, whereas yet others look east-northeast towards the rising of the Pleiades. These different directions can tentatively be associated with specific deities in the Hawaiian pantheon (Kirch & Ruggles 2019: 133-138). Ethnohistoric evidence such as this illustrates the specific kinds of beliefs that will also have underlain the orientation of many prehistoric monuments. It confirms once again the importance of solar and other celestial phenomena to pre-modern societies, but the archaeological detection and interpretation of such complex patterns in fully prehistoric contexts poses a significant methodological challenge.

5. Conclusion

Skyscapes, like landscapes, remind us that megalithic monuments must be interpreted not only in themselves, but in relation to the wider world of the societies by whom they were built. Megalithic

Fig. 5 – Oyu stone circles, Akita Prefecture, Japan: showing one of the two concentric double stone circles with a 'sundial' setting visible immediately to the left of the inner circle (Photo: C. Scarre).

monuments have an immediate visual presence and a direct connection with the land, their blocks quarried from rocky outcrops or collected from scatters of erratic boulders or other surface exposures. The locations chosen for their construction varied widely, from prominent upland locations to lowland slopes and sheltered basins. Some megalithic monuments may have been designed to blend into their backgrounds, but most would originally have been visually striking, both in their morphology and design. Furthermore, their creation was frequently accompanied by extensive landscape modification, from clearing the site of stones or trees, to intentionally opening up wider vistas. Cosmology and symbolism are especially evident when a celestial orientation can be proposed, but all megalithic monuments will have operated within social and material worlds rich in mythological meanings.

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Part I: Megaliths

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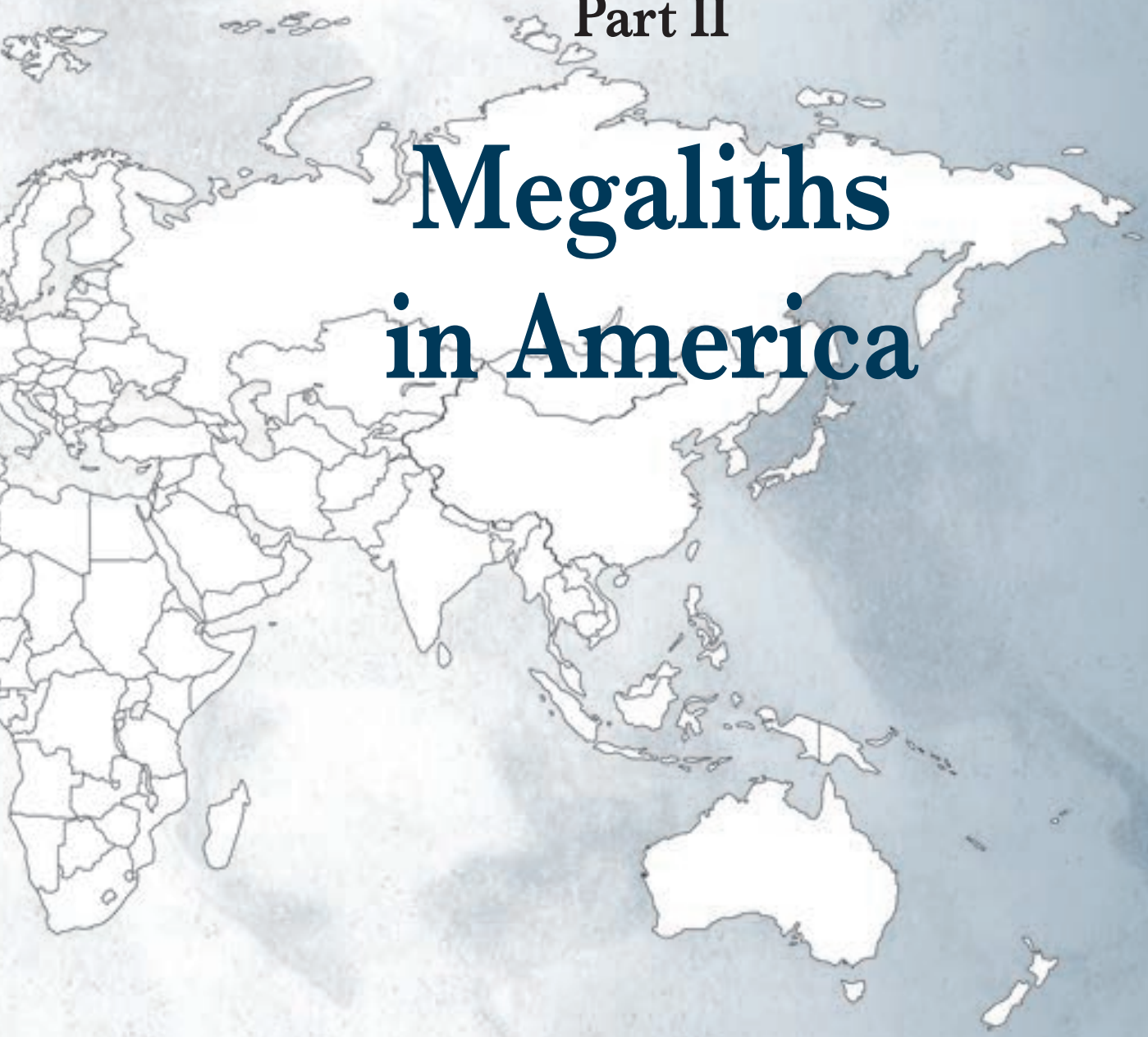


Part II

Megaliths in America

José R. OLIVER, Luc LAPORTE

Introduction

Apart from the San Agustín de Huila site, which has long been part of studies on megaliths in the World (Joussaume 1985, 2003; Mohen 1989) and is also discussed within this volume, the American continent is rarely cited on this subject in specialized literature. As the map in **Fig. 1** shows, sites with megaliths in South America and the Caribbean, either as free-standing monoliths (in rows or clusters) or as part of architectural features, are far more frequent than is generally known among Old World archaeologists. Indeed, one of the oldest records of megaliths observed outside Europe concerns the north coast of Perú, in Huanchuco, where an Agustínian priest noted in around 1560: '*Encontramos en esta región una especie de menhires y betilos cuya relación de que en cada pueblo había una huaca o ídolo la cual adoraban y tenían por ojo del pueblo y a la cual rendían culto para que los cuide sus (chácaras) con son su estancia y le dan chicha, sanco y cuyes para ser fiesta*'.

Further south, as in Tafi del Valle in north western Argentina, the first studies concerning standing stones date from the late 19th century (Ambrosettti 1897; Schreiter 1928; Gonzalez 1961; Azcarate 1996). Other megaliths have been the object of much more recent archaeological excavations in Cachi-Salta (Paez *et al.* 2014), in the province of Salta, also in north western Argentina, as well as in the desert region Tulán and Salar de Atacama in northern Chile; the latter will be presented as part of a specific article within this section (Perlès & Núñez, this volume, p. 205).

Standing monoliths are present throughout the Andean Cordillera where they were erected at different times (**Fig. 2**). Among the oldest could be the stone erected in the centre of the Caral settlement (2900-1800 BC), which has been occupied by pre-ceramic groups (Shady Solís 2006), in the Supe valley near the Perúvian coast. Like formative period site of Queneto (Horkheimer 1950) located further north in the Virú valley, these stones set pointing towards the sky are often interpreted as astronomical observatories, although without real material evidence. Located deep within the Old Temple structure at Chavín de Huantar (Conklin & Quilter 2008), the top of a tall and richly sculptured El Lanzón 'stela', stands directly below an opening at the roof of the structure, seemingly linking sky and earth. On the basis of stylistic seriation, (Burger 1992; Rowe 1962) the Lanzón is attributed to the A/B phase, which corresponds to the Urabarriu phase of occupation, cal 950-800 BC (Burger 2019: Table 2).

In the Andes, megaliths occur not only as free-standing monoliths but also as part of architectural complexes, such as Cerro Sechín in the Casma Valley of Perú, first reported by Julio C. Tello (1937). Here, over 90 monoliths form a wall that separates the temple's forecourt from the exterior on all four sides. On these monoliths are carvings depicting warriors, body parts of dismembered 'victims' and trophy heads, among other motifs. The site dates between *ca.* 1800 and 1400 BC. It is part of a larger group of nearby contemporaneous structural complexes (Sechín Alto, Pampa Llamas-Moxeque and Taukachi-

Fig. 1 – Map of the megalith sites of America mentioned in the text.

Fig. 2 – Megaliths or Huancas of the Peruvian Desert Coast from (a) El Caral, Supe Valley, (b) Cerro Queneto, Virú Valley and (c-d) Cerro Sechín, Casma Valley (Photos courtesy of César Astuhuaman).

Fig. 3 – Megalith sites in the Department of Boyacá, Colombian Andes: a. Map showing the location of megalithic sites; b. Monolith 'Piedra Del Castigo' erected in the plaza of Sáchica (Alcaldía de Sáchica, gov.co) [Photos: Courtesy of Alcaldía Municipal de Sáchica (http://www.sachica-boyaca.gov.co/turismo/cruz-atrial) Accessed 05/2020]; c. Megalith found in the open field at Ramiriquí in 1937 (Hernández de Alba 1937) (Grupo IAEH-UPTC 2012b; photo: G. Hernández de Alba (1937), collection Museo del Oro-Banco de La República, Bogotá); d. Monolithic sculptures on display at the Museum of Mongua, transported from La Salina pass across the Páramo de Pisba (Grupo IAEH-UPTC 2012c; photo: Alexander Sosa, José A. Villabona. Recomposition by J. Oliver); e. Silva Celis's restoration of the plaza at El Infiernito, showing the original location of the monoliths (Silva Celis 1981; courtesy of Omar Ortiz Morales); f. Standing monolith at El Infiernito (Courtesy of Omar Ortiz Morales).

Konkan), none of which display megaliths, making Cerro Sechín unique in this setting (Pozorski & Pozorski 2012).

Many of the megaliths erected in the open-air, especially in the Andean highlands, are the object of modern-day indigenous rituals and ceremonies (Duviols 1979; Osborn 2009). In Perú, as in Ecuador, they are frequently referred to as *wanka* (*huanca, guanca*), a Quechua language word for a sacred stone whose height is greater than its width and exceeds the height of a human being. Unfortunately, there is a lack of systematic and exhaustive survey of *wankas*, although there are some micro-regional studies on sectors such as Cerro Parihuanca (Sánchez García 2015) and Cerro Collona near Sicches (Meconi 1995) in the Perúvian Andes and around Quillosara (or Quillusara) in the province of Celica, southern Ecuador (Sanz González *et al.* 2014, 2015). Not infrequently, these standing monoliths are close to petroglyph localities or, as at Quillosara, the megalith itself is engraved with petroglyphs (see YouTube video by Alcoser 2017). Apart from exclusively descriptive works and local surveys, none of these sites have been subjected to systematic archaeological excavations.

One can find a similar situation to the north in Colombia and Venezuela. The monoliths carved at both ends from Ramiriquí (Boyacá, Colombia) were reported as early as the 18th century (**Fig. 3**); their quarries are known and well-studied, but their chronology is still controversial (Grupo IAEH-UPTC 2012a). Free-standing monoliths of similar styles are also found in neighbouring Sáchica and Mongua in the province of Boyacá (Grupo IAEH-UPTC 2012b-c; Acero Díaz 2013). A number of monoliths from these three areas have been relocated from their original sites in modern times and re-erected as monuments in nearby towns and parks, such as in Sáchica, or moved into a local museum precluding further contextual studies. To the west, near the town of Villa de Leyva, the site of El Infiernito (**Fig. 3**), however, has been subjected to systematic archaeological research by the Universidad del Los Andes, led by Langebaek (2014): it has several very tall free-standing monoliths (similar to Sáchica and Ramiriquí), a rectangular precinct bounded with erect monoliths, and a dolmen-like megalithic structure, reminiscent of those found in San Agustín. These sites will be subject of a specific chapter (Oliver, this volume, p. 159). Further north, around Chita, in the Sierra Nevada del Cocuy (**Fig. 1**), there are several archaeological sites in proximity to standing stones but, again, many of the stones have been displaced or removed due to agricultural activities. In this area, at the site known as Piedralarga, one test pit measuring about 1.0-1.5 m was excavated in front of a (still) standing stone, reputedly the largest in the region. The excavation yielded Herrera Period (pre-Muiska; 800 BC-AD 800) ceramics and artefacts and abundant food remains but was not radiocarbon dated (Pérez Riaño 1999: 101-105). The relationship between the Herrera occupation and the monolith remains to be established.

To the very north of the South American continent, along the Caribbean Cordillera in Venezuela (State of Carabobo), and just northwest of Lake Valencia (**Fig. 4**) the site of La Ringlera de Vigirima consists of an alignment of thin monoliths of about 150 cm in height stretching along a ridge of the upper Virgirima Valley (Oramas 1942; Páez 2017). A lone, standing monolith (La Serpiente) some 2.5 km to the west of Vigirima is reportedly engraved with a snake motif, but those from Virgirima lack any petroglyphs. The Virgirima alignment is found within a landscape rich in rock art in the form of petroglyphs engraved on boulders found on land and in riverbeds. The best known is that of Piedra Pintada, some 3.5 km to the south. Archaeological research is largely focused on rock art studies and the interpretation of figures and motifs (Páez 2010).

A quick look at the South American lowlands shows the lack of reported megalithic sites, albeit mega-earth structures like the ditch and earth-ridged sites (mis-labelled as 'geoglyphs')

Fig. 4 – a. Map showing megalith and petroglyph sites in the Caribbean Cordillera; b. Petroglyphs of Piedra Pintada; c. The megalith row at 'La Ringlera' de Vigirima, State of Carabobo, Venezuela (Photos and map: J. Oliver).

of various forms which are abundant in the Acre State of Brazil and in the northwestern region of Bolivia. Perhaps in many regions within the Amazon lowlands, the lack of suitable rock sources accounts for the near absence of megalithic works. Instead, there are the mega-mound structures located in the Llanos de Moxos (Baurés and Beni River basins) to the south (Lombardo & Prümers 2010) and in the Colombian-Venezuelan Llanos (Gassón 2003) both of which have extensively modified landscapes consisting of raised fields for agriculture and aquaculture.

Areas around the ancient relics of the Guiana Shield (of Pre-Cambrian origin), scoured by the Orinoco River, have produced tantalizing evidence of megaliths. One such locality was photographed by the late José M. Cruxent, but never published or reported. Reviewing his photographic collection, now at the Instituto Venezolano de Investigaciones Científicas (Caracas), we accidentally discovered several images that were part of the Orinoco-Ventuari Expedition of 1957 led by Cruxent, along with B. J. Meggers and C. Evans (Evans *et al.* 1959), showing a lone monolith standing right on the edge of the river, bearing no petroglyphs (**Fig. 5**). This find underscores the potential of the Orinoco-Guiana region for new megalith sites, keeping in mind that several such sites have been well researched in Amapá (see **Fig. 1**), sites that are also on the edges of the Guiana uplands (Darcy de Moura Saldanha, this volume, p. 193).

Megaliths in Central America had never been emphasized before. In Panama, the earth-built tumuli covering elite burials of the culture of Coclé (700-1000 AD) are sometimes associated with standing stones. This is the case for the site of El Caño in Río Grande, where a line of monoliths remains *in situ*, but many more have been either moved or looted, especially those with carvings (Mayo & Mayo 2013; Mayo *et al.* 2016). The Caribbean has also remained well under the radar for archaeologists studying megaliths. Here, they are associated with extensive ceremonial places stretching between southeastern Dominican Republic, such as at El Atajadizo, to the British Virgin Islands, with Puerto Rico having the highest concentration, dating between AD 700 and AD 1500. Megaliths in these islands demarcate various kinds of precincts including plazas and ballcourts (*batey*) used for the indigenous

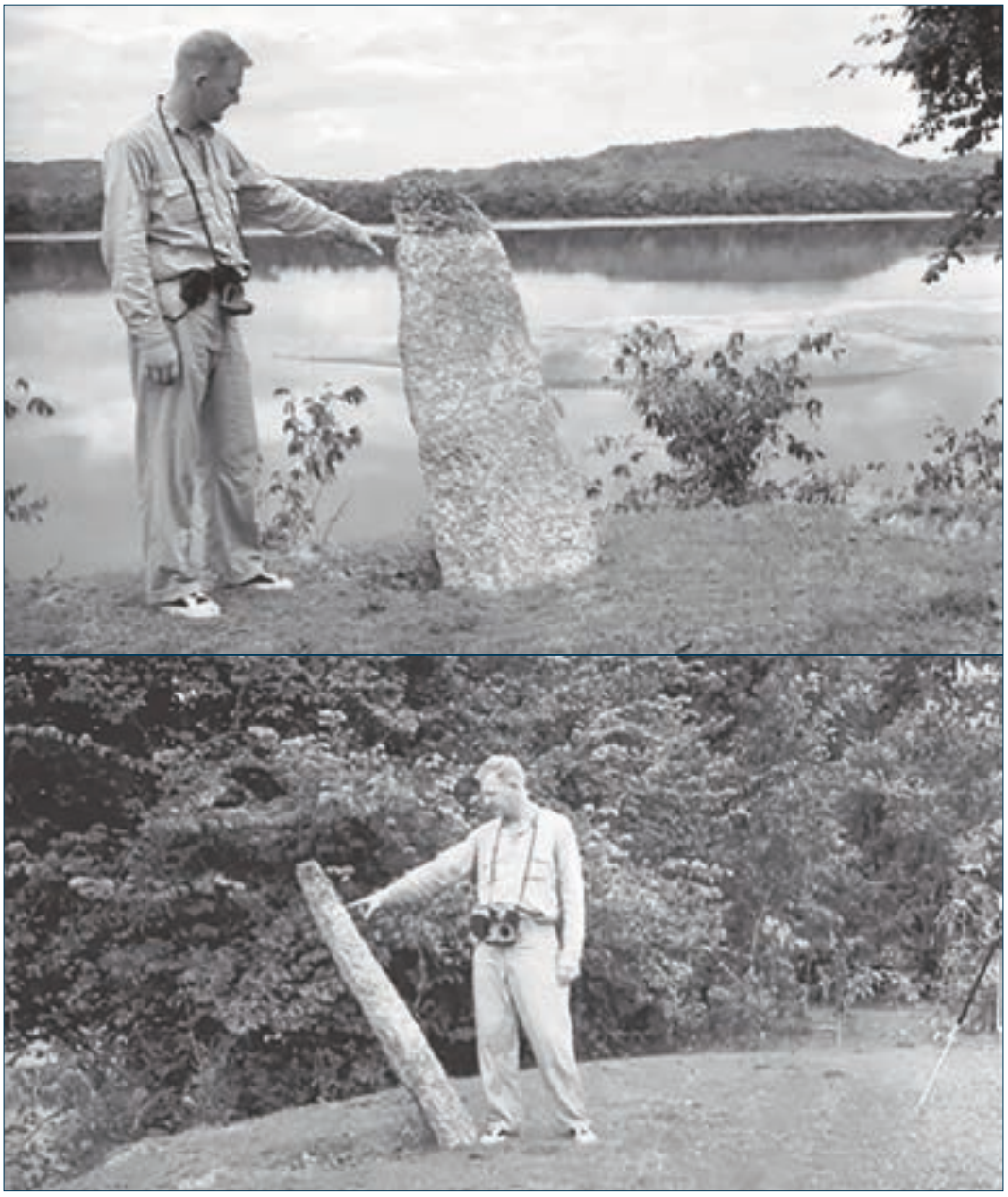


Fig. 5 – The late Clifford Evans stands next to a megalith facing the river (1957). The precise location is unknown, but it is near the confluence of the Upper Orinoco and Ventuari Rivers, Venezuela (J. M. Cruxent's Photographic Collection, Instituto Venezolano de Investigaciones Científicas, Caracas).

Fig. 6 – Megaliths in the Caribbean from the site of Jácana, Ponce, Puerto Rico: a. Map of Puerto Rico, showing sites with stone demarcated plazas/ballcourts; b. Topographic map locating Jácana (site #4); c. Jácana's row of monoliths, north side of the plaza; d. Monolith no. 9 with anthropomorphic petroglyph; e. Monolith no. 21 with superimposed series of petroglyphs (Drawings d-c, courtesy of J. Loubser; Loubser *et al.* 2014).

rubber ballgames. The monoliths of plazas in particular are decorated with petroglyphs, some bearing elaborate anthropomorphic figures, as can be appreciated at the site of Jácana in Puerto Rico (**Fig. 6**). The Caribbean megaliths are subject of an article in this section (Oliver, this volume, p. 131).

The above examples from South America and the Caribbean cannot be exhaustive but illustrate a diversity that has largely gone unnoticed. Attempts have been made to compare the large mounds of the Mississippi Valley with the megaliths of Neolithic Europe (Gronenborn 2006), or the large Mayan stelae in Central America with the deer stones of the Mongol plains (Jackson & Wright 2013), but the presence of so many megalithic devices in South America, as in the Caribbean and Central America, has received little attention until now. Inventories are still very incomplete, and many are poorly dated, if at all. Some megalithic works could spread over several millennia, and many archaeological specimens have been appropriated into the material culture of modern-day populations and thus remain as vibrant and meaningful today as they did in the past when they were first crafted.

Looking at just the cyclopean architectures of the Inca Empire in the Central Andes, we ask whether these can be truly understood without considering the existence of megalithic traditions, which certainly emerged from a much deeper time, probably from the Late Archaic/Initial Period. Rather than bemoan how little has been done or how little we know for this area, and several others in the Americas, we rejoice in the fact that so much is in our hands to discover, investigate, understand, and share with other colleagues around the world. 'Big rocks' require big thinking!

6

José R. OLIVER

Pre-Colombian megaliths of the Caribbean: *bateyes* and plazas of the Greater Antilles

Abstract: This chapter presents an overview of the pre-Colombian megalithic constructions in the Caribbean Islands. Megalithic works are distributed between Southeastern Hispaniola and the Virgin Islands, with Puerto Rico showing the largest concentration. In the Caribbean, they are always used to demarcate civic-ceremonial precincts: plazas, *bateyes* (ball-courts/games) and other ritual spaces. In Eastern Cuba and throughout most of Hispaniola, the civic-ceremonial precincts are instead demarcated by large earth ridges of embankments, while elsewhere in the Caribbean these ceremonial spaces remained unmarked. Following a discussion of the definition of 'megalithicality' and 'monumentality', the chapter traces the historical development of plazas/ballcourts focusing on Puerto Rico, with Las Flores (AD 700-1200), Tibes (900-1200) and Caguana (1210-1450/1500) serving as examples of a trajectory towards the consolidation of ceremonial centres with multiple courts framed by large monoliths and boulders. This ends with Bateyes de Viví (AD 1225-1445), a site that witnessed the ritual entombment of the monoliths of a plaza after a destructive flood event, followed by the plaza's reconstruction (rebirth). It is argued that the importance of large stones, as opposed to earthworks, lies in the indigenous notion that the petroglyphs captured on the monoliths embody sentient beings – persons, imbued with the vitality and potency of *cemí* (literally meaning 'sweet'). This vital force, greater than the size of the stone, renders them as monuments that express monumentality. These representations evolved in size from small portable icons made from various materials to megaliths, rooted on the ground and framing ceremonial precincts. There was a process of 'megalithization' and spatial fixation that the stone *cemí*-personages experienced through time. To understand the character and meaning of the monumental petroglyphs (*cemí*-imbued persons), this chapter examines how human beings and these sentient personages, embodied in monoliths, interacted in *areíto* (chant-dance) ceremonies that underpinned the 'Taíno' social political-religious order, which contrasts to the *bateyes*, where segments of the society engaged in ceremonial ball game competitions and where petroglyphs are absent. While these Caribbean Islands do not show individual megaliths on the scale observed in many other areas of the world, the overall visual and perceptual effect of the large stone-demarcated precincts is arguably of megalithic proportions. The question of mega-earth versus mega-lithic ceremonial sites in the Greater Antilles is addressed herein. The Caribbean thus adds yet another example of megalithic

archaeology, its peculiarities and distinct flavour enriching our understanding of both megaliths and monuments around the world.

Keywords: *Caribbean, Puerto Rico, monumentality, ceremonial centers, plazas, ballcourts (*batey*), earthworks, petroglyphs, Las Flores, Tibes, Caguana, Bateyes de Viví*

I. Of megaliths, monuments and monumentality

After the invitation to represent the Caribbean in the 'Megaliths of the World' conference, I came to realize that this region has its own expression of megalithic sites, deployed to impress viewers, modulate the landscape and fulfil important social functions. The theme of megaliths in Caribbean archaeology is notorious for its near absence in the literature. It has not received as much attention in the New World as it has in the Old. Perhaps this is because the most impressive large-scale works are manifested in architectural constructions that were built piece-meal from much smaller stone units ('*Lego*-like' modules), such as the Pyramid of the Sun in Teotihuacan, Mexico (Sejourne & Salicrup 1996) or the large platform 'temples' of Chavín de Huántar in the Andean highlands of Perú (Burger 2008). Another reason is because far more abundant are mega-structures that are not megalithic but mounded earthworks, such as Monks Mound in Cahokia (a late Mississippian period city; Pauketat 2004) and the Moche civilization's Huaca del Sol made of sun-baked mudbricks (Hastings & Moseley 1975), or combinations of rubble-fill and stone dressing of buildings such as Caral's enormous 'Temple of the Amphitheatre' in the Supe Valley on the Peruvian Coast (Shady Solís 2006). Mega-earth structures also include the numerous large-scale ridge-and-ditch enclosures (so-called 'geoglyphs') in the State of Acre of Western Brazil (Saunaluoma *et al.* 2018; Watling *et al.* 2018) and the huge mounds of marine shells, known as *sambaquís*, in coastal Brazil (Gaspar *et al.* 2008). In the Pacific Northwest of US-Canada, there are the red-wood totem poles of the Kwakiutl (*Kwakwaka'wakw*), made famous by Franz Boas (1955 [1927]), with the tallest in Alert Bay, British Colombia, measuring a staggering 52.7 m (173 feet) in height (Fone 2019). In the Caribbean, as shall be seen, sites in Hispaniola have large ceremonial plazas bounded by parallel *camellones* or earth and rubble-filled embankments, such as at Casa de La Reina (100 m in length) or by an oval plaza encircled by an earth and rubble embankment, such as at El Chacuey (35,721 m^2) (Alegría 1983: 39-45; Boyrie Moya 1955).

In South America there are several sites across the Andean highlands with outstanding megaliths, recognized as such, for example, at Quilosara and Cerro Collona in the Ecuador-Perú border, Infiernito, Ramiquira and Mongua in the Colombian Andes, and Cerro Parihuaca and Cancha Asiruni in the Peruvian Andes. I suspect that the most famous of all megaliths of the New World are those sites clustered around the San Agustín de Huila region in the Colombian Andes, with their dolmen-like tomb structures (once covered by earth mounds), impressive megalithic statuary and large carved stone coffins (Preuss 1931 [1929]; Reichel-Dolmatoff 1972; Llanos Vargas 2013; see Oliver, this volume, p. 159). Less well known are the megalithic alignments found in the South American lowland tropics, such as that which links with petroglyph sites in Vigirima, near Lake Valencia in Venezuela (Oramas 1942; Páez 2017). Most notable is the complex of megalithic sites of coastal Amapá in the Brazil-French Guyana borderland (Saldanha 2017). The latter is a rare instance where the authors have explicitly recognized an analogy with England's Stonehenge (Petry & Saldanha 2008). Indeed, the megalithic, free-standing sculptural *inuksuit* tradition, begun in pre-colonial times (Thule culture), is still alive among the Inuit of the Canadian-Greenland Arctic region (Fitzhugh 2017: 152-157). Although rarely referred to as megaliths, numerous sites of the Americas also include carved or engraved monolithic *stelae* that can also be regarded megalithic. Such is the case for Palenque during the Classic Maya period in Mesoamerica (e.g., Schele & Miller 1986) or the famous 'Tello Obelisk' from Chavín de Huántar in Perú (e.g., Rowe 1962).

Given the diversity of materials in the construction of mega-structures/sculptures, it is not surprising that the emphasis in New World archaeology has been, and still is, on monumentality rather than 'megalithicality' (e.g., Burger 2012). It is worth briefly clarifying these two terms.

As Thomas (2013) emphasized, the term 'monument', in its old Latin sense (*monumentum*), refers to something that serves 'to call to mind' (*monere*), as much intangible (an idea) as tangible (a thing). Like a Roman tombstone, it need not be megalithic, even if it is 'mega' in terms of the (cognitive) importance of what it elicits in viewers. In other words, while monuments are cognitively or symbolically grandiose, important and superlative (hence, *memorable*), they do not have to be so in physical scale. *Monumentality*, also a noun, means 'having the quality or state of being monumental', where the same definitional dictum applies; large *physical* scale/size is not a necessary property. The adjective *monumental* is associated with large size or grand scale, whether materially (e.g., a monumental pyramid) or cognitively (e.g., a monumental lie). Monumentality, combining *both* of these senses at once, is what has caught most the attention of Americanist archaeology, since it can accommodate the use of all sorts of large-scale materials, from earth and wood to mudbricks and stones. At the same time, it allows us to reflect about what it implies for the people who created and used (or controlled) large-scale productions and what their display expresses to any viewer, local or foreign: what it 'says' about society in general.

Still, megaliths deserve their own niche in archaeological analysis, if only because almost all stone types are sought after and selected for their durability and permanence in comparison to almost every other kind of raw material. It can be assumed that durability, alongside texture and colour, was one of the important properties for selection. This minimises questions of why stone was chosen of over other materials.

Indeed, deliberations about megalithic work (such as the Menhirs du Plessis, France), inevitably move into discussions about monuments and monumentality, and vice versa. They are clearly related concepts, but I would argue they are neither synonymous nor inter-exchangeable. Little 'things' can be monuments and monumental-not in physical scale, but 'big' in terms of cognitive perception or understanding of their significance or importance. And, of course, not all large-scale stone works are necessarily monuments. They may be monumental in physical size but perhaps not monuments in terms of the scale (cognitive value) of what they mean.

Where stone works are present at sites in the Caribbean, they always function to demarcate plazas, ballcourts (*bateyes*) and other ritual or ceremonial precincts. It must be said that the vast majority of sites with *stone* demarcated plazas/ballcourts barely qualify as being *mega*lithic. The boulders or slabs are not much larger than 70 to 100 cm in height; some are roughly retouched, others noticeably modified. The size of both the stones and the area enclosed vary considerably from site to site, but several, especially in Puerto Rico, are arguably precincts enclosed by megaliths. One the finest examples is the civic-ceremonial centre of Caguana (AD 1200-1450), Puerto Rico (**Fig. 1: 20**). To fully appreciate the megaliths of Caguana the site must be contextualized within the broader geographic distribution and developmental history of plaza/ballcourt sites in the Caribbean.

2. Plazas and ballcourts of the Greater Antilles: an overview

Sites with *stone* structures demarcating plazas and/or ballcourts are tightly circumscribed between southeastern Dominican Republic and Tortola in the British Virgin Islands, with Puerto Rico evincing the largest concentration (**Fig. 1**). One possible exception may be site MC-6 on Middle Caicos in the Bahamas, which yielded two adjoining plazas, one of which includes a small court framed by two parallel rows of small rocks (Sullivan 1980, 1981). On the other hand, sites with plazas/ballcourts framed by earth ridges or embankments are predominant in easternmost Cuba, such as Laguna de Limones (Torres Etayo 2010), and throughout most of Hispaniola (Alegría 1983). The exception in Hispaniola is the region of Higüey (today's Altagracia) and Saona Island, where quadrangular or rectangular plazas/ballcourts are framed by small to medium-sized stones, such as

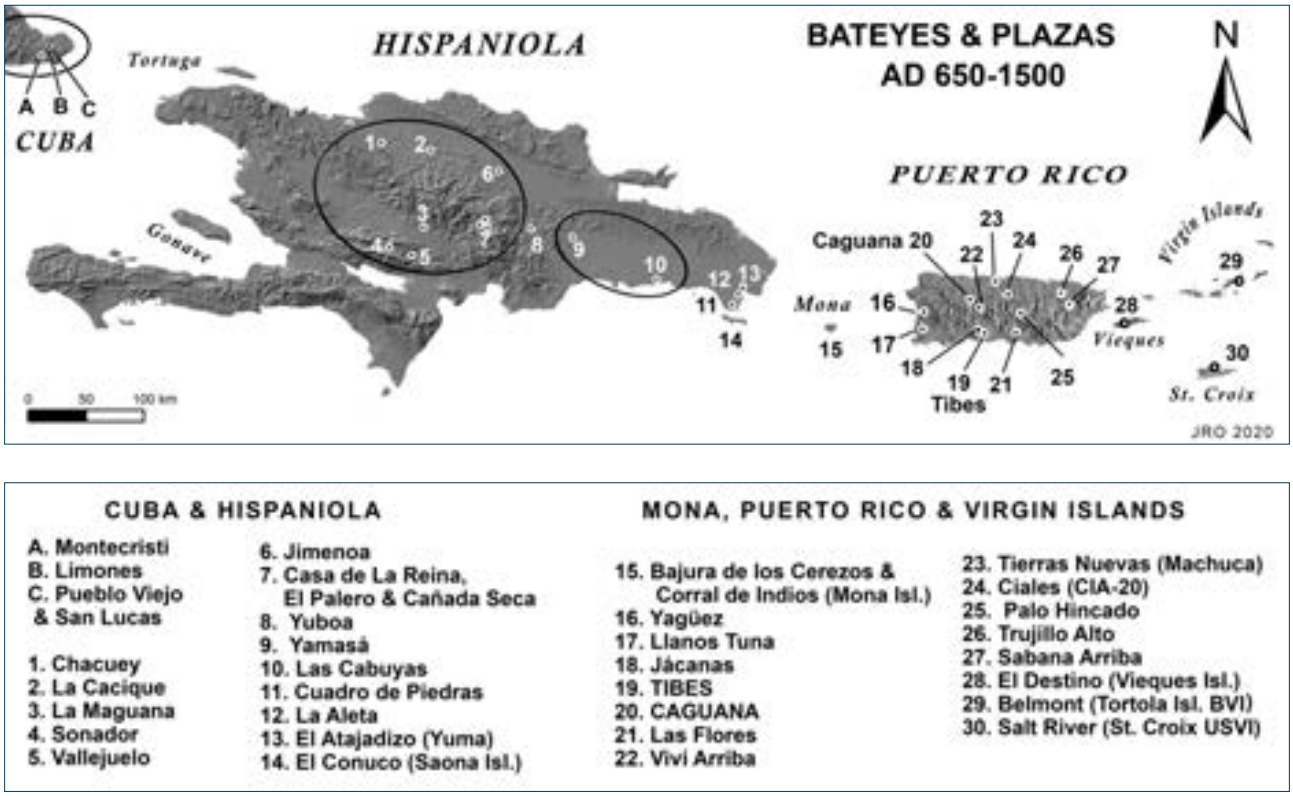


Fig. 1 – Distribution of key plaza and ballcourt sites in the Greater Antilles. Plaza/ballcourt sites A, B, C in Cuba and 1-7, 9, 10 in Hispaniola are demarcated with earth ridges/embankments (black ovals). In south-eastern Hispaniola, sites 8 and 11-14 have plazas/ballcourts framed with small monoliths. In Mona Island, Puerto Rico, Vieques and the Virgin Islands, plazas/ball courts are framed by monoliths (sites 15-30), some of which are megalithic (e.g., 18, 19, 20 22, 23, 25).

at El Atajadizo (**Fig. 1: 13**), adjacent to the Yuma River (Veloz Maggiolo *et al.* 1976). Sites in eastern Hispaniola relate more closely to those of Mona, Puerto Rico and the Virgin Islands. Neither central-western Cuba nor Jamaica nor, for that matter, the Lesser Antilles and Southern Caribbean islands have yielded structurally demarcated precincts that could be securely identified as Pre-Colombian plazas/ ballcourts. Of course, there are plenty of sites whose plazas are simply bounded by domestic structures, detectable by a ring or semi-circle of domestic middens around a clean-swept central space. Likewise, the indigenous rubber ball game does not require stone or earth embankments to set game boundaries, as markers (of any kind) could be temporarily placed and removed after the game. Indeed, indigenous rubber ball games were still played in 1619 by Island Carib-speaking groups (mainly an Arawak language) from Martinique (Anonymous of Carpentras [1618-1620] in Moreau 1990: 184-187) and yet there is no archaeological evidence of stone or earth demarcated plazas or ballcourts (Bérard 2013). The same can be said of rubber ball games reported in the mid-1730s (still played in 1803) among the Otomaco and Taparita Carib-speakers of the Apure-Orinoco region of Venezuela (Gumilla 1741 [1882]: 108-110; Rosenblat 1964: 267-271).

A spatial analysis of the distribution of all the sites with stonework is fraught with problems. They are vulnerable. For example, in Puerto Rico, during the era of industrial sugar production, an untold number of plazas/*bateyes* were obliterated by mechanized ploughing, leaving scatters or piles of the larger monoliths. Furthermore, if the latter displayed petroglyphs, they were frequently looted by collectors. Even in the central highlands of Puerto Rico, plaza/ballcourt sites are not immune to destruction (Rodríguez Meléndez 2007). Palo Hincado (**Fig. 1: 25**), one of the larger civic-ceremonial sites in the mountains of Barranquitas,

Puerto Rico, was obliterated in 2002 to make way for housing construction. This is the only known site on Puerto Rico to not only have a stone demarcated plaza (72 x 57 m) and ballcourt (33 x 15 m), but also three roads (from 0.2 km to 1.1 km long x 5-15 m wide) with earth embankments of up to 1.5 m high (Rouse 1952: 484-489; Ortiz Aguilú *et al.* 2001; Meléndez Maíz 2001). Palo Hincado thus combines earth embankment techniques, typical of western Hispaniola and eastern Cuba, with plaza/ballcourt stonework typical from Mona to the Virgin Islands.

Many of Hispaniola's sites have suffered a similar fate. For example, San Juan de La Maguana, while still detectable (see *Google Earth*: 18°51'9.59"N - 71°14'16.85"W), has suffered major impacts since first described by Sir Robert Schomburgk in 1851 (Alegría 1983: 33-39). Currently a baseball field exists within the confines of the archaeological plaza. The single monolith with an engraved petroglyph, once situated at the centre of the plaza, no longer exists. The linear parallel earth embankments leading from La Maguana's near-perfect circular plaza (area: >125,000 m^2) to El Fondillo Creek has been obliterated. Subsequent attempts to 'restore' the plaza only succeeded in further blunders (Boyrie Moya 1955: 54-55). Other sites, such as Yuboa (**Fig. 1: 8**), consisting of a rectangular plaza, framed by small, erected monoliths (*ca.* 40-60 cm tall), was lifted and recreated on the grounds of the Museo del Hombre Dominicano in 1972; it was about to be destroyed. Finally, few of the sites in Hispaniola have been systematically excavated and researched, with Chacuey (**Fig. 1: 1**) and El Atajadizo, also known as Yuma (**Fig. 1: 13**), being the best documented (Boyrie Moya 1955; Veloz Maggiolo *et al.* 1976). However, vast areas of Hispaniola have yet to be archaeologically explored. The sites shown in **Fig. 1** are likely to represent a fraction of yet to be discovered sites with demarcated plazas/ballcourts.

On Mona, Puerto Rico and the Virgin Islands, systematic archaeological research of ballcourt/plaza sites has fared better (e.g., Rouse 1952; Drewett 2000). Well researched sites include Caguana (Mason 1941; Alegría 1983; Oliver, references herein), Tibes (Curet 2016; Curet & Stringer 2010; Torres *et al.* 2008; Torres 2012), Jácana (Espenshade 2014; Loubser *et al.* 2014; Loubser & Espenshade 2007), El Delfín de Yagüez (Rivera Fontán 2005), Bateyes de Viví (Oliver & Rivera Fontán 2007), Belmont (Drewett 2000), and Machuca/Tierras Nuevas, where Rivera Collazo and Oliver have begun new excavations in 2019 (**Fig. 2**).

To summarize, plazas and ballcourts demarcated by either earth embankments or rows of monoliths in the Caribbean are restricted to a region extending from easternmost Cuba to Tortola in the British Virgin Islands. Sites with earth-embankment plazas/ballcourts, are found from eastern Cuba to Hispaniola. The latter cover areas averaging ten times larger (avg. 6,605 vs. 642 m^2) than those with stone-demarcated precincts in Hispaniola, Puerto Rico and the Virgin Islands (Alegría 1983: 116; Wilson 1990: 24-25). Another important feature of contrast is that some earth-bounded plazas in Hispaniola, most notably Chacuey and La Maguana, only have a single (short) monolith with engraved figures (petroglyphs) erected near its centre, whereas in Puerto Rico, the parallel rows of monoliths of the plazas account for almost all the petroglyphs on the site. By contrast, at sites in Hispaniola such as Chacuey, the ensemble of petroglyphs is found outside the plaza but connected to the latter by a dirt path framed by earth ridges. We shall return to the significance of this observation later.

Finally, at least between Mona Island, Puerto Rico and the Virgin Islands, sites can be ranked as follows (Oliver *et al.* 1999):

a) Village/hamlet sites lacking stone-demarcated (structural) plazas/ballcourts.

b) Village/hamlet sites consisting of a single stone-demarcated precinct/plaza located at its centre or dispersed farmsteads with each with a single plaza or precinct (typical in Puerto Rico's northern Karst hills). Among these, a further distinction can be made according to the area of the plaza/ballcourt and other precincts vs. total occupation area. With just one precinct, it is possible that it functioned as a plaza and a court for the ballgame (if sufficiently large).

c) Habitation sites with one stone-demarcated plaza, one or more ballcourts (*bateyes*) or 'ceremonial' precincts; conventionally these are classified as ceremonial centres. Some have small domestic areas (like Caguana) while others qualify as a village or hamlet (e.g., Yagüez).

Fig. 2 – Selected sites with stone-demarcated plazas and ballcourts (*bateyes*) of Puerto Rico and the Virgin Islands. Las Flores is among the earliest dated (AD 700-1300), followed by Tibes (cal AD 900-1200) and Caguana (AD 1210-1420). Most of the other sites date between AD 1200-1500. Ballgames and ceremonial activities in plazas were described by the Spanish as late as 1512.

d) Non-habitation (vacant) sites consisting of a single precinct, most of which are ballcourts.

Batey (plural *bateyes*) is the Taíno language (Arawak family) word for the rubber ball, the court and the game. However, today it refers to the clean-swept space or courtyard in front of the house in Puerto Rico or to the homesteads of sugar-cane cutters in Haiti and Dominican Republic (Oliver 1998: 101; GAAR 2002).

The monoliths framing a nearly quadrangular space usually function as a plaza, whereas ballcourts tend to be rectangular, with a length roughly three times the width (Oliver 1998: 101). How square or rectangular they are is frequently dependent on local topographic constraints, and some can have trapezoidal areas (e.g., Viví Arriba site). With rare exceptions (e.g., Jácana, Puerto Rico), the erected monoliths of the plazas form a row on the east and west sides, whereas the north and south are without monolithic markers or are defined by a cobblestone pavement. Often, behind (outside) the row of erected monoliths, a *calzada* or cobblestone pavement is placed. Sometimes the cobbles are set over a relatively low earth *talud* or bank packed against the rear side of the monoliths, along with small anchoring rocks at the base in order to stabilize them. Constant maintenance is required to keep the monoliths erect, as the tropical rainy season batters the terrain. Almost always, the monoliths of the plazas bear iconography in the form of petroglyphs. The long sides of rectangular ballcourts, as well as other ceremonial precincts, also consist of a row of monoliths or slabs while the court's distal ends are demarcated with a cobblestone pavement or left unmarked. Ballcourts either bear no iconography or, at most, one or two petroglyphs. There are smaller rectangular precincts that are often called '*bateyes*' in the literature, but whose function as a ballcourt is debatable; other sorts of activities may have taken place in these (ritual, ceremonial?). Stone-demarcated circular precincts are rare in Puerto Rico and not known for Eastern Hispaniola, Mona or the Virgin Islands. Their function is not known, beyond being 'ceremonial', which is not very informative.

3. The antecedents of Caguana

The chronology of this part of the Caribbean (**Fig. 4**) is divided into five periods, each characterized by a given cultural complex defined largely on the basis of ceramic style, but also other material culture traits. A group of closely related styles thus forms a series (of styles/cultures) and within the latter sub-groups of styles are labelled 'sub-series' (e.g., Chican subseries). It is assumed that all the

styles of a series derived from a common ancestor and evince a traceable phylogenetic history of divergence (analogous to the proto-language reconstructions of historical linguists). All such normative, culture-historic (and neo-evolutionary) time-space models are of course quite problematic but, for now, unavoidable since the taxonomic nomenclature still is widely used throughout the Antilles. For definitions and critiques of style, subseries and series, originating with Rouse in 1939 [1992], see Oliver (2009: 11-27), Rodríguez Ramos *et al.* (2010), and contributors in Keegan *et al.* (2013).

3.1 Las Flores (Periods IIIa-IIIb, AD 700-1200)

One of the earliest dated sites with a stone-demarcated plaza is Las Flores in south-central Puerto Rico (**Fig. 2**; 18° 2'38.22"N - 66°37'22.03"W). This site was continuously occupied from AD 400 to *ca.* AD 1300. It covers an area of 20.2 km^2. The first phase of occupation (Periods IIa-IIb) is characterized by late Hacienda Grande to Cuevas styles. During this period, several middens with domestic refuse surrounded a plain, unmarked central plaza. The plaza was first demarcated with monoliths around AD 700-800 (i.e., after cal AD 580-760 and before cal AD 710-970, 2σ; Ortiz Aguilú 1977; Wilson 1991: 145-146) (**Fig. 3**). The plaza covered an area of 600-900 m^2, roughly 22% of the total settlement. This construction was accompanied by significant changes in ceramics and artefacts, transitioning from Cuevas to early Ostiones and continuing with a mixture of artefacts of early Ostiones and early Santa Elena styles (**Fig. 4**). According to Ortiz Aguilú (in Wilson 1991), the most intensive occupation occurred during Period III (AD 700 and 1200), with ceramics becoming more elaborate in style (early to late Santa Elena). By this time, six domestic middens surrounded the plaza. Unfortunately, the final site report was never completed, thus it is not known if petroglyphs existed in this plaza, as would be expected. However, Eichholtz's (1997) study of petroglyphs and their possible alignments with celestial bodies mentions four localities of rock art outside the settlement and yet does not mention any within the plaza (**Fig. 3b**). If they are truly absent, this would be very uncommon for Puerto Rico.

Besides stone-demarcating the plaza/ballcourt, another important change is that the island-wide practice of concentrating human burials within an unmarked central plaza in Periods II and IIIa was in the process of being abandoned by Period IIIb. At Las Flores, during the transition from Periods IIIa-IIIb, burials of individuals were placed in domestic (midden) contexts. Although a unique stone-lined

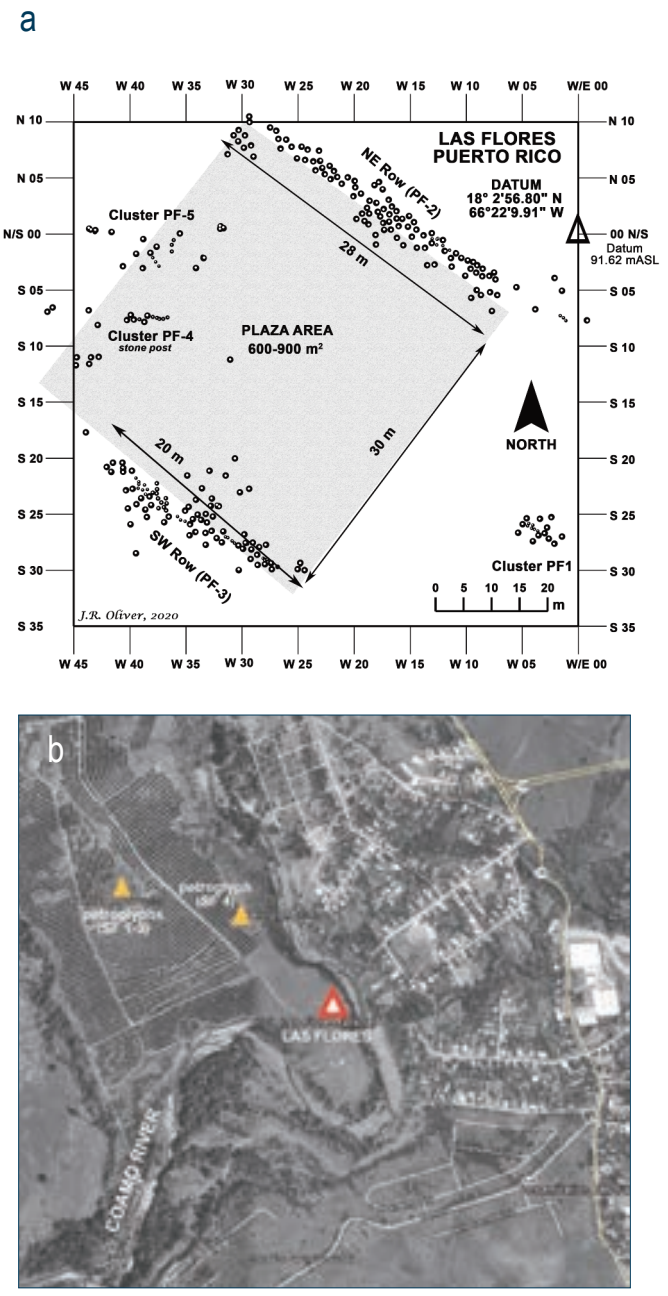


Fig. 3 – Plan view of the stone-demarcated plaza (a) and satellite image locating the site of Las Flores (red triangle) and two clusters of petroglyphs sites (b). Map redrawn from Eichholtz (1997) (Aerial Photo courtesy of L. Antonio Curet).

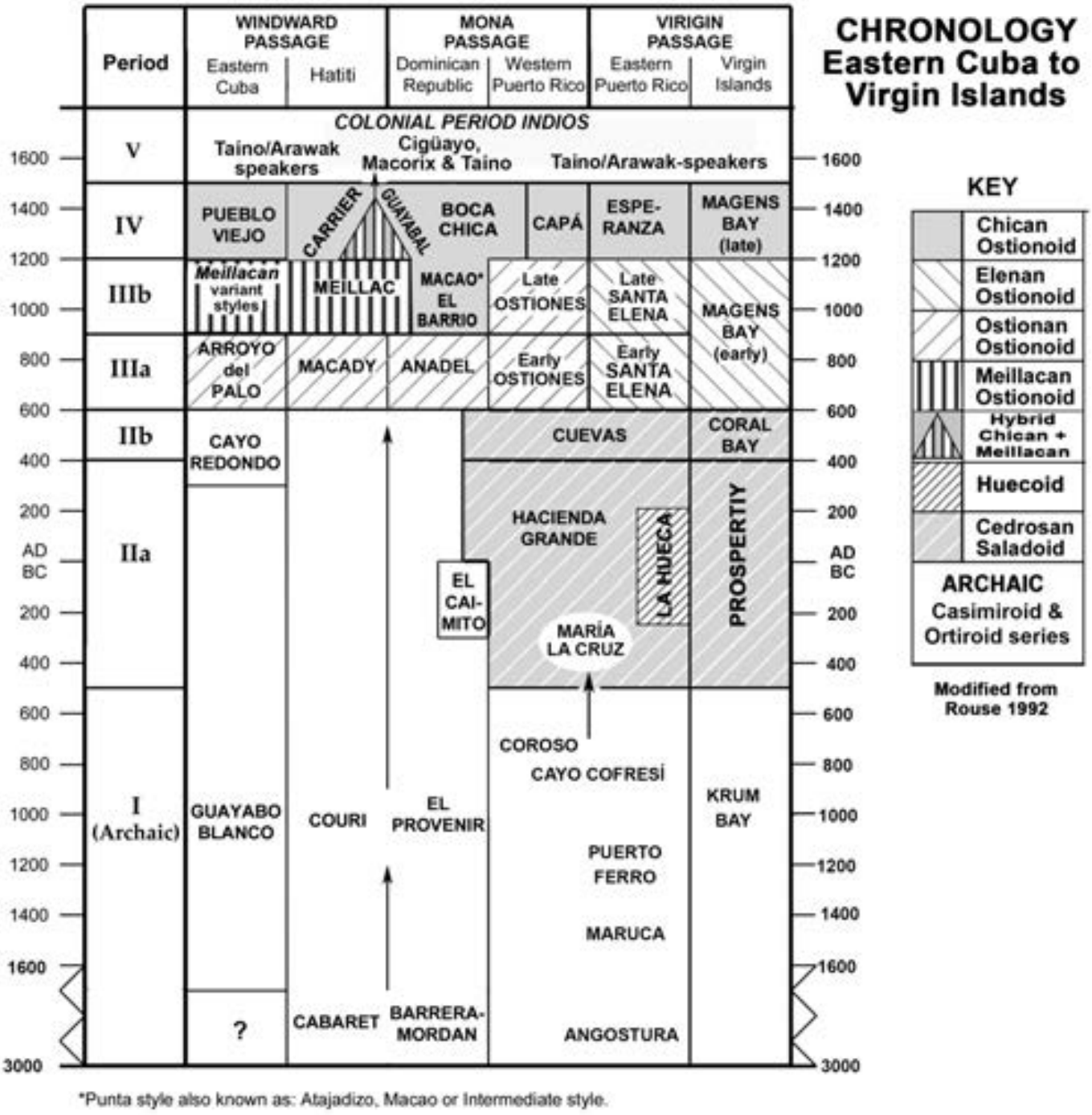


Fig. 4 – Archaeological chronology for the region between Eastern Cuba and the Virgin Islands. Each individual name corresponds to a cultural/ceramic complex defined as a style (following Rouse; roughly a 'phase') and shade patterns indicate their affiliation to a series (akin to tradition) and a subseries (akin to sub-tradition).

tomb of a 3 to 4 year-old child was located within the NW corner of the plaza, the rest of the burials were placed in midden/domestic areas outside the plaza. This shift in burial practices is significant, as there was no longer be a direct link between the funerary ceremonies or other commemorative feasts performed by the living community and the dead (i.e., ancestors) congregated under the plaza (Curet & Oliver 1998). The change suggests that individuals (and their close kindred) or the household, were in control of their ancestors' remains (bones). This was in contrast to the community-wide focus of the previous period, where the living had always engaged in communal civic-ceremonial activities on the plaza's surface in the company of the underlying 'underworld' community of ancestors (see also Oliver 2009: 141-147). As we shall see later, the community of skeletal remains under the plaza were replaced by a contingent of potent, vibrant personages engraved on the plaza's monoliths, providing a different mechanism of community identity and solidarity, one where a person would no longer be able point to the grave and say, 'here lies my grandmother', yet would be able to point instead to petroglyph icons as ancestors of the community, if not polity.

During Periods IIIa-IIIb, Las Flores formed part of a regional settlement pattern of hamlets or villages, the majority of which lacked stone-demarcated plazas/ballcourts (Torres *et al.* 2008, 2012). At the very least, the leader of Las Flores stood out from other village headmen/women of this region in that political-religious events in his/her village were formally enacted in a structurally defined plaza. Along with the construction of the plaza, as noted above, something changed in the way social groups determined genealogical relationships and in how they defined themselves as a community. Las Flores was abandoned in around AD 1300 for as yet unknown reasons (Ortiz Aguilú in Wilson 1991: 146). However, while Las Flores was still active in around AD 800-900, another site, Tibes, began its journey to become a major civic-ceremonial centre in southern Puerto Rico (**Fig. 2**).

3.2 Tibes (Period IIIb, AD 900-1200)

Tibes (18° 2'38.22"N - 66°37'22.03"W) is the first site with multiple, stone-demarcated precincts to arise in Puerto Rico (**Figs. 2** and **5**). It is widely regarded as the first large ceremonial centre in the region (Curet & Stringer 2010). The earliest occupation dates to between AD 300-400 and AD 600 (Curet 2016; Curet *et al.* 2006). During this time the domestic areas are largely confined to Deposits B, C and E, forming a northern semicircle on the east side the site (**Fig. 5a**: red contour lines). These middens contained rare Hacienda Grande and predominantly Cuevas style ceramics belonging to Periods IIa-IIb, although the latter seems to extend chronologically into Period IIIa (*ca.* AD 800).

In the next phase, transitional from Periods IIb to IIIa (*ca.* AD 600-800), the domestic area expanded to Deposits A and F, completing a semi-circle east of the central cleared area, which I call a plaza. There is no evidence that the plaza was yet demarcated with boulders. Early Santa Elena style artefacts gradually emerged out of the late Cuevas style background. Towards the beginning of Period IIIb (probably after AD 900), the once undefined boundaries of plaza became marked with boulders. For this early phase of construction, the sequence, number and configuration of stone-demarcated precincts, is difficult to unravel (Curet, personal communication 2020) because of subsequent major alterations and reconfigurations (Curet *et al.* 2006: 35; Curet & Stringer 2010). Indeed, Deposits D and G (**Fig. 5**: blue contours), consist of a mixture of midden deposits, rocks, clasts and boulders that Curet (personal communication) hypothesizes resulted from the construction of central plaza n° 6. These events are estimated to have occurred after *ca.* AD 900. At some point between AD 700 and AD 900, part of Tibes was impacted by a major flood (Green 2016; Curet, personal communication), which would require resetting the monoliths and the restoration of the precincts, if these already existed prior to this event. A more precise date for the flood event is crucial, since I agree with Curet that the earliest phase of court construction most likely followed this.

The elaborate multicourt site, as shown in **Fig. 5**, reflects the final period between AD 1000 and 1200 (Curet & Stringer 2010; Torres *et al.* 2014: 135).

Midden deposits from Period IIIb with late Santa Elena style artefacts (**Fig. 5**: blue contours, deposits A, and E-H) form a semi-circle around the central plaza no. 6 and circular plaza no. 7. The largest rectangular court, no. 3 (1151.4 m^2), is most likely a ballcourt capable of accommodating a large number of players per team (**Fig. 5f**). The smaller rectangular courts (ranging from 134 to 325 m^2 in area) entail either a smaller number of ball players or may have (also) functioned for other kinds of gatherings, perhaps of particular sub-groups of the Tibes community or neighbouring groups from the local region, possibly those hamlets or villages that lacked structured, stone-demarcated precincts. However, Curet (personal communication) notes that the question of whether Tibes was occupied year-round or a *vacant* ceremonial centre is unresolved. If the latter, it would mean that the apparent 'domestic'

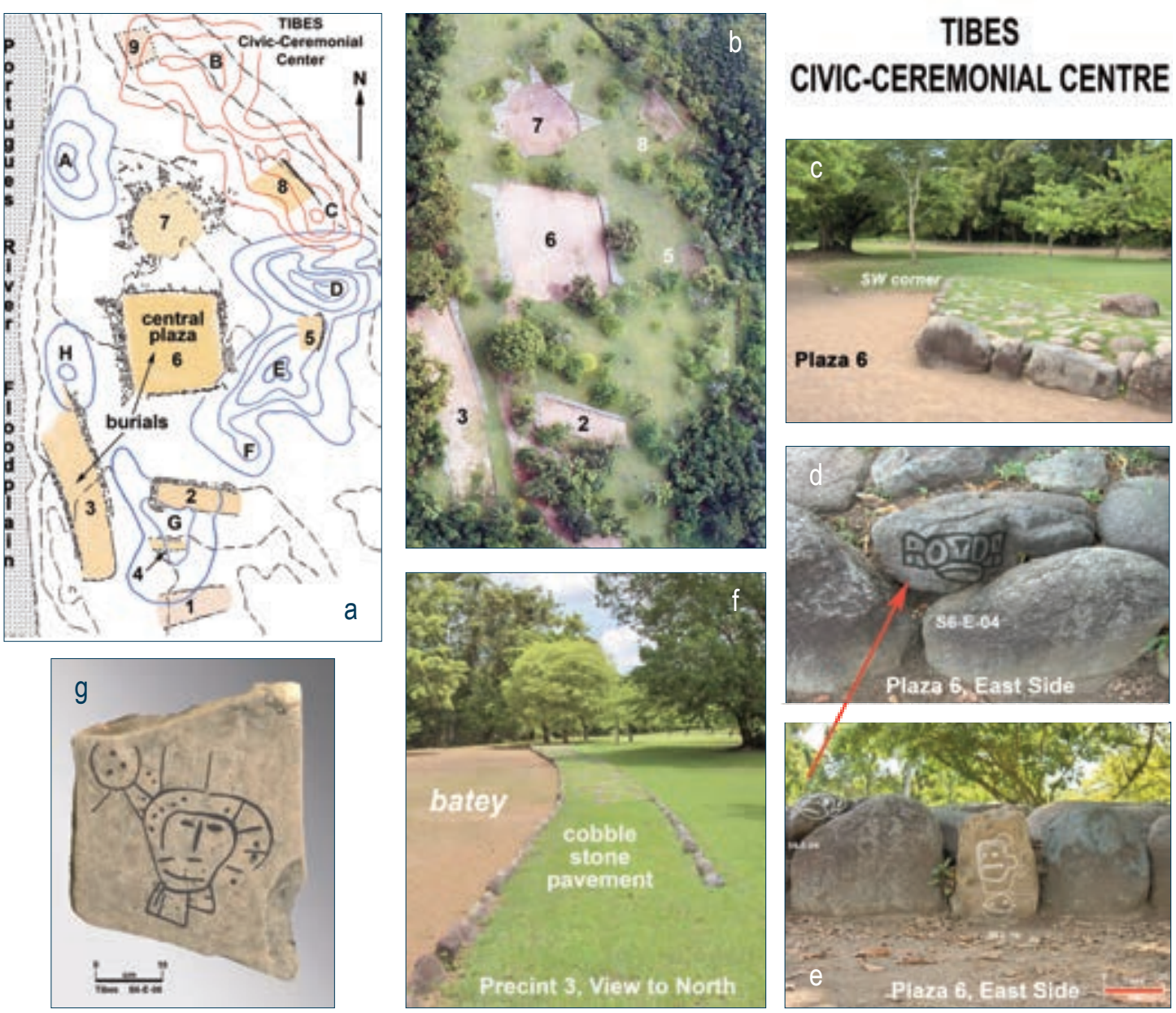


Fig. 5 – Tibes: a. Topographic map of Tibes showing plazas/ballcourts (1-9) (After Curet *et al.* 2006). Dashed line shows contours of 2 m. The blue and red contours show ceramic concentrations by weight at intervals of 100 g; b. Aerial view of Tibes after its reconstruction; c. View of the southwest corner of the central plaza (no. 6) with cobblestone pavement; d-e. Petroglyphs on the monoliths of the east side of the central plaza no. 6; f. View to the north and east side of ballcourt no. 3; g. A sandstone slab fragment with petroglyphs located on cobblestone pavement adjacent east row of the central plaza no. 6 (Photos: J. Oliver).

midden deposits resulted from cumulative, repeated feasting rather than from everyday domestic activities (on this topic, see DeBoer & Blitz 1991).

The 'star-shaped' circular precinct (750 m^2) is certainly not a ballcourt but its function is unknown. All these precincts surround a central quadrangular plaza (1480 m^2) capable of holding a large crowd. The total occupation area of the site is 40,468 m^2, of which 11.2% (4540,4 m^2) was devoted to civic-ceremonial space (Torres *et al.* 2014: Table 1). If it were a vacant centre, then the whole site would have been ceremonial. If so, it may explain why the percentage of public space is half of that calculated for Las Flores (22%).

The individual rocks used are of relatively small dimensions (as was the case at Las Flores); most are not carefully worked but rather selected from the Portugués River for their appropriate shape (**Fig. 5**). There are, of course, exceptions (**Fig. 5g**), specifically the sandstone rocks coming from further away (Torres *et al.* 2014). The stones vary in size, but most are rough-cut boulders averaging 30 x 33 cm with the larger ones being about 80 cm tall and 15 cm wide. They are set on the long edge or on the narrow end, forming a linear row of monoliths demarcating the court floor of the precinct. To the exterior and adjacent to the erect monoliths, there is a pavement (*calzada*), about 1-2 m wide, its surface capped with smooth cobblestones. The latter are present in most precincts on one, two or three sides, while circular plaza no. 7 is framed by triangular areas filled with cobblestones. In the central plaza's east *calzada*, amidst the cobbles, there are three fragmented rock slabs that were once located elsewhere to delimit the court or plaza area. Unless their location is the result of later restoration, these three slabs probably decorated an earlier precinct, perhaps (speculatively) affected by the flood. If so, these monoliths were recycled as 'pavement material' and, whatever the potency or pre-eminence the icon once held, it seems to have been lost and it is no longer on display.

A total of 17 monoliths with petroglyphs are known for Tibes. Of these, ten were concentrated in the central plaza no. 6 (**Fig. 5d, e, g**), one in the star-shaped precinct no. 7, two in the long rectangular *batey* no. 3 and two in *batey* no. 2. In addition, three monoliths with unknown provenance within the site are housed in the Tibes Museum (Ambrosino *et al.* 2016). Their concentation in the central plaza is a pattern that became canonical in the following Period IV. The petroglyphs are carved in either sandstone (n=11) or igneous (n=6) boulders, accessible from the Portugués riverbed within a radius of *ca.* 5 km. The 17 monoliths are decorated with 29 individual motifs. The iconography is relatively simple, characterized by anthropomorphic (n=22), zoomorphic (n=3), biomorphic (n=1), 'abstract' (n=1) and two undetermined (Ambrosino *et al.* 2016: Tables 1-3) figures. Most display relatively simple faces (**Fig. 5e**) and lack full bodies. Perhaps the most interesting is petroglyph SE-6-08, a human face displaying the outlines of an elaborate headdress (**Fig. 5g**), an element that signals the high rank and/or status of the personage, anticipating the more elaborate (and full-bodied) figures found later in sites like Jácana and Caguana. To modern eyes, the location, distribution and orientation of the icons seems haphazard. In the central plaza, two petroglyphs are on the northernmost segment of the west wall. On the east side, two petroglyphs are located on the north-central third of the row (**Fig. 5d, e**), and two others are on the south end. Between these, there are no petroglyphs. Finally, three (**Fig. 5g**) more lay flat on the adjacent western *calzada* (pavement). In short, we do not know the reason for this apparently random placement of the iconography.

While the individual rocks are relatively small by conventional megalith standards (if such a standard exists), the overall visual effect throughout Tibes imparts a sense of 'megalithicality'. The total rock weight transported into the central plaza no. 6 and ballcourt no. 3 was 97,371 kg and 41,425 kg respectively; the estimated total for the site is about 228,000 kg of boulders brought from the Portugués River and surrounding area (Torres *et al.* 2014). These figures, however, do not translate into high costs of construction. In a study of the labour costs (persons-days) involved in transporting rocks and completing construction of the plazas/*bateyes*, it was estimated that it could done in 93 days by five people, or 47 days by 10 people, which suggests that '*batey* construction at Tibes did not necessitate long term shifts in the every-day functioning of local social groups that built them' (Torres *et al.* 2014: 139). But it was still a large-scale project (even if not

costly) that resulted in a monumental site (in both senses defined above), where stonework features prominently. Besides its monumentality, the power of 'calling to mind' adds one further element: the fixation in space of potent beings in the form of petroglyphs, both within the settlement and, more specifically, within the central plaza. As will be seen in the following section, in the next couple of centuries these petroglyph-icons would evolve into socially ranked beings (albeit non-human) essential to the well-being of the community and intimately engaged with the ability of the elite to successfully lead, to execute policies and, thus, to govern wisely.

At Tibes there is also a clear change of burial practices. Two clusters of human burials were found under the central plaza and below what would become a ballcourt. Of the 50 individuals, 45 were buried during Periods IIa-IIb (**Fig. 4**: Saladoid series). During early Santa Elena (Period IIIa) the custom of interment in burial grounds was almost, if not entirely, abandoned (Pestle 2017; Curet, personal communication, 2020). The former unmarked central plaza/burial ground was discontinued in favour of burying individuals elsewhere. In the case of Tibes, after AD 800/900 the deceased were apparently not buried within the site's domestic and public spaces. As argued for Las Flores, the public gatherings and ceremonies in the plazas were no longer directly linked to the underground community of human remains of ancestors. The connection with the deceased in the plazas was achived through ceremonial chants and 'spiritual' presences, some embodied in the monoliths.

After the demise of Tibes, probably just before AD 1300, many more sites with one or more stone-demarcated plaza/ballcourts precincts emerged in Eastern Hispaniola, Saona, Mona and Puerto Rico, Vieques, St. Croix and Tortola (**Fig. 2**). Of these, Caguana, in Puerto Rico stands out not just because of its 11 stone-demarcated precincts but for its rich and elaborate iconographic display.

4. The civic-ceremonial centre of Caguana (Period IV, AD 1210-1420)

Period IV, when Caguana was active, is characterized by Capá style ceramics and artefacts and relates to the immediate ancestors of the indigenous groups that Europeans encountered in 1492 in the Greater Antilles, later to be homogenised under the term 'Taíno culture'. But the latter is a product of the classic normative, cultural history, first coined by Samuel Raffinesque in 1836 and then by linguist Daniel Brinton in 1871 (Oliver 2009: 6). It is an anthropological construct (Rouse 1939 [1992]; Lovén 2035 [2010]) that has homogenized and blurred what, in effect, are diverse societies and cultures. In fact, the Spanish never used Taíno to designate an ethnic or linguistic group of the Caribbean nor is it registered as an ethnonym for self-designation (Oliver 2009: 6-30; Curet 2014). Although it is valid to use Taíno to designate an Arawak family language, it is worth keeping in mind that in Hispaniola alone, two Taíno dialects co-existed with two other non-Taíno languages, *Cigüayo* and *Macorix*, along with bilingualism, making a 1:1 correlation between ethnolinguistic groups and specific material cultures/styles (e.g., Boca Chica, Carrier, Meillac etc.) complex, to say the least. In the 16th century, Spanish chroniclers referred to the natives simply as *indios* (Indians) often accompanied by an adjective. Thus, one finds *indios* of the *West* Indies, of a 'province' (e.g., *indios* of Maguana) or an island (*indios* of Mona), or of a group 'belonging' to a *cacique* (e.g., *indios* de Guarionex). But 'Taíno' has proved impossible to eradicate, even among specialists. To alert the reader of its problematic nature, when used here, 'Taíno' is set in quotes.

4.1 Caguana: research background

Within less than a century after Tibes was abandoned, Caguana arose as a preeminent civic-ceremonial centre in Puerto Rico (**Fig. 6**). Although only one radiocarbon date is available (Y-1244, 680±80 BP; cal AD 1210-1315, 2σ), the techno-stylistic characteristics of the artefacts and the iconography of the petroglyphs leave little doubt that they belong to the Capá style (Period IV) of the Chican Ostionoid series (Alegría 1983: 66-88). The absence of European artefacts suggests that it did not survive much longer than this, if at all, into the early colonial period. There is a presence of late (Period IIIb) Ostiones pottery but, on the whole, this does not reflect an intense occupation associated

with plaza construction/use (Alegría 1983; Oliver 1998: 6-27; Rouse 1941: 474-478). The preponderant presence of Capá style artefacts, some in association with the central plaza and the large ballcourt, places Caguana's structures squarely within Period IV (AD 1210-1420/1500). The overall plan of the site (**Fig. 6**) reflects its final period of existence. The arrangement of the precincts around the central plaza at Tibes served as a blueprint for Caguana (compare **Figs. 5** and **6**). Since 1965, Caguana has been a national archaeological park and a source of identity and indigenous heritage for all Puerto Ricans including Taíno revival groups (Oliver 2012, 2021).

The site was first systematically investigated in 1914-15 by J. Alden Mason (1885-1967), an outstanding archaeologist of the 20th century (Schwartz 2017). His research formed part of the anthropological section of the *Scientific Survey of Porto Rico and the Virgin Islands* led by Franz Boas who visited the site with Mason and Robert T. Aitken in 1914. Caguana was then then known as Capá (*Cordia alliodora*) on account of the presence of this tree species, which provided shade for the coffee plantation at the site. For its time, the archaeological research conducted was of a high standard. Aitken produced a site-wide map that became instrumental in the restoration of the site in 1964-65 (**Fig. 6**: right). Mason's results, published in 1941, included an appendix containing ceramic analysis performed by Irving Rouse (in Mason 1941: 273-301), who also excavated several test pits in 1938 (Rouse 1952: 474-478). Alegría (1983), in 1949 and again in 1964 conducted additional excavations (Oliver 2012: 11-17). In 1965, Chanlatte Baik (Baik 1965; Oliver 2012: 18-21) dug nine 1 x 1 m test pits. The most recent excavations by Rivera Fontán (1992) included systematic auger testing throughout the site and four 1 x 1 m test pits. Oliver has published a detailed reappraisal of all previous investigations (1998) and other topics relating to Caguana (Oliver: see references cited). Between 1995 and 2003, Oliver and Rivera Fontán conducted excavations at farmstead sites and caves in the Karst zone around Caguana (e.g., Oliver *et al.* 1999). The following synthesis is based on the these investigations.

4.2 The stone-demarcated precincts

Caguana (18°17'41.03"N - 66°46'51.52"W) is situated on a terrace above and east of the narrow floodplain of the Tanamá River. The 11 stone demarcated enclosures cover 5285 m² or 21.8% of the area of the site (24,325 m²). A ground

Fig. 6 – Caguana: a. Topographic map locating the ceremonial precincts of Caguana after restoration; b. Core area of Caguana based on the 1914-15 map, before restoration (For a complete map see Mason 1941: Fig. 2).

penetrating radar survey (Oliver 2012: 22) detected a buried rectangular *batey*, south of the central plaza, Precinct A (**Fig. 6**), adding to the total area devoted to ceremonial activities. There is evidence that the site may have been larger. Several uprooted monoliths from former plazas/*bateyes* were found 280 and 300 m west of central plaza across the Tanamá River (sites ANG-4a, ANG-4b) and another was found 230 m south, across a small stream bordering Caguana (Chanlatte Baik 1965; Oliver *et al.* 1999).

Caguana has a quadrangular central plaza A (48.7 x 35.5 m) delineated to the west by a row of igneous monoliths displaying 22 petroglyphs and to the east by a row of large limestone slabs and boulders that, in 1915, contained a similar number of petroglyphs (**Figs. 7A, B** and **8**). In 1949, Alegría (1983) reported that most of the limestone slabs (east row) had been removed or reused by the local farmers as steps for their pile-dwellings. Restoration in 1964 replaced them with similar modern (smaller) limestone blocks. Only three petroglyphs survived: one is still *in situ* (**Fig. 7b**), another is lost (**Fig. 7a**) and a third, looted and mutilated by a collector, Mr. Junghan, is exhibited in the museum (**Fig. 7B**).

The northern and southern borders of plaza A consist of a cobblestone pavement of about 1 m in width (**Fig. 8c, f, g**). Adjacent to plaza A, on the NW corner, is plaza C (180 m^2), consisting of a semicircle of low (30-45 cm tall) limestone monoliths that join those from the central plaza (**Fig. 8d, f**). In the NE corner of plaza C, a limestone monolith bears a petroglyph of an anthropomorphic face. Mason (1941) speculated that Area 'Z' may have been a *cacique*'s *bohío* (house). Excavations in Area D (**Figs. 6** and **8d**) revealed numerous postholes, in some of which the wooden post was preserved. These features continued into and under Plaza C (Oliver 1998: 19). Mason's (1941: 245-247) excavations showed that Area D had been burned down, with abundant ashes, charcoal and charred posts found *in situ*. The stones demarcating Plaza C cut through the charcoal and ash stratum and it is therefore a later addition adjacent to Plaza A. The postholes do not form a discernible pattern; they are a palimpsest that could only be solved by radiocarbon dating, not available in 1915. In sum, there were several structures in this 8 x 30 m area E-C (**Fig. 6**).

Area Z, located between the south edge of ballcourt B and the central plaza A, yielded wooden posts forming a *bohío* or circular house (23 m in diameter). The artefacts within this structure were all Capá style (Period IV). The lower part of the deposits contained abundant ash and charcoal lenses, and posts showed signs of fire, perhaps related to the conflagration in the nearby Areas E-C. Alegría (1983) re-excavated between Plaza C and Area Z and retrieved a post (*Coccoloba rugosa*) from which the only (conventional) date was obtained (Y-1244: cal AD 1210-1315, 2σ). It seems that the burning in Areas C, E and Z may may have been undertaken in order to make room for the expansion of plaza A to the west and north (Oliver 1998: 17). If so, the date marks a time just before the expansion of the central plaza and the addition of the circular plaza (**Fig. 8f, g**). It can be surmised that a central plaza already existed prior to this date. A gently curving arc of five postholes 11 m north of the northern stone pavement of plaza A (Alegría 1983: 28), together with another group of three postholes between the east row of Plaza A and the rectangular plazas L and M was also recorded (Rivera Fontán 1992: 20-28).

While excavations were too limited to delineate floor plans or the number of structures (*bohíos* and/or sheds), it can nonetheless be said that several structures existed in close proximity to the central plaza. This is comparable to the site of Yagüez dated to cal AD 1206-1390 (**Fig. 2**). Yagüez has a single precinct comprising a central plaza (39 x 33 m) framed by monoliths engraved with petroglyphs. Three oval-to-round houses were uncovered near the southern border of the plaza, with an elongated structure (a shed?) situated immediately behind the western edge of the plaza (Rivera Fontán 2005: 191-98, 136). Structures adjacent to the perimeter of central plazas were also reported for Hispaniola in the 16th century. Las Casas (1876: 507), for example, noted that the Indians 'had a plaza commonly [situated] in front of the doorway of the house of the *señor* [lord, *cacique*].' He further notes that the plazas were 'fenced by some *lomillos* of a palm or two [23-50 cm] in height'. But since this description is from Hispaniola, the word *lomillos* ('little humps') probably referred to small earth embankments but it cannot be discounted that may also apply to small monoliths.

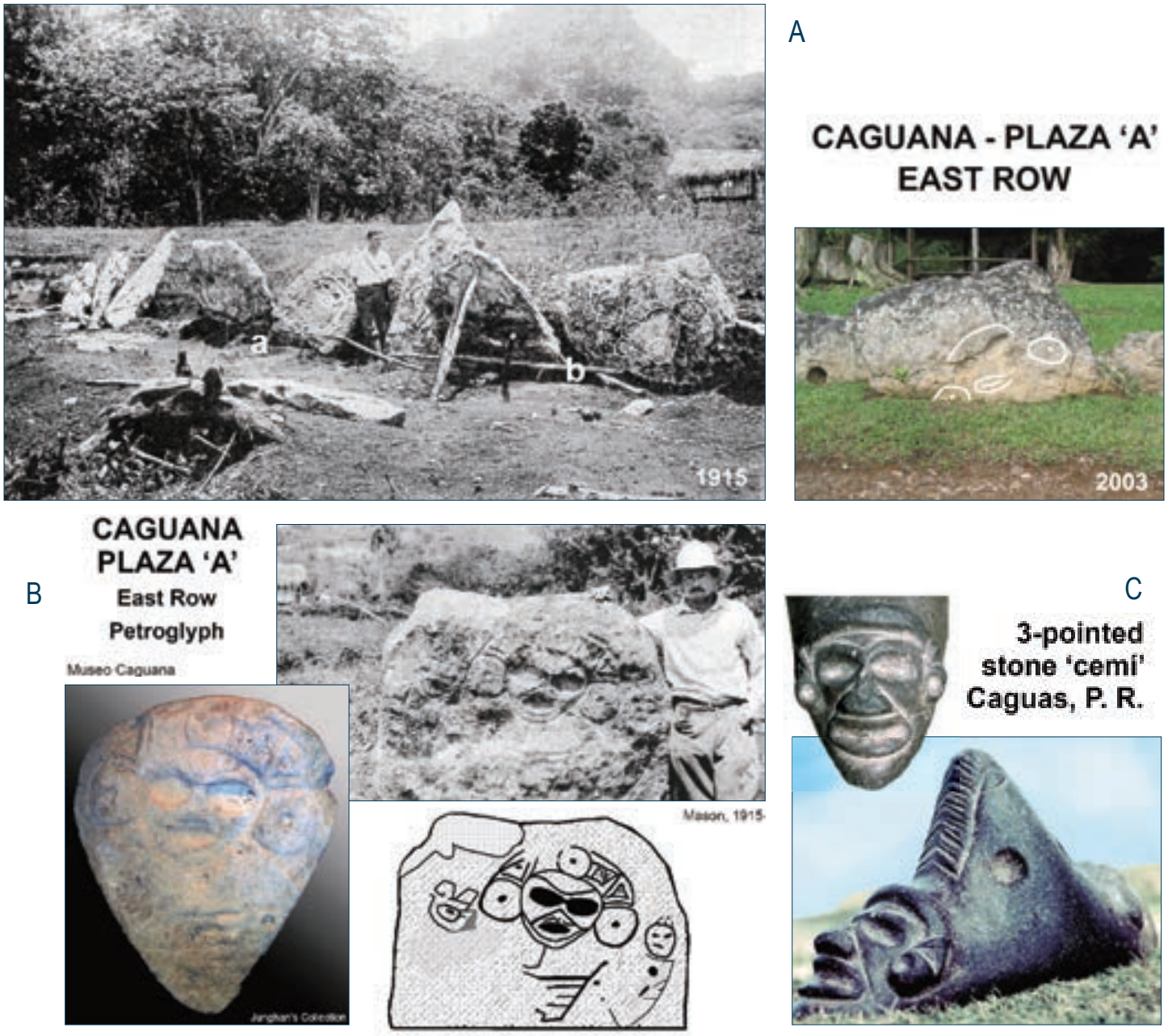


Fig. 7 – Caguana: A. The large limestone slabs of the east row of Plaza A (now largely destroyed) shows two petroglyphs (a-b) of which only one (b) remains *in situ* today. A slab with petroglyphs (B) and Mason by its side, was located on the eastern row. It was looted and mutilated and is now in the museum; C. A Period IV (Chican Ostionoid) three-pointed igneous stone *cemí* (24 x 11 cm) displays 3D facial features (top) that are reproduced in 2D on the anthropomorphic petroglyphs of Caguana.

Precinct B is, undoubtedly, the largest *batey* structure (**Fig. 8a, b**). It is a long, rectangular precinct, measuring 61 x 17 m (1073 m^2), framed on the east and west by large calcareous slabs, the largest measuring around 2.5 m tall, 3.0 m wide and about 20-50 cm thick. The slabs were quarried from the Karst formation to the north and east of the site. Transportation must have been difficult. The *mogotes* (conical limestone hills) are tightly clustered around small valleys (*dolines*) so that all paths leading to Caguana must circle around the hills. A cobblestone pavement defined the northern boundary and a line of small boulders (no longer *in situ*; **Fig. 6**) demarcated the southern edge. This *batey* entirely lacks petroglyphs. A second large, rectangular ball court, Plaza H (40 x 7 m), is today

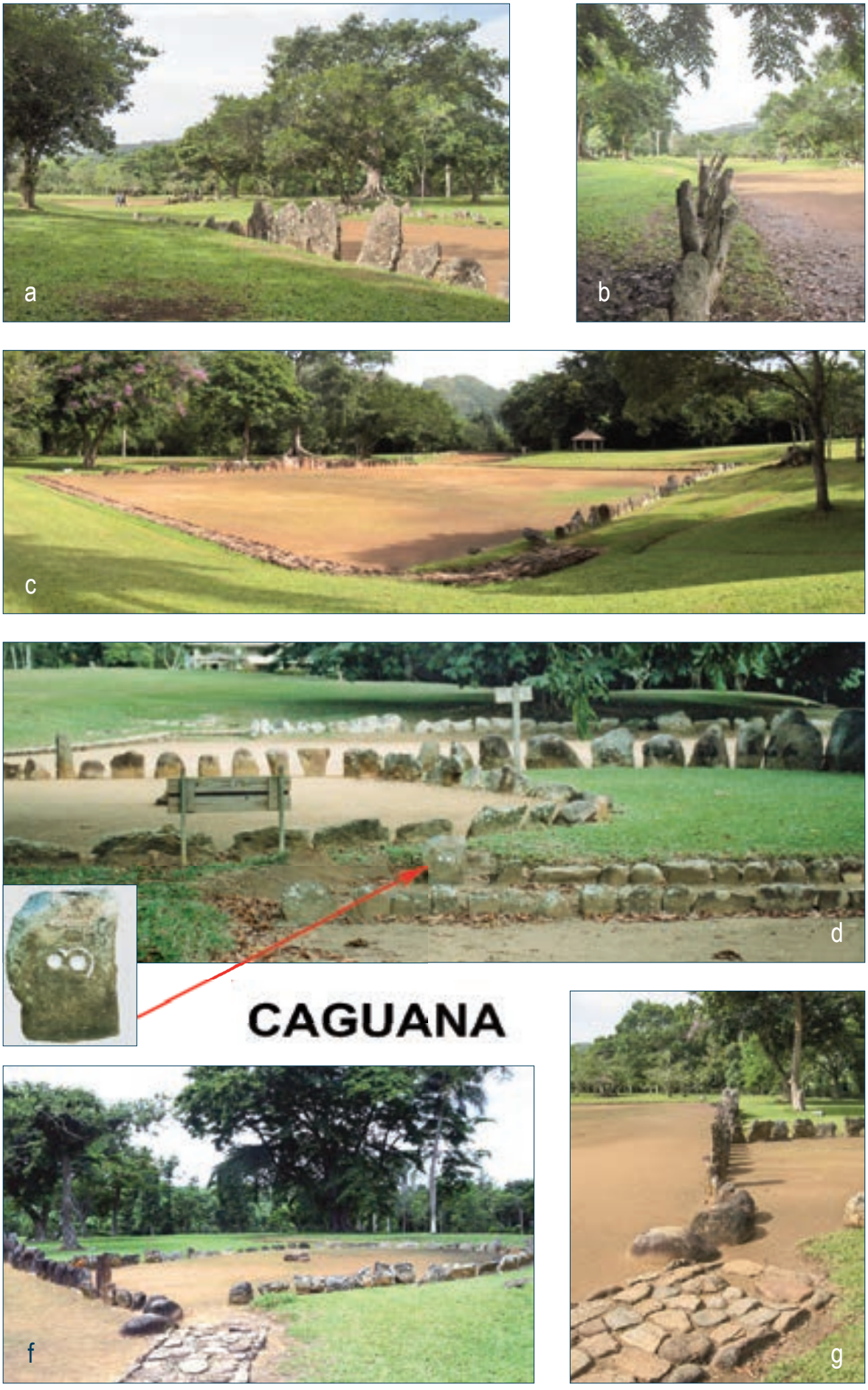


Fig. 8 – Caguana: a. View to the southeast of *batey* B; b. View to the south of *batey* B's large limestone slabs; c. View to the northeast of the west wall of central Plaza A and northern cobblestone pavement; d. View to the east, plaza D (foreground) with circular Plaza C (mid-ground) and Plaza A (background); e. Petroglyph from Plaza D (insert- red arrow); f. View to the southwest of circular Plaza C; g. View to the south with the juncture of central Plaza A and the circular Plaza C (Photos: J. Oliver).

shorter than it once was. Again, petroglyphs are absent. With the exception of structure G, the remaining rectangular precincts are smaller, ranging from 30-35 m in length and from 7-12 m in width. These may have functioned as *batey* courts (maybe two players a side?) but their size suggests that it is more likely that they fulfilled other functions.

Although most of the iconography is concentrated in the central plaza, some of the smaller precincts in Caguana, had one or two petroglyphs. The eastern precincts, K and M, have a single petroglyph, while precinct L has two. On the western side, precinct D also had one petroglyph (**Fig. 8d, e**). Finally, the circular plaza C also had one figure with a simple face. These are engraved on small monoliths not taller than 30-40 cm (**Fig. 8**).

Structure G was not a court, but rather a long feature whose original architecture is now lost (Alegría 1983: 74, 81), and which Mason did not excavate in full (Mason 1941: 250-251). Mason described it as a sort of stepped platform consisting of vertical slabs capped by horizontal slabs, framed by earth embankments, from where people could observe ceremonies. Finally, in 1964 Alegría uncovered a linear cobblestone pavement leading to the river from between Plazas I and H (**Fig. 6: O**).

I have speculated elsewhere (Oliver 1998) that the smaller rectangular precincts (**Fig. 6: K, L-N, I and J**) were courts assigned to groups that inhabited farmsteads dispersed throughout the vicinity of Caguana. The pre-colonial settlement pattern in this Karst region indicates a dispersion of individual farmsteads, each located on the 'saddle' between the Mogote hills overlooking a valley, that is, a doline or sedimented sinkhole (Oliver *et al.* 1999). Each of these Pre-Colombian farmsteads had one small stone-demarcated plaza with unique petroglyph iconography, such as at Finca de Nelo Vargas (Rivera Fontán & Oliver 2005). The lack of nucleated hamlets or villages in this region continues today, with domestic houses belonging to one family surname (e.g., Cintrón) dispersed between the hills. Clearly, topography imposes constraints on the nucleation of agrarian inhabitants into villages as much today as in the past. To celebrate festivities such as birthdays, weddings, funeral wakes and special holidays, the dispersed relatives congregate in the acknowledged patriarch's homestead. It is plausible, therefore, that the smaller precincts in Caguana were, likewise, spaces devoted for the different farmsteads groups who gathered for more intimate, family-specific feasts and ceremonial rituals. The central plaza, however, was used for congregations of *all* the members of the wider, regional society, most likely including guests from beyond the local area.

There is no archaeological evidence at Caguana to suggest it was a nucleated village, and just a few structures are indicated around the main plaza. In terms of occupancy, Caguana is more like one of the dispersed homesteads but, of course, with a much larger investment in civic and ceremonial spaces, well beyond the need of its residents. Like Tibes, it can be argued that Caguana was a *vacant* ceremonial centre, that its wood-and-thatch *bohío* structures were not homes that were in use year-round. However, I still favour the hypothesis that Caguana was a homestead, the residence of a *cacique* of importance and of his/her (consanguineal and affinal) relatives. From an archaeological perspective the wealth and prestige of the *cacique* primarily consisted of the personages (petroglyphs) displayed in Caguana's central plaza. He or she had the capacity to fruitfully engage with these personages, and to organize and fund major competitive events, such as ballgames and ritual battles, as well as variety of ceremonies, known as *areítos*, taking place at the site.

Ethnohistoric documents suggest that 16th century 'Taíno' society was stratified, albeit more pronounced in Hispaniola than elsewhere. At the top of the hierarchy is the *cacique* (literally the 'head of the house') followed by the *nitaíno* (literally 'good', 'noble') which refers to an elite group, possibly comprised of cadet lineages descended from an apical ancestor 'chief', its leaders functioning as advisors of a *cacique*. Finally, the *naboría* (literally 'the rest') comprised the commoner stratum. The *behique* (shaman) was an important status (role), with action focused on curing ailments and dealing with real or perceived supernatural threats. The *cacique*'s political power depended on his/her ability to effectively manipulate supernatural forces and to divine the future through the *cohoba* rituals (involving hallucinogen inhalation), aided by *nitaíno* advisors.

4.3 Competitive ceremonies: the *batey* game and ritual battles

The *batey* game has been well described by 16th century chroniclers for both Puerto Rico and Hispaniola. The game was played with a round, solid rubber ball made from the sap of the *tabonuco* tree (*Dacryodes excelsa*), which was probably wound with cotton string. The game is similar to the *tlatchli* (Nauatl: *ōllamaliztli*) of the Aztec, the *pokolpok* of the Yucatec Maya and to other ballgame variants throughout Mesoamerica, versions of which are still played today (Scarborough & Wilcox 1991). In the era when theories of hyper-diffusionism prevailed, it was argued that the Antillean rubber game with its formally built courts, was 'invented' in Mesoamerica from where it diffused widely across the Americas and was eventually adopted by the 'Taínos' (e.g., Eckholm 1961; Alegría 1983: 153). My view is that rubber ball games are not likely to have had a single origin and are old enough that it is difficult to track the diverse and numerous developmental pathways from one or more sources. The imposition of (relatively) permanent boundaries with earthworks and/or rock materials is not exclusive to ballgame courts, but was applied concurrently to plazas and a variety of other constructions. It was part of a wider phenomenon of increasing socio-political complexity and ideology where monumentality was expressed in varied ways. I argue that the Antillean rubber ball game was played long, long before any formal ballcourts were established. In due time, the game was appropriated by emergent political leaders from what in earlier times was a popular game, played by everyone, everywhere. It is akin to the neighbourhood football (soccer) games with bags or books for goal posts that, subsequently, the elite bodies (i.e., the 19th century Etonian Football Association) appropriated, controlling the game and its players, and building stadia, setting formal rules, (with betting alongside), and so on. Nonetheless, the neighbourhood games continued in parallel with those of, say, La Liga.

The *batey* game entailed two teams comprising 10, 20, or even more than 30 players a side, depending on the occasion and court size. People observed the game seated on 'stone seats' (*turén*) while the *cacique* and *nitaínos* sat on elaborately carved wood stools known as *duhos* (Fernández de Oviedo y Valdés 1881: 166). Ballgames involved men against men (most frequently), women against women, married against unmarried women and sometimes teams of mixed gender. For a win to be declared the ball had to travel beyond the reach of the opposing team (so that it could not be returned) or end up motionless on the ground. There are no rings through which the ball had to go in order to win a game, as in Mesoamerica. Men played naked, whereas women wore *naguas* (loincloths). There is no mention of protective gear, as is the case for Mesoamerican ballplayers. The ball was hit with the shoulder, head, elbow, knee and, most frequently, with the hip. Women's rules differed from those for men. They were allowed to use their knees and closed fists, whereas men were not. These games involved bets involving goods and commodities – winner takes all – similar to the betting of the Algonkian lacrosse game in North America (Scarborough & Wilcox 1991). Occasionally, the life of a human being was also put at stake. The winning team earned the right to execute or kill the 'prisoner' (even if in absentia), as two Spaniards, Pedro Juárez and Cristóbal de Sotomayor, found out (Fernández de Oviedo y Valdés 1881: 166-167, 472-474; Las Casas 1876: 507-508). In Caguana, courts B and H were most likely the arenas for ballgames, involving teams from the local area and very likely visitor teams from much further afield. While the *batey* game had an economic function (betting) and was a sport, it was also a ceremonial/religious event. Winning or losing was not merely due to sporting skills but was influenced by the favour (or lack of favour) of supernatural forces (*cemí*). Like all such competitive encounters, the everyday cumulative tensions of society, that could have developed into unchecked violence, were regulated through ceremonial action.

The sense of monumentality in Caguana partly rests on the political-economic and religious importance of these ballgames and arguably in the megaliths that frame the *batey* B, among the largest at the site. With its impressive court size and megalith boundaries, no doubt some games that took place here would be remembered for a long time. By contrast, the smaller, *vacant* ballcourts found between farmstead sites, such as at El Cordón del Río (Utu-53), were less grand as would befit

competitions between teams from neighbouring farmsteads.

Another possible competitive activity is the ceremonial battle. Although it is only described for the chiefdom of Xaragua (or Jaragua), in today's Haiti, it is possible that ceremonial battles took place all over the Caribbean, and not just among 'Taínos'. Such events were observed among the Island Carib indigenes in the Windward islands. For example, in preparation for a seafaring expedition, a *cayounage* (a generic word for feasting) took place, where a mock battle ensued between the defenders of the canoe from an attack by another group armed with bows, arrows and wooden round shields, as if they were 'real' enemies (Anonymous of Carpentras [1628-1620] in Moreau 1990: 213-214). But in Xaragua, the battle was part of two days of feasts ordered by a powerful *cacique*, Behecchio, to welcome and honour a guest chief, in this case Bartolomé Colón (Christopher's brother). Here, two squadrons armed with bows and arrows faced each other in the plaza of Xaragua (the village) as if they were the worst of enemies. The skirmish gradually escalated to the point that four warriors were killed and many more wounded. Moreover, this battle was celebrated with merriment and joy, amidst singing, by all onlookers (Las Casas 1876: 138-140). If, as seems likely, similar ceremonial battles took place in Caguana, these could be enacted in the main plaza A or perhaps the large ballcourts B and H. The latter would perhaps make more sense given that theywere spaces where competitive events were enacted, as is evident in the *batey* game.

It is salient that the ballcourts and smaller rectangular courts indicate that activities performed by *segments* of the larger society ascribed to Caguana, were competition rather than cooperation. The central plaza A, by contrast, was the arena where all *segments* of society came together as a cohesive, cooperative entity and, as shall be seen, under the leadership of the *cacique*.

4.4 Coming together in the central plaza: petroglyphs, *areítos* and people

Central plaza A displays monumental petroglyphs engraved on monoliths, some of which are megalithic is size. These petroglyphs represent potent personages that are megalithic in scale, being many times larger than their portable counterparts. The same types of personages occur in a variety of three-dimensional sculptured artefacts such as pendants, amulets, seats (*duhos*), ceremonial stone rings, and pestles, amongst others. One the most iconic of all 'Taíno' artefacts is the three-pointed stone sculpture (**Fig. 7C**), whose origin dates to the Archaic period (2000-500 BC; see Oliver 2009: 13; Rodríguez Ramos 2010: 68-69). By Period IIIB, and certainly in Period IV, the once pocket-sized objects (with personages vaguely depicted) were joined by much larger, still portable examples (*ca.* 20-30 cm at the base) that displayed detailed, elaborate facial and body features. They also acquired more specific identities. Comparison of the anthropomorphic icons of plaza A and a three-pointed stone from Caguas, Puerto Rico (**Fig. 7B, C**), demonstrates that the two icons refer to the same class of personage, both of high rank (large earspools, headdress) and seniority/age (ribs and vertebrae). In summary, the two-dimensional petroglyph icons on Caguana's monoliths are, by comparison, monumentalized and 'megalithicized' versions (homologues) of the personages seen in portable examples. To appreciate the significance of the monumental and megalithic scale petroglyphs, it is essential to first give a sense of 'who' these petroglyphs/personages are and their interactions with human actors and the ceremonies taking place in the central plaza.

Although most of the iconography in the eastern row of monoliths has been lost since 1915 (**Fig. 7**), it is very likely that it presented a similar ensemble of icons as the better-preserved western row. The latter has a total of 22 petroglyphs, numbered sequentially from south to north (**Fig. 9**).

Space prevents a detailed analysis of each petroglyph. Such analysis can be readily obtained from previous publications (Oliver 1998, 2005). Suffice it to say that the 22 personages, lined up along the western row, relate to a number of characters mentioned in 'Taíno' myths and legends collected in 1494 by Fray Ramón Pané (Pané 1999; Oliver 1998: 133-191). The placement of each icon/petroglyph along the row follows an order of world creation, moving from a domain of 'primordial' beings (**Fig. 9: 1-8**) at the southern end to the human domain at the very

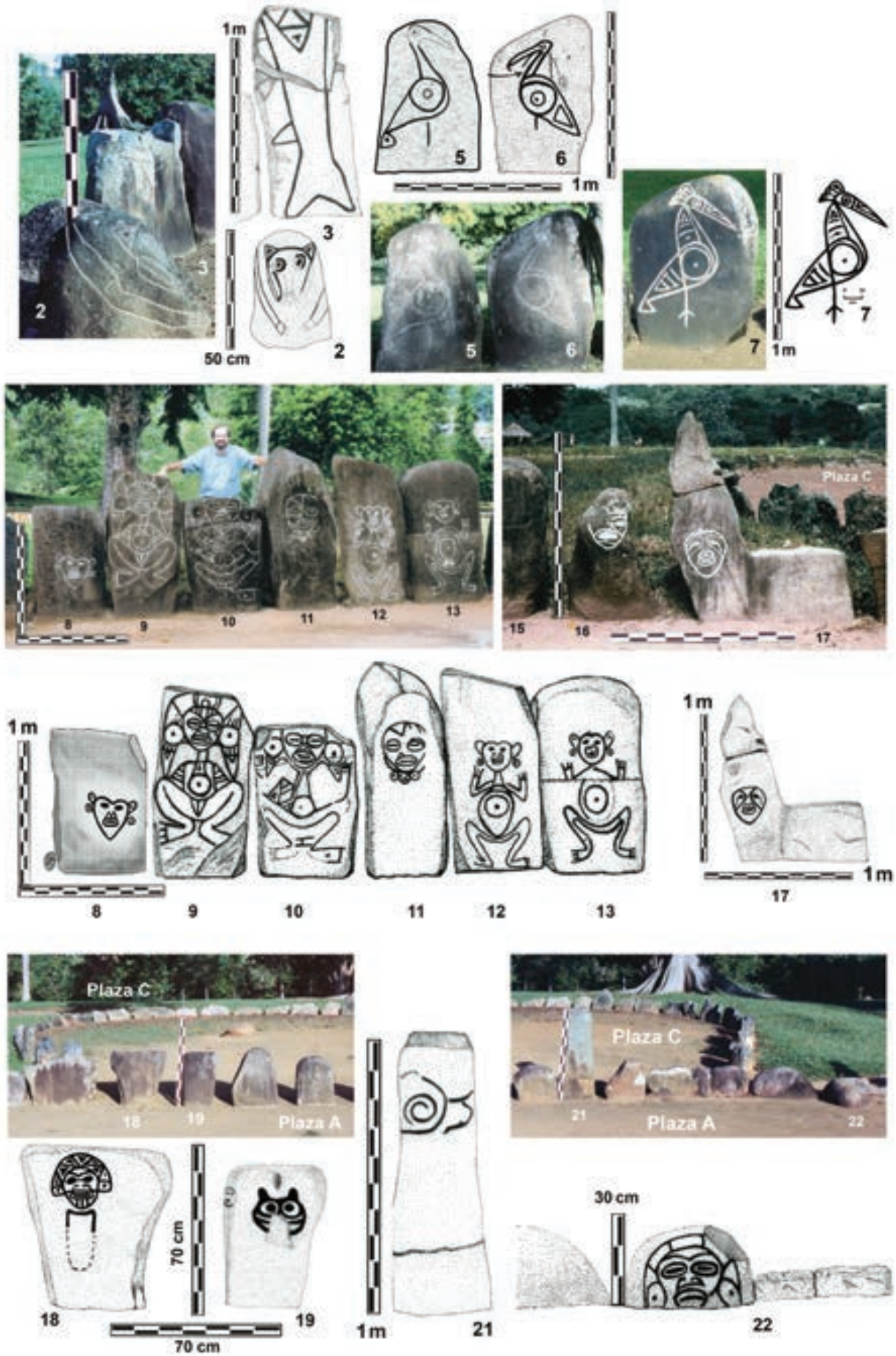


Fig. 9 – Caguana: Petroglyph iconography of the west row of Plaza A. Petroglyphs are numbered in sequence from the north end (no. 1) to the south end closest to the *batey* B (no. 22). All rocks are igneous. Petroglyphs nos. 1, 4, 14 and 15 are not included (see Oliver 1998 for the latter). Petroglyphs 9-13 are at the centre, with petroglyph 6 wearing a pectoral of a *guaíza* or face 'mask'. Only *caciques* (chiefs) were entitled to wear the *guaíza* which means both soul of the living and face or rostrum (Photos: J. Oliver).

centre, where social order is revealed (**Fig. 9: 9-13**). In the primordial domain the personages (petroglyphs) are either simple anthropomorphic bodyless faces or, predominantly, full-bodied zoomorphic beings, including a dog, a fish and three birds. In 'Taíno' mythology, the long-beaked bird personage is responsible for creating marriageable women and establishing incest taboo (**Fig. 9: 7**). Bird no. 7 at Caguana is most likely based on the Antillean Blue Heron (*Ardea herodias*) or the Royal Egret (*Luecophoyx thula*), which appears in versions of the same myth among several indigenous groups in Guiana (e.g., the Macusí 'Wooden Brides' myth analysed by Lévi-Strauss 1974: 221), whereas the Hispaniola myth is based on the Hispaniolan Woodpecker (*Melanerpes striatus*). The remaining northern third of the western row presents an iconographic sequence that moves into the domain of the spirits or souls of the non-living, the *opías* (the antonym of *waísa*), hence completing the return to the primordial domain. For example, petroglyph no. 19 depicts a *múcaro* or owl (*Otus nupides*), the character in 'Taíno' myth that flies at night into the living world to feast on guava fruits (*Psidium guajava*). Another example is the anthropomorphic petroglyph no. 22, the last monolith and closest to Area Z and *batey* B (**Fig. 9: 22**). This portrays an elaborate anthropomorphic head of another high-ranking personage emerging from the underground, giving the visual impression that part of his body is hiding below the ground. Although the 'Taíno' myths are only known from the chiefdom of Maguá in Hispaniola, specifically from *cacique* Guarionex's household, the sequence of iconographic personages and its thematic order in Caguana uncannily emulates that found in the oral accounts of Hispaniola. As might be expected from regional variations of similar myths, some (though not all) of the personages described in narrative are iconographically replaced in Caguana (e.g., Hispaniola's woodpecker vs Puerto Rico/ Guiana's heron) but as characters they still perform the same roles; the birds with their long beaks carved the female genitalia in the wooden brides, transforming these sylvan beings into the first (marriageable) women.

The focus of visual attention is, however, on five anthropomorphic figures situated at the centre of the row (**Fig. 9: 9-13**): a pair of high-ranking, elder personages (**Fig. 9: 9-10**), with elaborate headdresses, large earspools, with mask-like faces, slit eyes, skeletal thoraxes and fleshy (fertile) legs, befitting a fecund ancestral couple. The female explicitly displays her genitalia, whereas the male gender of her companion is inferred by the fact that he is seated on a *duho*, symbolized by the sideward 'H' motif. A second pair of full-bodied personages (**Fig. 9: 12-13**) may be 'descendants' of the pair of ancestors, given their fleshy body outlines and open eyes. The latter are also of lower rank, indicated by their small earspools and lack of headdress. Between these two pairs is a head (the body is eroded or was not engraved) with similar facial features to that of the pair of ancestors to his/her right. A necklace with a pendant depicting a face or mask rests on the chest. The mask/face in 'Taíno' language is called a *guaíza* (*waísa*), which translates as both 'soul of the living' and 'face' or rostrum. It seems that the face is the seat of the *waísa* vital force; it is where 'being alive' is best reflected. Spanish chroniclers have pointed out that the *guaíza* could only be worn by *caciques*. Thus, petroglyph no. 11 depicts a *cacique*, unsurprisingly situated at very centre of the western row. This chief articulates ancestors and descendants, the non-living and the living, the personages of the primordial and the social/human world. This central segment of the row encapsulates the *ideal* social and political order in the cosmos. As noted elsewhere (Oliver 2005), these icons are in a sense a 'manifesto' of the political power of the *cacique*, supported by powerful ancestors and a contingent of potent personages (petroglyphs/icons). These petroglyphs/personages are not mere inanimate representations of potent beings. The indigenes believe they *are* beings imbued with the vital force of *cemí* and capable of engaging in social relations with living humans in the here and now.

The indigenous concept of *çemí* (*semi*, *cemí*, *zeme*) is crucial. Although archaeologists treat it as an object (e.g., three-pointed *cemí*) it is, in fact a potency – a vital force with which human beings, non-human beings and other things can be imbued. The 'Taíno' term literally translates as 'sweet' or 'sweetness' and is extant among the Lokono (Arawak) speakers in Guiana. This potency would manifest itself to ordinary humans through 'nature' (trees, rocks, animals, etc.). Once this occurred, a *behique* (shaman) would be called to perform a *cohoba* ceremony, enabling him to engage in a

dialogue with the *cemí* tree or rock, when he reached a state of hallucinogenic trance (by inhaling powdered seeds of *Anadenathera peregrina*). Next, the *cemí* present in a tree, rock, shell, etc. would reveal its identity, its names or titles (the more titles the higher the rank), the specific powers it possessed, how he/she was to be sculptured, where the sculpture should be kept and by whom, how he/she should be treated (e.g., food offerings; Pané 1999; Oliver 2009). Thus, wood, stone and other materials could potentially become imbued with the potency and vitality of *cemí* or 'sweetness', although not all such *cemí* manifestations had to be objectified or sculptured into an artefact. Another key aspect of this animistic belief system was that once objectified, these (non-human) beings were treated socially and regarded as people. Pané (1999) registered the biography of 12 of these *cemí* imbued personages, making it quite clear that these beings, over their lifetime and relationships with human beings, acquired increasing reputation and prestige and, further, that they had something akin to free will and volition. The case can be made that these figures were not understood as representing or standing for someone/something else (i.e., they are *not* representational art) but are the actual persons. Chiefs could not own them, but rather they had to have the skills of negotiation and persuasion to keep them on their side, otherwise they would run away and abandon them (e.g., *cemí* Baraguabael's biography in Pané 1999: 30). The *caciques* were required to constantly consult and negotiate (also via the *cohoba* ceremony) with the *cemí*-imbued beings in order to divine future outcomes and determine whether policies would be successful and supported. Marriage alliances, planting and harvesting, fishing and trade expeditions, war and peace, were all decided after consultation with the *cemí*- empowered beings (for a detailed discussion see Oliver 2009).

The ensemble of petroglyphs of Caguana were most likely the result of such *cemí* manifestations, on the limestone rocks of the Karst zone and igneous boulders of the Tanamá River, through which they revealed to human beings their identities, powers and so on. The petroglyphs at Caguana are, therefore, such sentient *cemí*-empowered beings, albeit of monumental and megalithic scale when compared to portable microlithic icons. It is conceivable that these *cemí*-imbued icons, the petroglyphs, are not merely 'representations' of powerful beings but are who they claimed to be and who they told the shaman they were. This demands a different interpretation of the social dynamics between these sentient petroglyph-beings and the indigenes gathered in the central plaza, and of the contexts of the various civic feasts and ceremonial performances that took place in Caguana.

The 16th century documents provide good clues of the kinds of ceremonial performances took place in a plaza (see Oliver 1998: 94-100). All the feasts and ceremonies involving tightly choreographed dancing and chanting were called *areíto* in 'Taíno' language. Areíto performances involved different ensembles: men and women, men or women only, married or unmarried women, and so on. Las Casas (1876, Vol. 5: 507) was impressed by the rigorous synchronicity of movements of the dancers (a line of partners, with arms laced behind them, moving with sideward steps in a circular trajectory), who followed in the steps of the *téquina* or master of the *areíto*. Like the *responsorio* of Gregorian plain chant, the *téquina* would lead the chant and followers responded in monophonic chorus. The *areíto* was accompanied by the drumbeats of a *mayohabo*, made from a hollowed tree trunk, an instrument that only the elite children (of the *cacique* or *nitaíno*) learned to play. It seems that the chiefs presided over the *areíto* rather than joining the performers. *Areítos* were celebrated for varied reasons and occasions: to welcome foreign or allied dignitaries, to celebrate a war victory or a marriage, to cement a political alliance or to go to battle. Some of these feasts are described as being highly solemn. On the death of a *cacique*, for example the event could last two weeks and involved foreign chiefs as guests. Other feasts appear to be quite 'rowdy' (to the Spaniards' eyes), with copious amounts of fermented beverage and/or *cohoba* sniffing, consumed amidst song and dance. These *areítos* ended when everyone had become too drunk or overcome by *cohoba* after-effects. These various kinds of *areíto* are thus performances that rememorate, 'to call to mind', and they are hence momentous events in terms of the scale and significance of the performances.

The specific lyrics of an *areíto* performance are not known, but as Fernández de Oviedo y Valdés (in

Oliver 1998: 94) noted, '*…in this island [of Puerto Rico], as I was able to understand, only their songs, which they call* areítos, [function as] *their books or memorials, that is passed on from people to people, from fathers to sons, from those* [peoples] *present to those who will come.*' Is is easy to imagine that some of the *areíto* lyrics would stress the genealogical connections that the *cacique* had with his or her long line of predecessors (ancestral chiefs), commemorating the deeds that together they have achieved, all of which served to justify his/her authority and power. It is in this context that one can envision that *areíto* performers are joined by all the *cemí*-imbued, sentient personages embodied in the monoliths of Caguana. Among these, as noted, are the ancestral pair of male and female chiefs (petroglyphs **Fig. 9: 9-10**), a 'reigning' chief (**Fig. 9: 11**) and descendants (**Fig. 9: 12-13**). They mirror the society of the living performers in the worldly domain. Given that a similar contingent of personages was present on the eastern (limestone) and western (igneous) rows of the central plaza, it is tempting to propose that a dual or moiety organization was also mirrored in human society.

It can be further argued that the petroglyphs depicting ancestral beings (**Fig. 9: 9-10, 19, 22**) present a new way of linking the living with the deceased, following the demise of burying the deceased under the plaza. The 'megalithization' (petroglyphs) of these personages also implies that they are permanently fixed in the plaza. They no longer circulate with and between people; to socially engage them (during *areítos*) humans must come to the plaza.

5. Earth versus stone

It is now possible to better appreciate the sharp contrast between the mega earth-framed plazas of Cuba-Hispaniola and the stone-demarcated plazas of Eastern Hispaniola, Puerto Rico and the Virgin Islands with their concentration of petroglyphs at the edges of the plaza. Had Caguana required a plaza area the size of, for example, La Maguana or Chacuey, the petroglyphs (and monoliths) would have to be massively increased in size to obtain the same proportional visual scale from any vantage point within the plaza. Conversely, if monoliths of the size (*ca.* 100 cm tall) present in Caguana were used to demarcate a plaza the size of La Maguana in Hispaniola, the monoliths (and embodied personages) would be reduced to visual irrelevance for *areíto* performers from almost any vantage point within the plaza. To attain a sense of proximity to the personages (petroglyphs) in such large plazas would have obviously required further 'megalithization' proportional to the distance between the object and the viewer (and their relative heights). Each of the two areas with mega-structures presents a different mode for engaging with the petroglyph/personages. In Cuba and Hispaniola, increased plaza areas capable of very large gatherings was the universal choice and the engagements with fixed *cemí*-imbued icons/personages took place to a very large extent outside the plaza. The indigenes elected not to import mega-monoliths of an appropriate scale given the huge plaza areas; earth mega-embankments sufficed. The engagement with *cemí* icons (petroglyphs) still occurred but outside the plaza, so we can infer that physical proximity was not essential to the *areíto* and other ceremonies performed in the plazas. In some instances, such as at Chacuey, the plaza would have a path with embankments leading to a nearby river or creek where boulders contained a contingent of petroglyphs, and might have one small, engraved monolith at the centre. For most plaza sites, petroglyphs or pictographs were located in the surrounding landscape (caves, field rocks, river rapids, etc.) but with no discernible pathways from and to the ceremonial plaza. By contrast, for SE Dominican Republic, Puerto Rico and the Virgin Islands, the effectiveness of the *areíto* ceremonies rested on (or required) the physical proximity and interaction between the indigenes and the *cemí* personages. The choice of stone rather than earth banks seems obvious: the iconography could not be firmly engraved on dirt as it could on stone.

The iconographic sequence, style of the figure and hence, symbolism, displayed in Caguana is exclusive to this site. Contemporary Period IV large ceremonial centres, such as Machuca, Yagüez and Viví Arriba, as well as small single plaza sites such as Finca de Nelo Vargas (close to Caguana), display different personages (petroglyphs) and sequences. Each *cacique*, whether head of a hamlet or the leader of a polity, had its particular contingent and ordering of *cemí*-petroglyphs. There is no official,

centralized 'pantheon' of *cemí*-personages to be found across Eastern Hispaniola, Puerto Rico and Virgin Islands. There are, of course, *individual* petroglyph figures that are found on more than one site. For example, at Jácana in Ponce (Loubser *et al.* 2014: Fig. 9, 16), there is a pair of petroglyphs very similar (not quite identical) to Caguana's personages nos. 9 and 10. At Jácana, they are separated from each other along the monolith row and accompanied by different petroglyph figures. Anthropomorphic petroglyphs similar to nos. 9 and 10 at Caguana are also present (black pictographs) in some cave sites with pictographs, such as Los Tamarindos or Cueva del Lucero (Juana Díaz, Puerto Rico), but again, they show a different arrangement within the panel and are joined by a different contingent of figures. Thus, there is an element of localism and individualism in the style and combination of petroglyphs the Pre-Colombian plazas of Puerto Rico.

6. The death, burial and rebirth of a Pre-Colombian plaza: Bateyes de Viví Arriba (1225-1445 AD)

This last section of the chapter focuses on the death of a plaza, the symbolic entombment of monoliths and rebirth. Excavations from 2004 to 2006 at Bateyes de Viví (18°13'19.15"N - 66°40'32. 37"W) (**Fig. 2**), yielded the only known evidence in the Caribbean of a ritual entombment of monoliths from a plaza, following a catastrophic flood. The following discussion is based on Oliver & Rivera Fontán's (2007) investigations. The site is located on a terrace at the tip of a meander of the Viví River in the central highlands of Utuado, Puerto Rico (15 km SE of Caguana). It was occupied during Period IV, its ceramic assemblages being associated with Capá style artefacts (**Fig. 4**). Five AMS dates place the occupation between cal AD 1225 and AD 1445 at 2σ. The stone enclosures include a central plaza (precinct A), four circular structures demarcated by medium-to-small boulders and a 17 m linear cobble-stone pavement near the apex of the meander, and a rectangular *batey* (17 x 38 m) to the southern end of the terrace. The *batey* has two rows of monoliths. Near the south end of the western row there is a large natural boulder engraved with many simple petroglyphs (eye-mount dots within a circle). Another boulder at opposite (north) end, again with very simple petroglyphs, forms part of the *batey* row. A further tall monolith with an unusual, very fine line engraved (geometric design) was found toppled amidst the circular enclosures (**Fig. 10**).

At least four monoliths, (up to 100-120 cm tall) with elaborate petroglyphs had been extracted from the central plaza by local farmers, and now adorn their home gardens. Only one of these displayed a bodiless anthropomorphic head with an elaborate headdress and large earspools in a style reminiscent of Caguana's high-ranked personages. Otherwise, relatively simple face designs dominated in the central plaza.

The habitation (domestic) locus was situated on the northwestern quadrant of the meander. Unfortunately, this area has been impacted by agriculture, floods and, most damaging, by bulldozing of the terrain. The resulting overburden mound contained large numbers of artefacts and midden debris (charcoal, animal bones). All artefacts from the overburden and archaeological excavations belong to the Capá style, Period IV (*ca.* AD 1200-1500). This habitation area covers around 7.5 km^2, which suggests a small, hamlet-sized settlement with a disproportionately large area devoted to ceremonial space (*ca.* 32.3 km^2 or 77% of the total area). As at Caguana, it would seem that the ceremonial courts of Bateyes de Viví served a larger population than the local residents. However, the lack of systematic surveys around Viví prevents an understanding of the characteristics of the surrounding settlement pattern vis-à-vis this ceremonial centre.

The main plaza A is situated between the *batey* and the circular plazas. It has a trapezoidal rather the quadrangular (widening to the north) form, with an eastern and a western row (40-42 m long) of medium-to-tall (*ca.* 1-1.2 m) igneous monoliths. The northern and southern edges were demarcated by a line of short, elongated monoliths set on edge (*ca.* 15-30 cm tall and 20-60 cm long). The monoliths are all granodiorite extracted from the surrounding hills. The plaza covers a maximum area of 1,428 m^2, which is somewhat smaller than that of Caguana (1761 m^2). The monoliths on the eastern side are partly supported by a low, longitudinal earth embankment on the exterior. At the base of some of the monoliths, small boulders or cobbles were placed to anchor them in place. During fieldwork,

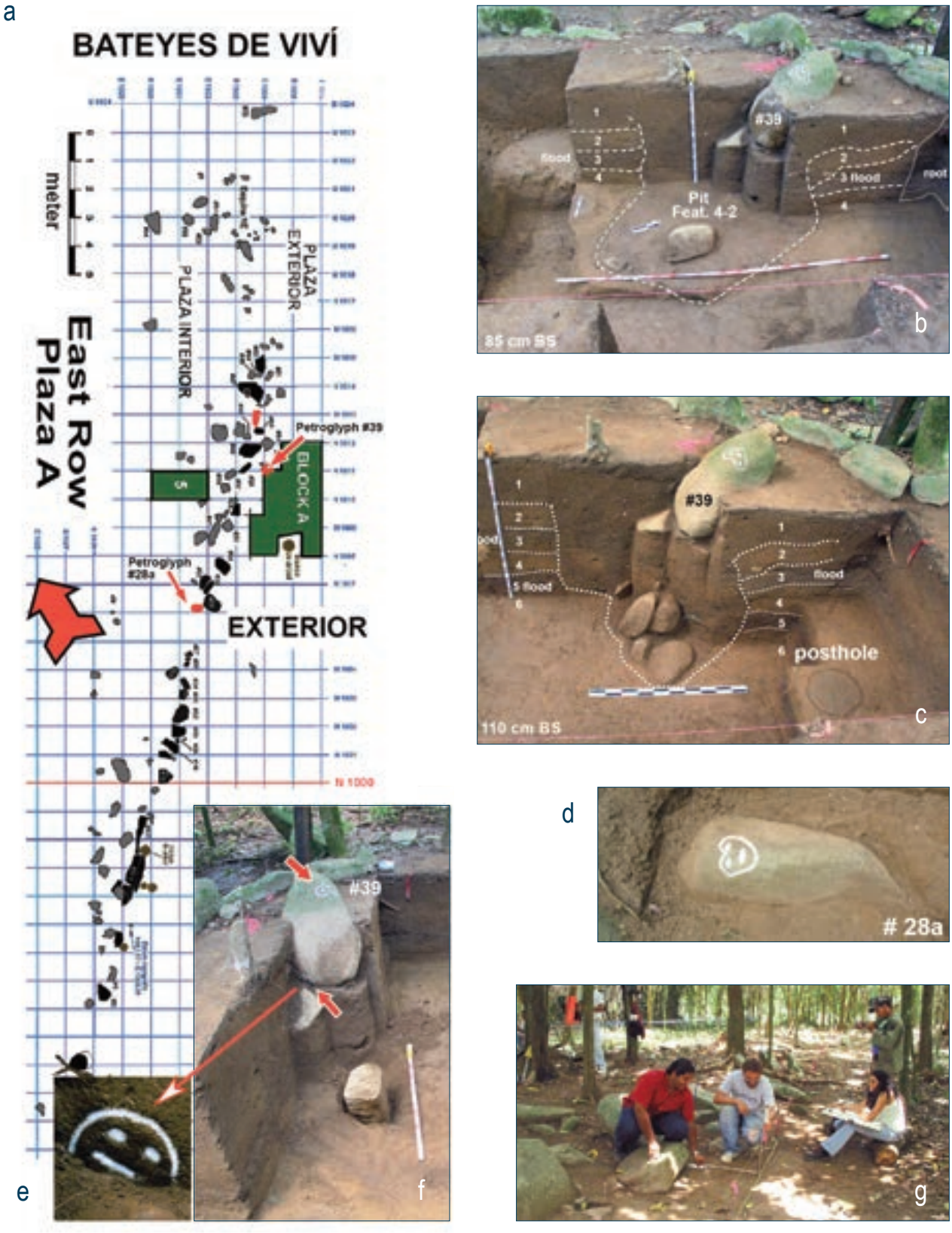


Fig. 10 – Vivì: a. Planview of the east row of monoliths of Plaza A showing Test Unit 5 and Block A excavation. Red arrows point to petroglyph no. 39 (seen in b, c, f, e) and no. 28a (seen in d); b. View to the west of Block A showing Feature 4-2, the burial pit and sediment fill that contained entombed batey monoliths at 85 cm; and (c) at 110 cm below surface. Layers 3 and 5 are linked to flood events; d. Buried monolith #28a (bottom red arrow in map; e-f. Monolith #39 sealing the pit with petroglyphs above and below ground; g. The crew mapping the western row of monoliths in Plaza A, view to the north (Photos: J. Oliver).

an anomaly was noted in the eastern row of the main plaza. The tip of a monolith with a petroglyph (**Fig 10**: rock no. 39) depicting a heart-shaped face was found adjacent to and to the exterior of the row and plaza area. The petroglyph itself faced eastwards and away from the plaza (**Fig. 10a**: top red arrow). It was clearly not part of the line of monoliths used to demarcate the plaza, where petroglyphs (**Fig. 10d**) always face towards the interior of the plaza. Excavations of Block Area A revealed a pit (**Fig. 10**: Feature 4-2) that cut across several layers of the embankment deposit. Boulder no. 39 was set on top of this feature (**Fig. 10f**). On its base was another petroglyph of a simple face looking down into the (filled) pit feature, as though this petroglyph personage were directly guarding or protecting the entombed *batey* stones. At least six *batey* monoliths were found within the pit . None bore petroglyphs. The largest stone was found resting at an angle (**Fig. 10b**) while another group of four were leaning against each other in a group (**Fig. 10c**) directly below stone no. 39. The placement of stone no. 39 as a seal or cap for the entombed *batey* stones explains its anomalous position outside the line of monoliths demarcating the plaza. The excavation did not extend to the bottom of the pit in order to preserve its integrity for future archaeology but, using a metal poker, it was possible to ascertain that more monoliths lay beneath those visible in **Fig. 10c**.

The interred monoliths were all granodiorite but differed from those found above ground in plaza A (and *batey* B as well). Most presented a weathering pattern with fissures and spalls typical of the natural boulders and blocks strewn about the surrounding hills and or rolled into the flat terrace close to the precincts. Instead, all the entombed monoliths had a smooth, shiny surface, a patina that results from river rolling and weathering. These stones were extracted from the bed of the Viví River. This was confirmed by comparing the rocks in the river with those of the surrounding hills. However, the source of rock material for the existing (on surface) precincts comprised a mixture of both kinds of rock, with a higher prevalence of river-worn rocks on the western row (**Fig. 10g**). Three AMS charcoal assays from the fill of the pit (Feature 4-2) date it between cal AD 1285 and AD 1445 at 2σ (GrN-30055, 30056 and 30057). The entombed monoliths must therefore belong to a plaza/*batey* structure that was operational before these dates, but perhaps not by much. Why did this ritual entombment occurr? Was it the result of an established ceremonial cycle of death and renewal of the plaza? The layers of sediment deposits provided a likely answer.

In the excavation's west wall profile (see **Fig. 10c, d**), Layer 1 consists of accumulated refuse materials contemporary with the current Plaza A. This rests on Layer 2 that consists of lighter sediments (overburden, spoils) originating from the indigenous excavation of the pit to entomb the monoliths. The pit itself cuts Layers 3 to 6. Crucially, the overburden in Layer 2 rests on Layer 3, a deposit that resulted from a major, violent flooding episode of the Viví River that impacted the structural integrity of Plaza A, especially the eastern row. Underlying the flood event, the deposited sediments show a mixture of Layers 3 and the underlying Layer 4, a medium sandy loam, with very few cultural materials. Layer 5 presents sediment characteristics similar to those of Layer 3 and, hence, is most likely an earlier (undated) flood deposit prior to the occupation of the site. Layer 6 is culturally sterile.

A conventional ^{14}C date from the overburden in Layer 2 yielded an AMS date of cal AD 1427-1631 at 2σ (GrN-30054). Taking into consideration the most probable intercept (0.76%), this date can be narrowed to between cal AD 1430 and AD 1524. Layer 3 sediments that dipped down on the side of the pit feature were dated to AD 1290-1410 at 2σ (GrN-30057). This offers an approximate *terminus ante quem* of AD 1430 for the proposed Level 3 flood event. The sediment fill of the pit itself was presumably dug from an existing deposit with Capá artefacts. It is associated with two dates (rounded off) of cal AD 1290-1420 (GrN-30056) and AD 1330-1445 (GrN-30055) at 2σ. More samples, dated via AMS, would be useful to narrow this down but it appears that the flood and subsequent excavation of the pit occurred in around AD 1430. Given that the hillside monoliths are more prevalent on the eastern row and that a low earth ridge was built only on the eastern side, it is possible that the flood impact on the plaza was more severe on this side. The low earth embankment (50-75 cm) may also have been built as a defensive berm against future floods. The eastern part of the Viví River meander is, not surprisingly, the section that tends to be

breached during normal floods. The western row, on the other hand, is some distance away from the river and may not have been as severely impacted. Here, the granodiorite rocks with smooth river-worn patina are more abundant, indicating that replacement with hill rocks was less needed.

In conclusion, Bateyes de Viví provides evidence that the monoliths themselves were of great significance and value for the indigenes. Following the catastrophic flood (*ca.* 1430s), the plaza was rebuilt, particularly the more vulnerable eastern row of monoliths. A selection of the impacted monoliths was then carefully deposited at the bottom of a pit. It can be surmised that a burial ritual and ceremony took place. The funerary pit was then backfilled and, at its mouth, a monolith (no. 39) with petroglyphs was erected, thus sealing the tomb. Indeed, it is tempting to label this rock a tombstone, one that is, I would argue, *cemí*-imbued with the faces of two personages (petroglyphs): one above ground, looking up into the sky (and away from the plaza) and another at the base, guarding the buried monoliths. The 'tombstone' by any definition, is a monument, and from a cognitive perspective, is monumental. The treatment of monoliths, even without petroglyphs (i.e., not seemingly *cemí* beings), suggests they were deemed sufficiently important to deserve a reverent burial and spiritual protection by the *cemí*-beings embodied in rock no. 39, a veritable a 'tomb-stone' monument.

7. Final remarks

After AD 700, the Greater Antilles began a process of physically demarcating ceremonial space, with either earth embankments or monoliths. The preference for using lithic materials for demarcating civic-ceremonial space became widespread between eastern Hispaniola and the Virgin Islands. In the latter region, in around AD 1100, sites with multiple functionally-segregated spaces (plazas, ballcourts and other ceremonial precincts) arose in Puerto Rico. Tibes, in Period IIIb is, for now, the earliest exemplar of a ceremonial centre with multiple, functionally segregated and stone demarcated precincts, a trend that was further elaborated during Period IV in sites such as Caguana and Bateyes de Viví. Considered in totality, from small boulders and cobbles to large monoliths, all these stones visually impart a sense of 'megalithicality' to these construction projects

Monumentality is linked to the indigenous notion that such rocks embodied powerful and animated beings, personages whose vitality stemmed from being imbued with *cemí* ('sweetness') potency. And it is also linked to the ways in which these personages embodied by the monoliths interacted, as social entities, with indigenous actors, in momentous *areíto* ceremonies in the plaza. While individual monoliths are, by world-wide standards, modest in size, weight and volume, there was nonetheless a process of 'megalithization' (aggrandizement) of the petroglyph-personages (previously hand- or pocket-sized sculptures of various materials), to fixed, non-movable stone personages rooted in the plazas. Clearly the choice of larger rocks to embody *cemí*-persons relate to their greater visibility and their permanence on the ground. They mark, if not stand guard over the ground where important and momentous events, ceremonies and rituals took place. Ballcourts, where such potent beings engraved into rocks do not congregate – or sometimes just one or two – include a range of rock sizes. At many sites (**Fig. 2**: blue triangles) they are just 10-35 cm high, but at others (Tibes) they are larger and much taller towards the centre of the row. 'Bigger' *bateyes* imply an increased visibility of the stadium and a greaterimportance of the ballgame.

In conclusion, this region of the Caribbean has its own unique expression of megalithic works, deployed to impress viewers, to modulate the landscape and fulfil important social, economic and political-religious functions. The importance of the stone works, especially those embodying *cemí*-personages, are magnified through *areíto* (chants and dances) performances that marked momentous occasions. The plaza ceremonies stressed shared identity, a coming together. Monoliths also framed a space reserved for competition, where cumulative stress (inherent to all societies) and rivalries were diffused through ritually controlled, regulated games taking place in the *batey* courts. Stones demarcating plazas were treated as valuable objects, even when they bore no petroglyphs, deserving a proper burial with a 'tombstone' monument that, itself embodied *cemí*-personages to mark and guard, from above and below, the entombed rocks.

Acknowledgements

I would like to express my heartfelt gratitude to Luc Laporte and Jean-Marc Large (University of Rennes) for their hospitality in La Roche-sur-Yon and, most of all, for their enthusiasm in including the Caribbean *bateyes* among the megaliths of the Americas. L. Antonio Curet (National Museum of the American Indian, Washington D.C.) reviewed parts of the manuscript and graciously shared unpublished information and current views on the site of Tibes. My thanks also go to Emily Lundberg, for sharing with me her fieldwork experiences at Las Flores all those years ago. I like to dedicate this chapter to my long-time friend and colleague, the late Dr. Colin McEwan (1951-2020) whose scheduled contribution in this international meeting was stolen from us.

7

José R. OLIVER

Megaliths of the Colombian Andes: Boyacá, Sierra Nevada del Cocuy and San Agustín

Abstract: The Andean highlands of Colombia present a rich and varied corpus of megalithic works ranging from tall standing menhirs, richly carved monumental columnar statues and dolmen-like funerary structures to massive stone sarcophagi and monolithic alignments delimiting ceremonial spaces. Megaliths seem to have first emerged during the Late Formative Period (*ca.* 400 BC) and are still in use among the present-day U'wa of the Sierra Nevada del Cocuy. This chapter aims to provide a synthesis of the current state of knowledge on megalithic manifestations found in the Department of Boyacá in the Northern Andes and in San Agustín Massif region of the Upper Magdalena River Basin of Colombia.

Keywords: *megaliths, San Agustín, Boyacá, dolmens, standing stones, Colombia*

1. Introduction

The Andean highlands of Colombia present a rich corpus of megalithic works of which those from the San Agustín de Huila area are possibly the best known among archaeologists world-wide, particularly through the works of Preuss (1929 [1931]), Reichel-Dolmatoff (1972) and the illustrated catalogue (in French) by Duque Gómez & Hidalgo (1982). There are, however, two other less well-known regions with outstanding megalithic traditions that deserve to be discussed in detail before proceeding to the better-known San Agustín. Both of these areas are found in the Department of Boyacá in the northern Colombian Andes. One is centred around the Tunja to Mongua area, the other is located in the Valley of Chita and the surrounding highlands of Sierra Nevada del Cocuy, also known as Sierra de El Güicán (**Fig. 1**). The San Agustín megalithic manifestations are some 630 km to the south in the Colombian Massif region where the Andes splits into the Central and Eastern Cordilleras. The sites are concentrated in the upper reaches of the Magdalena River and the neighboring Isnos-La Plata River basins and extend to the northwest around the border with the Tierradentro region (Drennan 2000; Langebaek 2009). The main objective of this essay is to provide a synthesis of the current state of knowledge about megalithic traditions in Colombia to an international readership. While San Agustín's literature in English is reasonably abundant (but not in French) that from the northern Colombian Andes is almost entirely written Spanish.

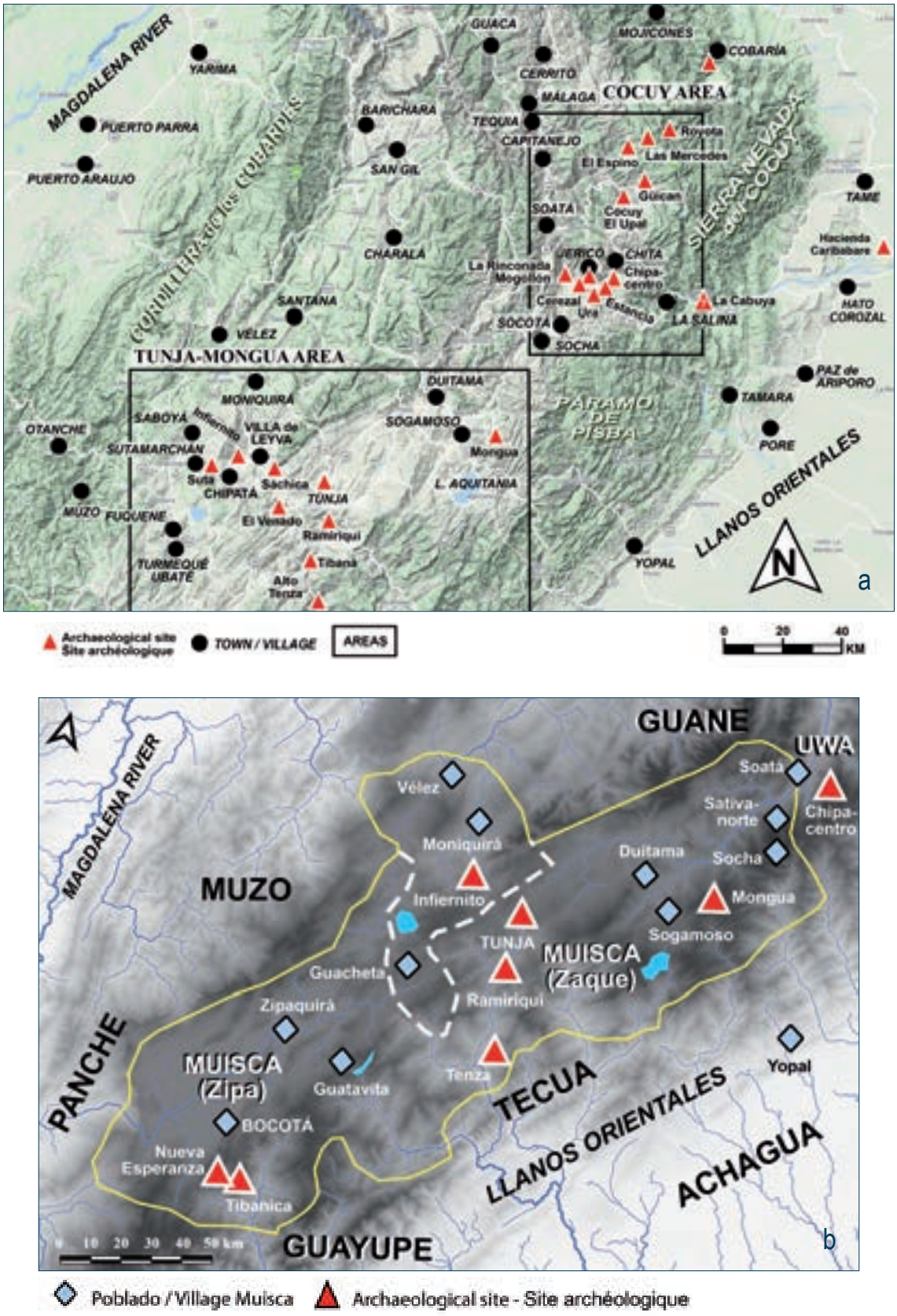


Fig. 1 – Megaliths in the northern Colombian Andes: a. Map of the Boyacá Region showing the location of archaeological sites (red triangles) and towns (black circles) in the Tunja-Mongua and Sierra Nevada del Cocuy Areas (rectangles); b. Map showing the Muisca territory (yellow outline), led by Zipa and Zaque 'lords', paramount chiefs, with surrounding ethic groups. Key archaeological sites (red triangle) and settlements (blue diamond) at the time of Spanish Contact (1537-39).

2. Megaliths of the Boyacá Region: El Infiernito, Valley of Leiva

In the Department of Boyacá (**Fig. 1**) the most revealing megalithic site is El Infiernito (**Fig. 3a, b**) located in Moniquirá sector, west of Villa de Leiva or Leyva (Langebaek 2001, 2005, 2014; see also Therrien *et al.* 2006: 18-22). Unlike San Agustín, El Infiernito is characterized by a series of tall (*ca.* 6-11 m) free-standing, columnar menhirs, weighing between *ca.* 8 and 11 tons, and up to 30 tons in some cases. These monoliths, made of hard limestone (Lower Cretaceous rock formations; Lleras Pérez 1989: 48), are mainly undecorated, except that some have a deep groove around one or both ends of the column (**Figs. 2a-c** and **3a**), prompting the speculation that these might be phallic representations (Silva Celis 1981). The site of El Infiernito also has a rectangular courtyard demarcated by two parallel rows of undecorated monoliths (**Figs. 2d** and **3c**). There is also a dolmen-like funerary structure, although architecturally different from those of San Agustín and other areas such as the Middle Cauca Valley (**Figs. 2e** and **3d**). Sadly, the burials within the dolmen-like chamber were looted long ago. However, lithic artefacts and ceramics mixed with deteriorated human remains seem to suggest a collective burial locus. In 2006, on the exterior east side of the doorway, a ceramic burial urn of a 2 to 3 year-old infant was rescued accompanied by three ceramic vessels, marine shells, an anthropomorphic copper figurine and a *tumbaga* (gold-copper alloy) pendant in the form of a bird [(1)].

Other dolmen-like funerary chambers – called *tumbas de cancel* in Spanish – are known elsewhere in Colombia, such as the Quimbaya and Quindío regions (Cardale Schrimpff *et al.* 1989). One example, closer to Leiva, is the site of Tominé de Santa Bárbara, *ca.* 3 km west of the town of Guatavita in Cundinamarca, today lost under Tominé Reservoir (Broadbent 1963, 1965). Generally, these are excavated rectangular chambers (one is 3.5 m long, 2 m wide and 1.5 m high) with the four side walls framed by vertical slabs of variable widths over which a large stone slab completely seals the tomb. Some may have a tunnel-like passage to the side. The top, sealing slab may or may not rest directly on the vertical monoliths and, frequently, the tomb is not overlain by an earth mound. Some 'Cancel Tombs' are of very small dimensions (50 cm on each side) and box-like (all sides framed by slabs): just enough to entomb a funerary ceramic vessel and lid, such as reported at Palestina Site-39 in the Middle Cauca River canyon, *ca.* 260 km southwest of El Infiernito (Botero Arcila *et al.* 2011). In that region the box-like secondary burial chambers date to earlier (AD 390-640) than the dolmen-like tombs (similar to Tominé). Based on pottery types (funerary vessels and offerings), the dolmen-like tombs probably date to after AD 900 (Botero Arcila *et al.* 2011: 208-209). The earlier box-like 'Cancel Tombs' are unknown in the Boyacá region. The dolmen-like tomb at El Infiernito, however, differs from those in Tominé and the Middle Cauca in that the large stone slab at the roof of the chamber directly rests on the vertical slabs and, further, the lateral rectangular doorway (facing west) is absent in the 'Cancel Tombs'. It is unclear whether El Infiernito´s burial structure was once covered by an earth mound, leaving an entry access on the western side (**Fig. 3d**).

Archaeological research conducted by Langebaek (2001, 2005, 2014) indicates that El Infiernito was a moiety-structured settlement, consisting of two open spaces clear of debris (i.e., plazas) ringed by domestic debris and abundant potsherds (**Fig. 3a, b**). Such duality in settlement organization has been noted at other sites. The closest is El Venado, located in the Valley of Samacá, *ca.* 30 km south of El Infiernito (**Fig. 1**), spanning the same Herrera and Muisca periods of occupation as El Infiernito (Boada 1999; Langebaek 2014: 205). The Infiernito settlement began modestly during the Late Herrera Period (before AD 1000) but its substantial occupation dates to the Muisca Period (AD 1000-1600), growing in area from 0.2 ha (Herrera Period) to 3.5 ha (Early Muisca, AD 1000-1200) and 6.8 ha in the Late Muisca Period (AD 1200-1600; see Langebaek 2014:

(1) This burial data and the information regarding the columns perpendicular to the burial structure are not published. The information was retrieved from an informative poster-guide for the park's visitors, posted at the entrance of a reconstructed burial dolmen-like structure.

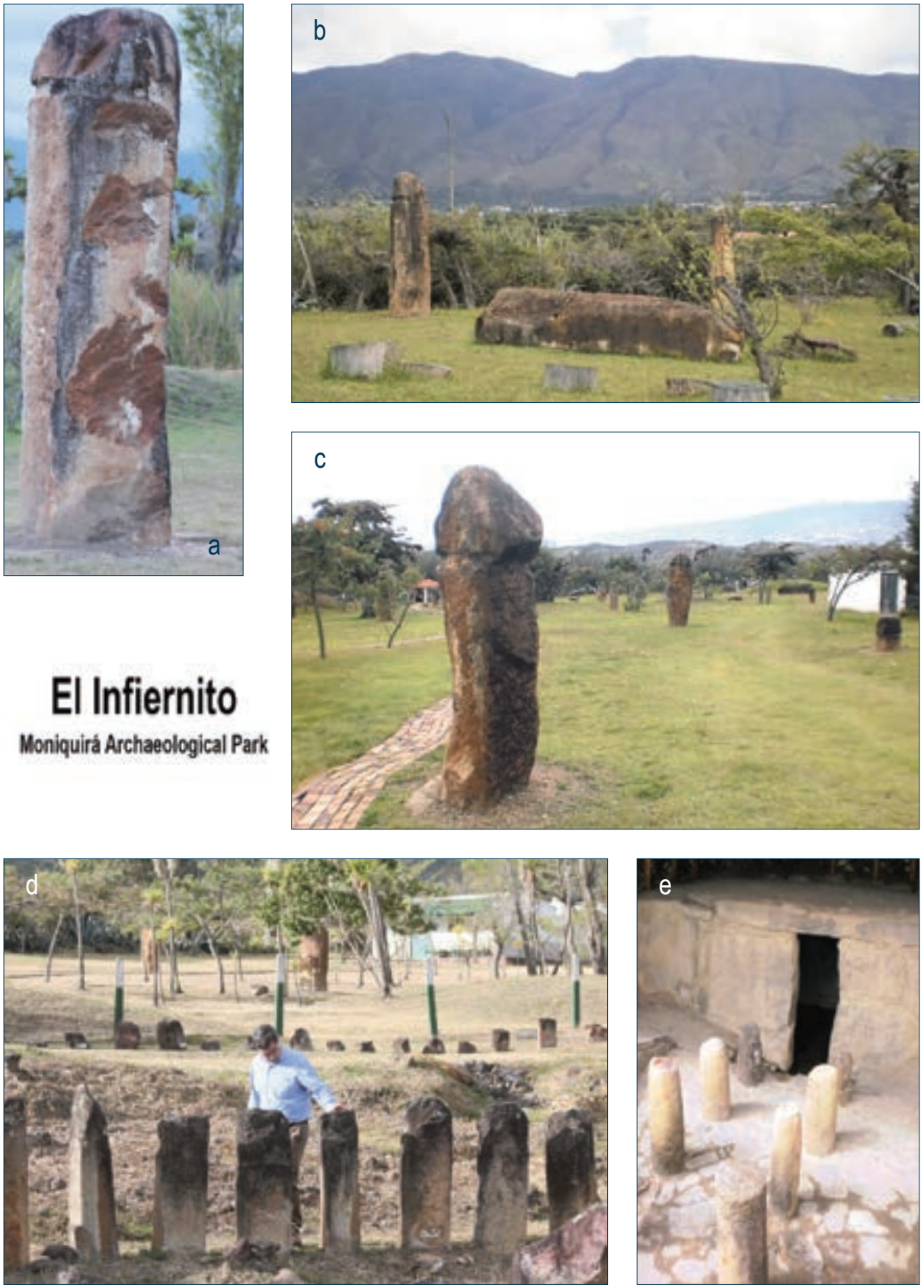


Fig. 2 – El Infiernito: Standing and toppled menhirs found in the eastern half of the site (a-c); d. Columnar rows of monoliths (C. Langebaek standing at centre); e. Short columns facing the entrance of the dolmen-like burial structure (Photography courtesy of Carl H. Langebaek and Omar Ortiz).

203) [2]. The eastern half of the site is where the single dolmen-like funerary structure, the rectangular courtyard framed by two parallel (east-west oriented) rows of monoliths, and a series of tall menhirs are found (**Figs. 2** and **3**). The western half, at present, lacks any such megalithic monuments. Therefore, the occupants of the eastern moiety seemed to have exerted control over (and/or the right to host) ceremonial feasts, apparently surrounded by menhirs erected in various locations.

(2) The chronological ranges for the Herrera and Muisca periods (and temporal divisions within) in the Boyacá region are later than those from the Sabana de Bogotá region. Herein I follow the chronological periods suggested by Langebaek (2001: 14-15, Table 1).

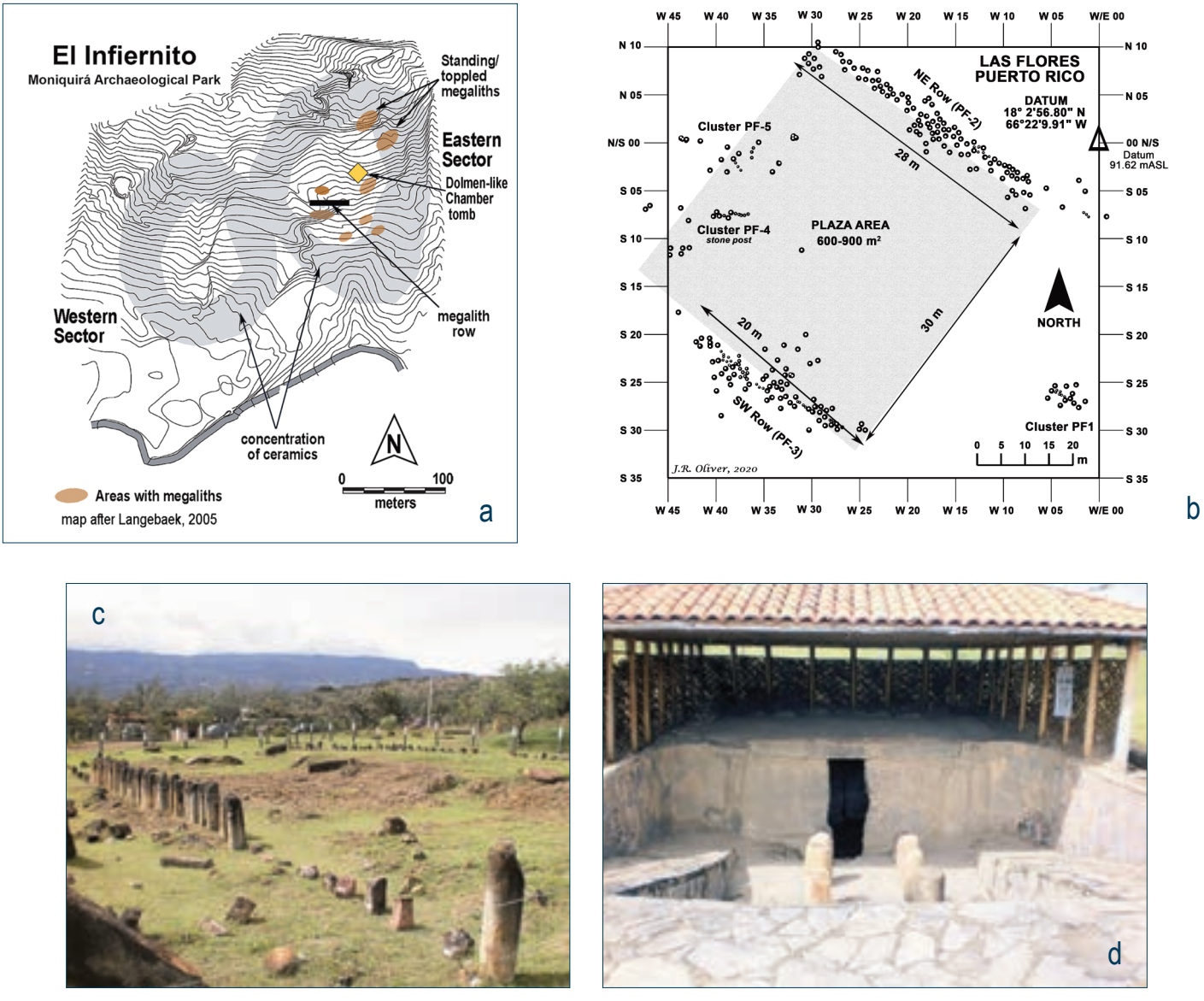


Fig. 3 – El Infiernito: a. Topographic map showing the two circular rings (grey) of high density of ceramics (redrawn from Langebaek 2005); b. The UPTC map of the archaeological park, underlain by topographic map (a), showing present locations of menhirs and megaliths. The east circular plaza contains most of the tall menhirs, the row of monoliths fronting a courtyard (c) and the dolmen-like tomb structure, with eight columns facing the entrance to the burial chamber (d). The reconstructions of several elements of the burial structure (the 'paved' slabs, lateral benches) have been subject to much critique [Photography courtesy of Omar Ortiz; Maps courtesy Universidad Pedagógica y Teconológica de Colombia (UPTC) and Carl H. Langebaek (redrawn by J. Oliver)].

Among the historic Muisca (Chibcha speakers) the solar journey, sunrise to sunset, is of highly symbolic and calendric importance. The most popular celebrations among the Muisca were associated with the December solstice, 'known as *huan*, and were held to remember the creation of the Sun and the Moon' (Langebaek 2014: 216). Indeed Bochica, the mythical founder of the Muisca civilization, was regarded as both a solar deity and an anthropomorphized lord, while his equally mythical descendants, the lord-deities Hunzahúa and Goranchacha, were described as 'sons of the Sun' (i.e., sons of Bochica) (3). The real flesh-and-blood *zaques* ('supreme' lords) likewise claimed inheritance from these mythical, quasi-human lords that emerged from the Sun. Furthermore, at El Infiernito, 'during the winter solstice, the Sun rises over Lake Iguaque, the birthplace of humankind according to Muisca mythology' (Langebaek 2014: 219). It is perhaps not accidental that the rectangular courtyard is aligned east-west and that the eastern moiety is where the menhirs and the funerary dolmen-like structure are found. It seems likely that the eastern moiety ranked higher than the western but, at the same time, the western moiety was *the* necessary complement to successfully enact the ceremonial feasts, not unlike Osborn (1985) described for the modern Chibcha-speaking U'wa (descendants of the 16th century Lache or Tunebo) of the Sierra Nevada del Cocuy (4). The Uw'a communities are also comprised of east and west moieties and, as will be seen later, also inhabit a territory with menhirs and megalithic structures, still imbued with significance in the 20th century.

The eastern half (moiety) of El Infiernito is also where Langebaek (2005) reported a finding a disproportionate number of large, decorated (painted) ceramic necked jars used for serving liquids (most likely *chicha* or maize beer) as well as painted ceramic drinking bowls dating to the Muisca Period. One such feast would likely be the above mentioned *huan* (December solstice) ceremony. Based on ethnohistoric documents, among colonial period Muisca lords and principal elites, ceremonial feasting (with its attendant gift and commodity exchanges) was the basis of their prestige and aggrandizement as political-religious leaders. Langebaek (2005: 208) concluded that the archaeological research at El Infiernito '*does not support the idea that the power of the indigenous elites* [and lords: *zaque* and *zipa*] *was based on their control of fertile lands and the labor force'*. In other words, rulership centred on political-religious and to a lesser extent, if at all, on political-economic power, an interpretation, as we shall see, not dissimilar to that proposed by Drennan (2000: 120-121) for the nature of rulership during the Regional Classic Period (AD 1-900) in the San Agustín region.

Well before Langebaek's work in the 1990s, several of the site's megaliths had been looted by locals, possibly since the late 16th century (Lleras Pérez 2014). Indeed, in 1846 explorer Manuel Vélez reported not only the courtyard framed by monoliths but also a circular space 13 m in diameter demarcated by 13 columnar stones that no longer exists today (Broadbent 1970: 19), a structure similar to that found in the Goranchacha Temple in Tunja. In 1850-51, another explorer, Manuel Ancízar, described the state of the rectangular courtyard:

- *There are two rows of parallel columns, of similar diameter and oriented in an east-west direction… all are mutilated* [truncated], *the greater number of which rise half a meter above the ground. …the two rows are at a distance of ten meters* [measured] *from the base… there are still 34 columns* [monoliths], *all are four decimeters* [40 cm] *in diameter in the southern row, and only 12* [monoliths remain] *in*

(3) The terms 'deity' and 'divinity' are commonly used among archaeologists in Colombia, from Preuss (1929 [1931] to Osborn (1985) and Langebaek (2019), but with its Judaeo-Christian weight, they are not entirely appropriate to describe Amerindian supernatural beings or potencies. Nonetheless, I defer to my Colombian colleagues and use the term here as a quick reference to supernatural forces.
(4) Osborn's 1995 publication is the Spanish translation of her 1982 PhD dissertation (Oxford University; not accessible). A later published (print only) version in English is available (and expensive) but could not be consulted. Thus, all three works were accomplished before that of Pérez Riaño (1988 to present), whose research continued to expand Osborn's pioneering research of the late 1970s to mid-1980s in the Cocuy region.

the northern [row], *with same distance between them'*. (Ancízar 1853: 317) (5).

Ancízar added that many monoliths from El Infiernito were 'mutilated' (quarried) to be used as building material in various locations. He mentions that 32 were used in columns of the cloister of the Ecce Homo convent (located '*12 leagues to the west of the ruins'*) and in 12 columns in the chaplaincy house located in the main plaza of Leiva, all of which came from El Infiernito. A further two '*are found in the town of Sutamarchán,* [which] *were transported not too many years ago from the* [El Infiernito] *ruins, which has been the quarry for the neighboring sites*' (1851 [1956]: 317-318).

Since 1945, the site's integrity further suffered from over-idealized reconstructions by archaeologists (mainly the work of Silva Celis) to enhance its public presentation as a heritage site, the 'Parque Arqueológico de Moniquirá'. Silva Celis imported several monoliths from the surrounding region, even from as far as Tunja, to complete the reconstruction according to his vision. Therefore, the current arrangement of monoliths in the rectangular court and the placement of the columnar menhirs are uncertain, as is the embellished cobbled pavement and wall-benches fronting the dolmen structure (Lleras Pérez 2014: 27-29; see also Therrien *et al.* 2006; Groot 2018). However, it is claimed that the columns perpendicular to the burial structure (**Fig. 2**) were found toppled, roughly forming two parallel rows of four columns on each side. For all these reasons, Langebaek did not bother trying to associate the megaliths or the dolmen structure with the stratified archaeological deposits he excavated. Astonishingly, there are only three ^{14}C charcoal dates for the entire site (Silva Celis 1981: 12-13). All three were rejected because they were dated at the Instituto de Asuntos Nucleares in Bogotá, which was closed due to its inconsistent and unreliable results (Lleras Pérez 1989: 43; 2014: 28). Therefore, the chronology at Infiernito is relative and based on selected ceramic types that have persisted for centuries: good as cultural indicators, but less so as chronological indices.

Some or all the free-standing, tall menhirs at El Infiernito may well have been erected during the Late Herrera Period, in which case they would still have been visible throughout the Muisca Period. Given the *continuous* Herrera to Late Muisca occupations at this site, it makes sense to suggest that the essential ceremonial functions associated with and the symbolic meanings of the megalithic monuments and structures may have persisted through the generations, even when it is expected that they would have evolved in their particulars. Other scholars, like Lleras Pérez, lean towards the idea that the megaliths at El Infiernito (and other sites) belong entirely to the Muisca Period, while others toy with the idea they started during the Herrera Period (Lleras Pérez 1989: 49). However, all archaeologists are aware that there is no empirical evidence to support or refute either of these hypotheses. Although speculative, it may be that the free-standing monoliths were gradually added over time, with new menhirs imported at different times from the quarries. Regardless, it is reasonable to argue that all the megalithic structures and free-standing menhirs were 'active' during the Late Muisca Period (AD 1200-1600). During the following period the populations of Suta and El Infiernito declined, albeit other new settlements were established. It seems that both sites continued into the period of Spanish contact (1537-1540s); however, just before Spanish contact other Muisca *caciques* (chiefs) had penetrated the valley, forcibly displaced by the lord of Tunja from their original settlements in the Tunja area (Langebaek 2001 and personal communication, 2021).

3. Megaliths of the Boyacá Region: Tunja, Ramiriquí and related sites

Some 25 km east of El Infiernito is the town of Tunja and 17 km south of Tunja is the town of Ramiriquí (**Fig. 1**). Both towns figure prominently as Muisca settlements just prior to and after the Spanish conquest initiated by Gonzalo Jiménez de Quesada

(5) Original Spanish text: '*Hay dos filas de columnas paralelas, de diámetro igual y orientadas en la dirección este-oeste… todas están mutiladas, el mayor número a medio metro sobre el suelo. …las dos filas distan entre sí diez metros en la base... Se encuentran todavía 34 columnas, todas de cuatro decímetros* [40 cm] *de diámetro, en la fila del sur, y sólo 12 en la del norte, fijadas a unas mismas distancias... A pocos pasos al nordeste se ve una columna* [menhir] *que parece entera, tendida sobre el terreno, midiendo cinco metros y medio de largo'* (Ancízar 1851 [1956]).

in AD 1537 [6]. At this time, Eucaneme (his personal name) was the Great *Cacique* (chief, lord) of Tunja (Hunza) [7]. Eucaneme, also bearing the title of Hunzahúa (the suffix *-húa* or *-hoa* in Chibcha means 'great'), led a broad Muisca territory stretching from the towns of Turmequé and Ubaté, to the south, to Chipatá and Saboyá, to the north (Aguado 1581 [*ca.* 1916]: 247) [8]. The chiefs of Duitama and Sogamoso sites seemed to have been independent of Tunja; there was even 'bad blood' between the chiefs of Tunja and Sogamoso. Nonetheless, this did not impede the latter lords engaging in military alliances against common enemies. However, this did not imply that Sogamoso was subordinated to Tunja (Langebaek & Uscátegui 2020: 7-9, 35). After Eucaneme was murdered in Tunja by the Spanish in 1540, his nephew Don Felipe Ramiriquí (AD 1540-1581) inherited the office, taking seat in Ramiriquí. He was, in turn, succeeded by his nephew Don Fernando Ramiriquí Pirariqua in 1582 (Gamboa 2008: 129, 2013: 120). The two settlements were thus closely linked.

According to Muisca lore, Eucaneme (i.e., Hunzahúa or Great *Cacique* of Tunja) was the 'heir' of Bochica, a solar deity, and also the latter's mythical 'descendants', Goranchacha (son of the Sun) and the mythical Hunzahúa (bearing the title), who founded the settlement of Tunja (Langebaek & Uscátegui 2020: 220-221, 290; Langebaek 2014: 216). In the Muisca epic narrating foundational movements across the Cundinamarca and Boyacá landscape, these mythical lord-deities, *'established not only a common territorial* [Muisca] *space, but a hierarchical ordering of the personages and places mentioned* [in the myths] *based on antiquity: for example, Tunja, as the final destination of Goranchacha's* [journey] *was more important than* [the settlements] *of Sogamoso and Guatavita*' (Langebaek & Uscátegui 2020: 207) (**Fig. 1**). The mythical lord-deities and the historic (real) chiefly figures thus '*defined not only a space of related groups but also, in the case of the Muisca, also defined the political order, including* [the ranking order] *of the* [living] *caciques as personages directly related to such deities. This territory, thus defined, also functioned to determine who* [among chiefs] *were definitively unequal*' (Langebaek & Uscátegui 2020: 207).

The mythical founders and the human flesh-and-blood lords resided in, and travelled between, several 'seats' (not unlike the late medieval itinerant Iberian royal courts). The Spaniards labelled these seats as *cercados* on account of them being fenced by wood posts, sometimes forming nested quadrangular spaces. The *cercados* are important since around them is where modern explorers and archaeologists have found megaliths, albeit not all *cercados* have megaliths or are found in habitation sites. For example, 5½ km due southwest from El Infiernito, at Suta, east of Sutamarchán, there are no megalithic structures (Henderson & Ostler 2005) yet, together with El Infiernito, this was a substantial Early Muisca Period settlement in the Valley of Leiva (Langebaek 2001).

Archaeological excavations in the Los Solares sector in Sogamoso, east of Tunja (**Fig. 1**), revealed a round house structure (*bohío*) with a floor plan (8.3 x 7.0 m) built with thick vertical posts (55-80 cm diameter) made of *palo santo* wood (*Bursera graveolens*) or *guayacán* (*Guaiacum officinale)* – both imported from the Eastern Llanos – and a rectangular fence enclosure interpreted as a *cercado* (Silva Celis 1945). Earlier in the 1920s, at the same site, historians Arrubla and Cuervo (in Therrien *et al.* 2006: 12) found '*great quantities of gold, stone and pottery; marine shells and necklace beads* [that] *may well have been offerings made to the deity of the of the sanctuary*', arguing that this was the site of chief Sogamoso's (Sugamuxi) 'Temple of the Sun' raided by Jiménez de Quesada in 1537 following the battle of the Iraca Valley (Hemming 1978: 81-86). In Sogamoso, Silva Celis also excavated four necropolises that yielded a total of 692 human burials

(6) The literature of the pre- and post-colonial Muisca civilization is prolific but the excellent study recently published by Langebaek (2019) is highly recommended, albeit in Spanish.
(7) The term *cacique* (chief) is a Taíno word (of the Arawak linguistic family) that the Spanish borrowed from the Greater Antilles and applied to native chiefs and lords throughout Hispanic America.
(8) Original quote from Aguado (*ca.* 1581 [1916]: 247) '*…y el tyranno y Cazique Tunja posseya, desde el pueblo llamado Turmequé, hacia la parte del Norte, todo lo que ay hasta el pueblo de Saboya y Chipata…*'

with diverse interment practices (Silva Celis in Therrien *et al.* 2006: 13). They attributed all these finds to a Chibcha (i.e., Muisca) occupation. Yet, like Suta (and Duitama too), Sogamoso lacks any menhirs or monolithic structures. What are the implications of the fact that some Muisca Period sites display megaliths (e.g., dolmens) and others do not, despite the fact that Sogamoso, for example, was a key seat of chiefly and religious power? Langeabek (personal communication, 2021) suggests that perhaps the massive wood fenceposts of the cercados are the equivalent of the alignments of monoliths framing rectangular or circular spaces, which resonates with modern U'wa's explicit conceptual linkage between wooden posts in houses and menhirs, as shall be seen later. If so, Sogamoso may also have had menhir structures, only they were made of wood, not stone.

The *cercados* enclosed functionally diverse structures (Pradilla Rueda *et al.* 1992: 49-55). There were sanctuaries (*santuarios*, *oratorios*), and *bohíos* (round structures) where the heirs to the office of chief underwent fasting rituals [(9)]. The huge posts were made of *guayacán* (*Guaiacum officinale*), wood brought from the Eastern Llanos. There were also kitchen/cooking structures, different buildings for the storage of food and ritual paraphernalia used in various ceremonies, as well as for the storage of weapons and material goods (gifts for exchange and commodities for trade (see definition in Gregory 1982 [2015]) that Spaniards incorrectly thought were tributes exacted by the chiefs (Langebaek & Uscátegui 2020). The richest sanctuaries (or temples), like those in Tunja and Sogamoso, housed sumptuous artefacts made of gold, tumbaga, copper, emeralds, *guayacán*, engraved marine gastropods (musical instruments) as well as colourful cotton-weaved *mantas* (cloaks), all targets of Spanish greed and plunder. Some *cercados* would also include very old structures where deceased chiefs would be housed, bejeweled with gold and marine shells, draped in cotton mantas and seated or stretched on a litter, (Langebaek & Uscátegui 2020: 218, 220). '*Only the* caciques *and* capitanes [second order chiefs] *had* cercados *but undoubtedly the largest and most elaborate were those of the highest-ranked caciques*' (Langebaek & Uscátegui 2020: 222). To summarize, there is a close relationship between the *cercado* and the rank and power of the *caciques*.

Tunja, but not Sogamoso or Duitama, has several tall menhirs located in and around the cercados, even though they have been moved from their original locations. At the time of Spanish contact (1540s), Tunja had at least seven *cercados*: (1) Cercado Grande de Los Santuarios, (2) Cercado de Quimizaque (or Quiminzá), (3) Cercado of the Hermano del Zaque (Brother of the Zaque), (4) Cercado de Boyacá, of Quemuentacocha, (5) Cercado de Tunja El Viejo (or Ramiriquí), (6) Cercado Viejo, and (7) Cercado Quemado (burnt) (See maps in Pradilla Rueda *et al.* 1992: 48-49; Tovar Pinzón 1995: 117-118; Argüello García *et al.* 2018: 19-20). The hinterland in-between the *cercados* consisted of dispersed residential *bohíos* (round houses), although some were nucleated, such as Auneme, Siabune and Namboche. East of the Cercado Grande is the site of Los Trangues (or Tiangues), the locus of a marketplace (Pradilla Rueda *et al.* 1992: 53-55; also see Langebaek 1987 for a study of Muisca trade and exchange). Because these *cercados* are well within the limits of the city, continuous urban development, and expansion since the 1540s have variously impacted the integrity of the archaeological deposits, leaving few localities available for reliable, broad area excavations. The possibility of, for example, determining whether dual (moiety) distributions were inscribed in space (as at El Infiernito and El Venado), is rather low. Most of the menhirs and other megalithic structures are no longer in their original locations. Nonetheless, since the mid-1930s, important archaeological research has been carried out in the area corresponding to the Cercado Grande de los Santuarios and its surrounding perimeter, today located within the campus of the Universidad Pedagógica y Tecnológica de Colombia (UPTC). Many of the results of the investigations are unpublished reports archived in the Museo Arqueológico de Tunja, although some can be accessed from the museum's

(9) The term *bohío* is also a Taíno word (Arawak family) borrowed the Spaniards and applied to native houses in the Americas (not always to imply circular houses).

Academia.edu web page [10]. The most detailed published excavation reports available are those of Pradilla Rueda *et al.* (1992) and Neila Castillo (1984).

As at El Infiernito, the Great Cercado of the Sanctuaries also had circular structures framed by short (most are *ca.* 45 cm tall) stone columns. Excavations by Hernández de Alba (1937) revealed two of these in close proximity. Circle-1 and Circle-2 are 25 m apart, each showing a circular ring of fragmented or truncated stone columns. Both were seemingly roofed structures since two concentric circles of wooden postholes were exposed within and between the stone circle (plan views in Argüello García *et al.* 2018: 33-34). Circle-1 (3 m floor diameter), with seven truncated stone columns (30-45 cm tall x 36-46 cm diameter), yielded abundant potsherds, a grinding stone and a child's skull. Circle-2 (*ca.* 11 m floor diameter), only partially excavated, had larger columnar stones than Circle-1, the tallest up to 1.5 m, the medium-sized ones averaging 65 cm (**Fig. 4a**). Hernández de Alba (1937) baptized Circle-2 with the name 'Temple of Goranchacha' in the belief that this was the ceremonial locus built for this mythical Muisca lord. This structure has not been preserved, its monoliths either relocated elsewhere or lost. Circle-1 and its stone columns are, however, still preserved *in situ* [11].

Subsequent excavations by Lemus (2018) showed that the artefacts from the Circle-1 structure date to the Herrera Period (400?/200 BC-AD 1200). Other excavations in various allotments within the university campus, in the 'Cercado Grande' area (La Muela North and South, El Establo, Curubal, Laboratorio East and West, El Huerto [Therrien *et al.* 2006: 24; Pradilla Rueda *et al.* 1988, 1992]) suggest that, like El Infiernito, the site was continuously occupied from the Herrera Period (200 BC-AD 1170) and the Muisca Period (AD 1200-1600) into the 1730s Colonial Muisca Period (Argüello García *et al.* 2018: 33-34; also Castillo 1984) [12]. Besides several houses, over 500 burials with highly diverse mortuary practices have been excavated (Therrien *et al.* 2006: 9). Such variability is likely to be due to age, sex, rank, and/or status as well as changes through time. Such a complex site with a long-term occupation, with only 11 dates reported (to 2006), presents obvious limitations in reconstructing its history. Here, as at El Infiernito and elsewhere in Boyacá, the pottery types selected as temporal markers to differentiate between periods are not particularly chronologically sensitive, hence the rather long temporal intervals of the Herrera and Muisca periods and their sub-periods (early to late).

The 16 known menhirs at Tunja (the tallest, 6.8 m) have all been moved from their original location to various places within the university campus and to the freshwater pond, Pozo de Donato (see GIAH-UPTC 2008; Groot 2018: 9), and still others removed to El Infiernito [13]. All the menhirs are sculptured in the same simple style as those from El Infiernito, Sáchica, Ramiriquí, Tibaná and the Upper Tenza Valley: quasi-cylindrical in cross section, with deep grooves encircling thier extremes. Good illustrations of the menhirs can be found in Argüello García *et al.* (2018).

One megalith (in fact, an anthropomorphic statue) located in Pozo de Donato is most likely imported from elsewhere (Argüello García *et al.* 2018: 41, 51). It is perhaps 1.5 m tall, sculptured with a simple face and arms folded on the chest; the rest is too eroded to discern further body designs. Its figurative style is similar to that of the monolithic statues from Salinas de Mongua (**Figs. 1** and **4c**). Several specimens were recovered by Silva Celis in 1965, on a trail of left margin of the uppermost reaches of the Cravo Sur River). Presently, the statues are in the Museum of Mongua (Grupo IIAH-UPTC 2012c). This site, described by Celis Silva (in Acero Díaz 2013) as a

(10) The reports can be accessed at: *https://uptc.academia.edu/MuseoArqueol%C3%B3gicodeTunjaUPTC*
(11) It should be noted that Hernández de Alba (1937) did not name Circle-1 'Temple of Goranchacha' but rather Circle-2. It was in Pradilla *et al.* (1992: Fotos 11-12) article that the misidentification was made and repeated in other publications (Argüello García *et al.* 2018: 33, footnote 1).
(12) Neila Castillo (1984) refers to the Late Herrera pottery as the Tunja Incised Ceramic Complex.
(13) Lleras Pérez (2014: 27) noted that Silva Celis had, apparently, taken some of the menhirs from Tunja to El Infiernito: '*…el arqueólogo* [Silva Celis] *recogió todas las columnas que pudo de las veredas vecinas y, cuando estas se agotaron, trajo algunas más desde la ciudad de Tunja, distante un° 40 kilómetros del sitio.*'

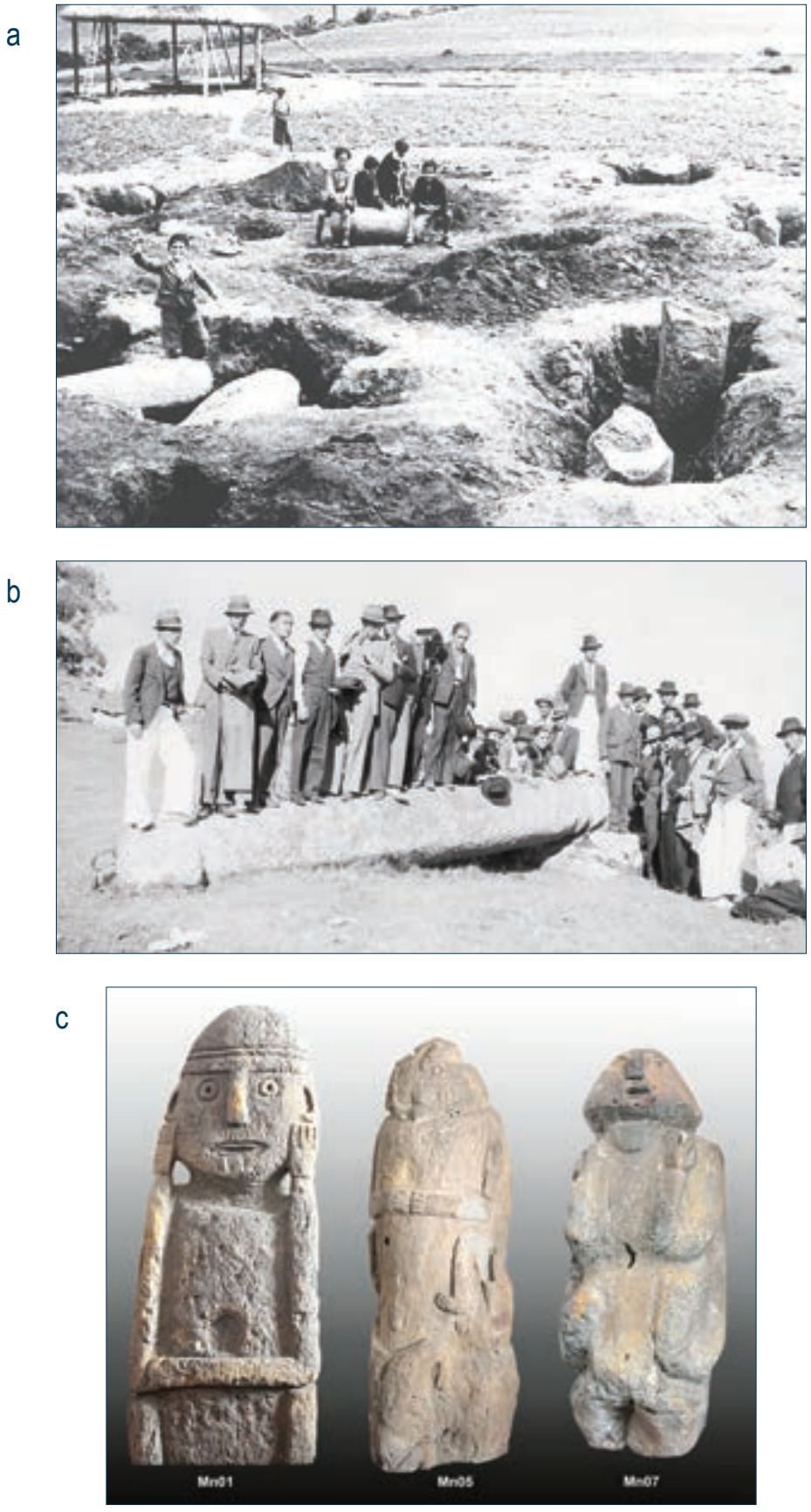


Fig. 4 – Menhirs from Tunja and Ramiriquí: a. View of the monoliths from Circle-2 'Temple of Goranchacha' structure, at Tunja, in 1937; b. The monolith 'Ra01' (5.80 m long x 0.63 m diameter) in the original 1937 location, 1 km northwest of Ramiriquí River (Photography by Hernández de Alba, 1937 courtesy of ICANH); c. The anthropomorphic statues from Salina de Mongua, left to right: Mn01 (72 x 27 cm), Mn05 (54 x 18 cm) and Mn07 (52 x 19 cm) (Photo: J. Oliver).

'ceremonial center', consisted of a two-tiered rectangular earth platform, the lower tier raised 30 cm from the ground surface, the upper raised 40 cm from the surface; the surface of the top platform measured 28 x 11 m, the lower 35 x 13 m, the long axis roughly oriented east to west. Ditches around the mound platform led downslope to a pond where two toppled statues were retrieved; six others were found downslope to the eastern side of the mounded platform. While the statues are related to the platform, they had been disturbed by local farmers who also looted the platform in search of treasures. Among the looted artefacts left on the surface, Silva Celis observed abundant ceramics (no cultural affiliation is indicated), ocarinas, and musical instruments made from large marine shells. Such rectangular earth platforms, however, have not been detected in Tunja or El Infiernito. Not surprisingly, the figures represented in the Salina de Mongua are stylistically very different from those of San Agustín.

There is ethnohistoric evidence that indicates that some of the menhirs in Tunja were quarried and bought from Ramiriquí and elsewhere. Chronicler Friar Pedro Simón, writing in the 1620s about the legend of the lord-deity Goranchacha, stated: '*He* [Goranchacha] *wanted to change* [or improve] *the fabric of this temple in honor of his father* [The Sun-lord Bochica] *and, to put it into effect, he ordered to bring from various places thick and noble marbles* [calcareous stones]*; three of these arrived to the site* [Tunja]*, where they can be seen today… two other* [menhirs] *can be seen on the trail of Ramiriquí, two others in Moniquirá'*, neither of which arrived in Tunja (Simón 1626 [1981]: 323) [(14)]. These were left on the trail because Goranchacha '*divined that a fierce and ferocious people* [i.e., the Spaniards] *would come, that they will mistreat and afflict them with restraints and work*' and thus he said '*goodbye to them* [the indigenes of Tunja], *saying that he was leaving because he did not want to see them suffer*' and thence '*entered his cercado never to be seen again*' (Simón 1626 [1981]: 323) [(15)].

Indeed, just 11 km south of the town of Ramiriquí, at the site of Tibaná-1 (**Fig. 1**), Lleras Pérez (1989: 45, Plano 1 and Figs. 13-15) documented eight menhirs resting on their sides (length *ca.* 4-6 m), some in the process of manufacture, some completed. They were next to the quarry from where they were extracted. Lleras Pérez noted that '*it is possible to appreciate all the phases of their manufacture, from the extraction of the crude rectangular blocks of the rocky wall, the trail left by dragging them to the sculpturing workshop, to the final product [a column] with the grooves at the extremities*' [(16)]. In the fields around Ramiriquí several other localities have yielded large menhirs. At 1 km northeast of the Ramiriquí River, Hernández de Alba recorded a site with two menhirs, one of which (code Ra01), measured 5.8 m long x 0.63 m in diameter (**Fig. 4b**). Next to this menhir was a hole dug into the natural rock surface where the column was supposed to be erected; it was intended to stand there in the field and not within a settlement. The menhir was relocated 2 km north of the city next to the Ramiriquí-Tunja road and set on a cement plinth 'guarded' by four grotesque cement statues of 'Indians' (Lleras Pérez 1989: 45; Grupo IIAH-UPTC 2012b). Another fragment (Ra05), is still found in an open field named El Santuario, 3 km south of Ramiriquí. A couple of fragmented menhirs from the region were relocated to the town's main plaza. As at Ramiriquí, the main plaza of Sáchica has a 1.4 m tall menhir transported from somewhere in the surrounding region (Grupo IIAH-UPTC 2012a).

In summary, the better-preserved menhirs in the region are plain, almost cylindrical columns with deep grooves around the upper and lower ends, some also having a short groove or notch perpendicular to the upper groove (**Figs. 2a, c** and **4b**). None of these can be firmly associated with a

(14) The original Spanish quote is : '*Quiso sublimar la fábrica de este templo* [del Sol] *en honra de su padre* [el *cacique*-deidad solar Bochica], *y poniéndolo en efecto, mandó que le trajesen de diversas partes gruesos y valientes mármoles* [roca clacárea]; *llegaron al sitio con tres de ellos, como hoy se ven… otros dos se ven en el camino de Ramiriquí, y otros dos en Moniquirá, que no llegaron al sitio…*'
(15) The Spanish quote is: '*…adivinó había de venir una gente fuerte y feroz, que los había de maltratar y afligir con sujeciones y trabajos y despidiéndose de ellos* [ses sujets], *diciendo que se iba por no verlos padecer… se entró en su cercado y nunca más lo vieron.*'
(16) Lleras Pérez (1989: 45) complained that the owners of the property forbade any excavations in Tibaná.

specific cultural period. Thus far, the free-standing menhirs are occasionally found in habitation sites (Infiernito, Tunja), in open fields (Ramiriquí area), and next to the quarries and workshops, most awaiting completion and eventual transport (Tibaná). The tall menhirs appear to somehow relate to ceremonial feasts and to 'sacred' circular and rectangular precincts, and to nearby burial grounds (and dolmens). Menhirs of sculptured figures (i.e., statues) seem to be confined to Salina de Mongua.

4. Sierra Nevada del Cocuy Region: the archaeology of megaliths and menhirs

The Sierra Nevada del Cocuy or Sierra del Güicán is the other important megalith area in the northern Colombian Andes. At the time of Spanish contact, the Cocuy region was inhabited by Lache (Tunebo, U'wa) and surrounded by different ethnic groups: the Muisca to the west, the Chitarero to the north, and the Guane to the northwest. The Lache, later also known as Tunebo, extended eastwards into the lower piedmont and savanna of the Llanos Orientales (**Fig. 1b**).

The first archaeological survey was conducted in 1943 by Silva Celis (1945) with the explicit goal of identifying the remains associated with the historic Lache and their immediate Pre-Hispanic ancestors. The resulting publication included a detailed review of the ethnohistoric documents as well as preliminary results of the archaeological survey. This was followed by ethnographic research conducted by Osborn (1985, 1995, 2009) of the U'wa groups in the early 1980s. Osborn's work also included some archaeology with the assistance of Cardale Shrimpff (Osborn 1985: Appendix) and Falchetti (1997), mostly based on surface collections, with only two small test excavations (Chita-1, Chita-2). This work reported on sites with menhirs meaningful to the modern U'wa communities. Osborn's research continued after 1988 with Pablo Pérez Riaño (see bibliography), who is single-handedly responsible for our current knowledge of the Cocuy region. His 2001 and 2013 publications provide a descriptive summary of all the relevant sites for the Sierra Nevada del Cocuy in Boyacá, as well as north into the Guane region in the Department of Santander.

Two major Pre-Hispanic periods with their corresponding ceramic traditions (or phases) have been postulated. The Late Formative Period, roughly coeval to Late Herrera, is the earliest and is also sometimes named 'Pre-Lache' (Pérez Riaño 2001: 76). The period's temporal span is based on just seven absolute dates: three from Arboloco site (Perez Riaño 1999: 170), two retrieved by Osborn and Falchetti's excavation (Chita-2) at the site of Chipacentro (Peña León 1991, cited by Perez Riaño 2013: 6) and two from an unnamed site along the vereda (trail) of Mura-Mocabon near Sativasur (Perez Riaño 1988, 2013: 33; see **Figs. 1** and **5**). The dates range between approximately 300 BC and AD 400 (uncalibrated), but it is probable that the period extends to about AD 1000/1200 or even later. In multicomponent sites the assemblages of the Lache Period stratigraphically overly Late Formative deposits. Although – apparently – the Lache Period entirely lacks absolute dates, it is assumed to be coeval with the Muisca Period of the Leiva-Tunja-Sogamoso region (AD 1200-1600). The sites with Lache Period ceramics are distributed to the east of the Chicamocha Valley (**Fig. 5**: near la Rinconada site) with a permeable Muisca-Lache zone roughly along a north-south axis between Sativasur and Capitanejo (**Figs. 1** and **5**). The near absence of absolute dates makes it very risky to assign the chronology of megaliths with any precision. Very few sites with megaliths have been located with GPS (by Pérez Riaño); most are given vague locations: '*found along such* vereda *(trail) and in such sector'*.

The most elaborate megalith site is Chipacentro, located along a *vereda* (trail) of the same name, in the El Resguardo sector, about 3 km south of the village of Chita (**Fig. 5a**). It sits on an intermontane valley at 2600-2800 m above sea level (hereafter, masl). The site consists of single and parallel monolithic alignments (**Fig. 6d, e**). Alignments 'X' and 'Y' demarcate a rectangular Central Plaza '4', oriented southwest to northeast. A single row of menhirs partly divides the central plaza. Other court spaces partly flanked by monoliths are visible in structures '1A' and '1B' to the northwest. There are also two low stone walls that delimit the complex. To the southeast there is semicircle of low monoliths that perhaps once formed a circular court (Osborn 1985: 84-92). The site is interpreted as a Pre-Hispanic ceremonial centre. The ceramics collected from the

surface indicate that it was occupied from the Late Formative to the Lache Period. Osborn is said to have obtained two absolute dates from Chipacentro (test pit Chita-2), for which there is no information published; but Peña León mentioned (to Pérez Riaño 2013: 6) one of these '*dated to the first century BC*'. Its relationship to the megalith complex is unknown. East of the Chipacentro (south of Chita) site, an erect menhir called *Piedra del Sol* (Sun's Stone) is the only example known to show remnants of

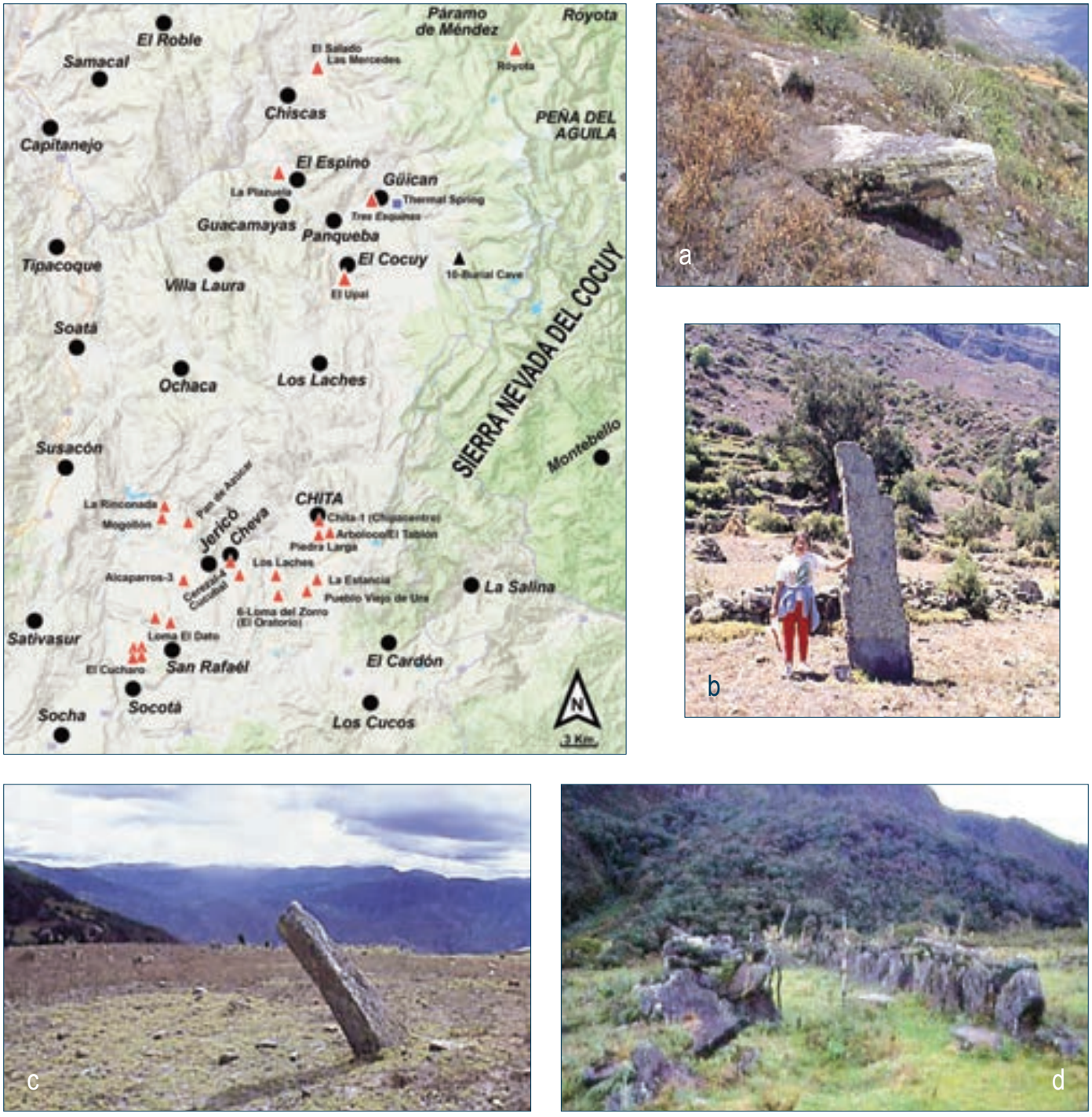


Fig. 5 – Menhirs from Sierra Nevada del Cocuy, Boyacá, Colombia. The map shows the location of key archaeological sites (blue triangles) and sites with megaliths (red triangles): a. Menhir from Cucubal site near Jericó; b. Menhir from El Cerezal-4 site near Jericó; c. Menhir from Los Alacaparros, El Juncal trail, north of Socotá; d. Two parallel rows of monoliths forming a courtyard at Royotá, south of Páramo de Méndez (Photos: courtesy of P. Pérez Riaño).

decoration (a spiral) in the whole Cocuy area. Surface pottery around the menhir belongs to the Lache Period (Osborn 1985: 80-84; Pérez Riaño 1999: 83). Indeed, compared to the menhirs of the Leiva-Tunja area, the menhirs of the Cocuy region are plain and coarse.

In the vicinity of the Chipacentro trail, menhirs are reported for sites El Tablón and Piedralarga (2780 masl). The latter has the tallest menhir left *in situ*, although several others at this site have been displaced by farming activities. At Piedralarga (**Fig. 6b**) two test pits were placed at 1.5 m and 7.5 m on either side of a standing menhir. The excavations yielded 90% Lache Period artefacts, although no radiocarbon dates were obtained. The association of deposit with the menhir cannot be ascertained (Osborn 1985: 80-84; Pérez Riaño 1999: 83, 101-103). About 1.5 km north-northeast of Chipacentro, along the Vichacucha trail (Chonegal/

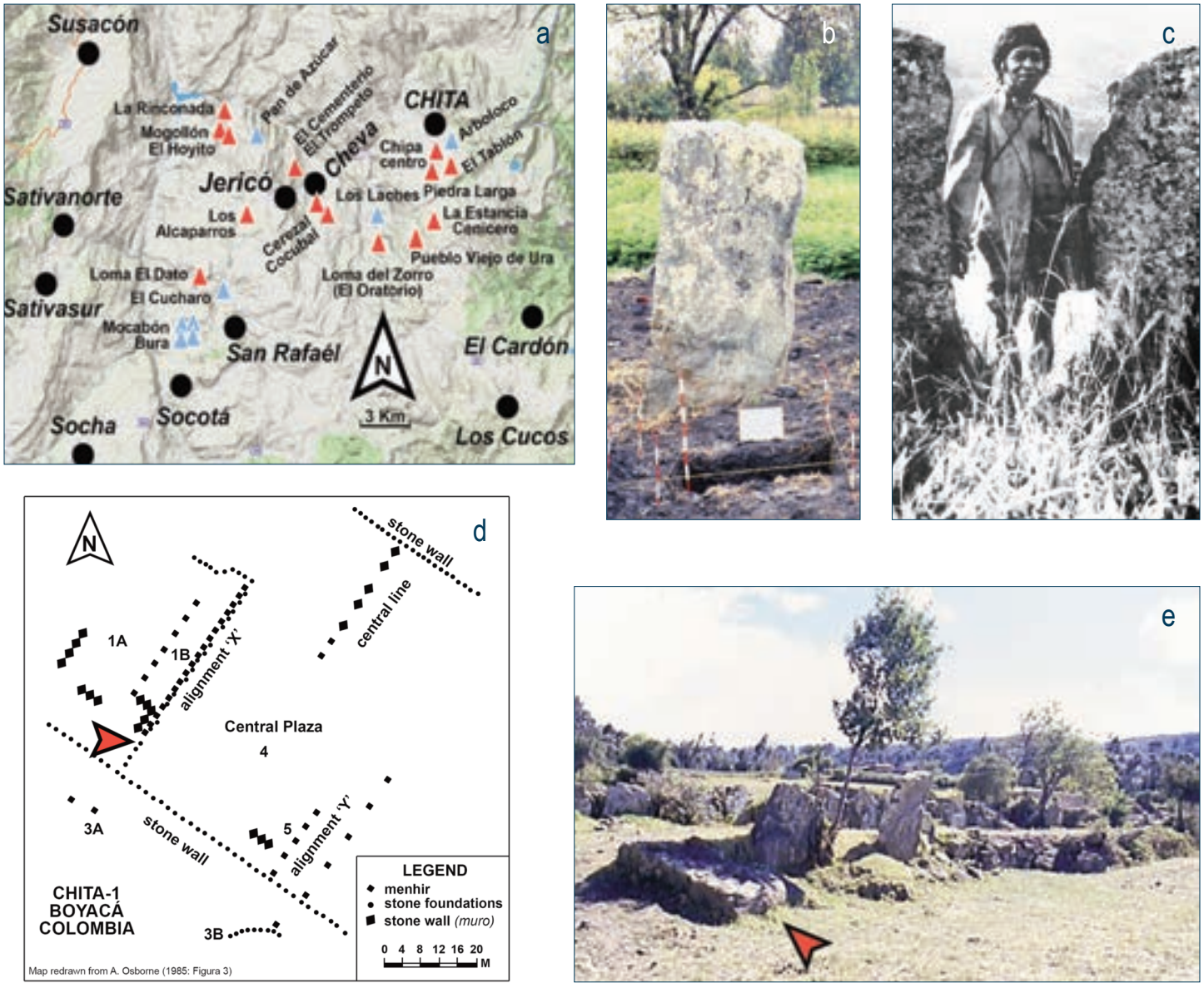


Fig. 6 – a. Map of the Jericó-Chita area; b. The fragment of monolith from Pierda Larga, near P. Pérez Riaño's Cut-1 (1 x 1 m); c. Uw'a native standing between two menhirs at the site Kubaruba or Cobaría (location in **Fig. 1**); d. Plan view of the monolithic alignments at Chitapacentro, based on Osborn (1985: Fig. 3); e. View (red arrows) of the south end of Structure 1B at Chipacentro (Historic photo (c) by Ann Osborne (1985) courtesy of FIAN-Banco de La República; photographs (b) and (e) courtesy of P. Pérez Riaño).

Choargal sector), is the Arboloco site. Although lacking menhirs, it has furnished the best data on the Late Formative occupations in this zone. It yielded a substantial Late Formative habitation and associated human burials (vaguely reminiscent of the 'Cancel Tombs'), supported by three radiocarbon dates (uncalibrated: *ca.* 300 BC-AD 400; Pérez Riaño 1999: 88-102, 170; 2001: 79-80). Among the notable Late Formative artefacts, found in all stages of production, are lithic winged plaques or pendants (some are bat-winged) of styles similar to those of the Tairona area in Sierra Nevada de Santa Marta, the Venezuelan Andes, and far beyond through Central America (Pérez Riaño 2013: 26-27, 1999; see also Acevedo Gómez *et al.* 2018; Perera 1979). The undated upper layers and the surface included a low frequency of Lache Period ceramics, including some Muisca and Guane ceramic imports (Pérez Riaño 1999: 101).

Along the trail of La Estancia to Pueblo Viejo de Ura, at El Pedregal de La Estancia (2670-2800 masl), Pérez Riaño found two menhirs used as a bridge to cross a creek; both originally came from the relatively nearby site of El Cenicero (**Fig. 5**: map). The surface survey at El Pedregal recorded around 25 large, stone structures (up to 1 m tall) thought to be house foundations, and ceramics dating to the Lache Period (Pérez Riaño 1999: 48, 2001: 93), whereas the El Cenicero excavations revealed a Late Formative occupation associated with stone-slab walls, one of which was square (house foundations?), but no menhirs. El Cenicero also included Late Formative lithic winged pendants, as did Arboloco. Occupation at the site continued into the Lache Period (Pérez Riaño 2001: 79).

Moving 3 km due southwest, one reaches Pueblo Viejo de Ura, attacked by Hernán Pérez de Quesada in 1541 (Silva Celis 1945: 376-377). Osborn's (1985, 1995) U'wa informants mentioned that the site once had menhirs, no longer present (Perez Riaño 1999, 2001: 79). Test excavations and surface collections (Silva Celis 1945) indicate a continuous occupation from the Late Formative to the historic Lache Period (Pérez Riaño 2001: 79). Some 2.75 km west is Loma del Zorro (or El Oratorio), where a single (?) menhir is located on a terrace (Pérez Riaño 2001: 93). Surface ceramics indicate a Late Formative to Lache Period presence. These sites are less than 1 km south of Cheva and Los Laches dispersed *caseríos* (homesteads; **Fig. 5**: map). On the Cocubal trail to the villages of Cheva and Jericó, at El Cocubal, burials were detected under massive natural rocks with menhirs reported nearby (**Fig. 5a**). Further along at El Cerezal, two menhirs separated by 5 m (*ca.* 2.7 m tall x 0.8 m diameter) were reported (**Fig. 5c**) by Pérez Riaño (2001: 90). The pottery detected on the surface belonged to the Lache Period. Just north of Cheva and near El Cementerio is the menhir of El Trompeto, similar to those from El Cerezal (Pérez Riaño 2001: 90, 2013: 18). El Cementerio (2200 masl) is itself a habitation site with circular stone walls, presumably a Lache Period structure, albeit Late Formative ceramics were also detected (Pérez Riaño 1999: 111-113). Pérez Riaño (2001: 91) commented that close to most of the menhir sites in the Cocubal trail *'there are tombs… under very large boulders, which had been sealed with several layers of slabs*' and where at least eight individuals of different ages were laid in secondary bundles. The burials' painted pottery is stylistically of the Lache Period, similar to that found in the Chipacentro and Pueblo Viejo de Ura. In another *vereda*, named La Ovejera (*ca.* 2900 masl), in the Jericó region, a series of menhirs formed a 9 x 19 m rectangle, but little else is known about this site (Pérez Riaño 2001: 81).

Moving southwest of Jericó, along the El Juncal trail, a standing menhir was photographed *in situ* (**Fig. 5c**) but has since been removed (Pérez Riaño 2013: 29-30). Further south-southwest, on the Jericó to Bacotá trail is La Loma del Dato (2200 masl) site, consisting of one square-sided menhir (1.1 m tall) facing eight small monoliths aligned in a row (Pérez Riaño 2013: Photo 11, 2001: 78). Surface pottery here ranges from the Late Formative to the Lache Period. This site is intervisible with El Naranjito, a rock art site (painted) and next to El Cucharo site, another locus of menhirs (2013: 29, Photo 13) for which no further details are available (**Fig. 5**: map). In Sativanorte, El Datal sector yielded six habitation sites with assemblages assigned to the Muisca Period (with Guane ceramic imports), collectively suggesting that south and west of this area, roughly marks a Muisca-Lache borderland. The Bura-Mocabón trail (2900 masl), near Sativasur, yielded four sites of which one unnamed site was excavated, yielding

Muisca Period ceramics and a radiocarbon date of 1710±80 BP (Pérez Riaño 1988: 58-60, 2001: 86).

West of Jericó, along the *vereda* El Juncal-La Rinconada, one reaches the junction of Chicamocha and Chitano rivers. In this vicinity, three nearby sites, La Rinconada (1650 masl), El Hoyito (1950 masl) and El Potrero de Mogollón (2200 masl) were investigated by Pérez Riaño (1999: 106-110, 2001: 90, 2013: 29). La Rinconada in fact consists of five sites that yielded several groups of aligned monoliths and slabs, 4.7 m and 6.3 m in length and 30-40 cm high, interpreted as house walls (Pérez Riaño 1999: 10, 2001: 90, 2013: 29). El Hoyito had stone alignments defining square and rectangular spaces, some of which consisted of double rows of stones (Pérez Riaño 2001: 90). Mogollón had two circular structures similar to those reported for La Estancia (see photograph in Pérez Riaño 1999: Photo 5.19). The ceramics from all these sites predominantly belonged to both Muisca and Lache types and a minority to Guane.

Some 45 km north of Chita is the site of El Saladero (or Saliaguito), on a terraced hillside (*ca.* 2800 masl) north of the village of Las Mercedes (**Fig. 5**: map), a settlement that falls within the territory of the Chiscas (*Betahuwa* clan) of the U'wa ethnic group. Osborn (1985: 106-117) reported a modern wall of stones within which there were several menhirs that farmers had removed from their original placement some 15 m to the south. In the latter location there were still five menhirs *in situ*. The archaeological deposit (up to 90 cm below surface) [17] was concentrated around the five menhirs (Osborn 1985: Photos 9-11). While hoeing the field for cultivation, the farmers uncovered a human burial, the individual having been interred in a flexed dorsal position, with the head pointing to the Sierra del Cocuy (east), and with small stone slabs around the burial pit and two more on each side of the skull. The surface-collected ceramics again span from the Late Formative to the Lache-U'wa Periods (Pérez Riaño 2001: 81). In the Cocuy/Güicán high-lands, along the Róyota River, is one of the best-preserved megalithic structures, consisting of two parallel rows framing a 6 x 20 m area (**Fig. 5d**). This locality is still used by modern U'wa. No archaeological sampling has yet been conducted or published. Similar, but less well preserved (or presently destroyed) rectangular structures are those of La Plazuela site near El Espino, Sínsiga near Cobaría, as well the above mentioned Chipacentro and El Oratorio (Pérez Riaño 2013).

In the Sierra Nevada del Cocuy region much more needs to be done in terms of systematic archaeological excavations beyond small test pits, and far more absolutes dates are needed to begin to contextualize the functions of the megalith structures and menhirs, their possible inter-connections with other features in the landscape (ancient trails, burial sites, habitation vs ceremonial sites, etc.). As the map in **Fig. 5** shows, there are large areas north of Jericó and Chita, as well the vast region in the high elevations of Sierra Nevada awaiting to be archaeologically explored. Indeed, the easternmost menhir sites reported by informants to Pérez Riaño (2012: 132-141) but yet to be archaeologically investigated, are found along the La Salina to La Cabuya trail towards the colonial town of Tame, on the Upper Casanare River, of the Llanos Orientales (**Fig. 1**). Notably, a single menhir is today found in what was the 18th Century Jesuit mission, Hacienda de Caribabare (1661-1767). Among the indigenous groups gathered at Caribabare were the Tunebo (Chibcha speakers) and other groups such as the Caquetío (Arawakan speakers). Here, a fragment of the menhir is set on a plinth of piled cobblestones, a monument that, according to Pérez Riaño (2012: 140, Photo 11), suggests this area to have been '*a sacred Lache-U'wa site*'. Also, the sacred 'Flight of the Swallows' songs commemorating ancient (mythical and historical) journeys performed in U'wa ceremonies recall specific site names which have menhirs, several of which still have yet to be verified on the ground, such as Tebarira in the Labateca region (Department of Santander), Kuta and Ríkuba along Róyota River, Ririban in the El Ratón Creek (Sínsiga-Cobaría area), Rohagra in the highland of Güicán, and Kyerketha in the region of Chiscas (Osborn 1985: 43-44, 66-71, 104).

(17) Osborn only made surface collection. The depth of deposits and the information on human burials is based on the trenches and other agricultural activities made by the local farmers.

5. Sierra Nevada del Cocuy: Use and Significance of Menhirs among the U'wa (Lache)

Early in the 16th century, the Sierra Nevada del Cocuy area was inhabited by communities that the Hispanic documents refer to as Lache and later (17-18th century) as Tunebo. They inhabited a broad region east of the Chicamocha River (east of Soatá and Socotá), the Cocuy highlands and the eastern edges of the Llanos Orientales. The Lache also extended north-northeast along the Sierra del Cocuy, not far from the borders of the modern Department of Santander (south of Tequia Valley) and Mérida Andes in Venezuela. When Hernán Pérez de Quesada arrived in 1541 at Pueblo Viejo de Ura (**Fig. 1**) his first impression was '*These Lache people, as much for their physique as in the dress, language and speech, and religion and superstitions, are very different to the people of the Reino* [de Nueva Granada] *called moscas* [Muisca]' (Aguado 1581 [1916]: 380) [(18)]. Scholars agree that Lache and Tunebo correspond to U'wa, the self-designation used at present by the direct descendants of these ethnohistoric groups (Osborn 1985, 1995; Pérez Riaño 1999, 2013). The U'wa communities speak Tunebo, a language of the Chibcha family to which the Muisca also belonged. The persistence and survival of many traditional aspects of U'wa culture and society provides a rare and unique opportunity to understand and appreciate the function and symbolism of the menhirs and other megalithic structures, even if these, as noted above, may all date to Pre-Hispanic, pre-Colonial periods.

The Sierra Nevada del Cocuy is the northern extension of the Eastern Andean Cordillera of Colombia. Its highest mountain peak, Ritacuba Blanco (*Ritaku'wa*), is 5,410 masl and lies 13.5 km northeast from the town of Güicán (**Fig. 1**). To the east, are the vast savannas of the Llanos Orientales. West of the Cocuy range, a series of intermontane valleys descend to elevations between *ca.* 2800 (in Chita) and 1600 masl (La Rinconada). The lower *Páramo* ecological zone ranges between *ca.* 3000-4000 masl, below which is the *Tierra Fría* or Cold Land (*ca.* 2100-3000 masl). The warmer (temperate) *Tierra Templada* zone is between 800-2100 masl, giving way to the *Tierra Caliente* below 800 masl, the latter found only on the eastern slopes of the Andes, continuing down into the Eastern Llanos (*ca.* 300-100 masl) (Osborn 1995: 32-42). In this landscape, lakes, lagoons, and ponds abound. Some are regarded by the U'wa as sacred and ceremonial, such as the thermal spring located just south of the town of Güicán where the U'wa performed rituals to the feminine fertility deity *Rika* (Osborn 1985: 94-97). Equally important landscape features are the *salinas*, or rock salt outcrops (**Fig. 1**: La Salina). The salt was harvested as an exchange commodity and as a key ingredient (with *ají*, [*Capsicum*]) to be used in shamanistic curing practices – salt being associated with mortality and death (Osborn 1995: 153, 218, 221).

One adaptation to this vertical ecological zonation by the indigenous farming communities has been the practice of transhumance – a seasonal pattern of mobility – documented since early Spanish contact and continuing into the 20th century. It should be noted that transhumance travel and transport of goods was by foot, unlike the Peruvian-Chilean Andes where camelids (llamas) were used as pack animals. The U'wa are not a pastoral but an agricultural society. The historic Lache/Tunebo and modern U'wa maintained residences in and exploited several different altitudinal zones to maximize procurement (gathering, hunting, fishing) and agricultural productivity. In the case of the U'wa, Osborn (1985: 32-34, Table 2; also, in Pérez Riaño 2013: 5) has argued that transhumance between the higher and lower altitudes was undertaken for ceremonial rather than material (ecological) reasons, reversing her earlier view presented in her 1982 PhD dissertation (Osborn 2009).

(18) The Spanish quote is: '*Esta gente lache, así en personas como en trajes, lengua y habla y supersticiones de religión, es muy diferente de la gente del Reino llamada moscas*'. Starting from Tunja, Hernán Pérez de Quesada's conquest took the route to Sogamoso through Chicamocha and to 'Uva' (Pueblo Viejo de Ura, from where the Lache moved to Chita, which was also conquered. From Chita, the Spanish continued north to Cocuy, the Panquebá, Guacamayas towns (of the Lache), until reaching the Valley of the Cercados or Tequia, implying residential chief complexes similar to those described for Tunja (see maps in **Figs. 1** & **5**). Pérez de Quesada noted that the natives of Tequia Valley (see **Fig. 1**, were different from the Lache in both language and dress; Aguado *ca.* 1581 [1916]: 380-381).

The U'wa divide the year into four seasons (wet, wet-to-dry, dry, dry-to-wet) to maximize food resource exploitation; residential movements are coordinated with the change of season. Crucially, the entire U'wa group (clan) moved and took up residence in the same specific altitudinal zone, season to season, eventually returning to their starting residence. The latter was considered to be the principal home, the clan's seat, and also their principal ceremonial locus (Osborn 1985: 32-34, 1995). Of course, the U'wa's explanation (emic perspective) for changing residence seasonally has little to do with optimal resource exploitation afforded in a given vertical ecological zone (the materialist perspective) and everything to do with the appropriate ritual performances in the ceremonial calendar, which nonetheless synchronizes with the (solar) agricultural calendar. Thus, the reasons for transhumance are a matter of both ecology (agricultural scheduling) and ideology (ceremonial calendar). At each seasonal residential site, the group (clan) had access to their own ceremonial sites but also to those ceremonial sites from other U'wa clans, where inter-group ceremonial gatherings were celebrated. Not all these ceremonial loci were within the residential settlement but were also found in a variety of locations along well-trodden *veredas* or trails (French: *chemin de champ*) connecting the different sites. To these ceremonial loci one should add burial sites in caves or under the ledge of massive rocks, and rock art sites, the latter all clearly Pre-Hispanic but appropriated by the U'wa (Pérez Riaño 1999, 2001, 2013). Several ceremonial sites important to the U'wa are marked by menhirs found along the *veredas*. As discussed in the previous section, the archaeology present around these sites include artefacts that span the Late Formative to the Lache periods, and it is theoretically possible (but must be archaeologically confirmed) that during the colonial period (16th-18th centuries) new menhirs may have been erected while pre-colonial and early colonial ones were actively maintained by the Lache (Tunebo, U'wa).

Not all megaliths meaningful to the U'wa are sculptured by human hands, and this is likely to also be case in the Pre-Hispanic past. For example, along the trail from Güicán to Bachira settlements, on the margins of Róyota River there are three unmodified megaliths (1680-1650 masl), all figuring in the creation myth of the U'wa. According to native informants, a megalith named Tejeira (or *tetra*, in Osborn 1985: 61), is a feminine personage carrying a child on its back, the latter represented by a smaller rock resting on top; another megalith is a masculine personage. The U'wa informants explained that these rocks were persons (mythical heroes) who were persecuted and fled towards Bachira and other places of the Tierra Fría zone, in order 'to avoid being killed, they transformed into stone', coinciding with similar myths collected in the Chita area (Pérez Riaño 2013: 35-36). However, there are no references to the manufacture of menhirs by the Lache/Tunebo or U'wa in the Spanish colonial chronicles, or in the 20th century ethnographic record. Were all these megalithic landmarks erected in pre-colonial times? Did the later colonial Lache or Tunebo respect their emplacement or were (some) megaliths relocated to more propitious sites? Keeping in mind the archaeological evidence already discussed, it is worth exploring the ideological and ceremonial significance that menhirs and other megalithic structures have among the U'wa.

In the cosmology of the U'wa '*…the universe was originally made up of two spheres (the permanently above and the permanently below) from whose mixing the intermediate* [earthly] *world originated*' (Osborn 1995: 16). The… dual structure is reflected in U'wa settlements, each of which is organized into two asymmetrical moieties – an eastern one associated with the rising of the sun and a western one associated with its setting. According to Osborn (1985: 29-30), '*there are* [two] '*ceremonial houses'* [east and west, and a third one] *in the… central part of the settlement. The eastern and western parts were occupied by different groups and the central part by individuals who enjoyed alliances with people in the two moieties…The eastern side (*kubina*) is associated not only with the rising sun but also with the above, with the masculine gender (which does not mean that only men live there). The western part (*ruya*), enjoying an association with the setting sun, is female and associated with the underworld below. Each sector is also associated with solstices and equinoxes*' (Langebaek 2014: 211; my clarifications in straight brackets).

The U'wa explained that the visible columnar megaliths of the intermediate world (i.e., the middle, earthly domain) are the posts that support the 'house' of the upper cosmos. The underground portion of the (invisible) columnar megaliths instead support the lower cosmic 'house' of the underworld (Osborn 1995: 74). Thus, the ceremonial site, whether a single menhir (post), a complex of monoliths, or the ceremonial house, is where the two cosmic halves meet and mix. The upper and lower worlds are, furthermore, inversions of each other. The U'wa ceremonial life revolves around the Reowa and the Aya Ceremonies, both richly described and analyzed by Osborn (1985, 1995). In essence both involve dances and songs whose lyrics refer to myths about mortality and acquisition of knowledge to combat disease (purification) in the case of the Reowa and about the establishment of humanity and cultural order in the intermediate (earthly) world in the Aya Ceremony. Given the dual organization of U'wa society, the Aya and Reowa song-dance ceremonies are each led by two *bita wedhaiya* masters of ceremony (i.e., master shamans or, better, 'wise men'), one from each moiety (Osborn 1995: 156). Importantly, the Reowa and Aya songs rememorate journeys undertaken by personages and deities through specific trails (*veredas*), stopping at key points in the landscape (settlements, ceremonial sites, menhirs sites, lagoons, burial caves, rock art sites, etc.), where various events took place, all in 'mythohistorical' time. These mythical, ancestral journeys are collectively called by Osborn (1985) *El Vuelo de Las Tijeretas* (Flight of the Swallow-tailed Nightjar; cf. *Uropsalis segmentata* [Lemke 1979]). The flight trajectories of the swallows (thought of as *ruka* or 'sister's children') serve to rememorate the various routes and journeys undertaken through the earthly cosmos by these mythical/ancestral bird-personages (sister's children), some of which are still undertaken by the modern U'wa clans.

The ceremonial name for a menhir is *Kyerketha* (or *Kerkatha*), which is also the name of a deity. In ordinary language the menhir and the shaman's ceremonial staff is *teba* and/or *teka* (plural *tebina/tekina*), which is also the main wooden post of the U'wa ceremonial house [19]. The set of house posts or menhirs (*tebina*) are thus said to support the upper and lower cosmos (Osborne 1985: 45; also, 61; 1995: 10, 61). The shaman's (*bita wedhaiya*) wooden staff or baton (1 m long x 30 cm diameter) used in the ceremonies and the menhirs share the same symbolic connotations: the U'wa say both are like 'gigantic needles' that link the upper and lower spheres of cosmos with the earthly world. Osborn further adds the communicative value that the ceremonial staff and the menhir have:

'*When the Kubariwa (Cobaría clan) wishes to communicate directly with the deities, they go to the site of the menhirs and talk to them* [the menhirs] *… When they try to explain the role of the baton in* [for example] *the principal ceremony of blowing* [Reowa Ceremony]*, they say that it [the baton] carries the song and compare it to the white man's pencil*' (Osborn 1995: 104-105; my underlining and italics) [20].

The sites with menhirs also provided the formal scenario for the exchange of gifts between different Uw'a clans. The reciprocal exchange of goods did not (always) require face-to-face interactions but, interestingly, took place in the absence of a trading partner. Moreover, the goods they collected a few days later were believed to be transformations of those they had originally left. As Osborn explained:

'*The word for a house post in the vocabulary used in chanted myths is kerkatha, which is also the name given to the places where there are menhirs that still exist within the territory of the majority of the* [U'wa] *clans. The menhirs were used* [in the past] *for astronomical observations* [and the place where] *the exchange of product between clans took place.*

(19) The Tunebo (U'wa) language) ordinary word for baton, house post and menhir is transcribed as *teba* in Osborn's 1985 book, but as *teka* in the 1990 book (both Spanish editions). I have not been able to check the original PhD thesis or its 2009 published version (in English) to determine which is the correct form. However, in the 1985 book (p. 61) Osborn says *teka* is the word for baton and *teba* is for menhir. This may cast some doubt as to these terms being synonyms, as Osborn argued, and I follow here.

(20) La citation en espagnol est la suivante : '*Cuando los Kubaruwa* [Cobaría] *quieren comunicarse directamente con la deidades van al sitio de los menhires y les hablan… Cuando tratan de explicar el papel del bastón dentro de la ceremonia principal de soplar* [Reowa]*, dicen que éste 'leva' canto y lo comparan con el lápiz de los blancos*' (Osborn 1995: 104-105).

The men of one clan placed their products there, returning four days later to pick up those left in exchange by men from the other clans' (Osborn 1995: 61, 64) [21]. *'In the past, the exchange with other U'wa clans did not imply face-to-face negotiations. The Kubaruwa* [Cobaría] *left their products in the sites with menhirs and* [then] *continued their journey to the next clan's territory* [another menhir site] *where they did the same. On their way back, they collected the goods that each* [different] *clan left in exchange in these same* [menhir] *sites. The Kubaruwa say that the goods that they* [originally] *left were transformed into the goods they picked. This mode of expressing the result of the exchange fits very well with their general belief that certain objects suffer a transformation according to the place where they appeared*' (Osborn 1995: 178) [22].

Although it seems that there is an awareness that the goods originated from another U'wa clan (trading partner), the transformation of the object is not simply the result of a direct physical replacement of object 'a' for object 'b', but of its supernatural transformation without human agency. This is a gift exchange modality that departs from many Mauss-inspired ethnographic examples from around the world (e.g., Gregory 1982 [2015]). It may be suggested that the menhir itself, often thought of as a person-being/deity (albeit nonhuman), is intimately involved in the transformation of the gifts, and perhaps one reason why such megalithic sites are the chosen, preferred (if not the only) places for such 'magical' gift transformations to occur and, thus enable reciprocal exchanges.

To date, archaeological sampling in the Cocuy region has, for the most part, focused on establi-shing, via artefact (ceramic) typology, a regional cultural chronology. Future investigations should further refine this work (broader excavation areas, more absolute dates), and should also consider what sort of portable material evidence there is or might be found in megalithic sites, like Chipacentro or Róyatan, that could be associated with ceremonialism and feasting as well as the exchange of goods. Given that there are (habitation) sites with no menhirs or megaliths (e.g., Arboloco, Tres Esquinas, Upal and Cerezal; **Fig. 5**: map) a comparison of the vertical and horizontal distributions of various types of portable artefacts with those from sites that do have menhirs/megaliths, could begin to unravel some of the unanswered questions, including determining what is distinctive or unique about ceremonial/exchange sites with menhirs and megalithic structures. A focus on identifying archaeological evidence (independent from ethnohistorical documents) of ceremonial feasting (chicha jars, decorated serving bowls) as, for example, obtained for El Infiernito and, to a lesser extent, in the Cercado Grande de Los Santuarios in Tunja, would be a step forward.

6. The Megalithic Tradition of San Agustín

First impressions of the megalithic statuary of San Agustín were recorded in 1758 by Juan de Santa Gertrudis, a Franciscan monk who believed that the monumental statues were, ultimately, the work of the devil (Llanos Vargas 2013: 3-4). At the same time, he struggled with his conviction that some of the statues were the images of bishops (with mitre and crosier!) and Franciscan friars with robes. Santa Gertrudis reasoned that since these statues were much older than the Order of Saint Francis, '*only the devil himself could have fashioned* [them], *perhaps to foretell the coming of Christ's ministers to the American infidels*' (Reichel-Dolmatoff 1972: 23-24). As Reichel-Dolmatoff (1972: 21) noted '*no mention was ever made in the early Spanish chronicles of the huge stone monuments of San*

(21) The quote in Spanish is: '*La palabra para poste de casa en el vocabulario de los mitos cantados es kerkacha, que es también el nombre para los lugares donde hay menhires los que aún existen dentro del territorio de la mayoría de los clanes. Lo menhires fueron usados, en un tiempo, con propósitos de observación astronómica. En estos sitios también se llevaban a cabo intercambio de productos entre clanes. Los hombres de un clan colocaban productos allí, regresando a los cuatro días para recoger los dejados en su lugar por hombres de otros clanes*' (Osborn 1995: 104-105).

(22) The quote in Spanish is: '*En el pasado, el intercambio con otro clanes U'wa no implicaba negociación cara a cara. Los Kubaruwa dejaban u producto en los sitios de los menhires, continuaban su camino hasta el territorio del siguiente clan, donde hacían lo mismo, y de regreso recogían lo productos propios de cada clan, dejados a cambio en los mismos lugares. Lo Kubaruwa dicen que los bienes que ellos dejaban e convertían en los que recogían. Esta forma de expresar el resultado del intercambio encaja muy bien con la creencia general de que ciertos objetos sufren transformaciones de acuerdo al lugar donde apararecen o se manifiestan*' (Osborn 1995: 178).

Agustín Valley… Were they buried, hidden out of sight in the forest? Or did the Spanish simply ignore them, there being more matters to worry about?' Regardless, throughout the 19th century a long line of illustrious Colombian and international explorers (naturalists, geographers) visited and reported on San Agustín, among which were Francisco José De Caldas in 1808, Mariano Eduardo de Rivero in 1825, who later in 1851 published an illustrated book with Johan Jacob Tschudi (Rivero & Tschudi 1851: Láminas XXXIX, XL); and Alphons Stübel in 1869 who took the first photographs and also sketched drawings; and finally, the eminent geographer Agustín Codazzi in 1854. While Stübel thought that the San Agustín statues were thousands of years old, Codazzi speculated they were instead sculptured by Andaki (or Andoque) groups at the time of Spanish conquest. The expeditions by members of the Chorographic Commission (1850-1859), led by Codazzi, included Manuel María Paz who created watercolour paintings of the megalithic monuments at San Agustín. Later, José María Gutiérrez de Alba's (1872) visited San Agustín and added to his journal abundant drawings of the monuments [23]. Although these drawings are creative renditions, some provide useful insights on the state of the monuments at the time. Through the 19th century, looting of the mounded funerary structures intensified. By the start of the 20th century, several of the statues from the region had been relocated to the main plaza of the town (Preuss 1929 [1931]: 78, Plate 2), some ending up in Bogotá and Berlin (Montero Fayad 2016). The works of Llanos Vargas (2013) and Reichel-Dolmatoff (1972) provide a rich account of these initial explorations of San Agustín.

The first investigation by a trained archaeologist was by Konrad Theodor Preuss in 1913. His publication (in 1929) of *Monumentale vorgeschichtliche Kunst, Ausgrabungen im Quellgebiet des Magdelena in Kolumbien und ihre Ausstrahlungen in Amerika*, with 87 photographic plates and 193 drawings gained world-wide recognition, placing San Agustín among the top great civilizations of the Americas at the time (see also Wavrin 1936). His analytical focus was primarily on the symbolism of the monumental statues and funerary architecture, although he did also comment on pottery and other artefacts recovered from excavations at a number of sites using the field techniques of his era. Relevant here is that, despite the anthropological/archaeological theoretical paradigm typical of early 20th century – especially cultural diffusionism – his rather cautious interpretations of the sculptures as material manifestations of Pre-Hispanic religious beliefs and practices (religious cult) still resonates with much later (and more sophisticated) interpretations, such as that of Reichel-Dolmatoff's (1972: 83-113) analysis of the centrality of the 'Jaguar-Monster' of San Agustín statuary. Preuss (1929 [1931]: 171), stated that '*It is probable that in the figures* [statues] *and the groups* [Pre-Hispanic people] *had themselves likewise symbolized ceremonial cults and mythical legends that obey the same* [human] *psychic base and not only represent knowledge or remembrances but also exert a magical influx over the events*'. Preuss' reasoning echoed Herbert J. Spinden's (1917) well-known proposition that all of the high civilizations of the New World rested on a single 'Archaic', or 'Formative' or 'Neolithic' basement (see also Lathrap 1977: 716). This notion of a shared 'Archaic' mental template allowed him, for example, to establish analogies between the Agustínian statues depicting a standing anthropomorphic figure mounted on its back by a zoomorphic creature ('alter ego'), such as at Mesita B, Alto de Lavapatas and Alto de Las Piedras, with the portable stone figures (*ca.* 11-17 cm tall) from the Trombetas River in Amazonia (compare McEwan *et al.* 2001: Fig. 3.4 and 7.16 with our **Fig. 10b**). For Preuss this uncanny formal similarity is not coincidental but points to a shared 'Formative' substratum ('psychic base') with regard to widespread religious ideas and practices. However, this shared 'Archaic' base was not the result of parallel convergence or independent 'invention' but of cultural diffusion: '*the richness of the forms* [iconography]*… makes us think that*

(23) The water color paints by Manuel Espinosa can be accessed and downloaded (JPG, PNG) at *https://catalogoenlinea.bibliotecanacional.gov.co/client/es_ES/bd/search/results?lm=F_COROGRAFICA_DIG&te=ASSET&rm=ACUARELAS+DE+L0|||1|||0|||true*
The journal by Guitiérrez de Alba, including the water colours and drawings, can be downloaded as PDFs from: *https://www.banrep.gov.co/impresiones-de-un-viaje/index.php/manuscrito and as JPG files from https://www.banrep.gov.co/impresiones-de-un-viaje/index.php/explorar/index?byWhat=tags&tags=Escultura+prehisp%C3%A1nica*

San Agustín was more likely to have influenced the other civilizations and was not the one receiving influences from them' (Preuss 1929 [1931]: 220). To strengthen his arguments, he also made comparisons between San Agustín and the iconography of, for example, the statues of Isla Zapatera in Nicaragua, the stellae from Chavín de Huántar in Perú, and the statues and iconography of Tihuanaco, among others.

The next generation of archaeologists – all within the culture history (normative archaeology) paradigm and with a preoccupation with cultural chronology – continued the work initiated by Preuss, but this time also weighing in discussions of migration as well as diffusion (linked to historical linguistics), but above all with a focus on the regional development of San Agustín culture. The key scholars who began systematic work in San Agustín and neighbouring Tierradentro in the late 1930s were Pérez de Barradas (1938, 1943) and Hernández de Alba (1946; see also Langebaek 2010; Llanos Vargas 2013: 30-33). Luis Duque Gómez (1916-2000), a contemporary of Hernández de Alba, began work in San Agustín from the early 1940s (Llanos Vargas 2013: 36-38). His investigations, particularly in collaboration with his protégé Julio César Cubillos, resulted in many key publications that form the backbone of later archaeological projects from the 1980s until the present (Duque Gómez 1946, 1963, 1964, 1982; Duque Gómez & Hidalgo 1993; Duque Gómez & Cubillos 1979, 1981, 1983, 1993; Cubillos 1980, 1991, 1992). The archaeological investigations were no longer solely focused on the monumental structures (burial dolmens and megalithic statues) but also the stratified deposits and domestic remains in and around the megalithic structures; the first radiocarbon dates were obtained at this time. The work led by Duque Gómez (see **Fig. 8a, b**), includes the first restoration (1960s to 1970s) of several megalith sites that eventually led to what today is the San Agustín National Archaeological Park, designated in 1993 as a UNESCO World Heritage site (*https://whc.unesco.org/en/list/744/*; See ICANH 2011). These and subsequent restoration works have been criticized, albeit with the acknowledgement of the difficulties encountered as a result of previous looting and the earlier archaeological excavations (Lleras Pérez 2014).

The eminent social anthropologist, yet superb archaeologist Gerardo Reichel-Dolmatoff, in 1966, conducted a series of archaeological excavations (using 'natural' stratigraphy techniques) at several sites, primarily targeting domestic refuse rather than megalithic structures (Reichel-Dolmatoff 1972: 115-129) establishing a ceramic-based regional chronology. On this basis he proposed a cultural sequence of five distinct ceramic complexes (phases and/or periods), dating from before the 6th century BC into the first decades of the 17th century AD. He suggested that the Isnos Period witnessed the development of monumental megalithic works, along with extensive landscape modifications (ridges, embankments, artificially flattened terraces) and evidence of metallurgy. He correlates the Isnos period with the presence of a chiefdom-level society, following Elman Service's (1962 [1971]) neo-evolutionary typology, *en vogue* at the time. He stressed that it was during this stage that the institution of the shaman witnessed its most notable development, where one observes '*their pervasive influence in the burial ritual paraphernalia, the burial chambers and tombs of the great chiefs*' (Reichel-Dolmatoff 1986 [2016]: 264-265). Unlike previous scholars who saw a single, long-lived homogeneous San Agustín culture, Reichel-Dolmatoff insisted that:

'*It is obviously erroneous to speak of 'a* [singular] *San Agustín Culture'; in fact, it is about many different cultures, belonging to many phases…, each with its own characteristics and throughout centuries and millennia. The origins of sedentary life in San Agustín should look into the forest regions, both of the mountain ranges and alluvial plains* [Llanos] *of Colombia, such as in* [western] *Amazonia. Indeed, in the sculptural art of San Agustín certain features of clothing, adornments, and weapons that indicate a tropical forest origin. Likewise, many of the animals depicted in the carvings of stone, such as jaguars, alligators, and large snakes, belong to the environment of the great tropical rivers and not to the temperate zone of the headwaters of the Magdalena River'* (Reichel-Dolmatoff 1986 [2016]: 271).

Of the sculptural and megalithic art of San Agustín, Reichel-Dolmatoff concluded that the chronology of this art is unknown, but nonetheless is the result of a '*gradual development of techniques and*

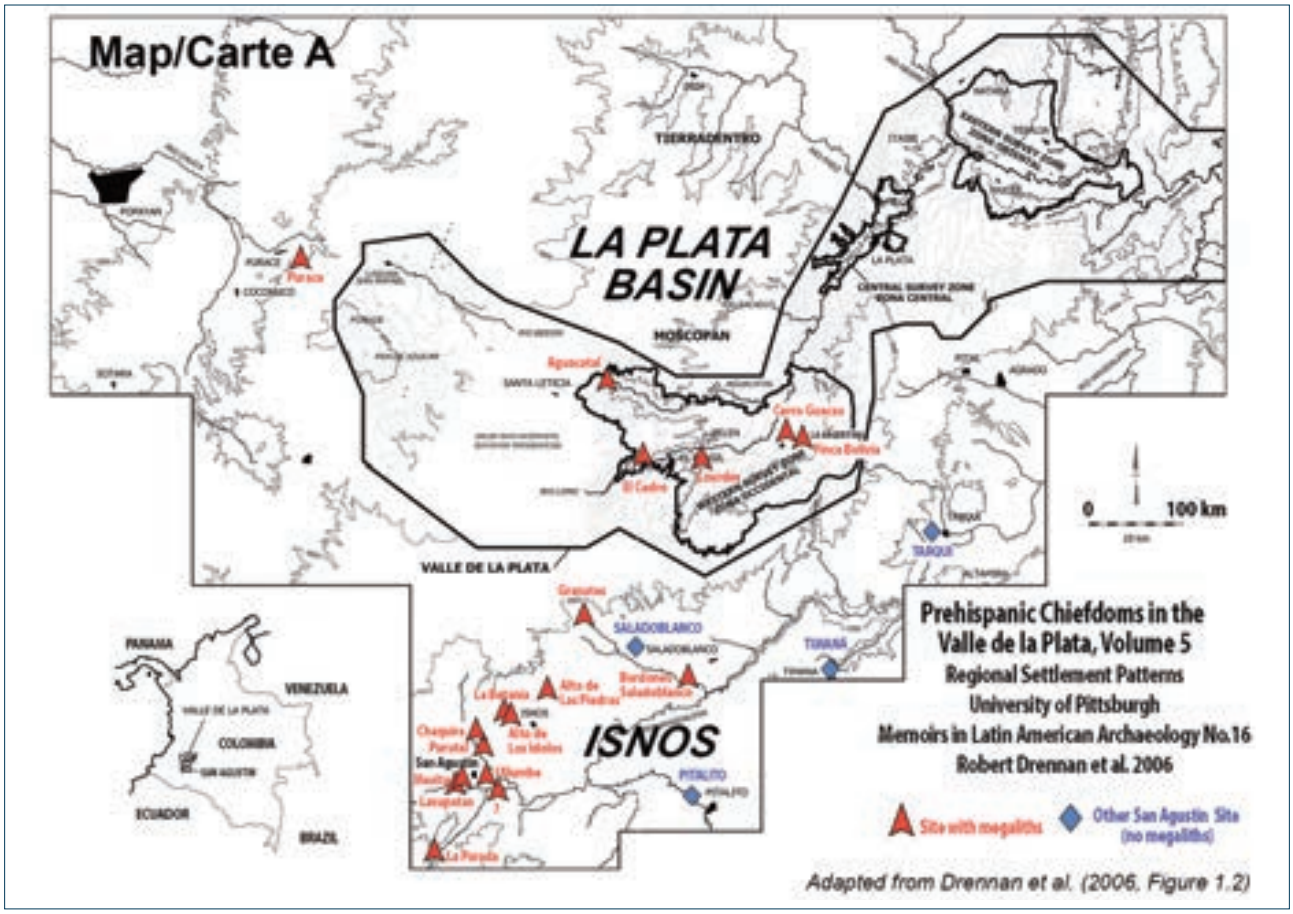
conceptualizations', and adds, *'since the sculptures vary in many stylistic, formal details, their classification is extremely difficult*' as is their '*correlation with certain phases of social and economic development*' (Reichel-Dolmatoff 1986 [2016]: 276). He goes on say that:

'*A very tentative classification of the statues may consider the following styles: shaped statues of rough columns and very rudimentary carving; statues flattened, elliptical section, and three-dimensional statues. There are intermediate shapes, as well as small carvings in peg or dowel shape; there are also isolated heads. The themes or characters that are represented in these sculptures are of an astonishing variety and defy a more detailed formal classification. There are human beings, animals, and monsters, almost all distorted, disproportionate, and with bestial features. It is a cruel, brutal art and it is based on an imagination charged with violence and terror. We do not know who these sculptures represent: chiefs, shamans, gods or ancestors; in any event, they are about highly distressed psychological projections, possibly visions produced by the use of hallucinogenic drugs*' (Reichel-Dolmatoff 1986 [2016]: 276-277).

From 1981 until the present, three multi-year projects have significantly advanced our knowledge of the archaeology of the San Agustín region in the Upper Magdalena (**Fig. 7**). The first, starting in 1984, is the *Programa de Investigaciones Arqueológicas del Alto Magdalena* (PIAAM) led by Héctor Llanos Vargas (Universidad Nacional); the second, from 1993-97, is the *Proyecto Arqueológico Valle de La Plata* (PAVLP) directed by Robert Drennan, Luisa Fernanda Herrera and Carlos Uribe (University of Pittsburgh and Universidad de Los Andes-Bogotá). The *Programa de Arqueología Regional del Alto Magdalena* (PARAM) was created in 1993 to extend the La Plata Project. The PVALP and PARAM projects brought into full force the sampling and excavation techniques (from intra-site to macro-regional scales) standardized by the North American New Archaeology school, along with its cultural evolutionary and ecological paradigms [(24)]. These projects led to numerous data-rich papers and monographs, as well as many MA and PhD dissertations both in Bogotá and Pittsburgh. To avoid multiple in-text citations, the remainder of this final section is based on information found in the following bibliographic references: Llanos Vargas 1988a-b, 1990, 1993, 1995, 1999; Llanos Vargas & Durán 1993; Pinto Noya & Llanos Vargas 1997; González Fernández 2007, 2012; Drennan 2006; Drennan *et al.* 1993, 2018. A summary of the results of these projects is published by Drennan (2000) and a synthesis where San Agustín is discussed in the broader context of the archaeology of southwestern Colombia and northern Ecuador is available in Rodríguez (2005).

The nomenclature for the cultural chronology of the La Plata and San Agustín-Isnos areas of the Upper Magdalena used here follows that of the above-mentioned projects (Drennan 2010: 12-13), based on a scheme originally proposed by Duque Gomez (Drennan 2010: 12-13). It differs from the five cultures/periods proposed by Reichel-Dolmatoff, which never gained much currency (but see Llanos Vargas 1988b). The Formative-1 (1000-600 BC) and Formative-2 (600-300 BC) Periods witnessed the appearance and subsequent development of sedentary farmsteads dispersed through various ecological and environmental zones. During the Formative-2, settlement patterns in the Isnos and the western La Plata survey areas suggest the clustering of some sites coupled with demographic growth. In La Plata area (**Fig. 7a**) two clusters occur, one encompassing Lourdes and another around Cerro Guacas and Finca Bolivia, all sites bearing megalithic statues (Drennan 2006: Fig. 3.12, 3.15). In the Isnos survey area, Formative-2 settlement concentrations occur broadly around Mesitas and Alto de Los Idolos sites and (Drennan *et al.* 2018: Fig. 4.7, 4.9; Table 2.3; see my **Fig. 7b**). The dominant pattern is still of dispersed hamlets. Current consensus is that monu-

(24) The importation of New or Processual Archaeology sampling and statistical techniques as well as a cultural evolutionary and ecological approach to the San Agustín region is not surprising given Robert Drennan's training as a PhD student in Oaxaca under Kent Flannery, which led to the seminal *The Early Mesoamerican Village* publication (Academic Press, 1976) where he contributed a chapter on religion and social evolution. To a large extent Drennan's theorical approach (followed by most of his students and Colombian collaborators) is in harmony with that summarized by Johnson and Earle's *The Evolution of Human Societies* (2000).



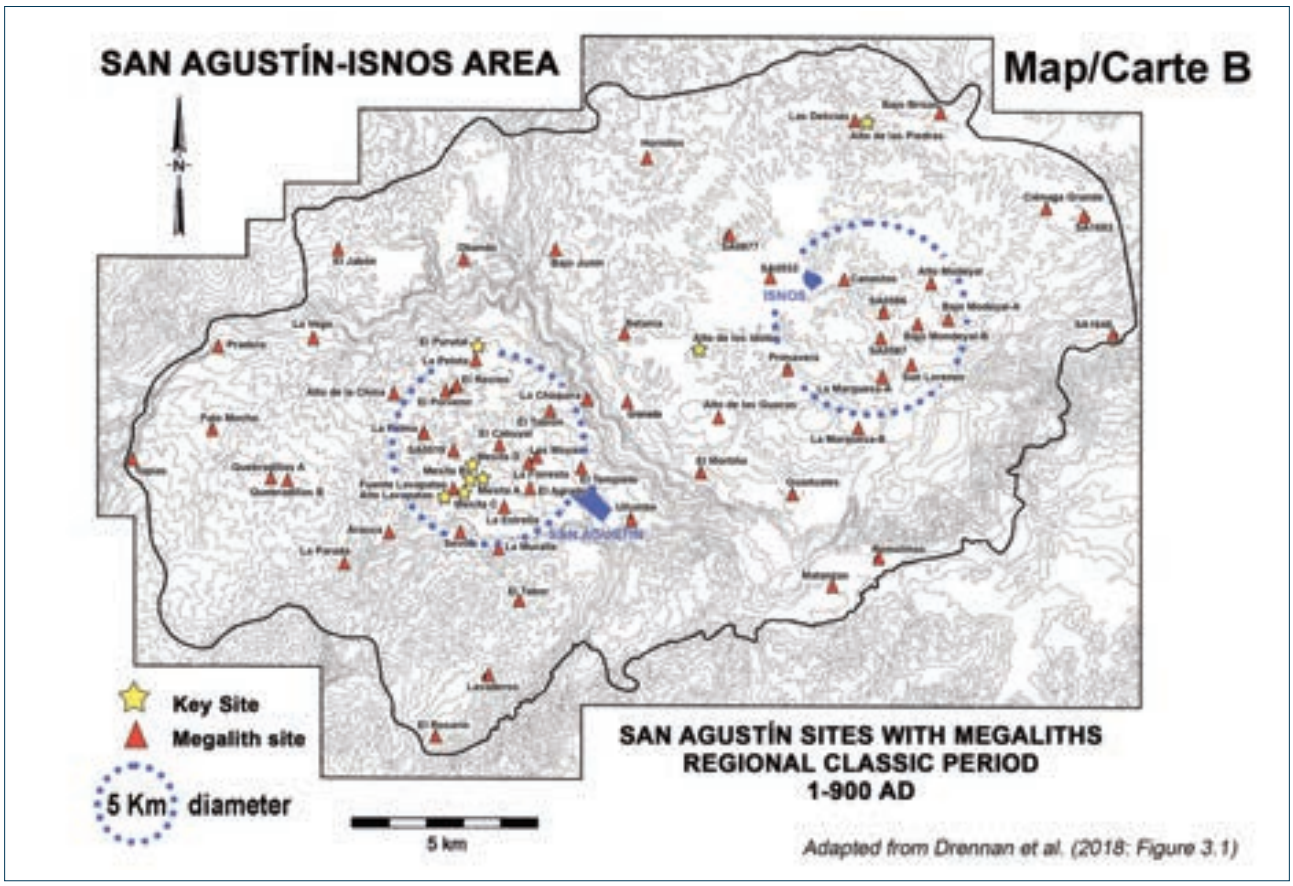


Fig. 7 – San Agustín-Isnos area: Map A: La Plata Basin zone showing the location of sites with megaliths; Map B: the San Agustín-Isnos zone showing sites with megaliths (funerary dolmens, statues, and/or sarcophagi). The dotted blue circles (5 km diameter) identify the two areas with the highest concentration of megalithic sites [Adapted from Drennan 2006 (Figure 1.2), 2018 (Figure 3.1). Modified by the author, 2021].

mentality (statuary, funerary dolmens and both wood and stone sarcophagi) most likely arose towards the end of the Formative-3 period (300 BC-1 AD), such as at Alto de Los Idolos and the Mesitas Complex. Drennan *et al.* (2018: 71) suggest that '*the precocious growth of the eastern settlement cluster in the San Agustín-Isnos zone might be related to the pattern of funerary ritual and common commemoration often thought to be fundamental to the emergence of the pattern of chiefly communities of the Regional Classic in the Alto Magdalena*'. Indeed, it is quite likely that the Mesitas Complex (Mesita A-D and Alto de Lavapatas cluster), '*with the largest complex of monumental tombs and statues in the Alto Magdalena may* [also] *have emerged during the Formative-3 as a centralizing ritual focus for the western settlement cluster in the San Agustín-Isnos zone*' (Drennan *et al.* 2018: 71). Nonetheless, Formative-3 shows relative stability and continuity from the previous period in terms of overall settlement pattern distribution and population estimates.

The following, long Classic Regional Period (1-900 AD) is an outgrowth and elaboration of the Formative-3 and indeed of the entire Formative, contrary to Reichel-Dolmatoff's (1986 [2016]) view of '*many different cultures*' through the millennia. This is when megalithic statues and monumentally proliferated. For this period, however, there is still a need for more absolute dates to establish the appearance and subsequent use (repairs, modifications, additions) of the various megalithic monuments, and chronologically relating the latter with equally well dated domestic structures, where it is still possible to do so [(25)]. During this long period the San Agustín-Isnos population increased from an estimated minimum of about 5,500-8,000 to a maximum of 11,000-16,000 persons with population density increasing from about 34 to 49 persons/km^2 (Drennan *et al.* 2018: Table 2.3; see also distribution maps in Figs. 5.1, 5.3). Looking at the distribution of sites with megaliths, it is clear that the San Agustín-Isnos region contains the vast majority of such sites when compared to the La Plata area (**Fig. 7**), the highest of which is the Mesitas Complex. This complex, comprising Mesita A, B, C, and D, Alto Lavapatas (**Fig. 7**: Map B) alone contains 145 (30%) of the 483 or so monolithic statues known for the La Plata and San-Agustín-Isnos surveyed areas (Sotomayor & Uribe 1987).

Sites with monumental burial constructions and statues were not 'vacant' or exclusively funerary and ceremonial places, but are also a locus of domestic, quotidian habitation, with thick, sometimes up to 3 m deep, midden deposits in and around houses, some of which had post fences around them (Drennan 2000: 35-40; Reichel-Dolmatoff 1975). This is the case of comparatively more 'modest' sites like Morelia-1 (Saladoblanco) in Granates Valley (Llanos Vargas 1988b), with only a couple of monumental statues and less numerous and elaborate tombs, as it is for the richest, more elaborate, monumental sites like the Mesitas Complex, El Purutal-Cerro La Pelota, Alto de Los Idolos, and Alto de Las Piedras (Drennan 2000: 100-117; González Fernández 2002, 2012).

During the Classic period there is some evidence of specialized economic activities related to elite households in Mesitas, albeit it is at a rather low level and not exclusive to the elites, and not too different from the late Formative. Drennan (2000: 121) observed that despite the elaborate sculptural art and funerary architecture (earth-mounded dolmens) the burial tombs of more important persons of this period, those interred in earth-mounded dolmen structures and stone sarcophagi, were not accompanied by much wealth. Drennan (2000: 121) concludes that such social differentiation, exhibited in these burial practices, had little socio-economic implication:

'*It is not the emergence of an elite that concentrated economic power or wealth but rather an elite whose importance, wealth and influence was measured in terms of prestige and probably in terms of spiritual*

(25) I attempted to collate all the absolute dates relating to San Agustín, using Drennan *et al.* (1993: 89-103; table 3.1) and Rodríguez (2005: tables 7 and 8). In comparing both tables there are quite a number of discrepancies. Most frequently the same laboratory number is assigned to a different site in these lists, or the same lab number offers different dates. This is likely either a typographic error or due to mistakes in the original bibliographic sources. A major problem is that as a result of previous excavations, looting and the relocation of many statues make it challenging to establish their links to the habitation (domestic) refuse in and around these monumental sites.

power. […] *The dynamic of leadership in these societies has to be located more in the religious domain than on economic control. The persons buried may have been as much shamans as caciques* [chiefs]. […] *The funerary practices and the concentration of the population around these ritual centers suggest a political aspect that is not present in the concept of shaman. It seems to be more a matter of the religious legitimization of a political organization through the participation of the people in a series of rituals, being the most archaeologically visible the burials of recently deceased leaders…* [which obviously] *are enacted* [and commemorated] *by the survivors. Their elaboration and monumentality may be due to their importance in the maintenance and continuity of the socio-political organization*' (Drennan 2000: 121).

Indeed, intensive excavations in the Mesitas Complex by González Fernández (2007, 2012) documented a growth in the number of house-holds from Formative-1 (n=6), Formative-2 (n=31) to Formative-3 (n=38) and almost doubling (n=75) in the Classic Regional Period (González Fernández 2007: Table 3.1). The study shows that several of the elite, as well as non-elite households, continued evolving *in situ* from at least the Formative-3 Period into the Classic Regional Period (González Fernández 2007: 33-42). In this period, Mesita B had an elite household group (GR/68) adjacent to the South Mound tomb with the principal burial, dolmen structure and elaborate statues, and ten other non-mounded dolmen tombs with monolithic sarcophagi. Mesita A had a similar elite household group (e.g., GR/63) adjacent to the Western Mound and the same for the Mesita C and Alto de Lavapatas singular mounds (e.g., GR/76, GR/2) (González Fernández 2007: Fig. 2.12-2.14). Clearly, during the Classic Regional Period, Mesita A-D formed a core area where households included prestige objects like hexagonal beads, 'dark' stone pendants, distinctive tripod vessels, obsidian and gold ornaments. The area also had physical proximity to monumental statues and earth-mounded burials with dolmens and stone sarcophagi (González Fernández 2007: 130, 2012).

A few words describing burials (dolmens) and monumental statues of the Formative-3 and Classic Regional Periods are in order. A characteristic feature of burials is the construction of dolmens using several large vertical and horizontal slabs to create a vaulted rectangular chamber (**Figs. 9** and **10**). The deceased was placed in a stone sarcophagus (**Fig. 9a, d**), some still havinga richly carved lid (**Fig. 9d**) with zoomorphic and anthropomorphic figures. The principal burial was located towards one end of the dolmen (**Fig. 9e**). The dolmen structure was covered by an earth mound. Not all sarcophagi were made of stone. A monoaxial wooden sarcophagus has been reported for Altos de Lavapatas (Tomb 7, dated 1395±50 BP) but due to poor preservation these are extremely rare. Also, due to acidity, skeletal remains do not preserve well and because of looting of offerings, little else can be added about the potential wealth of the deceased individual. Commonly, at the opposite end to the principal burial, at the entrance of the dolmen, one to three statues are erected as if standing guard as, for example, in the Mesitas Complex, Altos de El Purutal, and Alto de Los Idolos (**Fig. 8**), among others. The statues themselves are placed just under the dolmen's apparent entrance, under the roof slab. In some instances, the statue is given its own dolmen structure, with the principal burial nearby but not part of a single rectangular dolmen chamber/passage (**Fig. 8e, f**), hence these are colloquially called *templetes* (in Spanish) or 'little temples'.

Not all dolmens with sarcophagi seem to have been covered by earth mounds. In the Eastern Mound of Mesita A, for example, eight stone sarcophagi are found some 15-25 m outside the mound's dolmen entrance that contained the principal burial tomb; the statues thus face into this outer burial field. Within the earth mound, some 5-10 m from the entrance's 'guardian' statues, six other sarcophagi were also interred. The Western Mound showed a similar pattern. In Mesita B, between 10-25 m north from the Southern Mound, another burial field of 11 sarcophagi (**Fig. 9c**) was found beyond the earth mound that contained the dolmen structure along with the principal burial and the three statues looking out to the burial ground. Variations do occur. For example, the Mesita B North Mound, which is an elongated oval shape, contains seven burials aligned on the southern part of the earth mound, some slightly beyond the edge, with one found deep inside the mound on the east side. Not all burials contained stone sarcophagi but were of the 'Cancel Tomb' type and buried underground or

within the earth mound, as is the case in Mesita C (see plan views in González Fernández 2007: Fig. 2.11-2.13). Keeping in mind the 1200 year span from Formative-3 to Classic Regional Periods, very few, selective individuals were accorded such high-status burials.

In the Mesitas Complex and other key sites (e.g., Alto de Los Idolos, El Purutal, Alto de Las Piedras), in addition to the statues located at the entrances of principal earth-mounded tombs (and dolmens), there are a variable number of individual statues found in the area surrounding the mound complexes (**Fig. 10**). These statues are in relatively close proximity to household groups, as ascertained for the core area of the Mesitas Complex. Unlike those 'guarding' the tomb entrances, these other statues are not necessarily or exclusively related to burials. They may have been engaged in a variety of (unspecified) rituals and ceremonies (feasts), perhaps linked to household groups as identified by González Fernández (2007) for the Mesitas core complex, or perhaps they were collectively linked to the entire community. As Reichel-Dolmatoff (1972) aptly noted, the formal (techno-stylistic) classification is difficult to apply on account of the high degree of variability of formal features in body form and posture, facial features, hair styles, arm-hand positions, body accoutrements – such as headdress styles, caps and diadems, necklaces, plaques, pendants – and held artefacts like bags, cups, and war clubs. Some bear skin designs (engraved but representing scarifications or, more likely, body paints) on the face. Bandanas combined with caps and hair styles (braided versus straight and long at the back).

In the Mesitas Complex, I counted nine different arm-hand postures, such as left hand grasping the forearm or biceps of the left arm (and the opposite). The mouth is, however, an interesting dimension. In 31 of 77 specimens (40%) from Mesitas Complex, the mouth has prominent canine teeth, and facial features that associate it with a feline creature (likely a jaguar), but these figures have anthropomorphic bodies. These may either represent human beings (shamans, chiefs, powerful political and/or religious individuals) imbued with or invaded by a super-natural 'Jaguar Monster', as Reichel-Dolmatoff (1972) has argued. The interpretative possibilities are, in a sense, endless. One of the tallest statues from Mesitas B (no. 25) shows two inverted personages, the top one with a feline mouth (bearing canine teeth), the head having a simple cap (a mask worn by a human?) that is holding and presenting an upside-down infant. The lower section presents another personage, hands folded onto the chest. Its clenched teeth do not suggest a feline creature, however (**Fig. 10a**). Dualism is also present in figures of anthropomorphic personages that present another (zoomorphic) personage mounted on the back of the main figure (often called the 'alter ego'). These are not exceedingly common but aesthetically very arresting (**Fig. 10b**, from Alto de Lavapatas, no. 25). As noted earlier, these are very similar to the small, stone portable figures reported for the Trombetas River area in the Lower Amazon. The main personage illustrated here also has feline teeth, but the mounted figure is a double-headed creature, one head with feline mouth and scaled crest (a fantastic being) while the other has clenched teeth. The specimen from El Tablón (**Fig. 10c**) and El Cabuyal (**Fig. 10f**) show personages playing musical instruments (panpipe and flute). The figure playing the panpipe also displays a nose plug and a multiple string necklace on the chest, with a cloak or garment running the length of the body. The flute player seems to be seated, showing both legs and the hem of the garment.

Purely zoomorphic beings, like the jaguar head from Alto de Lavapatas (specimen no. 142), the monkey, caiman, frog, and raptorial bird are infrequent but nonetheless present. As is the case of some of the stelae from Chavín de Huántar (Central Peru), the animals depicted in San Agustín's statues are not from temperate zones but from the tropical forest lowlands of greater Amazonia. The feline (jaguar) with prominent canine teeth is, however, found all over South America, Central and Meso-america. The eagle from Mesita B (perhaps a Harpy Eagle, due its crest 'cap') holding a snake with its beak and talons is a prime example (**Fig. 10d**). Perhaps Spinden's (1917) notion of an 'Archaic', pan-American substratum derives merit. Finally, many of the statues still bear remains of mineral paint (black, red, orange, and white), a layer of symbolism that is lost for most examples. The pair from Altos de El Purutal (Cerro La Pelota) are among the few very well-preserved polychrome-painted statues (**Fig. 8e, f**).

Some of the burial slab walls are also polychrome painted (**Fig. 9d**) as, for example, at Alto de Las Piedras, near statute no. 295 (Sotomayor & Uribe 1987: 170). A reconstruction and interesting study of polychrome painted statues and burial chambers from various sites was conducted by Velandia Jagua (1994, 2018). Finally, except for Sotomayor & Uribe (1987) there are relatively few attempts to systematically classify, techno-stylistically analyze and interpret the vast corpus of megalithic statues from San Agustín (e.g., Friede 1954; Barney 1964, 1975; Gamboa Hinestrosa 1975, 1982) [26].

(26) Unfortunately, I have not been able to access the cited works to appraise them here.

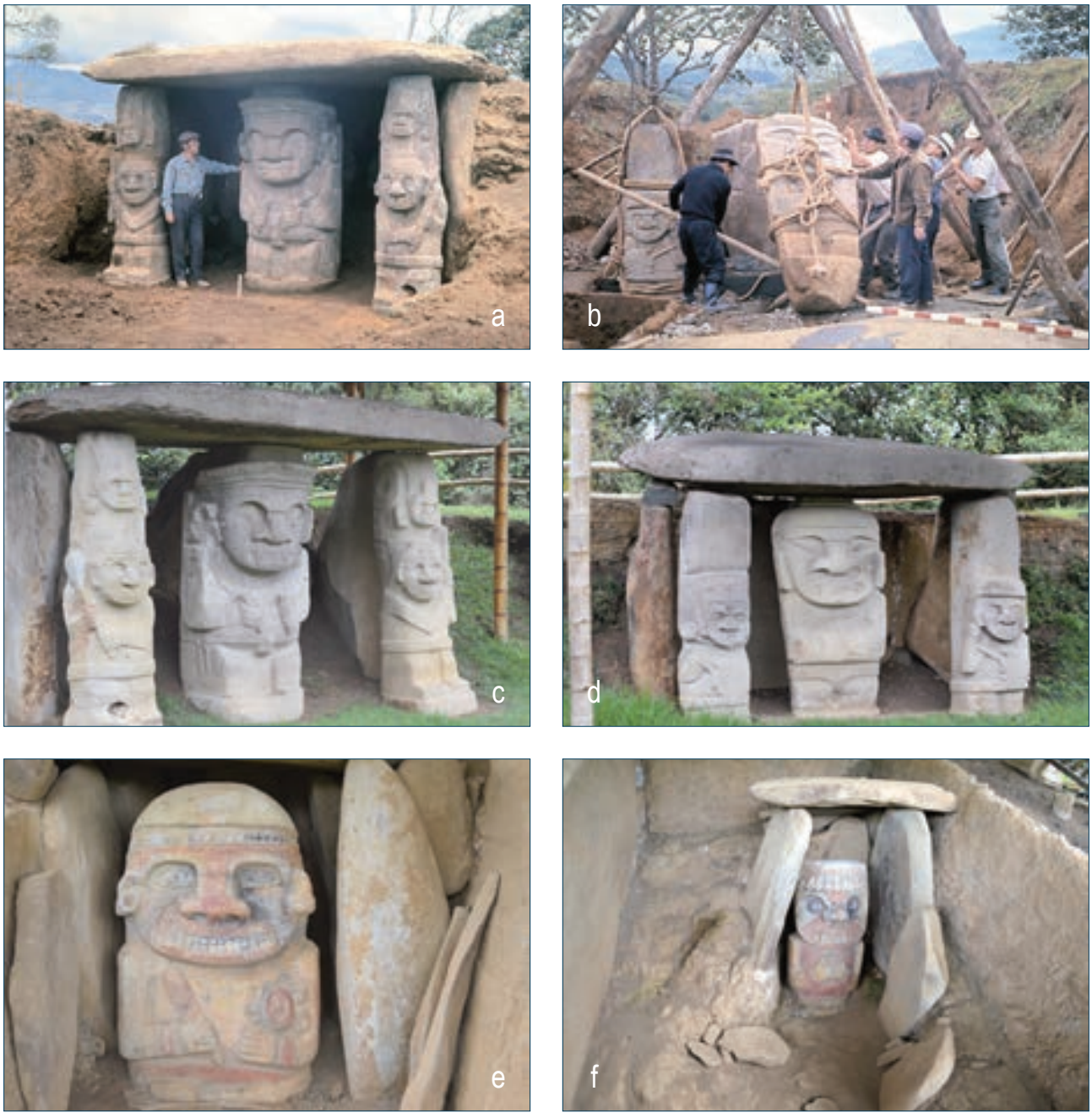


Fig. 8 – San Agustín: a. Mesita A, East Mound statues nos. 12-14 (central figure is 2 m tall) after reconstruction in 1971 by Duque Gómez; b. Mesita A, West Mound, statues nos. 3-5 (central figure is 1.6 m tall) in the process of being erected by Duque Gómez in 1971 [Photos: taken by Duque Gómez (*ca.* 1971), courtesy of Agencia de Noticias, Universidad Nacional de Colombia (AN-UNC, 2016)]; c. Mesita A, East Mound; d. Mesita A, West Mound, as seen today; e. Altos de El Purutal, statue no. 162 (1.5 m tall); f. Altos de El Purutal, statue no. 161 (1.47 m tall). Both retained polychrome paint (Photos: courtesy of O. Ortiz).

Fig. 9 – Dolmen burials from San Agustín-Isnos Region: a. Alto de Los Idolos, Mound B with a lid (no. 279) carved with a caiman (*Caiman* sp.) covering burial chamber and a carved 'altar' in the background (no. 261); b. Alto de Los Idolos, Mound II stone sarcophagus with handles (replicating wooden sarcophagi); c. A dolmen burial structure from Mesita C; d. Alto de Los Idolos, Mound 3, a sarcophagus lid (no. 269) carved with an male figure (2.25 x 0.82 m). Note yellow dot painted designs on the wall slabs; e. Alto de Los Idolos showing a burial structure (dolmen) with two 'guardian' statues (nos. 263, 262); f. Statue 262 depicts a potent male personage (91 cm tall) with a feline (jaguar) face/mask with fanged teeth, holding a long-tailed 'monkey', and on its back what seems to be two animals (fish?) in profile (Photos: courtesy of O. Ortiz).

Fig. 10 – San Agustín-Isnos Statues: a. Mesita C, North West Mound (no. 25; 3.9 m tall). Two inverted figures with feline faces/masks, one holding an infant upside down; b. Alto de Lavapatas. Three perspectives of an anthropomorphic personage (2.8 m tall) with feline face/mask surmounted by a double headed animal ('alter ego'); c. El Tablón-Cerro de La Pelota (relocated to the 'Forest of Statues'). A human figure (no. 172; 2.2 m tall) with nose-plug and beaded collar, apparently playing a panpipe; d. Mesita B, North West Mound. A raptorial bird (no. 22; 1.4 m tall x 1.7 m wide) grasping a snake with the beak and talons; e. Mesita C (relocated to the 'Forest of Statues'). An anthropomorphic figure with elaborate headdress, feline facial features, and loincloth (1.6 m tall); f. El Cabuyal. An anthropomorphic figure (no. 205; 1.2 m tall) with a plain headdress, possibly playing a flute [Photos: courtesy of Omar Ortiz (Photoshop retouching by the author); Drawings in by the author, based on Sotomayor & Uribe 1987].

The subsequent Recent Period (AD 900-1530) evinced a substantial population growth (estimated 22,000-44,000 persons; 70-140 persons/km^2), given that it covers a 600 year span compared to the 900 years of the Classic Regional. In short, the old notion of the collapse of San Agustín (in both Isnos and La Plata areas) is refuted by the current data (Drennan *et al.* 2018: 107-109: Isnos settlement pattern map in Fig. 6.1). Many sites with megalithic works (as described above), as well as homesteads or farmstead hamlets that had been operative during the Classic Regional Period, continued to be occupied during the Recent Period. However, it seems that they '*stopped burying their most important personages in the tombs that remained in the landscape in the form of* [megalithic] *monuments with statues*' (Drennan 2000: 122). Even if no new monuments were built (which remains uncertain) it means that the extant, visible monuments (and tomb structures) and statuary would still be prestigious places of commemoration and ritual celebrations for the inhabitants, even if the latter differed from Classic Regional Period practices. As Drennan (2000: 122) argues, it is unlikely that societies of the Recent Period lacked personages who merited such high-status burial treatment but '*it is clear that their importance did not find the same form of expressing it as was done during the Classic Regional Period*'. The Recent Period, its continuities, or discontinuities with the earlier decades of the 16th century, and their relationship to the ethnohistoric groups, remains to be studied. The high population densities of the Recent Period may not have persisted into the early Spanish colonial period (Drennan 2000: 136). During the initial Spanish-native contact (1540s-1560s), the names of many tribes are mentioned, mostly described as fierce warriors. By the 1620s there were the Chumapa, Cambi, Yauca, Otongo, Guachico and Quinchancha, to name a few, whose distributions are complicated by the systems encomienda (Indian labour/service assignments to Spaniards) and missionization that often entailed the forced resettlement of natives. There were also reports of invasions from the tropical forest, such as the 'fierce' Andaki who came from the Upper Caquetá River, only to eventually (in 1753) be joined by Quechua-speaking missionized Indians whom the Spanish brought to San Agustín hoping they would bring civilization to the Andaki (Reichel-Dolmatoff 1972: 19-21). Archaeology comparing the changes between Recent Period (AD 900-1600) to the later colonial period into the Republican Period (after 1810) is yet to be accomplished. Linking the archaeological remains to the ethnohistoric scenario is a challenge for the future.

7. Closing remarks

This chapter has presented a synthesis of the megalithic works from the Colombian Andes. The Tunja-Mongua and the Sierra Nevada del Cocuy areas of the northern Colombian Andes (Boyacá) and the San Agustín-Isnos-La Plata region of the southern Andes in Colombia each has its local characteristics and ways of expressing and arranging such monumental works. Although the scarcity of absolute dating is still a problem, it seems there is a consensus among Colombian specialists that megalithic works began towards the end of the Formative (*ca.* 400-300 BC) and flowered after the start of the first decades AD. In the north, the U'wa (Lache, Tunebo) still engage with and give meaning to the megalithic structures within a traditional social-cultural structure and practice. But in the Tunja-Mongua area, the menhirs are today instead re-appropriated as symbols of Colombian national identity rooted in an indigenous heritage, hence many are relocated and reclaimed in the plazas of towns, transformed into national archaeological parks and, in the case of San Agustín, into a Unesco World Heritage region. These megaliths have never relinquished their 'magnetic' power to demand meaningful engagement with human beings, past and present.

It is not easy to generalize in a meaningful way about the function and symbolism of megaliths and monuments between the regions considered here. In all these regions, the menhirs and statues seem to be linked with burial grounds, and with ritual feasting and ceremonial activities, which, in San Agustín and the Leiva-Tunja area, are understood to underpin and to be a source of the political-religious power of elites and chiefs, whereas for the modern U'wa they underscore the relationships among clan leaders and elders (given their egalitarian ethos). They are sometimes related to dolmen burial

structures (El Infiernito and in San Agustín region), or to nearby high-status precincts (Cercado de Los Santuarios, Tunja) and, even in El Cocuy, the menhirs and ceremonial structures are in proximity to tombs under massive rocks or in Cancel-like tombs. In the northern Colombian Andes, the menhirs are largely devoid of personality, lacking stylistic features that would make them (to us) distinguishable, one from another, contrary to the emphasis in San Agustín on sculpturing menhirs into statues of figures, each with its particular kind of personhood and readily distinguishable from each other. Places with menhirs associated with ritual and ceremonial feasting suggest that the statues propitiated opportunities for gift and commodity exchanges between hosts and guests, the U'wa case for reciprocal trading being the most fascinating. That all these megaliths are in various ways involved in cosmology – that is, world order, reinforced through songs and myth-telling – seems more than likely. In the case of San Agustín, its many statues are not only custodians of burials, but are perhaps also potent personages, either owned by or entrusted to particular elite household groups at core sites. Indeed, such statutes in fewer numbers are also found in some of the peripheral, rural hamlets: small-scale versions of core sites like Alto de Los Idolos or Mesitas Complex. A tantalizing idea in the Andean north (Muisca and U'wa) is the conceptual equivalency of the large fence wood posts of the *cercados* (elite compounds, sites) and the stone menhirs. If so, this brings to mind the wood henges of North America, such as at Cahokia (AD 1100-1350, late Mississippian period), and the stone circles of the British Isles. Some societies favoured wooden posts (Sogamoso and Cahokia); others preferred stone (El Infiernito and Stonehenge). To put it tritely: Burger King or McDonald's? The possibilities of interpretation of these menhirs abound: what they meant, who or what they represented, and how they functioned in society. I will leave it open to the creative imagination and musings of the reader.

Acknowledgements

Not being a specialist in Colombia, I am seriously in debt to Pablo Pérez Riaño for answering endless queries and sharing his personal (sometimes unpublished) data on the Cocuy region, as I am to Carl H. Langebaek Rueda for all the lessons he gave me on Muisca archaeology and for advancing manuscripts yet to be published. He also reviewed this manuscript providing invaluable comments. Any errors are, however, my own responsability. I also wish to thank Pérez, Langebaek and Omar Ortiz for contributing photographs used here. I wish to acknowledge Natalia Lozada Mendieta for her useful inputs on Colombian archaeology. Last but not least, I am grateful to the editors, L. Laporte and J.-M. Large, for pushing me hard to complete this synthesis and for inviting me to participate in the Megaliths of the World Conference.

8

João DARCY DE MOURA SALDANHA

The Late Holocene Megalithic Structures at Easternmost Amazonia

Abstract: The megalithic structures in Easternmost Amazonia (Amapa State-Brazil) can be described as circular or irregular arrangements of granite blocks placed at the top of hills. Although known since 19th century, there is not much information on this kind of archaeological site. Since 2005 an archaeological project has been developed. Its main goals are the promotion of site preservation and increasing empirical data on the archaeological phenomena associated with these structures. Here we present some results, providing fresh data on pre-Colombian occupation in the region.

Keywords: *megalithism, Amazonia, Amerindian occupation*

1. History of research

Archaeology in the State of Amapá has a long history, as the studies of pioneers such as Emilio Goeldi and Domingos Soares Ferreira Penna during the late 19th century remind us (Ferreira Pena 1879; Goeldi 1905). Despite this, few projects in that area promoted systematic excavations, resulting in scarce information on diversity and detailed characteristics of archaeological heritage. As such, although we know of several sites in the whole State area and are aware of at least three archaeological phases defined through historical-cultural approaches (Mazagão, Aristé and Aruã phases; Meggers & Evans, 1957), until the beginning of our project in Northern Amapá we had no detailed information on the archaeological deposits at megalithic structures.

Current survey of the area brought new archaeological data, evidencing a far larger presence of megalithic structures and other types of sites in the prospected area than was initially expected. Before the beginning of the project ten megalithic sites were known, located mainly between the Cunani and Flechal Rivers on the north coast of Amapá. Through our works on the area other structures have been identified, including funerary caves and ceramic caches in special places. A careful recording of megalithic structures shows a great diversity of form and size, as well as great proximity between some of them (**Fig. 1**).

Fig. 1 – Research area.

2. State of knowledge

In Brazilian Guiana, a very well documented occupation begins around 2000 BP with the Aristé Phase. Although Aristé ceramics are known since Emilio Goeldi's explorations on the north coast of Amapá at the end of 19th century, it was only after a publication by Meggers & Evans (1957) and a thesis by Stephen Rostain (1994) that comprehensive understanding of the pre-historical occupation of this archaeological culture was achieved.

The Aristé occupation extends along the Atlantic shore of Amapá, from the mouth of the Amazon, to Cayenne island on the French Guiana coast. Dating from around the first century AD and ending within the colonial period, the Aristé phase lasted for more than a thousand years. Both Meggers & Evans (1957: 152) and Rostain (1994) propose a chronological division of the Aristé phase based on the variation of decorative techniques and composition of the paste, as well as differences in the general settlement pattern.

The Ariste sequence starts with the *Ouanay Encoché* style. The *Ouanary Encoché* is characterized by a typical style of ceramics, with zoomorphic *appliques*, incised modifications on rims, and quartz-tempered paste. Dated from the beginning of the Christian era, this style lasted until the 10th century (Rostain 2009). The general settlement patterns of the *Ouanary Encoché* are not well understood, given that most sites are mixed with later occupations (Rostain 1994), which can contribute to disturbed and confused contexts. However, recent research in Amapá and French Guiana, involving large area mechanical excavations in sites with clearly *Ouanary Encoché* occupation, are showing what may be a pattern: larger occupation sites, some with more than 20,000 m^2 and some with presence of a peripheral ditch, encircling the site, which can be interpreted as a defensive structure (Mestre 1997). Better documented ceremonial/funerary sites are not yet described for this style, most likely because of the disturbing/mixing factor of re-occupations, or maybe because this kind of site was not well developed in this part of the Aristé chronology.

At around 1000 BP the picture seems to change dramatically: the emphasis on settlements sites comes to an end and the style becomes almost invisible from the archaeological record; conversely, there is an explosion of ceremonial\funerary sites. and some very elaborate anthropomorphic ceramics enter the scene. This is the *Enfer Polychrome* part of the Aristé sequence (Rostain 2009) (**Fig. 2**).

The small size of occupation sites was already noted by Meggers and Evans (1957). In comparing them to the most impressive ceremonial sites in the region, the megalithic structures, they related these to a circum-Caribbean group that must have migrated to the region (Meggers & Evans 1957: 585).

In fact, the settlement sites never exceeds 10,000 m^2, and have very simple features, such as post-hole concentrations, fireplaces and small pits for garbage deposition, which indicates a short time of permanence in each place.

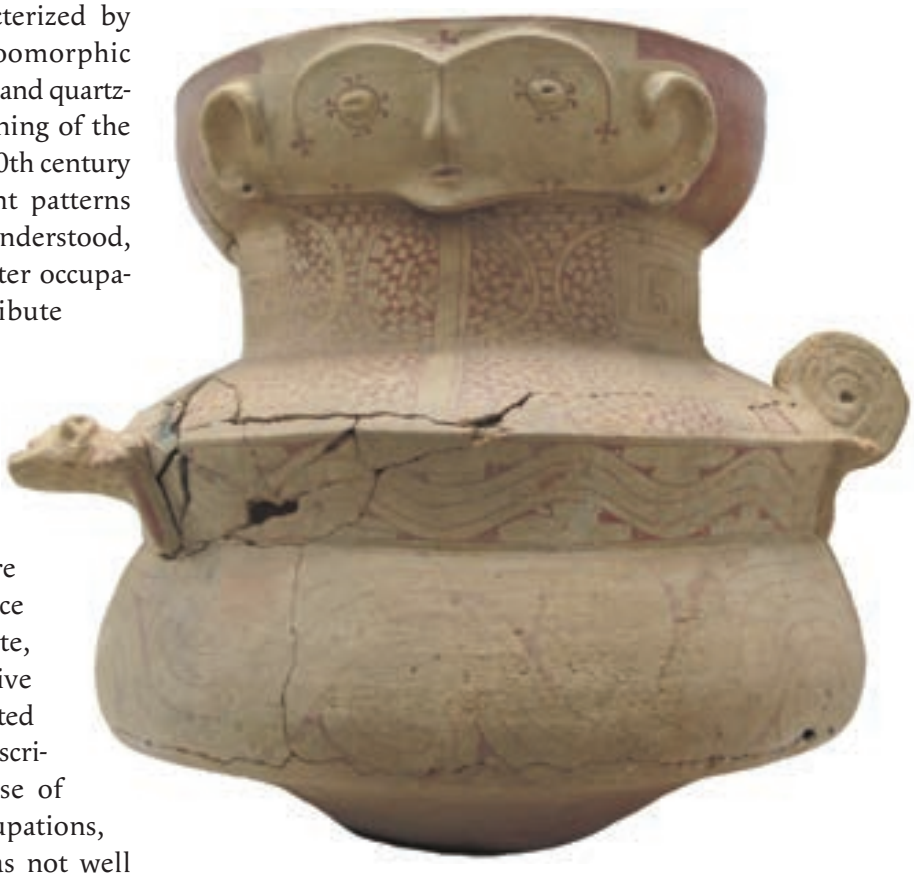


Fig. 2 – Typical anthropomorphic urn of *Enfer Polychrome* style (Photo: M. Cabral).

We perceive a striking difference when we look at the ceremonial/funerary sites of the period. These kinds of sites can be either natural places or monuments. In the former case there is the use of caves/rock shelters as ceremonial sites; whole pots can be found on the surface or in the cave recesses (Meggers & Evans 1957; Rostain 1994). Although different in essence, caves and megalithic sites have a very similar structure in terms of deposits, which can indicate that similar social performances were taking place on these different kinds of sites.

Other kinds of ceremonial\funerary sites include megalithic enclosure sites with chambered tombs. Most megalithic sites are formed by a circular arrangement of groups of granite blocks in horizontal, vertical or leaning positions, set at the top of hills. Sizes and compositions are variable. Some are quite small, with less than 10 m diameter and formed by blocks measuring less than 1 m long. The larger circular structure found (AP-CA-18) measures more than 30 m in diameter, and is formed by large blocks, some of them measuring more than 3 m above the soil level (Cabral & Saldanha 2009) (**Fig. 3**). In those cases, the hills where sites are placed are quite narrow, restricting the areas available to set the structures, which could measure more than 100 m in length (Nimuendajú 2004) and be only 5 m wide.

A Spatial Analysis was developed to investigate the differences in sizes between the megalithic sites in a pilot area, around the Calçoene river. As presented in the map below, megalithic sites are grouped by watersheds, and seem to be regularly spaced along them. Considering the differences in sizes of structures, and their distribution in the area, an existence of site hierarchies was interpreted, with the occurrence of only three large structures (more

Fig. 3 – Megalithic enclosure during excavation, Rego Grande site, Calçoene (Photo: collectio IEPA).

than 25 m long/wide) and many smaller ones (less than 20 m long/wide) (**Fig. 4**).

To understand the megalithic structures more fully, a pilot area around the creek Rego Grande was selected for detailed study. The pilot area is. In this savanna area measuring 2 by 0.6 km, there was a ceremonial complex involving five megalithic structures with different sizes. No settlement was found (**Fig. 5**). Four of the structures have been subject to archaeological investigations that have shown that differences in size also reflect differences in the general composition of deposition, confirming hierarchies. Site AP-CA-18 2, the smaller structure in the complex is formed by two concentrations of megalithic blocks deposited in a horizontal position. Excavations have shown that the blocks covered small pits containing urns.

Site AP-CA-38, the third largest structure, has horizontal blocks deposited indicating the presence of chambered tombs. The three investigated pits revealed the direct deposition of disarticulated human bones in the chamber, one accompanied by five ceramic vessels, and one only by a polished axe head. We also evidenced the deposition of possibly votive vessels around the only vertically set megalithic structure at the site (**Fig. 6**).

AP-CA-21, the second largest structure, has been subject to excavations of two concentrations of horizontally deposited megalithic blocks and one vertically placed block. The two concentrations have confirmed the presence of chambered tombs, with the presence of funerary urns at the base. The pits where structurally more complex than at AP-CA-38, with megalithic blocks serving as walls, and with the presence of more elaborate ceramics, some with complex polychrome painting.

Excavations at AP-CA-18, the largest megalithic structure in the complex, have shown that this structure, as we see it today, is formed by a more intense palimpsest of different types of depositions and reworking of features inside the megalithic enclosure than was previously described. These events may be listed as follows: opening pits of different sizes for funerary deposition and closing them with horizontal stone blocks; re-opening of the pits and re-working of material inside along with other materials into new depositions. Episodes of

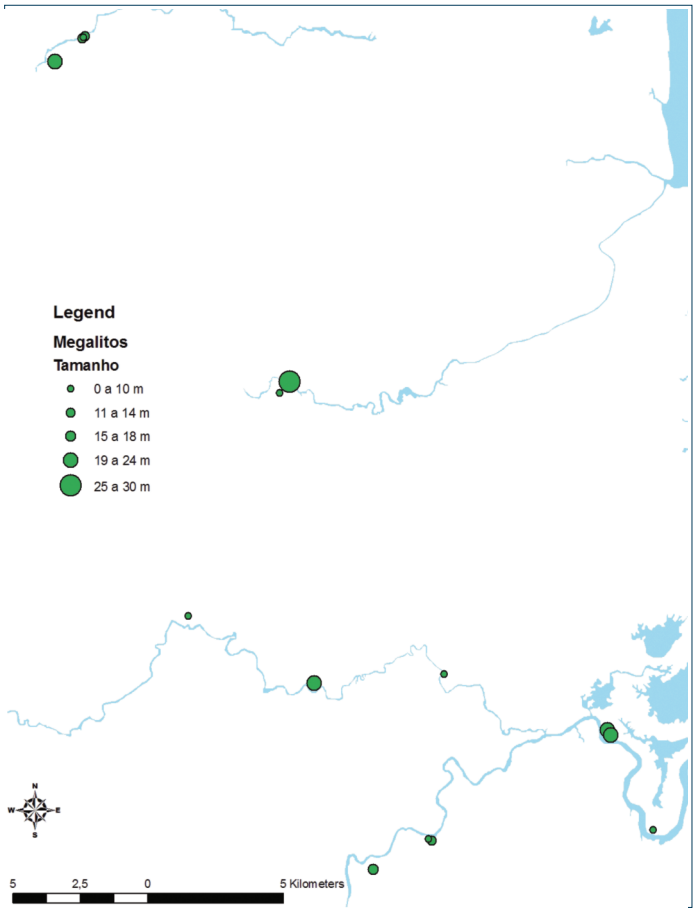


Fig. 4 – Megalithic sites distribution around the Calçoene area. Different sizes of dots mark differences in diameters of megalithic enclosure.

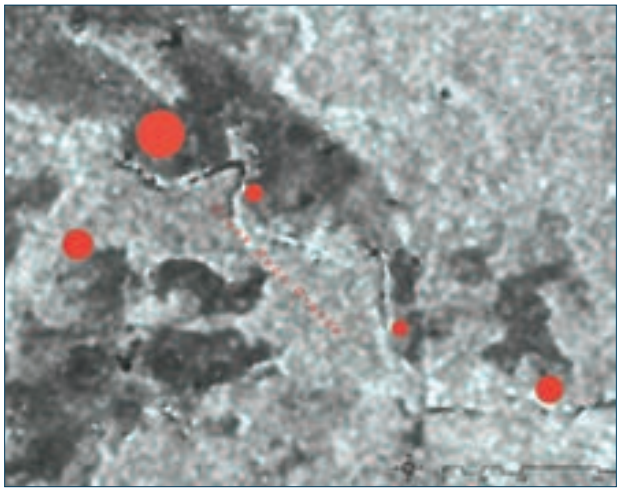


Fig. 5 – Pilot area around the creek Rego Grande. Differences in sizes of dots demonstrate differences in megalithic enclosures diameters.

Fig. 6 – Burial pit inside AP-CA-38 megalithic enclosure, with ceramic vessels and disarticulated human bones in the chamber (Photo: collection IEPA).

massive deposition of broken ceramic vessels over the chambered pits, possible related to memorial feasting; different kinds of offerings of ceramic around the blocks. Geophysical analysis, showed only 11 pits were present inside this megalithic enclosure, indicating a very restricted place for funerary deposition (**Fig. 7**).

Radiocarbon dating obtained by the project (from 1000 to 500 BP), indicates that this ceremonial complex might have been used regularly for nearly five centuries. Also, it shows that the use of megalithic monuments coincides with the widespread flourishing of different regional cultures and increasing numbers and sizes of archaeological sites (see Mc Ewan *et al.* 2001), which is indicative of a more intense occupation during the late pre-history of the region.

Fig. 7 – Burial pit inside AP-CA-18 megalithic enclosure showing massive deposition of pottery and funerary urns (Photo: collection IEPA).

3. Some relationships between megalithic blocks and astronomy

Observations concerning the AP-CA-18 main megalithic structure and the solstice have been undertaken during the last three years, in December 2005, 2006 and 2007. Other observations during the equinox and June solstice have also been carried out, but nocorrelations with the blocks were observed. Data so far allows very interesting interpretations of the use of such a site as a temporal marker or astronomical observatory (**Fig. 8**).

There are at least two correlations observed between the stone settings and December solstice. The first is related to the position of one block leaning towards the South, which is perfectly aligned to the solar position during the solstice afternoon (from 2pm to sunset), such that that both north and south

faces are lit at the same time and show no shadow (**Fig. 8**).

Surveillance during the afternoons of the December solstice also allowed a further observation regarding the leaning of the block and the solar trajectory during the afternoon, as presented in **Fig. 8**. This alignment between sun and block in this specific solar momentum strengthens our interpretation that megalithic stones were carefully set on the ground in accordance with previous knowledge and are not in these positions by chance. It also reinforces the need for better preservation of such sites than previously understood (Meggers & Evans 1957; Neves 2004) (**Fig. 9**).

A second correlation was observed during the sunrise of the December solstice. In fact, as we carried out excavations at the site from August to December, we were able to observe solar movement to the South. Our empirical observations lead us to believe that a second block (one with a hole) could face the sunrise at this time. However, as sunrise begun, another block was directly in front of the one with a hole, blocking the view. When the sun rose a little further, though, it appeared right at the point where the highest parts of these two blocks were aligned (**Fig. 9**). An alignment between both blocks and the sun was registered, reinforcing our interpretation that the positioning of megalithics – at least at this site – was meant to allow and mark solstice observation.

We must consider that astronomical knowledge is widespread among many Amerindian people (Green & Green 2006; Campos 2006), offering a rich background for further studies. Therefore, it is

Fig. 8 – Viewing the sun directly under the shadow of the block during solstice afternoon, showing the alignment (Photo: collection IEPA).

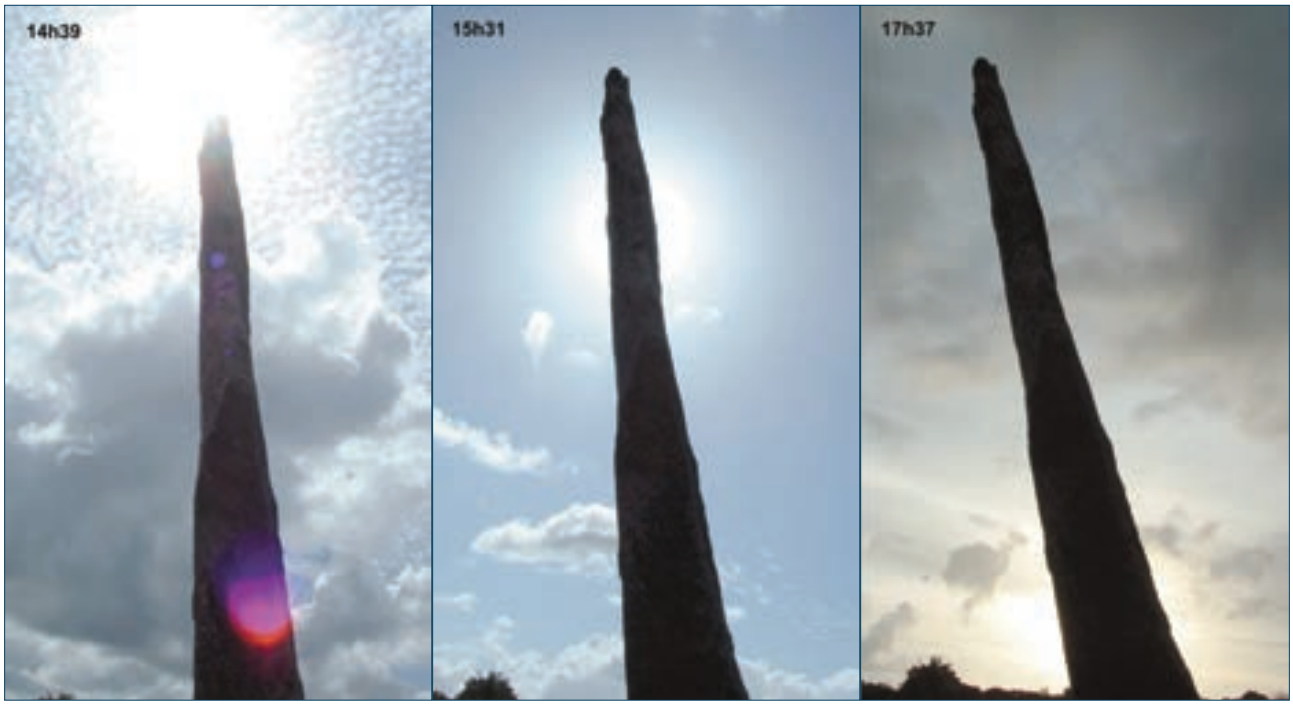


Fig. 9 – During December solstice, at 2:30pm, both north (on the left) and south faces of the block have no shadow. The only shadow projected is towards East, of the same width as the block (Photo: collection IEPA).

not the fact that ancient indigenous people held astronomical knowledge that amazes us. It is evidence for the solidification of this knowledge into something concrete and lasting that really brings something new.

Fig. 10 – Top left: stone blocks related to solstice sunrise alignment; bottom left: stone alignment as seen during the day. Right: solstice sunrise alignment (21/12/2006, 6:50am) (Photo: collection IEPA).

4. Synthesis and perspectives

In the period between 3,000 and 2,000 BP, the research area is characterized by a regional homogeneity of ceramic styles, all marked by the presence of incisions, excisions, some paintings and biomorphic ornaments, demonstrating that the Early Formative period is maintained with a unique ceramic assemblage (both decoration and shape), indicating a deep interconnected sphere of interaction.

In around 2000 years BP we can see in the region the beginning of a rapid demographic increase, combined with the intensification of landscape alteration in the form of settlement mounds, associated with large areas of agricultural fields and excavated channels for transport and communication. To the south, anthroposoils (Archaeological Dark Earth) starts to develop. On the island of Marajó, the construction of a system of residential and funeral mounds begins, culminating in the settlement system characteristic of the Marajoara Phase in around the year 1000 BP (Roosevelt 1991; Schaan 2011). All these investments in landscape engineering, represented by earthworks and nutrient-enriched anthropic soils along Guiana, certainly indicate the beginning of a much more sedentary

way of life, where the substantial investment of work for the development of the landscape indicates a greater establishment of territory.

From around 1100 BP we can see a real explosion of different archaeological cultures, characterizing one of the most diverse areas of the Amazon (Neves 2006), where the previous homogeneity of the previous styles begins to dissipate, due to the incorporation of new influences on material culture.

In addition to this phenomenon of a profusion of ceramic styles, we can also see the effective emergence of monumentality such as the megalithic enclosures containing funerary pits. This monumentality is clearly linked to cults of ancestors, in the form of deposition of highly decorated urns buried inside these places. This monumentality is materialized by the presence of mounds, megaliths, moats, pits and caves.

The observed diversification, however, seems to be the manifestation of an ambiguity: on the one hand, the need to maintain the growing and prestigious regional system of relation networks, through the maintenance of common identity attributes; on the other hand, to maintain specificity within the sphere of interaction, which could have occasioned, over time, the fragmentation observed in the ceramic styles and diversification of the types of sites (in this case, of monuments).

There would thus be a break in the established cycles, accompanied by this general increase in cultural diversity. There are complex ceremonial monuments and new artefactual styles, leading to more elaborate means of presenting identity. Hybrid ceramic complexes are the most characteristic manifestations, for example the Pacoval, Camutins, Caviana, Aristé, Mazagão, Koriabo and Thémire styles. Traditionally, this greater diversity has been interpreted as an index of greater socio-political complexity in the pre-colonial period of the Amazon (Roosevelt 1991; Schaan 2011). However, what may have been at stake during the period was the development of a series of intricate social networks and contexts, leading to the development of more diverse and differentiated life histories. Once communities ceased to be constituted by shared experiences and understandings of the world, personal identity could no longer be sought in larger group affiliations, but rather through descent, with a great need for investment in realigning the social identities of the groups through the connection with the ancestral world. Investment in funerary monuments is thus a way of fixing the dead bodies of a particular group in the past, turning it into a point of a recognizable line of descent.

In this way, a language that was both common and at the same time individualized, begins to emerge in the form of very elaborate urns for burial purposes, where regional differences could be used to demarcate regional power centres through different styles of funerary ceramics (Barreto 2009). These regional centers would be constituted through the construction and use of ceremonial monuments and their relations with the world of the ancestors.

The ritual monumentality definitively changes the character of the landscape: the capital to be obtained in the investment of labour in the landscape is not properly derived from the agro-ecological increment, but from a symbolic capital derived from the connection of the groups with the ancestral domains. It is at this point that the social constitution of the groups of the region begins to take place through the connection of the individuals with the place of the ancestors.

In these monumental structures the dead are no longer buried individuals forgotten by the group, but a social body represented by the mass of urns, ceramic fragments, bones, rocks, wood and earth, which intersected constructed spaces and began to act as a landscape transformation agent. The activities of visiting and revisiting these monuments, sometimes over hundreds of years, reinforced their role in the construction and maintenance of the social structures that organized these groups in the period just before the impact caused by the European invasion.

We are now only scratching the surface of the configuration of the megalithic culture in eastern Amazonia, but a general framework and some valuable clues are now available. More research is needed in order to fully provide a good understanding of the cultural processes that led to the emergence of the megalithic culture in the region and its link to more complex social formations in Amazonia in general.

From stone to dust: ceramics and megalithism in Amapá (Brazil)

Marina DA SILVA COSTA

1. Introduction

According to Guyanese archaeologist Denis Williams (2003), the introduction of processed rocks in the making of pre-colonial vessels from the Guianas would increase the hardness level of these pieces. Our main research goal was archaeological experimentation based on this proposal regarding the intentional intrusion of processed rocks in Amazonian pre-colonial pottery (**Fig. 1**). The choice of this approach was motivated by the analysis of ceramic shards from the archaeological site AP-CA-18, Calçoene, Amapá State, Brazil, a megalithic structure dated to 1000 BP (Saldanha & Cabral 2012) that revealed the presence of crushed granite in the clay of pre-colonial ceramics, associated with secondary burials and large granite stones with signs of astronomical uses. This entire context raises the idea of a relational network between past indigenous people and the granite. The experiment involved the production of ceramic plates and coils, containing crushed granite and sand (control group). These were subsequently submitted to a hardness test using the Mohs's Scale.

2. Materials and methods

In total 20 ceramics were produced – 10 plates and 10 coils – using crushed granite and sand as a temper. These were separated into two groups by morphology: plates and rollers. The rollers were standardized by controlling the weight of dry raw materials: clay, ground granite, and fine sand. The proportion of clay and anti-plastic was also controlled by weight: for each plate made from 80 gof dry clay, 8, 16, 24, 32, and 40 g of anti-plastic granite/sand were added, which led to 10%, 20%, 30%, 40%, and 50% respectively of mineral anti-plastic in proportion to the total amount of dry clay used for each plate. The rollers were each made with 20 g of dry clay, adding 2, 4, 6, 8, and 10 g of granite/sand. The percentages were determined followed the proposition of La Salvia

Fig. 1 – Sherds excavated on archaeological site AP-CA-18 – Rego Grande, Amapá/Brazil (Photo: M. S. Costa, 2015).

e Brochado (1989: 17), who classified the paste as 'plastic' or 'very plastic' according to the proportion of anti-plastic added in the clay. Between 25% and 50% of anti-plastic material added to the paste is considered plastic, while with 20% or less, it is considered very plastic. The granite added to the clayey paste was ground from larger pieces of raw rocks on an anvil with hard direct percussion using a basalt hammer [1].

3. Results

The experiment showed that the inclusion of 'granite dust' in ceramic pieces noticeably increased their hardness (Mohs scale), showing the improvement suggested by Williams (**Fig. 2**). The plasticity of the rollers was verified during the making of the pieces, by observing the affect of the anti-plastic material on the modeling: the roller made with the highest anti-plastic sand percentage did not maintain the circular shape during the modeling, unlike the roller with a maximum percentage of granite, which had greater plasticity.

The hardness test was performed after the ten ceramic plates were burned. According to Pomerol *et al.*, the '*hardness of the minerals, which measures resistance to scratches is usually expressed by the Mohs scale, it comprises ten graduations of increasing hardness. The ten reference minerals of the classical scale range from 1 to 10: talc, gypsum, calcite, fluorite, apatite, orthoclase, quartz, topaz, corundum, and diamond* (...)' (Pomerol *et al.* 2013: 515). Observations regarding the affect on the surface of the ceramic plates by the minerals listed on the Mohs scale (in ascending order) was used to analyze the hardness of the experimental ceramics. All plates containing anti-plastic sand were easily scratched by the minerals 1 and 2, i.e., talc and gypsum. A white trace that characterizes the non-incisions on the surface was caused by mineral 3, calcite, in all plates containing sand.

Tests performed on plates containing the lowest percentages of granite, 10%, and 20%, produced similar results to those on the pieces containing sand. However, the plates with higher percentages of granite added were marked by incision and absence

Fig. 2 – An archaeological experiment was carried out to manufacture ceramic plates and coils with crushed granite added as a temper. The inclusion of 'granite dust' in ceramic pieces noticeably increases their hardness (Photos: M. S. Costa, 2015).

(1) This technique consists of striking the object with a "'*concentrate' shock that the impact results in a fissure due to the hardness of both materials, the striker and the block that receives the impact"* (Rodet & Alonso 2004).

of the characteristic white trace from the 4th degree of the scale, the mineral fluorite, corroborating Williams' proposal. This result points to a positive response to the initial research question posed but requires more accurate analysis for a firm conclusion.

4. Conclusion

This research continues as a Masters thesis project, where archaeometry tests and analysis of petrographic blades from pre-colonial potsherds is being performed, in a study of possible symbology of the diverse uses of granite by ancient people from the region. Looking at Brazilian indigenous myths and ethnoarchaeology studies, we believe that there is a very important reality conjugating space, death, life, and granite in the Amazonian past.

The experiment with 'shards of stones' was designed to test the possibility of a development in Amazonian pre-colonial pottery, as suggested in the literature. At the end of this paper, looking at the evidence as a whole, it is noticeable that these ceramics, buried at the foothill of large granite rocks, guarding ancient bones, could represent more than a technical improvement in the art of producing ceramics. Using other forms of ceramic analyses from knowledge of ethnogeology (Ward *et al.* 2014) and Amerindian cosmologies, I will continue with research on the Amazonian megalithic sites.

9

Catherine PERLÈS, Lautaro NÚÑEZ

Non-funerary megalithism among mobile hunter-gatherers and shepherds: Tulán-52 and Tulán-54 (Atacama Desert, Chile)

Abstract: The two ceremonial centres of Tulán-52 and Tulán-54, in the heart of one of the world's most arid deserts, are an unparalleled example in the Andean area. Tulán-52, which dates to the Late Archaic period, is in fact a unique case in this area of a megalithic ceremonial centre erected by non-sedentary hunter-gatherer communities. It represents as a one-millennium-more prototype of Tulán-54. Tulán-54 dates from the early phase of the Formative Period, and attests to the development of camelid breeding and horticulture. This ceremonial centre also is unique from an architectural perspective with its central half-buried megalithic enclosure, partitioned by walls converging towards a central cell, and its burials of new-born babies accompanied by rich offerings. Data from the settlements and burials do not support the idea of monumentalism associated with stratified societies, where ritual elites would monopolise wealth. On the contrary, they lead us to turn to other early forms of non-funerary monumentalism, megalithic or not, dating from the beginning of the Neolithic process, in which elites would be organised corporately, with no personal accumulation of wealth.

Keywords: *Atacama, Chili, Recent Archaic, Formative, ceremonial centres, hunter-gatherers, pastoralists*

The Andean world is known for the early emergence of ceremonial structures, and even of ceremonial centres, some of which are very impressive. The oldest go back to the Pre-Pottery period and date to the Late Archaic, between 3000 and 1800 BC. Depending on the region, they are associated with mobile hunter-gatherer groups (Aldenderfer 1990) or the first agropastoral communities (Haas & Creamer 2006). During the following period, known as the Formative period (1800-200 BC), these ceremonial centres developed and took on increasingly monumental forms, with mounds, raised platforms, and courtyards (plazzas) (Hastorf 2008; Ikehara & Shibata 2005; Janusek 2004; Lavallée 1995; Pozorski & Pozorski 2008; Oliver, this volume).

We do not intend to discuss these Peruvian and Bolivian monuments here, but rather an overlooked monumentalism, with no known antecedents or descendants, which developed in northern Chile between 3000 and 500 BC, on the edge of a small

canyon in the south of the Salar (salt flats) of Atacama, the quebrada of Tulán (**Fig. 1**). The two sites concerned, Tulán-52 and Tulán-54, which date respectively from the Late Archaic and Early Formative periods, are perhaps less spectacular than some Peruvian or Bolivian sites, but they form a totally original 'tradition' [1]. In fact, they represent the only megalithic sites in the Andes for these ancient periods, even if the scale of this 'megalithism' remains modest. Furthermore, the older site, Tulán-52, is a very rare example of megalithism among non-sedentary hunter-gatherers.

(1) It is certainly difficult to speak of 'tradition' with only two sites. However, the close analogies between Tulán-52 and Tulán-54, despite the millennium that separates them, allow us to envisage the existence of sites that are chronologically intermediate and that have yet to be discovered.

Fig. 1 – Location of the Tulán sites in Chile.

1. A very arid environment

Another peculiarity of the sites of the quebrada of Tulán is their location in a very dry region, which experienced a marked aridification episode during the construction of Tulán-52. The Tulán quebrada (**Fig. 2**) is located between the Salar de Atacama, at 2,500 m above sea level, and the High Puna, at about 4,150 m, which is itself overlooked by the Andean

Fig. 2 – The Tulán quebrada seen from Tulán-54. In the distance can be seen the Salar de Atacama (Photo: C. Perlès).

Fig. 3 – Partial view of Tulán-52 in its arid environment. In the distance are the Andean summits (Photo: C. Perlès).

Stratigraphy	*Reference*	*Date BP*	*Date cal. BC, 1 sigma*
Interior, upper part of the filling	Beta 198837	3860 ± 60	2335 ± 96
Interior, middle part of the filling	Beta 198838	4220 ± 70	2789 ±100
Interior, lower part of the filling	N-2488	4270 ± 80	2866 ± 132
Interior, upper part of the filling	N-2487	4340 ± 100	3051 ± 159
Interior, lower part of the filling	Beta 198840	4390 ± 70	3097 ± 146
Exterior, start of occupation	Beta 210511	4580 ± 90	3307 ± 167

Fig. 4 – Table of radiocarbon dates from Tulán-52. CalPal online calibration.

peaks. From *ca.* 7000 BC to *ca.* 2500 BC, a period of instability and climatic deterioration (Grosjean *et al.* 2007) led to the abandonment of many previously occupied sites (Núñez & Santoro 2011; Núñez *et al.* 2013). This prompted the hunter-gatherer groups that had remained in the region [(2)] to exploit the rare refuge areas for fauna and flora: oases with perennial springs along the Salar de Atacama and the bottom of the pre-Puna canyons (the 'quebradas'), and some of the lakes in the Upper Puna (or Altiplano) that became swampy areas where vicuñas (*Vicugna vicugna*) and guanacos (*Lama guanicoe*) could graze. This was the case of the Laguna Miscanti, which overlooks the quebrada of Tulán at 4,120 m above sea level (Núñez *et al.* 2018). During the Late Archaic, when Tulán-52 was erected, the economy was based on hunting wild camelids, capturing rodents (chinchillas, viscachas, *Ctenomys* sp.) and birds (passerines, doves, occasionally flamingos), as well as gathering seeds and fruit, such as canker (*Goeffroea decorticans*), white carob (*Prosopis alba*) and cucurbits (De Souza *et al.* 2010).

Late Archaic settlements, considered to be semi-sedentary, have been excavated north of the Salar de Atacama, particularly in the quebradas of Vilama (Agüero & Uribe 2011) and Puripica (Núñez *et al.* 1999, 2010). They are located between 2,000 and 3,000 m above sea level and consist of circular or subcircular constructions on stone block foundations. A decrease in the average size of large camelids (guanacos or llamas) and only these, greater variability in their size and a pathological bone at Puripica 1, indicate the presence of captive animals and attest to the early stages of camelid domestication (Cartajena 2013). Very long-distance contacts are demonstrated by the presence of exogenous elements, such as obsidian from the High Puna of Argentina, and marine shells from the Pacific coast (*Oliva peruviana*, *Pecten purpuratus*).

2. Tulán-52

The Pre-Pottery site of Tulán-52 was not, however, built in one of the eco-refuges, but rather above one, on the desert reg on the edge of the quebrada of Tulán at an altitude of 2,970 m above sea level (**Fig. 3**). The base of the construction lies on a occupation level dated between 3400 and 3200 BC (**Fig. 4**), slightly earlier than the first architecture. The site was initially interpreted as a semi-sedentary settlement for hunter-gatherers, taking advantage of the abundant resources around the quebrada of Tulán (de Souza *et al.* 2010). It was recently reinterpreted as an early ('*templete*') (Núñez & Perlès 2018).

The site appeared as an early prototype of a ceremonial centre a low mound, 1.3 m high, covered with the remains of eroded fireplaces. Test pits on the periphery of the mound showed that site extension was limited and that the '*templete*' was not surrounded by any domestic structure.

Excavations (90 m^2) were mainly carried out between the late 1970s and 1985 (De Souza *et al.* 2010) and revealed agglomerated half-buried structures made of vertical slabs up to 1.5 m high, sometimes flaked to fit together, and topped by horizontal slabs (**Figs. 5** and **6**). These walls delimited very small cells, with diameters varying from 1.4 m to only 2 m – much smaller than the dimensions of dwelling structures of that period. Several alcoves with pillars and lintels were incorporated into the walls, which is a classic feature of Andean ceremonial buildings in both the Late Archaic and Early Formative periods (Núñez *et al.* 2005: 309). At the foot of one of these alcoves, a depression contained a block with linear incisions.

The whole monument was progressively covered by thick deposits resulting from intense food preparation and consumption activities, as evidenced by abundant mortars, some of which were apparently intentionally fractured. These deposits contained many wild camelid bones. The size of the meat cuts suggests collective feasts. In addition, the site was used for the production of arrowheads from local siliceous tuff and exogenous obsidian, for the preparation of colourant and, above all, for the production of abundant beads from Pacific shells (*Olivia peruviana* and *Pecten purpuratus*), stone,

(2) It is considered that the development of sedentary or semi-sedentary settlements on the coast during this period, exploiting marine resources, is linked to the displacement of groups of hunter-gatherers from the interior, escaping from this too arid environment (Núñez *et al.* 1999, 2010).

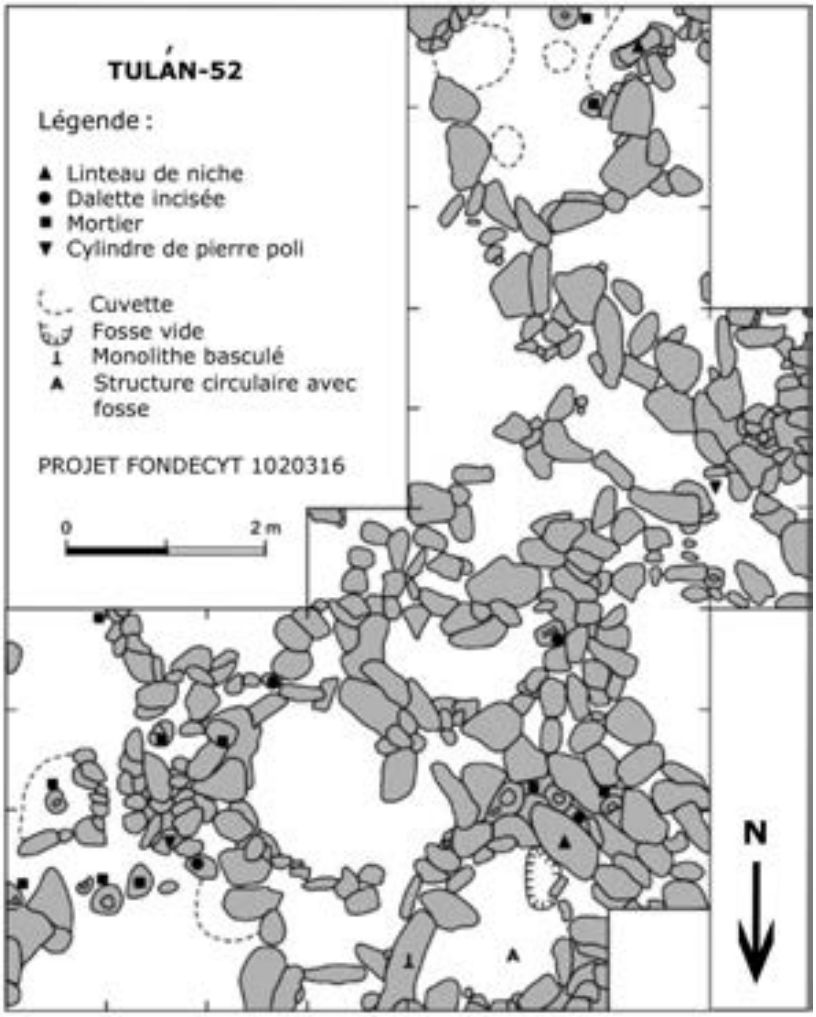


Fig. 5 – Plan of the excavations of Tulán-52 (After De Souza *et al.* 2010).

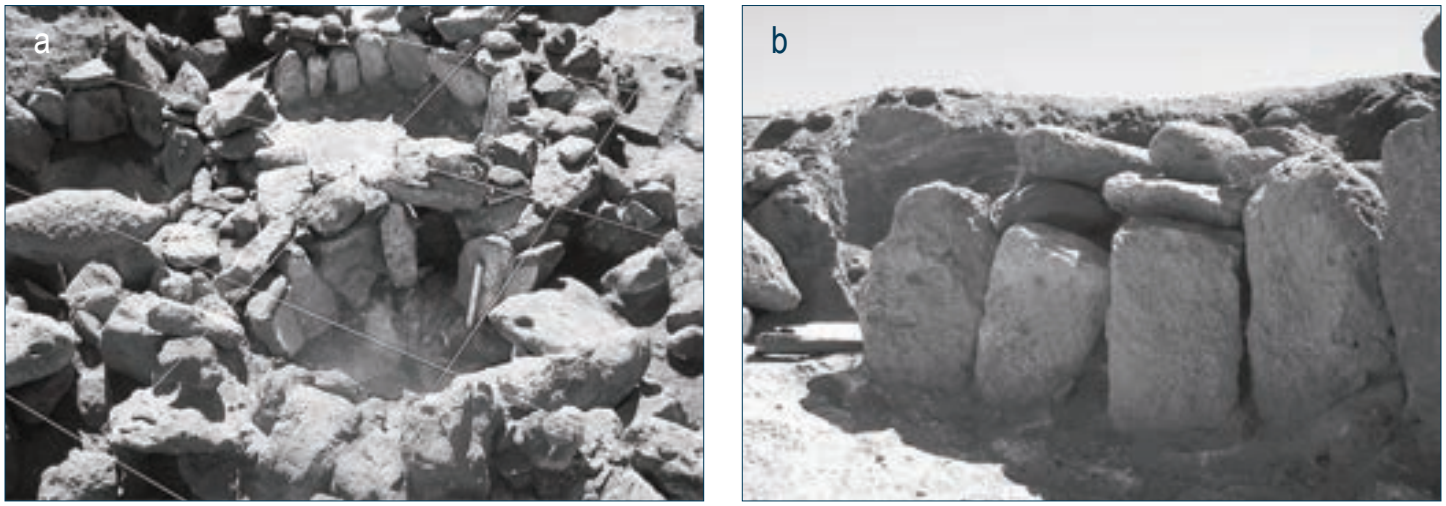


Fig. 6 – View of two cells at Tulán-52 and detail of the wall of the northwest cell (Photos: L. Núñez).

and sometimes copper ores (De Souza *et al.* 2010). When the site was abandoned, in around 2800 or 2300 BC [3], i.e., after several hundred years of use, it was almost totally camouflaged by these deposits. It was probably also intentionally filled in by external deposits, as suggested by a stratigraphic inversion in the radiocarbon dating. Thus, if ever the site had had an ostentatious appearance, this was completely obliterated.

Remains of domesticated squash (*Lagenaria* sp.) were found in the most recent deposits, echoing the first signs of llama domestication (Pozorski & Pozorski 1990; Kuijt 2002; Kuijt & Goring-Morris 2002; Yerkes 2002; Sassaman 2004; Pearson 2007; Cohen 2011; Schmidt 2012; Hadad 2014; Stordeur 2015).

3. Tulán-54

Tulán-54 is located 1 km downstream from Tulán-52, also on the edge of the quebrada. The initial occupation of the site is dated by radiocarbon to between 1300 and 1100 cal BC, making it a millennium more recent than Tulán-52. The main ceremonial structure was erected a hundred years later, and the site was abandoned between 460 and 420 cal BC (see list of dates in Núñez *et al.* 2016, 2017). During this period the climate had become wetter, leading to a diversification of the areas exploited outside the eco-refuges (Grosjean *et al.* 2007; Núñez & Santoro 2011). By that time, llamas were fully domesticated (Cartajena *et al.* 2007), but most of the consumed meat still came from vicuña hunting, while the llama was used for caravan transport. Horticulture was practised in the bottoms of the quebradas, where maize (*Zea mays*), quinoa (*Chenopodium quino*), oca (*Oxalis tuberosum*), peppers (*Capsicum* sp.) and cucurbits (*Cucurbita* sp.) were grown. But domestic plant remains are rare. As with meat, wild resources remained important in the diet, leading at least part of these groups to make regular moves.

Pottery was present in the form of tableware, cooking ware and pipes, which indicate connections with the plains of northwestern Argentina. The lithic industry was dominated by micro-perforators associated with an intense production of beads, as in Tulán-52. Blades of siliceous rock and obsidian tools and weapons indicate contacts with the east (80-100 km) and with the High Puna of Atacama and Argentina to the west, respectively.

Tulán-54 consists of a main central structure (the '*templete*'), subsidiary ceremonial structures, and technical structures (**Figs. 7** and **8**). Like Tulán-52, the site is completely covered by the accumulation of remains of feasting and of technical activities that took place there over several hundred years. A few burials, without funerary deposits, have also been unearthed recently around the temple, during a campaign of geophysical surveys and test-pits (Núñez *et al.* 2016, 2017). However, a genuine cemetery (Tulán-58) was located about 50 m away, at a considerable distance from any domestic settlement site. The burial position of adults and new-borns is a mixture of Late Archaic and Early Formative traditions, probably corresponding to groups from different parts of the Tulán region or the Salar de Atacama (Núñez *et al.* 2006a: 107). No exceptional funerary deposits, comparable to those found in the *templete*, were uncovered.

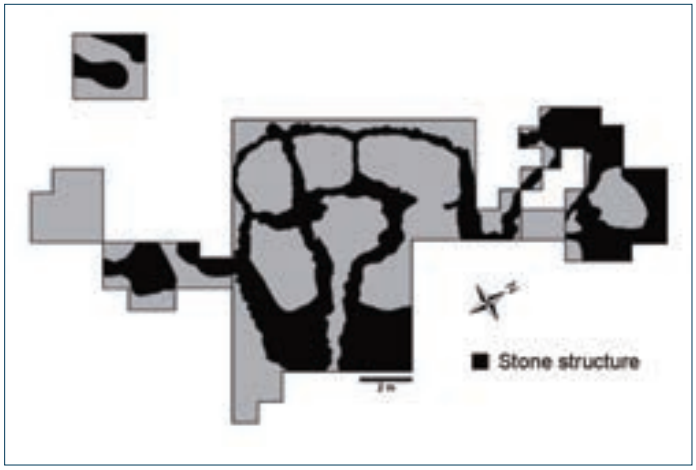


Fig. 7 – Plan of the stone structures at Tulán-54 (After Núñez *et al.* 2016).

(3) Four of the five dates coming from the filling of the structure are between *ca.* 3100 and *ca.* 2750 cal BC. Only one indicates more recent use, between 2450 and 2250 cal BC.

Fig. 8 – Structure adjacent to the ceremonial centre of Tulán-54 (Photo: C. Perlès).

Fig. 9 – View of the main structure of Tulán-54 and indication of the locations of two burials of new-borns, one with a gold-plated pectoral (black arrow) (a) and the other with a gold-plated wooden condor's head set with turquoise (white arrow) (b) (After Núñez & Perlès 2018).

Tulán-54 is much larger (8,000 m²), more complex and later than Tulán-52, but nevertheless presents a number of similar architectural features, even if the megalithic character of the construction is less pronounced. The central structure covers an area of more than 100 m². It consists of a half-buried enclosure with an internal perimeter made up of a wall of vertical slabs interrupted by alcoves with pillars and lintels. This is capped by several courses of small horizontal slabs.

The interior of the enclosure was partitioned by dividing walls, delineating a central oval cell with limited access by a ramp in a narrow corridor, and five surrounding cells. In the central cell and next to the enclosure wall, 27 burials of new-borns, mostly 6 to 12 months old, were placed in small pits, most of which were covered with stone blocks and then backfilled. All the neonates were lying on their right side. The majority of the burials contained funerary deposits, such as bead necklaces and millstones, one of which yielded starch from *Anadenanthera* sp., a genus known for its psychotropic properties (McRostie 2013, cited in Núñez *et al.* 2017). Some of these funerary deposits were exceptional, especially in the central cell where two engraved and intentionally perforated stone vases and two gold pendants were found (**Fig. 9**). Two other children were accompanied, respectively, by a snail from the Amazon and a gold-plated wooden condor head. It is not established whether the new-borns died a natural death or were sacrificed, but the latter hypothesis seems likely. Several hearths were uncovered near the burials, some of which were carefully built with fragments of millstones. Some blocks inserted in the walls were engraved or painted, in a similar style to the rock art that developed at the same time in the quebradas (Núñez *et al.* 2006b).

After the construction of the ceremonial enclosure and the deposition of the burials, interpreted as foundation deposits, the interior and exterior of the structure were filled in by a succession of ash lenses mixed with bone, lithic and pottery remains, until they formed a mound covering the entire monument, in the same way as Tulán-52. These deposits seemingly correspond to activities that took place inside the cells of the '*templete*', and to an intentional filling consisting of the remains of activities that took place outside (Núñez *et al.* 2017). Faunal data indicate the presence of wild vicuñas and guanacos, as well as domestic llamas. The very high representation of new-born camelids (35%) in the filling of the interior of the enclosure, which is significantly higher than in the external deposits (Cartajena *et al.* 2007), obviously evokes the burials of new-borns, while the selection of anatomical units, mostly the head, pelvis and extremities, appears to answer a symbolic code.

Like Tulán-52, Tulán-54 has been intensely visited, particularly over a period of two centuries (Núñez *et al.* 2017: Fig. 3). When the site was abandoned, it was practically concealed, and its monumental character was undetectable. However, members of the nearby community at Peine continue to refer to it as the place where their ancestors feasted (Núñez *et al.* 2017: 913).

4. Tulán-52 and Tulán-54 in the context of 'megalithic societies'

The two complexes of Tulán-52 and Tulán-54 represent a particular form of what is variously referred to, depending on the contexts and suggested interpretations, as a 'ceremonial centre', 'civic building', 'community building', 'religious monument' or 'temple'. Unlike most of these monuments, however, both of these complexes are located at some distance from dwelling sites – but not rock art sites – and must therefore be seen as aggregation sites, where groups who lived scattered throughout the region came together for ceremonial purposes (Pearson 2007: 379; Artusson *et al.* 2016). As in all the other centres of Neolithisation where community buildings, civic buildings or ceremonial centres were built, the erection of these monuments must have required control, or even coercion to organize the collective construction work, especially as the groups were not sedentary (Kuijt 2002; Carballo *et al.* 2014; Hadad 2014, 2019; Stordeur 2014; Laporte *et al.* 2020).

The older site, Tulán-52, was erected at the very beginning of the Neolithisation process, and the more recent, Tulán-54, at a time when camelids and a number of plants had been fully domesticated. Neither site, nevertheless, relied on an economy that could be described as purely pastoral or agro-

pastoral, since food resources remained mainly wild. Furthermore, neither of these centres was built by fully sedentary communities. Thus Tulán-54, and to an even greater extent Tulán-52, deviate markedly from the socio-economic models proposed, on the basis of ethnographic and archaeological data, for 'megalithic societies' (Gallay 2006) or 'societies with megaliths' (Jeunesse 2016). Indeed, different syntheses on past and present megalithic societies (Testart 2005, 2012, 2014; Gallay 2006, 2016; Jeunesse 2016) highlight a sedentary agropastoral economy with surplus production, the accumulation of wealth and a will of ostentation. These societies are classically described as stratified or hierarchical societies in which elites, under the guise of ritual power and by way of the dependent networks they set up, control long-distance exchanges and appropriate wealth and prestigious goods (Testart 1982, 2012; Price & Brown 1985; Feinman 1995; Hayden 1995, 2018; Price & Feinman 1995; Blanton *et al.* 1996; Trubitt 2000). Recent studies on this subject strongly emphasize the ostentatious character of megalithic (or monumental) constructions as an expression of the wealth of certain individuals, as a reflection of strategies for acquiring power and prestige, and as a sign of profound inequalities in society (Testart 2014; Artusson *et al.* 2106; Jeunesse 2016). For some, the mere presence of monuments requiring the implementation and coordination of collective work is enough to attest to '*a system of obligated surplus production and labour*' for the benefit of elites, even if the inequality of wealth is not obvious from archaeological data (Artusson *et al.* 2016). The construction of megalithic monuments has also been assimilated with the work of 'secret societies', frequently associated with the erection of megaliths or monumental buildings (Hayden 2018). The strategies implemented by the higher-ranked initiates in these societies very clearly illustrate one of the mechanisms by which the manipulation of ritual power can lead to personal enrichment.

5. Tulán-52 and Tulán-54 are not exceptions: monumentalism in non-agropastoral societies

In light of this apparent anomaly, several options can be explored. First of all, the 'megalithic' character of these monuments can be refuted. This is unquestionably possible, given the rather small dimensions of the slabs. Boulestin (2016: 79) considers that we can only speak of 'megalithism' when blocks weighing more than one and a half or two tons were transported, which is not the case in Tulán. But he also advances a second criterion: the fact that the work cannot be carried out by a domestic unit. And it is indeed difficult to imagine that Tulán-52 and Tulán-54 could have been dug and built by a single family, or even an extended one. Moreover, blocks larger than those used for dwellings were deliberately selected. Whatever we choose to call it, this monumentalism in non-sedentary societies, with an economy still essentially based on the exploitation of wild resources, must be taken into consideration. Alternatively, we could doubt this use of wild resources, but that would run counter to archaeobotanical and archaeozoological data. Moreover, as we will see, Tulán-52 and Tulán-54 are not unique in this respect. The same applies to the non-sedentariness of these groups. Again, unless perennial occupations are discovered in the future (which seems unlikely in the context of a hunter-gatherer or mixed pastoralism economy), this hypothesis does not fit with the excavation data.

It therefore seems more relevant to broaden the range of socio-economic contexts in which forms of megalithism, or, more generally, monumentalism, occur. Since megalithism is one among several forms of monumentalism, they will be considered together in the following discussions. Research in recent decades has revealed that, in many parts of the world, profound social and ideological transformations preceded the domestication of plants and animals, or, at any rate, the adoption of a fully agropastoral economy. This is exemplified by the appearance of collective ritual places, some of which are megalithic, in the Jomon (Kobayashi 2004; Kaner 2007; Pearson 2007), in Southern Peru (Aldenderfer 1990), among the fishermen of the recent Archaic northern coast of Peru (Pozorski & Pozorski 1990; Vega-Centeno & Lafosse 2008), in

the Early Woodland (Yerkes 2002), the Hopewell (Wright 2014), as well as by the megalithic collective buildings or 'sanctuaries' from the Pre-Pottery Neolithic A in the Near East (Kenyon 1957; Schmidt 2012; Stordeur 2015; Hadad 2019). Monumentalism was ignored for too long, but it is in fact a recurring phenomenon among hunter-gatherers.

The above-mentioned societies can, it is true, qualify as 'complex' (Price & Brown 1985) or 'affluent' (Koyama & Thomas 1981) hunter-gatherers or fishermen. Most were sedentary, unlike the hunter-gatherer and pastoralist communities of Tulán. There are, however, rarer examples of monuments erected by non-sedentary hunter-gatherers. The stone architecture of Tulán-52 is probably unique, but we can also mention the sites of the final Pre-Pottery of the Piruru tradition in the central Andes (Bonnier & Rozenberg 1988) and the monumental mounds of the Middle Archaic in the south-eastern United States, which required an even more considerable collective investment (Sassaman 2004; Saunders *et al.* 2005; Gibson 2006).

Various forms of 'community' or 'ceremonial' constructions of these hunter-gatherer societies exist, depending on the region, and they can reach impressive dimensions. The circular form is common in the oldest monuments and, when they are not mounds, they are often half-buried, which significantly increased the workload compared to a monument built on the ground (Hadad 2019). Like Tulán-52 and Tulán-54, some monuments were ritually 'sealed', broken, destroyed by fire or buried under so-called 'archaeological sediments', which Price and Bar-Yosef have described as 'villages garbage' (Price & Bar-Yosef 2012: 157)! This is the case for the ceremonial buildings of the PPNA in the Levant (Schmidt 2012; Stordeur 2015). In the Andes, the ceremonial buildings of the Chiripa in Southern Peru were ritually buried under layers of earth, apparently by every generation (Janusek 2004). These sealing rituals could necessitate major collective work, in some cases equivalent to construction work (Hadad 2019), and had the effect of obliterating, as at Tulán, the earlier monuments.

6. Funerary monumentalism and non-funerary monumentalism: which societies?

It is therefore indisputable that megalithism or, more generally, monumentalism, is not the prerogative of either agropastoral or sedentary societies (Jeunesse 2016). Moreover, all the examples cited to support this proposal present common features: they all represent an early phase of monumentalism in their cultural area. Secondly, they are instances of non-funerary monumentalism, although they are sometimes associated with human sacrifices, as at Tulán-54. Correlatively, they correspond to a collective monumentalism, and not a monumentalism linked to a lineage or a few individuals. Finally, the societies in which they are found do not show clear signs of differential accumulation of wealth.

We can therefore have recourse to alternative models, already proposed for regions of the world where early monumentalism was not accompanied by perceptible differential wealth between individuals in the dwellings or burials: the Near East (Kuijt & Goring-Morris 2002; Asouti 2006; Hadad 2014), the Ancient Jomon (Pearson 2007), the Mississippi (Sassaman 2004), the Hopewell (Yerkes 2002), and the Late Archaic societies of the northern coast of Peru (Pozorski & Pozorski 1990). According to these models, ritual elites would operate not on network strategies, but on a corporate strategy (Blanton *et al.* 1996; Feinman 2000, 2011), or what Renfrew called 'group-oriented chiefdom' as opposed to 'individualizing chiefdom' (Renfrew 1974: 74-79, 83-84). In this strategy of power, which would be precisely characterized by the presence of collective ritual spaces – as opposed to ostentatious individual or lineage burials – power would be distributed over several segments of society and would not lead to the individual accumulation of wealth (Feinman 1995, 2013: 46-47, 2016: 7).

A priori, Tulán-52 and perhaps also Tulán-54 would correspond to this corporate mode of elite organization since no difference in wealth has been documented to date through burials or dwellings. Yet, we cannot exclude an evolution of the socio-political context between Tulán-52 and Tulán-54 and a shift in ritual elites from a corporate mode of organization to a 'network' mode. The development

of caravan exchanges and the controlled circulation of valued goods could indeed have favoured such a shift.

7. Conclusion

The two seemingly isolated examples presented here are part of a wider group of megalithic or non-megalithic monuments. Like others, they confirm that ceremonial centres, sometimes megalithic in nature, were erected by communities of hunter-gatherers and non-sedentary pastoralists. Moreover, they lead us to put the emphasis on a non-funerary monumentalism in societies where the economy is not yet fully agropastoral. They enable us to argue, as Renfrew suggested a long time ago, that non-funerary monumentalism/megalithism and funerary monumentalism/megalithism (except for collective burials) form two opposite, even antagonistic, expressions of monumentalism because they are the product of two opposite poles of power distribution. In other words, monumentalism or megalithism are not necessarily the result of '*ostentatious plutocracies*' (Testart 2012: 4) or '*signs of very significant inequalities affecting society*' (Gallay 2016: 47), but may also have been the expression, perhaps ephemeral, of a corporatist power strategy of ritual elites.

The debate, nevertheless, is not closed: Hayden, for example, interprets several of the sites we have just mentioned, including Tulán-52 and Tulán-54, as the work of secret societies (Hayden 2018). In the same way, given the early development of monumentalism, the question of the socio-political organization of ancient communities and the nature of elites has disconcerted specialists of the Andean world for decades, and no real consensus has yet emerged (i.e., Siveroni 2001; Pozorski & Pozorski 1990; Haas & Craemer 2006). The answer, if any, is unlikely to come from the ceremonial centres themselves. It will stem rather from a better knowledge of all the other types of sites associated with them – hunting halts, settlements, dwellings, cemeteries, quarries, sheepfolds – which will enhance our understanding of the socio-economic organisation of these societies. However, in order to approach these fields through the study of material remains, archaeology needs to rely on historical or contemporary reference systems. But what references will we ever be able to use for societies in the process of Neolithisation?

Translated from French
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Part II: Megaliths in America

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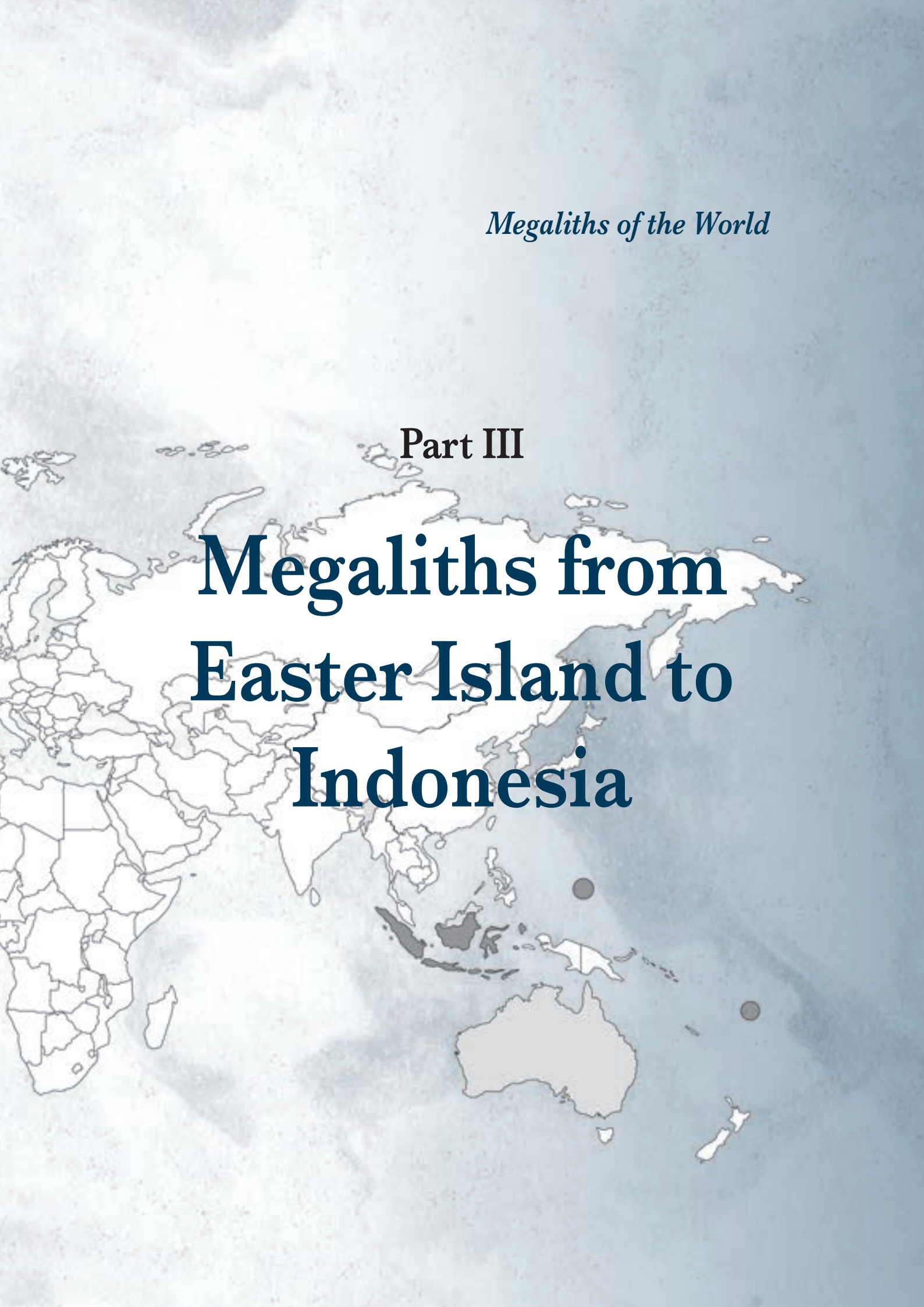

Part III

Megaliths from Easter Island to Indonesia

Fig. 1 – Huahine (Society Islands, French Polynesia), *marae* (altars and terraces) of Maeva, partially built on the lagoon, which is itself part of the monumental structure (Photo: N. Cauwe).

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Introduction

Have all regions of the world produced megalithic architecture in one form or another and at various periods of time? The answer seems to be obvious, as it appears that many societies are endowed with monuments regularly built with large blocks of stone. However, the concept of a kind of universal movement, which could be taken advantage of to support the notion of cultural evolutionism, is inconsistent. A world tour of megalithisms offers other perspectives, including the recognition of the diversity of the means and motivations involved. From this perspective, the island worlds of the Pacific and Indonesia offer some of the most interesting perspectives. In these regions, ethnographic records, some of which are first-hand, provide much better-defined cultural contexts than for fossil megaliths. Indonesia and Micronesia both offer examples of still extant megalithic practices, while in East Polynesia, monuments were still being built until the dawn of the 20th century.

These regions are also among those with the densest megalithic constructions. In Indonesia, all aspects of the landscape (valleys, plateaus, mountains) are occupied to some extent by thousands of stone vaults. The density of monuments on Easter Island is also surprising, with more than 250 constructions for an area of barely 165 km^2. On the island of Yap (Federated States of Micronesia), more than 15,000 large stone discs (*rai*) were imported from the Palau archipelago, and the *marae* of French Polynesia, of varied sizes, mark all the coasts and valleys (**Fig. 1**).

It is hardly possible to establish transregional typologies for all these constructions, as each island or sector of the same island has its own traditions. Yet none of these insular lands can be considered as an isolate. Even across the largest of the oceans, the Pacific, early contacts between archipelagos are now being demonstrated. Rather, megalithism seems to be a means of expressing, among other motivations, territoriality and identity, particularly through funerary practices where one-upmanship is rarely absent.

These different observations raise questions about the very definition of megalithism. In Indonesia, vaults and standing stones are unquestionably megalithic in the strict sense of the term. However, recent studies show that these monuments are sometimes accompanied by much more ephemeral complementary structures. In East Polynesia, altars of worship can be seen as authentic megalithism, but also as small constructions, or even as partial vegetal structures. The study of megaliths cannot, therefore, be limited to an architectural category in its own right since it is only a means of expression that cannot be separated from different materialities which respond to the same functionalities. Polynesian megalithism, for example, is about monumentality, the essence of which is broader than the mere use of large stones. Finally, everywhere in the vast area under consideration here, the landscape is itself sometimes construed as a monument – a sort of

Fig. 2 – Bas-relief of a woman and an elephant under the waterfall of Cawang, Pasemah plateau (Sumatra) (Photo: T. Steimer-Herbet).

natural 'megalithism'. The 'sacredness' of the landscape is then brought to light by sometimes substantial human developments, for example at Nawarla Gabarnmang on the Arhem Plateau (Australia), at Ava Ranga Uka A Toroke Hau in the centre of Easter Island (Rapa Nui), at Nan Madol or Levu in Micronesia, or on the Jambi and Pasemah Highlands in Sumatra (**Fig. 2**).

The anthropomorphism of many of the standing stones is also a remarkable feature of megalithism in Indonesia and the Pacific. In some regions, the figurative character of stelae or menhirs is unquestionable. Elsewhere, it is suggested by the cultural context, and thus by elements normally unattainable by archaeology alone. In some cases, this can go as far as recognising the spirits or forces that inhabit the raw material, or even their personalisation.

In this chapter, we also find examples of 'ephemeral' megalithism where the performance of constructions is amplified by regular dismantling and rebuilding, and where the sacredness of the place takes precedence over the longevity of the constructions. The phenomenon has been particularly well illustrated in East Polynesia where it seems to validate the stratification of society, as much as to account for the generational shelling of

the ancestors, or to maintain the economic system through sequences of retribution and obligations. It is also a question of maintaining the intrinsic strength of monuments.

Finally, the often-presented thesis of the necessity for hierarchical societies to construct megaliths is only partially confirmed here. Clearly, a large part of Indonesian megalithism is the consequence of economic changes, due to the development of international trade movements which led to the emergence of an elite and unprecedented wealth. Megalithism is thus a means of expressing these new social orders. In Polynesia and Micronesia, the hierarchical nature of societies is hardly in doubt either. However, here the context may justify the desire to build megalithic monuments, but where architectural complexity or the formal scale do not in any way require such a social structure. The case of Sumba, in the Sunda Islands, is exemplary in this respect, with two different approaches to megalithism, one that can be described as elitist, while the other is much more egalitarian. The latter case demonstrates that there is no need for strong stratification, nor for coercive power, to organize the construction of a dolmen. Systems of workforce mobilisation also require relationships and solidarity between groups, rather than the force of a more individual and centralized power. The relations between social structures and monumentality become more complex, requiring the abandonment of simple unequivocal relations between architectural developments and group organisation.

As can be seen, although this vast region does not form a megalithic province in its own right, Indonesia and the Pacific participate fully in debates and offer insights that are now indispensable, both on the functions and motivations of large stone architecture, and on the interactions between monumentality and social structures, building techniques, the value of standing stones or integration into landscapes that sometimes take on a monumentality assumed by monument builders.

Nearby Oceania or Melanesia is undeniably the forgotten province of this volume. The reason for this is certainly not contempt for a region of the world that has been undergoing cultural developments since extremely ancient times (more than 40 millennia at least). Be that as it may, megalithism in the strict sense of the term is not the most remarkable feature of Melanesian societies, where monumentality was first expressed through plant elements. In addition, the interest of Melanesians in the traditional era in preserving their buildings was often relegated to second place in relation to their efficiency.

Translated from French
by Louise Byrne

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Aboriginal monumental stone-working in Northern Australia during the Pleistocene

Abstract: Placements, arrangements, and constructions of large stones – most often termed 'megalithic monuments' – have long occupied the imagination of the global archaeological community. So-called 'megalithic traditions' have been studied extensively in Central to Northern Europe, and to a lesser extent in other parts of the world such as the Middle East, parts of Africa, Asia, and Oceania. Due to the nature of Australia's relatively unique archaeological record, and assumptions about 'hunter-gatherer' landscapes, it has often been assumed that Australian Aboriginal populations did not (or could not) construct monumental places from stone. Drawing on transdisciplinary research conducted over the past decade, we show how large rock outcrops were carved out to create new forms of monumental architecture in Northern Australia. We track back through time these anthropically shifting shapes of monumental rock outcrops, with implications for how Indigenous communities organized and marked their worlds more than 11,000 years ago.

Keywords: *Aboriginal Australia, Arnhem Land, Australian archaeology, megaliths, monumentality, Pleistocene*

1. Megalithic monuments and the European Neolithic

Across much of the world people have placed, arranged, and built with large stones (literally, 'megaliths'). Noticing distinctive and comparable phenomena of megalithic construction across much of the continent, European observers have long written about these shared traditions, trying to make sense of what they were all about (e.g., Camden 1610; Stukeley 1740), and how, and why, they could have spread over the long distances of their distribution (e.g., Riesenfeld 1950). In Europe, various terms (e.g., 'dolmen', 'menhir') have been used to classify and understand anthropic uses of large stone over the years, and placements, arrangements, or constructions using large stone have been grouped as forms of 'megalithic monument' (e.g., see Joussaume *et al.* 2006). This term refers to large stones used in such a way as to embody 'scale, permanence and visibility' (Ballard & Wilson 2014: 79) and to serve memorial or place-marking purposes (Scarre 2011; Wilson & David 2002). Certainly, the megalithic monuments of Europe serve such purposes today. Megalithic monuments are locations where people can engage with and (re)imagine 'prehistory' (Holtorf 1998), ancestral and national pasts that speak to us of our own becoming, or of the past of

others that we interact with today. The language used to describe European megaliths has since been exported to describe superficially similar constructions worldwide (e.g., see Joussaume 1988). Archaeologists have identified and documented notable instances of large stone manipulation in disparate parts of the globe, including the Middle East (Fraser 2018), Cameroon (Asombang 2004), Japan (Mizoguchi 2013), Indonesia (Adams 2007) and Pacific island nations such as Vanuatu (Bedford 2019).

There is a long history of critical analysis in the archaeology of both European Neolithic megaliths and monumentality and their connections with megaliths and monuments elsewhere in the world. Key commentators have debated the utility of 'megalithic monument' as a category and have explored the often-arbitrary ways in which the term is used to group and classify forms of monumental architecture (Scarre 2004: 143; Tilley 1998). As early as the 1950s, observers such as Gordon Childe and Glyn Daniel noted that many disparate types of architecture were being described as 'megalithic' (see Scarre 2004: 143). These included sites where rock was extracted to create structure (such as rock-cut tombs) and large stone buildings made entirely of small blocks of stone, as well as conspicuously megalithic monuments such as dolmens (Darvill 2010; Scarre 2004: 143; Tilley 1998: 141). In recent decades, archaeologists have reconsidered the use of large stones in the context of the wider landscape (Midgley 2013; Parker Pearson 2012; Scarre 2002). Gillings & Pollard (2016: 553-556), for example, have highlighted the importance of '*selection, extraction, journeying and erection*' of stones to the '*meanings embodied by the monumental configurations they ended up in*'. For the societies that built them, monuments embodied the interconnected cultural landscape: they were connected by visible and invisible trails to quarries, settlements, and socio-ritual events, usually of a religious nature.

Several scholars have explored the distinctive materialities of stone (Bradley 1998; Scarre 2004; Tilley 1996). Scarre (2004; see also Bradley 1998) discusses the implications of unmodified stones used in the megalithic monuments of Europe. In the Drenthe region of the Netherlands, naturally split glacial boulders were incorporated into Neolithic dry-stonework tombs. The stones were incorporated into monuments in such a way that they contrasted (in terms of colour and texture) with the rest of the structure, and their smooth faces were oriented inwards (Scarre 2004: 146). The way they were built into monuments hints at the special 'meaning' and 'potency' of these glacial boulders (Scarre 2004: 146). For Scarre (2004: 144), analyses of megalithic traditions can reveal '*the attitudes of these societies to the materials that they were using*', which may in turn elucidate their 'attitudes or ideas about the world'. There is much to be learned from the ways in which stone structures and their materialities interplay with the landscapes in which they are situated (see also Allen & Gardiner 2002; McFadyen 2008: 313; Tilley 1996). Importantly, structures made from wood and earth were key parts of Neolithic ceremonial and funerary landscapes alongside the especially durable materiality of megalithic monuments (Hinz *et al.* 2019; Midgley 2013; Parker Pearson 2012). Hinz *et al.* (2019: 22) remind us that megalithic monuments have often been examined as though 'detached' from contemporaneous (and more ancient) archaeological features. Their significance in Europe's Neolithic must be '*appreciated through their entanglement in the overall network of socio-cultural conditions of early agricultural societies*' (Hinz *et al.* 2019: 21). Such observations bring to the fore the idea that monuments must be understood at many levels, commencing with fine-grained analysis of their construction, chronology, and points of articulation with the surrounding landscape, and that the category 'megalith' may itself be secondary to the social processes and technologies by and for which they were made.

2. Stones and monumentality in Oceania and Aboriginal Australia

Despite the increasingly nuanced archaeologies at play in current studies of European megalithic monuments, stone constructions in Oceania (New Guinea, Australia, and the Pacific islands) have suffered from comparison. As the prior discussion highlights, monumental stonework has been conceptually parcelled with the unique social and economic conditions of the European Neolithic. Implicitly or explicitly, it is assumed that stone structures could only be made by people who were 'better organized'

(Malville *et al.* 1998) than more mobile or so-called 'egalitarian' societies, usually meaning 'small-scaled' societies not hobbled to agricultural plots, rural centres and/or centralized social powers. As Bedford (2019: 69) reflects: '*discussions of monumentality in… the Pacific and more specifically monumental architecture in stone, tends to be fixed in association with hierarchically organized chiefdoms, and that such activity would not have occurred if such social frameworks were not in place*'. These ideas were especially prevalent in the early 20th century, when European and colonial Australian antiquarians sought to explain Oceanic stone use in terms of cultural diffusion (Perry 1923; Riesenfeld 1950; Smith 1915; see discussion in Ballard & Wilson 2014: 82-84; Fraser 2018: 13-16; Russell & McNiven 1998). Riesenfeld (1950) collated a vast corpus of information on the 'dolmens' and 'menhirs' found in Pacific regions such as the islands of Vanuatu, and the smaller stone monuments of New Guinea. He suggested that a 'race' of 'stone-using immigrants' brought culture, crops, and cultivation to Oceania – but not Australia – before being replaced by 'aboriginal Papuans' in Melanesia (Riesenfeld 1950: 664-667). Systematic archaeological research coupled with changing social mores have since been unwinding such racialist assumptions. Recent discoveries in New Guinea, for example, have demonstrated that agricultural practices in this part of Melanesia developed gradually and locally over the past *ca.* 9000 years (see e.g., Denham *et al.* 2003; Golson 1976; Shaw *et al.* 2020). Ethnographies, while not a window into the past (Spriggs 2008), do demonstrate that at least for the last 80 years, and in many cases longer, monumental stones were part of active place-making processes through which ancestral forces were engaged. This work is suggestive that megaliths were part of a network of sites enlivened through ritual, orality and more transient materials (Ballard 1994; Bonnemaison 1996; Layard 1942; Rumsey & Weiner 2001).

Although Australian Aboriginal peoples and Torres Strait Islanders did not construct megalithic monuments as classically conceived, they have nonetheless been subjected to the 'remorseless logic of diffusionism' (Ballard & Wilson 2014: 83). As McNiven & Russell (2005: 165-173; Russell & McNiven 1998) have written, the hyper-diffusionist scholar William Perry (1923) erroneously suggested that there were megalithic stone circles in Australia. Perry (1923) posited that these stone monuments were evidence that an 'advanced' 'heliolithic culture' had occupied Australia prior to the arrival of Aboriginal people. These ideas were popular but not universally accepted at the time, and by the mid-1900s the tide of scholarship was reversed as scholars re-emphasized that there was '*no evidence … of megalithic remains on the Australian continent*' (Kenyon 1930: 71; McCarthy 1940: 184). Having been freed from association with megalithic monuments, '*Aboriginal Australians were made to represent the antithesis of megalithic culture, and the familiar nineteenth-century dichotomy of primitive (hunter-gatherer) Aborigines and advanced (agricultural) non-Aborigines was allowed to reassert itself.*' (McNiven & Russell 2005: 173)

This dichotomy re-established itself to the extent that Aboriginal people were also denied a monumental presence in the Australian landscape, in the sense that by not building large and lasting monuments, they failed to adequately mark their own presence as workers and builders of the land, a prerequisite for their recognition as worthwhile inheritors of that land. As Isabel McBryde (1963: 137) stated, Aboriginal people lacked 'monumental structures of any kind'.

At this stage, we must ask: what if Aboriginal monuments (stone or other) occur but bear little resemblance to those of Europe? Cosmologies and ontologies offer important insights into Aboriginal notions of monumentality. Aboriginal people assert that ancestor-beings formed the landscape in the cosmological past. The Aboriginal-English term 'Country' is often used to describe an interconnected and interactive landscape populated by the ancestors who endure through time. Country can speak and be spoken to; Aboriginal people care for a Country that nurtures in return (Bradley 2011: 45; Rose 2002). In the Aboriginal notion of Country there is no division between natural and cultural aspects of the landscape. Thus conceived, the landscape itself is a living monument to, and of, the ancestors (see Ballard & Wilson 2012 for discussion of this concept for Melanesia). From an archaeological perspective, it is worth noting that Aboriginal people fashioned their landscapes into durable and memorious places. In southeast Australia's Murray River plain, for

example, people from various Aboriginal language groups constructed large earthen burial mounds which served to commemorate the dead (Littleton & Allen 2020). Many of these large, built places have since been erased by generations of colonial pastoral activity across the region. The earthen monuments '*dropped out of European consciousness*' and were '*replaced by a trope of Aboriginal people with … no substantial constructions*' (Littleton & Allen 2020: 9).

Although the constituent stones were seldom vast, Aboriginal people also extensively manipulated rocky landscapes (Black 1950; Kenyon 1930; McCarthy 1940). Forms of Aboriginal stone constructions include stone-walled fish traps (McNiven *et al.* 2012, 2015; Stockton 1982), circular house structures (Coutts *et al.* 1978; McNiven *et al.* 2017; Wallis *et al.* 2017), standing stones (Gunn *et al.* 2012b) and arrangements forming lines, circles, figurative motifs or cairns (Barker *et al.* 2016; David *et al.* 2004; Fitzpatrick *et al.* 2018; Norris *et al.* 2013; Law *et al.* 2017; McIntyre-Tamwoy *et al.* 2015). As the studies cited here attest, many Aboriginal stone arrangements had ceremonial and totemic associations. These durable structures reminded Aboriginal people of the actions of their ancestors and were tangible aspects of local cosmologies. Among the more spatially extensive of these stone constructions is the engineered Budj Bim Cultural Landscape of the Gunditjmara in southeastern Australia. This landscape was recently inscribed on the UNESCO world heritage list (Smith *et al.* 2019). From at least 6600 years ago, the Gunditjmara modified the stony basaltic (volcanic) landscapes around Lake Condah for aquaculture: to manage and harvest eel populations (Builth 2006; Coutts *et al.* 1978; McNiven *et al.* 2012, 2015, 2017). Fish trap construction involved excavation of basalt blocks and the construction of basalt walls to form channels. These modifications '*radically altered local hydrological and sedimentation regimes*' (McNiven *et al.* 2015: 53). Archaeological analyses of Aboriginal built landscapes such as Budj Bim are already challenging Eurocentric notions of monumentality, and of 'hunter-gatherer' landscape use (which we note is a label rejected by many Indigenous peoples and by some archaeologists (David & Denham 2006; Smith *et al.* 2019: 293). Here, we contribute to a growing body of work which investigates how Aboriginal peoples constructed and performed monumentality. We describe an instance of monumental stone working in northern Australia, where Aboriginal people created a living space by hollowing out and reshaping a vast rock shelter.

3. Nawarla Gabarnmang, a rock shelter on Jawoyn Country, Northern Australia

Nawarla Gabarnmang is a rock shelter located near the centre of the Arnhem Land plateau in northern Australia. The plateau is a *ca.* 32,000 km^2 sandstone bioregion from which emanates major waterways such as the Katherine, South Alligator, East Alligator and Mann Rivers (**Figs. 1** and **2**). It is home to a remarkable density of rock art and archaeological sites, few of which have ever been studied in detail (e.g., Chaloupka 1993; David *et al.* 2017b; Gunn *et al.* 2017: 303; Lewis 1988). The site of Nawarla Gabarnmang lies 400 m above sea level on the northern edge of an elevated quartzose sandstone outcrop. The rock shelter is situated in Jawoyn Country, covering much of the southern half of Arnhem Land. The Jawoyn Association – an organization which represents Jawoyn people – rediscovered the site in 2006 through a helicopter survey of remote rock art and archaeological sites (Gunn & Whear 2007). Soon after the rediscovery of the site, senior Elders Bardayal 'Lofty' Nadjamerrek and Jimmy Kalariya gave the name of the place as 'Nawarla Gabarnmang', which means 'where the hole goes through the rock' in the Jawoyn language. When interviewed by Robert Gunn in 2007 (Gunn *et al.* 2012a: 56), Bardayal Nadjamerrek recalled visiting and camping at the site as a young boy sometime in the 1930s. For Jawoyn people, places such as this are not just 'archaeological sites'; they are places where their ancestors made paintings, held ceremonies, traded with nearby groups, and lived for many generations. At the invitation of the Jawoyn Association, archaeological fieldwork at the rock shelter was conducted by a multidisciplinary team of Australian and French researchers from 2010 to 2012.

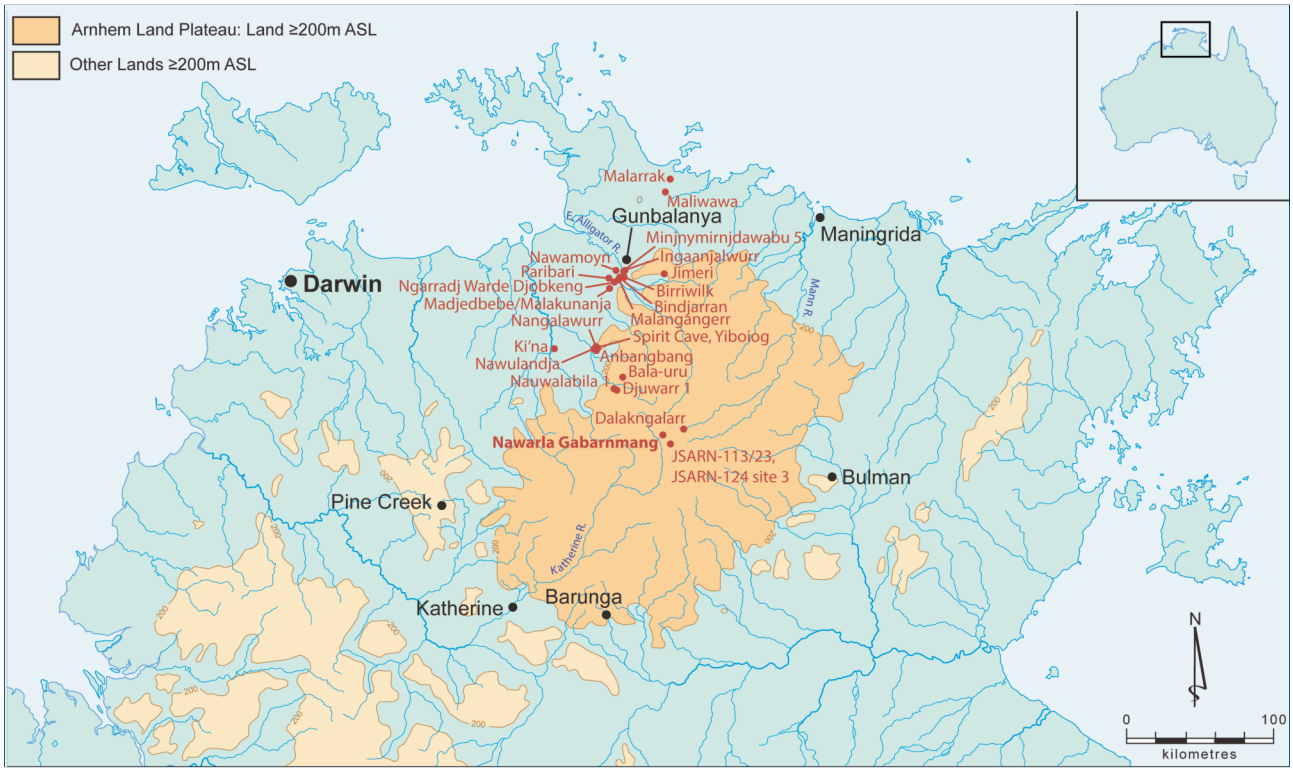


Fig. 1 – Location of excavated archaeological sites in and near the study area.

Fig. 2 – Northern entrance of Nawarla Gabarnmang from the air. Note the numerous quartzite blocks on the scree in front of the shelter (Photo: B. David).

Nawarla Gabarnmang is an expansive and impressive rock shelter (**Fig. 3**). It measures *ca.* 32 m long by *ca.* 23 m wide and the ceiling (as it stands today) is 1.8-2.0 m in height. The immediately surrounding landscape can be divided into several geological and geomorphological zones. The main area discussed here – and referred to as Nawarla Gabarnmang – is the long overhanging east-west aligned rock shelter. At the northern margin of the rock shelter is a basin that lies some 20 m lower than Nawarla Gabarnmang's ground floor (**Fig. 2**). To the south is a low-lying 'courtyard' area that separates the rock shelter from a vast rock outcrop, of which Nawarla Gabarnmang is a northern extension. Between the rock shelter and these two zones are piles of scree which slope downwards from Nawarla Gabarnmang to the basin and courtyard. These scree slopes comprise hundreds, and possibly thousands, of tabular quartzite blocks of regular size, which we discuss later in this paper. The floor of the rock shelter comprises soft grey-black sediments that are protected from wind and rain by the horizontal ceiling and by the more than 50 quartzite pillars that hold it up. The ceiling and 36 of the pillars are covered in colourful rock art panels made up of hundreds of painted and stencilled motifs; the ceiling panels have been described in detail in Robert Gunn's recent PhD thesis and subsequent book (Gunn 2016, 2018; see also Gunn *et al.* 2012a; David *et al.* 2017a; Delannoy *et al.* 2020). Much of the extant art on Nawarla Gabarnmang's surfaces dates to within the past 450 years, though some motifs date to much older periods, including some that can be shown to be between 3000 and 14,000 years old (Gunn 2018: Table 11.2; Gunn *et al.* 2012a; David *et al.* 2017a).

Fig. 3 – The internal space of Nawarla Gabarnmang (Photo: J.-J. Delannoy).

Excavations were conducted in 2010-2012 in seven discrete zones within the rock shelter (see Delannoy *et al.* 2017: Table 10.1). Extensive Accelerator Mass Spectrometry (AMS) radiocarbon dating, and Bayesian modelling of the site's chronology, have revealed phases of site use dating to 52,160-34,610 cal BP, 36,290-4220 cal BP and 2210-0 cal BP, although the deepest and oldest levels have not yet been dated (David *et al.* 2019: 81). As such, Nawarla Gabarnmang is among the oldest and most securely dated archaeological sites in Australia (David *et al.* 2019). The earliest known evidence of Aboriginal presence in Australia has been found at Madjedbebe, which is located at the northern end of the Arnhem Land plateau. The oldest cultural deposits at Madjedbebe date to within 70,700-59,300 cal BP (Clarkson *et al.* 2017), at least 7000 years earlier than the first known use of Nawarla Gabarnmang, with the dating of the latter's undated deepest deposits currently underway (see David *et al.* 2019: 83-84 for discussion). The excavations at Nawarla Gabarnmang yielded the oldest dated art in Australia. A small (35.3 mm long) painted fragment of the rock shelter wall had fallen onto the ancient floor and was AMS radiocarbon-dated by stratigraphic association to 27,657-26,739 cal BP (David *et al.* 2013). Pieces of ochre with striations (use wear) were found in layers dating to within the period 52,160-34,610 cal BP (David *et al.* 2019: 74). Further, one of the oldest examples of edge grinding technology in the world was uncovered at the site. A fragment from a ground-edge axe was found in deposits dating to *ca.* 35,500 cal BP (Geneste *et al.* 2010, 2012). Older examples of edge grinding have since been discovered in Australia, including at Madjedbebe (Clarkson *et al.* 2017; see also Hiscock *et al.* 2016).

4. An archaeology of architectural space: the case for monumental stoneworking

In this chapter, following the research of Delannoy *et al.* (2013, 2017, 2020), we outline the ways in which Nawarla Gabarnmang was constructed as a monumental piece of stone architecture. The site is not an arrangement or construction from moved or quarried stones (though stone was moved within and out of the shelter). Rather, Nawarla Gabarnmang is a culturally fashioned and furnished place, made by extracting rock and modifying the shape of an existing rock shelter with extraordinary morphological characteristics. Within the site, the durable quartzite pillars appear to frame the panels of rock art motifs located on the ceiling (and the pillars are themselves foci of the art). During the late Pleistocene, Aboriginal people had made decisions about which pillars should remain standing and where those pillars would be located. Before discussing these aspects of architectural choice and the active structuring of place, we must first explore the archaeological and geomorphological evidence for stone-working at Nawarla Gabarnmang.

Archaeomorphological research conducted in 2010-2012 aimed to investigate the spatial history of Nawarla Gabarnmang (Delannoy *et al.* 2013, 2017, 2020). There were four main facets to this research:

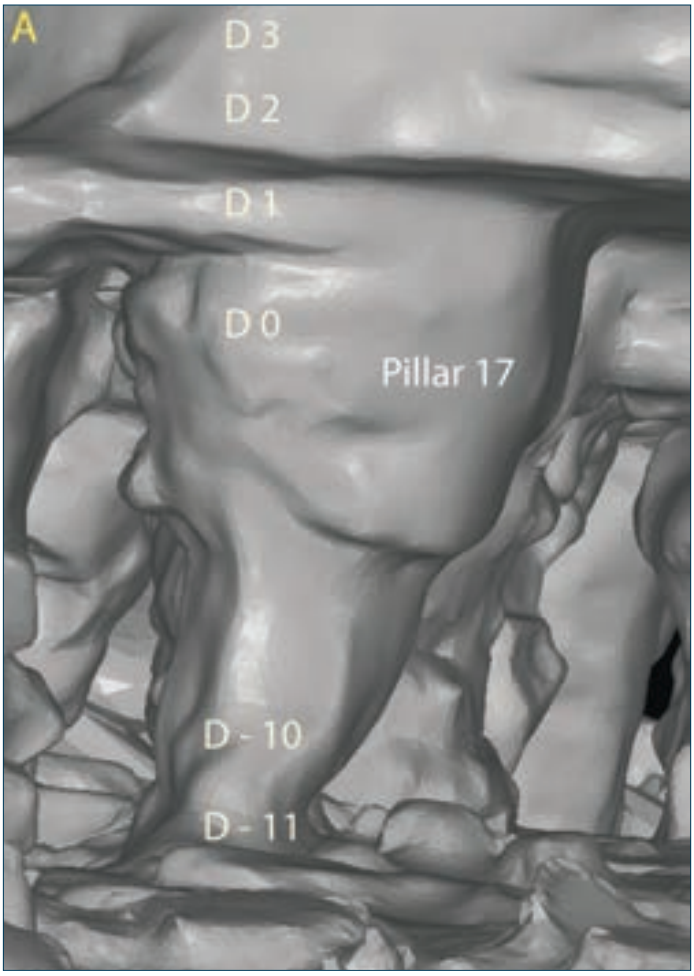
(1) Three-dimensional (3-D) LiDAR laser mapping of the site and its immediate surroundings to characterize the internal and external topography of the site, and to quantify the volume of displaced rock.

(2) High resolution geomorphological ground mapping, undertaken so that objects present at the site could be traced to their point of origin and, in turn, an investigation of the processes which caused objects to be translocated at the site. High resolution mapping of the rock shelter ceiling was also carried out so that items found on (and in) the ground could be understood in relation to the rock art panels above.

(3) Characterization of the 17 quartzite strata that make up the rock shelter's ceiling slabs and pillars. The aim was to characterize each quartzite layer (in terms of its thickness, texture, and petrography) so that the strata could be compared with rock debris found in the excavations and on the ground. Thin section petrographic and X-ray fluorescence (XRF) analysis made it possible to identify the unique geological characteristics of each quartzite stratum (**Fig. 4**).

(4) Archaeological excavations and radiocarbon dating of Stratigraphic Units (SUs) containing geomorphological objects (collapsed blocks, roof fall, etc.) and cultural materials.

Mapping of the location of the quartzite pillars and contours of the ceiling revealed striking differences



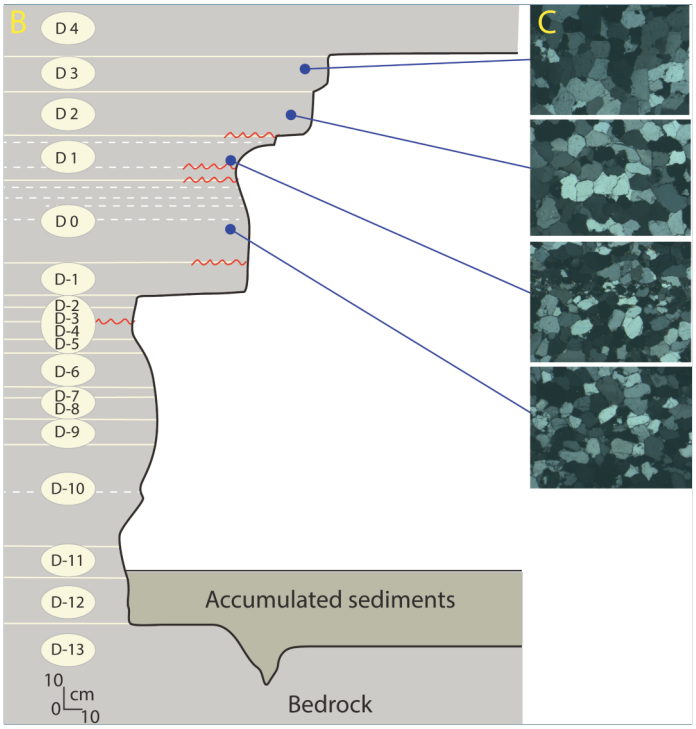
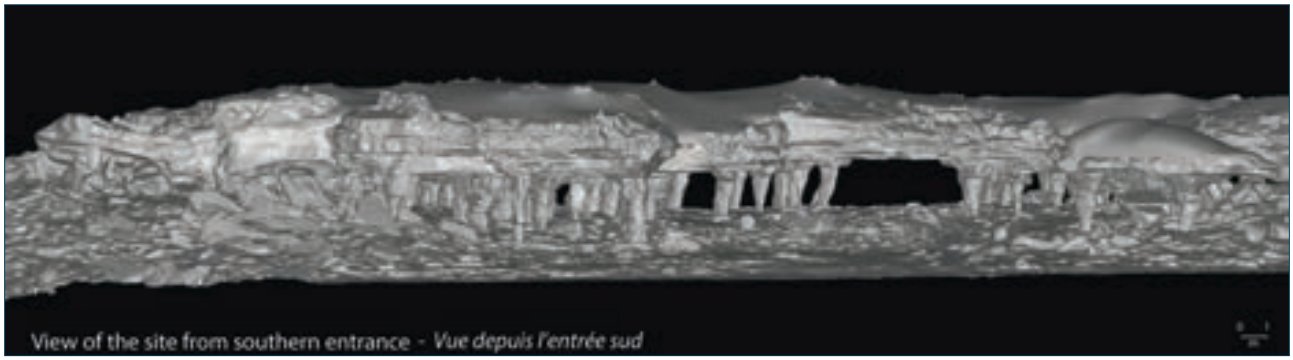


Fig. 4 – Rock strata from the bedrock, pillars, and ceiling of Nawarla Gabarnmang.



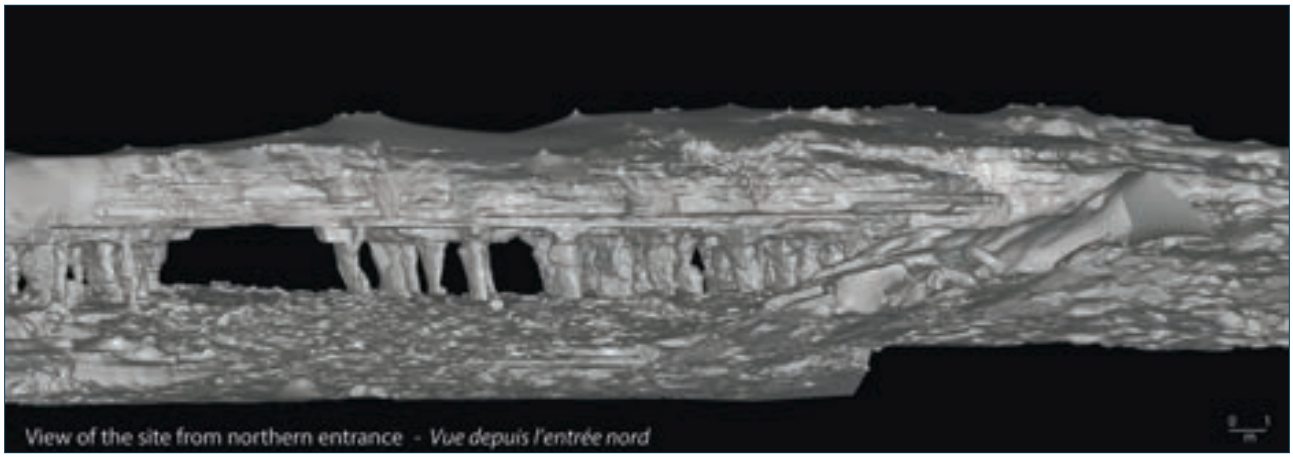


Fig. 5 – 3D laser model of Nawarla Gabarnmang showing the relative density of pillars inside the shelter (3D survey: B. Sadier; model processing and CAD: J.-J. Delannoy).

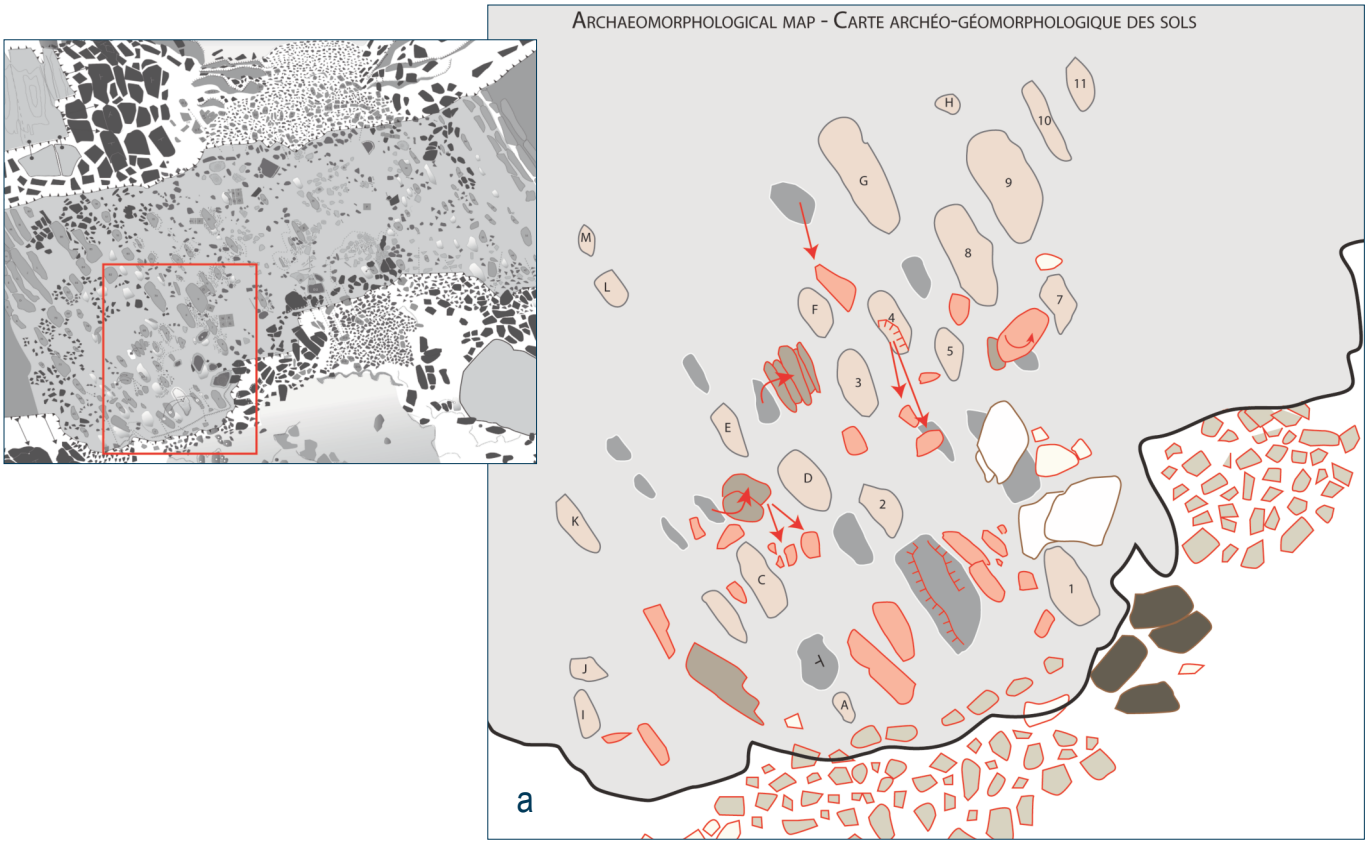
across the site. At the southwest corner of the site, thick forests of pillars (spaced *ca.* 1.0 m x 2.0 m apart) graduate to solid rock. Towards the southern, central, northern, and central-eastern areas of the site there is a large cavity (**Fig. 5**). There are few pillars in this zone, these being spaced up to 8.0 m apart (Delannoy *et al.* 2013). For Jawoyn today and in the recent past, this relatively spacious area is the focal point of the site, where the 'hole goes through the rock'. Likewise, the ceiling is especially high and flat in the northern and southern sections of the site, which suggests that there has been more extensive rockfall here, where fewer pillars remain to support the roof (Delannoy *et al.* 2017: 209). Yet the floor levels below these fallen sections of ceiling are among the lowest points of the rock shelter's ground surface. We would expect the large slabs of fallen rock to be located either on the ground or buried in the soft sediments on the rock shelter floor. Several questions emerge from these observations: why is there such a variable density of pillars across the site? In areas where comparatively more ceiling strata have collapsed, why is there so little evidence of collapse on the floor? Are the processes by which the pillarscape and ceiling formed erosional, occurring over the course of many millions of years? Or could they be anthropic, occurring within tens of thousands of years?

The geology of the local landscape provides a useful context for our investigation of Nawarla Gabarnmang's physical structure and spatial history (see Delannoy *et al.* 2017 for details). The rock shelter together with its surrounding rock landscape is composed of quartzites that were deposited 1700 million years ago (Carson *et al.* 1999). Quartzite sandstone pillars at various stages of formation can be seen close to Nawarla Gabarnmang, including south of the site at the southern margin of the courtyard. The gaps seen today between quartzite pillars along the landscape near the rock shelter formed through processes of fracturing and slow dissolution ('phantomization') of the rock over the course of 120 million years (Delannoy *et al.* 2017: Fig. 10.20; see Quinif 2010 for a detailed description of 'phantomization').

Tectonic activity in combination with immense pressure caused the formation of narrow fissures in the bedrock. These fissures occur in a regular triple-checkerboard pattern. The regular layout of the fissures is reflected in the spacing and orientation of the more than 50 existing pillars within the rock shelter. When mapped onto the ceiling of the rock shelter, these fracture lines enabled the mapping of where pillars would once have been located (Delannoy *et al.* 2017: Fig. 10.23). Geomorphological reconstruction of past pillar locations demonstrates that many of them have disappeared. As Delannoy *et al.* (2017: 222) explain: '*The rhythm and spacing of voids between pillars in sectors neighbouring those parts of the site with widely spaced pillars show that they map perfectly onto the network of fractures in the rock*'. In locations where pillars are now absent there are instead either: (a) remnant traces where a pillar was once joined to the ceiling; or (b) flat areas of ceiling where the pillar is now absent. Where there are no remnant traces of the pillars, this is either because the section of ceiling bearing the traces has since fallen, or because these traces were intentionally removed by people (see below).

5. Pillar toppling, stone removal and the maintenance of space

In the southwest section of the rock shelter there is evidence for the anthropic movement of stone and partial removal of pillars (Delannoy *et al.* 2017: 225-235, 2020). In other words, the work was not completed. As mentioned previously, the pillars are generally more densely spaced in this part of the site. The ceiling overhead is relatively flat due to a sequence of major roof fall events. Yet, unlike other areas of the site, there are still large blocks of stone on the ground here: petrographic and morphological analyses reveal that some of these stones originate from pillar strata, and others from ceiling strata. In an area designated 'Alcove A', analysis of a succession of anthropic rockfall events has helped historicize how the rock shelter was modified through time. In Alcove A there is a large block of stone ('Block A') resting on a pillar base (**Fig. 6**). Block A originated as a stratum of the rock shelter ceiling (stratum D0), which tells us two things. First, we know that stratum D0 was originally located above three other ceiling strata (D-3, D-2, and D-1). These three ceiling strata must have fallen prior to stratum D0 that capped them, but they cannot be



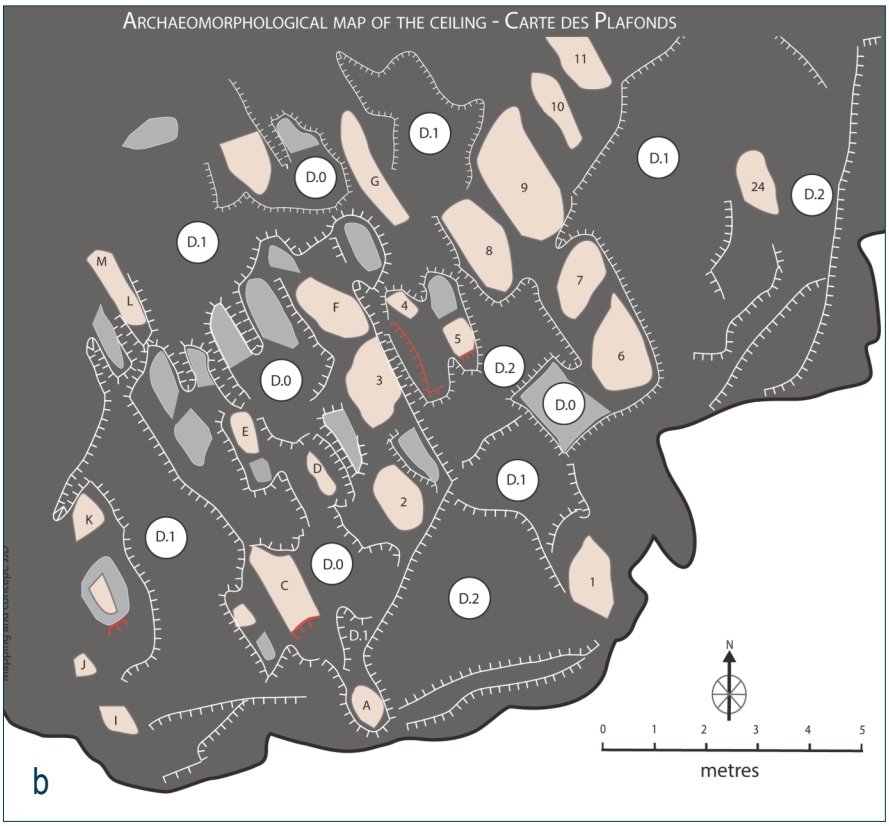
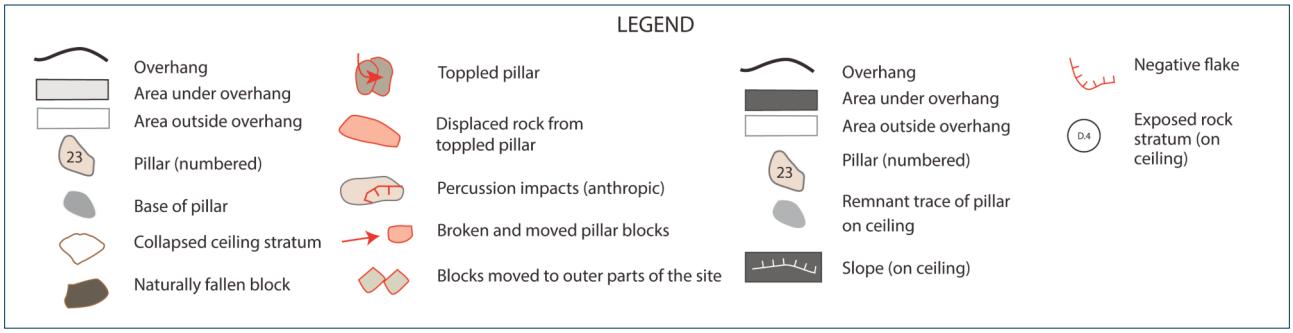


Fig. 6 – Archaeomorphological maps of the southwestern corner of Nawarla Gabarnmang, representing the area with the most recent pillar removals. a: floor; b: ceiling (Map: J.-J. Delannoy).



found underneath Block A. They had already been removed from the rock shelter floor by the time Block A collapsed. Second, petrographic analysis revealed that a partly buried block found adjacent to the pillar base is composed of strata that once sat atop the base. This means '*pillars were removed before the collapse of ceiling strata, and that they were removed to outer parts of the site'* (Delannoy *et al.* 2017: 228). Possibly, the large blocks which can still be found in Alcove A were too difficult to break up and remove. Block A has been extensively reduced by the removal of very large flakes (some conjoining flakes having been relocated a few metres away along the pathway to the southern exit of the site), apparently in an attempt to reduce its size so it could be removed.

In a nearby part of the southwest section of Nawarla Gabarnmang called 'Alcove B', and in the space between Alcoves A and B, there is direct evidence for the intentional removal of pillars by Aboriginal people. Between Alcoves A and B, we can see instances where flaking of the uppermost pillar strata is in progress (**Fig. 7**; Delannoy *et al.* 2017: Figs. 10.32-10.34). Percussion impact marks and negative flake scars can be seen on the uppermost pillar stratum where the pillar joins the ceiling. People were gradually reducing these layers of very hard quartzite. In this zone we can see evidence of several toppled pillars in various states of deconstruction. Invariably, the pillars that have been toppled are missing their uppermost strata, which demonstrates that people removed this part of the pillar to create a gap between the pillar and the ceiling. Once the pillar was disconnected from the ceiling, it could be toppled. In Alcove B, we can see evidence of the latter stages of this process (or evidence of a similar process of pillar deconstruction). Here, we find a pillar which has had its uppermost strata removed. Only a 70-80 cm-tall portion of the pillar's base remains *in situ* (strata D-12 to D-10). Surrounding the pillar base are pieces of rock measuring *ca.* 15-20 cm thick with percussion marks around their edges. Petrographic analysis suggests that these blocks came from strata D-9 to D-6 of the pillar they are found adjacent to. Once these pieces of the pillar were on the ground, people reduced them into smaller pieces and moved them from the positions where they fell (**Fig. 6**). The uppermost strata of the original pillar have already been entirely removed from the area, as have the other pillars that are missing from Alcove B.

The archaeomorphological evidence from the southwest section of the site demonstrates that:

(1) People intentionally removed pillars from the rock shelter.

(2) The removal of pillars occurred prior to instances of ceiling collapse.

(3) Once ceiling and pillar strata had fallen, people reduced the blocks into manageable sizes before moving them or removing them from the rock shelter (**Figs. 2**, **6** and **8**).

The evidence from the southwest of Nawarla Gabarnmang helps to explain the apparent 'non-correspondence between geomorphological processes of ceiling collapse' and 'the geometry of the floor level' (Delannoy *et al.* 2017: 209) in the southern, central, northern, and central-eastern areas of the site. As is the case in the sequence of events at Alcove B, it seems that people flaked fallen stone (ceiling and pillar strata) into regular sized blocks measuring around 30-40 cm long and 10-20 cm thick, before removing these blocks to the outer edges of the site: the northern and southern scree slopes fronting the site's two entrances. Petrographic analysis of rock from the scree slopes shows that these did not originate from localized collapses of the rock shelter's overhang. Rather, they are blocks of ceiling and pillar strata from inside the rock shelter. Further, 3D laser scanning of the rock shelter and immediate vicinity revealed that the volume of rock on the scree slopes is equivalent to the volume of ceiling and pillar rock removed from the shelter (Delannoy *et al.* 2017: 235). The scree slopes themselves are anthropic accumulations.

In terms of rock use *within* the rock shelter (as opposed to removal and subsequent deposition on the scree slopes), there are three noteworthy examples. First, when senior Aboriginal Elders Bardayal Nadjamerrek, Peter Bolgay and Jimmy Kalariya visited the site in 2006-2008, they interpreted isolated blocks of rock lying flat on the ground in the interior of the rock shelter as 'pillows'. The men stated that their ancestors had moved the blocks to parts of the site where they slept. Further,

Fig. 7 – Upper sections of rock pillars that have been flaked during early stages of pillar removal (Photos: B. David).

Fig. 8 – Stacked and partly collapsed rock slabs that enabled access to the rock shelter's ceiling (Photo: B. David).

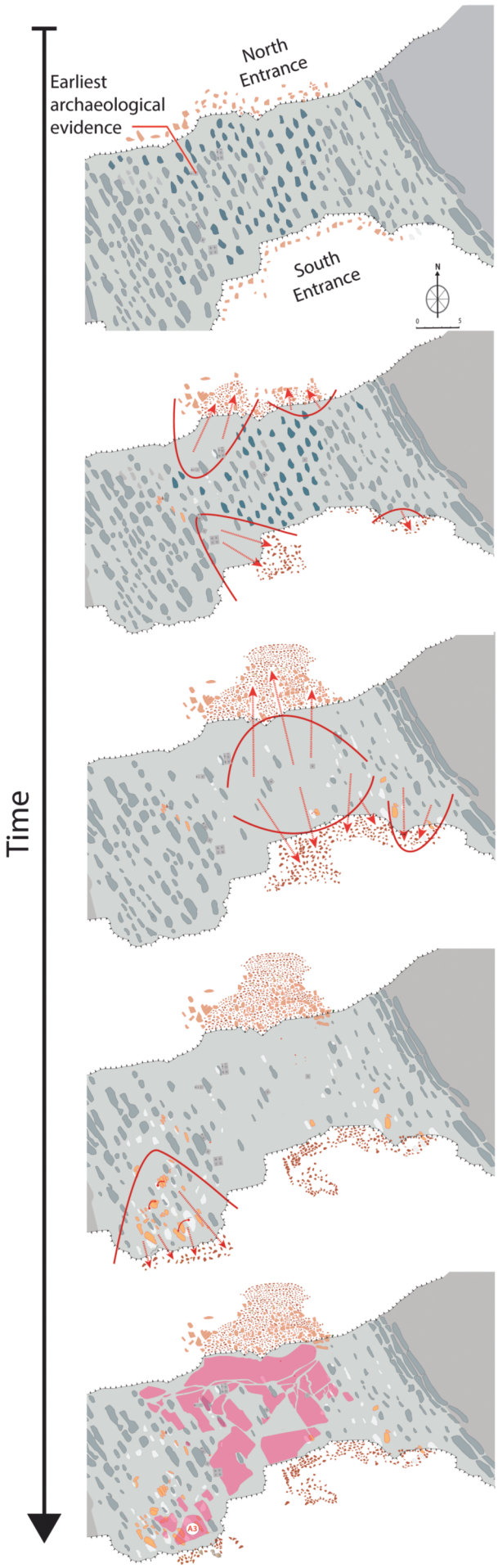
excavations at Nawarla Gabarnmang revealed that the primary material used for stone artefact manufacture throughout the cultural sequence was local quartzite (David *et al.* 2019: Table 4). There is extensive evidence that large blocks of quartzite were flaked from the rock shelter's bedrock walls and ceiling. Finally, as the floor-to-ceiling space gradually widened through time due to successive roof-fall (and pillar or block removal) events, the Aboriginal constructors of the site used stacked rocks to create stools to stand on. These stools are constructed from three to four slabs of rock, each measuring approximately 0.4 m long x 0.4 m wide x 0.1 m high (Delannoy *et al.* 2013: 26). The stacked slabs – which originated from a single ceiling stratum – were found in areas of the site where the ceiling is highest and where people flaked the bedrock or made rock art near the ceiling (**Fig. 8**). These modified, moved, and placed stones were used to enable further modification of Nawarla Gabarnmang.

In terms of chronology, several lines of evidence enable the timing of the anthropic modifications to be determined (**Fig. 9**). The earliest evidence for ceiling collapse at the site – in the form of tabular blocks found in the excavations – was found in excavation levels dating to *ca.* 35,129-33,998 cal BP (Delannoy *et al.* 2017: 237). Excavations in the northwest section of Nawarla Gabarnmang yielded blocks from a ceiling collapse event (or events) which date to between 23,909 and 21,495 cal BP (Delannoy *et al.* 2017: 237). People were visiting and using the rock shelter prior to this period, as evidenced by stone artefacts found in deeper (and older) excavation levels. Dating of rock art panels above Alcove A provide a *terminus ante quem* for when strata D0 and D1 (the upper ceiling layers) fell in this specific part of the site. A radiocarbon date of 11,624-12,024 cal BP was acquired from a wasp's nest lying underneath rock art on the existing ceiling (stratum D2) (Delannoy *et al.* 2017: 227). Thus, people removed the blocks on the floor (rock strata D-3, D-2, and D-1) before 11,624 cal BP. The radiocarbon dating of Nawarla Gabarnmang has so far has provided only Pleistocene dates for periods in which pillars were toppled and blocks (re)moved.

6. *Aménagement* and Aboriginal Australian monumentality

The space and rock art galleries we encounter at Nawarla Gabarnmang today were formed over thousands of years by the Aboriginal people who inhabited it. People opened up the internal space through the removal of selected pillars and increased the floor-to-ceiling height by removing fallen ceiling strata. Gradually, these activities created new surfaces for living, making, and socializing. In two recent works, Delannoy *et al.* (2013, 2017) use the French term *aménagement* to describe this process. *Aménagement* is to do with the social construction of space. The making of Nawarla Gabarnmang involved not only rock extraction, but also the movement and maintenance of trimmed blocks, the arrangement of stacks and 'pillows', and the production of rock art. Nawarla Gabarnmang is a monumental stone place constructed by Aboriginal people during the Pleistocene, with other kinds of engagements and modifications into more recent times. The chronology of this engineered space is currently relatively coarse-grained, due to the difficulty of further dating the removal and deposition of stone blocks. However, we do know that these activities were taking place between *ca.* 35,000 and 11,500 years ago.

Returning to the ideas explored at the start of this chapter, the archaeology of Nawarla Gabarnmang has profound implications for how we understand Aboriginal monumentality. Like the Australian Aboriginal notion of Country – and indeed this place is part of Jawoyn Country – the site can be labelled neither in the Western dichotomy of 'natural' (as in a geological feature inhabited by the ancestors) nor 'cultural' (a structure formed by human actions) but, ontologically, lies in-between. The rock itself is inhabited by ancestral spirits of the Jawoyn who make themselves known through specific paintings and motifs (Gunn 2018: 822). In Jawoyn worldviews, even the geological expressions of the site (such as the material fabric of the quartzite rock) are metamorphosized actions of the ancestors into the present. The archaeomorphological story of the site reveals Nawarla Gabarnmang through the works of Aboriginal people across the generations, actions that transformed an extraordinary, pillared landscape through ancestral engagements.



c. 50,000 cal. BP

- The rock shelter was closed, with tightly packed pillars of low height from floor to ceiling.
- Geological rock-fall had taken place along the northern and southern edges of the site.
- People camped along the edge of the site, in more open areas where roof-fall and pillar collapses had taken place.
- The oldest signs of people (flaked stone artefacts) are highly localised, as determined by the archaeological excavations.

c. 35,000–25,000 cal. BP

- People occupied multiple parts of the site.
- Large number of stone artefacts are deposited, including fragments of edge-ground axes.
- Earliest evidence for the anthropic opening of the site in its western, northern and southern parts.
- Commencement of rock-strewn taluses at northern and southern ends of the site.
- First signs of rock art (excavated painted rock fragment c. 27,000 years old).

c. 21,500–11,500 cal. BP

- Period of major opening-up of the central and eastern parts of the site.
- Anthropic removal of pillars; collapse of ceiling strata.
- Extension of the talus slopes at northern and southern ends of site (from dismantled pillars and blocks from collapsed ceiling strata).
- From at least 14,000 years ago, expansive rock surfaces were available for painting, having been exposed by anthropic pillar removals and ceiling collapses.

Before or c. 11,500 cal. BP

- Before or c. 11,500 years ago, the final major anthropic removal of pillars took place with the opening up of the SW sector of the site.
- The SW sector is where the chaîne opératoire for the dismantling of pillars and clearing of the internal space within the shelter remains best evident.
- Rock art was created in some of the cleared sections of the site.
- Last additions to the talus slopes on the northern and southern ends of the site.

Today

- The pink infilled areas on the map (left) represent the main painted ceiling panels.
- Most of the extant rock art panels were painted in the past 450 years.
- The separation of paintings into distinct panels largely follows the creation of flat ceiling surfaces through pillar removals and subsequent corresponding ceiling collapses. The now-exposed (and largely painted) ceiling surfaces resulted from the removal of rock pillars by people at the site.

Fig. 9 – The historical sequence of rock shelter construction at Nawarla Gabarnmang.

As Tim Ingold (2000: 188) puts it: '*Building … is a process that is continually going on, for as long as people dwell in an environment. It does not begin here, with a pre-formed plan, and end there, with a finished artefact. The 'final form' is but a fleeting moment in the life of any feature, when it is matched to a human purpose … we may indeed describe the forms in our environment as instances of architecture, but for the most part we are not architects. For it is in the very process of dwelling that we build*'.

Nawarla Gabarnmang is a remarkable illustration of the continual process of human building-in-place. In the southern, central, northern, and central-eastern sections of the site is a cavernous space carved out for, and by, human dwelling. To the northwest, there are ceiling slabs and pillars in every imaginable state of dismantlement and deconstruction. Even after the period of intensive *aménagement* of the rock shelter itself ceased *ca.* 11,500 years ago, people continued to work on Nawarla Gabarnmang. While there was certainly rock art at the site by 28,000 years ago (David *et al.* 2013), the extant art adorning the pillar and ceiling panels is all probably more recent than 14,000 years ago, and most motifs date to within the past 450 years (Gunn 2018: 843-844). Until 1935, Jawoyn people visited and stayed at the rock shelter, lit fires and socialized, all the while contributing to the paintings and to the accumulation of soft, artefact-rich sediments on the rock shelter floor.

The monumental stone-working that took place at Nawarla Gabarnmang helps deconstruct the at-times linear trajectories of human progress suggested by global archaeological narratives. Here, monumental stone-working is to some degree associated with a period of change in mobility patterns, but this pattern runs contrary to the trajectories traditionally associated with monumental constructions. In the period 29,150-11,860 cal BP – a period that spans the onset and duration of the Last Glacial Maximum (LGM) – the site was probably visited on a seasonal basis (David *et al.* 2019: 81). During the LGM, the climate was dry and mean temperatures were relatively low. Patterns of stone artefact manufacture and deposition suggest people procured non-local raw materials in this period, and were more mobile relative to earlier and later phases of site use. Thus, the makers of Nawarla Gabarnmang neatly fit the mobility patterns often assumed for periods of local scarcity, but their constructions challenge disciplinary assumptions of how more or less mobile populations interact with the landscape. People who had (and have) become 'the antithesis of megalithic culture' and monumental culture (McNiven & Russell 2005: 173) built places in their world in monumental stone between *ca.* 35,000 and 11,500 years ago. Even in the Australian context, we expect this case study to have a considerable impact on archaeological thought and practice. Intrinsic to the thinking of some analysts is the notion that Aboriginal people were passive recipients or transient occupiers of the world in which they lived. Few rock shelters in Australia have been reported as being culturally modified and flaked into shape, though this evidence is there when looked for (e.g., for another example from the Kimberley in northwest Australia, see Delannoy *et al.* 2020). Further, sites such as these – especially in parts of northern Australia – are at risk from encroaching mineral extraction activity (see Nicholas & Smith 2020; Wahlquist 2020) and their significance is generally under-appreciated by the wider non-Aboriginal community. As we have seen, Australian Aboriginal forms of monumentality look very different to megalithic monuments from other parts of the world. It is through fine-grained trans-disciplinary analyses especially those incorporating archaeological and geomorphological methods that such forms can be properly identified and historicized. Through this kind of research, we can seek to understand how Aboriginal people built, marked, and arranged their worlds.

11

Nicolas CAUWE

Megalithism in Eastern Polynesia

Abstract: Polynesian monumentalism, recognized since the discovery of the Pacific Islands by Europeans, is rarely described as megalithic. Indeed, the raw materials used are quite varied (stone, wood, coral, earth), and there are sometimes even questions about the use of living plants for the architecture. In addition, despite their possible impressive size, Polynesian monuments are not systematically built with large boulders, and they have often undergone supported methodical dismantling and reconstruction. Therefore, it seems that a Polynesian megalithism, in the sense of a general architectural movement, does not exist. Nevertheless, megalithic approaches were occasionally applied to the architecture and/or the statuary. In the present synthesis, we will not give an inventory of all monuments for which megalithic means were used; such a task would be pretentious and without interest in the context of this publication. Rather, we will try to identify the general features which run through all these varied productions. Within this framework, it seems that megaliths in Polynesia cannot be considered as full-fledged types of monuments; rather, their forms and functions are more useful in defining a typology. However, Polynesian megalithism cannot be limited to its technical aspects. The use of large slabs is significant in the sense that raw materials are often sacred in Polynesia, while natural or carved shapes always have an operative power named *mana*. Comparisons with the many stelae of Eastern Polynesia suggest an anthropomorphic element to many of the boulders. Finally, the landscape is important for the Polynesian monumentality, not as a background, but as a part of the conception of sacred spaces. Altars, burials, paved paths, stelae, or petroglyphs often reinforced striking geographic features such as as volcanos, waterfalls, valleys, beaches, cliffs, lava tubes, and outcrops. Probably, the entirety of the islands were considered as monuments. In this case, Polynesia could give us a rare example of a natural 'megalithism'.

Keywords: *genealogical architecture, sacred raw materials, anthropomorphism of megaliths, natural megalithism*

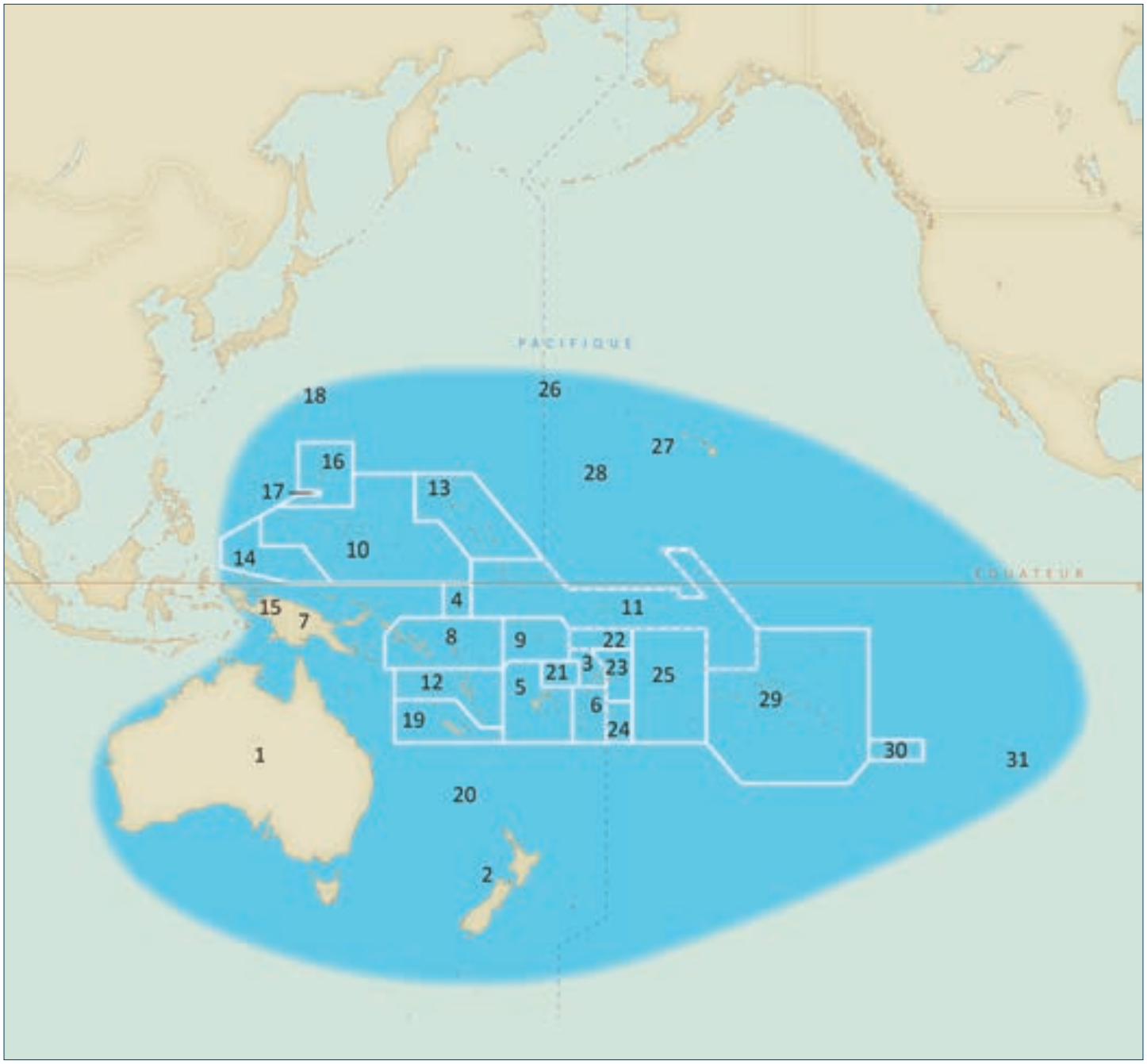


Fig. 1 – Map of Oceania, with indication of contemporary countries or provinces: 1. Australia; 2. Aotearoa (New Zealand); 3. Western Samoa; 4. Nauru; 5. Fiji Islands; 6. Tonga; 7. Papua New Guinea; 8. Solomon Islands; 9. Tuvalu; 10. Federated States of Micronesia; 11. Kiribai; 12. Vanuatu; 13. Marshall Islands; 14. Belau; 15. Western New Guinea (Indonesia); 16. Northern Mariana Islands (United States of America); 17. Island of Guam (United States of America); 18. Wake Island (United States of America); 19. New Caledonia (France); 20. Norfolk Island (Australia); 21. Wallis and Futuna (France); 22. Tokelau (New Zealand); 23. Eastern Samoa (United States of America); 24. Niue (New Zealand); 25. Cook Islands; 26. Midway (United States of America); 27. Hawaii (United States of America); 28. Johnston Atoll (United States of America); 29. French Polynesia (Society Islands, Tuamotu, Marquesas Islands, Austral Islands and Gambier Islands); 30. Pitcairn (United Kingdom); 31. Rapa Nui (Easter Island, Chile).

1. State of the art

Monuments are abundant in the Pacific Islands (**Fig. 1**) and have given rise to many studies, but they have rarely been considered as large stone architecture. There is therefore no synthesis dealing specifically with Polynesian megalithism. A number of worship sites were built using large stones, but thier non-systematic 'megalithic' character does not seem to be indicative of an architectural trend in its own right. This is due as much to the cultural traditions of Polynesia as to the way in which the history of this part of the world was approached when research began, and for a long time after this: from an exclusively ethnographic viewpoint. Indeed, during explorations, particularly from the 18th century onwards, Europeans were able to observe many monuments still in use. It was thus possible to assess the functions, the purposes and the ceremonies which took place at them, although many early accounts are marred by approximations, naiveties, errors and misunderstandings. The terminology used for the different types of monuments was also derived from dialogues with the Islanders.

It then became clear that the size and shape of the monuments were less important for determining categories than their structure and function. In this way, the megalithic character of some altars was not considered of primary importance, since a monument made of large blocks, with wide altars and large paved terraces was considered by Polynesians to have the same function as a small dry-stone building measuring only a few square metres. The *marae* (enclosed surfaces sometimes paved, with one or more altars and stelae) of Rangiroa in the Tuamotu (**Fig. 3b**) are thus placed in the same typological category as the large site of Taputapuatea on Raiatea Island (Leeward Islands, Society Archipelago) (**Fig. 3a**). In contemporary western term this would be equivalent to classifying under the same banner a small rubble chapel with a wooden roof and a large Gothic cathedral with a pointed vault; the same religious services could be held in each, although the pomp would probably be different. In such a context, the concept of a Polynesian megalithism seems inconsistent, apart from reminding us that large stones were regularly used in constructions, even for statuary, the most famous example being the *moai* (anthropomorphic figures) of Rapa Nui (Easter Island) (**Fig. 2**). In the present synthesis, we will therefore use the term megalithism in a very broad and probably unorthodox sense, where monumentality is more important than the size of the architectural elements

Fig. 2 – Ahu Tongariki, Rapa Nui (Easter Island) (Photo: N. Cauwe).

Fig. 3 – a. One of the largest *marae* at the Taputapuatea site in Raiatea, Leeward Islands, Society Archipelago; b. Small *marae* of One Mahue, Rangiroa atoll, Tuamotu archipelago (Photos: N. Cauwe).

used, and where stone, although it is most frequently used, is sometimes replaced by other materials that allow the same monumental project to be completed.

Polynesian archaeology developed at rather a late stage, after the Second World War. For a long time, it was considered that such work had no *raison d'être*. In 1935, the Belgian Henri Lavachery declared that field excavations had no future on Easter Island, as everything was on the surface (Lavachery 1935). A decade later, the famous New Zealand anthropologist Peter Henry Bucks, who was Maori by his mother and also named Te Rangi Hiroa, shared the same opinion, based on excavations undertaken in Aotearoa (New Zealand), Hawaii or Tonga that seemed to provide no additional information to that already revealed by anthropology (Buck 1944). In such a context, the study of monuments was limited for a long time to a comparatism, established on the basis of structures still visible on the surface (Aitken 1930; Buck 1927, 1938; Linton 1926). J.F.G. Stokes (Dye 1991) developed this type of research in Hawaii, Kenneth Pike Emory (1933, 1934, 1939, 1947) and Yosihiko Sinoto (Yawata & Sinoto 1968) in the Society Islands, Katherine Routledge (1919) and Alfred Métraux (1940, 1941) on Easter Island.

The expedition organized by the Norwegian Thor Heyerdahl in 1955-1956, to Easter Island and French Polynesia, marked the beginning of real archaeological research. For the occasion, Heyerdahl recruited several archaeologists, including the Norwegian Årne Skjølsvold and the Americans Edwin Ferdon Jr., William Mulloy and Carlyle S. Smith (Heyerdahl & Ferdon 1961, 1965). Since then, work has multiplied under the influence of many teams, too numerous to be presented here, but a list of which can be found in the bibliography assembled in this volume (Allen & Kahn 2010; Anderson *et al.* 2003; Anderson & Sinoto 2002; Bahn & Flenley 2011; Barbe 2006; Cauwe 2011, 2014; Cauwe & De Dapper 2015a; Chavaillon & Olivier 2007; Cochrane 1998; Conte 2000; Conte & Kirsh 2004; Conte & Poupinet 2002; Eddowes 2004; Kellum-Ottino 1971; Kirsh 1990; Kirsh & Weiler 1994; Kühlem 2016; Martinsson-Wallin 1994; Mulloy 1966; Ottino 2003; Stevenson & Ayres 2000; Stevenson *et al.* 2001; Van Tilburg 1994; Vargas *et al.* 2006; Vogt *et al.* 2019; Wallin 1993; Wallin & Martinsson-Wallin 2010). Concerning Central and Eastern Polynesia more particularly, it is important to underline the pioneering role of the Americans Kenneth Emory and Yosihiko Sinoto (Emory & Sinoto 1961; Sinoto 1968), and of the Frenchman José Garanger (1972, 1974, 1976a-b, 1992), true craftsmen of a Polynesian 'prehistory', based on data collected from excavations, rather than solely on ethnography, which very often does not take into consideration the depths of time.

2. Genealogy of monuments

Polynesian monumentalism is marked by the diversity of structures, with each, or almost each island having its own style. The large *marae* from Nuku Hiva on the Marquesas Islands, such as those of Hatiheu (Ottino-Garanger 2006), form complexes worthy of Roman forums (**Fig. 4a**), with multiple terraces, houses or podiums added over time enclosing vast open spaces. At Raivavae, in the Austral Islands, the Puapua Tiare *marae* is limited to paving surrounded by stelae set on end; access to the monument is via a small, paved path (Edwards 2003) (**Fig. 4b**). In Tahiti or Moorea, enclosed spaces vary greatly in size; they contain one or more altars (*ahu*), in front of which stand stelae or 'backrests'; the most complex monuments also have annexes (Garanger 1969; Wallin 1993). At Rapa Nui (Easter Island), there are no terraces or enclosures around the *ahu*, which are preceded only by a ramp covered with pebbles, although some support stone statues several metres high (Routledge 1919; Martinsson-Wallin 1994) (**Fig. 5**). At Mangareva (Gambier Islands), by contrast, the statuary was essentially made of wood and was of smaller dimensions (Laval 1938; Martin 2009). Our intention here is not to draw up an inventory of all these monuments. It is more important to recognize the diversity of architectures, which allow each island to display its personality while preserving the general principle of altars around which social, religious and economic life is organized, with an emphasis on the funerary world (representation of divinized ancestors, stelae, and presence of burials). These cultural 'differentiations' were for a long time attributed to the isolation of each small island, lost in the Pacific. However, contemporary data refute the prolonged

Fig. 4 – a. Large *me'ae* at Hatiheu, Nuku Hiva Island, Marquesas Archipelago; b. Marae Puapua Tiare, Raivavae Island, Austral Archipelago (Photos: N. Cauwe).

Fig. 5 – Ahu Akivi, Rapa Nui (Easter Island) (Photo: N. Cauwe).

isolation of the Polynesian islands. Evidence exists of regular contact, and new explanations are thus required for the development of the unique personality of each island. There is now little doubt that this is a phenomenon with multiple and complex causes, involving both the ecological conditions specific to each island and contacts with other groups necessitating the expression of differences in order to preserve specific identities (Conte 1997).

Excavations carried out in the last decades of the 20th century and at the beginning of the 3rd millennium revealed the relatively ephemeral nature of all these monumental architectures. Sacred sites are permanent, but the buildings on them were regularly rebuilt or completed, despite the frequent use of megalithic-type building elements. Initially, these superimpositions of buildings were interpreted in chronological terms: the sequencing of architectures seemed to denote a periodization of the history of the islands (Heyerdahl & Ferdon 1961; Wallin 1993). For East Polynesia, these phases range from the middle of the 1st millennium AD to the middle of the 19th century, with variations on the different archipelagos or islands. On Easter Island in particular, this periodization has been called into question by recent excavations. These works indicate that each monument had its own history, its own specific rhythm, and that it is therefore out of the question to discern several major stages in the regular reconstructions of the *ahu* that would mark the history of the island (Cauwe 2011).

The discovery of ceremonial gestures marking the end of the use of monuments before reconstructions were undertaken was even more remarkable. Traditionally, a platform with statues (*ahu-moai*) is preceded by a terrace or a ramp strewn with pebbles. This area, called *tahua*, was probably where ceremonies were held, although little is known about this. We note that at the end of the use of an *ahu*, a few pebbles were systematically taken

Fig. 6 – a. Ahu te Niu, Rapa Nui (Easter Island), excavated by the Royal Museums of Art and History of Brussels. Several pebbles from the ramp preceding the statue podium were removed when the monument was closed. This gesture is recurrent on most of the *ahu-moai* of Easter Island; b. Ahu Motu Toremo Hiva, Rapa Nui (Easter Island), excavations of the Royal Museums of Art and History of Brussels. In front of the platform, a vast earthen ramp reinforced with stone blocks was built in order to evacuate the statue(s) from this site. Here, we have a partial view of the stone foundations of this ramp (northeast corner of the semi-circular construction). Partially under this ramp is a deposit of red slag dust, contemporaneous with the closure of the monument. The same practice was also observed for other statue platforms (Photos: N. Cauwe).

from the *tahua* (**Fig. 6a**). The repetition of the same gesture from one monument to another shows how important this was. We also note that there is often nothing left of the *moai* that were installed on the ancient platforms. We know that they existed, however, as later architectures contain fragments of statues, recycled in the new masonry. The Rapanui therefore not only raised *moai* on platforms, but also removed them several decades later, for what must have been meaningful reuse given the sacred character of these figurations. At the site of Motu Toremo Hiva, at the extreme east of the island, traces of such operations have been brought to light. Above the *tahua*, an earthen ramp was built, reinforced with heavy stones as a foundation. On either side of the construction, two postholes attest to the installation of pillars that were probably used as relays for traction ropes (Cauwe *et al.* 2010) (**Fig. 6b**). Furthermore, for all the monuments at the end of their cycle of use, we observe the deposition of red slag dust (Cauwe 2012) (**Fig. 6b**). The meaning of this gesture escapes us, but its systematic recurrence proves its importance. Finally, in at least one case, at Ahu te Niu, the intentional planting of a palm tree above a fenced-off platform was observed (Cauwe 2011). All this evidence clearly shows that the *ahu-moai* were rigorously dismantled, that they were clearly ceremonial, but that the different stages were not all synchronous. Natural sedimentary intervals separate them, showing that the closure of an *ahu-moai* was a long-term process, probably spread over a few years, although we cannot provide precise indications.

The reasons for these cycles of construction, dismantling, then reconstruction, are not at all obvious. We know, however, that in Polynesia the aristocracy had to show its capacities, as birth alone was not sufficient to ensure rank and function. Did the regular reconstruction of platforms of worship facilitate this requirement, by enabling chiefs to assert their abilities? But there is more. Testimonies collected in ancient times indicate that Polynesians had a genealogical conception of all aspects of the world, including monuments (Métraux 1941: 107). Could ritualized closures and reconstructions of *ahu-moai* represent the generational shelling of monuments? The recovery of fragments of old statues in order to to integrate them into the masonry of new altars seems to be part of the same principle. But the regular reconstructions could also respond to economic and religious necessities. It is obvious that the construction of an *ahu-moai* required the mobilization of a workforce, its remuneration and organization of its subsistence. A whole economic machine was thus set in motion: food production; extraction and transportation of raw materials; shaping the slabs for the podiums, and sculpture of statues. In addition, whole sections of the politico-religious structure were also activated: taboos were lifted in order to reach particular resources; ceremonies were necessary for closing the *ahu*, then for the opening of the subsequent ones; and deceased chiefs were 'ancestralization'.

Organized closures, followed by reconstructions, have not been observed in the rest of East Polynesia, however there are indications of affiliations between monuments, such as the need to take a stone from a *marae*, in order to obtain the *ofa'i-faoa* (foundation stone) of a new construction (Henry 1928: 132). Moreover, the great *marae* of Tapupatuatea, on the island of Raiatea (Leeward Islands, Society Archipelago) is reputed to be the ancestor of all the worship monuments of Polynesia (**Fig. 3a**). Regardless of whether this tradition stems from an ancient background or from a more recent need for resilience, it clearly indicates the genealogical conception of Polynesian monumentality. Alfred Métraux evoked this aspect in 1941 by recognizing that, in Polynesia, the value given to genealogy had 'contaminated' religion and literature (Métraux 1941: 107). To phrase this formula somewhat more positively, it seems rather that genealogy is the very essence of the Polynesian traditional worldview and narratives. Thus, in creation myths, everywhere in Polynesia, everything comes from the union of couples. These are sometimes improbable, such as the association between gods or spirits, between the latter and humans, or between superior beings and elements of nature. What is important is the anchoring of everything in a genealogical system. In Aotearoa (New Zealand), the myth of Rangi and Papatua is quite revealing of this way of thinking. Rangi is the sky, a masculine element. Papatua is the earth, recognized as feminine. Rangi and Papatua loved each other madly and were permanently attached to each other – so much so that they left no room for their children, who wanted to eat, see light, and find places to express themselves. But the sky

Fig. 7 – a. *Marae* on the heights of Maeva, Huahine Island, Society Archipelago. On the paved terrace, in front of the altar (*ahu*), a series of small stones were erected; b. Petroglyphs on a standing stone, Raivavae Island, Austral archipelago (Photos: N. Cauwe).

had joined the earth and the world was closed. The offspring of Rangi and Papatua, when they were finally able to separate their parents, they gave birth to different aspects of the world: Tawhiri is the father of the wind, Tu that of war, Tane that of light and forests (McCosh Clark & Atkinson 1896). Beyond the sometimes-comical story of children's attempts to disunite their parents and create the world as it now exists, with a living space between the heavens and earth, it is important to emphasize that everything in the universe is related to an ancestry, the elements of nature as much as cultural concepts (war, love, crafts). There is no reason why monuments should have escaped this principle.

3. Anthropomorphism of megaliths

One of the characteristics of the *marae* of Eastern Polynesia is the presence of numerous standing stones in front of, or even on top of the altars (Maric & Marchesi 2015) (**Fig. 7a**). 'Stelae' are also used as territorial boundaries, or above burials. The traditions recorded in the 19th century indicate that the functions of these standing stones were quite diverse: representations of ancestors or gods, supporting slabs in communal places to regulate the position of individuals depending on their lineage, etc. Unfortunately, this is no longer verifiable. From a formal point of view, it should be noted that many of these stones present natural shapes, while others were entirely or partially shaped. Some bear a vertical median line, sometimes also petroglyphs, regardless of their categories (**Fig. 7b**). Until recently, the phenomenon seemed to affect all of East Polynesia, with the exception of Rapa Nui. But, in 2012, the discovery of a small stone erected in a pit, dug out in front of Ahu Hanuanua Mea (centre of Easter Island, at the place called Ava Ranga Uka A Toroke Hau) challenged the hypothesis of the singularity of Easter Island in this regard. Since then, survey has already led to the identification of about a hundred stelae or standing stones, sometimes associated with *ahu* (**Fig. 9a**), sometimes erected along ancient paths, sometimes in valley bottoms, close to rocky surfaces covered with petroglyphs (Vogt & Cauwe 2019). Attempts at typological classification show that these stones belong to a combinatory type, where a number of natural or worked shapes may or may not bear a series of secondary elements (natural, rounded, bevelled or pointed ends; notches or cupulae sometimes present on the sides; or median line engraved on one face for many of these stones) (**Fig. 9b**).

Some authors have proposed that these stelae represented an early stage of Polynesian anthropomorphic figuration, before real statues were carved in stone or wood (Lavachery 1951). However, additional fieldwork shows that stelae and standing stones are part of the whole monumental history of the islands, in the same way as explicit statues, and that there can be no question of imagining an evolutionary process from the simple to the sophisticated. Statues and stelae were not mutually exclusive, and each probably had its own function. Throughout Polynesia, however, it seems acceptable to confer an anthropomorphic value on the erected stones. In the Society Islands, evidence from the 19th century suggests that the slabs installed in the courtyards of *marae* contained some of the strength (*mana*) of the high-ranking people who settled down against them (**Fig. 8**). When they died, these slabs were sometimes moved to the altar itself (*ahu*), where they continued to bear the *mana* of the deceased (Maric & Marchesi 2015). On the other hand, the median line carved into many of these stones is reminiscent of a spine (**Fig. 9b**). Indeed, several clearly figurative statues display a partially represented skeleton, the spinal column indicated

Fig. 8 – Marae Fareia, Island of Moorea, Society archipelago, with a series of standing stones in the enclosed space in front of the *ahu* itself (Photo: N. Cauwe).

Fig. 9 – a. Ahu Papara, Rapa Nui (Easter Island). The standing stones erected in front of (or on) sacred altars was ignored for a long time on Easter Island. The practice is, however, as present on the latter as elsewhere in East Polynesia; b. Stele, currently lying on the ground, in front of the Ahu Maitaki te Moa, Rapa Nui (Easter Island). In the centre of this slab, a deep groove is visible (Photos: N. Cauwe).

by an incised line. These arguments are not all decisive, but they do present some indicators of generalized anthropomorphism.

We also note that 'natural' (unshaped) or sculpted stelae present selective shapes. They are relatively thin, and frequently display a pointed end or, more rarely, a regularly rounded end (**Fig. 10a**). For a relatively large number of Polynesian monuments, the walls are made from the juxtaposition of this type of slab. One of the most striking examples is undoubtedly that of the Puapua Tiare *marae* in Raivavae (Austral Islands) (Edwards 2003; Maric & Marchesi 2015) (**Fig. 10b**) but the phenomenon also occurs on Easter Island (Vogt & Cauwe 2019). These considerations raise the question of the symbolic value of the construction elements of large monuments. In this regard, we recall that pre-contact Polynesians did not categorize things in nature as animate (animals, plants) and inert (minerals). Everything was uniformly charged with *mana*, a force intrinsic to everything. Thus, in New Zealand,

Fig. 10 – a. Marae Puapua Tiare, Raivavae Island, Austral archipelago. The shapes of the slabs erected to delimit the enclosed area often evoke the standing stones or stelae frequently found associated with the *marae* of East Polynesia; b. Marae Puapua Tiare, Raivavae Island, Austral Archipelago. The lines of standings slabs that delimit this monument would be like an assembly of anthropomorphic figures (Photos: N. Cauwe).

pounamu (nephrite) is a sacred stone (Chambonnières & Maine 2017). This personification of a rock is not an isolated case. A Tahitian story recounts how a fisherman once caught a heavy stone in his net. He detached the unwanted object with difficulty and threw it back into the sea. But the stone kept coming back into his net. He then brought it back to the village priest, who told him that it was an incarnation of the god Ta'aroa. The stone was immediately honoured and became the god of fishermen in that village (Henry 1928: 393-394). On Easter Island, one of the volcanoes, Rano Raraku, is formed of tuff. This soft rock was used exclusively to make the famous statues (*moai*) of this island in the southeast Pacific. However, *moai* are the representation of divinized ancestors and there is no doubt that these sculptures were laden with *mana*. Was the tuff itself sacred or was it the incarnation of a god or a spirit? No further details are known about this, as the Rapanui were only questioned at a late stage, after the collapse of their traditional way of life due to imported diseases, abductions and other cruel events. Yet ceremonial paths delimited by large statues led to this volcanic quarry (Cauwe & De Dapper 2015b, 2019). Later, when statue altars went out of fashion and quarry operations became outdated, the volcano was transformed into an actual monument, with exuberant rock art and a hundred giants implanted in deep pits on its flanks (Routledge 1919; Cauwe 2011). Can such structures – ceremonial routes in the first instance, the development of invasive art in the second – be justified without the recognition of the intrinsic strength of the tuff, or even of the possibly personified volcano itself (Cauwe 2011) (**Fig. 11**)?

Ultimately, the rocks used for the construction of religious monuments and domestic houses, stelae, orthostats, or paving stones, possessed a force, shaped by taboos. The architecture was alive and sometimes included elements that had an anthropomorphic value or that were definitively figurative.

Fig. 11 – Rano Raraku, Rapa Nui (Easter Island). This volcano was used for a long time as a quarry, before being transformed into a full monument. But already at the time of its exploitation, it was accessed by paths decorated with large statues. The volcano itself has clearly always been considered sacred (Photo: N. Cauwe).

4. Monumentality of trees and landscapes

Adding live plant elements to monuments is relatively common in Eastern Polynesia (Orliac 1990; Kühlem *et al.* 2019). The most emblematic example is undoubtedly that of one of the *ahu* at the site of Taputapuatea in Raiatea (Society Islands), where a banyan tree (*Ficus prolixa*) was intentionally planted at the end of the monument, and is still alive today (**Fig. 3a**). This configuration is repeated elsewhere in the Leeward Islands or in the Marquesas Islands (Kühlem *et al.* 2019) (**Fig. 12**). A few years ago, traces of the intentional installation of a palm tree were found on the terrace of an *ahu* on Easter Island (Cauwe 2011) (**Fig. 13a**). These relatively limited examples should not hide the probable wide range of this phenomenon. It is, in fact, sometimes complicated to prove that early architecture and living trees are contemporaneous, even more so to demonstrate the deliberate nature of the association. However, some excavations have revealed structures built specifically for woody trees (pits, reserved areas in pavements, installation of lithic mulch – the intentional addition of stone to the soil to be cultivated to promote moisture capture), confirming the tangible use of trees in architecture. Moreover, it is hard to imagine, in the Polynesian context, that they were merely ornamental plants, decorating religious areas. The testimonies published by Teuira Henry concerning the trees installed in the *marae* of Tahiti seem unequivocal in this regard. These trees were specifically dedicated to certain deities and therefore bear a fundamental sacred character. Thus, the miru (*Thespesia populnea*) was attached to the god Roro'o, the inspiration for liturgical chant, the tamanu (*Calophyllum inophyllum*) to Tane, god of the forest, and the aito (*Casuarina equisetifolia*) to 'Oro, god of war (Henry 1928; Kühlem *et al.* 2019).

The most spectacular example of the use of living trees in cultural architecture is certainly the site of Ava Ranga Uka A Toroke Hau, in the geographical centre of Easter Island, explored since 2008 by a team from the German Archaeological Institute in Bonn (Vogt & Kühlem 2017). The name of the site is a legend in itself: '*the valley where Uka, daughter of Toroke was swept away by the waves*'. But it was the presence of walls blocking the valley that first attracted attention. On Easter Island, the 'valleys' (ava in Polynesian) are lava tubes whose upper part has collapsed, forming narrow gullies that descend from volcanoes to the sea, and along which heavy rainfall gushes. There are no rivers in Rapa Nui except for these intermittent streams. Therefore, freshwater management was a real challenge for the first settlers. At first, the dams found in the Vaipu Valley, at Ava Ranga Uka A Toroke Hau, seemed to represent an adequate response to the need to retain the precious liquid. But discoveries in the field sometimes run counter to hypotheses. Upstream of the walls encircling the valley, excavations uncovered vast paved terraces, small canals, stone

Fig. 12 – Hatieu, Nuku Hiva Island, Marquesas archipelago. Planting banyan trees (*Ficus prolixa*) on monuments is common practice in East Polynesia (Photo: N. Cauwe).

Fig. 13 – a. Ahu te Niu, Rapa Nui (Easter Island). In front of the *ahu*, a large circular stony area was created, in the centre of which traces of palm tree roots were observed. This stone structure, related to the technique of lithic mulching, refutes the hypothesis that the presence of this palm tree is natural (Photo: N. Cauwe); b. Ava Ranga Uka A Toroke Hau, Rapa Nui (Easter Island). Partial view of one of the large, paved terraces that mark the site. A small channel ending in a basin crosses the structure, while the circular pits in the paving are small areas reserved for planting palm trees (Photo: C. Halt-Reiter).

basins and traces of tree planting (**Fig. 13b**). The initially identified walls were not, in fact, dams, but served as supports for these constructions, where water played an important role, but where storage was not a concern. The large, paved surfaces are in no way adapted to water retention, the canals are narrow with a low flow rate, and the stone basins – without any caulking at all – only remain filled if they are permanently supplied. After more than 10 years of exploration over an area of more than a hectare, the organization of the site is beginning to become clear. The starting point seems to be an intermittent and not very high waterfall, at the foot of which a basin was carved out over time. The Rapanui reinforced these natural features bydigging two outlets at the top of the waterfall to double the flow of water, and creating a paved path leading to the small pond. Downstream of the waterfall, retaining walls made it possible to fill the site with soil brought in from elsewhere, on which

Fig. 14 – a. Hakaui valley, Nuku Hiva Island, Marquesas archipelago. The end of this valley is marked by a vertiginous waterfall, more than 350 m high. Several clues (including a paved path; see **Fig. 13b**) suggest that the islanders considered this unique place to be sacred; b. Hakaui valley, Nuku Hiva Island, Marquesas archipelago. A stone path leads to the end of the valley (see **Fig. 13a**), in order to access the foot of a formidable waterfall (Photos: N. Cauwe).

large paving stones were laid. At least two channel systems were constructed across the terraces to occasionally supply stone basins, some of which were quite small, whereas others held up to about 10 m^3. The pavements are marked by small circular pits in which traces of tree roots were found. These roots represent several species, but palm trees are prevalent. On at least three occasions between the 13th and 18th centuries (^{14}C dating), this whole tangle of terraces, canals, basins and domestic trees was restored or rebuilt. The same tradition prevailed for statue platforms, which were also regularly dismantled and then rebuilt.

Clearly, Ava Ranga A Uka A Toroke Hau is not simply a domestic site. Paving, water features, and regular reconstructionsall point to a sacred function, a hypothesis reinforced by a series of details, such as the presence of a small platform with a statue, rock engravings, a deposit of bags containing a red mineral dye, the organization of burials, the installation of a stele erected in a pit, and the creation of a small 'cache' under the central basin, in which macro plant remains and miniature tools were found. The details of the rites that took place there are no longer accessible. Water, tree planting, or plant remains evoke fertilityand the renewal of nature. The double waterfall resembles the depiction of the tears of the god Hiro which form rain in Polynesia. We also know that there were taboo places in the Marquesas Islands, with basins, paving and domestic trees, reserved for tattooing chiefs. The functions of Ava Ranga Uka A Toroke Hau were undoubtedly multiple, as for most spiritual places in Polynesia.

Trees thus played an important role in Ava Ranga Uka A Toroke Hau (Kühlem *et al.* 2019), but the very configuration of the valley in which the site is located seems to have played a fundamental role. The organization of all the structures seems to show that natural elements (the basaltic flanks of the valley, including the small cavities in them, the collapsed blocks in the centre of the valley and the natural waterfall) may have been considered as architecture, as shown by the built structures. This is not a unique case: in Nuku Hiva (Marquesas Islands), for example, an ancient, paved path, several kilometres long, leads to the very end of the Hakaui valley, and the foot of the highest waterfall in Polynesia. This natural place, first described by the explorer Max Radiguet (1929), is spectacular, with a torrent that falls vertically for nearly 350 m and which, over time, has carved out a vast shell-shaped cavity (**Fig. 14a**). It is obvious that the construction of a paved access path (**Fig. 14b**) reveals the sacred character that the Marquesans most probably attributed to the place, a kind of natural architecture where water played an essential role.

There are also a number of volcanoes in Polynesia with traditions still associated with their sacred character (Henry 1928). On Easter Island, the Rano Raraku, which was, for a long time, the quarry for extracting tuff for the fabrication of the famous *moai*, was accessible via several partially paved paths, and enhanced with statues, a sort of ceremonial or processional walkway divulging the importance of the volcano. These few examples reveal the specific perception of the landscapes by Polynesians. Should we evoke natural monumentalism?

5. Conclusion

Despite a diversity of forms and means used, the Polynesian monumentalism has a unity betrayed by some general features. The genealogical conception of places of worship is undoubtedly one of the keystones of this monumentalism. The concept is quite widespread in Pacific cultures and is expressed in monuments by recycling and removing old architectural elements and using them in new structures. There are also cycles of closure and reconstruction which confer a relatively limited life expectancy on monuments. On Easter Island at least, ceremonies closing altars with statues have left material traces.

Another constant element in all the islands of Polynesia is the non-distinction between inert and animate matter. Everything seems to be imbued with *mana* (internal force) and there is evidence of the sacredness of diverse raw materials (e.g., nephrites, tuff, wood). Such a context obviously reinforces the sacredness of monumental architectures, which are not only used to service religious, social and economic practices, but which are themselves derived from genealogies and inhabited by intrinsic forces. Stelae, with a clearly anthropomorphic value, further emphasize this monumental

sacredness, as do the trees intentionally planted at times in courtyards and on pavements, sometimes literally on the altars of which they are an integral part.

Finally, the natural setting of many monumental arrangements also seems to participate in the sacredness of the place. There is no doubt that it represents more than a setting. In a few particular cases, ancient, paved roads lead to singular features in the landscape that were probably considered as sacred places in their own right, a kind of natural monumentalism.

Translated from French
by Louise Byrne

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Christophe SAND

Megalithic architectures in a world of oceanic 'little islands (Micro-nesia)'

Abstract : Micronesia, encompassing most islands and archipelagos of the Northern Pacific, holds a diversity and richness of monumental structures without real parallels elsewhere in Oceania. This chapter presents some of the most iconic and specific examples, scattered across a region settled from about 1300 BC onwards. The chronological approach that will be used allows us to highlight that these structures were built in cultural contexts that have no evident ties between them, the emergence of monumental traditions appearing, above all, as the result of internal socio-political dynamics. In the Mariana Archipelago a tradition developed from the end of the 1st millennium AD of carving large, monumental columns topped by a cap, called *Latte*, quarried exclusively using stone and shell tools. Positioned in a double alignment and reaching in some cases several metres high, these columns probably served as the basis for elite houses and wooden ceremonial structures. In the Caroline Islands, during the 2nd millennium AD, real monumental towns were built, the emblematic example being Nan Madol, also called the 'Venice of the Pacific'. The site encompassed over 100 artificial platforms raised on the lagoon floor, some holding walls reaching 8 m high and built through a complex placement of polygonal basaltic columns. Finally, we will discuss the late production of large 'stone-money' used on the Island of Yap, whose gigantic character was only permitted after the introduction of metal and the advent of steamboats for their transport.

Keywords: *Oceania, Western Micronesia, monumentality, Nan Madol,* Latte*,* Rai*, hierarchy, centralized power, climate change*

1. Introduction

Lost in the middle of the largest ocean of the planet, the Pacific Islands have been the last part of the world to be explored by Westerners, who were looking for the *Terra Australis Incognita*, supposed to compensate in the Southern Hemisphere for the weight of the Northern Hemisphere's Continents. During the first crossing by Magellan in 1521, the only inhabited island officially visited by the Spanish crew was Guam, in the centre of Western Micronesia (Beaglehole 1966). Two centuries later, James Cook was the first to describe in a detailed way some of the monumental constructions he came across in different Polynesian archipelagos, made

aware of this topic by the drawings of gigantic statues called Moai seen on the most isolated island of the world by Dutch sailor Roggeveen on Easter Day, 1722 (Beaglehole 1966). One generation later, when explorer Dumont D'Urville began to work on the division of Oceania as part of his famous geographic paper (Clark 2003), two regions could be clearly distinguished. During his circumnavigation voyage a few years earlier, in the southwest Pacific, in a set of archipelagos characterized by large islands, he was confronted by fierce, black-skinned islanders that were said to be savage and cannibal. He gave to this group of islands the name 'Melanesia', the Black Islands. The whole eastern half of the Pacific appeared to be occupied by lighter-skinned populations that James Cook had already termed as a 'nation' speaking related languages, who had developed what Bougainville thought to be the 'Earthen Eden' during his stop in Tahiti in 1768. The amazing size of this region, composed of an infinite number of islands, made Dumont d'Urville choose the term 'Poly-nesia' to name the large triangular area expanding from Hawaii to Rapanui (Easter Island) and Aotearoa (New Zealand). But the extensive set of islands from the border of Southeast Asia up to the centre of the Pacific still needed to be named. Having apparently no clear-cut cultural or linguistic coherence and being composed mainly of alignments of small, mountainous islands in its western part but only of atolls in its eastern half, this region defied any simple definition. Logically, Dumont d'Urville should have divided this area into two regions, relying on their geographical specificities. He chose instead to create one unique entity that he named 'Micro-nesia', the small islands (**Fig. 1**). After four centuries of European presence, this region remains the least well-known part of the Pacific for the general public as well as for scientists. This is unfair, as some of the islands of the Northwest Pacific have a long and complex history that has led to the building of some of the most massive and spectacular megalithic structures of Oceania (Morgan 1988).

For Pacific Islanders, the term 'megaliths' does not relate to a precise concept. When you live in an archipelago of a few square kilometres, settled by a restricted group of people on a substrate composed only of coral and sand, being able to build a community-house nearly 50 m long and over 10 m high, standing on posts over 50 cm in diameter, itself gives a sense of monumental construction. Likewise, the heaps of coral blocks up to a height of several metres, raised on the beach of the Te Abakana site on Tabiteuea in Kiribati some centuries ago to make outside invaders believe that the island was protected by giants, can certainly be classified as megalithic. But the quality and diversity of the megalithic traditions present in Western Micronesia is such that the data originating from the atolls cannot be presented in this paper (see Rainbird 2004: Chapter 8). After listing the main steps of the archaeological research history undertaken on the megalithic sites of the Northwestern Pacific, the chapter will be organized in a chronological order to allow a general logic, each period having develo-

Fig. 1 – Location of the main islands of Western Micronesia in the Northwest Pacific.

ped different traditions according to the region considered. Three megalithic cultural traditions will be discussed: the raising of large columns topped by a cap (*Latte*) in the Mariana Islands, the building of monumental cities on the reefs of Pohnpei and Kosrae in the eastern part of the Caroline Islands and the production and transport of large 'stone-money' discs between Palau and Yap. This will permit us to analyse the socio-political dynamics that led to the development of these sets of megaliths, before discussing, in the final part, some perspectives of future studies on these exceptional megalithic sites of Micronesia.

2. Discovery and scientific studies on the Micronesian megaliths

From west to east, Micronesia encompasses 9000 km of ocean, covering a total surface of 7 million km^2, only 2700 km^2 (0.04%) of which is land (**Fig. 1**). When leaving the border of island Southeast Asia, i.e., the Philippines, the first archipelago, at about 1000 km distance, is Palau, forming the start of the Caroline Islands which extend to Kosrae Island, covering, along a west-east axis, a total distance of nearly 3000 km. To its north, and on a 1000 km-long perpendicular axis running south-north, is the archipelago of the Mariana Islands, extending as far as the Japanese island of Iwo Jima. The majority of these islands are mountainous, formed by the erosion of former volcanos or by processes of uplift of old Karstic plateaus. This region was progressively settled over the course of one millennium, stating at the end of the 2nd millennium BC. The eastern half of Micronesia is formed exclusively of chains of atolls, from the Marshall Islands all the way to the long succession of Kiribati's atolls, over a distance of 6000 km. The settlement of this region started at the beginning of the 1st millennium AD and took over a thousand years to finalize.

Micronesia was the first region of Oceania to be explored on a regular path by Westerners (Lèvesque 1992-2002). As early as the 16th century, Spanish ships navigating between their colonial possessions on the American continent and the Pilipino colony, regularly crossed the northern Pacific, especially as part of the yearly voyage of the 'Manilla Galleons'. Although the main objective of the stops during the 1st century was to collect water and fresh food, the Christian conversion and colonization processes began as early as the middle of the 17th century on the island of Guam. The first Catholic missionaries regrouped the islanders from the different islands of the Marianas around the missions, providing a workforce for the first settlers (De la Rosa 2016). The autochthonous groups were hit during this period by a massive demographic decline, especially due to the introduction of foreign diseases that decimated entire families, leading to the loss of a large part of the oral traditions. The missionaries were the first to notice the presence of alignments of large columns topped by a cap on different islands of the Marianas, called by the local name of *Latte*, before foreign artists started publishing engravings illustrating these mysterious constructions (**Fig. 2**).

Fig. 2 – Engraving of the early 19th century illustrating an alignment of columns with cap (*Latte*) in the Marianas (Dumont d'Urville 1835, II, plate LXII).

The first part of the 19th century saw the rise of the number of scientific and commercial expeditions, launched by different European nations with the aim to complete the mapping of the Pacific started during the previous century (Hanlon 1988). It is in this context that megalithic remains present on the border of Pohnei's (Ponape) eastern lagoon were for the first time described (O'Connell 1836; Gulick 1859), and that in 1824 the French navigator Deperrey visited the city of Lelu, the megalithic capital of Kosrae, still settled by the ruler (*Tokosra*) and the nobility of the island (Ritter and Ritter 1982). But it was not until the second half of the 19th century that the first studies with a research scope started on some sites. Thus, the megalithic town of Nan Madol, buried under luxuriant vegetation, was partly mapped for the first time in the 1870s by the trader Johann Kubary, sent to Micronesia by the Godeffroy Museum of Hamburg to acquire ethnographic objects (Kubary 1874). Kubary also undertook 'excavations' in the main burial area of the Nan Dawas platform, which had already been partly looted by previous visitors. Site plans of different alignments of *Latte* are made during the same period. For the first time, sets of alignments of large stone discs were described on Yap Island. The use of photography allowed, for the first time, the popularization of some of these sites,raising curiosity amongst visiting groups and the German colonial authorities, who tookcontrol of parts of Micronesia at the end of the century. These decades were marked by different 'excavations' and by the visits of scientific expeditions, some with an ethnographic interest. The most important was the *Südsee Expedition*, which occurred during the German possessions of the Caroline Islands between 1908 and 1910. Ethnographer Paul Hambruch, in charge of the mapping of sites and of the recording of ethnographic data, completed a detailed map of Nan Madol (Hambruch 1936) which would serve for nearly a century as the base-map for all the archaeologists working on the site. The capture of the islands by the Japanese between the two world wars, fostered valorisation of the economic resources of the archipelagos, prompting an important immigration of Japanese workers. Colonial Japan organized new excavations, completed by professional archaeologists, with only some results being published (Yawata 1932). The Japanese colonial authorities were the first to engage in the clearing of vegetation and the creation of access paths for some of the megalithic sites like Nan Madol, as part of local tourism. The Japanese presence did not prevent research in the region by amateur Americans, who were based in their own territorial possession, the island of Guam (Thompson 1932).

After WWII, the region fell completely under American control. Different teams of professional archaeologists were sent to the islands to undertake the first coordinated programs of chronological studies, recently made possible by the use of carbon 14. Following the first studies of Spoehr, in the mid 1950s Douglas Osborne completed a detailed survey of the Palau Archipelago, illustrating for the first time the extent of the monumental terracing present on Babeldaob Island (Osborne 1966). Not long after, Edwin Gifford carried out the first professional archaeological study of Yap Island (Gifford & Gifford 1959). The megalithic city of Nan Madol was studied by Betty Meggers and Clifford Evans' team in 1963, as part of their research on the pre-Columbian links between Asia and the American continent. Provided with significant financial funding from the Smithsonian Institution of Washington DC, they organized the cleaning of the entire vegetation on a total of eight platforms (**Fig. 3**) (Sand 2020), allowing, for the first time, the visualization of the monumentality of some of the constructions [(1)]. A new generation of American university scholars followed these pioneers in the 1970s, as part of public programs or as private teams fulfilling CRM studies. In Yap, Rosaline Hunter-Anderson conducted a research project for the University of Guam (1983) while, over several years, Steve Athens completed the cartography of Nan Madol's main platforms (1980). In the middle of the 1970s, a team from the University of Oregon, under the direction of archaeologist William Ayres, started a programme on Pohnpei Island that continued until the year 2010 (Ayres 2002). The first Micronesian archaeologist, Rufino Mauricio, was trained during this programme and worked on the

(1) Unfortunately, the numerous maps completed in 1963 and the excavation data have never been published.

Fig. 3 – View of the rear of the burial platform of Nan Dawas in Nan Madol, after its partial clearing by the team of B. Meggers and C. Evans in 1963. The person to the right gives the scale (Meggers and Evans collection, Smithsonian Institution, photograph no. 7108).

Nan Madol site as part of his PhD thesis (Mauricio 1987). A study focussing on the monumental site of Lelu in Kosrae was carried out between 1978 and 1980 by Ross Cordy of the University of Hawai'i (Cordy 1993), while William Morgan prepared a synthesis-publication on Micronesian megaliths (Morgan 1988) (**Fig. 4**). A large CRM programme was funded by the US Army ahead of the construction of a coastal road around Babeldaob in Palau in the 1990s, as part of the independence process (Wickler *et al.* 2005). After a period of drastic reduction in archaeological research on the

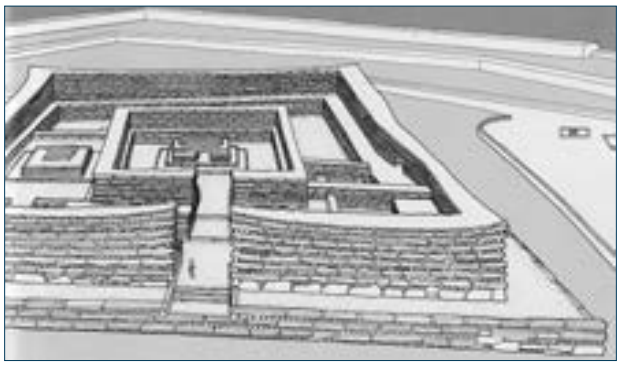

Fig. 4 – Perspective view of the Nan Dawas platform (Morgan 1988: 69).

megalithic sites of the region, it restarted after 2010, in the Marianas (Carson 2012), in Palau (Liston 2009), in Yap (Sand *et al.* 2014) and on Pohnpei (McCoy *et al.* 2015; Ayres *et al.* 2015; Seikel 2016; Kataoka *et al.* 2017; Sand *et al.* 2018).

3. Significant examples of Micronesian megaliths

Unlike other cultural regions of the World, the megaliths present in the Pacific Northwest cannot be reduced to only one architectural form. On the contrary, they are characterized by a diversity of types, linked to a variety of motivations, which fostered the development of specific traditions between archipelagos at different periods. The following section presents the three most spectacular forms identified in the region, following a chronological order.

3.1 The *Latte* of the Mariana Islands

The columns covered by a cap, called *Latte* in the Chamorro languages, are characteristic of the Mariana Islands, the archipelago forming the northern part of Western Micronesia. They are composed of a shaft (*haligi*) of elongated form, mostly of rectangular section, narrowing from the base to the apex. A hemispheric cap (*tasa*) was placed on this apex, the largest face of which was directed upwards. The shafts, which were extracted from quarries of fossilized reef (Karst), beachrock or basalt, can vary in size between sites, the majority measuring between 1 m and 3 m high, with caps mainly carved from coral blocks. But some sites, including the emblematic site of the House of Taga on Tinian Island, north of Guam, have shafts reaching 5 m high that are still standing (**Fig. 5**) (Carson 2012). On the neighbouring island of Rota, in the abandoned quarry of *Latte* columns is a shaft of over 8 m long, with a weight of nearly 35 tons. Some of the nearby caps weigh over 20 tons (Morgan 1988: 136-138).

The *Latte* are spatially organized in double parallel alignments usually comprising a dozen columns, this number being increased when the shafts are of larger size. No engraving showing the use of these monumental structures is known, but a series of Spanish descriptions dating from the 17th century ascertain that they were used as foundations for chiefly dwellings or for large community houses (Morgan 1988: 119-120). Dozens of such patterns in parallel alignments, organized without a clear orientation, are recorded on the most important sites, the size-diversity between structures being interpreted as an illustration of customary hierarchies between families (Cordy 1983). Archaeological excavations have shown a multigenerational occupation of these villages, in some cases pre-dating the raising of the first alignments of columns, whose emergence

Fig. 5 – Example of *Latte* alignment with caps on the site of House of Taga on Tinian Island (Photo: M. Carson).

has been dated from the end of the 1st millennium AD onwards. The recovery of important amounts of food and of domestic rubbish as well as the presence of numerous burials, allow us to envision the presence of large populations before the first European contacts, which are known to have led to the demographic collapse of the Chamorro. The final abandonment of the *Latte* villages is directly related to the Spanish colonization process of the Mariana Islands starting in the 17th century, which led to numerous local deaths and the forced displacement of the populations around the Catholic missions.

3.2 The megalithic city of Nan Madol on Pohnpei

The megalithic city of Nan Madol extends over a surface of over 60 ha, forming a 1300 m long and 500 m wide quadrangle oriented on a southwest/northeast axis (**Fig. 6**) (Kataoka *et al.* 2017). Based on the numerous oral traditions of Pohnpei, Nan Madol is known to have been the political centre of the Sau Deleur dynasty, which united the chiefdoms of the island under its authority at the beginning of the 2nd millennium AD and reigned despotically until the beginning of the 17th century, a period which saw the rapid abandonment of the megalithic city (Saxe 1980; Mauricio 1987). Resting on the southeastern border of Temwen Island, a total of over 100 platforms were progressively built from the 10th century onwards by infilling the lagoon's plateau, the most monumental structures being completed around the 14th century. The circulation between the platforms was mainly done by canoe, thanks to a set of channels filled by the tides, prompting the Europeans to term the site a 'Venice of the Pacific'. The main characteristic of Nan Madol's architecture is the use of basalt columns of polygonal section, measuring between less than 1 m and sometimes over 4 m of length, with a weight of over 20 tons, to build walls in a header and stretcher mode, by positioning an alignment of columns onto which was placed another alignment in a perpendicular direction (Ayres 1993). This method was used to raise the retaining walls of the platforms placed on the lagoon floor, the inner fill being composed of loose coral and basalt blocks. Walls were built on some platforms using the same header and stretcher technique, the most significant reaching over 8 m in height and over 3 m wide. The largest blocks

Fig. 6 – General map of the megalithic city of Nan Madol on the east coast of Pohnpei, with the vegetation cover in grey (Modified from Sand 2020: fig. 2).

were deliberately positioned at strategic places, where they could be seen by the largest number of visitors, as well as on the most important platforms. Monumental spherical basalt blocks, which could in some cases weigh over 35 tons each, were used as cornerstones or in the building façade, irrespective of their weight (Kataoka *et al.* 2017).

The layout of Nan Madol was symbolically divided into two, the southwestern half of the site being the public area while the northeastern half was a sacred space (Morgan 1988). Walls were built in order to protect the platforms carrying habitation and ceremonial spaces, encircling the city on its southwest, southeast and northeast sides. Unsurprisingly, some of these walls are amongst the most monumental of the city. Thus, for example, three superimposed blocks, with a total weight of over 100 tons, close the southern corner of the outer façade of the large enclosure wall of the Pahnwi platform, which reaches 10 m in height. The public area of Nan Madol, called Madol Pah, was accessed from the southwestern entrance of the site, opened in the Ponkaim protection wall. This area was organized around the wide Pahnkadira platform, covering a total surface of 7000 m^2, and was the central locus of the Sau Deleur dynasty. This platform grouped the living spaces of the ruling family. These comprised a series of large buildings for habitation or meetings. A wall enclosed the private space, while the public zone was accessed from a dock built as a southern extension of the main platform, at the outlet of the entry channel to the site. Pahnkadira was surrounded by different platforms with specific uses, including the Dorong platform, where clams were raised as gourmet items for the Sau Deleur. Idehd platform enclosed an artificial pond where a sacred eel was raised and worshipped, fed with the bowels of turtles. Madol Powe, the sacred area of the site, was occupied by the priests and the dignitaries, and access was forbidden for the non-nobles. One set of platforms had a religious purpose, while others carried habitation places. The northeastern corner of the site enclosed one of the most sacred platforms of Nan Madol, called Nan Dawas. About 3000 m^2 in extent, its central part was protected by a wall over 200 m in total length, with a height between 6 m and almost 9 m. The inner area was composed of a series of funerary chambers that were used to bury members of the ruling family over a period of several centuries. Nan Dawas, built in front of the large entrance of Pohnpei's eastern lagoon, is encircled by a set of lateral platforms, which are the only examples aside from the burial compound to be oriented, for symbolic reasons, on an east-west axis. The mausoleum was protected by a series of three monumental walls each over 10 m thick, built on the ocean side to break the power of the waves crashing in the pass during typhoons.

During its time of occupation, the city, which was the centre of the Sau Deleur's power over the whole island of Pohnpei, probably sheltered a permanent population of between 1000 and 2000 people, mostly of high lineage and of the religious caste. Nan Madol being unable to produce any food for daily needs, its inhabitants depended on the forced contribution of the population occupying the different valleys, as part of a highly hierarchic and centralized political system. While over the last half century, classic excavation techniques have allowed us to define fairly precisely the chronology of occupation of Nan Madol (Seikel 2016), the use of advanced techniques on the site has recently expanded our data analysis. The mapping of the town by LiDAR has allowed generation of a detailed geo-referenced map (Comer *et al.* 2019), which now replaces the former maps created by hand and with compass during the 20th century. Also, geochemical analysis of the polygonal basalt blocks used in the construction of the Nan Dawas platform, has shown that over half of them were extracted from geological bedrock located in the northwestern part of Pohnpei, over 35 km away by sea (McCoy 2014). The move of tens of thousands of these blocks, in some cases weighing several tons, must have required an immensely complex collective organization and the participation of a large number of inhabitants in order to extract the monoliths from the different quarries, achieve their transport to Nan Madol and finalize the raising of the platforms and walls.

3.3 The megalithic city of Lelu in Kosrae

The city of Lelu on the east coast of Kosrae, nearly 500 km distant from Pohnpei, is far less extensive than Nan Madol, covering only about 20 ha (Cordy 1993). The typology of its spatial setting is nonetheless comparable to that of its bigger sister,

with the building of a large canal and some lateral branches around a set of artificial platforms sustaining monumental walls, at the border of Lelu Island, which closes the eastern bay of Kosrae. A series of excavations, especially those undertaken during the 1970s-1980s, has allowed the identification of a progressive chronological development of platforms from east to west over the lagoon between the 13th and 17th centuries AD. The centre of power was located on the large platform of Posral, residence of the royalty (Morgan 1988). The central habitation area was surrounded by monumental walls exceeding 6 m in height and width at the base, using the same construction technique of header and stretcher as at Nan Madol (**Fig. 7**). The apexes of the high wooden buildings, whose ridges could exceed 15 m, topped the height of the walls, as described by early visitors (**Fig. 8**). Platforms for funerary or religious uses surrounded this centre, with the building of massive burial chambers, sometimes protected by monumental enclosure walls. Other parts of the city were devoted to the habitation of the nobles and of the lower-class population.

Unlike Nan Madol, the city of Lelu was still flourishing during the first recorded European contacts at the beginning of the 19th century (Ritter

Fig. 7 – Monumental wall of the Kinyeir Fulat platform in Lelu (Photo: C. Sand).

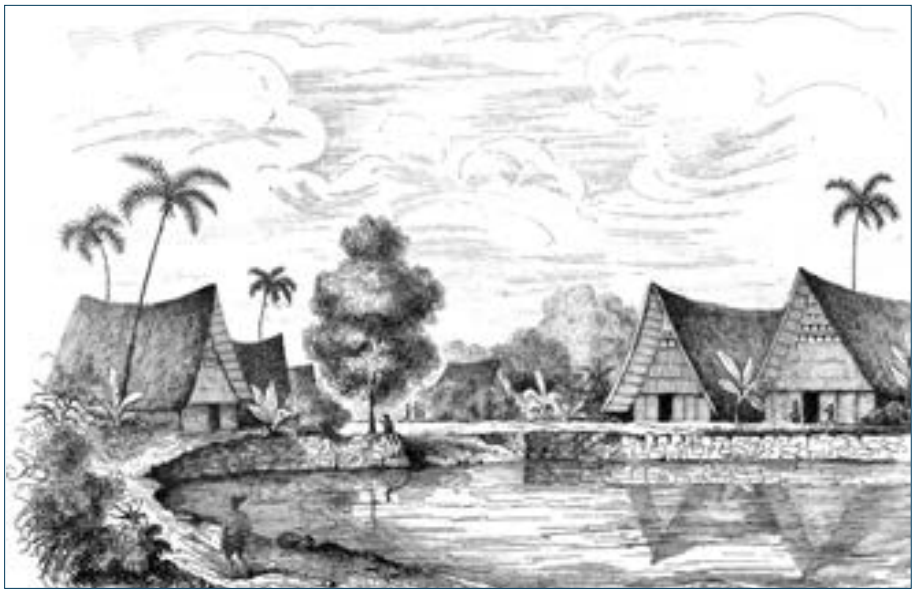

Fig. 8 – Engraving of 1824, illustrating the high dwellings witnessed by the first European visitors to Lelu (Dumont d'Urville 1835, II, plate LVII).

& Ritter 1982) and its outskirts continue today to be the main habitation centre of Kosrae. We have precise descriptions thereby of the lifeways inside the city, as well as engravings illustrating the settlement pattern and the form of the large dwellings built on some of the platforms.

3.4 The *Rai*, or 'stone-moneys' of Yap

One of the most common cultural tradition of the Pacific is the production of symbolic 'moneys', used as exchange items or for prestige display during ceremonies, especially to materialize bounds between chiefdoms and groups. This 'money' is most often of small size and produced with perishable material like vegetal fibre and/or shell and bone. In this context, during the second millennium AD the island of Yap developed a unique tradition of flat rounded stone 'money' called *Rai*, with a hole in its centre. This form of exchange item in shell or stone was known in other cultures of the Western Pacific, but the Yapese chiefdoms gave this tradition a megalithic character during the second half of the 19th century.

The *Rai* are mainly extracted from aragonite veins, a type of rock formed by the decomposition/recrystallisation of the karst, a material nearly absent from Yap. The families keen to obtain one of these plaques had to travel by canoe to the raised karstic islands forming the southern part of the Palau archipelago, called the Rock Islands, located over 450 km west of Yap (Hazell & Fitzpatrick 2006). The extraction of aragonite blocks from the outcrops amongst the karstic picks were organized through agreements with the local chiefdoms, in difficult living conditions and with technical means restricted to shell adzes before the European contacts. Excavations undertaken in some quarries of the Rock Islands demonstrate that the start of the procurement of blocks of aragonite possibly dates to the 14th century, but *Rai* production appears to have accelerated during the 19th century with a massive

Fig. 9 – Alignment of 'stone-moneys' along the dancing alley of the site of Mangyul, in the northeast of Yap (Photo: C. Sand).

increase in extraction. Testimonies to the presence of ceremonial sites with numerous discs on dancing alleys in Yapese villages are unknown before the middle of the 19th century, although photographs taken in the succeeding decades appear to indicate that this tradition was already in place at that time. Whatever the antiquity of the creation of these 'stone-money banks', they multiplied during the second half of the 19th century, stimulated by a massive rise in the demand for *Rai* on Yap. This demand was fostered on one side by the access to metal tools, allowing canoes to be built more quickly and larger aragonite blocks to be carved. Furthermore, the Yapese chiefdoms made agreements with European adventurers (2) to use steam vessels to carry workers to Palau and bring back the *Rai* in their holds (Fitzpatrick 2003). This led to a rapid increase of the size of the holed stones, the most impressive examples of which, made at the end of the 19th century, had diametres surpassing 3 m, the most massive weighing over 5 tons. During this period, each village stored its 'bank' on dancing alleys (**Fig. 9**). The total amount of *Rai* transported from Palau to Yap probably exceeded 15,000 before the abrupt end of production following German control of the region at the very end of the 19th century (Morgan 1988).

'Stone-money' continues to be regularly exchanged between families in Yap today, characterizing this Micronesian society as one of the last traditional megalithic cultures of the planet (Fitzpatrick & McKeon 2019). The inhabitants of Yap identify the small-sized *Rai* – with an irregular shape and with roughly carved edges – as the 'moneys' with the highest symbolic value, because their typology shows them to be old pieces, produced before the introduction of metal through exchanges with Westerners.

4. Analysis

The monumental architecture of Western Micronesia has a clear polymorphic character, combining traditions present over long distances with specificities restricted to only one archipelago or a few islands. Its megalithic nature is not in question, each example presented in this paper being characterized amongst other things by the use of lithic or coral blocks of very large size. Likewise, the oral traditions are clear regarding the link between the production of these structures of megalithic character and the existence of strong centralized political organisations, able to command the raising of monumental structures. However, these constructions cannot be understood without taking into consideration the fluidity of Oceanic island organizations, marked by internal dynamics and constant competitions of power between chiefdoms (Cordy 1983).

Some cases of cultural influences in building methods and settlement pattern organisation can be identified over long distances. The islands of Pohnpei and Kosrae have each witnessed the construction of monumental settlements during the 2nd millennium AD, characterized by the building of platforms and walls with massive coral blocks and basalt columns of polygonal section. The two most extensive and spectacular sites, presented in the previous section, are Nan Madol on Pohnpei and Lelu on Kosrae. Although separated by nearly 500 km of ocean these two sites clearly encompass a common architectural typology, particularly the use of header and stretcher placement of rows of columns interlocking one over the other, to build walls that could reach nearly 10 m high for the most massive (Athens 2018). The builders created platforms positioned mainly on the sandy bottom of the lagoon, resting partly on Temwen Island for Nan Madol and on Lelu for the city of the same name, in order to allow circulation inside the city through a series of channels accessible by canoe. But there can be no doubt that the decision to place the two cities on the seashore, isolated from the main island and facing a large passage to the ocean, also allowed to create a symbolic frontier between the elites and the common people. Oral traditions on

(2) The most famous of these adventurer/traders was David O'Keefe, whose romanced life was presented in a film show-casing Burt Lancaster in 1954, entitled *His majesty O'Keefe*.

Nan Madol insist on the numerous taboos and rituals that had been put in place to control access to the inner boundaries of the city, half of it being devoted solely to the families of high rank and to the priests. The fact that two monumental ensembles of this size, which share so many typological similarities, developed on two islands over 450 km apart, leaves little doubt about the political links that bonded the Sau Deleur of Pohnpei to the high chiefdom of Kosrae. The existence of megalithic constructions with the same typology in other parts of the two islands, whose archaeological study remains in large part to be undertaken, underlines the global character of the building tradition of header and stretcher that was in place during the Sau Deleur period and demonstrates a massive centralization of power. The dates obtained for the two sites give, for the moment, chronological primacy to the most extensive site, although the most monumental platforms were erected on both islands between 1300 and 1600 AD in independent dynamic processes.

The development of a form of megalithic tradition in former societies is often associated in the archaeological literature with the emergence of centralized and hierarchical political structures (Kirch 2017). Based on the oral traditions, this was clearly one of the major drivers that facilitated the development of megalithic traditions in Western Micronesia [3] (Ayres 2002). Petrographic analysis allows to demonstrate today that, as indicated by the oral traditions, a significant number of the large monolithic basaltic blocks used in the building of the walls of the Nan Dawas burial platform were extracted from quarries located on the northwestern side of Pohnpei. Transport being impossible by land on a mountainous island with summits exceeding 750 m and overhanging deep valleys, each of these monoliths had to be transported by sea, probably by floating attached to bamboo rafts (see Ayres & Scheller 2002). The collective effort and organization implied for the transport of millions of tons of basalt columns gives an idea of the complex hierarchy put in place by the Sau Deleur and their court. Likewise, the organization of the extraction, from quarries, of large shafts and caps composing the *Latte* in the Marianas, cannot be conceived without a centralized socio-political organization, that the Spanish colonial process eradicated after the middle of the 17th century before it could be documented, leaving archaeology as the only source of information.

Conversely, the resilience of some island societies confronted by brutal changes in their historical pathways is clearly at play through the dynamic acquisition of 'stone-moneys' by the Yapese chiefdoms during the second half of the 19th century. There is no question that this interest was fostered by internal cultural considerations, leading, on this island, to a unique process of development of a megalithic tradition of a ceremonial exchange-object (Fitzpatrick 2018). This process having taken place during the colonial period, its evolution can be studied fairly precisely, thanks, especially, to the retention of part of the knowledge of the names and stories related to these objects. Furthermore, the continuation of exchange of *Rai* between families up to present times in Yapese society, contextualizes the symbolism associated with these 'moneys', showing that – contrary to what a classic archaeological analysis might conclude – it is not the largest discs which carry the highest value, but rather the most crude. The inhabitants of Yap explain the difference in symbolic value by the 'industrial' nature of the gigantic 'stone-moneys' produced with metal tools and transported on steamboats, while the stones of lesser size are old, were produced with traditional tools and brought back from Palau to Yap on canoes.

5. Some perspectives of study on Micronesian megalithic sites

Despite over a century of archaeological research on some sites, a great number of questions remain unanswered regarding our understanding of the development of megalithic traditions in Western Micronesia, as well as about the organizational and spatial characteristics of these monumental ensembles. Except for the sites of Nan Madol and Lelu, and some major *Latte* sites of the Marianas, most of the megalithic loci of the Northwest Pacific

(3) The present paper does not discuss the topic of the emergence of processes of megalithism but we note that in the case of Western Micronesia, the complexity of the hierarchies at play appear to be the core for the development of monumental constructions.

remain to be studied in an archaeological perspective. Thanks to technological advances, today researchers have advanced tools like LiDAR, freeing them from the constraint of the tropical vegetation cover, which is one of the most handicapping limitations for the study of archaeological sites during field projects in the Pacific. The massive extension of the forest cover on islands like Pohnpei explains why so few survey and mapping projects have been carried out to date in the valleys, preventing any analysis of Nan Madol's megalithism in a wider cultural and spatial setting. The use of LiDAR on Temwen Island, on which leans Nan Madol, has shown for the first time the presence of a dense expanse of horticultural structures buried under the vegetation (Comer *et al.* 2019), suggesting the presence of numerous structures on the main island. To our present absence of a large set of field data must be added the absence of the final publication of numerous research programmes undertaken over the last half-century in the region, which restricts the emergence of new hypotheses on the development of centralized political traditions in the northern Pacific. Furthermore, part of the proposed chronological synthesis still relies on results obtained between the 1960s and 1980s, at a time when ^{14}C dates had a large delta margin. A set of studies conducted in the Pacific have shown that applying the AMS dating technique, allowing a small delta margin, to samples retrieved from old archaeological collections, produces coherent results and can significantly refine the cultural chronologies (Sand *et al.* 2002). Programmes focussing on a new analysis of material remains from old archaeological collection stored in American and Japanese museum institutions, have the potential to greatly enrich our knowledge of the remote history of the region, without necessitating the organization of new excavation field projects.

Despite the end of the production of *Rai* a century ago, discs of aragonite continue to be an integral part of customary exchange ceremonies in Yap. After they were neglected for a long period by the Christianized populations and by the colonial authorities and then by the local administrations, the megaliths of Western Micronesia regained their role of cultural symbols of the islanders' prestige in the early 21st century. The disc form of the *Rai* today symbolizes the cultural specificity of this island on the bank notes as well as on the licence plates of cars (**Fig. 10**) or on advertising boards, while being also used as logo for the official documents of the State of Yap. A similar process of clear cultural reappropriation, sees the motif of the *Latte* of the Mariana Islands being used, for example, on American coins to symbolize the island of Guam. Finally, on Pohnpei, the inscription of the site of Nan Madol on the World Heritage List of UNESCO in 2016, has raised awareness of the inhabitants of the cultural importance of their 'Venice of the Pacific', prompting a new interest in the study of the past and the will to promote the local cultural heritage, which is confronted by the global assimilation process underway in Western Micronesia.

Without neglecting questions revolving around scientific and identity issues, we must underline in the conclusion how much the climate change process threatens the immediate future and, more than elsewhere, a significant part of the megalithic sites

Fig. 10 – Use of *Rai* as logo on a licence plate of the State of Yap (Photo: C. Sand).

of Oceania. The sites of Nan Madol and Lelu are literally constructed 'in the water' [4] (**Fig. 11**). Likewise, some of the 'stone-money banks' of Yap have been positioned on the immediate seashores. The rise in the sea level today gradually drowns the most exposed sites, while the multiplication of extremely devastating typhoons weaken the vegetation cover and speeds the erosion of the monumental structures. The extent of this natural process necessitates a rapid response in order to implement the protection measures needed to ensure the sustainability of the most emblematic sites, and to study the archaeological remains threated by erosion before they are washed away once and for all by the ocean. If nothing is done, part of the exceptional and unique megalithic ensemble presented in this paper will have disappeared in 20 years from now.

Translated from the French
by Christophe Sand

(4) The real risk of partial destruction of the integrity of Nan Madol induced UNESCO to list the site as 'property in danger' when it was inscribed on the World Heritage list in 2016.

Fig. 11 – The southeast corner of Nan Dawas platform, holding the mausoleum of the Sau Deleur, under water at high tide. Note the size of the basement monolith of the wall (Photo: C. Sand).

13

Tara STEIMER-HERBET

Mechanisms of appearance and disappearance of Indonesian megaliths

Abstract: The Indonesian megalithic phenomenon is contemporary with the great Hindu-Buddhist kingdoms of Sriwijaya, Majapahit and Malayu. It represents an exceptional cultural heritage, thanks to its reach. Indeed, monuments can be found in the forests, the mountains, the plateaus, and along the coastline. The megalithic sites were built by indigenous groups whose religious beliefs revolved around the cult of the ancestor and of Nature spirits. This shared religious base can be found from Bondowoso (Eastern Java) to Toba (Northern Sumatra), through Sukabumi, Kuningan, Lampung, Pasemah, Jambi and Minangkabau, to name only the most well-studied regions. The resource and service networks developed by the indigenous groups with the Hindu-Buddhist kingdoms gave rise to the acquisition of prestige goods, leading in turn to social competition, an environment particularly favourable to the development of megalithic culture. The emergence of 'chiefs' probably preceded the appearance of megaliths, which were built for burying the deceased as well as honouring, commemorating and/or communicating with ancestors. These communities did not use writing; the standing stones (uncarved or carved) marked the territory and served as a way to transmit the memory of mankind from one generation to the next. In Java, Sumatra (central and southern) and Sulawesi (central Lore Lindu), megalithic monuments were no longer built when the Hindu-Buddhist kingdoms lost their power. On the other hand, and following a similar logic, the use of megaliths developed later in the isles of Sumba, Flores, Nias, Northern Sumatra (Toba) and Central Sulawesi (Tanah Toraja) following contacts with European merchants. Despite massive conversions to Catholicism and Protestantism in these areas, the tradition remains alive to this day. These monuments bear witness to a period of exchange and trade that led to the development of complex Indonesian societies, and this chapter aims to shed light on the mechanisms of the emergence and disappearance of the megalithic phenomenon in this region.

Keywords: *Indonesia, Hindu-Buddhist kingdoms, Sriwijaya, Majapahit, Malayu, megalithic phenomenon, emergence, disappearance*

1. Introduction

Recent discoveries of numerous Indonesian megalithic hotspots, dating to the classical or modern period, provides a unique occasion to study a dozen cases of appearance and disappearance of this kind of monumental architecture. The mechanisms that led to the practice of megalithism appear common to all hotspots belonging to the last two major episodes of the megalithic phenomenon. The first of these episodes dates to the beginning of the Christian era and coincides with the onset of the Hindu-Buddhist kingdoms, on the coasts or inlands of Java, Sulawesi, and Sumatra islands. This occupation prompted the appearance of a series of megalithic concentrations within local communities. The second episode is linked to commercial activities and the installation of numerous trading posts during the 10th century in Flores, Sumbawa and Timor, with an increase in activities around the 16th century in Nias, Sumatra, Sulawesi, and Sumba by European, Indian, Malaysian, Vietnamese, Thailanders, and Chinese merchants. This occupation was the starting point for the appearance of a succession of megalithic practices within local communities.

The Hindu-Buddhist kingdoms, just like the European and Asian merchants, represent state systems depending on international trade for power. Within this framework, Indonesia represents a maritime crossroads, 17,000 islands strong, offering numerous commercial opportunities. The meeting of state powers and the local communities resulted in increased wealth on both sides. For the local communities, which functioned based on a tribal system where kinship defined social relationships in a non-hierarchical manner, the increase in wealth led to a form of social and political competition which favoured the rise of megalithism. It is highly likely that the existence of chiefs within these communities predates the original creation of megalithic monuments to inhume the dead and honour, commemorate, and/or communicate with ancestors. For these local societies, who did not possess writing, the role of monumental stones was not simply to mark the landscape and transmit the memory of mankind from one generation to the next, but also reflected religious and political aspects. As such, Indonesian megalithism is linked to the ancestor cult and to the socio-economical functioning of societies, in which it played a role in managing intra and intercommunity relationships.

We propose here to present a history of megalithic research in Indonesia, followed by the description of four megalithic oncentrations linked to Hindu-Buddhist kingdoms, and three still active hotspots born out of interactions with the first European and Asian merchants (**Fig. 1**). Through this, the diversity of the megalithic phenomenon in this part of the

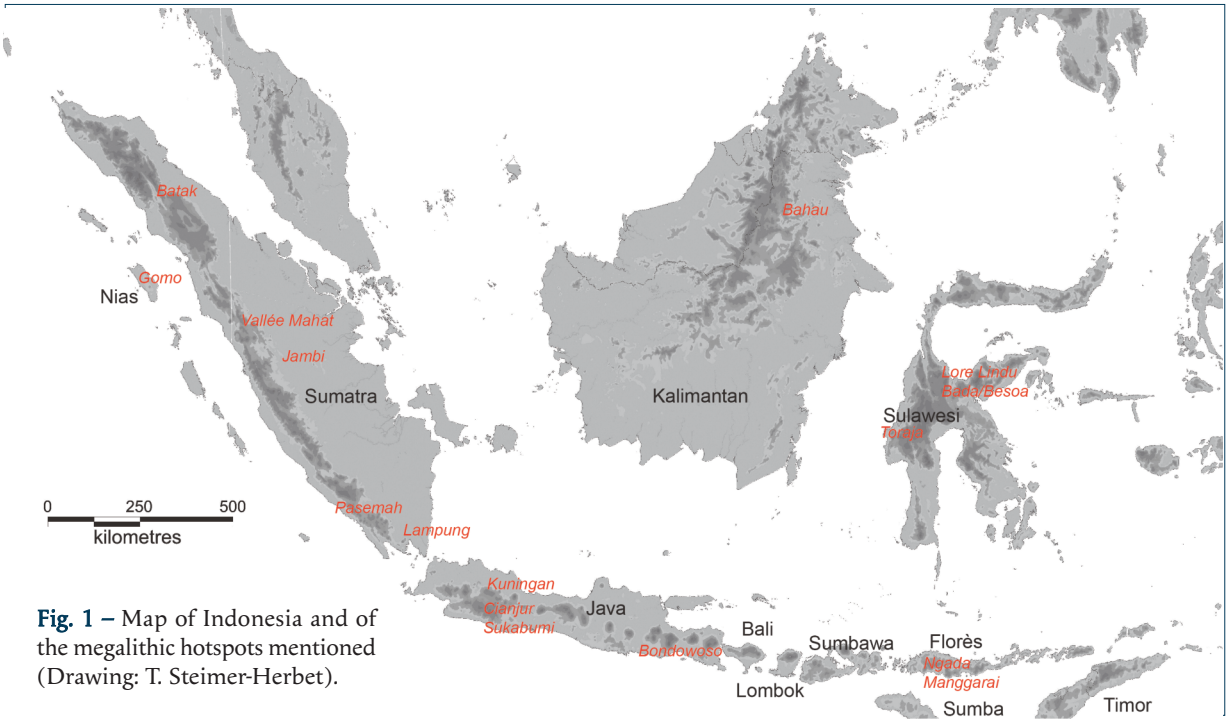

Fig. 1 – Map of Indonesia and of the megalithic hotspots mentioned (Drawing: T. Steimer-Herbet).

world will be explored, in particular the factors that led to its appearance and disappearance.

2. Research history

Most published work on Indonesian megalithism is relatively old and dates to the Dutch colonial period, when several explorers collected an important amount of data concerning archaeological remains in Sumatra (Adam 1922; Bosch 1922; Bie 1932; Hoop 1932; Vonk 1934; Schüller 1936; Schnitger 1938, 1939), in Sulawesi (Perry 1918; Kaudern 1938) and in Java (Steinmetz 1898; Heekeren 1931; Willems 1938; Schnitger 1942; Heine-Geldern 1945). Between 1945 and 1965, Dutch archaeologists led the regional Archaeological Services and informed Indonesians about how to study and preserve their cultural heritage. The 1960s were marked by the discovery of megalithic monuments at Kalimantan by Tom Harrison (1962a-b). North American researchers, financed by the Ford Foundation, conducted research in the central region of Sulawesi, among the Toraja (Crystal 1974a-b; Nooy-Palm 1978, 1988). Their work focused mainly on investigating ancestral religions. In 1975, the creation of the National Research Center for Archaeology (NRCA) allowed Indonesian archaeologists to take ownership of their archaeological heritage, continue research, and publish their work in national journals such as S*kripsi Sarjana Jurusan Arkeologi, Berita Penelitian Arkeologi* or *Pertemuan Ilmiah Arkeologi*. Several archaeologists, belonging to local branches of the NRCA called *Balai Arkeologi*, explored the less known provinces of Java and Sumatra, but also the Lesser Sunda Islands. At first, research focused on the Hindu-Buddhist kingdoms, then thought to have been the high point of Indonesian history. Some research teams nonetheless inventoried megalithic sites. European researchers arrived in the 1980s, with Marcel Bonneff publishing an article on the island of Sumba and its megalithic societies (1980). Around twenty years later he was followed by Roger Joussaume, who specialized in the megalithic phenomenon on the Atlantic front in France and Ethiopia (Joussaume 1997, 1999). Harder to reach, and relatively unknown areas, such as the Bada and Besoa valleys in Sulawesi, Jambi at the centre of Sumatra, Nias, and Sumbawa were then explored and a very diverse megalithism was found, with monuments of various shapes and functions (Harrison 1958; Suzuki 1979; Watson 1979; Sukendar 1980a-b, 1983, 1985a-b, 1997, 2003; Rumbi 1981; Viaro 1984, 2000; Miksic 1986, 1987, 2004; Ziegler 1986; Prasetyo *et al.* 1995a; Ziegler & Viaro 1998; Kusumawati 2002). The country was also thoroughly investigated by historian Jean-Paul Barbier (Barbier 1988, 1998a-b, 2011; Barbier & Newton 1988). Continuing the work of Tom Harrisson, and inbetween gold and petrol seekers, the megaliths of the Bahau region in Kalimantan were studied by Bernard Sellato (1992). Three regions were the focus of several excavations and reports by the NRCA, as well as several theses: Bondowoso in Java (Prasetyo 2015), Ngada and Manggarai in Flores (Sudamardi 2014), and Lore Lindu in Sulawesi (Yuniawati 2009).

Megalithic research in Indonesia is made difficult by several factors. The first is physical, linked to the sheer scale and density of the phenomenon. Bagio Prasetio, archaeologist for the NRCA, inventoried no less than 593 hotspots and thousands of monuments. According to him, 60% of the territory is occupied by megalithism. Due to the insular nature of the country, the megalithic foci are heterogeneous and it is almost impossible to extract a chrono-typology from them, something that he nonetheless attempted (2015). The second difficulty is cultural, as it appears that Indonesian researchers have been strongly influenced by the diffusionist theories of the first Dutch archaeologists (Perry 1918; Hoop 1932; Kruyt 1932; Heine-Geldern 1945; Soejono 1969, 1982; Poesponegoro & Notosusanto 1983; Sukendar 1985a-b; Loof 1993; Sutaba 1998; Prasetyo 2006). For these scholars, Indonesia was the theatre of a ballet of migrations from Europe, India, or Japan, within which megalithism was an imported product. Today, the frequent use of radiocarbon dating (Prasetyo 2014: 31) and ethnological work (Viaro 1984; Sudamardi 2014) have demonstrated that these monuments, contrary to the Dutch archaeologist's conclusions, are not from the Neolithic and do not necessarily represent an imported tradition. Finally, the third difficulty is political. Megalithism is a sensitive topic that relates to communities who still practice ancestral religions such as the ancestor cult and animism. The Indonesian government deems these practices archaic, and when an individual registers administratively,

they must choose between the five official religions (Islam, Catholicism, Protestantism, Buddhism, Confucianism, Hinduism). The national politics of Indonesia enforces modernity, and everything related to the ancestor cult, animism and, by consequence, megalithism, is deemed to belong to archaic, prehistoric times (Sudamardi 2014: 3). Given the richness of the phenomenon, research on megalithism and Hindu-Buddhist kingdoms will continue, but subactual or current megalithic societies have already started to disappear. Current practicing individuals of this culture are ignored, marginalized or, at best, presented as folklore.

3. Megalithic societies and the Indo-Buddhist kingdoms

3.1 Dolmens, *Pandhusa* and cylindar sarcophagi of the Bondowoso valley (Eastern Java)

In Eastern Java, at the foot of the Kawa Ijen volcano, the megalithic monuments of the Bondowoso valley were relatively well-documented during the Dutch presence at the end of the 19th century. In 1898, Steinmetz was the first to document hundreds of monuments (1898). Heekeren continued this work (1931), and in 1938, Willems published the results of his excavations of the Pakauman monuments (Willems 1938). Fifty years then went by before an Indonesian archaeological team from NRCA conducted new investigations, in 1983, 1985, and 1992 (Suwarno 1992; Karihandi 1994; Prasetyo 1995, 1996, 2000, 2006b, 2008a-b; Prasetyo *et al.* 1995b, 1996; Kusumawati 2002; Suryanto 2004).

The region yielded 47 sites bearing megalithic monuments. Two of these, at Wringin and Grujugan, were excavated by a team led by Bagio Prasetyo. Their results confirmed those described in Heekeren and Willems's publications, namely that the excavated spaces were indeed funeral chambers. Fragments of Chinese porcelain, glass and terracotta beads, metal bracelets and tools, as well as buffalo horns accompanied the deceased. Two coal fragments sampled in the Dawulan and Doplang dolmens by Bagyo Prasetyo (2014: 31) place the Bondowoso valley dolmens within a chronological period extending from the 6th to the 14th century AD (Bondowoso 840±200 BP; Jember/Doplang 580±100 BP). A sarcophagus bears a Hindu inscription from 1324 Çaka (1402 AD). These dates are coherent with the nature of the artefacts discovered.

Three kinds of monuments were inventoried. The first is a classical dolmen, with a chamber made of orthostats and a natural stone slab cover (**Fig. 2a**). The second, locally known as *Pandhusa*, is a rectangular chamber with a cover slab sculpted so

Fig. 2 – Photographs of the megalithic monuments of Bondowoso: a. Grujugan dolmen; b. *Pandhusa* from Grujugan; c. Cylinder-sarcophagi from Nangkaan (Photos: T. Steimer-Herbet).

that its flat surface rests on the chamber's walls, while its upper part is shaped into a kind of half-cylinder (**Fig. 2b**). The third is called a 'cylinder-sarcophagus' (**Fig. 2c**). In the photograph, the chamber is buried under sediments. Originally, it rested upon the ground and its shape was rectangular. The walls are made of edged panels.

Traces of the settlements of these monuments' patrons are still visible and are located near the tombs. They do not differ from traditional settlements. *Kenong*, stones shaped with one or two protuberances on their upper part, served as leaning points for wooden structures that have now disappeared. The excavation of these settlements uncovered materials similar to those found in the tombs. Stone statues were also placed near the structures (Prasetyo 2015).

A few kilometres from the megalithic monuments and the *kenong* houses (as the crow flies), temples made of bricks were constructed. These temples belonged to the Mataram kingdom (Medang) who was soon placed under Majapahit control. While there are no written traces of contact, the artefacts discovered within the megalithic tombs confirm exchanges took place between the two communities. As soon as the Hindu-Buddhist kingdoms manifested themselves, the local communities adopted rice culture, probably in order to satisfy the food exchange network. They also provided natural resources for exportation, such as sulphur from the Kawa Ijen volcano, known for its disinfecting and fungicidal properties. These exchanges provided a tremendous wealth income for the valley's inhabitants (Steimer-Herbet 2018).

3.2 Platforms, menhirs, and statues of Sukabumi and Cianjur (Western Java)

The Sukabumi region was also explored by the Dutch (Hasskarl 1842; Hoop 1932; Friederich 1855). Recent prospections led by NRCA representatives have demonstrated that, around the 12th and 13th centuries AD, the slopes of the Halimun and the Salak were occupied by communities who raised stones and built pyramidal platforms (Azis *et al.* 1986; Yondri 2011a-b; **Fig. 3a**). As at Bondowoso, statues were raised at Ciarca (**Fig. 3b**) but also at Bojongkalong and Cidada. At Tugu Gede, near Pelabuhan Ratu, a 4 m tall menhir is still honoured to this day. Every year after harvest, the local inhabitants come to knot white fabric around it and make offerings to Nature spirits (**Fig. 3c**). This is one of the rare sites to be maintained, the others have been covered by the vegetation. A few have been rehabilitated, such as that of Pangguyangan, where an Islamic tomb covers the submit of a pyramidal platform seven terraces high.

These monuments are always accompanied by stone chairs, basins, and cupula stones (Tugu Gede, Ciarca, Bukit Tongtu) (**Fig. 3d**).

There are numerous examples of pyramidal platforms on the island of Java, but that of Cianjur on Mount Padang is one of the most mediatized in Indonesia (**Fig. 4a**). It is mentioned in tales and legends of the inhabitants of Sukabumi. Prabu Siliwangi, a Hindu king of the Bogor region, is said to have come to settle there at the end of the 15th century.

This site was discovered in 1914 by Dutchman N. J. Krom (1914), on top of a mountain. It was subsequently lost under vegetation and rediscovered in 1979 by inhabitants of the village of Karyamukti (Mauludy & Situngkir 2011). It was the subject of two reports by Jakarta's NRCA (Sukendar 1985a) and that of Bogor's (Yondri 2011b). Known remains consist of a series of terraces and stairs, 150 m high. The staircase leading to the site is steep, but the 400 steps are sound (**Fig. 4b**). The stone blocks used to build it come from the Cikuta river 300 m away; a few are also found in the rice fields in the valley. It is magmatic rock, in the shape of prisms. While the hill was formed of 13 terraces, only the last five remain well-preserved today and are valued. Below the summit, a strong retaining wall supports the first of the five terraces. At this location, the vestiges of a rectangular structure are visible, the door of which opens to the north towards the mountain of Gunung Gede. Its interior surface is covered with a stone pavement. To reach the fourth terrace, one has to climb a narrow staircase, now partially collapsed, constructed within a retaining wall. Terraces 3, 2, and 1 are detached from one another by small terrain slopes marked by raised stones. Stone alignments also delimit the eastern and western edges of the terraces. In the centre, with no apparent order, rectangular and circular monuments were built.

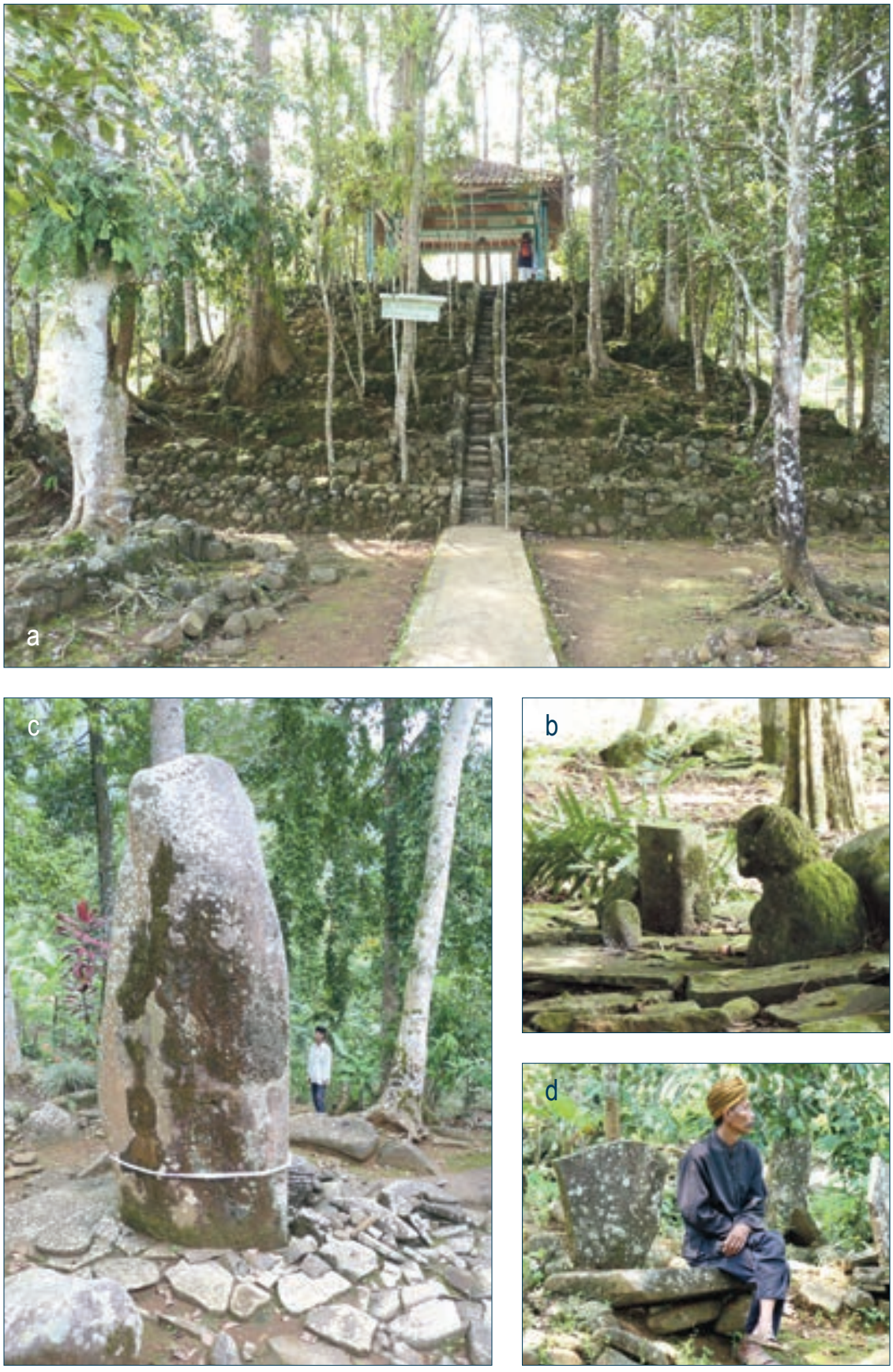

Fig. 3 – Photograph of the megalithic monuments of Sukabumi: a. Pyramidal platform of Pangguyangan; b. Statue of Ciarca; c. Menhir of Tugu Gede; d. Stone chair of Tugu Gede (Photos: T. Steimer-Herbet).

Fig. 4 – Photograph of the site at Gunung Padang: a. View of the 3rd terrace from the 4th terrace with the rectangular building; b. Staircase leading to the 3rd terrace (Photos: T. Steimer-Herbet).

As for the other megalithic sites mentioned, there are no records of its construction or its use in the written sources left by the neighbouring Hindu-Buddhist kingdoms. This colossal building site, however, must have mobilized effort and wealth implicating more than one community. The succession of terraces of the pyramidal platforms of the Sukabumi and Cianjur monuments are evocative of the Majapahit period temples, such as that of Seto in the centre of Java, dated to the 15th century. As some platforms are earlier than the temples, the hypothesis must be raised that these architectural practices served as models (Prasetyo 2015; Steimer-Herbet 2018).

3.3 Tombs, menhirs and ceremonial spaces of Kuningan (Northern Java)

In Northern Java, the Cipari site is the largest and best-preserved of the 33 discovered in the region (**Fig. 5a**; Kosasih *et al.* 1981). The exploration of this territory started in the middle of the 19th century with Wilsen (1855). Cipari was discovered in 1971 by Wijaya, the landowner. It occupies a 700 m^2 surface. The tomb's walls (**Fig. 5b**), the walls of the circles and the platforms of the menhirs, were all built of fine volcanic rock. The edged walls of the tomb chambers are relatively thin. The cover stones are set on their sides. Inside the tomb, no human

Fig. 5 – Photographs of the Cipari site: a. Circular place; b. Tomb; c. Raised stone (Photos: T. Steimer-Herbet).

bones were found but various artefacts were uncovered, including numerous ceramic pieces (plates, bowls, jars) including Celadon (greenware), some incense, stone bracelets (cornaline), polished stone axes, bronze axes, and bronze pearls (Azis *et al.* 1981; Kosasih *et al.* 1981).

The tombs are located near two great plazas: one is circular, the other oval. They are delimited by bench seats, and the centre is marked by a large stone of around 1 m high. On both sides of these great empty spaces, staircases lead to terraces on which menhirs were raised (**Fig. 5c**). The staging of the Cipari site was carefully developed, and there is a proximity between ancestral spirits (the deceased, placed in the tombs) and the members of the community who sat on the bench seats. The quality of the artefacts discovered on the site indicates contacts with exogenous populations. The kingdom of Tarumanagara controlled the whole of Western Java from the 5th century AD onwards, including the Sunda strait and that of Malacca. At the end of the 7th century, the inhabitants of Tarumanagara were under the rule of the Sriwijaya kingdom. The region was particularly appreciated for its indigo production. The Chinese Buddhist monk Faxian, returning from India to China in 413 AD mentions three religions in this area: Buddhism, Hinduism, and traditional (which he qualifies as 'dirty').

The megalithic remains of the Kuningan region are numerous and very diverse, with dolmens in Jalaksana, stone coffers and stone seats resembling those of Cipari in Cigadung, Pesawahan, and Teguh Asmar. Another very rich site, similar to Cipari, was found at Ragawacana, regrouping dolmens, menhirs, and statues (Azis *et al.* 1981; Kosasih *et al.* 1981).

3.4 Menhir-statues and *kalambas* of the Bada and Besoa valleys, in the region of Lore Lindu (Central Sulawesi)

The area of Lore Lindu was described by Kruyt (1908) who reports the words of the Sarasin brothers whi passed through the Bada valley in 1902 and noticed cylindrical monuments known locally as *kalambas*. Several explorations followed: Schuyt in 1911 and Gru Bauer in 1913. Raven excavated one of the monuments of the Pokekea site in 1917-1918 (Raven 1926). He was one of the first to attribute a funerary function to *kalambas*. Research in the area started again in the 1970s, with excavations and surveys by the NRCA (Sukendar 1980a, 1997). These intensified in 1995 and 1996, with the objective of creating a distribution map of the monuments in the Besoa valley, and there were excavations at the sites of Pokekea and Tadulako (Prasetyo *et al.* 1995a; Yuniawati 2000, 2001, 2008, 2009).

At Lore Lindu, the most striking elements are anthropomorphic statues several metres high. The most well-known is that at Palindo (Watu Molindo). It may be leaning, but it is nonetheless impressive with its 4.5 m of height. This massive statue has a face occupying a third of the granite block. Only its front part is polished; the rear was slightly shaped but mostly left rough. The contours of the face are delimited by a regular ring. At the top of the head, a protuberance may represent a knotted fabric or a crown. The ears, represented by two protuberances, are very simply carved. Coversely, the nose, the eyes, and the mouth are finely etched. The brow bone and the nose ridge form a single line. The chin is absent. Under the oval of the face, a gutter is carved out, marking the neck and shoulders. The arm line is barely discernable, and two small apophyses represent the nipples, despite this being a masculine statue (Steimer-Herbet 2018).

The statues of Lore Lindu must have represented important people (**Fig. 6a**). Many of them punctuate the Bada and Besoa valleys, with dimensions varying from human size to monumental. These valleys are known for their precious natural resources, such as sulphur, gold, charcoal, and iron. The Lore Lindu valley has obtained National Park status from UNESCO, in order to protect its fauna, flora, and mineral resources and deposits.

Individual wealth was also expressed through the making of *kalambas*, a type of cylindrical urn, closed by a stone cover. The most beautiful *kalambas* are located in the Besoa valley. Fifteen sites have been inventoried, one of the richest being Pokekea, where over 27 *kalambas* were discovered. One measures 4.70 m in height with a diameter of 1.87 m. The exterior wall is decorated with a banner of faces. The covers are decorated with a simple protuberance or

with small human figures (**Fig. 6b**). The excavations led by Dwi Yuniawati at Tadulajo uncovered bone fragments of many individuals (around 10), broken pots, and stone tools (Yuniawati 2000, 2001, 2008). Radiocarbon dating of grains from the lower level of the filling from one of the *kalambas* provided a *terminus ante quem* of around 830 (Erl-10584 1251 ±31 BP, 766-898 cal to 2 sigmas) (Kirleis *et al.* 2011: 174). Similar monuments were mentioned in Sumatra, in the Batak region (Steimer-Herbet 2018), but also to the east of Sumbawa and to the north of Kalimantan (Prasetyo 2015: 135; Arifin & Sellato 2003).

Fig. 6 – Photographs of the Besoa valley monuments: a. Anthropomorphic statue of Tadulako; b. *Kalambas* from Pokekea (Photos: T. Steimer-Herbet).

Paleo-environmental studies have demonstrated that several drought years considerably affected the area around the 13th century (Kirleis *et al.* 2011: 175). The acquisition of resources must have become complicated, leading to the decline of the Lore Lindu communities and to that of the neighbouring Hindu-Buddhist kingdoms. During this period statues were no longer erected and the dead no longer placed inside the *kalambas*.

In order to provide a complete overview of the megalithic concentrations that developed in parallel with the Hindu-Buddhist kingdoms, we must mention the regions of Lampung (Sukendar 1976), Pasemah, Jambi (Bonatz 2006), the Mahat valley in Sumatra (Miksic 1986), as well as the emblematic site of Gunung Kidul in Yogjakarta, at the centre of Java (Sukendar 1971). In the examples provided above, the contacts established between the kingdoms and the local communities remained purely commercial. Bonatz even suggested the relationship was servile in nature, citing the Jambi region where parts of the community could have helped transport merchandise from one coast to the other (Bonatz 2006). From a cultural point of view, these autochthonous communities managed to develop an original identity via their stone architecture, one that must have marked the minds of their commercial partners. The question of the recurring absence of written sources concerning the local communities, despite the lasting impact of the Hindu-Buddhist kingdom, must be raised. Where did the resources they exported or consumed come from? Despite thousands of megalithic monuments, these societies are invisible in the historical record, a phenomenon we might qualify as historical amnesia.

4. Megalithic societies and international trade between Asia and Europe

The pattern observed with the Hindu-Buddhist kingdoms on the islands of Sumatra, Java, and Sulawesi repeated with the arrival of Asian and European merchants. In particular, previous hotspots were 'reactivated', such as in the region of Samosir in Sumatra inhabited by the Batak community, but also in harder-to-reach islands: Nias, Flores, Sumba, Sumbawa. The local communities traded with the last representatives of the Hindu-Buddhist kingdoms and, when this failed, with Asian and European merchants developing new trading posts.

4.1 Stelae, tables and benches of the island of Nias

The Niha tribes living on the island of Nias, at large from Sumatra, have long pushed navigators away. Dutch merchants were the first to establish trading posts with the tribes of the Gomo region, at the centre of the island. These contacts considerably changed the social makeup of the tribes. In 1890, Modigliani reported on a trade deal between the Dutch and the Gomo tribes. Beyond the riches acquired by trading local resources (including patchouli), the Dutch also acquired slaves from some tribes (Bonatz 2002). True 'slave hunts' between villages started, practices that contributed to the forging of the rather belligerent character of the Nias and to the multiplication of the number of enclosures around villages wishing to protect themselves. On top of this, the practice led to unbridled competition between the tribes.

Ethnologists who worked on this island estimate that the first megalithic monuments are around 350 years old (Viaro 1984; Ziegler 1986; Ziegler & Viaro 1998). Excavations at the foot of megaliths at the Tundrumbaho and Hiligeo sites have yielded charcoal, radiocarbon dated by the PPPG laboratory of Bandung in 2004 and 2005 to 340±120 BP and 260±120 BP (Prasetyo 2014: 31). The shape and function of megaliths vary depending on regions (Sukendar 1983; Härmmerle 2001; Marschall 2002; Bonatz 2009). On a small island, 110 km by 40 km, there are at least three cultural groups with distinct domestic, funerary, and ritual identities. The spiritual world of the Niha is comprised of nine levels, with the gods occupying the upper ones. They are not lineage societies, but rather based on patrilinear filiation, with several women being partnered with one man but only one of them having the same 'rank' as her husband. There are three casts: nobles, people, and slaves. The noble title is hereditary but must be validated through prescribed festivities. The nobles control the village riches, and in return maintain the village's organisation, control outside relationships, and re-distribute wealth by organising great 'merit feasts'.

The trade deals with foreign merchants created an influx of wealth and prestige goods. During this period the merit feasts coincided with the edification of stone monuments in honour of important people, as well as the sacrifice of numerous animals – mostly pigs (Feldman 1988; Beatty 1992). Megalithism in Nias is strongly linked to the living. The benches, circular or quadrangular seats, the circular stone tables sculpted from monoliths and statues were erected in honour of the ruling chiefs and nobles (**Fig. 7a**). The dead were abandoned in the forest, with only skulls being brought back on rare occasions to be preserved within pyramids, within cranial urns at the island's centre, or under stone tumuli in the north. Usually, wooden statues hosted the ancestor's spirit. The pyramids, urns, and tumuli were always accompanied by Y-shaped wooden posts representing the strength of the ancestors, a tradition that could have been inherited from Assam Indians.

Feasts were an occasion for the nobles to confirm their social status, and to sometimes obtain new titles thanks to a compulsory schedule of ten to twelve feasts during a noble's life. The feasts were not always accompanied by the construction of megalithic monuments. During a male noble's first feast, a raised stone called *behu* was erected (**Fig. 7b**). This ceremony required the help of numerous men to transport the stone, and their salary was paid by the stone's patron. The tenth feast, for both men and women, was marked by the building of a stone bench (**Fig. 7c**). These stones, natural or finely sculpted, occupied the public space. As such they symbolized the social power of the nobles. They also served in initiatory rituals, such as the famous 'jump pyramids' that young warriors had to jump over.

Fig. 7 – Photographs of the megalithic monuments of Nias: a. Megalithic ensemble at Lahusa Satua; b. Raised stone in the village of Dahana; c. Bench seat in the village of Orahili (Photos: T. Steimer-Herbet).

The abolition of slavery by the Dutch in 1839, the presence of missionaries, and massive religious conversions all contributed to reduce the importance of these merit feasts. Over the past 50 years, the megalithic phenomenon in Nias has been on the decline. The fall of patchouli stock value since synthetic patchouli was created has considerably reduced the final remaining trade exchanges. The financial crisis among the Nias communities was then aggravated by a pig illness in 1998. Finally, the 2004 tsunami and the 2008 earthquake meant the end of this megalithic culture (Steimer-Herbet 2018).

4.2 Cylindrical and quadrangular urns and Toba sarcophagi on the shores of Lake Toba (Northern Sumatra)

In the north of Sumatra, the island of Samosir is inhabited by the Toba, one of the five Batak groups. Stone. or most recently concrete, tombs, are omnipresent on the island. They are placed alongside

roads, in coffee fields, and on the hillsides of the surrounding plateau. Several kinds of tombs are used to preserve the ancestor's bones: miniature houses, cylindrical urns like those of Lore Lindu, quadrangular urns (**Fig. 8a**) and, finally, the most frequently encountered shape, the sarcophagus (**Fig. 8b**) (Schnitger 1938; Barbier & Newton 1988; Barbier 1998a-b).

Fig. 8 – Photographs of the Batak megalithic monuments: a. Quadrangular urns in the village of Simanindo; b. Sarcophagi of the village of Pollung Parsingaran (Photos: T. Steimer-Herbet).

The *Singa*, a mythical animal for numerous Batak groups (Pakpak, Simsim, Kalasan), with its globe-shaped eyes, its horns, and its smile, decorates many stone sarcophagi of Toba. This animal represents Naga Padoha, god of death, but also of renewal and of harvests, and the god that receives the bodies of the dead and then transports the souls to their final destination (Barbier 2011: 73). Its large and prominent chin rests on the head of a smaller figure, half embedded in the sarcophagus. The *Singa* sits on a ligtly carved chair, its folded knees held by its hands. The arms bear large bracelets and the head bears a crown. It represents the deceased ancestor. At the back of the sarcophagus, a feminine character is represented (Steimer-Herbet 2018).

Whether dead or alive, men and their descendants can change status – if they can afford it. The ruling chiefs or shaman have the power to help the spirit of the dead or the newborn to elevate themselves in the hierarchy of souls at his/her death. At death, the individual is inhumed directly into the ground or – rarely – suspended in a mat in the attic before the bones are collected about a year later during a second ceremony. The bone collection and transport are the occasion for a second feast, during which the cranium and long bones are washed. The spirit of the dead keeps the same status as in life, unless a rich descendant chooses to elevate it by organising a lavish ceremony including many pig and buffalo sacrifices and an orchestra playing for seven days. The tomb is built near old house of the deceased, which allows them to stay in contact with their family and its descendants (Stöhr & Zoetmulder 1968; Tobing 1956).

According to oral sources transcribed by Jean-Paul Barbier (2011: 88), the sarcophagi date to the 18th century while the circular and quadrangular urns with a cover date back to the 11th and 12th centuries. A 1292 note by Marco Polo on Batak cannibalism indicates that, as early as the 13th century, Europeans tried to establish links with the Samosir region communities. The Batak, however, seem to have privileged Indian merchants during the 14th century, as attested by ancient texts mentioning them. Proof of their exchanges can also be found in the Batak language, which contains over 200 words borrowed from Sanskrit, in their calendar and astrology and, to a lesser extent, in the practice

of cremating the dead (funerary urns). The latter remains relatively rare among the Toba, whilst it is frequent among the Pakpak, a tribe of Southern Lake Toba (Barbier 1988).

It is interesting to note that among the Toba-Batak there exists a certain flexibility allowing progress through the social hierarchy. If one has enough money, it is possible to change status, which is probably what allowed these clans to perpetuate their funerary traditions until the 21st century AD.

4.3 Dolmens, stone tables, and raised stones among the Manggarai and the Ngada (central Flores)

The island of Flores is part of the Lesser Sunda Islands, along with Bali, Lombok, Sumbawa, Sumba and Alor. Its megalithic heritage is varied, the better-known examples coming from the Ngada and Manggarai regions (Sukendar 1997; Sudamardi 2000a-b). The island was only recently explored by the Dutch, and Arndt, Staveren, Rouffaer, Ernst van Bekkum and Verhoven were the first to report descriptions of megalithic monuments: menhirs and dolmens (Sudamardi 2014: 104).

Megalithic monuments are easily identified in the villages of Flores (Steimer-Herbet 2018). In the Manggarai region the Jakarta NRCA led prospections and inventory campaigns of the dolmens of the village of Warloka. Discoveries were numerous: bones, lithic tools, ceramics, and metal tools. Several research theses have focused on the inhumation methods, the ceramics, or the sanitary state of the ancient populations (Sudamardi 2014). The monument distribution appears focused on a hill summit that overlooks Warloka, but some are dispersed in the plain up to the beach (Ariadi 2014). Ceramic and porcelain objects come from trade with Chinese, Vietnamese, and Thailander merchants between the 10th and 17th centuries (Rahmayani 2012). Interestingly, these objects were accompanied by others usually associated with the Bronze or Iron Age (stone anvil, gold pearls, facet pearls, and bracelets made of bronze). The megalithic monuments of Warloka are linked to a settlement and a ceremonial area located on top of a hill (Sudamardi 2014: 168).

East of Manggarai is the region of Ngada, with its traditional villages and thatched roofs that still try to survive and maintain the ancestral beliefs, despite the massive exodus of the younger generations. The villages are built longitudinally: the houses face each other on each side of a rectangular terrace, more or less elevated, following the landscape. The central plaza is used as a ritual place. At the time of the first megaliths, around the 16th century, society was divided in five classes: nobles, middle class, commoners, men without land, and slaves. The men without land tended to domestic tasks or to the fields, while the slaves constituted a resource of the nobles and the middle class. The Ngada still practice a religion mixing the ancestor cult, Nature spirits, and Christianism, worshipping Gae Dewa (the god that united Dewa Zeta – the Heavens – with Nitu Sale –the Earth) and the Cross which was imported by Portuguese missionaries (Sudamardi 2014). When they die, the Ngada become ancestors, their spirits remaining in the villages by incarnating themselves in a pond, a tree, or a stone. The body of the deceased is placed in the forest (Arndt 1929). The ancestors belong to the community and are associated with festivities: offerings are made to them (buffalos, pigs, or chicken), and they are tasked with keeping evil forces away. Despite being omnipresent in Ngada villages, megaliths are rarely cited in ethnological studies, which seem to favour describing wooden representations (Erb 1988). The sculpted wooden posts, about 3 m high and surmounted by thatch umbrellas are called *ngadhu*. They symbolize the founding male ancestor, while in front of these the *bhaga*, miniature houses with thatched roofs, represent the female founding ancestor. Each of these paired representations is associated with one of the village clans, to commemorate a long-dead ancestor. The extended families are matrilocal, with women transmitting the estate (Sudamardi 2014: 72-74, 126). The ancestors protect individuals from danger and bring prosperity. To deserve that protection, the descendants must periodically make offerings and execute particular rituals (Sudamardi 2014: 156-157).

Near the *ngadhu* and the *bhaga*, megalithic constructions of raw stones raised to the sky were placed, either in isolation (*peo*) (**Fig. 9a**) or in groups (*ture*) (**Fig. 9b**). Each megalithic monument is associated

with a village clan and welcomes the spirit of an ancestor. The *peo* is the receptacle of a male ancestor and is used to attach animals sacrificed during ceremonies. The *ture*, rectangular in shape, is made of several raised rock slabs and stone tables. While the raised stone symbolizes masculinity, the flat stone is associated with femininity. This structure is a funerary marker for the clan's warriors. In order to be assured of the ancestor's protection, offerings must be placed on the flat surface (Sudamardi 2014: 85-86, 142).

Fig. 9 – Photographs of megalithic monuments of the Ngada: a. Peo of the village of Tololela; b. Ture of the village of Bena (Photos: T. Steimer-Herbet).

In addition to their role as the hosting place of the ancestors, the megaliths of Flores have other functions linked to its colonial past. These stones, where every year people come to recite the names of the ancestors, affirm an identity, a right to the land, a power, and an authority. Megaliths play an active part in everyday life. The village organization depends on particular placement within the landscape, and reflects Ngada identity, clan genealogy, and the authority of founding clans (Sudamardi 2014: 132).

Excavations at Warloka showed that the island of Flores was not isolated. On the contrary, it was part of commercial trade networks between Asia and Europe as early as the 10th century. According to the material remains found in Warloka tombs, the local communities exchanged spices (cloves, nutmeg, pepper), beeswax, and sandalwood in exchange for precious objects brought by Chinese, Vietnamese, or Thailander merchants (Sudamardi 2014).

The island of Flores was the theatre of many incursions, some friendly, some less so, by the Majapahit, the Bima and Goa Sultanates, the Portuguese, and the Dutch. While the island was not central to commercial activities in the archipelago, it was nonetheless known for its natural resources of sulphur, beeswax, honey, sandalwood, and spices. In 1618, the local Solor authorities signed a treaty with a Dutch company (Verenigde Oostindische-Dutch Company – VOC) forcing local rulers to sell all their produce to them and provide them with slaves. The latter were put to work in the pepper and sugar plantations of Java and Sumatra (Erb 1988: 99; Sudarmadi 2014: 109-112). Sold to the Dutch by the Portuguese in 1854 (Lisbon treaty), the Ngada region resisted invasion until 1907. The arrival of Catholic priests authorized to convert the people of Flores and to force them to leave their traditional villages for the Lowlands quickly put an end to the society. Modern history has not been much kinder to this territory. In 1942, the Japanese took control of the island, then following liberation, the brand new Indonesian state aimed to impose an image of modernity, deeming the megalithic societies archaic and relegating them to folklore. While the country's official motto is 'unity in diversity', kinship

links, matrimonial practices, and the religious and economical life of the Flores communities are marginalized. In the sixties and seventies, the government gave villagers the opportunity to leave their traditional houses to be closer to the asphalt road, and to live in modern accommodation (Sudamardi 2014: 118).

5. Conclusion

Our knowledge of the relationships established between the European and Asian merchants and the tribes of Nias, Samosir (Batak) and Flores (Ngada) are based on treaties and trade deals (slaves and local ressources). Ethnographic studies and our fieldwork observations complete the picture and reinforce the idea that megalithism in these islands was born – or at least rooted its larger expressions – in the interaction between local communities providing natural resources and the state-based societies that so needed them.

The power of tribal chiefs was built up and brought down depending on transactions and economic interests. The appearances and disappearances of megaliths are directly correlated to a mercantile logic. These communities were fragile, as proved by Lore Lindu in Sulawesi, where a climatic change ended megalithism, in Flores where missionaries and modernity dispersed the populations and brought ancestral traditions to an end, or in Nias where natural patchouli was replaced by an artificial product, diminishing trade and therefore the need for megalithic expression. Flexibility in adaptation was therefore the key to the longevity of traditions, as was the case with the Batak for example, where tribes adapted to economic constraints and favoured the progression of individual status through monetary wealth, therefore opening development perspectives thanks to the major diaspora that took place among the population.

Megaliths bear witness to lavish times, when the state entities of the first Hindu-Buddhist kingdoms, as well as the European and Asian merchants, were able to develop thanks to commercial trade with local communities. The omnipresence of these monuments in valleys, mountains, and plateaus of all habited islands is exceptional, and demonstrates the vast diversity of contacts and exchanges between individuals. For these societies based on oral tradition, stone was a way to express oneself in at least five different symbolic areas: the ancestor cult, prosperity, land legitimacy, identity, and social rank: five areas essential to the social order, and for which megalithism acted as a transmission and preservation agent in a durable manner.

Translated from French
by Claudine Abegg

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Ron ADAMS, Guillaume ROBIN

Menhirs of Tana Toraja (Indonesia): a preliminary ethnoarchaeological assessment

Abstract: Stone remains a prominent feature of the natural and cultural landscape of Tana Toraja, Indonesia, where outcropping basalt and limestone karst formations create a dramatic backdrop. In this context, the manipulation of stone is a significant aspect of ancient cultural traditions that persist to the present day. The quarrying and erection of large menhirs are part of this stoneworking tradition that also includes the construction of rock-cut tombs and placement of smaller freestanding stone monuments. Menhirs are quarried, transported, and erected on the occasion of the largest type of funeral feast held in Tana Toraja, which can entail complex ritual practices, up to over a thousand guests, and the slaughter of what can be a staggering number of water buffaloes and pigs over a period lasting several days. In this paper, we provide an overview of the practice of erecting stone menhirs in Tana Toraja and its social significance. Preliminary ethnoarchaeological documentation of Torajan menhirs provides insights into the methods, logistics, and social dynamics associated with this megalithic tradition. The quarrying and shaping of menhirs is done by specialized stoneworkers, while the transport and erection of the menhirs involves a larger labour force. The monumental plazas in which the menhirs are placed serve to commemorate the deceased ancestors and mark the prominence and wealth of the family groups with which they are associated. These spaces, enshrined with megaliths, also become venues for important components of ritual feasts. From a broader perspective, the enduring significance of these monuments is inseparable from the elaborate feasts in which they are embedded and for which they become an everlasting symbol. The link between the menhirs and the social entanglements of large feasts is consistent with megalithic practices observed elsewhere in the Indonesian archipelago, where monumental construction is often tied to elaborate ritual undertakings.

Keywords: *menhirs, ethnoarchaeology, feasting, Indonesia*

Menhir building in Tana Toraja is one of many megalithic traditions found throughout the Indonesian archipelago (**Fig. 1**). The megalithic phenomenon in the region being recent (a few centuries old) and in many cases still living (as opposed to prehistoric, as in Europe), this tradition in Indonesia and elsewhere in Southeast Asia spans various types of societies (from kingdoms to small scale non-state societies) and has various forms (menhirs, chambered tombs, statues, etc.) (Gallay 2006; Steimer-Herbet 2018). In Tana Toraja, the practice of erecting menhirs is part of a stone-working phenomenon that also includes smaller, free-standing stones and rock-cut tombs. These practices are embedded in traditional ritual feasts and are key to understanding Torajan cosmological concepts, kinship, and social order. In this paper, we present an exploratory overview of the Torajan menhir tradition and examine links between menhirs and feasting, in the context of the complex and traditional sociopolitical dynamics of the area.

Menhirs and other stone constructions comprise an anthropogenic lithic landscape within a natural setting where stone figures prominently. The highlands of Tana Toraja contain mountain ranges that took shape during ancient volcanic activity that occurred between 150 and 15 million years ago. The resulting creation of magmatic rocks (basalt, ryolites, and gabbros) forms the Lamasi geological complex which covers Tana Toraja and other areas of south and central Sulawesi (Polvé *et al.* 1997: 83; White *et al.* 2017: 75). Overlying this complex of igneous rock in many parts of Tana Toraja are the Makale Formation Reef Limestones, attributed to the Lower to Middle Miocene geological epochs (White *et al.* 2017: 75). The resulting geographic setting is marked by outcropping basalts and other rocks of magmatic origin and a dramatic karst topography marked by steep cliffs that typifies the landscape of the upland areas of the southern and central parts of Sulawesi (**Fig. 2**) (White *et al.* 2017: 75).

In areas of Tana Toraja where outcrops and cliff faces of suitable stone (typically basalt or similar types of igneous rock) are present, there are active traditional stoneworking practices of constructing rock-cut tombs and carving large menhir stones. Rock-cut tombs (*liang pa'*) are cut into outcrops by specialized stone workers and are part of elaborate death traditions which also include conspicuous funeral feasts (**Fig. 3**). Stone menhirs (*simbuang batu*) also correspond to Torajan funerary practices. *Simbuang batu* are erected in special ritual spaces known as *rante'* on the occasion of the largest funeral feasts held in Tana Toraja.

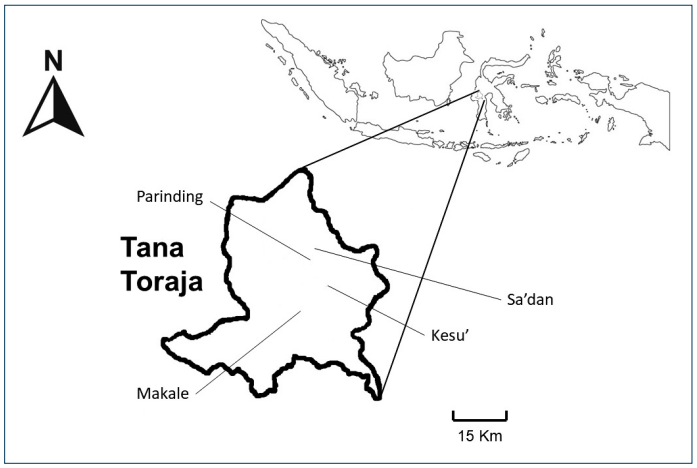

Fig. 1 – Map showing Tana Toraja and locations mentioned in the text.

These funerary practices are part of a ritual tradition in Tana Toraja that includes numerous traditional feasts where socio-ecomic and political power is negotiated, and important relationships are established and maintained. Monuments constructed from stone are the enduring markers of these events. The purpose of this paper is to provide an overview of the traditional process and methods of constructing menhirs in Tana Toraja and present observations on how these monuments are situated with the broader context of traditional ritual practices and their associated sociopolitical entanglements.

1. Previous anthropological and archaeological research in Tana Toraja

There have been myriad anthropological studies conducted in Tana Toraja over many decades (e.g., Adams 2006; Bigalke 1981, 2005; Crystal 1971, 1974a-b; de Jong 2013; Kennedy 1953; Koubi 1982,

Fig. 2 – View of landscape in Tallunglipu (northern Tana Toraja) (Photo: G. Robin).

Fig. 3 – Lokomata *liang pa*' rock-cut tomb complex (northwestern Tana Toraja) (Photo: G. Robin).

2008; Nooy-Palm 1979, 1986; Sandarupa 1997, 2016; Tsintjilonis 2000, 2007; Volkman 1985; Waterson 1986, 1993, 1995, 1997, 2009). The social and symbolic aspects of elaborate ritual practices and iconic traditional *tongkonan* kindred group houses of Tana Toraja have been a focus of many of these works, as has the impact of historical entanglements and the rise of modern tourism. The many years of social anthropological work conducted in Tana Toraja has provided rich descriptive accounts of the traditional culture and, given this long span of research, has enabled the use of a diachronic perspective when reviewing Torajan cultural traditions. In general, however, *simbuang batu* have received very limited attention in previous social anthropological research with a few exceptions (see below).

Archaeological investigations conducted within Tana Toraja have primarily consisted of ethnoarchaeological studies. Similar to the social anthropological work in the region, living ritual feasting practices and the potential insights they can provide for feasting in antiquity have been a focus of some of these investigations (see Adams 2004; Jeunesse & Denaire 2018). Ethnoarchaeological overviews of Torajan megaliths have also been conducted by Indonesian archaeologists. Akin Duli (Hasanuddin University) in particular, has provided valuable descriptive accounts of menhirs and examinations of their social and symbolic significance, as well as ethnoarchaeological studies of rock-cut tombs and older coffin burials in Tana Toraja (Duli 2015, 2018).

There have been very few well-documented ethnographic accounts of the specific elements of the process of erecting menhirs in Tana Toraja. In her extensive ethnographic study of Torajan social and religious practices Nooy-Palm (1986: 242-245) included an account of the erection of a menhir in a detailed description of the rites involved with the funeral for a prominent noble. Similarly, Crystal (1974a) devoted an entire article to the subject of Torajan menhirs in which he offered detailed descriptive accounts of the different phases associated with the practice. Importantly, these essentially historical accounts offer rare insights into megalithic practices that appear to have been altered over the course of several decades.

2. Stone monuments and living groups

As monumental constructions related to the deceased, *simbuang batu* and *liang pa*' are both linked to *tongkonan* kindred group houses. *Simbuang batu* are erected at feasting plazas known as *rante*' throughout much of Tana Toraja, and *pantunnuan* in the Makale' district of southern Tana Toraja and possibly also other areas (Crystal 1974a). The *rante*' are associated with villages of one or more related *tongkonan* houses and are the traditional location for the slaughter of water buffaloes during large funeral feasts hosted by members of the corresponding *tongkonan*. Similarly, *liang pa'* are linked to specific *tongkonan* groups and are reserved as the interment place for the deceased members of the *tongkonan*. The presence of proper *liang pa'* tombs is so important that *Tongkonan* are considered incomplete without a corresponding *liang pa'*, which have been referred to as '…the *tongkonan* of the ancestors' (Waterson 1986: 97). The *tongkonan*, *liang pa*', *simbuang batu*, wet-rice paddy fields, and garden plots constitute a Torajan cultural landscape in which the dead are ever-present in the world of the living.

As the built representations of the kindred groups forming the basis of Torajan society, the *tongkonan* houses form the nucleus of this cultural landscape (**Fig. 4**). Groups of related *tongkonan* are tied to a founding *tongkonan* and form household clusters (*tondok*) that are scattered throughout the countryside in Tana Toraja. *Tongkonan* can have associated genealogies that go back 20-30 generations, and they therefore provide a means through which individuals trace their decent, as membership in the kindred group and associated house is inherited (Waterson 1995: 196, 197; Waterson 1997: 65). Due to bilateral kinship reckoning, individuals can claim membership to many different *tongkonan*. This membership is ultimately defined and expressed by participating in *tongkonan* rituals entailing contributions of livestock to *tongkonan* feasts and assisting with the maintenance of the kindred group house and its associated rice granaries. Some wealthy members of traditional noble classes in Tana Toraja can be members of more than ten *tongkonan*, although people are generally only able to maintain an active membership in several *tongkonan* to which they have inherited membership (Adams 2001: 28).

Fig. 4 – *Tongkonan* Karuaya (central Tana Toraja) (Photo: G. Robin).

Fig. 7 – *Tadoran* stones at Sa'dan Matallo (northeastern Tana Toraja) (Photo: R. Adams).

Ritual practices related to rice fertility can also be accompanied by the placement of stones. The *mabua pare* is a village-wide ritual that is rarely held and traditionally occurs as the final stage of a sequence of rites that take place over a period of many years. It has been documented by ethnologists in the past, although it is not clear if it is currently held anywhere in Tana Toraja. The ritual was performed at night and involved the placement of a small stone within the village and a second stone at the rice field of the leader of the village. Unlike the *simbuang batu* stones, which have an obvious connection with death, the stones emplaced for the *mabua pare* are related to fertility, with the stone in the village having a male symbolic association and the stone at the rice field having a female association (Crystal 1974a: 121, 122; Kruyt 1923-1924: 335, 339).

4. Menhirs of Tana Toraja: from quarry to erection

The authors collected preliminary ethnoarchaeological data on the process of quarrying and erecting *simbuang batu* in Tana Toraja in 2017, during fieldwork that was primarily focused on the tradition of *liang pa'* rock-cut tombs. The data presented below is also derived from ethnoarchaeological fieldwork conducted by Adams in 2000 and 2001. The insights gained from this primary ethnographic data are augmented by previous documentation of menhir building by anthropologists Hetty Nooy-Palm and Eric Crystal.

The erection of a *simbuang batu* at a *rante*' occurs during the latter part of the sequence of rituals comprising a Torajan funeral feast (Nooy-Palm 1986: 244, 245). This ritual event, known in the Sa'dan area of northern Tana Toraja as *Mangriu' Batu* (pulling the stone) is the final stage of a process that can span weeks from the time the stone is quarried or retrieved whole to the time it is transported to the *rante*'.

The preparations for erecting a *simbuang batu* are part of the overall planning for a particularly important (expensive) funeral. These high-level funerals involve a lot of material preparation (gathering and building bamboo structures for the feasts, accumulating necessary livestock and other food stuffs, etc.) and are therefore planned months or years in advance. As part of the planning, a work crew is contracted to retrieve or quarry the stone. According to informant testimony in 2001 in interviews conducted by Adams, these stoneworking crews were traditionally not necessarily paid, but instead were provided with meals for each day employed cutting the stone with iron picks and hammers – if the stone was quarried (as opposed to simply retrieved as an erratic). According to current practice (2017), however, stone quarriers are paid

in cash to quarry *simbuang batu* and transport them to the *rante*'. Within the context of the overall planning, the quarry crew can be contracted from several weeks to several months prior to the funeral or perhaps longer. For example, we observed many menhirs that had been quarried, but not yet transported to the *rante*', including one menhir that had been quarried for a funeral that had not yet been scheduled. In traditional practice throughout Tana Toraja, the deceased person's living siblings and children organize the scheduling and contracting of the menhir quarrying and other aspects of a funeral, as well as sponsoring the overall costs (Adams 2001: 181).

The cost to contract a crew of stoneworkers to quarry a large *simbuang batu* for a *rante*' in the Parinding area in north-central Tana Toraja in 2017 was 20,000,000 Rupiah (approximately €1,250). This crew comprised three individuals, which is common for stoneworking crews. It is also common (more common, in fact) for these specialized stoneworkers to also be contracted to cut *liang pa*' tombs in rock faces and outcrops, which the authors observed on multiple occasions. In the case of quarrying *simbuang batu*, the process of quarrying the stones and transporting them to the *rante*' can take up to a month or longer.

On our 2017 survey of traditional stoneworking practices, we identified several *simbuang batu* quarries at small basalt outcrops in the uplands of the northwestern part of Tana Toraja. In many cases, *simbuang batu* had either been completely cut out from the quarries and were awaiting transport or had already been moved to the *rante*', as could be deciphered by the concave shape in the basalt outcrop (**Fig. 8**). The quarry locales we observed were all situated adjacent to roads, which is probably no coincidence given the current practice of transporting these stones by truck.

Although quarrying appears to be the most common method used to obtain a *simbuang batu*, there are many accounts of stones being retrieved whole for this purpose. In these cases, according to informant testimony, stones are taken from stream locations or

Fig. 8 – Menhir quarry in Deri (northwestern Tana Toraja) (Photo: G. Robin).

fields without being quarried from outcrops. Some of the large boulders at *rante*' that have a relatively smooth, waterworn appearance are likely to be examples of this type of activity. For a funeral feast in the southern part of Tana Toraja in 1968, Eric Crystal (1974a) observed the placement of *simbuang batu* at a *rante*' (in this case referred to as a *pantunnuan*) that were apparently retrieved from the landscape in this manner. None of the five stones erected for this feast measured more than 1.2 m (4 ft) long according to Crystal (1974a: 120).

There also appear to be different criteria used to determine the suitability of a stone for use as a *simbuang batu*. Crystal (1974a: 120) noted that there were two main requirements for simbuang batu stones in the area of the Makale' district in southern Tana Toraja: the stones should not be too flat in shape and they should 'ring true' when struck with a blade, signifying that they were living rocks (Crystal 1974a: 120). Informant testimony in our 2017 survey indicated that the shape of the stone was not of particular importance, and this seems confirmed by the presence of *simbuang batu* with a variety of shapes at *rante*' throughout Tana Toraja. Similarly, Nooy-Palm (1986: 267) observed that in the Sangalla area of southern Tana Toraja, stones with exceptionally irregular/unusual shapes were chosen as *simbuang batu*. In the 2017 context, we observed menhirs of various shapes and sizes, including menhirs that had been fashioned from cement and decorated with stone chips derived from the quarrying of solid stone menhirs or rock-cut tombs. However, informant testimony indicates that these menhirs are considered less prestigious than those made from solid stone.

According to informant testimony in the northern part of Tana Toraja in 2001, the specific shape of the stone is considered to be the most important characteristic of a *simbuang batu*: it should be wider at the base and taper towards the top. Hired stone-workers cut the stones to create these characteristics, and the most refined examples of this practice attain a prismatic shape.

There are multiple traditional methods used to transport stones. For large *simbuang batu*, stone hauliers use vines or rope to pull the stone, while others trail behind to push it. To facilitate forward progress, palm fronds can be placed parallel to the long axis of the stone as it is pulled. This method contrasts with what has been documented in West Sumba, Indonesia, where timber segments are placed over the ground to provide a track on which large tomb capstones and wall stones are pulled (Adams 2007).

During fieldwork in 2017, we observed a stone being prepared for manual transport by a crew of hauliers pulling with vines in the Parinding area of northwestern Tana Toraja. The menhir had been placed along the roadside after being transported to the location by truck from a quarry located approximately 10 km to the north in the Buntu Lobo area. Coiled strips of bamboo were wrapped around the stone at intervals where vines would later be attached. The coiled strips of bamboo also secured segments of wood that extended the length of the long axis of the stone. Strips of bamboo were also being prepared and placed underneath the *simbuang batu* to facilitate its movement over grass while it was pulled from its position on the roadside to a *rante'* located approximately 20 m downslope and to the west of the road (**Fig. 9**).

In the past, *simbuang batu* were pulled by men to the *rante*' for up to several kilometres from the quarry or other locations from which the stones were procured. When stones were hauled a long distance, one water buffalo would typically be slaughtered to feed those pulling the stone (Crystal 1974a: 120). For a funeral held in 1968 in the Makale' district of southern Tana Toraja, Crystal noted that five modestly-sized stones measuring about 1 m in length were carried a distance of approximately 200 m. The stones were secured in bamboo slings wrapped around poles, and each stone was carried by 30 men holding the poles. In this case, a feast involving the slaughter of several pigs was held for the hauliers when the stones arrived at the *pantunnuan* (*rante*') (Crystal 1974a: 120, 121).

Nooy-Palm (1986: 244, 245) documented the transport of a *simbuang batu* to a *rante*' in the Kesu' area of the central part of Tana Toraja in 1969. This *simbuang batu* stone was bound with bamboo and was pulled by men grasping bamboo 'handles'. It required 'tens of days' to move the stone to the *rante*', during which time the men performed songs intended to make the stone lighter. The hauliers

Fig. 9 – Preparing *simbuang batu* for dragging to Rante' Sirrin (northwestern Tana Toraja) (Photo: G. Robin).

Fig. 10 – Erecting *simbuang batu* at Rante' Sirrin (northwestern Tana Toraja) (Photo: G. Robin).

were reportedly given rice, buffalo, pig meat, and palm wine for their labour.

When a *simbuang batu* reaches the *rante*', there are specific steps taken to raise it upright. In the Kesu' area, this process involves a small ritual held to solicit permission from the 'spirits of the earth' (*ampu padang*) known as the *ma'tambuli padang*, for which a to *minaa* (practitioner of the traditional *aluk to dolo* religion) addresses the *ampu padang* (Nooy-Palm 1986: 244, 245). Following this rite, a hole is dug into which the stone base is inserted. The depth of the hole can vary depending upon the size of the stone. Nooy-Palm (1986: 244) noted that the hole for a *simbuang batu* placed at a *rante*' in the Kesu' area was 2 m deep. The erection of a *simbaung batu* we observed in 2017 in the Parinding area of northwestern Tana Toraja required a hole dug to a depth of approximately 1 m for a stone measuring approximately 4 m long.

According to informant testimony, certain items must be placed in the hole prior to inserting the *simbuang batu*, although there are differing accounts, most likely based on local traditions concerning what these items should be. According to informant testimony in the Sa'dan area of northern Tana Toraja in 2001, a fragment of a cooking wok, beads, and a beaded ornament should be placed in the hole. According to informant testimony gathered in 2017 referring to Torajan traditional practice more generally, chicken blood and a piece of copper were placed in the hole prior to the placement of the *simbuang batu*.

We observed the placement of a *simbuang batu* in 2017 in the Parinding area of northern Tana Toraja several days after the stone was transported to the *rante*' by truck (see above). Approximately 125 people were present to place the stone upright; it measured approximately 4 m long and 0.75 m in diameter. Due to the size of the stone, a temporary bamboo structure was built around the *simbuang batu*. Rope, chains, and sheaves were also used to lift the stone into place (**Fig. 10**). Those participating in this activity were members of the deceased person's family, as well as friends and others in the local community. Contrary to the traditional practice noted above, no items were placed in the hole prior to implanting the stone into the ground. Also, unlike traditional practice, concrete was poured around the *simbuang batu* to stabilize its base. This extra measure is probably attributable to the relatively shallow depth of the hole (1 m) in relation to the length of the stone (4 m). Before the use of concrete became a normal part of erecting *simbuang batu*, it is likely that deeper holes were necessary for stabilizing the stones, more in line with the 2 m deep holes that Nooy-Palm (1986: 244) noted for *simbuang batu* erected in the Kesu' area. Similarly, the use of sheaves or pulleys appears to be a more recent practice as their use was not documented in accounts of menhir erection described by Nooy-Palm or Crystal.

Prior to the erection of the *simbuang batu* in Parinding in 2017, two water buffaloes and one pig were slaughtered. A *ma' bado* ceremony was also performed by a group of approximately 20 men (family members and friends of the deceased) who were standing in a circle while singing and chanting in honour of the deceased. After the *simbuang batu* was erected, meat from the water buffaloes and pigs slaughtered earlier in the day were served at a feast held at the village of the deceased's family.

According to Crystal (1974a: 121), in the southern part of Tana Toraja, once a *simbuang batu* has been placed, areca palms are traditionally planted adjacent to the stones. Nooy-Palm (1986: 266) noted that in the Kesu' area, a tree trunk was placed next to each newly erected *simbuang batu*. A tree was not planted adjacent to the *simbuang batu* that we observed being placed in 2017, although we observed that both areca palms and stouter arenga palms were occasionally present adjacent to *simbuang batu* stones throughout Tana Toraja.

The newly placed *simbuang batu* is typically one of many *simbuang batu* standing at a *rante*' that have been placed for various funerals in the past. In traditional practice, one *simbuang batu* is typically erected for each funeral feast. However, if there are no *simbuang batu* at the *rante*', then five should be placed at a single event in order to complete the requirements for the highest level of funeral (Crystal 1974a: 120).

Later in the sequence of traditional funeral rituals, the deceased person's body is transported from their village to the *rante*' and placed on a *lakkian* wooden structure. Up to several days after the body is moved to the *rante*', numerous water buffaloes are

slaughtered there. Many of these water buffaloes are tethered to *simguang batu*. If there are more water buffaloes present than menhirs, some would have traditionally been tethered to bamboo stakes (Crystal 1974a: 121). In many cases, livestock is slaughtered in villages instead of the *rante*' (e.g., if the village is a long distance from its affiliated *rante*'). In the southern part of Tana Toraja, Crystal (1974a: 120) observed the slaughter of five different types of water buffaloes that were each tethered to the five *simbuang batu* erected for the funeral.

5. Discussion and conclusions

Torajan menhirs are constructed as impressive monuments to commemorate the deceased, although their function as memorials is only one aspect of their significance. As prestigious items tied to a specific class of large feasts, these monuments signify the success of the family and their ability to assemble the resources for such a large event. As Crystal (1974a: 120) noted:

'The simbuang batu *are believed to harbor neither the soul of the deceased nor the spark of life eternal. These megaliths are representative, however, of wealth (as expressed in domesticates killed) and status (tied to the length and munificence of the ceremony)'.*

Unsurprisingly, the largest *simbuang batu* are considered to have the greatest amount of prestige attached (Crystal 1974a: 122; Nooy-Palm 1986: 265). However, *simbuang batu* are just one of several different material fixtures associated with funerals that signify large labour inputs and overall lavishness. Among other essential aspects of large funerals are temporary bamboo structures built for guests. These structures are built around the perimeter of *tondok* villages and serve as the areas where different groups of guests are seated and served food and coffee or tea. Elaborately carved wooden saringan litters are also crafted and used to carry the deceased during specific phases of a funeral. The *saringan* are built to resemble *tongkonan* houses in miniature and are only used for a single funeral before being discarded. They can only be built for a funeral at which at least ten water buffaloes are slaughtered.

In addition, wooden *tau-tau* effigy statues are carved and placed in front of *liang pa*' rock-cut tombs as part of the final stage of the funeral (Nooy-Palm 1979b: 224-251). These effigy statues are the nearest equivalent to *simbuang batu* as prestige objects and signifiers of funerals for high-status individuals. *Tau-tau* are reserved for the highest-ranking nobles and are made from jackfruit wood, an extremely durable hardwood that is considered able to communicate verbally with humans (**Fig. 11**). They are only carved for funerals involving the slaughter of at least 24 water buffaloes in most areas, although in Malimbong in northern Tana Toraja, they can only be carved for a funeral at which at least 36 water buffaloes are slaughtered (Waterson 1993: 79). In modern times, due to theft, *tau-tau* have become less commonly placed in open positions in front of tombs and are instead kept within houses, tombs, or in galleries protected by locked metal fencing in front of groups of *liang pa*' rock-cut tombs.

Within the village, the most obvious testimonials to large funerals are the horns of water buffaloes slaughtered at funerals and displayed on the exterior of the *tongkonan*. *Tongkonan* can be adorned with dozens of sets of water buffalo horns which can be an indicator of the wealth and renown of *tongkonan* members who are able to amass the resources and support for these events. The water buffalo horns on the front of a *tongkonan* structure are also believed to ward off evil influences (Nooy-Palm 1986: 193).

Simbuang batu differ from these other markers of funerals in their permanence. Like the stone markers erected for other types of Torajan rituals, the permanence of *simbuang batu* is typically the most enduring vestige of these traditions. Indeed, this connection between stone monuments and ostentatious ritual practice is common among megalith-building societies in Indonesia. At the western end of the archipelago, ethnographically documented monumentality traditions among the Batak of northern Sumatra and on the island of Nias off the western coast of Sumatra are linked to feasts of merit (Barbier 1988; Beatty 1992; Feldman 1988; Sherman 1990). To the east, large stone tombs on the islands of Sumba and Flores are associated with elaborate funerary traditions (Adams 2019; Forth 2001; Hoskins 1984; Jeunesse & Denaire 2017; Schröter 1998). These monuments also attain a long-term link to feasting, as they are constructed at feasting plazas similar to the *rante*' in Tana Toraja

Fig. 11 – *Tau-tau* in Tampang Allo (southeastern Tana Toraja) (Photo: G. Robin).

(Adams & Kusumawati 2011). Archaeological data and ethnohistorical accounts indicate that these traditions most likely began during the second millennium AD (Bontatz *et al.* 2006; Steimer-Herbet 2018). The still extant megalithic traditions in West Sumba are associated with feasting locales representing centuries of tomb building (Adams 2007). Similar long-term histories probably apply to *rante*' in Tana Toraja. In this sense, *rante*' are good indicators of the prestige biographies of entire communities across Tana Toraja. Some famous *rante*' sites (e.g., Bori Kalimbuang) display dozens of very large menhirs representing generations of funerary practices and are the focus of particular renown, as well as tourist places.

Given their large size and very public orientation in the *rante*', *simbuang batu* are the most outstanding of the Torajan stone monuments and suitably so, given that funerals are the most extravagant of the Torajan feasting events. The funerals and other periodic ritual occasions bind individuals to the larger kindred groups with which they claim membership and enhance the prestige of these groups and the respective member households. Long after the perishable house structures and rice barns have deteriorated, only the stone monuments commemorating large feasts and the rock-cut tombs will remain as visual reminders of this social order.

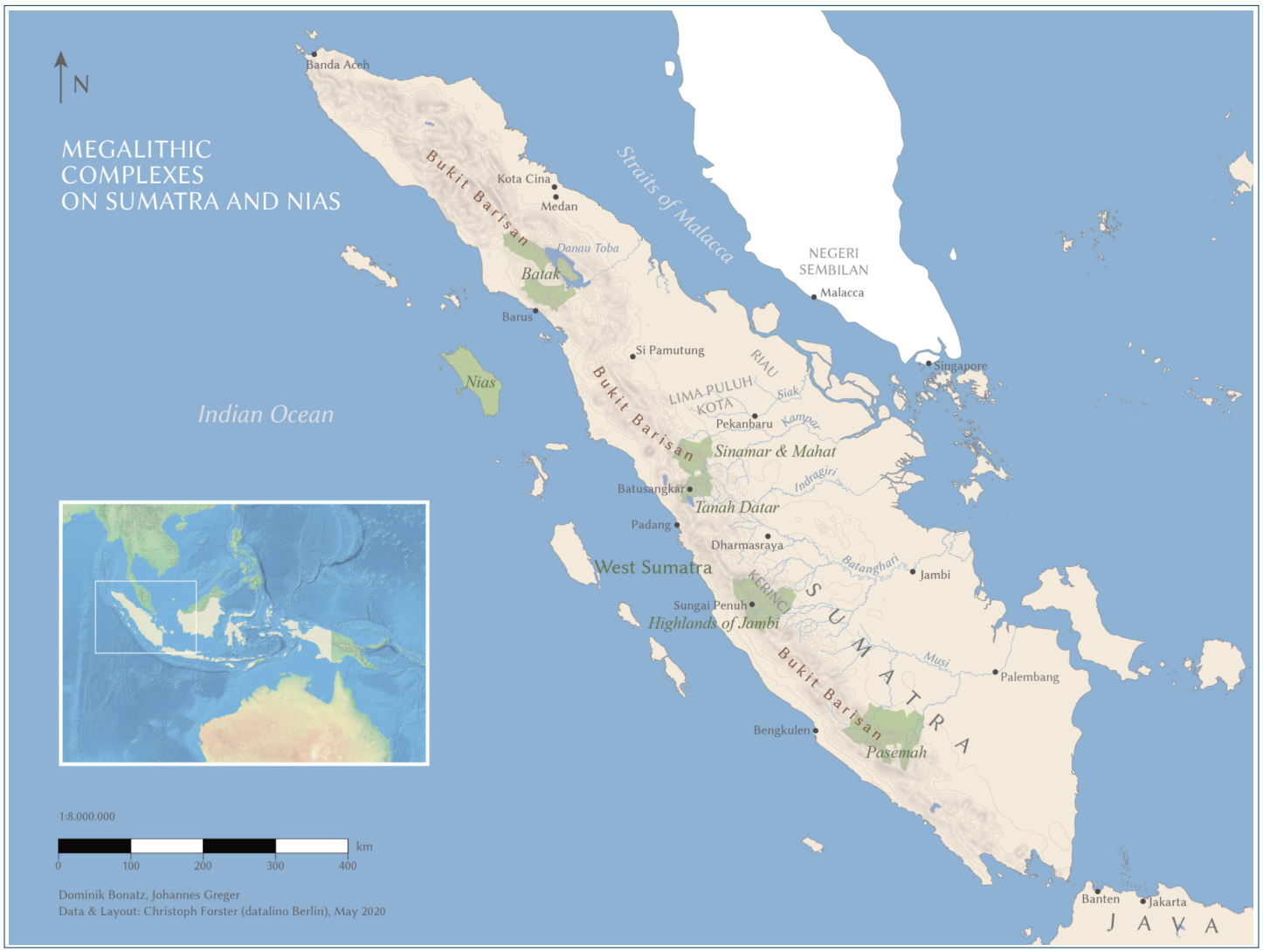

Fig. 1 – Map showing the location of megalithic complexes on Sumatra and Nias.

15

Dominik BONATZ

Megaliths on Sumatra and Nias (Indonesia): Concepts of 'value' behind the making of stone monuments

Abstract: This article aims to summarize the phenomenon of megalithism on Sumatra and the adjacent island of Nias. This is quite an ambitious task, because this area hosts the greatest number of megalithic monuments and buildings in Southeast Asia. Large megalithic complexes are found on the Pasemah plateau in South Sumatra, in the highlands of Jambi, in the homeland of the Minangkabau in West Sumatra, in the Batak lands in North Sumatra, and all across Nias. The stones, stone sculptures, and stone buildings in these regions show different formal and iconic characteristics and they date to different periods, from the early first millennium AD to the present. Given this spatial and diachronic extent, the variety of megalithic forms of expression and their different social contexts present an important field of inquiry. They allow us to better understand the meaning of stone monuments in societies and the concepts of 'value' behind their making, the essential approach of this paper.

Keywords: *megaliths, archaeology, value, Indonesia, Sumatra, Nias*

1. Research history

The megalithic remains on Sumatra (**Fig. 1**) were first documented during the early decades of the 20th century when most parts of the Indonesian archipelago were governed by the Dutch colonial regime. A couple of government officials and plantation owners became attracted by the impressive stone monuments they saw during their travels in Pasemah and Kerinci in South and West Sumatra (1). Their reports encouraged scholars, who had never been to Sumatra, to develop their diffusionist theories about the spread of megalithic cultures from Europe through North India and Southeast Asia to Polynesia. After Perry, who published his book *The Megalithic Culture of Indonesia* as early as 1918, the ethnologist Heine-Geldern became the most influential advocate of such theories (Heine-Geldern 1928). The first comprehensive study, however, that stands distinctly apart from the oversimplistic approaches of these scholars was van der Hoop's survey of the megalithic remains on the Pasemah plateau (Hoop 1932). His book is still the most informative and complete documentation of this huge megalithic complex. Shortly after van der Hoop, Schnitger came to Sumatra and started a

(1) E.g., Bont 1922; Westenenk 1922; Witkamp 1922, all working as government officials in the Dutch East Indies. Earlier reports are rare but mentions of megalithic remains are found in Tombrink's travel report from South Sumatra (Tombrink 1870) and Modigliani's travel report from Nias (Modigliani 1890).

series of archaeological surveys and excavations in different parts of the island and on Nias. His book, *Forgotten Kingdoms in Sumatra*, was published in 1939. It is still the only book available to readers in search of a general view of remains from the island's early past, including the megalithic remains.

Schnitger, who was born in Austria, never joined the Netherlands Indies Archaeological Service or the Batavian Society for Arts and Sciences. This, perhaps, gave him the freedom to follow his own archaeological interests. He also made important contributions to the documentation of the megaliths (Schnitger 1939-1942, 1941-1942), an area of study that was nearly completely abandoned after him, when other archaeologists and art historians focused on the monuments from the Buddhist and Hindu kingdoms in Sumatra and thus gave prominence to a period that was labelled the 'Classical Era' of Indonesian history. Only in the 1970s, and long after Indonesia had become an independent state, did Indonesian archaeologists from the National Research Center for Archaeology resume work in those regions of Sumatra that were known for their important megalithic remains. Still influenced by the paradigms of colonial archaeology, their approaches often followed the strict division between 'Classical Era' and 'Prehistoric' archaeology. All megaliths were categorically assigned to prehistory and dates were proposed that made them 3,000 to 4,000 years old. Even such academic authorities as Haris Sukendar, the doyen of megalithic research in Indonesia, postulated a very old age for the megalithic cultures, without any scientific evidence (e.g., Sukendar 1980, 1983, 1997). This picture only changed after 2000, when data from excavations were critically scrutinized for chronological conclusions and it became more and more clear in academic circles that the so-called megalithic cultures were contemporaneous with the development of Hindu-Buddhistic and even early Islamic political entities in other parts of the archipelago. An important contribution in this direction was the long-term archaeological project in the highlands of Sumatra conducted under the direction of the author and in cooperation with the Indonesian National Research Center for Archaeology (Puslit Arkenas) from 2003 to 2012 (e.g., Bonatz 2006, 2012, 2019; Bonatz *et al.* 2006). Since then, the archaeology of megaliths on Sumatra and Nias has made considerable progress, including systematic documentation by Indonesian archaeologists, which, however, are published mostly in the Indonesian language and are hardly accessible outside of Indonesia (e.g., Tri Wurjani 2013; Rangkuti 2017) (2). Further research is needed to solve chronological questions and to understand the relationships between the megaliths and other aspects of society such as settlement forms, economies, politics, and religion.

2. The iconicity and aesthetic 'value' of the megaliths

The megaliths on Sumatra and Nias consist not only of aniconic stones or menhirs. Such monuments, obviously, are found in great number, but next to them we always find stones that are sculptured in the form of humans and animals or that are carved with ornamental and figurative decorations. In Pasemah, for example, impressive statues are made from huge andesite stone blocks. They show men and women, often in combination with their children and with animals such as elephants, buffalos, and wild boars, which they try to dominate (**Fig. 2a-b, d**). These images stand side by side with other monuments, like large mortars on which fantastic scenes are carved (**Fig. 2c**), flat and upright stone formations, dolmens, and subterranean stone cist graves with colourful paintings on their inner walls (**Fig. 3**) (3).

(2) In this respect, the author has launched a database project to collect all available data concerning the megaliths on Sumatra and Nias and to make them accessible online. The project is funded by the German Research Foundation (DFG) and based at the Freie Universität Berlin. A useful overview of the megalithic complexes in the Indonesian Archipelago, including Sumatra and Nias, has already been published by Steimer-Herbet (2018); another has been recently published by the author (Bonatz 2021).
(3) There are hundreds of different statues and reliefs on stones scattered over 25 sites in the Pasemah region. For more examples, see Hoop 1932; Steimer-Herbet 2018 and Bonatz 2021: figs. 6-21. Very well illustrated with pictures and drawings is the beautiful book edited by Rangkuti (2017), which unfortunately is not available outside of Indonesia.

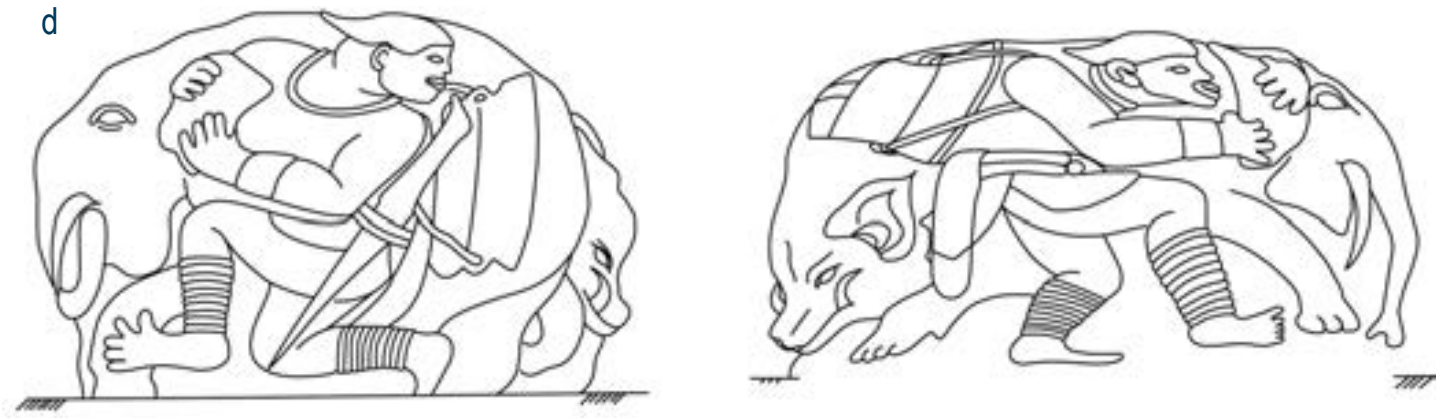

Fig. 2 – a. Statue in Pulau Panggung, Pasemah. A man tries to force an elephant to its knees while he holds two children firmly under his arms; b. Statue in Sinjar Bulan, Pasemah. A squatting woman wearing a long robe and a precious necklace; c. Large mortar in Pulau Panggung, Pasemah. The relief depicts a giant snake attacking women (Photos: J. Greger); d. Schematic drawing of the *batu gaja* ('elephant stone') from Kota Raya Lembak, Pasemah. H: 1.25 m, L: 2.06 m (Drawing: L. Wolff-Heger after Rangkuti 2017: 67, KTL 1).

Fig. 3 – Wall painting showing a monster or tiger in a cist grave in Kota Raya, Pasemah (Photo: D. Bonatz).

Fig. 4 – Megalith in Dusun Tuo, Pratin Tuo region, highlands of Jambi. The decorations consist of cylindrical circles on the long sides, a row of anthropomorphic figures on the top, and a human face at one end of the stone (Photo: D. Bonatz).

In contrast, in the highlands of Jambi, the megaliths are always erected as single monuments. They have a conical or long cylindrical shape and lie flat on the ground. Twenty-one of these exceptional stone monuments have been documented in the region (Bonatz 2012, 2019; Bonatz *et al.* 2006), and most of them bear decorations in the form of floral and geometric patterns, human faces, or full anthropomorphic figures (**Fig. 4**).

Further north, in the Minangkabau highlands of West Sumatra, cluster hundreds of megaliths in the two small adjacent valleys of Mahat and Sinamar (Miksic 2004; Tri Wurjani 2013; Bonatz 2019). The stones have a pillar shape with a curved upper end (**Figs. 5** and **6**). Their height varies from less than 1 m up to 4.5 m. Only a small percentage show carved decoration (e.g., **Fig. 6a**). These, however, display an interesting combination of floral and geometric motifs, most of which seem to allude to nature symbolism (Bonatz 2019). Very few stones bear a face with headgear (**Fig. 6c**). This evidence is striking, because it indicates that these latter megaliths were perceived as anthropomorphic representations, a meaning that can thus be assigned to all other stones with rounded, head-like ends.

Finally, the Batak lands of North Sumatra have two distinct types of sculptured stone monuments. One type is large sarcophagi containing the bones of the ancient rajas and their families (**Fig. 7a**). The fronts of their heavy lids show the monumental head of a mythological creature nowadays called *singa*. Under the head of the *singa*, that is, at the front of the body of the sarcophagus, appears a squatting, usually male human figure. Another, usually female figure sits on the end of the sarcophagus lid. These funerary monuments with their artistically appealing sculptures are most concentrated on Samosir Island in Lake Toba and along the southern shores of the lake.

The other type of stone monument is found in the lands of the Bakpak-Batak, which stretch from the highlands west of Lake Toba as far as the west coast

Fig. 5 – Megaliths on the Bukit Domo, Mahat. The stones point towards the volcano Sago, which is situated far beyond the mountain ridge seen in the background of this picture (Photo: D. Bonatz).

Fig. 6 – a. Megalith in Tanjung Bunga, Mahat Valley; b. Megalith in Padang Tabagagk, Mahat Valley; c. Megalith with human face and triangular headgear in Ikua Labuah (Photos: A. Kissel).

of Sumatra. It represents male riders on horses, and sometimes elephants, in a very striking artistic style (**Fig. 7b**). Originally, these stone riders were placed together with figures of squatting women. Until the middle of the 19th century, nearly every ancient village must have possessed several of these sculptures, which were considered representations of the village rajas and their wives. Today, however, as highly prized items on the illicit antiquities market, most have been stolen or partly destroyed, so only a few remain in their original places (Barbier 1988, 1998).

Situated 125 km west of Sumatra, the small island of Nias is the region with the highest concentration of megaliths in the Indonesian archipelago. The stones erected in the three culturally diverse parts of the island exist in all imaginable variations: huge monoliths placed horizontally or vertically on the ground, stone tables, benches, and seats, the latter decorated with the heads of fantastic creatures called

Fig. 7 – a. Stone sarcophagus of the marga Sidaputar in Tomok, Samosir, Toba Batak; b. 'Stone rider' in Santar Jehe, Pakpak Batak (Photos: D. Bonatz).

Fig. 8 – a. Stone ensemble in Bitaha, North Nias (Photo: F. Wolter); b. Christian grave and megalithic monuments in front of a traditional house in Lalai, North Nias (Photo: D. Bonatz).

lasara, roughly worked stelae, pillars with human heads and human statues sculptured completely in the round (**Figs. 8** and **9**). As can easily be understood from the impressive group of stones in front of a single house in Bitaha (**Fig. 8a**), the visual expressions range from aniconic through semi-iconic to artistically captivating images. Some sculptured stones in this context properly appear as 'art objects'. Viewed alone, one would normally abstain from calling them megaliths. However, in the context of all the other stone monuments, the term 'megalithic culture' still applies to the specific form of cultural praxis that created and shaped such a broad variety of meaningful stone artefacts. This applies not only to the example of Nias, but also to the other regions mentioned above. Not only do the numerous stones erected in all these areas demonstrate a very serious and creative investment of time and labour, their multiformity also hints at different layers of values held by the people who made and perceived them. To approach such values from a modern scientific perspective, further inquiries must be made.

Fig. 9 – a. *Osa-osa* stone seats from Central Nias in the Museum Pusaka Nias, Gunung Sitoli (Photo: S. Haack); b. Three-headed *osa-osa* seat in Lahusa Idanöi Tae, Central Nias, used to dry the bedclothes of the family that owns this monument (Photo: D. Bonatz).

3. Time, space, and the dynamics of trade

The chronology of the megalithic complexes on Sumatra and Nias still poses many questions. However, as recent research has made clear, the idea of megalithic cultures that are more than two or three thousand years old has to be completely abandoned. A small number of radiocarbon dates from human skeletons that were buried under megalithic grave markers in Mahat and Sinamar in West Sumatra (compare **Fig. 6a, c**), suggest that these could be indeed the earliest evidence of a megalithic complex dating from around the 1st century BC to the 10th century AD, but perhaps also later (Bonatz 2019: 419-420). More reliable are the dates from excavations at two megalithic sites in the Highlands of Jambi (**Fig. 10**) that prove that these small settlement sites with megaliths were occupied from the 10th to the 14th centuries AD (Bonatz 2012: 58-60, 2019: 414; Tjoa-Bonatz 2009: 203-204). The huge megalithic complex in Pasemah also seems to have originated no earlier than the middle of the 1st millennium AD, and it could well have lasted intact until the 12th century AD (Bonatz 2019: 411). Therefore, it can be assumed that megalithic practice arises in different places during the 1st millennium AD (see also Steimer-Herbet 2018: 2, 21, 24), for reasons that will be addressed later in this article.

Megalithic traditions in North Sumatra and on Nias are even younger and persist into the present. The stone sarcophagi of the Toba-Batak mostly date from the 18th and 19th centuries AD and continue to be used today (Barbier 1998: 92-98). The stone riders of the Pakpak-Batak, however, could be distinctly older; several things suggest that they emerged in the period between the 9th and 12th centuries AD when Tamil merchants from South India were trading with this region and Indic influences became prevalent there (see below and Bonatz 2021: 83-85). It is not clear if the megalithic tradition on Nias also started around that time. The vast majority of stone monuments and sculptures there, however, are much more recent. They span the last 200 or 300 years and still form a very present element of commemoration and prestige in the

Fig. 10 – Excavated area in Pondok, Kerinci, highlands of Jambi. Postholes show the location of a house on stilts next to which a megalith was erected (now under the protective shelter in the background of this picture) (Photo: D. Bonatz).

modern society (Ziegler & Viaro 1998: 75; Hämmerle 1999: 373-375; Bonatz 2009: 67).

All in all, the appearance of different megalithic traditions in different periods and in different parts of the two islands requires explanations that go beyond the failed assumptions of diffusionism and migration theories. There are, instead, complex reasons related to the socio-economic developments in the regions in question, some of which show commonalities. One of the most important impetuses probably came from trade relations and commercial activities (Steimer-Herbet 2018).

In the second half of the 1st millennium AD, a powerful political unit, called Srivijaya and later also Melayu, arose in the eastern lowlands of Sumatra. The culture of this first state-like political system in the history of Sumatra was strongly influenced by Hindu-Buddhist beliefs and material culture expressions. Its economy, however, developed under the premise of a growing international sea trade stretching from the Persian Gulf and India to Java, the Malayan Peninsular and, most importantly, China. From the 7th to the 12th centuries AD, Srivijaya-Melayu was in fact the salient actor in the international commerce of the whole Indo-Pacific region, challenged only by the Tamil merchants and their protecting power, the Chola Empire (Miksic & Goh 2017: 289-306).

To become such a strong player in this early international sea trade, Srivijaya-Melayu profited from the natural resources obtained from the Sumatran highlands. Items such as beeswax and honey, ivory, hornbill casques, rhinoceros' horn, *gaharu* resin, and aromatics such as benzoin and camphor had a high commercial value (e.g., Wheatley 1961: 32). Gold, mined or panned on the rivers originating in the highlands of Kerinci and further north in Tanah Datar – in the land of the Minangkabau – was a primary stimulus for trade. It is obvious that the connection of the Sumatran highlands to the trade system of the Srivijaya-Melayu kingdom must have powerfully influenced the life of the indigenous highland populations. The acquisition of wealth through trade drastically changed their lifestyle and social relations. Communities that formerly lived by a mobile subsistence strategy based on gathering and hunting now developed a stronger orientation towards sedentary life because it became necessary to control territories, resources, and trade routes. Subsequently, small settlement systems with new forms of socio-political organization and centres of communication emerged. This development seems to be significant, especially for the Pasemah region and the highlands of Jambi (Manguin 2009; Bonatz 2012: 60-64).

The megaliths in this context appear as clear markers of territorial claims, group identities, and new forms of social hierarchies. Their erection most probably relates to the activities of the new local leaders in society who became eminent, wealthy, and powerful because of the increasing profit from trade relations (compare Steimer-Herbet 2018: 1). Therefore, it was primarily the political dimension of trade economies that gave rise to the first megalithic complexes in Sumatra, and it was the entanglement with historical processes in the 'Classical Era' of the Indonesian Archipelago that brought such phenomena to life.

In this connection, it is especially illuminating to review the iconography of the Pasemah megaliths. The people represented in these monumental sculptures wear heavy bead necklaces and precious metal objects like bangles and greaves (**Fig. 2a, b**). The male figures are sometimes equipped with helmets, daggers, and swords, and several carry heavy loads on their backs (**Fig. 2a, d**) [4]. The most striking object in this context is a large bronze kettledrum that can be identified in some of the representations (**Fig. 2d**) [5]. All these items apparently originated from exchange with the lowlands, and the fact that some of them are carried as loads could indicate that the people represented were actively involved in

(4) For further examples, see Hoop 1932: figs. 9-11, 39-42, 14-151; Steimer-Herbet 2018: figs. 31-33, 35.

(5) For more representations of kettledrums on the Pasemah monuments, see Caldwell 1997; Guillaud *et al.* 2009: fig. 18-3. There is an extensive discussion of the bronze kettledrums, which were originally manufactured around 500 BC to 200 AD in the area of the so-called Dongson culture in North Vietnam and from there disseminated as regalia or objects of power among various societies of the archipelago. The networks generated by trade with Dongson artefacts probably remained active until the middle and second half of the 1st millennium AD, and therefore the kettledrums depicted on the Pasemah monuments could have been brought rather late to this region (see Bellwood 1997: 272; Guillaud *et al.* 2009: fig. 18-3; Steimer-Herbet 2018: 21; Bonatz 2019: 410-411).

trade relations. In any case, there is a distinct element of prestige evoked by the regalia demonstratively shown on the Pasemah monuments and exhibited by the leading members of society, who may have sponsored the erection of such (telling) stones.

The connection between trade, wealth, power, and prestige is evident also in the explosive development of megalithism on Nias which, as stated above, started in a much more recent period. The megalithic tradition probably originated in Central Nias, from where it soon spread over other parts of the island. The reason it first appeared there, however, is the simple fact that this region became extremely rich by trading in slaves. In sources from Arabic travellers and Indian merchants from Gujarat, slaves are mentioned as the only valuable trade 'resource' from Nias (Ziegler & Viaro 1998: 35, no. 1). The slaves were hunted among the local populations and exchanged mainly for gold and copper. The commerce with humans increased from the 17th to the 19th century, when slaves from Nias were in great demand with the Islamic merchants from Aceh in North Sumatra and with the Dutch East Indian Company, the VOC. The villages along the rivers Gomo, Tae, and Susua in Central Nias were ideally placed to profit from exchanging and shipping slaves, being geographically close to the main harbour, Sömambawa [(6)]. The region rapidly grew wealthy, and the elite in the villages started to show their new wealth in a continuous series of festivities. Every feast, but especially the 'feasts of merit' called *owasa*, required the slaughter of hundreds of pigs and the erection of stone monuments: mushroom-like stone tables on which the women would dance, *osa-osa* stone seats (see **Fig. 9a**) on which the male sponsors would sit, as on thrones, during the festivities, and large pillars (*behu*) for the village rajas. As a result, the leading villages situated on small plateaus high over the

(6) For a summary of the sources and examples of quantities of slaves who were sold during this time, see Hämmerle 1999: 375-376.

Fig. 11 – Aerial view of Tetegewo, situated overlooking the Susua River. The village, which is the old seat of the marga Telambanua, was founded about 300 years ago and abandoned in the first half of the 20th century (Photo: F. Wolter).

river valleys changed their layout into proper stages for performance, filled with a mass of stone monuments in front of every house and on the terraces which led to the house of the raja's family (**Fig. 11**). In view of the impressive scenario that these villages present, Viaro (1984) coined the term 'village megalithism'. The whole village community invested its wealth in festivities accompanied by the erection of stones, which became the essential way to negotiate social relations, group identities, and competitions among the leading members of the community. Significantly, this practice consuming wealth, time, and labour declined. Most of the villages were abandoned after the prohibition of the slave trade and the region became increasingly impoverished during the early decades of the 20th century.

We can assume that the stone riders (**Fig. 7b**) in the lands of the Pakpak-Batak similarly relate to new forms of power demonstrations based on economic wealth, although in this case the phenomenon remains restricted to the highest members of society. The horses on which most of the riders are seated were already a distinct sign of prestige. They were originally unknown in Sumatra and could have come to the Batak regions only with the Tamil merchants from India. With the Indian influence, complex systems of writing also developed among the different Batak groups, but only the Pakpak-Batak adopted the practice of cremation, which did not become the usual burial practice anywhere else in the archipelago, except Hindu Bali [7].

The only region on Sumatra where contacts with the outer world and the dynamics of trade cannot be regarded as important stimuli for the development of megalithic practices are the valleys of Mahat and Sinamar in the Minangkabau highlands of West Sumatra. Here, we find large numbers of menhir-like stones (**Fig. 6a, c**) clustering in places that two Indonesian excavations have shown to be cemeteries [8]. In these cases, it seems possible that internal competition among the different groups living in a geographically very enclosed and remote environment fostered the continuous erection of megaliths (Bonatz 2019: 420-421). Apart from this, the Mahat and Sinamar megaliths are unambiguously connected to religious beliefs. Their phenomenology and their archaeological contexts invite us to reflect on the meta-physical values that societies could have ascribed to megaliths, not only here in the homelands of the Minangkabau, but also in other parts of Sumatra and beyond.

4. The ontology of stones, landscapes, and ancestors

The relationship between the various types of stones erected in the landscape and contemporary settlements in the early megalithic complexes on Sumatra is still difficult to discern. Only for the highlands of Jambi does the archaeological evidence mentioned above show that the megaliths were placed next to houses that probably formed the centre of a village community (**Fig. 10**). The stone riders and their associated female statues in the Pakpak-Batak lands originally must also have stood next to or in front of houses because surface finds (ceramics and stone tools) in a few places where such monuments have remained *in situ* indicate ancient settlement activities on these sites [9]. In Mahat and Sinamar, it can be assumed that the burial fields with megaliths were located next to village entrances. Archaeological surveys in this region have identified few of these potential settlement places, and their simultaneous development with the megalithic burial sites is not yet proven (Bonatz 2019: 420). Finally, and most striking, is the lack of any archaeological evidence of ancient settlements connected with the huge megalithic complex in Pasemah, which also includes megalithic tombs and dolmens.

Despite these uncertainties in associating places with megaliths with the living spaces of their builders, the interaction between humans and stones can be

(7) The Tamil Indian influence on the early Pakpak-Batak tribes is treated in greater detail in a forthcoming publication (Bonatz 2021: 75-85).
(8) The two sites are Bawah Parit in Mahat and Guguk Nuang in Sinamar, where archaeologists from the Indonesian National Research Center for Archaeology excavated human remains buried under the megaliths (Aziz & Siregar 1997; Tri Wurjani 2013).
(9) Personal observation.

considered an ongoing and even mutual process. Whether aniconic stone, statue, or any other type of monument, once a megalith had been erected, commemorations were performed in its presence with rituals, feasts, and additions of new stones. During this long-lasting process, the megaliths became the focus of deference to and veneration of the ancestors, of remembering their achievements as individual personalities or as a collective group, and consequently a durable sign of the trait d'union between the living and the dead. The power of the ancestor shifts between being protective, fertility giving, and being frightening. The beliefs in such powers are still prevalent, for example in the respect with which the Batak and the people on Nias approach the stones of their ancestors. Offerings are given to them and other provisions are made to avoid provoking their anger.

The stones that convey the memory of the ancestors are an integral component for shaping the landscape in the sense of transcendent social communications and communications with nature. The primary impetus to erect the megaliths in Mahat and Sinamar, for example, was the death of a community member. The megalith marked the burial site and visually confirmed that this individual had found his place among the ancestors of the community. Yet, the megaliths also seem to have functioned as the physical extension of the ancestor's spiritual powers. They incorporate the idea of a human figure (see above) and, with their curved end, they all point in the same direction, towards the most prominent volcano in the region, the Gunung Sago. This volcano cannot be viewed from the bottom of the Mahat valley because its silhouette is hidden behind the high mountain ridge that completely encloses the valley (**Fig. 5**). Nevertheless, the thousands of megaliths in Mahat that all face its direction demonstrate that the volcano was perceived as a powerful natural force with a strong religious aura. Although the spiritual beliefs of the ancient people are unknown to us, it can be imagined that the megaliths were an important means to communicate with the volcano, to absorb its fertility and life-giving powers, and to pass these powers to the ancestors who would give them back to the community. In the same sense, the floral and geometric motifs on some of the megaliths (e.g., **Fig. 6a**) can be interpreted as symbols of nature that carry the idea of life and fertility (see Bonatz 2019: 417-418). All in all, the circle of life, death, and nature is deeply embedded in the physical appearance of the megaliths and confers an aesthetic value that is symbolic and metaphysical at the same time.

Similar criteria apply to the megaliths in the highlands of Jambi and in Pasemah, although the primary purpose of their erection was different from the funerary function of the stones in Mahat and Sinamar. However, they too form an integral part of the spiritualized and sacralized landscape, interacting with the natural surroundings and manifesting a timeless consciousness of being inside and outside of the physical boundaries of human life. The megaliths in more recent social and environmental contexts, especially on Nias, change this perspective in that they act mainly within the village spaces. They connect the private sphere of the family houses with the public sphere of the village community. They are omnipresent and create a genealogical and collective element of memory for every individual living in the village. Performances during festivities and rituals help to refresh this memory and enact the spiritual relationships with some of the megaliths, but apart from that, they are quite practical objects, used and rather randomly perceived during daily activities (**Fig. 9b**).

The multi-layered values of the megalithic monuments made it possible for megalithic traditions to be transformed into modern monumental practices. On Nias, Christian graves now occupy the same spaces as the old megaliths, that is, in front of the houses, where they sometimes stand next to the stones of the ancestors (**Fig. 8b**). Among the Christianized Toba-Batak, collective tombs made of cement and colourful tiles fulfill the same function as the stone sarcophagi and stone vats that contained the human bones of the deceased members of a noble family clan (**Fig. 12a**). And in Tanah Datar, in the heartland of the Minangkabau, the Islamic tombstones have exactly the same shape as the megaliths in the adjacent valleys of Sinemar and Mahat (**Fig. 12b**). The Islamic tomb-stones no longer point towards the nearest prominent volcano, but towards Mecca. New religious provisions have caused this change in the orientation of the stones; this indicates that the spiritual bonds between the monuments and their surrounding landscape

Fig. 12 – a. Christian collective tomb called *tugu* on Samosir Island, Toba-Batak; b. Islamic graves on the royal cemetery ground in Saruaso, Tanah Datar, 18th-20th century (Photos: D. Bonatz).

have lost meaning. The modern monuments still demonstrate a large investment in economic resources, because their erection and the accompanying ceremonies can be very expensive. They are still the focus of collective rituals and commemoration practices, and they can achieve a high political value for the elite class. Yet, several other aspects of the older megalithic tradition are no longer prevalent. The time-consuming and labour-intensive transportation and construction of the megalithic monuments, their high degree of artistic imagination, their metaphysical and spiritual properties – all these aspects seem to be bound to the past.

5. Conclusions: concepts of 'value' behind the making of megaliths in Sumatra and Nias

In archaeology, 'value' is increasingly central to discussions about interpretative reconstructions of the past (e.g., Mathers *et al.* 2005; Lafrenz Samuels 2008; Crook 2018). While the term, generally, has been taken to mean moral ideas, general conceptions or orientations towards the world and thus has many different uses (Miller 2008), value with regard to material heritage mainly determines the significance of an object in society. As Marx stated, value '*does not stalk about with a label describing what it is. It is value, rather, that converts every product into a social hieroglyphic*' (Marx 1995: 45).

Megaliths, indeed, can be taken as hieroglyphics for reconstructing past societies. Especially in the case of the megalithic heritage in Sumatra and Nias, value is implicated in so many aspects of megalithic practices that it can be used as an analytic to assess the significance of a multi-faced social hieroglyphic. It starts with the material value of the stone monument. The efforts to quarry, transport and sculpt the stone transform the material value into a socially meaningful investment of time and labour. The material value can even be measured in the economic investments, the prizes of the feasts which accompany the erection of a megalith, for which more recent ethnographic examples provide quantifiable face values (e.g., numbers of buffalos and pigs slaughtered during the feasts; see also the contribution of R. Adams & Robin in this volume, p. 307). Then, it continues with the social value of the monument that, despite its often-individual assignment to a certain living person or ancestor, always conveys the interaction of a group of people. The actual social value of the process of stone erection lays the foundation for the enduring social memory that can be considered as the most important aspect of the valorization of the stone monument. Here, the actual physical or archaeologically reconstructed context of the megalith or a group of megaliths is central to its interpretation because it shows the extent to which people placed value on the visibility and accessibility of the monuments.

Apart from these aspects, which, probably, can be located in every society with megalithic practices, there are some aspects specific to the region under discussion. Striking, for example, is the aesthetic value assigned to stone monuments which are carved or sculptured. Often, they stand next to aniconic stone monuments, thus there was a concern for competitive levels of communication, not only in terms of size but also in the efficacy of images. In this context, the multi-modality of many megaliths enforces their value in the sense of their increasing significance. As they were apparently believed to interact within the spheres of the living, the dead and nature, and as they combine past memories with future provisions and occasionally stand for territoriality, fertility or protection, their effective values can be aligned with the significance of politics, metaphysic, magic or religious.

Furthermore, the megalithic heritage of Sumatra and Nias stands for the shifting values people place on monuments. Apart from the complete abandonment of megalithic practices due to demographic, political or climatic shifts, instances were discussed within this paper in which the megalithic tradition was transformed into new systems of beliefs and their materializations. The modern Islamic tombstones in the Minangkabau regions and the Christian graves in the Batak lands and in Nias all convey, in a certain way, the megalithic tradition. However, their actual values are reduced to only few of those of the older stones. None of these modern monuments reaches the full complexity of material, social, aesthetic and symbolic values of the megaliths of the past. This conclusion may also be adduced as

an argument as to why it is appropriate to use the term 'megalith' in a discourse on cultural heritage. Although the discussion in this article has shown how arbitrary the designation of a stone monument as megalith sometimes can be, the term nevertheless has the analytic quality to incorporate all the facets of value which makes a stone or a group of stones into an ontologically outstanding monument. In this regard, concepts of value are extremely useful for the definition of megalithic practices and traditions in a regional as well as a global perspective.

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Christian JEUNESSE

The social context of megalithic practice: an ethnoarchaeological approach. What the case of the Indonesian island of Sumba teaches us

Abstract: The island of Sumba (Indonesia) is the last place in the world where people still build megalithic graves. The island shows a quite homogenous traditional material culture, but two clearly differentiated socio-political systems: on one hand, segmented, egalitarian, tribe-like societies, on the other, stratified chiefdoms, both of which built megalithic tombs. It is thus an ideal place in which to study the social and political backgrounds of the megalithic practice. Each types of society had its own way of dealing with megaliths: in the egalitarian community, small or medium-sized, poorly decorated monuments sheltered a funeral population including several generations; in the stratified society, a greater variability of sizes and monumental, richly-decorated 'royal' dolmens were built for just few deceased individuals (often only the royal couple). The examination of current changes, which tend to attenuate differences while at the same time creating conditions favourable to the emergence of new cleavages, offers us a valuable opportunity to observe 'live' how a megalithic system adapts to changing social and political conditions, since the construction of megalithic tombs remains a privileged medium for the expression of identities. Having characterized the 'Sumbanese' model, we attempt to show how it might refine our view of European Neolithic megalithic practices, notably by encouraging the development of new research projects inspired by the data provided by social anthropology.

Keywords: *ethnoarchaeology, Sumba, megaliths, social organization, tribe, chiefdom, elite graves*

Fig. 1 – Location of the island of Sumba within the Southeast Asian area.

1. Introduction

The island of Sumba is part of the string of small Sunda islands that occupy the southeastern part of the Indonesian archipelago (**Fig. 1**). It was first selected because it is the last place in the world where societies that have remained largely faithful to the traditions of the hill tribes of Southeast Asia still routinely build dolmen-like megalithic monuments for 'collective' burials, i.e., containing the remains of individuals from several generations inhumed successively. This is a world in transformation, but one in which village tribal societies have preserved very beautiful remnants of their past splendour, maintaining complex networks and avoiding relationships with contemporary Indonesian society. Among the reasons for this preservation of the traditional way of life are the lack of mineral resources, a poor development of tourism infrastructure, but also the fact that the Dutch colonial power only took full control of the island at a late stage, in the first two decades of the 20th century.

Several ethnoarchaeological projects have been pursued since 2015, some of which are still ongoing. These have resulted in seven publications: a general presentation of the cultural context with a comparison with the Toraja of the island of Sulawesi (Jeunesse 2016a); a contribution on the ethnoarchaeozoology of feasting (Jeunesse & Denaire 2017); two works devoted to the significance of Sumbanese megalithic architecture (Jeunesse 2021; Bec Drelon & Jeunesse, this volume, p. 365); two articles dedicated to the question of the collective tomb (Jeunesse & Denaire 2018; Jeunesse *et al.* 2021). Finally, the issue of social background was addressed in an article (Wunderlich 2019) which was the first in which the Sumbanese actualist reference model was mobilized in a study aiming at a better understanding of the forms of social organization in the Late Prehistory of Europe. This work benefits greatly from the research of R. Adams, a pioneer of Sumbanese ethnoarchaeology (Adams 2007, 2009, 2010, 2016; Adams & Kusumawati 2011). If the island of Sumba lends itself particularly well to an analysis of the social background of megalithic practice, it is because this practice is still very much alive there today, but also because of what can be observed, as we will detail below, is not one but two forms of traditional social organization, which opens up the possibility of approaching the question from a comparative perspective.

2. A tropical island in the Indonesian archipelago

About the size of Corsica, the island of Sumba has 24 different ethnic groups speaking nine languages (all belonging to the Austronesian language family), some of which are subdivided into several dialects (**Fig. 2a, b**). Its ethnological coverage is still very incomplete, with a relatively well-explored area in the west and a large eastern half where only one ethnic group has been studied in depth (**Fig. 2c**).

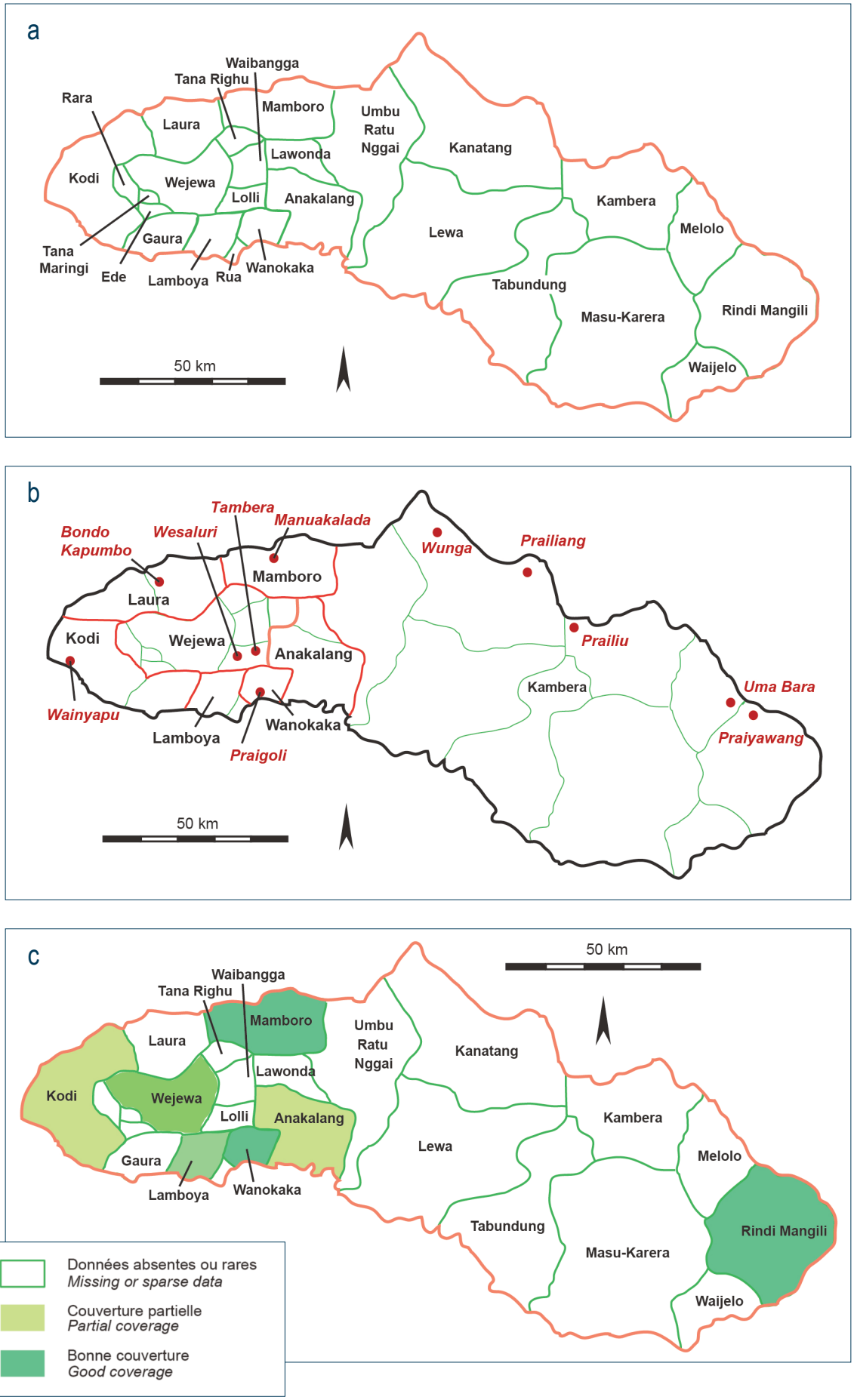

Fig. 2 – a. Map of the administrative districts of the island of Sumba, the boundaries of which roughly reproduce the former boundaries between ethnic groups; b. Distribution of languages and location of the main villages mentioned (in red); c. Intensity of ethnographic coverage.

Our observations covered several ethnic groups, the main one being the Lolli, located in the centre of the western half of the island. Since there is no 'scientific' map of ethnic distribution, we must use the current administrative division into districts, which, as we have had repeatedly confirmed in our fieldwork, reflects fairly accurately the former ethnic boundaries.

One of the island's assets is the at least partial preservation of the animist religious background (about 30% of the population, the numerically dominant religion being Christianity). Known as *marapu*, the local religion is part of the so-called 'hierarchical' or 'transcendental' animism typical of the non-state rice-growing societies of Southeast Asia (Århem 2016). The relationship with the spirits of the ancestors, intercessors between humans and gods, and the practice of sacrifice occupy a central position (**Fig. 3**). Domestic animals (horse, buffalo, pig, chicken, dog) are bred for exclusively ceremonial purposes and considered as ritual goods, common property, within the lineage of the living and the spirits of the ancestors (Jeunesse & Denaire 2017). Funerals are the scene of often spectacular slaughter, mainly to provide the livestock that the ancestor will need to hold his rank in the world of the dead. Animism is primarily present in rural areas. There are, therefore, largely intact traditional cultural poles, combining a 'tribal' social structure, the Marapu religion, the use of the vernacular language (Indonesian acting as the language of communication), megalithic practice and burial in collective graves.

Fig. 3 – Reading of the entrails of a chicken by a traditional priest dialoguing with the spirits of the ancestors. Village of Wesaluri (Lolli) (Photo: C. Jeunesse).

The construction of megalithic tombs remains very common (probably more than a hundred each year on the island), especially in the egalitarian societies of the west, where very high concentrations of dolmens can be observed, e.g., up to about 1400 for the Kodi village of Wainyapu alone. Although they also in the rice fields or near grazing areas, dolmens are mostly set up within the villages (**Fig. 4a**), in front of the origin houses (or ancestor's houses) of the lineages. The spatial configuration comprising a subcircular sacrificial area surrounded by two concentric circles comprising, respectively, of the main origin houses and the dolmens associated with them, is quite common in the villages of the western part of the island (**Fig. 4b**). The remains of the deceased are divided between the dolmen, which houses the bones, and the attic (also called the 'tower') of the ancestors' house, which serves as a dwelling for the spirits.

Social organization is based on a system of exogamous patrilineal and patrilocal clans subdivided into lineages composed of a variable number of households (**Fig. 5**). In a dualism comparable to that described by Leach (1954) for the Kachin of Burma two configurations, broadly reflecting the classic opposition proposed by Sahlins (1963) between tribe and chiefdom, exist side by side on the island: in the west, segmented societies formed of politically autonomous clans and villages; in the north and east, stratified societies formed of clan confederations led by a dominant clan in which a 'king' (*raja*) is chosen who has real political power over a territory comprising a variable number of villages

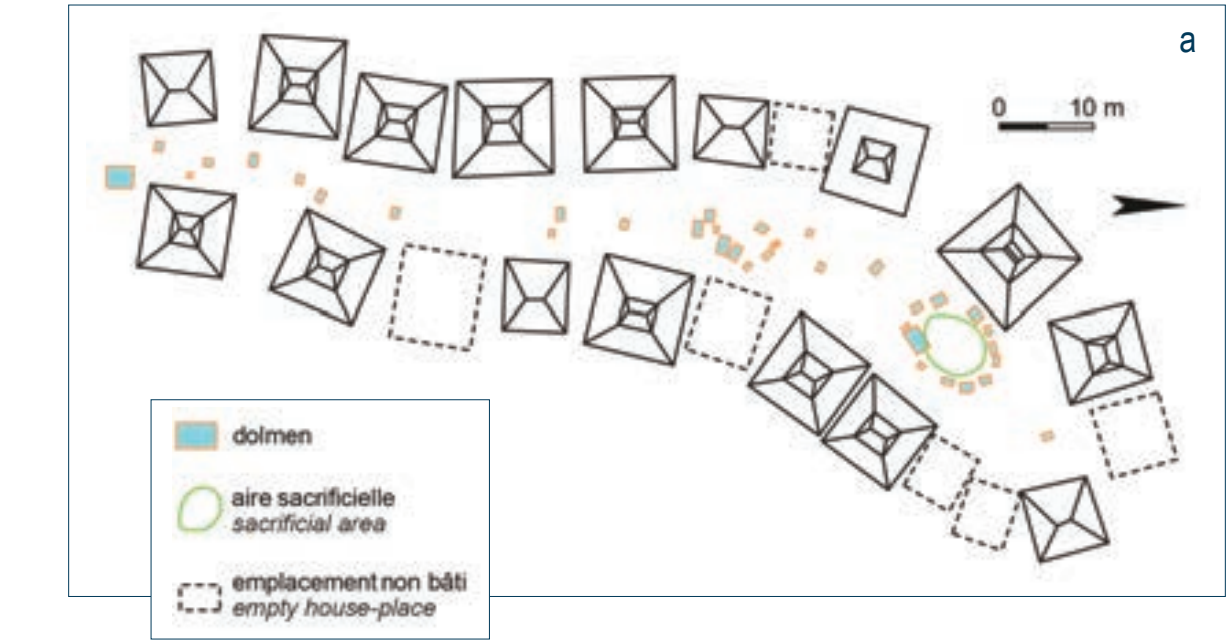

Fig. 4 – a. Map of the village of Tambera (Lolli); the dolmens are scattered throughout the village, with a particular concentration around the sacrificial area; b. Sacrificial area surrounded by a crown of dolmens and the origin houses of the lineages (Wanokaka district) (Photo: C. Jeunesse).

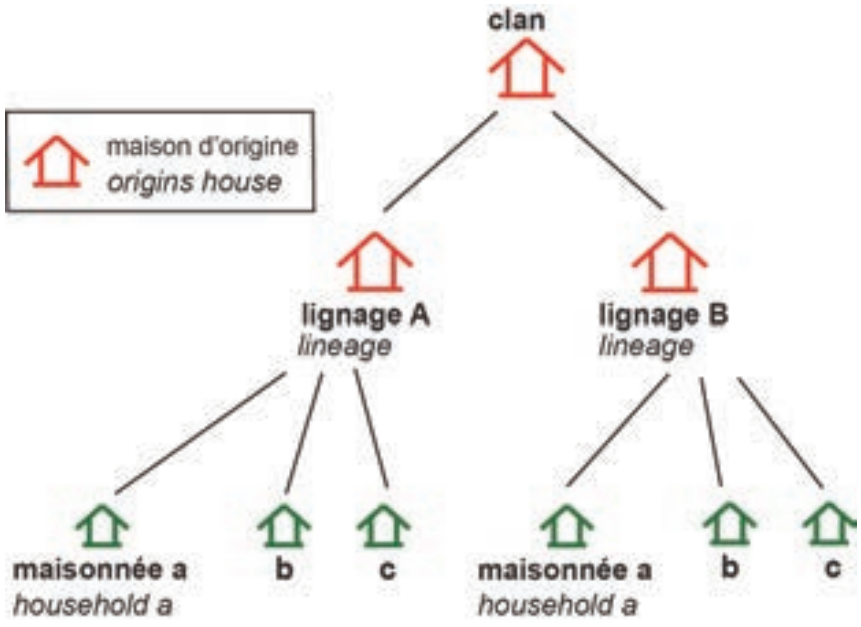

Fig. 5 – Schematic representation of the three levels of the social 'pyramid'. The relevant level for the management of dolmen 'pools' is the lineage.

(**Fig. 6**). The territories concerned are referred to as 'domains' by ethnologists who have worked in Sumba. The concentration of power in these territories is reflected in the existence of main villages created by the royal lineages, where only members of the dominant clan and their slaves can settle. Amongst others, slave craftsmen, goldsmiths and sculptors, are attached to the royal household and are responsible for making regalia and objects whose use constitutes a royal privilege. This *ex nihilo* creation of 'princely residences' was an important step in the transition to stratification. Limiting ourselves to the cases that we had the opportunity to verify on site, we can cite the examples of Praiyawang (Rindi domain), Uma Bara (Melolo) and Prailiu (Kambera). The territories of the domains vary in size. Their extent should not be confused with that of ethnic groups. The eastern districts, where most are concentrated, are mixed areas with cohabitation with segmented 'free' villages (Jeunesse 2019).

The two social systems are intersected by a superimposition of three classes (nobles, commoners and slaves) which, somewhat paradoxically, does not hinder the egalitarian functioning of segmented societies in the west. The existence of a comparable dualism, with, depending on the point of view, either cohabitation or the alternation of a democratic form and an aristocratic form within pre-state societies has been proposed for Neolithic and protohistoric Europe (Jeunesse 2017, 2018, 2019), which makes the Sumbanese example all the more valuable.

Inhabitants are grouped in villages of varying sizes managed by village councils. In segmented societies, these councils bring together the chiefs of both aristocratic and common lineage according to an egalitarian principle well summed up by the expression 'one individual, one vote'. In stratified societies, the last word always goes to the upper echelon, that of the dominant clan, often represented in villages other than the main village by one or other household. Apart from the main villages of the domains, the other villages are almost always multi-clan. One features often overlooked by experts – in Sumba and elsewhere – is the non-territorialized character of the clan, which primarily results from the migration process generated by the passage of generations. Depending on the ethnic group, the office of 'head of lineage' (which implies the occupation of the parents' house, which is at the same time the origin house) is passed on either

Fig. 6 – Sumba Island: distribution of areas in which a stratified social organization prevails. Districts with aristocratic 'domains' may comprise several such domains and at the same time contain independent villages with a segmented egalitarian social organization.

to the eldest (primogeniture) or to the youngest (ultimogeniture) son. The other male children must, once married, build their own houses and find land to cultivate. Some will settle in their home village if it is able to accommodate new homes. Others will establish new settlements and clear plots of land for cultivation on the territories controlled by their clan. Finally, others will seek permission to move to another village where they will be welcomed by a lineage belonging to their clan from a previous migration or by another clan, usually a partner clan that is a wife-giver or a wife-taker clan. The repetition of the process from generation to generation has led to a wide dispersal of clans within the ethnic territory. In the small village of Wesaluri (Lolli ethnic group), for example, by the time it had reached its maximum size (around 1960), the households were divided among six separate clans (out of a total of 16 occupied houses). The wide dispersion (over hundreds of km^2 for the largest ethnic groups) of burials belonging to the same clan is an important consequence of this non-territorialization.

The divides induced by ethnic and linguistic fragmentation and by the cohabitation of the two forms of social organisation contrast with a relatively uniform material culture, with a sufficient degree of homogeneity to – if one were in the context of a vanished society studied by archaeologists – group the whole island within a single archaeological culture (which would then probably have been called 'Sumbanian'). There are certainly differences, but they are secondary, similar to those that lead us, in archaeology, to subdivide a culture into regional 'styles'. Some, discussed in more detail later, are directly related to the existence of the two social substrates. Others reflect the affirmation and display of ethnic identities. As we have seen during our fieldworks, some members of the segmented societies of the west are still able to identify at first glance – mainly on the basis of the choice and stylistic treatment of motifs – the ethnic origin of an *ikat* (traditional fabric).

The two systems represented in Sumba correspond to two of the five main types of traditional social organization identified for the Southeast Asia-Melanesia domain, namely the 'band' (nomadic hunter-gatherers well represented, for example, in Borneo), the Melanesian 'big men' system, the 'tribe', the 'chiefdom' and the 'principality' (**Fig. 7**). As will be seen later, tribal-chiefdom dualism is a widespread feature within the vast set of Southeast Asian hill tribes. The practice of slavery dates back at least to the time of the first contacts with European travellers (the Portuguese, in the 16th century) and still plays a very vivid role in mentalities and political life, even though, of course, it no longer

Big man societies	**Segmentary societies** (Tribe)	**Stratified societies** (Chiefdom)	**Principalities** (State)
egalitarian	segmentary society (politically independant descent groups) class society (3 levels) «ranked acephalous societies» (Shrauwers 2016)	confederation of descent groups with a dominant DG class society (4 levels)	confederation of confederations of descent groups class society (5 levels)
achievment based society	ascribed status	ascribed status	ascribed status
Baruya Melpa *(New Guinea)*	Kodi (*Sumba*) Toraja (*Sulawesi*) Kachin (gumlao) *(Burma)* Konyak (thenkoh) *(India)*	Rindi (*Sumba*) Mamboro (*Sumba*) Kachin (gumsa) *(Burma)* Konyak (thendu) *(India)*	Makassar *(Sulawesi)* Bima *(Sumbawa)* Wajdo *(Sulawesi)* Shan (*Burma*)

Fig. 7 – The two forms of social organization represented in Sumba in their regional context (South-East Asia and Melanesia). We can see that they are interposed between the 'big men' societies and the small states constituted mainly by Muslim principalities.

has any legal basis. Slavery was very significant in the chieftaincies of the east and north, where the royal lineages could count up to several hundred slaves used as domestic and agricultural labour, as soldiers in war expeditions and as merchandise in exchanges with the Dutch or the Muslim principalities of neighbouring islands. It was much more discreet in the segmented societies of the west, being limited to a few individuals at most per household (**Fig. 8**).

3. The two forms of megalithic practice

The two types of organization, egalitarian and stratified, correspond to two very distinct types of megalithic practice, with a great abundance of poorly differentiated dolmens in segmented societies and a small number of large and richly-decorated dolmens in stratified societies, where burial in a megalith is a privilege reserved for the 'royal' clan (Jeunesse 2019). Let us now look at what, more precisely, differentiates 'egalitarian' megalithic practice from 'elite' megalithic practice.

In the segmented societies in the west, there is some variability, but it is limited in scope. The monuments range in scale from small, unadorned dolmens to medium-sized dolmens with engraved or carved decoration. At the lower end of the scale are the modestly sized dolmens, devoid of decoration and with little elaborate architecture. typical of the poorest villages in the north of the island. As can be seen from the two examples

a

Lineages	*Number of slaves*	*Number of free members*
Uma Andungu	201	24
Uma Jangga	267	54
Uma Kopi	110	12
Uma Kudu	103	19
Uma Penji	478	12
Uma Wara	39	23
Sum	1198	134

b

East Weyewa district
(573 households) :
(descendants of -)

125 nobles	25%
379 commoners	67%
54 slaves	9%
15 priests	2%
Free : 524	Slaves : 54

Fig. 8 – Numbers of slave descendants in two Sumbanese societies studied in the mid-20th century: a. Royal clan of the Rindi domain (stratified society) (from Forth 1981: Appendix 3); b. Sample of 573 households in the eastern part of the Weyewa district (segmented egalitarian society). The contrast between the massive role of slavery in aristocratic domains and its quasi-anecdotic character in the context of segmentary societies in the west is noteworthy (from Kuipers 1990).

presented, one from the western half (**Fig. 9**) and the other from the eastern half of the island (**Fig. 10**), the simplicity of the constructions does not prevent the existence of a certain architectural diversity. The two dolmens in **Fig. 11a** illustrate the high end of the scale. They belong to the most powerful lineage of the village of Wesaluri (Lolli) and were erected about 50 years ago, near the rice fields that extend from the foot of the hill where the village was settled. The carved decoration on the capstone represents the hindquarters and head of a buffalo treated in a highly stylized geometric manner. There are two reasons for the contrast between the two groups of monuments: the first is of a stylistic nature and is a matter of regional diversity; the assimilation of the dolmen with a buffalo is, to give just one example, not shared by all the ethnic groups on the island. The second comes from the differences in prosperity between the communities concerned. The two poorer villages are in the arid northern part of the island, in areas without irrigated rice fields where the communities struggle to make a living. The more prosperous village is located in the Waikabubak basin, a vast and particularly fertile, irrigated area in the heart of Lolli country. A degree of wealth here allows the expression of ostentatious behaviours, in an atmosphere of competition between lineages, but which, however, remainsrestrained due to a strong democratic ethos. The general impression of the dolmens of segmented societies thus remains one of great homogeneity, which can be illustrated by the small necropolis of Tana Riwu (**Fig. 11b**), with small-to-medium sized monuments that lack even relatively modest decorations. The 'buffalo-dolmen' of the Waikabubak region, in Lolli country, remain an exception whose detailed study remains to be carried out. In general, the decorations are –when there are any– discrete, limited to geometric friezes on the edge of the capstone (**Fig. 11c**). However, the most sophisticated monuments may present more elaborate compositions, typically with figurative motifs that represent the possessions of the main deceased, as in the case of the tomb of Pale Poti,

Fig. 9 – The village Bondo Kapumbo (Laura), with its modestly sized and undecorated dolmens typical of the less developed areas within the egalitarian societies of West-Sumba (Photos: C. Jeunesse).

Fig. 10 – Poorly elaborated dolmens typical of the unstratified areas of the eastern half of Sumba Island. a. Prailiang (Kanatang); b-d. Wunga (Kanatang) (Photos: C. Jeunesse [a-b]; A.-C. Monna [c]; N. Bec-Drelon [d]).

Fig. 11 – a. In more prosperous regions, segmented societies produced larger and often decorated monuments, such as these two dolmens in the rice fields of the village of Wesaluri (in the background, on the wooded hill), in Lolli country. The small, erected stones are used to raise the cover slab, the only way to access the burial chamber; b. A small 'extramural' cemetery in the Tana Riwu district; c. Geometric decoration on the edge of the cover slab of a table-dolmen in the village of Praigoli (Wanokaka). The thickness of the slab is about 30 cm (Photos: C. Jeunesse).

founder of the village of Wesaluri in the second half of the 19th century (**Fig. 12**). This lineage-head can be qualified as a man of influence but, according to the logic of the segmentary organization that prevails in his ethnic group, he is devoid of any political power. The unusually rich decoration of his dolmen illustrates the existence, at the margin, of a system similar to that of the institution of the Melanesian 'big man' system within the segmented societies of West Sumba, which can be understood, from an evolutionary point of view, as a survival of the institution of the 'big man' within the social form, which replaced that in which he was at the centre of the social and political game.

The dolmens of this 'egalitarian' megalithic practice provide collective tombs, with funerary populations spread over one to five generations and numbering between two and twenty individuals (Jeunesse & Denaire 2018). Each lineage uses several monuments simultaneously, which leads us, in an article partially dedicated to this aspect, to use the expression 'pool of dolmens' (Jeunesse *et al.* 2021).

In the eastern chiefdoms, the dolmen as an architectural form is reserved for members of the

Fig. 12 – Tomb of Pale Poti on the outskirts of the town of Waikabubak, Lolli, late 19th century: a. General view; b. Detail of the decoration (engraving and bas-relief): 1. mounted horse; 2. *marangga* (metal ornament); 3. tabelo surmounted by a *mamuli* (metal ornament); c. Détail of the *tabelo - mamuli* couple and its frame of geometric motives (Photos: C. Jeunesse).

dominant clan, the only individuals entitled to be buried under a tabular capstone placed on four or six robust stone pillars (**Fig. 13**). The members of the lower categories are buried in a pit, covered or uncovered by a stone slab simply laid on the ground. The most spectacular monuments are those housing the so-called 'royal couples'. These were significantly larger until recently (we will see later how the situation has evolved recently) than the largest tombs of the dolmen complexes of the 'egalitarian' megalithic practice of west Sumba, from which they also stand out for the richness of their decoration. They include carved pillars (*penji*) (**Fig. 14a**) and slabs with bas-relief decoration placed along the

Fig. 13 – a. Praiyawang (Rindi) royal necropolis; the cover slabs are about 1 m thick and dominated by carved pillars; b. Prailiu (Kambera) Royal Necropolis (tomb of raja Tumbu Umbu, buried in 2008; the woman posing in front of the monument is Tamu Rambu Margaretha, widow of the late king) (Photos: C. Jeunesse).

main axis of the monument (**Fig. 14b**), and human and animal *ronde-bosse* sculptures placed on the 'roof' of the monument (**Fig. 14c**). The imagery is clearly more varied than that of the discrete bas-reliefs of the 'egalitarian' megaliths. In particular, the *ronde-bosse* sculptures represent the royal symbols of the crocodile (the king) and the tortoise (the queen), two animals that also embody the sun, the colour red, masculinity, seniority, wisdom, and diplomacy (crocodile; Hoskins 1998), the moon, the colour black and the feminine principle (tortoise). They arestill sculpted even today for certain domains, by descendants of slaves attached to the royal court.

The royal tombs of east Sumba are neither individual nor truly collective. They actually house the two members of the royal couple and can therefore be described as 'conjugal', at the risk of shocking some archaeothanatologists who are

Fig. 14 – a. Uma Bara (Melolo); eastern face of the *penji* (pillar carved in coarse limestone) of the tomb of King Mirri umbu windi tara ngunju (see also **Fig. 18**). Under the mounted buffalo is a skull tree, which itself surmounts two opposite hybrid quadrupeds holding a shield, a group of motifs inspired by the royal coat of arms of the Netherlands (early 1980s); b. Tomb of the cemetery of Uma Bara (Melolo), with a richly decorated vertical slab in bas-relief at the top and along the longitudinal axis of the covering slab, with two looms in the middle. The tomb contains the remains of King Mirri umbu windi tara ngunju, who was buried in 1981, and his two wives Tamu rambu adu uma and Tamu rambu ada; c. Prailiu (Kambera); tomb of raja Tumbu Umbu (see **Fig. 17a**). Detail with the royal symbols par excellence, the crocodile and the tortoise. In the background, the *penji* is crowned by an equestrian statue of a hunter. The horseman is a court slave, embodying the deceased king (late 2000s); d. Uma Bara (Melolo); the cemetery of the court slaves (in the foreground) consists of simple pits covered with a slab. It is immediately adjacent to the royal necropolis (background) (Photos: C. Jeunesse).

attached to classical terminology, in which this configuration is not taken into account to its true value, despite its capital importance and the fact that, although it generally concerns two individuals buried successively (i.e., at two different moments), it is clearly distinguished, in spirit, from the collective tomb. These tombs are lined up in necropolises reserved for the royal lineage and are accompanied by secondary necropolises where the court slaves, defined as 'hereditary', are grouped together, and the non-alienable slaves whose main task is to take care of the house of the king and his children. This arrangement can be illustrated by the case of the village of Uma Bara, main village of the Melolo domain (**Fig. 14d**). The complex formed by the two cemeteries is located within the village, not far from the royal house. A second necropolis where lower class slaves, descendants of war captives, are buried, is located, as is customary, in another village of the domain, in this case the neighbouring village of Pau (**Fig. 15a**).

This pattern, which is shared by all the eastern domains, has, however, its exception. This is found in the Mamboro domain, on the northern coast of the western half of the island (**Fig. 2**). This society, stratified for at least eight generations, differs from its eastern counterparts in two major aspects: firstly, the fact that the transition to stratification did not result in the creation of a new 'royal' village, the oldest village of the ethnic group, that of Manuakalada, having retained its pre-eminence; secondly, the preservation, within the royal clan, of a multi-generational collective tomb practice and the 'pool of dolmens' system. Indeed, the royal lineage has two dolmens, used alternately in order to comply with the 'generation 'jump' rule, which prohibits the burial in the same monument of adult members of two successive generations, in order to avoid any risk of incest (**Fig. 15b**). The tombs thus each have four royal couples. Also worthy of note in the case of Manuakalada, is the marked difference in size between the royal house and the other houses, a contrast specific to stratified societies. This other form, alongside the variability of funerary architecture, of material display of social differences, will be dealt with in another article.

Two distinct types of megalithic practices are thus associated with the two forms of social organization represented on the island of Sumba. In the 'egalitarian' megalithic practice of the west, the

b

Fig. 15 – a. Satellite view of the royal village of Uma Bara (left) and the adjoining village of Pau (Melolo). The court slaves are buried in Uma Bara (A), at the end of the row of royal dolmens (B) that stretches in front of the origin house of the royal lineage (C), the second category slaves in a modest cemetery located in Pau (D); b. Royal village of Manuakalada (Mamboro). The overview shows the locations of the royal house (A) and the two royal tombs (B and C). Below: view of tomb B, a dolmen covered with a cement screed last restored in 1957 according to a traditional recipe.

dolmen is a common funerary form, accessible to all lineages prosperous enough to finance its construction. Its erection-feast and architecture are certainly two of the main vectors of social competition, which explains the variability we have highlighted, but the amplitude of the gap between extremes is severely limited by the egalitarian ethos that governs social relations in segmented societies. The transition to a stratified organization, which can be situated, with all due caution, between the second half of the 18th and the first half of the 19th century at the latest, led to an appropriation of the dolmen as an architectural form and of funerary monumentalism by the dominant clans, the only ones now allowed to bury their dead under raised cover slabs. With the appearance of the 'conjugal' tomb, there is a focus on the person of the king as an individual, the collective dimension being transferred to the necropolis which groups together all the royal tombs, in 'princely villages' where, in general, only members of the dominant clan and their slaves reside. It is interesting to note, as we have had confirmed by several royal families in the east, that the transition to stratification does not open the door to complete freedom of choice and the architectural excessiveness (a kind of 'hubris') that may accompany it. The size of the monuments in fact remains codified by tacit agreements between the royal clans of the different domains. The constraints of the egalitarian ethos are thus transferred from the level of the lineage head (segmented societies) to that of the 'paramount chief' of the domain (stratified societies).

This relationship between megalithic practices and forms of social organization may be tentatively, subject to systematic verification, extended to the whole area encompassing Southeast Asia and Melanesia (**Fig. 16**). From a historical perspective, it would seem that the appearance of megalithic practice goes hand in hand with a configuration

Big man societies	**Hierarchized societies** (Tribe)	**Stratified societies** (Chiefdom)	**Principalities** (State)
egalitarian	segmentary society (politically independant descent groups) class society (3 levels) «ranked acephalous societies» (Shrauwers 2016)	confederation of descent groups with a dominant DG class society (4 levels)	confederation of confederations of descent groups class society (5 levels)
achievment based society	ascribed status	ascribed status	ascribed status
no megalithic graves **no collective graves**	 **collective graves**	 **«royal» priviledge** **«royal» cemetery** **collective graves**	

Fig. 16 – Correlation between forms of social organization and types of megalithic practice, based on the situation observed in Sumba and the surrounding islands.

(what we call 'segmented' or 'tribal' societies) comprising the existence of descent groups, a marked concern for genealogy, the existence of ancestors' houses and a hierarchy of festivals favouring funerals and ceremonies marking the reconstruction of ancestors' houses. This configuration is shared by all the hill tribes of Southeast Asia, from the Nagas and Kachin in the northwest to the small islands of the Sunda and the Moluccas in the east. Megalithic graves are absent in the 'big men' societies of Melanesia where, as among nomadic hunter-gatherers, the attitude towards the dead is dominated by a desire to keep them away and forget them – quite the opposite of the typical behaviour of societies with descent groups, in which the collective tomb, which is not always megalithic, symbolizes, as does the ancestors' house, the continuity of the group and its territorial anchorage. Downstream of stratified societies or, more broadly, of the form of organization peculiar to 'sedentary pre-state societies with descent groups', which brings together segmented and stratified societies, the Hindu and Muslim principalities of the Indonesian archipelago mark the transition to state organization. Megalithic funerary architectures are disappearing with the weakening of kinship as an organizing principle of social and political life, but also, and perhaps primarily, with the adoption of the 'world' religions of Hinduism, Islam and, lastly, Christianity. The 'monumentalist' spirit then moves to the palaces, symbols and caskets of princely administration and secular power, and to religious sanctuaries, the earthly abodes of the gods and places where spiritual power is exercised. The mastery of sophisticated architectural techniques imported from the western empires made megalithic construction obsolete: one can now make large, high, and impressive buildings in ways other than by stacking monoliths (Jeunesse 2016b).

4. Recent evolution of funerary megalithic practice: the case of the '*nouveau-riche*' graves

We have stressed above the dynamism of current megalithic practice. In the east, some royal dynasties continue to bury their dead in monumental tombs. Although concrete has tended to replace stone in some cases, the tombs remain the preferred vehicle in the quest for prestige through ostentatious display, and stone is once again being heavily used in some royal necropolises where its use had previously declined. In the segmented societies of the west, the contemporary megalithism that we have seen year after year since our first visit in 2015, takes on two very contrasting faces.

On the one hand are the village communities that have remained animist, living far from the administrative centre of the small town of Waikabubak and little affected by the recent enrichment of certain lineages linked to the development of wage-earning. These groups adopt a conservative attitude, perpetuating traditional practices, including the 'egalitarian megalithic practice' described above. At the same time, in the last two or three decades, near Waikabubak but also in some more remote villages, remarkable monuments have been appearing, which contrast with the traditional uniformity of the megalithic landscape. Some of these larger and more richly decorated tombs immediately evoke the royal graves of the stratified domains, which clearly served as models for their builders. The emergence of these tombs imitating royal graves does not mean that the segmented societies are becoming stratified. They are an indication of a change in the balance of factors that regulated traditional hierarchies and values, with a significant strengthening of the role of wealth and 'modern' political status (within the current Indonesian democratic state) in the means employed in the conquest of prestige and fame, and a concomitant weakening of the democratic ethos that used to structure social relationships in the traditional village societies.

The transgression is sometimes relatively discreet, as illustrated by two examples collected from the Kodi, an ethnic group located at the western end of the island and one of the few communities in which it is customary to build one's own dolmen during one's lifetime. The tomb photographed in the village of Wainyapu (**Fig. 17a**) was built between 2015 and 2016. In a village where at least ten new monuments are built every year, this one differs from ordinary dolmens both in its size, about twice the average (a ratio that also applies to the weight of the capstone) and in its exuberant ornamentation in a context where decoration is largely absent. On the main face, in which the entrance has been pierced, there

Fig. 17 – Examples of '*nouveau-riche*' tombs in the western part of the island. Those of Wainyapu (Kodi) (a) and Ratenggaro (Kodi) (b) stand out for their large size while retaining the iconographic and social codes of the egalitarian societies of West Sumba; that of Waihura (Wanokaka) (c) breaks with these by appropriating the architecture and royal symbols of the stratified societies of the east, such as the crocodile and the turtle (Photos: C. Jeunesse).

are three friezes of geometric motifs overhanging representations of a buffalo's head and a series of six gongs, traditional motifs that refer, among other things, to the economic prosperity of the person who commissioned the monument. The same association can be found on the south face (right) of the largest tomb in the famous 'marine cemetery' of Ratenggaro village (**Fig. 17b**), located a short distance from Wainyapu. In this case, the decoration is completed, at the bottom left, by a series of *mamulis*, the most common type of metal ornament on the island, generally used as an ear pendant. The west side bears, in addition to the name of the owner of the grave, a frieze of *mamulis* accompanied above by two *marangga* (large metal pectoral pendants) and below by two horses that are made, like the other motifs, using the bas-relief technique. This tomb stands out because of its height and the richness of its decoration. As in the case of the Wainyapu tomb, the figurative design here consists of motifs representing ritual goods, a category that includes metal ornaments as well as musical instruments and, as noted above, livestock. The objects and animals depicted are included mainly to testify to the wealth of the sponsor in terms of the prestige goods that could be used in the ceremonial exchange. The difference between these two tombs and their neighbours remain of a quantitative nature; they are larger and more ornate but decorated with motifs that faithfully reflect the symbolic universe shared by all in the segmented societies of the island. The transgression is therefore benign, limited to larger dimensions and an ostentatious display of the emblems connoting the most powerful lineages, in proportions that were already tolerated at the end of the 19th century.

This is not the case for the tombs of Waihura (Wanokaka) and Kalimbu Kuni (Lolli), where the desire to imitate the architecture of the royal tombs in the east represents a qualitative break with tradition. In Waihura (**Fig. 17c**), a table-dolmen surmounting a buried vault and flanked by two decorated anthropomorphic pillars (*penji*) displays, on the edge of the capstone, the bestiary typical of the decorations of eastern royal tombs with, among others, the symbol par excellence of royalty, the crocodile. The quality of execution of the sculptures shows that a professional sculptor from outside the area was used, probably trained in one of the sculpture schools on the island of Java. The aim of commissioner was therefore to showcase his wealth, but also to demonstrate his claim to compete with members of the upper stratum of the island's aristocracy, i.e., the royal clans of the stratified societies of the north and east. The tomb of Kalimbu Kuni (Lolli), completed in 2018, is also a table-dolmen, but unlike the tomb of Waihura, the dead are buried in an above-ground sarcophagus consisting of a monolithic chamber covered with a capstone that reproduces one of the types of dolmens commonly used in the segmented societies of the west (**Fig. 18**). The main limestone capstone is probably the largest and heaviest (close to 50 tons) that has ever been shaped and transported on the island of Sumba. The use of colour to enhance the decorative motifs is, to our knowledge, unique on the island. The selected motifs are rooted in three distinct inspirations, making a remarkable case of iconographic syncretism: the buffalo head and the metal ornaments, which we have already encountered in the case of the tombs of local 'big men', refer to the local tradition of the western 'egalitarian' megalithic practice; the scenes of hunting on horseback, the representations of crocodiles, turtles and the slave wearing the royal attributes at the time of the funeral refer to the royal iconography of the east; and the treatment of the *ronde-bosse* statues comes from the artistic traditions of the old Hindu-Buddhist kingdoms of Java and Bali (8th-19th centuries.). The first reveals a desire to position oneself (at the top) in the scale of prestige in Lolli society, the second to claim a status comparable to that of the rajas of the east; the last is mostly likely evidence of the influences that marked the sculptor's artistic career, perhaps also of a desire to appropriate a piece of the ancient mythified glory of the powerful Hindu-Buddhist kingdoms of Java and Bali.

The attitude of the community towards the builders of these tombs is ambivalent: on the one hand they are admired and envied for their wealth, on the other hand they are decried for having, as it were, proclaimed themselves kings within societies that remain very much marked by an egalitarian ethos. Their achievements are indicative of the tension between the egalitarian tradition and the ambitions of certain lineages enriched by contributions of wealth from outside the traditional agrarian economy. The

Fig. 18 – The very large table-dolmen of Kalimbu Kuni (Lolli) with its exuberant decoration combining traditional local symbols (buffalo, metal ornaments), royal emblems of East-Sumba (ritual hunting, crocodile) and stylistic influences from the Hindu kingdoms of Java and Bali (statues in '*ronde bosse*') (Photos: C. Jeunesse).

reference to eastern kingship and the fact that the medium par excellence for the display of prestige remains primarily the megalithic tomb (and not, for example, the possession of a luxury car or other 'western' goods) and that the desire for social ascension involves assimilation into the royal dynasties of the east shows, however, that the attitude of the 'new-rich' remains deeply rooted in tradition. Wealth is, just as everywhere in traditional tribal society, not an end in itself, but a means to be invested in the conquest of prestige. The transgression, therefore, lies in trying to use wealth and social status within Indonesian society to transcend traditional class boundaries, which were previously completely watertight. Indeed, wealth was, in the traditional system, only a means by which to achieve prestige within the categories defined by birth, as shown by the example of the mechanism of emergence of the 'big men' mentioned above. In the context of the contemporary democratic ethos, as promoted by the Indonesian state and the mass-media, the role of heredity is doomed to inevitable erosion and the conflict between the primitive egalitarian ethos and the modern democratic ethos can be likened to the struggle between the pot of earth and the pot of iron. It will of course be interesting to follow the effects of this evolution on the fate of the traditional animist religion and on megalithic practice, and to see how long the construction of monumental megalithic tombs will remain one of the favoured means of expression among emerging social groups.

I began this article by stessing the opposition between 'elitarian' and 'egalitarian' megalithic practices. The case of the '*nouveau-riche*' tombs shows that it is appropriate to add a third type to the picture, reflecting current social demands within the segmented societies of west Sumba while borrowing its codes from the aristocratic domains of the east and the north, and which constitutes one of the hybrid forms born of the clash between tradition and modernity.

5. Discussion

The island of Sumba provides an almost ideal case of positive correlation, within the same cultural universe (material and spiritual culture), between two forms of social organization and two kinds of megalithic practice, with the small to medium-sized dolmens of segmented societies on the one hand, and the large royal dolmens on the other. We can now ask ourselves what lessons can be drawn from this configuration for the understanding of fossil megalithic practices. The most recent ambitious attempt at a social interpretation of European megalithic practice, based on the application of only a superficial understanding of the ethnological corpus of knowledge was the work of Renfrew. It is on the basis of this work that we will try to assess the scope of our observations in Sumba.

Renfrew's aim was to write a social history of the British Isles between the early Neolithic and Early Bronze Age based on the study not of megaliths but of 'monumentalism', of which megalithic practice is only one variant (Jeunesse 2016b). In an approach typical of the 'New Archaeology' school, he proposed an historical scenario in which the degree of monumentalism was a direct reflection of social complexity or, depending on the usage of the time, of the degree of integration of societies (Renfrew 1973, 1976, 1984a-b). His reflection was based only marginally on the reality of the functions of megalithics in traditional societies living at the time of his writing. In fact, it drew primarily on the conceptions developed by the neo-evolutionist movement during the third quarter of the 20th century, particularly those concerning the mechanisms of historical change within pre-state societies. Two basic principles are mobilized, which can be summarized as follows: 1) social complexity is a direct reflection of population density, whose progressive increase generates an increasing concentration of power and increasingly unequal forms of organization; 2) large monuments, whose construction presupposes the mobilization of an abundant workforce, are only conceivable in societies where social relations are based on coercion, which is precisely the hallmark of unequal societies. Thus, Renfrew concludes that '*The major henge monuments of Britain could only have been built by some centralized and coordinated society, of the kind we can today call a chiefdom society*' (Renfrew 1984a).

The results of Renfrew's research are summarized in the table in **Figure 19**. The small dolmens on the islands of Rousay (Orkney) and Arran (Scotland),

formed of blocks that can be manipulated by a small number of individuals, are presented as representative of the egalitarian village societies of the Early Neolithic. At the other end of the spectrum, Phase III of the Stonehenge complex would be the work, within a totally transformed world, of a society with 'integrated chiefdom', in other words a stratified chiefdom society of the 'Polynesian' type in which a hereditary elite, basing its legitimacy on a supernatural origin, enjoys coercive power over the rest of the population. In between, the long mounds and the causewayed camps would reflect societies with emerging chiefdom and the early henge monuments, the cursus and versions I and II of Stonehenge would reflect chiefdoms. For the record, and without wishing to enter into a discussion regarding the precise content of the categories used and the validity of the overall reasoning, the stratified societies of Sumba would, within this classification system, be considered as chiefdom societies. Coercion, and thus the possibility of mobilizing by force the masses of workers necessary, in the perspective adopted by Renfrew, for the realization of great monuments, comes into play as early as Stage B (emerging chiefdom).

The ambitious historical picture developed by Renfrew is one of the most remarkable achievements of the 'New Archaeology' movement. Its systematic evaluation would be beyond the scope of this article. We will therefore limit ourselves to a few remarks, especially those inspired by our trips to the contemporary megalithic societies of Sumba Island. The first is that the validity of the model developed for the British Isles is obviously not transposable to the whole of European history of megalithic practice. Without going into detail, we know today that in Brittany, the most spectacular monuments, by their size and weight, and the efforts made to erect them, date from the very beginnings of the megalithic period which, incidentally, preceded the first megaliths of the British Isles by more than half a millennium. These are the Carnac mounds ('*tumulus carnacéens*') of the gulf of Morbihan region and the very large standing stones of the Locmariaquer alignment, dated to the middle of the 5th millennium, the latter of which would never find their equivalents in the later history of prehistoric European megalithic practice. It should be noted, in passing, that this observation does not call into question the link between very large monuments and stratification, as several authors have pertinently suggested that graves such as the '*tumulus carnacéens*' are difficult to imagine in an unstratified context (Cassen *et al.* 2011; Pétrequin *et al.* 2012; Jeunesse 2014). On the other hand, it changes our view of two other ideas underlying Renfrew's reasoning: firstly, the idea that very large monuments can only result from a centuries-old progressive historical sequence, and secondly, the conviction that the emergence of stratified societies with a high concentration of power is inconceivable in the context of the non-metallurgical village societies of the European Neolithic.

The observations made in Sumba show, firstly, that Renfrew greatly underestimated the logistical capacities of egalitarian societies. It is now known

D	Integrated chiefdom	Stonehenge III
C	Chiefdom	Henge monuments including Stonehenge I and II Cursus, temples of Malta
B	Emerging chiefdom	Long barrows and Causewayed enclosures (type Windmill Hill)
A	Egalitarian societies	Small megalithic graves of Arran and Rousay

Fig. 19 – Table summarizing Renfrew's conclusions. On the left are the types of societies; on the right are some emblematic monuments or types of monuments (After Renfrew 1973, 1984a-b; Gallay 2009).

that the transport of large stones could, quite commonly, mobilize more than a thousand people (Adams 2007) without any form of coercion. In a densely populated area, the determining factor in this matter is the size of the solidarity groups constituted by the clans and their allies, i.e., first and foremost, the wife-giver and wife-taker clans. Alongside the ceremonies linked to the megalithic cycle (extracting and towing the slabs or capstones, and building the monument), funerals and celebrations accompanying the reconstruction of the ancestors' houses are ideal opportunities to get an idea of the size of these groups. Assemblies of more than a thousand participants are still common today, as we have seen several times since 2015. We also had the opportunity to study in detail the circulation of live animals and meat in a ceremony organized on the occasion of the displacement of a megalith in the Lolli village of Tarung, which was modelled on a funeral ceremony (Jeunesse & Denaire 2017). The most spectacular figure is that of the number of beneficiaries of the meat shares distributed at the end of the ceremony, with more than 600 families concerned, a figure that must be multiplied by at least two or three if one seeks to reconstitute the number of people present or represented on the day of the ceremony. Furthermore, the obstacle to the construction of very large monuments should not be a difference in technical know-how or in mobilization capacities. The western tribes would be perfectly capable of handling capstones as large as those used by the eastern chiefdoms. What has prevented them from doing so until recently is the binding force of the egalitarian ethos that governs social relations.

Our observations and those of our predecessors (see, in particular, Adams 2007) in Sumba also lead us to relativize the impact of demographic determinism on the 'degree of integration' of societies. The situation on the island is, in this respect, quite clear: there is no positive correlation between population density and the degree of vertical social differentiationor the size of the megalithic monuments. Indeed, today there is a density of 97 inhabitants per square kilometre in the west compared to 28 in the east, a contrast which, according to observations by travellers, administrators and missionaries, was in place long before the first population estimates were made. The primary cause of this imbalance lies in the climatic contrast between the arid east where agriculture is only possible on the small coastal plains or at the bottom of the valleys that cut into the limestone plateau, and the well-watered west, with its much longer raining season, where both the plains and valleys bottoms (irrigated rice growing) and the slopes (dry rice, maize and tubers) can be exploited. Thanks to its large number of inhabitants, west Sumba was used as a demographic reservoir for the slave trade which, until the end of the 19th century, attracted traders to the island, mainly from the Muslim principalities of Sulawesi, Sumbawa and Flores, the Dutch having given up this source of profit after the abolition of slavery in 1863. A discussion of the causes of the emergence of a stratified organization in the eastern part of the island would be beyond the remit of this article. It must be noted, however, that this occurred in the least populated region of the island, and that the demographic dynamism and agricultural wealth of the west, rather than favouring a concentration of power, probably contributed instead to the preservation of the small, segmented village societies.

Coercion plays a central role in the stratified societies of east Sumba. The raja decides on war and can coerce the free men of his domain to participate in this, just as he can force them to participate in major development works such as the construction of dykes, irrigation canals, bridges or roads (Forth 1981). On the other hand, coercion does not seem to be involved in the megalithic cycle, where the principle of voluntary participation inherited from the segmented society remains. But if the royal dolmen is not the product of a forced mass mobilization, it is nonetheless a way of inscribing in stone the relationship of domination that characterizes the new aristocratic ethos. It is, in a way, something like an unwritten constitution. It is based on the support of the entire population, which therefore considers the tribute paid to the late king not as a constraint, but as a duty paid to the guarantor of the unity, security and prosperity of the domain.

The homogeneity of the material culture, which would, in the context of a purely archaeological approach, have led specialists to bring together within a single culture all the traditional human manifestations of the island, has already been

stressed above. The cohabitation, within the same cultural block, of 25 ethnic groups, nine languages and two systems of social and political organization provides a model which has served to nourish our reflection on the potential existence of this type of configuration in the recent prehistory of Europe (Jeunesse 2019). The heuristic power of this model is even more powerful, as its existence is attested in several populations belonging to the very large complex of the 'hill tribes' in Southeast Asia. First highlighted by Leach, who remains the only scholar to have provided a detailed analysis, in his famous monograph on the Kachin of Burma (Leach 1954), the segmented/stratified dualism was then observed in Sumba, among the Toraja of Sulawesi, among the Nagas of Northeast India, especially the Konyak Naga (**Fig. 20**) and in several other populations of Southeast Asia (Kirsch 1973). The European historical context whose significance we have tried to better understand is that of the Hallstatt culture, which similarly shows a cohabitation of two forms of social organization within the territory of one 'archaeological culture' (in the sense formerly defined by Gordon Childe) (Jeunesse 2019). As, however, the case of the Carnacean burial mounds shows, as does the roughly contemporary (middle of the 5th millennium) case of the Varna necropolis, there is no reason to restrict the field of investigation to the Bronze and Iron Ages. Stratified societies did indeed exist from the first part of the Neolithic, even in non-metallurgical contexts (Jeunesse 2017), and nothing prevents us from imagining the existence of socio-political dualisms comparable to those of Southeast Asia from this period.

In the northern half of France between 4800 and 4400 BC, for example, in an east-west strip running from Burgundy to Brittany, there is a cohabitation between the so-called 'Passy-type' long mounds, whose characteristics remain compatible with a segmented organization, and the Carnacaean mounds, which show a shift, within a small area, towards a stratified system. Locally, in the Gulf of Morbihan, the most likely hypothesis is that of a sequence during which the Carnacean mounds would have succeeded the Passy-type long mounds with, in addition, the possibility of a rebirth of the latter after the end of the undoubtedly relatively short period of the former (Jeunesse 2018). But, as is not sufficiently emphasized, the same type of architectural variability also exists in the context of the first period of construction of megalithic toimbs, that of the passage graves of western France (horizon 4400-3600 BC), where a marked contrast can be observed between the majority of monuments, characterized by their relatively modest size and unsophisticated architecture, and a few rare large burials built with care, such as the tomb of Gavrinis (Morbihan). To pursue the reasoning we have tried to follow in this article, would require a systematic catalogue of monuments, the most recent of which was published more than half a century ago and concerns only part of the geographical area concerned (L'Helgouach 1965), but also a systematic classi-

	Sumba	Konyak Naga	Kachin	Toraja
Stratified society (Chiefdom)	Domains	Thendu	Gumsa	Puang
Segmented society (Tribe)	Segmented societies	Thenkoh	Gumlao	Other communities
	Forth 1981 Jeunesse 2019	*Fürer-Haimendorf 1969*	*Leach 1954*	*Bigalke 2005 Nooy-Palm 1975 & 1979*

Fig. 20 – Examples of social-political dualisms among the hill tribes of Southeast Asia. Both forms of organization are referred to by the vernacular terms *gumsa* and *gumlao* among the Kachin of Burma, *thendu* and *thenkoh* among the Konyak Nagas (northeast India). Among the Toraja (Sulawesi, Indonesia), the term *puang* refers to small 'kingdoms' formed by a confederation of descent groups.

fication of monuments according to their size, the volume and mass of their constituent elements, the care taken in their construction and the aesthetic investment implemented. A comparable cohabitation, with an even more spectacular contrast, exists in the east of Ireland (the Boyne Valley) in the last third of the 4th millennium with, again, a small core of large, geographically concentrated monuments. Here, on the potentially 'stratified' side, there are large mounds (up to 90 m in diameter and 12 m high) of a very ostentatious character (Newgrange, Knowth and Dowth) which some specialists consider probably succeeded, locally, a group of monuments of more modest size (about 20 m in diameter at most) (Whittle 1996: 244-245) that can easily be imagined to have been erected in a segmented social context. In both cases, it seems to us that the Sumbanese model could be a good starting point for a reassessment of the social and political significance of the observed variability.

Translated from French
by Christian Jeunesse

Megalithic techniques at Sumba Island (Indonesia): from quarries to abandonment

Noisette BEC DRELON, Christian JEUNESSE

1. Introduction

Sumba Island is a part of the Lesser Sunda islands of Indonesia in Southeastern Asia. Despite the massive evangelization of the island by the Dutch people at the beginning of 20th century, today between 20% to 30% of Sumba's people still practice their traditional religion called *Marapu*, an ancestor cult which includes the building of megalithic tombs. Between 2014 and 2019, several ethnoarchaeological missions were organized by Archimède Laboratory of Strasbourg University; these enabled us to observe different techniques in megalithic tomb construction. Our searches concentrated particularly on the west side of the island, in the Loli and Kodi districts where megalith tomb constructions and associated ceremonies are still very much alive (for the location, see above Jeunesse Fig. 2, p. 343). Our observations of the construction techniques of megalithic tombs complement those of Adams (2007, 2009) and Steimer-Herbet (2012, 2018), and follow a first synthesis presented in 2016 (Jeunesse 2021).

2. Quarries

There are two ways of supplying megalithic slabs in Sumba Island: from local quarries, in the village or in the immediate vicinity, and from more distant quarries. Villages are situated on the top of small hills and the main necropolis is always in thecentre. At this site, the bedrock is often outcropping and has been used to extract stone slabs and blocks. In Tossi village (Kodi district), we observed extraction traces on the bedrock (**Fig. 1**). The largest slabs were probably used for the construction of megalithic tombs, the small stones for the setting of house posts or for the village enclosure. Our oral investigations at Wesaluri village (Loli district) revealed a systematic local supply of the stone slabs tombs, except for one capstone which came from Tarimbang quarry (5 hours' drive away, in the Tabundung district). The so-called 'bedrock chamber' tombs (type 1b) often found in the Loli district, did not require any extraction or transportation of stone since they are carved directly into the outcropping rock (**Fig. 2**).

In Anakalang district, there is a quarry specializing in the construction of megalithic tombs. We observed all architectural components of Sumbanese megalithic tombs: capstones of all sizes, columns, and

Fig. 1 – Quarry in the centre of Tossi village with traces of extraction (Photos: N. Bec Drelon).

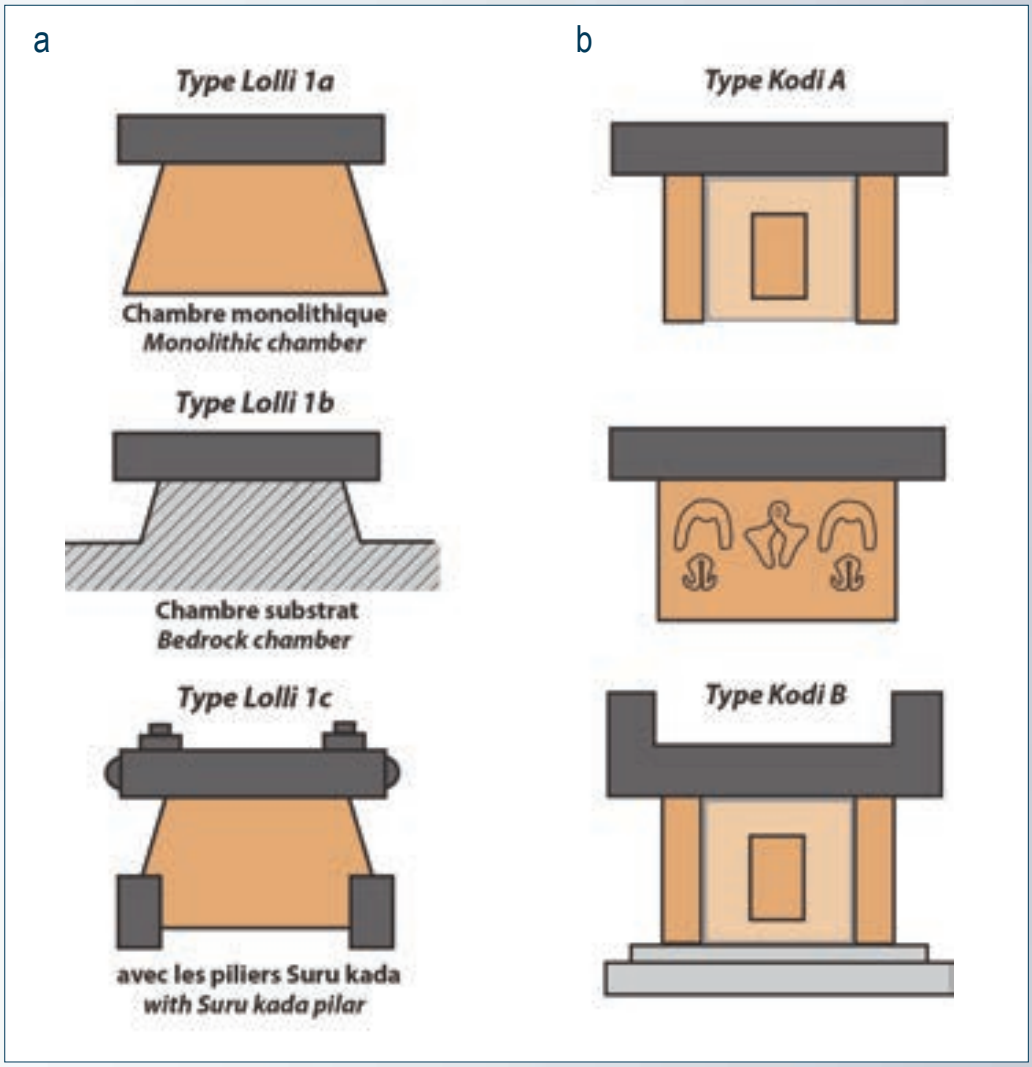

Fig. 2 – a. Lolli district's type of tombs; b. Kodi district's type of tombs (Drawn: N. Bec Drelon).

Fig. 3 – Quarry in Anakalang district. Chambers and capstones are waiting to be extracted (Photos: N. Bec Drelon).

monoliths (**Fig. 3**). The work of shaping and extraction is achieved by means of an iron tool whose traces are easily observed in the soft limestone. Today, all the slabs are transported by truck, but to the stone is extracted, moved and loaded onto the truck by hand. It required many people and a long time (several days or weeks) to handle blocks of up to 45 tons.

3. Transport

Even though the transport of megalithic slabs by means of truck is commonplace on the island of Sumba, one can still witness stages of towing that have not yet been mechanized. Wainyapu village, situated in the Kodi district, has about 1400 megalithic tombs. All the slabs come from the largest quarry of the district which belongs to this village and is located near the beach, 200 m away. We were able to observe the extraction, transport, and arrangement of two slabs covering the graves of two brothers from a neighbouring village (**Fig. 4**).

Capstone extraction, first movements of pull and positioning gently on the wood ramp

Pull and climbing on the top of the quarry

Deposit of the capstone on megalithic chamber

Fig. 4 – Capstone extraction, hauling, transportation and deposition in Kodi district, quarry of Wainyapu village (Photos: N. Bec Drelon and C. Jeunesse).

Several operations are necessary to extract a slab and these can last a whole day depending on the difficulties encountered. First, rope is used to pull the slab vertically to one side to extract it from its location. Then it must be made to fall gently, into a horizontal poisition on a path of logs. Two groups of people are posted on each side of the slab. The first group pulls while the second holds the slab back to control the fall and prevent the slab from breaking (**Fig. 4**). Here, the log path is set on a slight slope. The two groups meet on the same side to pull the slab up the slope. Once this is done the slab is pulled relatively easily to the truck. The limestone being very soft, the friction of the ropes sometimes leaves large grooves on the slabs. These types of traces had been observed by previous reseachers (Steimer-Herbet 2012).

4. Construction

In the Kodi district, megalithic tombs are built during the lifetime of the person, while amongst the Loli district, the children build the tomb on the death of their parents. Not far from the village of Wainyapu (Kodi District), we observed a tomb whose chamber was being built (**Fig. 5**). Work at the site had paused and the scaffolding was still in place. A rectangular chamber was formed by six orthostats. At this stage, the orthostats were not yet quite vertical, and were wedged by the scaffolding. The slabs must first be finished by cutting, with adjustment made so that they fit perfectly to each other. Long right-angled notches are carved on both sides of each orthostat. Finishing operations are therefore done at the place of the construction of the tomb. We thus find at all the cutting waste at the foot of the slabs.

Fig. 5 – Megalithic tomb under construction in Kodi district. Orthostats are trimmed before being fitted to each other (Photos: N. Bec Drelon and C. Jeunesse).

5. Utilisation

The megalithic tombs of Sumba are used for collective burial (Jeunesse & Denaire 2018), and are reopened several times during their use. In the Kodi district, access to the tomb is from the front, via a small door that facilitates access to the interior of the vault (**Fig. 2**). This is not the case in the Loli district where access is vertical, via the capstone. During a funeral ceremony, we observed a very ingenious opening device that seems to be systematically used for type 1c tombs (**Fig. 2**). The *Suru Kada* is a device made of stone and wood that allows the opening of the capstone of the tomb and its closure once the dead have been placed inside (**Fig. 6**). Access to the tomb is vertical and the capstone is a removable element. It is sometimes replaced because it is damaged by repeated use (**Fig. 7**). Although mainly wood is used for the *Suru Kada* device, four small standing stones are necessary at the corners of the tomb to support the wooden scaffolding (**Fig. 6**). We have noted the presence of these four pillars around many monuments of the Waikabubak region. These clues testify that the opening/closing of these tombs is vertical that they are intended to accommodate several individuals. The megalithic tombs can be completely closed and re-opened several times and the capstone (despite being heavy and voluminous) is a removable device. The frontal or lateral access found in European tombs is, therefore, not the only proof of the collective function of a tomb; there are alternatives that must be borne in mind when studying the European megalithic phenomenon.

6. Restoration

Capstones, especially those that are removable using the *Suru Kada*, are sometimes worn or broken and despite some repair attempts, are replaced over time. We observed this restoration technique in the secondary necropolis of Djagangara village. A wooden scaffold was built around the burial chamber at the base of the existing roof slab. A

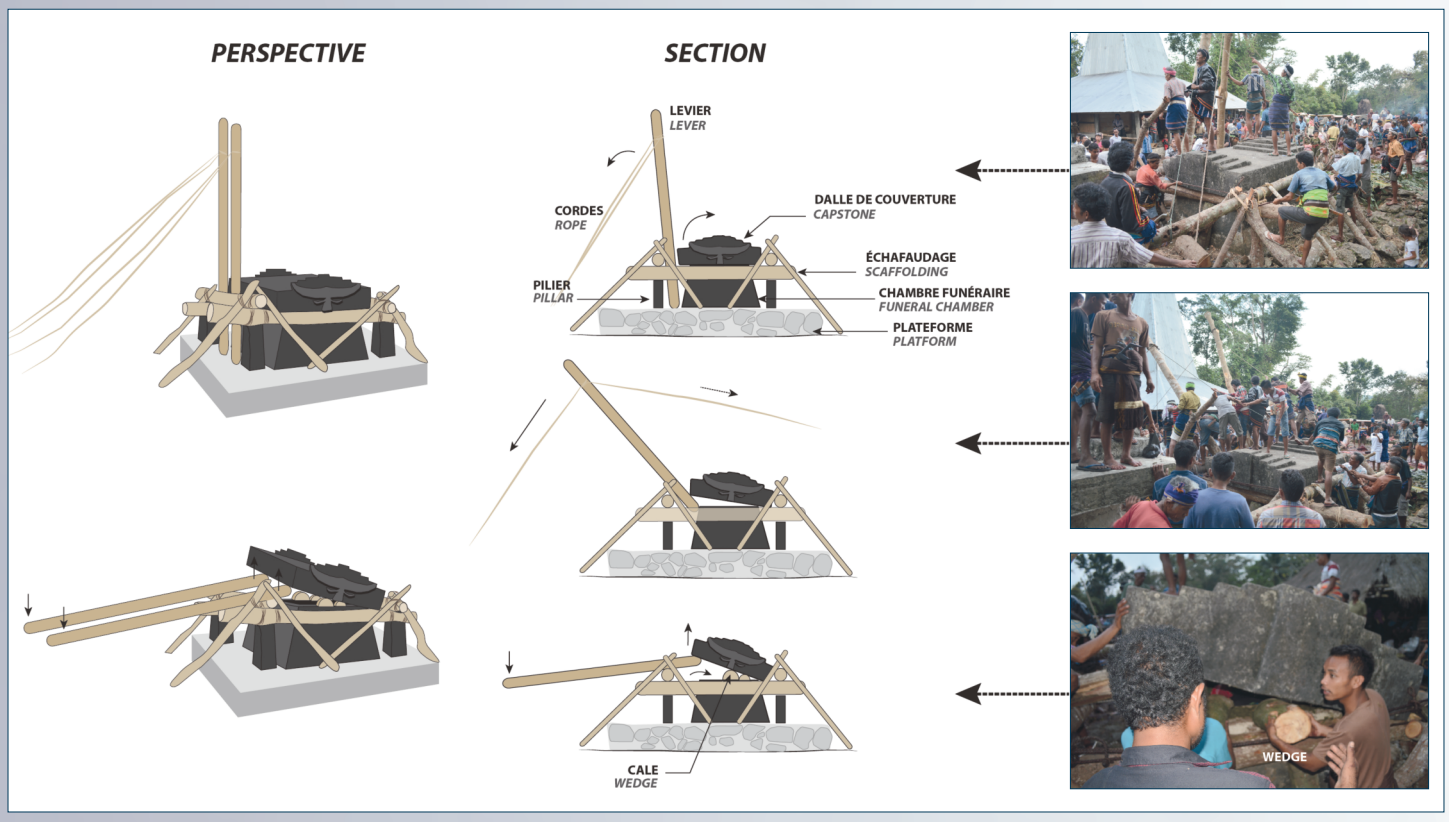

Fig. 6 – Opening device of the megalithic tomb called *Suru Kada* in Lolli district, Tabodung Village (Drawing: N. Bec Drelon; photos: C. Jeunesse).

Fig. 7 – Capstone change in a secondary necropolis (Djagangara Village, Lolli district). A wood sledge called *tina watu* is used (Photos: N. Bec Drelon and C. Jeunesse).

Fig. 8 – Several sledges (*tina watu*) abandoned after being used, in Wunga village (Kanatang district) on the left and in Pu'u Nu'u Rara village on the right (Photos: C. Jeunesse and A. Denaire).

wooden ramp extended this scaffolding. The new roof slab was quarried from a quarry 80 m from the necropolis (**Fig. 7**). It was transported by means of a sledge (*tina watu*) pulled on a transverse log road (**Figs. 7** and **8**). This sledge was positioned on the ramp. Then, people rocked the broken slab out of position and the new one was set in place, we suppose very quickly, so that the tomb was sealed again (we could not attend this last step). Thus, it is not uncommon to find abandoned wooden sledges in the villages, they are used both for construction and for restoration (**Fig. 8**). Obviously, these interventions on the tombs are accompanied, to a lesser extent than at funerals, by rituals and animal sacrifices.

7. Conclusion

Our observations of burial practices in Sumba allowed us insight into a multitude of gestures and practices concerning the collective functioning of the tombs but also into the construction techniques. We hope that these few examples will shed light on the European megalithic phenomenon and at the same time remind us to be cautious in our interpretations.

Translated from French
by Noisette Bec Drelon

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Maria WUNDERLICH

Setting the wider frame. A comparison of recent megalith building traditions in Sumba (Indonesia) and Nagaland (India)

Abstract: At the core of archaeological disciplines lies the urge to reconstruct narratives of past human life and the meanings behind the material remains found today. The distant past of prehistoric archaeology requires aids to attempt such reconstructions and analogical reasoning constitutes one important approach in this regard. Comparative research strategies including the use of recent ethnoarchaeological case studies hold high potential as they provide opportunities to engage in current archaeological debates and are especially suitable for the study of complex phenomena, such as megalith building traditions. This paper presents a comparative study using both quantitative and qualitative data sets and perspectives. The recent case studies include remarks on the social mechanism influential for megalith building activities on the island of Sumba, Indonesia, and the southern area of Nagaland, Northeast India. Both examples show striking similarities, on a structural basis, with concern to activities and mechanisms of feasting activities, economic inequalities and the collective efforts involved in the process of megalith building. Yet, the case studies are characterized by particularities and individual strategies of given communities, both within the regions of interest and within the broader comparison between them. These particularities represent individual interpretations and expressions of overarching mechanisms and deserve the same attention as the structural similarities. This study shows that comparative approaches should use and combine both qualitative and quantitative approaches, thus enabling a comparative synthesis of different case studies while at the same time avoiding generalizations of broader regional frameworks.

Keywords: *Northeast India, Sumba, comparative approaches, ethnoarchaeology, feasting, collective action, landscape construction*

Fig. 1 – Map of megalith building activities across the world based on Joussaume 1985. The location of Nagaland and Sumba is marked in red.

1. Introduction: comparative archaeologies and recent examples

At its very core, archaeology attempts to reconstruct narratives concerning past human life, about the meanings and social implications of material remains being found today. Within this approach, analogical reasoning and analogical inferences played a key role from the beginning, albeit under differing considerations and with ever-changing reception by the archaeological scientific community (compare for example Binford 1978; Hodder 1982; Bernbeck 1997; Gramsch 2000). Recently, both comparative approaches using solely archaeological case studies (e.g., Glørstad & Melheim 2016), as well as 'ethnoarchaeological' approaches have regained importance (compare Politis 2016). In the light of current debates and scientific discourses, alternative viewpoints and the integration of non-European perspectives on history are urgently required. Moreover, specific aspects of the vast arena of socio-political organization must be pursued further (Hofmann & Stockhammer 2017: 14). The importance of comparative strategies in archaeological research is demonstrated by its potential to engage in and contribute to current archaeological debates, as it can be applied to diverse topics in the quest to understand past human behaviour, especially in relation to complex phenomena, such as megalith building traditions.

Among the few existing examples of recent megalith building activities are those of societies in Nagaland, Northeast India, and on the island of Sumba, Indonesia. Both case studies are diverse and variable within themselves, but also show striking parallels. The structural similarities, which can be detected on the basis of quantitative analyses, must be combined with an understanding of particularities and individual strategies of given communities, thereby requiring a qualitative approach. This approach may enable a comparative synthesis of different case studies while at the same time generalizations of broader regional frameworks can be effectively avoided (cf. Furholt 2014).

1.1 A brief history of research

Nagaland and Sumba constitute two of the few examples of areas with a recent megalith building tradition (**Fig. 1**). The histories of both Indonesia and India were heavily influenced by colonial rule by the states of England and the Netherlands, during the 19th century and by the independence achieved in both states after World War II (Joshi 2008: 43-45; Vel 2008: 31).

The history of research in Nagaland and Sumba partly reflects these historical developments. Within Northeast India, the earliest accounts of megalithic monuments derived from reports written by colonial officials who had taken up administrative assignments and some of whom were trained scientists (e.g., Hutton 1921a-b, 1922, 1928; Mills 1922, 1926, 1937; Fürer-Haimendorf 1939, 1946). After the independence of India was achieved, the north-eastern part of the state also became the focus of the archaeological interest. Over the decades following, a diverse research tradition developed which encompasses both archaeological and anthropological perspectives, thereby offering a broad and diverse thematic focus (e.g., Mawlong 2004; Jamir 2005, 2015, 2019; Prokop & Suliga 2013; Burke 2014; Jamir *et al.* 2014; Wangjin 2014; Khongreiwo 2015; Mitri *et al.* 2015; Wouters 2015; Mitri 2016; Wunderlich 2019; Wunderlich *et al.* 2019).

From the first half of the 20th century onwards, publications about Sumba were written by travellers, missionaries and Dutch civilian employees (e.g., van der Hoop 1932; Rouffaer 1937; Keers 1938; Onvlee 1938; von Heine-Geldern 1945). From roughly the 1980s onward, after Indonesia gained independency, an independent archaeological and anthropological research tradition evolved involving both Indonesian and international researchers who began to focus on the eastern parts of the archipelago (e.g., Forth 1981; Vel 1994, 2008; Sukendar 1985b; Needham 1987; Kuipers 1990, 1998; Hoskins 1993, 1998; Keane 1995, 1997; Gunawan 2000; Adams 2007; Jeunesse 2017, 2019).

1.2 The setting: Sumba and Nagaland

Sumba

The island of Sumba is located in the eastern part of the Indonesian archipelago (**Fig. 2**) and is characterized by its remoteness in terms of economy. Due to its geographic location, the island is characterized by sharp differences concerning the environmental setting. Divided by a low mountain range,

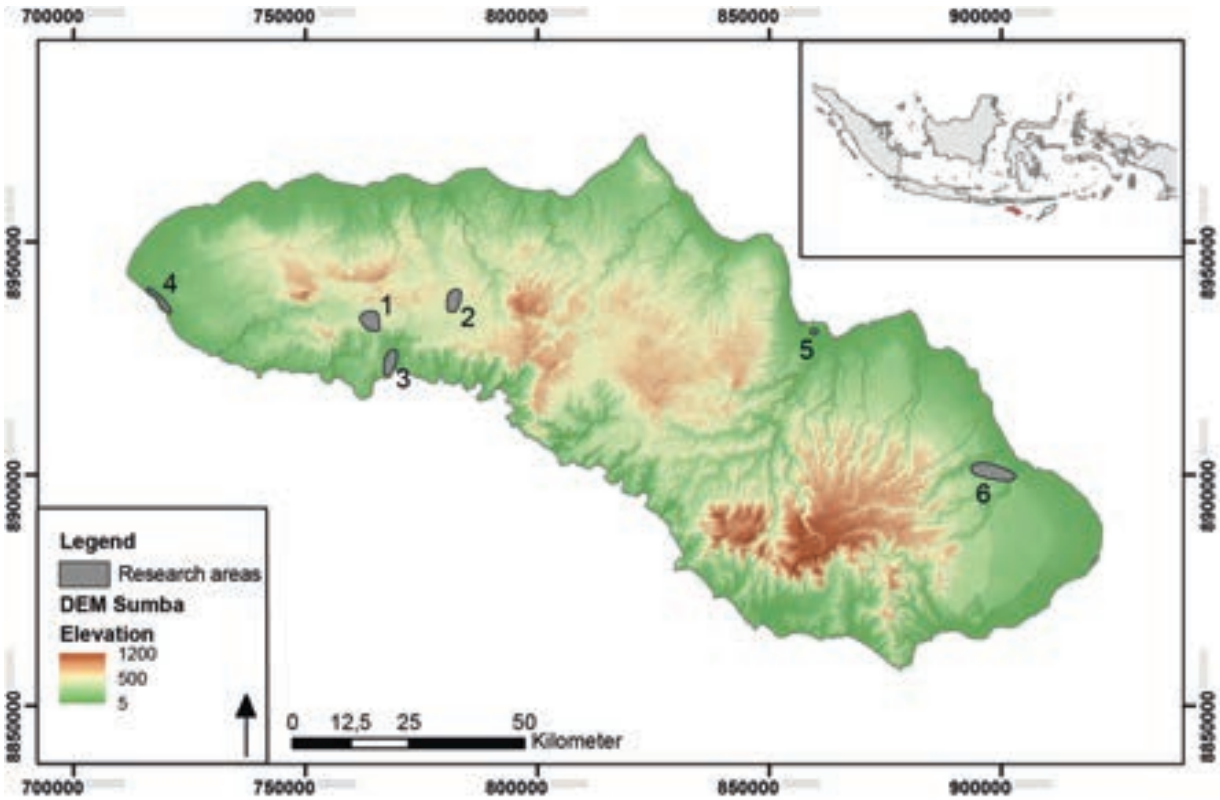

Fig. 2 – The location of the five study regions on Sumba: 1. Waikabubak; 2. Anakalang; 3. Wanokaka; 4. Kodi; 5. Northeast Sumba; 6. East Sumba.

the eastern and western part of the island exhibit different conditions and population densities. The western part of the island is densely populated and has a favourable climate for rice cultivation. In contrast, the eastern half of the island is severely affected by dry and hot conditions which, in combination with extensive deforestation, have led to the emergence of grasslands and shrubs unsuitable for farming activities. In these areas, economic activities centre on cattle and horse herding (Vel 2008: 23-25).

Yet, the social divide between the eastern and western parts of the islands goes deeper. Within the western part of Sumba, social organization was – and is – characterized by a low degree of institutionalized social inequality and the absence of strict hierarchical frameworks. Although, historically, different classes of society were present, these differences were not very influential in daily life. Therefore, many society members in west Sumba had – and have – a rather high degree of capabilities (Gunawan 2000: 99-102; Adams 2007: 75-76). By contrast, major parts of east Sumba, especially those communities on the eastern coast, exhibited institutions of rigid social hierarchies and were therefore defined by a high degree of social inequality. East Sumba is well known for its former kingdoms, leading to a sharp differentiation of royal lineages and a mass of slaves connected to them. The environmental constraints were one of the key factors shaping this two-class system; the restricted natural resources were used for herding economies, as they are today, and the herds belonged entirely to the royal lineages, and still do (Kuipers 1990: 23; Vel 2008: 58).

Nagaland

The analyses shown in this study are focused on the southern areas of Nagaland, where Angami- and Chakhesang Naga constitute the major groups being present (**Fig. 3**). In general, Nagaland is characterized by the presence of diverse societal structures, political and economic frameworks, as well as varied local customs. Although shared traditions and structural traits are present, these vary regionally

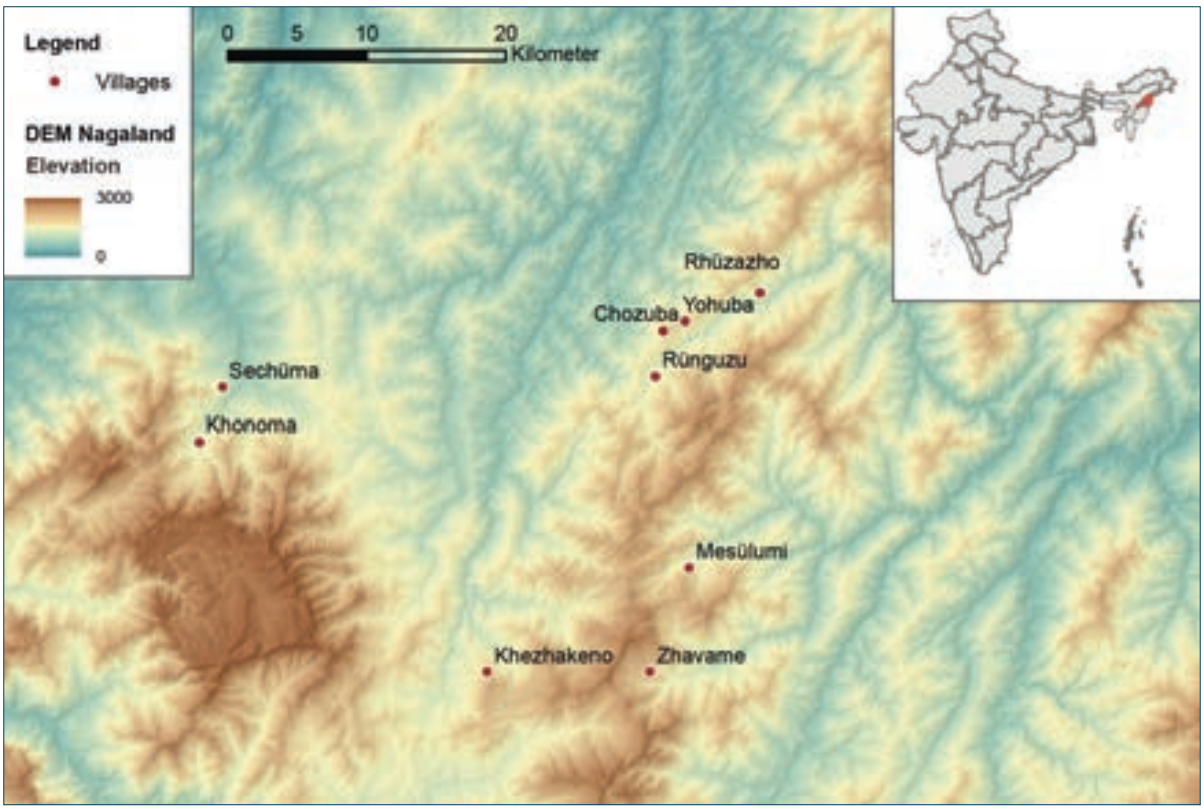

Fig. 3 – The Angami and Chakhesang villages in Nagaland, Northeast India, visited during fieldwork in 2016.

and may find expression in different communities and villages (for a broad overview: Venuh 2014). Among the groups practicing megalith building are the Angami, Chakhesang, Khasi, Lhota, Rengma and Konyak Naga (Jamir 2004). The systems of social organization vary greatly among these groups and range from more egalitarian systems (e.g., Angami and Chakhesang Naga; Hutton 1921b) to systems with strict a social hierarchy (e.g., the Ang-system of the Konyak Naga; Fürer-Haimendorf 1969). With regard to subsistence strategies, shifting cultivation and terrace cultivation are complemented by animal husbandry of cattle, pigs, chicken and *Mithun* (*bos frontalis*). Rules of inheritance and land ownership vary greatly among the different Naga groups, with both individually-owned and commonly-owned land being present (Jamir 2004: 112-114). The southern Naga groups exhibit, as already mentioned, relatively egalitarian social structures. Most importantly, for the most part, these groups did not follow the concept of inherited social positions (Ovung 2012: 125-126). Social renown and political influence were achieved by deeds and actions, namely by being a renowned hunter, warrior, a clan elder, or a feast giver.

2. Recent megalith building activities in Sumba and Nagaland

Some facets of megalith building activities in Sumba and Nagaland reveal major dissimilarities. A major difference is constituted by historical developments in the two regions. While both were (and still are) heavily influenced by the missionary activities of various Christian churches, these had very different outcomes. In Sumba, a syncretic relation between animistic and Christian elements is traceable in the material record and also observable with regard to megalithic monuments (compare Wunderlich 2019: 66). By contrast, in Nagaland the advent of Christianity resulted in the complete abandonment of megalith building and feasting practices (Lohe 2011: 156-157).

The following analyses and the results presented derive entirely from two seasons of ethnoarchaeological fieldwork in 2015 (Sumba) and 2016 (Nagaland), which are published comprehensively elsewhere (Wunderlich 2019).

2.1 Types of monuments

Sumba

Megalith building activities in Sumba are expressed in multifaceted grave forms, which comprise different types of graves, as well as other architectural features such as stelae and ornamentations. With regard to the grave types, regional differences are traceable within the record, yet some major types can be distinguished which are present in almost every region of the island. A very high number of graves is represented by dolmens of varying subtypes (**Fig. 4**).

Traditionally, the stones used for the graves were quarried in the sandstone sources across the island; nowadays concrete is also used to build dolmens. As noted, there are different forms of dolmens, some of which are typical for specific regions of Sumba. Simple stone slabs, which can be set on a pebble foundation, constitute another common type of megalithic monuments on Sumba. While dolmens occur in different sizes and simple stone slabs are usually very small graves, there are also many examples of very impressive megalithic graves with regard to their size. These consist of one or even two rather small dolmens on the ground, above which a large stone slab is set on four stone pillars. This type of megalithic grave is sometimes accompanied by one or two stelae and is often heavily decorated. Although this form of grave is also present in the western part of the island, it is best known in the context of east Sumba, where the royal graves exclusively follow this form of architecture, and surely constitute some of the most impressive megalithic graves throughout the island. They are adorned by extensive ornamentation, especially on the top of the stone slab, and on the accompanying stelae (**Fig. 5**).

This ornamentation east Sumba follows a strict symbolic language, with different animals representing the man and woman of the royal lineage, and including depictions of water buffaloes, horses, and daily activities. This symbolic language is rather different from that of the ornamentation of the rest of island, although it should be noted that there are very obvious differences with regard to the overall

Fig. 4 – Graves near the ritual place in Tarung, Sumba (Photo: K. Rassmann).

Fig. 5 – A royal tomb in the village of Uma Bara, East-Sumba (Photo: M. Wunderlich).

quantity of ornamentations on megalithic graves [1]. The motifs present in the western part of Sumba vary regionally (**Fig. 6**).

Sculpted wave motifs in combination with geometric ornamentations are especially common in the areas of Anakalang and Wanokaka, while rather complex incised motifs can be found more frequently in the region around the city of Waikabubak. In this region, the highest number of variations were recorded during fieldwork in 2015. Despite the differences and variability, which also includes Christian symbolism such as depictions of crosses and Jesus, some symbols are shared across all the different regions. The most important of these is the water buffalo, which can be found in different techniques and forms on megalithic tombs in every part of the island. Another example of such a shared symbolic language is constituted by the symbols of *Maraga*, *Tabela* and *Mamuli*, which signify female and male gender traits respectively. While these symbols are commonly used on megalithic graves, they are also found on the wooden pillars of houses, thereby being of importance both in the sphere of the living, as well as the ancestors.

(1) The percentage of ornamented tombs ranges from 4.4% in Kodi to 65% in Waikabubak. In Prailiang, northeast Sumba, no decorations were present.

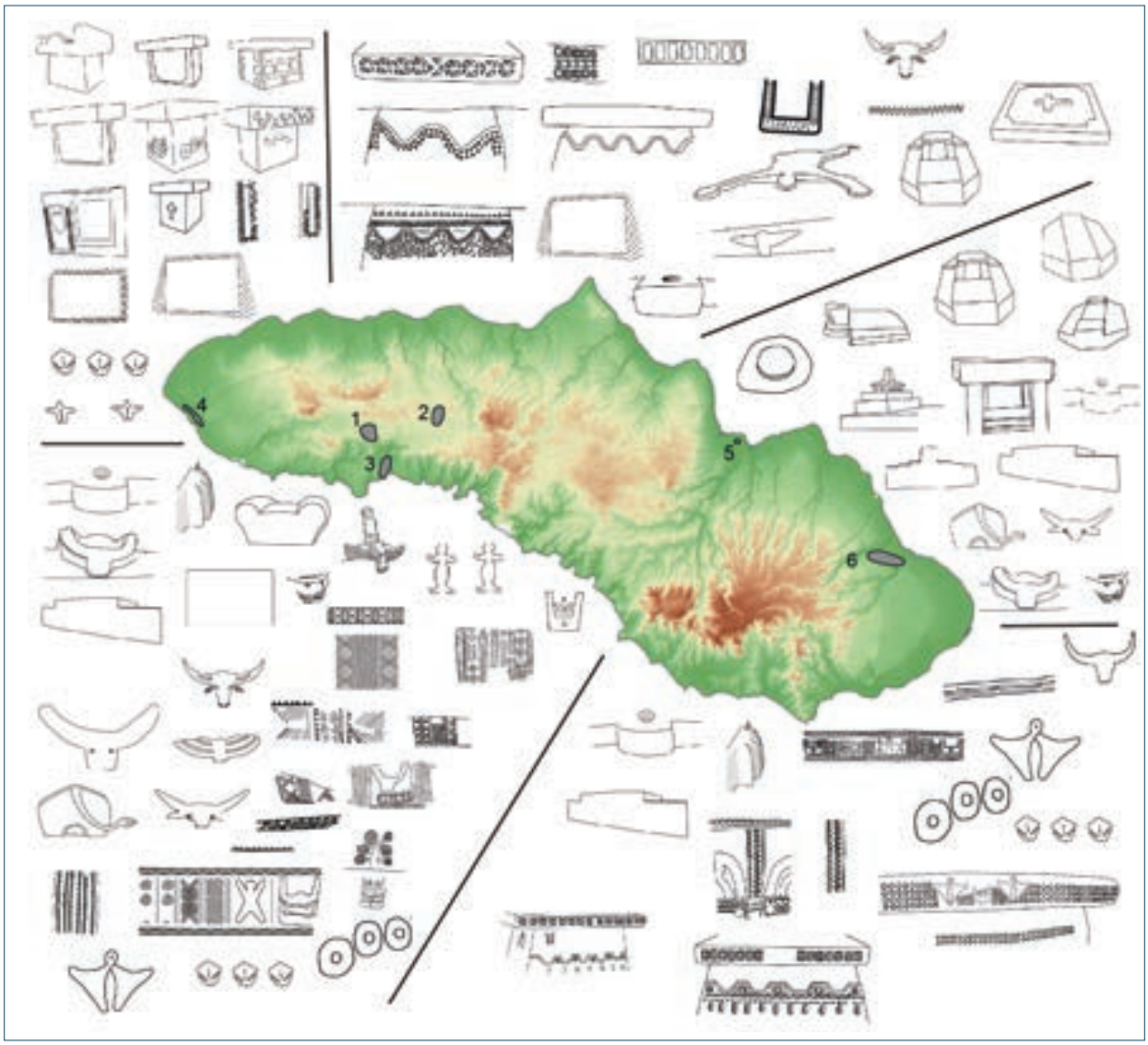

Fig. 6 – The different sculpted and incised ornamentations occurring in Sumba: 1. Waikabubak; 2. Anakalang; 3. Wanokaka; 4. Kodi; 5. Northeast-Sumba; 6. East-Sumba.

Nagaland

In the context of Nagaland, two main types of monuments can be distinguished, constituting the majority of monuments. These are present in highly varying frequencies (2) in the different villages of southern Nagaland. Both monument types are a result of very different contexts and social mechanism. The first type, sitting platforms, are in most cases a result of communal building efforts, while the second type, standing stones, represent the last stage of individual building activities rooted in the so-called *feasts of merit*.

Sitting platforms were usually built by a neighborhood (*Khel*) within a village and thereby represent a joint effort to create a space that serves communal needs and requirements as a place to rest, a location for assemblies. The platforms are brick-built, with larger stones or benches used as seats (**Fig. 7**). Sitting platforms may be of oval, round or rectangular form and are still frequently used today.

Yet, the most common megalithic monument in Nagaland are standing stones, which can be subdivided depending on the presence or absence of additional architectural features like brick-built platforms or stone frames but also by the number and arrangement of the standing stones in rows or small fields. The most common types in the different Angami- and Chakhesang villages visited during the fieldwork in 2016 were single standing stones, and lines of varying numbers of stones (**Fig. 8**).

The general lack of specific restrictions concerning the appearance of stone monuments, results in a great level of variability. The orientations of the stones and the platforms, and the size and shape of the stones are determined by the desires of the builders and the monuments therefore exhibit many different variants.

The variability of stone monuments is further expanded by the presence of small platforms with small stones erected on the top. This kind of monument signifies the number of affairs of a married man. More rarely occurring are 'head-stones': a symbol of the number of heads captured when head-hunting was practiced, before it was banned by the British Colonial Officials (compare Lohe 2011: 156).

2.2 The influence of feasting activities

In anthropological studies, feasting constitutes a central and intensively researched topic (e.g., Dietler & Hayden 2001; Hayden 2014), which is connected to mechanisms and behavioural choices such as solidarity or reciprocity (e.g., Hayden 2001: 40-53). Moreover, feasting activities play an important role within discourses on the expression of social hierarchies as they might – among other possibilities – make economic and social inequalities visible and serve as a signalling mechanism (compare Roscoe 2009). The manifold entanglements of feasting within different concepts of social and economic organization exemplifies the need for a profound description of these activities within their specific frameworks.

Sumba

Within the system of social and political relations and organization in Sumba, feasting activities play a vital role covering and interconnecting different facets. While feasts are an important factor in the creation and maintenance of relationships and solidarity within and between clans, they are fundamental within the system of bride givers and takers (compare Adams 2016: 108). Feasting constitutes a regularly occurring mechanism, like the ancestral house building of different lineages, funerals, thanksgiving, and also megalith building. Feasting activities take place during all the different stages linked to the erection of a megalithic monument. The whole undertaking of building a megalithic grave, with its connected duties, is organized by the household as the primary sponsor (compare Adams 2007).

Starting with the decision to build a megalithic grave, the quarrying, the transportation, the erection of the stones and the completion of the tomb will require feasting activities. These are particularly

(2) The percentage of sitting platforms ranges from 22% in Angami villages to 5% in Chakhesang villages. The percentage of standing stones lies between 69% (in Angami contexts) and 82% (in Chakhesang contexts).

Fig. 7 – A sitting platform in the Angami village of Khonoma, southern Nagaland (Photo: M. Wunderlich).

Fig. 8 – Example of a smaller cluster of megalithic monuments at the terrace fields in Khezhakeno, southern Nagaland (Model: S. Jagiolla).

important during the transport and erection of the stones since every participating person has to receive food and beverage for their work. The feasts associated with megalith building activities constitute some of the biggest and most lavish festivities, potentially requiring more than ten water buffaloes and 100 pigs to be slaughtered (Adams 2016: 109). Yet, it has to be recognized that the number of animals slaughtered, the people involved in the working steps, and the general outline of the feasting activities depend on the will and capabilities of the sponsor and tomb builder. They are therefore characterized by a high degree of variability and do not necessarily follow exact rules and obligations. Despite their rather loose structure and low degree of institutionalization, these activities constitute an integral part of, and a very important accompanying factor, for the megalith building activities themselves.

Nagaland

In complete contrast to the situation in Sumba, megalith building in Nagaland is not accompanied by feasting activities but, rather, is a very specific part of the so-called *feasts of merit*. Despite this profound difference, feasts form an integral part of the agricultural cycle, as do special occasions such as marriages. Much more elaborate than these, the *feasts of merit* were essential in the development of individual prestige and societal influence of single persons and households. This function is, as mentioned above, rooted in the low degree of hierarchization in Angami and Chakhesang communities, whereby the only way to achieve socio-political esteem and influence was either to succeed in a certain profession (for example as a hunter or warrior), by being an elder of a clan, or by becoming a feast giver (Ovung 2012: 125-126; Venuh 2014: 127-128). The *feasts of merit* could be started after a marriage and the foundation of the independent household of a young couple. As soon as a certain surplus of rice was produced and animals were available, this couple could begin the feast series. Despite its universally essential role in southern Nagaland communities, the institution of the *feasts of merit* was – despite its overall presence – translated in a different way in each village. Common to all the different version of *feasts of merit* was a materialization of the achievements of the feast-giving household in terms of clothing, wood and stone. The example of the Chakhesang village Mesülumi is a special case as it offers both a simple and a more complicated layout of the feasts. Both versions of the *feasts of merit* contained three distinct stages, with each stage comprising a minimum of two repetitions. After the first stage, a simple house horn and a special type of post were set up on the roof and the front of the feast givers house. After the second stage, a decorated house horn was attached to the house, while only after the third and last stage (after a minimum of six single feasts) could a standing stone be erected in the name of the feast giver. In the simpler version the feasting had to last for nine days and three posts could be erected; in the more complicated version the duration of feasting was 29 days and five posts were erected.

Despite the variability and uniqueness of the *feasts of merit* in the different southern Naga villages, they all shared one characteristic in addition to their social importance. The amount of resources used was extraordinary high, especially for those households who completed the whole series of feasts. In his monograph on the Angami-Naga, Hutton (1969)

Feast no.	Rice	*Mithun*	Cattle	Pigs
1-3	Small amount	None	1	None
4 (2x)	2 baskets	None	4	2
5 (2x)	baskets	None	8	4
6	6 baskets	None	10	5
7	12 baskets	None	12	8

Fig. 9 – The resources for a feast series of seven stages among Angami Naga, reported by J. H. Hutton (1969).

recorded a seven staged feasting series and listed the resources needed for these (**Fig. 9**). This example clearly highlights the high number of animals, as well as the amounts of rice needed for the feasting activities.

2.3 The influence of economic and social inequality

The examples given above concerning feasting activities point towards a decisive factor in megalith building, namely the influence and role of economic inequality. This facet of megalith building is concerned with what Shenk *et al.* (2010) labelled as material wealth and in this context is considered to be an important form of inequality in agricultural societies. It is indeed essential to differentiate between economic and social inequalities with regard to megalith building in Sumba and Nagaland. While networks and relationships play an important role within the process of enabling single households to build a megalithic monument, means of resources (most notably in the form of rice, pigs and water buffaloes) also play an essential role and are in many cases a product of and manifestation of economic inequalities. Considering the case studies presented, social inequality is without doubt connected to economic inequality, but surely is not tied to it. Therefore, a wide array of approaches must be used to explain the dynamics and mechanism connected to social inequality.

Sumba

In the case of Sumba, we must differentiate between the western and the eastern part of the island, since both areas exhibit very different socio-economic and political structures (compare Jeunesse 2019). While, in the western part of Sumba, social inequality played only a minor role within megalith building activities, the very same factor was the main driver behind the shape of megalith building in the eastern part of the island. Economic inequality did, on the other hand, play an essential role in the choice of the type, the material and size of megalithic graves in west Sumba, while it constituted a less decisive factor in east Sumba.

In the context of the strongly hierarchized societies in east Sumba, megalithic monuments must be considered as one of the most durable and symbolic materializations of the now abandoned social structures of royal lineages and slaves. In general, the diversity of grave types is much lower in east Sumba. The existing types are characterized by marked differences in size and elaboration, thus creating a tension between the social groups entitled to build the respective monuments. Large and complex grave monuments are solely to be built by members of the royal lineages, while former members of the slave families can only use small stone slabs resting on the ground. This restrictive access to the different grave types is also followed today, despite the abandonment of slavery and royalty. The high degree of restrictions and regulations connected to megalith building in east Sumba also affects the diversity of size and architecture of the monuments. The different grave monuments are marked by a high degree of uniformity, especially the small and undecorated graves of former slaves. Despite the official abandonment of slavery, social restrictions persist in the context of the different communities. Dependencies and social inequality are still a decisive factor, and a member of the former slave families would still, today, not be allowed to build a special type of grave monument. Thus, despite changing socio-economic conditions, the practice of megalith building remains unchanged and unaffected.

In a stark contrast to the this situation, megalith building in west Sumba is affected by a multitude of factors, the most influential being economic capabilities and access to social and political networks. Although a certain degree of impact on megalith building activities due to social inequality cannot be denied, there are no restrictions concerning the grave type and the affiliation of potential grave builders and certain social groups. The choice of the grave type, the material used, the quarry and the use of decorations is uniformly connected to the economic situation of the grave builders' household. The size of the monuments, especially, can be described as a materialization and expression of economic inequalities within western Sumbanese communities. As a consequence, there is both a high diversity of grave types present in these communities and a wide variability of grave sizes. While in most villages most of the graves can be

assigned to 'medium' size classes (i.e., between 0.1 and 3 m^3 : 61.2-84.4%), only a minority of graves is extraordinarily big or small [(3)]. Naturally, the exact numbers vary from village to village, yet the distribution curves in many cases follow a normal distribution (compare Wunderlich 2019), reflecting the moderate economic capabilities of the majority of grave builders.

Nagaland

Within the context of Nagaland, it is very clear that social inequalities play a minor role within the praxis of megalith building, while economic inequalities have a major impact on monumentality. The praxis of megalith building was open to any member of the society if they had formed an independent household. Yet, this was limited as usually only the men of these households were considered as feast givers. Although in many cases, one stone for the man and one for the woman of the family were erected, women would not act as feast givers. Depending on the economic resources and productivity of the household, it was possible for every household to start the feasting series.

With the dependence on individual capabilities in connection with social networks and relations, megalith building in Nagaland appears to be a rather open concept, offering possibilities to many people. It must, however, be mentioned that, at least in the village of Mesülumi, it was estimated that only around 30% of the village population ever started the feasting series. In general, it was assumed that only small parts of the overall population of villages were ever able to erect a stone. Moreover, the number of stones constitute a clear materialization of economic capabilities and, furthermore, of connections and networks within the village community. In contrast to the factor of size, which is of high relevance throughout Sumba, it is rather the number of stones which is decisive in Nagaland. Since a high number of stones can only be reached through the repetition of the last stage of the *feats of merit*, the number of erected stones is a direct representation of the intensity of a feast giver's activities. The difficulties in obtaining an high intensity of feasting activities is best explained by the frequency of monuments with a higher number of stones. Usually, most of the monuments consist of those with one or two stones, while exemplars having between 3 and 5 stones are more rarely present, and those with 8 or more stones are seldom to be found. These numbers plainly illustrate the clear decline in households with the capability to repeat the series of feasts even once, and those who cannot start, let alone repeat them. Yet, it is important to note that this differentiation is not necessarily due to a strict and institutionalized hierarchization, but depends more on a complex interplay between factors of economic differentiation and the social relationships and networks of a given household.

2.4 The importance of collective memories and landscape construction

A long-standing topic of discussion amongst researchers of monumentality is the question of the creation and alteration of landscapes (e.g., Osborne 2014: 5). Amongst others, one important element might be the potential use of megalithic structures for the creation of frames of reference of collective memories. A possible close link between monuments and social memories is discussed in many cases (e.g., Osborne 2017: 166; Müller 2018), and is evident due to the suitability of megalithic monuments to create (re)accessible, group-specific materializations of importance for collective memories (compare Halbwachs 1950). Modifications of landscapes are an integral part of societies, albeit that these may happen within intentional or non-intentional frameworks. In any case, landscapes are experienced through social relationships, thereby creating a potential connection between social structures and landscapes (cf. Ingold 1993: 155; Grier 2014: 232-240).

(3) Small graves (0-0.1 m^3): between 0.7 and 18%; Big graves (3-7 m^3): between 4.4 and 28.4%; Extraordinarily big graves (7-40 m^3): between 0 and 4.9%.

Sumba

In the context of Sumba, megalithic monuments do not play a major role within aspects of landscape construction. Most of the graves are located within the villages, with additional areas assigned outside of these if insufficient space is available. The exact arrangement of megalithic graves within the villages varies from region to region. The general plan of the villages and the affiliation of houses to the different clans are among the most important factors influencing the distribution of megalithic graves within them. In many cases, at least some of the grave monuments are arranged in circles surrounding the central ritual areas of the villages (**Fig. 10**). Often, the megalithic tombs are positioned in clusters or spread evenly along the long axis of the village outline. In either case, a general rule is that the tombs are to be found close to the houses belonging to the same clan as the tomb builder. Since megalithic tombs are considered as a second home for the dead, a close connection between the ancestors and the living members of a given clan is an important aspect. This points towards the importance of collective memories within the tradition of megalith building. The integration of the dead and their tombs into the domestic sphere and into a collective framework creates direct links between the past and the present, thereby creating and maintaining collective memories.

Nagaland

In contrast to Sumba, the element of landscape construction constitutes a prominent and vitally important feature of megalith building traditions in Nagaland. Both in Angami, and in Chakhesang groups, the location of the main monument types, sitting platforms and standing stones, differs profoundly. Only the sitting platforms are, in most cases, to be found within the village area itself, while only a few of these are located close to the terrace fields. The location of sitting platforms is related to both their function, and their ownership. In many cases, these monuments were built in a collective way by a community, most notably by the different *Khels*, or neighbourhoods, within the villages. As collectively erected monuments, the sitting platforms were located within the space assigned to the affiliated group.

With regard to the standing stones, only few exemplars may be found within the villages themselves. One reason for these outliers in terms of the spatial distribution is the growing size of most villages. Those standing stones which are today located at the fringe of the village area were originally positioned close to the domestic areas near the footpaths.

The distribution of most of the standing stones follows the route of the footpaths leading from the village to the terrace fields and the forest areas and which are used on a daily basis by many members of the communities (**Fig. 11**). There are two reasons for the location of the stones along these paths. Firstly, a very practical reason is the potential of megalithic monuments, especially those with an attached stone platform, as resting places for people coming up from the terrace fields. Secondly, and more importantly, the prominent placement of the megalithic monuments leads to a memorization of the names and achievements of the feast givers. The landscapes which are created in this way might be described as arenas of social reproduction by means of monumental architecture. This arena connects the domestic sphere of life – the villages themselves, and the economic areas – the terrace fields and the forest areas. As mentioned earlier, a constant (re)creation of the direct environment of the village might be used to create, or foster, unequal access to specific areas or resources and thereby influence relationships of inequality within the communities themselves. The weak connection between social inequality and megalithic monuments in Nagaland is also visible here; it was repeatedly explained during the fieldwork that a monument could be built in any given area or space. Private properties were not a barrier to the construction of a megalithic monument belonging to a different person. In this way, diverse and mixed landscapes of stone monuments were created, which contain monuments associated with different clans or other social groups. Interestingly, this altered environment encompasses both an individual and a collective form of memory culture. Since the monuments themselves are always seen as a function of both the feast giver's accomplishments and those of the affiliated social groups, a collective frame of reference is created

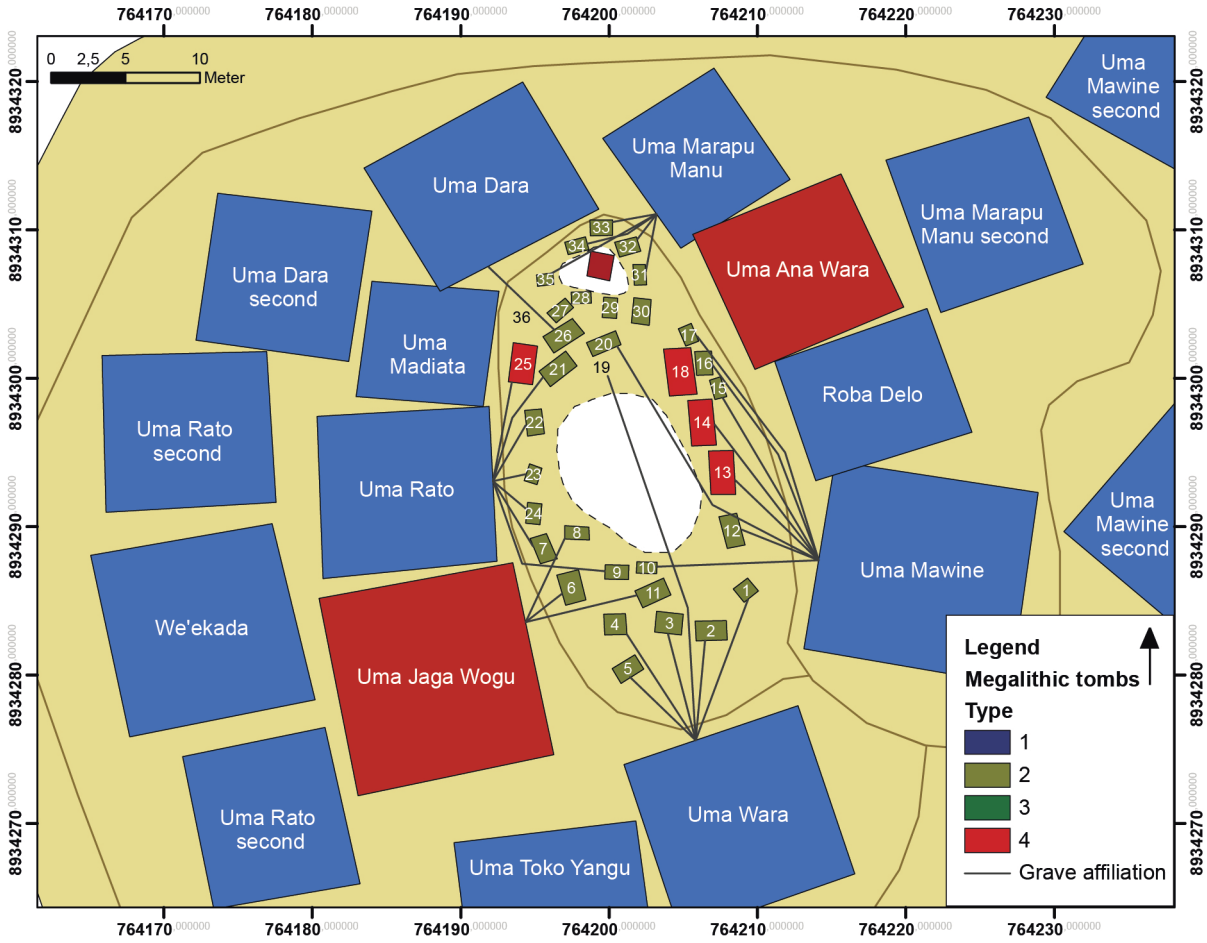

Fig. 10 – The grave types located in the central village area of Tarung, Sumba.

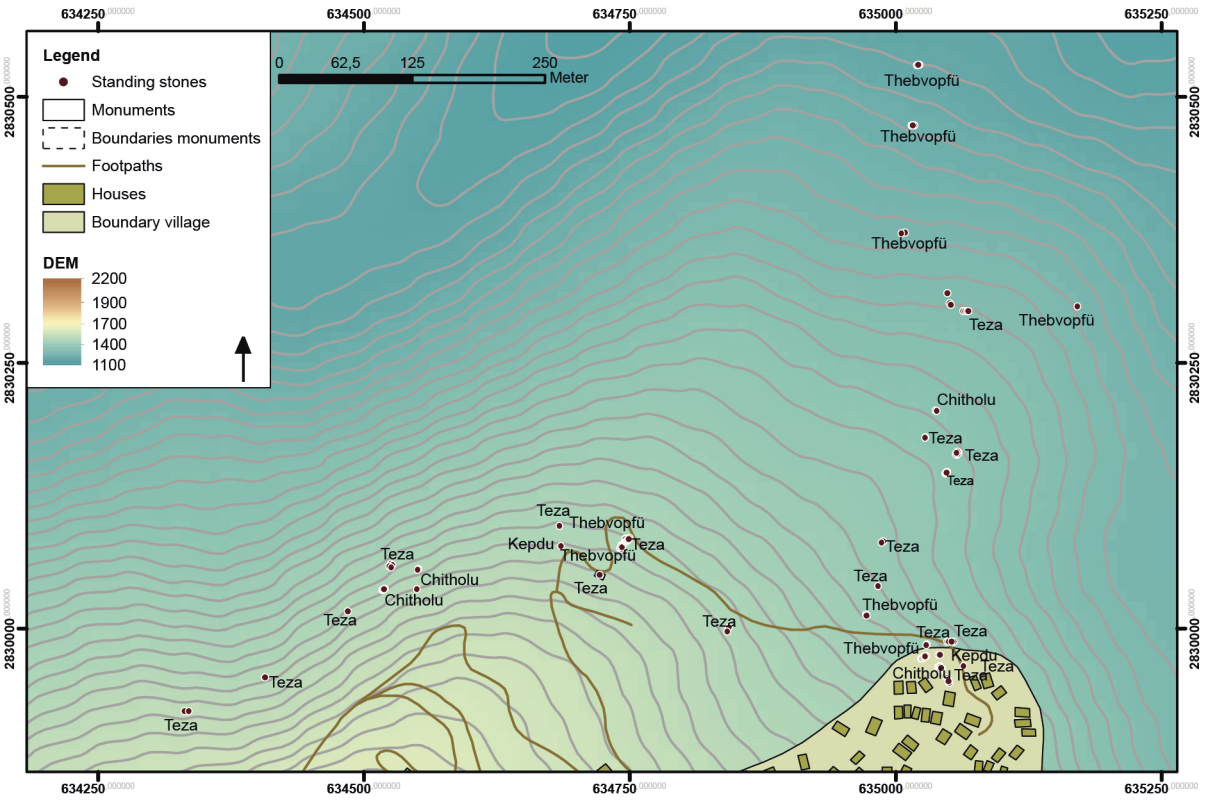

Fig. 11 – Detailed view of the megalithic monuments located northwest of Mesülumi, southern Nagaland.

through the landscape construction, ultimately forming collective memories (**Fig. 12**).

2.5 The importance of collective/cooperative action and communal frameworks

Within the broad span of social organization and basic behavioural mechanisms, individualistic versus collective as well as exclusive versus corporate strategies form important points of reference (compare Blanton *et al.* 1996). These terms describe modes of behaviour and organization which are present within every society, regardless of the degree of social hierarchization. However, a given group or community will incline towards a certain strategy and will thereby develop a certain pattern of behavioural choices. As one of the basic elements within the repertoire of human behaviours, cooperation appears in different forms and for different reasons, sometimes being influenced by a high degree of solidarity and sometimes by a high degree of competition (compare Roscoe 2009: 70; Carballo 2013). Despite having a fluctuating and situational character, cooperation depends on different rules and mechanisms in its formation and maintenance. Most importantly in this regard are factors of reputation, reward and reciprocity (Carballo *et al.* 2014: 5-9).

Sumba

Due to the contrasts within the social and political organization of Sumbanese communities, Sumba provides a broad variety of case studies with regard to the importance of cooperative and collective action, as well as communal frameworks. Within east Sumba, collective action in relation to the erection of megalithic tombs is limited to the provision of labour forces. Albeit that the construction of the royal tombs would not be possible without shared labour and the help of large groups of people, this must be differentiated from the cooperation and collective action present in the western part of the island. Most importantly in this regard is the missing link between the eventual collective construction of a royal tomb and the communal frameworks of megalith building embedded in west Sumba. The reason for this fundamental difference is the dominance of exclusionary strategies in large parts of east Sumba, which are based on exclusive and restricted ownership of resources, as well as important knowledge (compare Kuipers 1990: 23).

Fig. 12 – Standing stones by the footpaths east of Zhavame, southern Nagaland (Photo: M. Wunderlich).

In the more egalitarian contexts of the social organization in west Sumba, communal frameworks do play a vital role within most aspects of life. The most influential and notable social groups in this regard are the clans and lineages (*Umas*), which are the foundations of most parts of the social sphere. They provide common labour pools, social security, and are essential within the realm of the sponsoring of bride wealth (Hoskins 1993: 17-18; Adams 2007: 82). During the megalith building and the accompanying lavish feasting activities, clan and lineage members are obligated to support and sponsor by providing labour and resources. The erection of megalithic graves within the ancestral villages in close vicinity to the oldest and most important houses of the different lineages signifies the collective dimension of megalith building regardless of the individual owner of the grave. The collective reference towards megalithic graves is embedded in the communal framework of these important socio-political institutions (clans and lineages) and is represented for outsiders by the prominent placing of the monuments.

Nagaland

In a similar way to the situation in west Sumba, megalith building activities in Nagaland constitute a tradition in which collective and cooperative action is of great importance.. Cooperative and collective action frameworks play an important role in the allocation of necessary resources, especially during the *feasts of merit*. The feasting activities were characterized by the importance of reciprocal mechanisms. Solidarity with the feast giver, in form of gifts of rice or other resources, were a fixed part of feasting activities and in some cases, even expected from certain social groups such as relatives, clan-members or rich people within the village. The allocation of resources for the feast giver's activities, nevertheless, automatically implied an expected repayment. Therefore, feasting in Nagaland was closely connected to reciprocity and the creation or maintenance of important relationships, while sharing as a distinct practice was not necessarily the focus. Megalith building was connected to a complex system of rewards and important for the individual reputation of the feast giver, but also for the reputation of affiliated social groups.

The generally high degree of cooperation connected to megalith building activities is embedded in a communal framework, in which corporate strategies are fundamental. In this regard, the interwoven relationship between kinship-structures (clans), further social groups (*Khels*) and different aspects of the socio-political sphere are highly significant. Clans and *Khels* provide common labour pools, social security and an educational system (Lohe 2011: 87-90; Venuh 2014: 135-136). Furthermore, they are relevant for cooperation in agricultural activities and decision-making processes. Sponsoring or supporting feasting and megalith building activities are an integral part within this framework of corporate strategies as they link many of the afore mentioned aspects and provide a bridge between individualistic and collective aspects of the village communities.

3. Synthesis: comparing two models of megalith building activities

The structural comparison of both case studies shows that there are similarities in the underlying social mechanisms and behavioural choices that influence megalith building in Sumba and Nagaland. Yet, despite the structural resemblances, the individualistic interpretation and expression of overarching mechanisms should not be forgotten. The case study of southern Naga communities shows how important this specific collective agency was among the communities involved. Although courses of action were unanimously followed and showed the same societal importance (e.g., the institution of the *feasts of merit*), the ever-changing and unique translations of these within the desired frameworks of a given community seem to have been highly significant. Thus, general interpretations using broad categories should also be avoided, or at least be critically questioned, in archaeological contexts.

The comparison between the megalith building traditions in Sumba and Nagaland highlights striking similarities. The three factors, or courses of action, showing the highest degree of accordance between southern Nagaland and western and eastern Sumba concern the important role of feasting activities during megalith building, as well

as the influence of economic inequality with regard to the building practices in general, but specifically to the types and size of the monuments. Both aspects are closely interlinked, since feasting activities require the highest amounts of resources (rice and meat) to be allocated within the whole process involved in megalith building. Albeit the specific framework of feasting is rather different, the mechanism itself represents an intersection of divergent systems, such as solidarity, reciprocity, communality, competition and inequality. Yet, it should be mentioned that feasting in Nagaland must be seen as the framework in which megalith building is embedded, while in Sumba, feasting activities accompany megalith building. Economic inequalities are not only influential within the practice of feasting, but also affect the choice of type, size and, in the case of Sumba, the application of decorations to the stones. Varying from case to case, the leverage of the economic capabilities of an individual and their connected social group must therefore be considered a fundamental variable in the process of megalith building activities. Additionally, we should not underestimate the collective and cooperative action within all communities studied, which also varies. In west Sumba and southern Nagaland these courses of action are embedded in communal frameworks and corporate strategies, which involve important social groups (such as clans and lineages) and represent important intersections for complex socio-political forms of organization. In east Sumba, megalithic tombs are erected in a collective way, but exclusive strategies and strict social hierarchies define the social structure of the communities and are represented in their access to specific types of grave monuments. Other aspects are not structurally overarching and important only to some specific communities with megalith building traditions. Among these are the role and societal significance of megaliths as a means of landscape construction, as well as their function as materializations of social and collective memories. In Nagaland, both aspects are closely intertwined; megaliths as an element of landscape construction provide a framework for the preservation of social memories. In Sumba, the dead and their burial are integrated into the social/domestic sphere and a strict collective framework of ancestral villages, which function as central places. The factor having the lowest degree of accordance in relation to megalith building is the role and influence of social inequality. This factor proved to be highly relevant only in east Sumba. By contrast, southern Nagaland and western Sumba exhibited no social restriction on the construction of megalithic monuments.

A structural comparison, as presented here, provides a framework for a broad evaluation of similarities and dissimilarities of the mechanisms influencing megalith building, and is thus also a potential source of understanding for archaeological case studies. Despite the potential offered by structural comparisons and the use of quantitative approaches, there should be no doubt that this approach must be supported by qualitative data. One of the great advantages of ethnoarchaeological data sets is their potential to give us an understanding of the potential variability of past human behaviour.

4. Perspectives

The research on recent megalith building tradition in Sumba and Nagaland is of great value to assessments of the possible variation and complexity of this topic, which is of long-standing interest for archaeological researchers. Both Sumba and Nagaland exhibit megalithic architecture that is embedded in diverse social contexts, as the situation in eastern and western Sumba particularly shows. The megalith building and feasting activities in southern Nagaland are characterized by an extraordinarily high degree of local variability, in which each and every village has specific translations of overarching and shared traditions. Although the overall framework of, for example, the *feasts of merit*, hold significance within the entire area settled by Angami and Chakhesang Naga, this practice was altered to meet individual needs and preferences. This circumstance might also provide new avenues for the archaeological research of megalith building, where local variations and aberrations might also have been of higher importance than usually considered.

Acknowledgement

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Part III: Megaliths from Easter Island to Indonesia

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Part III: Megaliths from Easter Island to Indonesia

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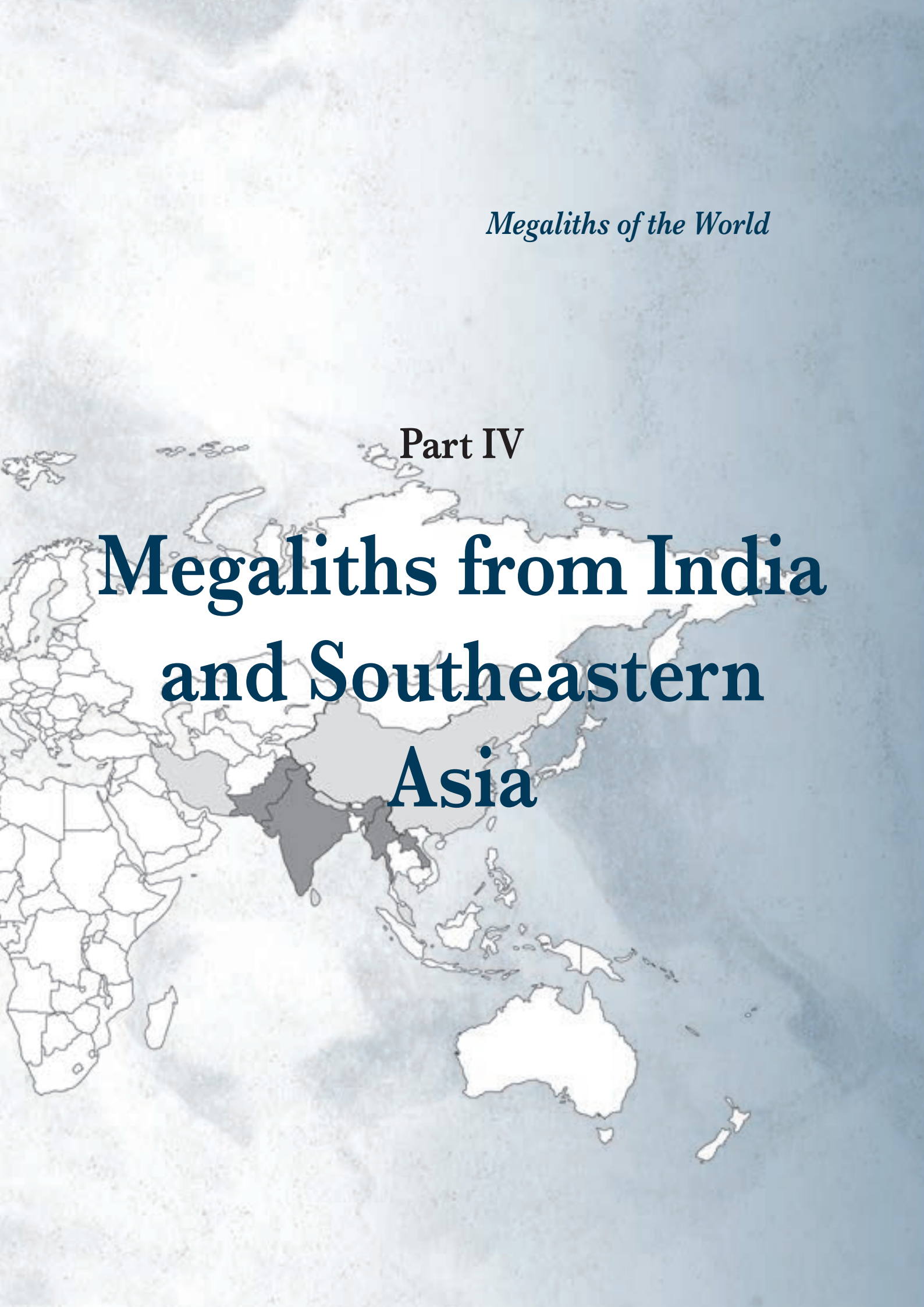

Part IV

Megaliths from India and Southeastern Asia

Rabindra Kumar MOHANTY, Johannes MÜLLER

Introduction

The Indian subcontinent, and more generally South and Southeast Asia, is a rather remarkable case for megalithic studies. It has a huge number of megalithic remains, some of which were built several millennia before our own era, while others are part of ongoing traditions. In addition, historical texts sourced a few centuries ago inform us about some of the contemporary societies (Basa *et al.* 2015). Research into both the monuments and the associated literature has been extremely abundant, some beginning as early as the first half of the 19th century, and has resulted in the publication of numerous scientific, archaeological, ethnographic and historical articles. After decolonization, these studies were largely pursued by a fairly dynamic pool of national and some international researchers, as mentioned in the first chapter of this section (Mohanty, this volume, p. 419). There are few regions of the world where megalith building continues from the past into recent times. An attempt to compare, structurally, some European and the Northeast Indian megaliths was made recently (Wunderlich *et al.* 2019).

The various contributions presented here illustrate the great diversity of this topic of study, as well as of some of the related academic traditions. This diversity is so significant and the megalithic monuments so numerous and versatile that no single work could claim to be exhaustive, but Chapter 19 (Mohanty, this volume, p. 431) provides a broad overview of megaliths in Southern Asia. The following contributions also shed light on a state of knowledge that varies greatly depending on the regions concerned. In southeastern Pakistan, facing a large urbanization of suburbs around the major cities, time is running out for the documentation of megaliths. We know only that they come from a period prior to the arrival of Islam, and very few have ever been studied in a truly scientific way (Kalhoro, this volume, p. 499) except for some megalithic graves from Gandhar region (Zahir 2016). Similar remarks could probably be made in relation to the numerous standing stones of Baluchistan, with a few others reported from eastern Iran as early as the second half of the 19th century (Fergusson 1872). Further north, in the foothills of the western Himalayan mountains, some intensive exploration has taken place recently (Bettsa *et al.* 2019). Still higher in the mountains, archaeological surveys have begun to explore the Tibetan highlands. In the Himalayan valleys, some burials display megalithic characteristics (Khandhuri *et al.* 1997). Further to the east, the hilly regions of Northeastern India and neighbouring Burma have also produced many different concepts of megaliths, some of which are still related to contemporary ethnic groups and traditions (Devi 2011; Marak 2019a). Reported since the mid 19th century, living megalithic traditions such as those of the Nagas people sometimes contribute to the renewal of identities; surveys of these monuments have been conducted in many areas (Jamir & Müller, this volume, p. 447). However, these megaliths are not always those for which we are the best informed about the chronological depth of their local implantation. Other living megalithic

Fig. 1 – Lingering tradition of monolith worship by the community of Silupta, Kamrup District, Assam (Dutta 2019: 146, Fig. 2). In some South Asian societies, megaliths are still part of living traditions. Different sizes of stone constructions can be observed as graves in many regions. Often, megalithic and non-megalithic burials exist side by side.

traditions survive within Indian subcontinent (Rousseleau 2006), for example, the burial traditions of Mundas in Jharkhand, which are described here in detail (Shekhar & Mohanty, this volume, p. 475).

Other debates concern the total disappearance of phenomena, such as the large stone jars, probably with a funerary purpose, that can be found from Northeastern India to northern Laos (Thakuria, this volume, p. 489). Researchers tend to associate these with deep grave pits, simply covered by a large capstone, and frequently marked by several standing stones above the ground (Keosphha 2006). Although poorly documented by recent studies in Southeast Asia, other clusters of standing stones are also reported, down to the Malacca Peninsula (Taha & Osman 1982). For a long time comparisons have been proposed between the different forms of megaliths observed on the Indonesian islands and those present in distinct (and very distant) parts of South and Southeast Asia. Comparing Indian and Indonesian examples, a completely different approach was proposed at the end of the previous part of this book (Wunderlich, this volume, p. 373) This goes beyond the mere similarity of architectural forms to focus on the different social mechanisms governing the construction of these megaliths.

Continental India brings together many questions of the origin of megaliths, having a large number of chronologically diverse examples. The *Topikals* of Kerala, stone cists built with laterite blocks assembled and arranged in the shape of a 'mushroom', have also been mentioned within Chapter 19 (Mohanty, this volume, p. 431). There are numerous megalithic sites in the Deccan region in the central part of India. Some are part of living traditions while others have an antiquity of several millennia (Darsana 2015; Nair 2015). Megaliths were recently studied in the north of Ceylon Island (Katugampola 2015), in the state of Tamil Nadu. Chapter 27 (Rajan, this volume, p. 545) offers a comprehensive description of the remains encountered. Describing the megalithic ruins or focusing solely on the funeral practices with which they were associated, is obviously not sufficient to fully reflect all aspects of past societies. These must also be perceived through the remains encountered within settlement sites. Some megaliths appear closely associated with, and even prior to, the first developments of iron metallurgy in the 2nd millennium BC, surviving many centuries after the rise of historical times around the 4th-5th century CE.

Several contributions in this volume consider the Vidharba region of the northeastern part of India (Mohanty, this volume). The incredible diversity of architectural remains

encountered here is illustrated in Chapter 25 (Sontakke, this volume, p. 523), through a comparison of two distinct geographical areas. The interpretation of the social organizations of these past societies, with a functional and statistical analysis of archaeological grave goods compared to historical texts, is the aim of Chapter 26 (Vaidya & Mohanty, this volume, p. 535). In the alluvial plains of Northwest India, funerary monuments contemporaneous with the civilization of the Indus during the 4th millennium BC are sometimes presented as very early developments, announcing what, elsewhere and later, would be at least partly built with large stones. In contrast to these developments, the Harappa civilization is, in principle, non-megalithic, with a few burials and cemeteries and without a significant investment in stone architecture (Bisht 2015; Kenoyer & Meadow 2016; Shinde 2016).

The various contributions collected in this section will give the reader an overview of different states of research for a vast geographical area which has sometimes been presented as the 'megalithic' continent, par excellence, although the definition of a 'megalithic tomb' and what would be labelled a 'cist burial' in other research traditions should be kept in mind.

Fig. 2 – Megalithic tombs and stone cists in the Khasi-Jaintia Hills, India (Mitri 2019: 173, Fig. 12).

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Rabindra Kumar MOHANTY

Megalithic cultures in Southern Asia

Abstract: The origin and development of megalithism in India has been a subject of debate in terms of whether it was due to indigenous movement or was influenced from foreign sources. Here, the 'megalithic' culture incorporates varieties of burials with or without stone settings. The monuments represent a context of socio-religious expression through the burying of the deceased in a grave accompanied by certain culture-specific objects of the period. The wider practice coincides with the extensive use of iron and forms an adjunct to the megalithic culture across the subcontinent. Iron Age megaliths appear in different regions of the country beginning between the 13th and 12th centuries BCE and continuing until the Early Historic period around the 2nd and 3rd centuries AD. They are largely found in the southern part of the country, and hence popularly known as South Indian Megaliths. However, organized burial practice in the Indian subcontinent can be dated to the Mesolithic period when burials appear between the 8th and 4th millennium BCE and continue throughout the Indus Valley Civilization, and regional Neolithic and Chalcolithic cultures. The burials built of stone excavated at Dholavira and Daneti from the early phases of the Harappan culture (around 2800-2000 BCE) assume significance and somewhat resemble megalithism during the Iron Age. The prior existence of selective burial practices and their continuity during subsequent Neolithic and Chalcolithic contexts in many parts of the country are often superimposed by Iron Age megalithism. Permutations and combinations of architectural models, use of different building materials, and varying socio-economic and traditions for the ritual departure of the deceased, result in a range of forms of megalithic monuments, found across many parts of India, but especially in Peninsular India.

Keywords: *megalithism, monoliths, Chalcolithic, Neolithic, Iron Age, Gandhar, Vindhyan, Ganga plain, Deccan, Peninsular India, Black and Red Ware, burial*

1. Introduction

The history of investigation of the Indian 'megaliths' spans more than two centuries. In 1819, Col. Mackenzie recorded megaliths for the first time in Solapur Doab, Karnataka in South India. Four years later, Babington unearthed a group of megaliths in the northern part of Kerala, and published an article entitled *Description of the Pandoo Coollies in Malabar* (Babington 1823: 324-30). He is credited as the initiator of megalithic research in the Indian subcontinent. During the 19th century, several 'megalithic' sites were discovered, and many were also subjected to various levels of excavation, especially in Peninsular India, by colonial administrators, officers, missionaries, treasure hunters and antiquarians. Since then, these impressive monuments, either visible on the surface or buried underground, and with or without stone settings containing cultural material and associated human remains, have been subjected to varied degrees of investigations and interpretations (for a detailed review see Mohanty & Selvakumar 2002).

Indian megaliths, although having some commonalities, also show regionalism; the inspiration for these practices and their further development seems not to be uniform. It probably depended on the cultural environment, local and regional cultural ideologies, economics, and assimilations of developing ethnic philosophies. This resulted in such a variety of regional and local manifestations that no two burials are in any way close to being similar, in terms of their contents, architecture, or the very

Fig. 1 – Some important megalithic culture sites in the Indian subcontinent.

purpose of the megalith (e.g., to dispose of the dead or to erect a memorial). Multiple types appeared at the same site, and internal arrangements and layouts were experimented with in almost all cases. The author began searching for minute variations from surface archaeology as social indicators of the megalithic people on a small scale in the 1990s (Mohanty 1993).

As this tradition became prominent during the Iron Age, the monuments are generally known as Iron Age megalithic burials. Although the burials are found in different contexts and regions and over an extended period, they are believed to have an external influence. The sudden increase in the number of sites and the number of burials, often without settlements nearby, has created a great deal of uncertainty regarding their very existence. Yet the presence of thousands of impressive large megalithic burial sites in the south of the Vindhyan region, in Peninsular India, demonstrates a regional process of varied cultural behavioural representation.

While some non-Iron Age megalithism appeared in certain pockets of the north and northwestern parts of the country, these do not show the same level of intensity as seen during the Iron Age in South India. Some of these burials could pre-date the Iron Age, belonging instead to the same cultural environment as the Gandhar Grave Culture, and some Chalcolithic and Neolithic sites are found in Peninsular India. The increase in visibility of megaliths coincides with the Neolithic/Chalcolithic-Iron Age transition. At this time, iron was percolating to different strata of the society, eclipsing the limited use of copper tools. Its tremendous versatility and applicability by different groups of people from hunter-gathers to farmers, and its offensive-defensive uses, created unprecedented social order with emergence of specialized groups beyond the subsistence economy. The preceding period was mostly known for animal pastoralism, marginal agriculture, the occasional use of copper objects and, less commonly, for value-added objects like steatite and semi-precious stone beads of non-local origin. The newly introduced iron technology, including both smelting and smithing, and the introduction of important cultivars like rice, wheat and barley alongside pastoralism in some areas, significantly expanded economic activities. This created a dichotomy in social behaviour with some groups emerging from an earlier dormant state of social display to develop a lively social role and generate connectivity through the building of monuments. Whether this happened within the ambit of inherent development or was introduced along with the movement of cultivars, people and cultural traits brought with the highly technical iron smelting technology, remained unresolved until recently. How the horse was introduced to these people is also unknown. Similarities between several forms of megaliths from Europe and the Near East created further doubt about the origin of the megalithic people, and the concept and building of identical megalithic monuments.

Hence, everything associated with megalithism in India, including ethnic association, language, technology, profession, economy, production system and the very people involved with it, remain contested. In this chapter we will endeavour to examine some of the problems concerning the understanding of megaliths and megalithism in India, its relevance to past societies and its rise and decline, and we will highlight achievements and advancements in megalithic research in the country.

2. Previous research: what we are told

Here, we will briefly describe what has been the understanding for the past 200 years regarding megalithism and the people who built the monuments. The discussion still revolves around who the people were, their material culture, economy, the concepts behind building different types of megaliths, their chronology, and whether they had a local or regional origin or were introduced from an outside or foreign region. To further complicate the issue, megalithism has a widespread association with Black and Red Ware (BRW), with frequent simultaneous occurrences in Peninsular India.

Early research revolved around 'diffusionist' theories, concerning the origin, the people and other accompanied cultural elements such as iron and BRW (Childe 1948; Gordon 1958; Subbarao 1958; Dikshit 1969; Narain 1969; Soundara Rajan 1969, 1996; Gupta 1972b; Gururaja Rao 1972; Leshnik 1974; Sundara 1975, 2015; McIntosh 1982). With regard to typological similarities between Indian

megaliths and similar forms found in the western world, especially in West Asia and Europe, it was argued by most of these scholars that either there was a migration of people with all the paraphernalia, or at least that the ideas originated from those regions. The Indian 'megaliths' were attributed to various groups of people such as the Scythians, the Druids, and the Celts. Early scientific analysis of skeletal remains provided conflicting views on the racial origin, from 'pygmoid' and 'Negroid', to 'nonhomogeneous' (Hunt 1924; Kennedy & Levisky 1985), 'proto-Austroloid' and with 'Dravidian' elements (Zuckerman 1930). Even studies on skeletal remains conducted as late as the 1960s by Indian scholars focused essentially on 'racial' affinities with a view to further substantiate the 'origin and authorship' of the megalithic people, identifying them as belonging to Proto-Australoid, Negroid or Mediterranean groups (Sarkar 1972). With this kind of assumption, and with some transient similarity of associated cultural material and some similarities in megalithic architecture, the very nature of origin, or at least the influence of development of megalithism in India was the subject of much speculation, largely pointing towards a heterogeneous foreign origin, mostly from West Asian countries and/or Europe (Banerjee 1965; Childe 1948; Gordon 1958; Dikshit 1969). However, it was later suggested that there was, in fact, no alarming invasion or movement of people from outside to the subcontinent as was proposed earlier (Kennedy & Levisky 1985).

Looking at the Dravidian languages family and the wide distribution of megaliths in south India, it was also argued that authors of the megaliths could be the 'Dravidians' (Fürer-Haimendorf 1953). The mortuary practices of some contemporary ethnic groups who erected stone monuments resembling 'megaliths' were also investigated. The Todas, the Kurubas/Kurumbas, the Khasis, the Gadabas and the Bondos are examples of some of the groups whose burial practices were documented by earlier scholars (Fürer-Haimendorf 1943; Mohanty & Selvakumar 2002). Even though debates and assumptions regarding non-native origins have continued until recently (Sundara 2015), there are strong arguments for a native origin (Chakrabarti 1992; Chakrabarati & Lahiri 1993-1994; Moorti 1994; Mohanty & Selvakumar 2002). Disagreements continue because of a paucity of settlement sites associated with and contemporary to the megalithic cemetery sites, which suggests that they were built by a more mobile, pastoral society. There are more than 2500 burial sites currently known, to which fewer than 100 settlements can be related.

There is a view that pre-Iron Age burials in India might have played an important role as some of the burial types, such as pit burials and urn burials, are considered indigenous, and we briefly discuss this below. There seem to be four major regional groups of megalithism, based on chronology and types of material culture, each documented in different topographical and ecological zones: the Himalayan region, including Kashmir and Uttarakhand; the Ganga plane and adjoining area; the region occupied by the eight sister states in northeastern India; and Peninsular India. The introduction and spread of iron in India seem synonymous with the prominence of megalithism; the metal had a catalytic effect, resulting in widespread activity. The technological advancement and use of iron had repercussions that spread to different strata of the society and the impulse was reflected in socio-religious behaviour culminating in ancestral worship. The association of BRW, earlier or later, with the megalithic culture in major parts of India remains problematic. This pottery is another major element associated with the south Indian megaliths. Its antecedents began in pre-Iron Age contexts starting from the Harappan era and it became the characteristic pottery of the Ahar culture of Rajasthan. Subsequently, it is evident in Central India and northern Deccan sites associated with Savalda, Malwa and Jarwe Chalcolithic cultures from around 2000-1000 BCE. The megalithic Black and Red Ware, is typo-technologically similar to the Black and Red Ware of the Central Indian Chalcolithic culture (Subbarao 1958; Gururaja Rao 1972: 335-7).

At the beginning of megalithic research, newly discovered megalithic structures were identified by comparison with the multiple European types. Based on his extensive surveys and observations of excavations, Krishnaswami (1949) stressed the need for a '*precise and self-explanatory nomenclature*', and classified and defined the megalithic types of southern India on the basis of '*morphological and other intrinsic features*'. He also discussed the contemporary megalithic forms of Northeast

India and their relevance. Though there was broad patterning of architectural forms (Krishnaswami 1949), the internal and external structural features of these monuments varied in shape, size, and placement in the landscape, and the treatment of the remains of the deceased varied even within a single location, site or within a region (Mohanty 2005a-b; Mohanty & Thakuria 2013; Mohanty & Vaidya 2017). The early stages of investigation were mostly of an antiquarian nature, often undertaken by treasure hunters and only in exceptional cases for the purpose of scientific investigation. In recent years, however, scholars have started focusing on various research problems. Attempts are now made to understand issues related to social and cultural relationships, professions, the absence and presence of burial monuments in relation to contemporary settlements, their distribution within the subcontinent, chronology, economy, subsistence, and why only a small segment of the society were buried in these monuments. Many other aspects have also been investigated. As a result, a vast amount of literature is available pertaining to many aspects of the megalithic culture (Ramachandran 1971; Gururaja Rao 1972; Sundara 1973, 1975; Leshnik 1974; Rao 1989; Rami Reddy 1992; Mohanty & Walimbe 1993, 1996; Moorti 1994; Brubaker 2001; Mohanty & Selvakumar 2002; Boivin *et al.* 2005; Mohanty 2005a, 2018; Sinopoli *et al.* 2008; Rajan 2013; Morrison *et al.* 2015).

3. Authorship: beginnings and ideological contributors to the study of megalithism in India

During the early days of discovery and research, the term 'megalith' was used to designate only the large stone monuments related to the Iron Age, as these were easily visible in the landscape. As more and more evidence of associated material cultural appeared, and as research progressed, the term was invariably applied to all types of burials within the environment, with or without stone settings. These then became associated with settlements yielding iron and Black and Red Ware in Peninsular India, irrespective of their association with 'megaliths'. Hence, burials with minimal or even without stone settings, belonging to the Early Iron Age and post-Iron Age periods, are grouped as 'megaliths'. Though the term 'megalith' may, in a strict sense, appear inappropriate (Begley 1965; Gupta 1972a; Leshnik 1974; Mohanty 2005a, Mohanty & Vaidya 2017), it has been widely used and accepted by a large section of archaeologists working in the field. The 'megaliths' described here do not form a homogeneous entity; rather they belong to many different cultural and chronological contexts.

Megaliths in India were connected with death rituals, both sepulchral and non-sepulchral, and with a few commemorative monuments. The wide appearance of such elaborate burial architecture along with iron and the distinctive accompanying (BRW), not known from burial contexts prior to the Neolithic-Iron Age transition in south India, prompted several assumptions and speculations regarding the initial development of the practice, and the origin and nature of the people with whom it was associated within the subcontinent. We will therefore review the early evidence of death rituals and consider reasons for the exponential growth and emergence of the diverse burial architecture now documented at more than 2500 sites, a few of these having more than 1000 individual monuments with a combination of different architectural forms (Mohanty & Thakuria 2013).

4. Prehistoric burial customs: the legacy of megaliths in India?

Despite earlier assumptions of a native origin of megaliths, a considerable attempt has been made with more recent discoveries to suggest an indigenous origin, probably with minimal external influence. Burials, as a means of disposal of the dead, were (and are) prevalent in many parts of the world, irrespective of their socio-cultural-religious and economic dissimilarities and diversities. Archaeologically, the early burial tradition in the Indian subcontinent can be traced back to the Mesolithic period (8th-4th millennium BCE), when monuments were built in large numbers, especially in the Gangetic plain and, sporadically, in other parts of the country (Sankalia 1964; Pal 1992, 2002; Misra 2001; Prabhakar 2015). In Northern India, the remains from sites like Mahadaha and Damadama reveal single or multiple burials of male and female individuals, often buried before rigor mortis, accom-

panied by personal ornaments like earrings, necklaces, and pendants made of bone, antler or ivory (Pal 2002).

This burial tradition continued during subsequent Chalcolithic-Neolithic cultural phases beginning in around 4th millennium BCE, as evident from Pre and Early Harappan levels at Mehrgarh, where excavated infant burials were found placed in box-like chambers made of mudbrick and clay (Jarrige 1986; Jarrige & Hassan 1989). One of the adult burials at the same site was placed in a pit having two stone plates – one below the hands and the other close to the arms. These burial customs continued during three subsequent phases i.e., Early, Mature and Late Harappan between *ca.* 3000-1800 BCE. Elaborate burial architecture using contemporary construction materials like mud, burnt brick, boulders and stone slabs became part of burial architecture in many of the Harappan cemeteries.

The burial architecture in some of the Indus sites such as Dholavira (Bisht 2015) and its neighbouring site Dhaneti (Prof. Ajithprasad, MSU, personal communication) near Kachchh, from the Mature Harappan phase (around the 2nd half of the 3rd millennium BCE) provide evidence of elaborate burial construction using locally available stone slabs and boulders, the ideology and memory of which are clearly visible during the height of the Iron Age in India. At both places, cist burials were surrounded by cairns. Rectangular, and oriented north-south, the cists were lined and capped with limestone slabs. In some cases, the northern corner was removed to make a 'porthole'. In one cist, a coffin-like structure of clay was placed on props of pots and stones. The coffin is anthropomorphic in appearance. At Dholavira, Bisht classifies the tombs into seven categories: 1. Rectangular memorials; 2. Cists; 3. Cairns and round graves; 4. Stone-lined circles; 5. Fractional burials; 6. Infrastructure, and 7. Hemispherical tumuli (Bisht 2015).

The burial traditions of the subsequent period can be seen in Western Indian Harappan cemeteries excavated at Nal and recently at Farmana (Shinde *et al.* 2011) and further south in the Deccan region. These belong to the Late Harappan-Savalda culture at Daimabad (Sali 1986; Sankalia 1974: 484), dated to around 2300-1800 BCE. Most of the pit burials

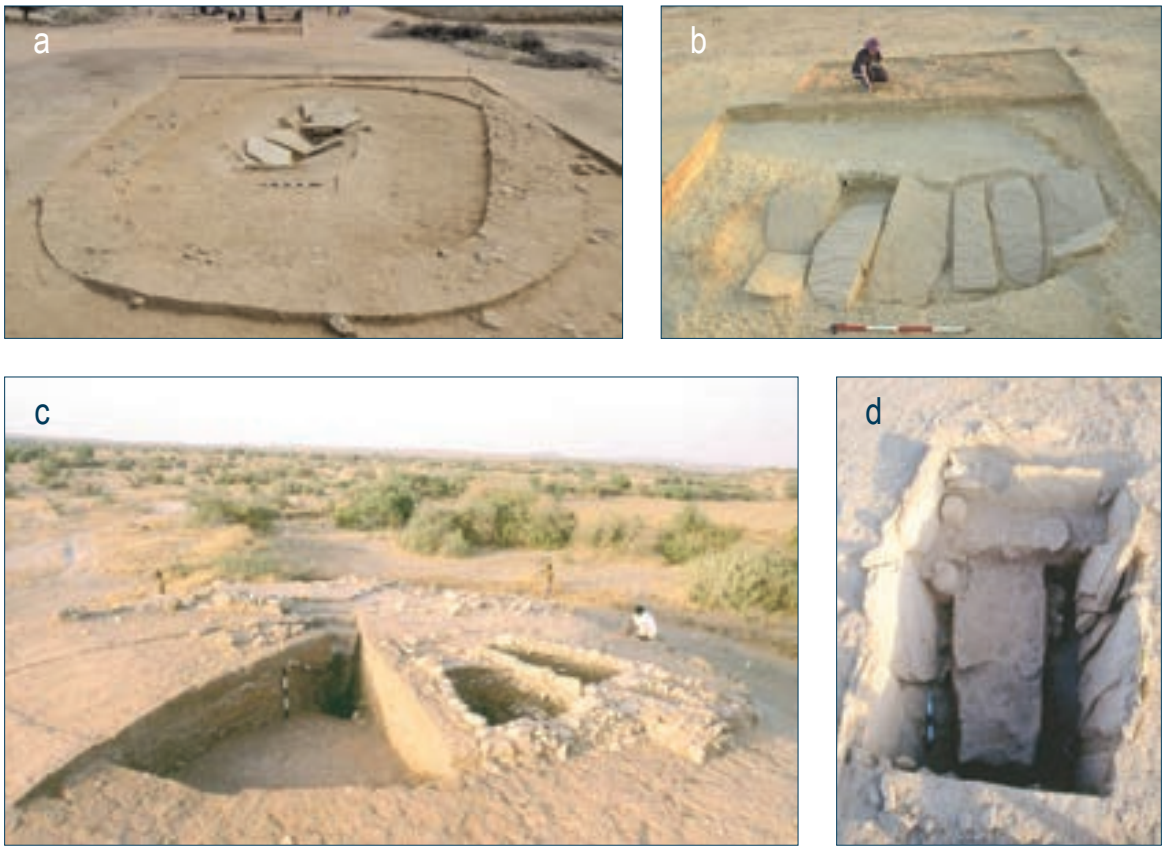

Fig. 2 – a-b. Dhaneti (Courtesy Ajithprasad); c-d. Dholavira (Courtesy of R.S. Bisht).

from these phases included elaborate grave goods similar to the material culture from the settlements. Normally, the graves contained a variety of pots ranging in number from two to forty, in different shapes and sizes, together with beads made out of semi-precious stones like agate, carnelian, jasper and steatite, shells and shell bangles, rings, and copper mirrors (Lal 1998; Kenoyer 1998). At Ropar, an adult male burial was found with a dog skeleton. Other burials also reveal evidence of partial bones from animals eaten during feasting. All these examples demonstrate a high degree of care and meticulous arrangement before disposal of the dead.

The succeeding regional Chalcolithic cultures, especially the Ahar/Banas, Kayatha, Malwa and Jarwe who occupied mostly the central and western parts of India, followed the Indus Valley tradition and continued intermittent, irregular and inconsistant burial practices. One important commonality is the prevalence of BRW with white painting, and copper metallurgy along with similar, associated material remains (Sanklia *et al.* 1969; Singh 1979; Dhavalikar *et al.* 1986; Mishra 2010). Although the Ahar culture can be dated to 3500-1400 BC (Misra 1997; Misra & Mohanty 2001), the others listed above flourished from around 2200 to about 1000 BCE (Ansari & Dhavalikar 1975; Dhavalikar *et al.* 1986). All these cultures continued with burial traditions, with the deceased carefully entombed in a pit and provided with grave goods. An exception is found at Balathal where four humans and one animal are buried within a well constructed stone-built enclosure in a centre that was associated for several centuries (between 3500 to 1400 BCE) with ritualistically burnt cow dung. This burial had vitrified ash just like the ash mounds of south Indian Neolithic context (Misra *et al.* 1997; Gwen *et al.* 2007, 2009). A large number of bull figurines, especially the stylized examples from the Ahar culture sites of Purani Marmi (Misra *et al.* 1993; Mohanty *et al.* 2003) and Kayatha (Ansari & Dhavalikar 1975) can certainly be compared with the bull cult and are ideologically similar to bull paintings and figurines associated with ash mound sites of the southern Neolithic period (Sundara 1987; Korisettar & Prasanna 2014).

The beginning and spread of the Northern Indian megalithic culture appears to have been inspired by different sources, as suggested by the chronology of the monuments and associated material culture (Sharma 1985; Chakrabarti 1992, 1988; Chakrabarti & Lahari 1993-1994; Kharakwal 2015; Misra *et al.* 2015). Prior to this, burial customs were evident intermittently during the Neolithic period at Burzahom within settlements in Kashmir (Sharma 2000). The deceased was ritually interred into a pit plastered with lime, with stone pieces placed on top and often covered with ash, either below the living floor or in the compound. The skeletal remains show both inhumation and secondary burials. They were accompanied by grave goods including steatite and carnelian beads, and are sometimes also associated with the burials of animals such as wild dogs, wolves, barasingha (swamp deer) and ibex (Nautiyal *et al.* 2001-2002; Sharma 2000; Bhatt *et al.* 2015).

Our recent excavation of the Neolithic-Chalcolithic sites on the east coast of Odisha, especially at sites like Golbai Sasan (Sinha 2000; Mohanty *et al.* 2012), Harirajpur (Mohanty 2013-2014 DC. Annual report; 64-66) and Deltihuda (Acharya *et al.* 2017), have provided evidence of ritualistic burials of adults and children. The children were buried in pots while the adult burials were associated with pots, copper objects and a few stone pieces placed neatly in excavated pits. All these east coast sites are dated to between *ca.* 2000 and 1200 BCE (Sinha 2000; Harvey *et al.* 2006; Kingwell *et al.* 2018).

During this period, the upper Deccan region was inhabited by people of the Late Harappan Savalda culture (2200-1800 BCE), and subsequently by regional Chalcolithic culture groups who built settlements like Malwa and Jorwe from around 1800-1000/700 BCE. The burials reported from most of these sites, like Daimabad (Sali 1986; Sankalia 1974), Jorwe, Nevasa (Sankalia *et al.* 1960), Chandoli (Deo & Ansari 1965: 17-24), Tekwada and Inamgaon (Dhavalikar *et al.* 1986), provide a picture of complex ideology, with status-, sex- and age-oriented ritual burial customs (Lukacs & Walimbe 1986). Large numbers of deceased belonging to all ages and of both sexes (Mohanty & Walimbe 1993) were accorded a ceremonial burial in a pit below the living floor or in the compound, with appropriate grave goods including from two to fifteen pots and ornaments such as necklaces of copper, shell and jasper beads (Mohanty 2017a).

The children were buried in single, twin or triple large urn or pot burials, while adults were burial in an extended position. Some more privileged individuals were provided with special burial vessels. Two of the adult burials excavated at Inamgaon were arranged in a crouched position within handmade, partially burnt and four-legged jars quite similar to the later development of the sarcophagi recovered at many Iron Age sites in Peninsular India (Rajan 1997; Mohanty & Selvakumar 2002; Boivin *et al.* 2010). Some burials contained multiple deceased individuals and may represent groups suffering an unnatural death. During this period, there was clearly cultural contact, visible to us not only through the movement of goods like copper, important cultivars like wheat and barley, and various types of beads but also in the ceramic signatures of cultures who were percolating into adjoining areas of Karnataka inhabited by southern Neolithic people (Fuller & Korisettar 2004; Korisettar & Prasanna 2014; Sundara 2015).

5. Neolithic to Early Iron Age megalithism: transition in Peninsular India

Prior to the beginning of the Iron Age associated megalithic construction, the middle part of Peninsular India, comprising the upper part of present state of Karnataka and adjoining areas of Andhra Pradesh and Tamil Nadu, were inhabited by southern Neolithic people, better known for their cattle keeping, ash mounds and as the first farmers of that region (Allchin & Allchin 1983; Paddeyya 2000-2001; Boivin *et al.* 2005; Sinopoli *et al.* 2008; Morrison *et al.* 2015). They were culturally diverse but were

Fig. 3 – a. Legged jar burial from Inamgaon; b. Burial in supine position Nevasa; c. Urn burial, Tekkalkota; d. Burial with animal remains, Ramapuram (Courtesy of Deccan College).

contemporary with the Chalcolithic cultures of western India such as the Mature Harappan, Ahar, Kayatha and, at their height, overlapped with neighbouring regional cultures like the Savalda, Malwa and Jarwe found in the upper part of Peninsular India. The Neolithic sites located in the upper Krishna and upper Tungabhadra basins have been extensively investigated. Though some of these sites, like Kodekal, Watgal Utnur, and Hallur can be dated to 2500 BCE, most of the Neolithic settlements flourished between *ca.* 2000 and 1400 BCE (Fuller *et al.* 2007).

It is interesting to observe that the child and adult burial traditions continued in Neolithic settlements like those in the Deccan Chalcolithic mentioned above. Sites like Hallur (Nagararaja Rao 1971), Tekkalkota (Nagararaja Rao & Malhotra 1965), Sangankallu (Korisettar & Prasanna 2014), Brahmagiri (Wheeler 1948), Ramapuram (IAR 1982-1983, 1983-1984) Piklihal (Allchin 1960), Tirumakudalu Narsipur (Seshadri 1971), Budihal (Paddayya 2000-2001), and Utnur provide ample evidence of well-prepared, organized, selective ritual burials for individuals. Most of these are fractional and secondary in nature. In the case of adult burials, bones were often placed in a pit on a flat granite slab, along with several pots. Children were buried in urns, sometimes covered with a lid, in a pit dug either below the house or in the compound. At Piklihal, a burial was found where the deceased was placed in an extended posititon within a coffin-shaped shallow pit (Allchin 1960: 113).

Some of these excavated sites provide substantial evidence of different modes of disposal of the dead within the settlement. The sites continued to be inhabited during the period of the Iron Age megalithic period, without any interruption. During this time, burial activity shifted from the settlements to nearby cemeteries. Various architectural types of megaliths emerged in the cemeteries, in combination with cists, stone circles or cairn circles, and menhirs, along with previous single burial types. Whether the introduction of iron and its versatility brought changes to various craft production and industrial economics, resulting in cultural behaviour leading to the development of more elaborate burials and accompanying architecture, or whether there was some external inspiration is still debated.

We shall consider three important excavated sites in order to explore this transition phase and examine how megalithism became incorporated. The excavation by Wheeler at Brahmagiri (Wheeler 1948) was very significant as it showed, for the first time, a transition of burial customs between the Neolithic and the Early Iron Age. However, occupation continued during the Early Historical period without any significant break. Located on a granite outcrop, the Neolithic levels, identified as phase 'IB', revealed 17 handmade burial urns. The skeletal remains of small children were invariably placed, tightly-folded, to fit into the restricted space in the urn and usually covered with either a bowl (placed upright or inverted), or with the lower half of a broken urn, as can be seen in many cases at megalithic sites like Adichannalur in South India (Rea 1902-1903). In one such urn burial, a copper pin was found as the grave good. Recording further evidence during the transition phase, Wheeler writes '*…eighteenth burial-urn of similar type was found in a grave-pit cut into the earliest stratum of the Megalith culture on site and confirms the overlap of the two cultures*' (Wheeler 1948). During the Iron Age here, the burials shifted to the nearby cemetery where elaborate megalithic burial monuments consisting of pit or cist burials enclosed by cairns were used, with numerous grave goods included. During the megalithic period, the handmade grey-brown pottery of the Neolithic gradually changed to slow wheel-turned BRW. The pit circles and cist burials show different distribution patterns with the cemeteries. Moreover, the burial architecture, material used, number of pots, types of BRW, iron objects and other artefacts, and the nature of the human remains associated varied considerably in each case. The pit circles were richer, both in variety of iron implements and the variability of the ceramics (Wheeler 1948).

A similar case is found at the Neolithic and Early Iron Age site at Hallur, with an overlap between the two cultures indicating continuity of earlier cultural characteristics along with the emergence of BRW and iron artefacts. Megaliths like cairn circles and dolmen-like cist circles were found on hilly slopes around 3 km to the north and west of the site. The cemetery seems contemporary and used by the people living at Hallur and in the surrounding area (Nagaraja Rao 1971).

One of the most remarkable sites of the period, which emphasizes the concept of multicultural remains, is Ramapuram, located in District Kurnool, Andhra Pradesh. It was excavated by Narasimhiah (IAR 1980-1981, 1981-1982, 1982-1983) and yielded evidence of handmade pottery along with microliths and limited copper implements. The handmade grey-brown pottery, of Neolithic periods IA and IB, progressively improves towards the end of this phase and emerges as fully developed BRW, with the slow wheel process used during period IC. Gradually, the site adopts all the cultural elements of the Early Iron Age found in the region. The development of ceramics seems to be a local innovation with the partial adoption of external influences in the form of new shapes such as a lid with a finial, an hourglass shaped stand, and a three-legged jar, which emerge in association with earlier types of ceramics.

The most significant discovery from the earliest phase at this site are the remains of children in single or twin urns or in groups of three, either as secondary or primary burials. These were initially buried without grave goods but these were added as time passed. They include, for example, part of a goat, and spouted vessels and bowls. At this stage, burials of children and adults took place within the settlement, in a similar manner to that observed during the Neolithic and Chalcolithic periods in the Deccan region. In some cases, the legs of adult individuals were removed below the ankle, as seen at Inamgaon (Lukacs & Walimbe 1986). During phase IC, child burials in urns continued along with adult burials in pits, with a variety of structural elaboration. It is quite noticeable that the planning and constructional design evident during the Neolithic improved during the Iron Age transition within the settlement. There were pit burials, urn burials, single cist and double cist burials, some often encased by pebble or stone creating an appearance similar to a rudimentary cairn circle. Three triangular anthropomorphic figures were made in thin Cuddapa (black limestone) slabs arranged in a pit with animal bones and BRW pots. During this period, the grave goods accompanying the burials included copper artefacts, a variety of iron objects, animal bones, steatite, shell, terracotta beads and spindle whorls. Although the single or double urns were handmade grey ware, the funerary pots were often spouted vessels with bird finials, three-legged jars, or discs on a stand – all in BRW. This scenario changed with a well-organized cemetery with 27 megaliths of this period located 1.5 km from the settlement. Four excavated burials in the cemetery generally revealed dug out pits arranged with grave goods in the form of iron tools and several pots from period IC. The pits were filled with black clay and packed with small boulders and fragments of stones, and were frequently enclosed with slabs, like those found in the settlement. These burials did not yield human remains but one included 26 perforated conch shells which must have been brought from the distant east coast (IAR 1981-1982: 5-6). There are several such excavated Neolithic megalithic sites, including Piklihal, Maski, Kadebakele, Veerapuram, Bukkasagar and Sangankalu which developed and continued during the Iron Age megalithic period.

The site of Hallur shows continuity of occupation through three transitional phases between 2000 and 1000 BCE. The wheel-made BRW and a few iron objects appear between 1200 and 1100 BCE. Sites like Tekkalkota, Watgal and many others were deserted during the transition between the Neolithic and the Iron Age in around 1400-1200 BCE. Communities probably moved, mostly from hilltop locations, to hinterlands in order to exploit ecosystems, arable land and water resources available within the neighbourhood, or they gradually moved south with the newly introduced iron technology coupled with a variety of cultivars like wheat, barley, rice and cotton (Cooke & Fuller 2015; Fuller & Korisettar 2004). This can be inferred from the large number of megalithic sites and smaller settlements with evidence of iron use from this region (Moorti 1994; Sinopoli *et al.* 2008; Johansen 2014; Morrison *et al.* 2015).

6. Conclusion

The above observations, starting with the Mesolithic period in Northern India, the Neolithic-Chalcolithic cultures of western India contemporary with the Indus Valley Civilization, and the succeeding regional Chalcolithic and southern Neolithic, have evidenced systematic, ritualistic, and probably hierarchical disposal of the dead, often within constructed

burial monuments and with the incorporation of substantial numbers of prestige goods from each contemporary period from 8000 BCE through to around 1200 BCE.

These megalithic practices are seen in different contexts, from Jammu and Kashmir in the north (Sharma 2013) to southern Deccan and extending into eastern India and as far as West Bengal and Odisha. They provide evidence of continuity in the burial tradition with a complex ideology of monumentality and ritual offerings appropriate to the cultural achievements of the respective period and region. We see that pit burials with grave goods continue throughout, and structured burials with mud and burnt bricks, cist burials supported with boulders, clay coffins, tumuli with clay and pebbles, and stone-lined circles, as at Dholavira and Dhaneti and many other Harappan sites, continued with pit and urn burials, with some similar ritualistic traditions extending to Daimabad, a multicultural site with Savalda, Late Harappan, Malwa and Jarwe cultures in upper Deccan. These sites provide ample evidence of ideological binding with the social commitment, at least for some individuals, of providing burials, and the concept of a permanent resting place for the departed soul.

This is followed by the regional Chalcolithic cultures of Central India, the Deccan region and the Neolithic culture in the neighbourhood of Southern Deccan, which continued the tradition more intensively, as seen from the large numbers of burials appearing at the sites of Inamgaon, Chandoli and many others (Dhavalikar *et al.* 1986).

The megalithic tradition in Peninsular India became prominent when some of the Neolithic settlements either began to wane or became assimilated, continuing to develop as Early Iron Age megalithic sites. At some sites, resettlement took place after an interval, as at Sangankalu-Kupgal (Fuller *et al.* 2007; Korisettar & Prasanna 2014; Roberts *et al.* 2015). This transition from the Neolithic to the Iron Age occurred in most settlements in around 1400-1200 BCE and a shift of settlement pattern and building of Iron Age megaliths seems to take place between 1200 and 300 BCE in this region, gradually moving south towards Tamil Nadu and Kerala. The building of megaliths continued until the historical period. Tamil Brahmi inscriptions and coins appear in the burials dating from the 5th century BCE to the 3rd century CE (Moorti 1994; Rajan 1994; Brubaker 2001; Mohanty & Selvakumar 2002; Abhayan 2018).

Fig. 4 – Dolmen, Kurg, Karnataka (Photo: Chandan Kumar D.).

The introduction of iron to Northern India dates to about 1500 BCE (Tewari 2003), while non-Iron Age megalith building goes back to 2400-1500 BCE (Agrawal & Kharakwal 1998: 110-113). Similarly, in Gandhar region (now in Pakistan), both Iron Age and non-Iron Age burials date to around 2000-300 BCE (Dani 1968b; Zahir 2016). Nevertheless, some early dates from graves suggest that, in northern Karnataka, megalithic burial, using a substantial amount of varied stones combined with terracotta architecture, had already begun by 1400-1300 BCE. Four thermoluminescence dates for ceramics in burials are available from Kumaranahalli (Singhvi *et al.* 1991; Brubaker 2001: 294-295), and cluster around 1400-1300 BCE, indicating a single short phase.

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Rabindra Kumar MOHANTY

Megalithic architectures in India

Abstract: Megalithic monuments are found at many sites, especially in Peninsular India and, less commonly, from the Himalayan region to Central India. Architectural variability, the use of structural material, and the inclusion of grave goods are all evidenced. The pre-Iron Age megaliths could date prior to 1200 BCE, while Early Iron Age megaliths continue to the 3rd century CE, during the Early Historical period. Along with megaliths, contemporary burials appear in the same cemeteries without stone settings, for example in sarcophagi and as pot burials, in a continuity of an older tradition in South India. In some cases, there appears to be a combination of burial architecture incorporating basic forms such as the cairn circle, dolmen, cist burial and menhir.

Keywords : *megaliths, leaving tradition, Kashmir, Northeast India, Uttarakhand, Vindhyas, Vidarbha, Peninsular India, terminology, chronology*

1. Distribution and chronology of the megaliths

The observation of a burial tradition extending from the Mesolithic period until the emergence of the Iron Age megalithic burial constructions (cf. Mohanty, this volume, p. 419) has left us with more problems than it has solved. Although evidence for an antecedent stage of 'megalithism' is found in the pre-Iron Age contexts, this tradition became very popular during the Iron Age, mostly in the southern part of India and to some extent in northern India. It continued to survive even into the Historical period and up to modern times if not, perhaps, at the same intensity, in a few pockets of central, southern and northeastern India. The chronology, the cultural context in which megaliths were built, and the people associated with them are from different economic, cultural and ethnic backgrounds.

The legacy of megaliths in South India seems to have an ideological antecedent running though the Mesolithic and Neolithic-Chalcolithic cultural milieu, observed during the earlier period. But which individuals were given a ceremonial or emotional burial and which were disposed of within other contemporary systems depended on many factors. Not all were accorded monumental burial. Most disposal of the dead took place as cremation, simple burying or in rivers, depending on the nature of the death, the age and sex of the deceased, the resources available, the ecology of the place and, probably, the season of the death in the monsoon environment (Mohanty & Walimbe 1996; Mohanty 2005).

1.1 Past and living traditions

It has been difficult to build an internal chronology of the megaliths in any given site or region as

radiocarbon dates are rarely attempted, although several dates are available from settlements. Simple typology, for example from our intensive survey and excavations from Vidarbha, does not allow us to place the burials in chronological brackets. However, sites with megaliths or megalithic associations occur in chronological contexts ranging from the Early Iron Age to the modern period in different parts of India with a greater concentration in Peninsular India (Soundara Rajan 1969; Gururaja Rao 1972; Deo 1973a-b; Leshnik 1974; Moorti 1994; Rajan 2013; Abhayan 2018), in Vindhyan region (Sharma 1985), in eastern India (Behera 1995-1996), in northern India (Leshnik 1974: 26-32; Sharma 2000; Nautiyal *et al.* 2001-2002; Bhatt *et al.* 2015; Kharakwal 2015; Misra *et al.* 2015) and in north-eastern India (Singh 1985a).

Most of these megalithic architectural forms are also prevalent among groups like the Nagas (Binodini Devi 1993; Jamir 1997-1998) and the Khasis (Mawlong 1990) in northeastern India and the Bondos of Central India (Elwin 1945; Shekhar & Mohanty, this volume, p. 475), the Korkus of Melght, Maharashtra (Thukral 2005), and in parts of South India among the Kurubas (Kapp 1985) and the Malarayans (Krishna Iyer 1967). All those who have abandoned megalithism still practice burning or disposing their dead by performing elaborate rituals, feasting, sacrifice of animals, providing grave goods, participation in community and relationships, and erecting or constructing memorials using stones, or even wooden posts, of different sizes and shapes. The process of ritual is often unique to different ethnic groups. However, they seem to have no relation to the megalithic traditions of the prehistoric past.

In northeastern India, several ethnic groups continued to build megaliths. In recent times, there is less intensity and the erection of megaliths has been abandoned by some segments of society due to socio-religious changes. A great deal of intensive documentation by several scholars has provided interesting evidence of the concept and practice of burials or memorials in northeastern states (Singh 1985a ; Binodini Devi 1993; Jamir 1997-1998; Sharma 1997-1998). The literature documents many nuances of megalithic construction which provide a range of concepts and beliefs about how the process might have operated (Jamir and Müller's article in this volume, p. 447 gives an excellent review). Their chronology and influences remain the subject of discussion starting from the time of settlement of the eastern Neolithic to the present, as well as their origin, in relation to different ethnic ideologies, purposes, and continuity. The construction of these burial monuments may not have any direct relationship or impact with Iron Age megalithism on the mainland. It seems they show some ideological connection with traditions prevalent in East Asian countries (Thakuria, this volume, p. 489).

1.2 Past megaliths in North and Central India

Leaving aside the ethnographic traditions of the megalithism, there are three geographical environs in addition to South India where megalith building, as a regional cultural manifestation, can be seen. These are the Kashmir valley in the Upper Himalayas and Uttarakhand in the Central Himalayan region, parts of the north-central Vindhyas and the Vidarbha region of Maharashtra. Each of these four, regional megalithic cultures seems to have derived inspiration from different sources.

Megaliths in Kashmir

In Kashmir, a dozen menhir sites have been reported. At Burzahom, the menhir was placed in a semicircle (IAR 1960-1961: 11). These sites are mostly commemorative. Associated artefacts included red ware and black burnished pottery, bone tools and stone axes. At Gufkral, the megalithic remains have been dated to the mid 2nd millennium BC (Sharma 2000).

Megaliths in Uttarakhand

Further east in the Kumaun region of Uttarakhand, cist burials were found. These were typologically quite similar to the Kherai and Ghaligai graves, dated to between *ca.* 2400 and 1500 BCE (Agrawal & Kharakwal 1998: 110-113). In contrast, menhirs, cairns and cist burials are known from Himachal as well from Uttarakhand (Kharakwal 2015). It seems that the burials of Uttarakhand, Kashmir and Gandhar (Swat) are comparable (Dani 1967; Stacul 1997; Tusa 1981). Some of these burials date to the

pre-Iron Age (iron was introduced to Uttarakhand sometime during the early 1st millennium BCE). The artefacts recovered indicate a Himalayan cultural corridor between China, Central Asia and the Gangetic Valley. The megaliths of Central Himalaya may date to later than those at Kherai in Swat, Dir, and Chitral Districts of Pakistan which belongs to Chalcolithic period between the mid 3rd millennium to mid 2nd millenium BCE on the basis of pottery shapes and burial typology. In both the areas, grey ware continues, and iron appears in graves much later during period III from the 10th/9th to the 4th/3rd century BCE (Dani 1967, 1968; Ali *et al.* 2002; Zahir 2016). Again, an isolated cist burial at Gagrigol near Bageshwar, Central Himalayas is dated to *ca.* 2666-2562 cal BCE (Agrawal *et al.* 1995). Unlike those in South India, Uttarakhand burial complexes are devoid of Black and Red Ware (BRW). They have coarse red ware and a fine wheel-made red and grey ware, both similar to the proto-painted grey ware of the Ganga plain. In the lower Ramaganga Valley, excavations at Sanana and Baseri revealed dolmenoid cist and urn burials. At Sanana, grave goods consist of pots, beads made of agate and carnelian, iron pins, nails and sickles. The burials in Central Himalaya were poor in funerary goods, especially in terms of iron implements compared to those associated with South Indian megaliths. The megalithic pottery from Uttarakhand is comparable with the excavated pottery of the Gandharva Grave culture or the Swat culture of Pakistan.

Burials are known from the Ganga plain and from western India during the Mesolithic period (cf. Mohanty, this volume, p. 419). Ceremonial burial traditions continued intermittently during the Copper and Bronze Ages, evidenced particularly from the excavated site of Sanauli in western Uttar Pradesh. Here, there were a variety of burial patterns including a clay coffin, and pit burials dating to the pre-Iron Age and belonging to the late 3rd and early parts of the 2nd millennium BCE (2600-1100 BCE) (Sharma *et al.* 2006). The excavations also revealed numerous copper artefacts, and the remains of well decorated wheeled cart (Manjul & Manjul 2018).

The Iron Age period, known as the painted grey ware (PGW) culture in the Ganga plain in Northern India, is dated to around 1100 BCE (Gaur 1983). Although early evidence of iron from this region has been pushed back to *ca.* 1500 BCE (Tewari 2003), burials are rarely found. A recent excavation at Abhaipur, District Pilibhit (a PGW site) has revealed adult burials interred into pits within the settlement dated to cal 4440-3700 BCE (Mishra 2010).

Megaliths in Vindhyas

Moving southwards to the parts of the north-central Vindhyas covering the districts of Chandauli, Allahabad, Mirzapur and Karwi in Uttar Pradesh, and Rewa, Satna and Sidhi in Madhya Pradesh, a large number of megalithic sites have been discovered and a few of these have also been excavated (Misra *et al.* 2015). In this vast area the megalithic sites are located either near the junction to or on the northern slope of the mountains, and on the alluvial plane of the Ganga Valley where the river valleys are enclosed by the hills. Sites are also found in the north and upper Rewa Ranges towards the south at different altitudes and settings (Misra *et al.* 2015).

Excavations and explorations in the north-central Vindhyas have brought to light ample evidence of a well-developed megalithic burial tradition. There are more than 60 sites recorded, some having more than 100 burials. These sites often have combinations of cairn circles, cists and dolmenoid cist burials. Some of the cists were concealed by cairn circles and were marked by one or two massive capstones. A few of these sites are located close to contemporary settlements (Misra *et al.* 2015). Most of these burials yielded red thick coarse, grey/black ware, along with very fragile human bone pieces and iron slags. Some later burials had culturally varied grave goods, like microliths, beads of semi-precious stone, glass bangles, a terracotta pendant, fragments of animal bones, a burnt clay lump with reed impression, a hammer stone and a stone sharpener.

Looking at the cultural content of the burials excavated during the megalithic culture of the Adwa Valley, three phases of evolution can be seen, i.e., the Chalcolithic phase, transitional phase and the Iron Age phase. The excavations at the sites of Kakoria (IAR 1962-1963: 38-39), Tokwaur and Koldihwa in Allahabad district have yielded Chalcolithic material, primarily in the form of copper. Megalithic sites like Khajuri in Allahabad and Munai in Rewa districts

date to the Early Chalcolithic and continued to the Late Iron Age. Taking all these dates into consideration, the antiquity of the Chalcolithic megalithic culture of the Adwa Valley may be traced to the middle of the 2nd millennium BCE while megalithic burials from Belan Valley range from the 8th to the 3rd century BCE (Misra & Misra 2001-2002). Hence, the megaliths of the Vindhyan region have been grouped into two categories: pre-Iron Age megaliths and Iron Age megaliths. The former date from 1500-1000 BCE, while the latter are from 800 BCE to the 3rd century BCE (Sharma 1985: 480).

Megaliths in Vidarbha

The Vidarbha region, i.e., the eastern part of Maharashtra in Central India is widely known for Early Iron Age megalithic culture, spread over 11 easternmost districts: Buldhana, Akola, Amaravati, Yavatmal, Wardha, Nagpur, Bhandara, Chandrapur, Godchiroli, Washim and Gondia (Deo 1991; Mohanty *et al.* 2017). More than 100 burial sites and several habitation sites have been reported so far, of which more than 20 sites have been excavated, providing much more data than other parts of the country. More than 4000 megalithic monuments are reported from these excavated sites and nearly 90 burials (in approximately 2.25% of the monuments) have been exposed to date. Like the South Indian megalithic phase, the Vidarbha Iron Age is associated with BRW, micaceous red ware, black on red ware, and other regional types of ceramics. Radiocarbon dates from some of the sites excavated suggest that they can be placed between the 8th and 9th centuries BCE to about the 1st century CE (Deo 1973a; Mohanty & Selvakumar 2002; Mohanty 2018).

The cultural material from the lowermost levels at Mahurjhari, associated with Late Neolithic ceramics types found in the South Indian context, together with the presence of microliths certainly suggests an early beginning (Mohanty 2003a). However, the Chalcolithic cultural phase at Tuljapur Garhi in Amravati district (IAR 1965-1966: 27, 1984-1985: 48-50) and evidence from the excavations of a fortified urban site at Adam in the lower levels (Nath 2016) continues through to the Iron Age without megalithic burials in the near vicinity. The excavation at Adam has provided a cultural sequence beginning with the Mesolithic and moving through the Chalcolithic (1600 BCE) and Iron Age (1400 BCE) to the Early Historic period (700 BCE-250 CE) (Nath 2016). The ceramics of the Chalcolithic phase closely relate to the Malwa and the Jorwe cultures (dated between *ca.* 1400 BCE and 800 BCE) appear sparsely during megalithism. The lower levels at the Early Iron Age site of Tharsha revealed twin urn burials.

Some of these large Iron Age settlements, like Kaundinyapur, Tharsha, Pauni, Adam and Nagardhan, gradually expanded and grew into large urban centres. These were surrounded by vast tracts of fertile land and perennial water sources. While these settlements seem to become agriculturally prosperous with influential societies, the absence of megalithic burials suggests that they abstained, culturally, from contemporary regional behaviour such as the construction of megalithic burials, as practiced in the neighbouring megalithic sites of Bhagimohari, Naikund, Mahurjhari and others (Mohanty 2018). All these contemporary Iron Age sites, with or without megaliths and associated settlements, have provided different chronological situations and ecological backgrounds for the advent megalithism in this region. There are several dates from habitation sites such as Naikund (690±110 BCE), Takalghat (615±105 BCE), Kharwada (510±100 BCE), Bhagimohari (750±100BCE) and two dates from a burial at Naikund (545±105 BCE and 505±100 BCE), all uncalibrated. Although the introduction of iron might have occurred earlier, the construction of megaliths began much later.

1.3 Past megaliths in Peninsular India

The chronology of megalithic burials in Peninsular India, where more than 2000 sites and variety of burials are found, remains a vexing problem. On current evidence, most of the Neolithic sites of this regional tradition appear to have undergone modifications during the period of *ca.* 1400-1200 BCE. Some sites were becoming uninhabited and, as mentioned above, some of the Neolithic occupations were gradually adopting a new cultural milieu by adopting the method of making pottery using the slow wheel. The amount of BRW produced subsequently increased and diversified with the creation of a variety of shapes, becoming the 'Megalithic

BRW' of South India. The transition from the Neolithic to the Megalithic period in around 1400-1300 BCE is now supported by findings from several excavated sites (Moorti 1994; Mohanty & Selvakumar 2002; Fuller *et al.* 2007; Sinopoli *et al.* 2008; Johansen 2014). The economic repercussions of the newly introduced technology, craft specialization, the versatility of iron implements, and the adoption of new varieties of cultivars happened concurrently during this period, probably leading to a dramatic impact on previously dormant social behaviour like selective burial customs and the performance of socially visible activity.

At the site of Sanganakallu in Karnataka, BRW, which is different from the Neolithic pottery, was gradually introduced in around 1400 BCE (Roberts *et al.* 2015). The arrival of BRW and the gradual spread of iron appear to have an intimate relationship in South India. Iron appeared first and its incorporation into the system took some time to manifest in various social activities, including within death ceremonies. In Karnataka, the earliest evidence of iron recoded at Hallur dates to around 1200 BCE (Nagaraja Rao 1971). Similarly, at Veerapuram in Andhra Pradesh, the earliest iron dates to *ca.* 1200 BCE (Sastri *et al.* 1984).

The early emergence of the Early Iron Age megalithic monumentality can be traced to the later part of the 2nd millennium BCE at sites like Ramapuram, Komaranhalli and Terdal. It became widespread during the 1st millennium BCE and continued until the Early Historic period in certain parts of Tamil Nadu. Tamil Sangam literature describes various types of burials, the classes of people associated and their socio-economic conditions spanning from *ca.* 300 BCE to 300 CE (Gururaja Rao 1972).

Most of the chronological assumptions about megaliths have been built on the analysis of ceramics found in association with settlements, on a regional basis. Four thermoluminescence dates from burials at Kumaranahalli push the date back a little to 1300 BCE but need further corroboration (Singhvi *et al.* 1991). Four ^{14}C dates obtained from wood charcoal from a forge and from ashy dung deposits, both at Bukkasagara, an Iron Age site in Karnatak, have calibrated date ranges of 1270-1010, 1310-1040, 1620-1440, and 1280-1010 BCE (Johansen 2014: 256-275). Thus, the time frame for monument construction in general is largely based on artefact typology, which is obviously problematic. However, two AMS dates obtained for Tamil Brahmi inscribed potsherds, collected from Porunthal in Tamil Nadu, date to the 5th century BCE (Rajan 2016). Summarizing the evidence from the research carried out so far, the megaliths of Peninsular India can be tentatively dated to span the period from the end of the 2nd millennium BCE to the middle of the 1st millennium CE. The megaliths of northern Karnataka and Andhra Pradesh had an early beginning, while those of Tamil Nadu and Kerala are later, probably around the second quarter of the 1st millennium BCE. It appears that in Tamil Nadu and Kerala, the megalithic tradition continued even during the 4th and 5th centuries CE (Chedambath 1998). This could be the case in other parts of South India.

2. Megalithic terminology

As megalithic research gained importance in the 20th century, Krishnaswami (1949) emphasized the need for a '*precise and self-explanatory nomenclature*', looking at the '*morphological and other intrinsic features*' and classified and defined the megalithic types of southern India in particular, and India in general. He classified them into 'dolmenoid cist', 'multiple dolmens within a stone circle', 'transected/port-hole cist', 'cairn-circle', 'menhir', 'urn burial', 'sarcophagus', 'hood stone', 'umbrella or *kundan kudai*', '*TopiKal*', 'alignment', and 'multiple rock-cut caves/chamber'. This remains the basic typology, described with extensive permutations and combinations. Many scholars still advocate more specific typologies, focusing on minute details within the basic types.

Reflecting on the uses of the term 'megaliths' in an Indian context, it symbolizes mostly a socio-economic-cultural expression of burying the deceased in a grave which may or may not have lithic settings. There are remarkable varieties of megalithic burial types with distinctive features having many variations in both their external and internal architectures, and in the nature of grave goods that have been recorded from various parts of the Indian subcontinent. There have been debates

about describing megalithic types, often suggesting different nomenclature for identical types with extra features. For example, stone circles or cairn circles at a particular site may vary considerably in their shape, size, and nature of deposit, and are often found with additional embellishment such as menhirs, double/triple peripheral boulders, chambers, or anthropomorphic carvings, and they are rarely similar to each other. This indicates an ever-changing process governing the erection of the burials as evidenced from most of the excavated megalithic sites in India (Deo 1970, 1985; Deglurkar & Lad 1992; Mohanty & Joshi 1996; Mohanty & Thakuria 2013). Available local rock types influenced the regional architecture to a great extent, but cultural choice, economic conditions, affiliated professions, community ideologies or even the family traditions probably also played a major role in producing the variations of burial types that occur, even within a single site (Mohanty 2005).

Several megalithic burial sites reveal multiple basic types, like stone circles, dolmens, urn burials and simple pit burials (Moorty 1994). Intensive investigations, for example at Sirathavoor near Chennai in Tamil Nadu (Haricharan *et al.* 2013) and at Mahurjhari and Bhagimohari in the Vidarbha region of Maharshtra, provide a great range of burials showing not only external variation in architecture, but also in terms of buried internal structures (Mohanty 1993, 2005; Mohanty & Vaidya 2017). Hence, the usage of the term 'megalithic' here can be expanded. The inclusion of stone urn burials or sarcophagi as part of the tradition can be justified as these monuments also had regional cultural antiquity and often subsequently accompanied emerging architecturally complex burial types. The most important aspect remains that there are sepulchral and non-sepulchral burial monuments in several segregated cemeteries or localities within a site (Mohanty & Vaidya 2017). Some of these burials have primary and secondary skeletal remains; not all were accorded a ceremonial burial, and had varied patterns of disposal dependent on age and sex, and also with regard to the nature of accompanying grave goods (Mohanty 2005; Mohanty & Walimbe 1993). Sometimes, large elaborately constructed megalith burials are found to be devoid of any human skeleton or even significant ancient remains (Deo & Jamkhedkar 1982; Deglurkar & Lad 1992; Sontakke 2014b, 2015).

The megalithic burials constructed both above-ground and underground, were arranged around a pit. Even most of the cists or dolmens constructed on hill tops had pits dug for ceremonial repositories. The megaliths sometimes had stone chambers, rock-cut chambers, passage, urns, sarcophagi, menhirs or combination of these and were externally marked by either one or several features such as a cairn, cairn circle, stone circle, *Kudaikal*, *TopiKal*, menhir, or carvings of anthropomorphs and cup marks. Some of the burials, such as dolmens, were partly buried and partly above the ground, and pit burials and urn burials, or standard burials in megalithic cemeteries did not have any surface markers (Mohanty 2005b). At several sites, monuments such as menhirs, *kodaikals* (IAR 1990-1991: 33-4) and dolmens (Fukao 1996) had no artefact remains; these appear to be symbolic in nature.

At a few sites in South India, the burials are marked by carved monoliths known as 'anthropomorphic figures' (Narasimhaiah 1980: 201-203; Krishna Sastry 1983; Rao 1989; Moorti 1994; Rajan 2013, 2016). At some sites, megaliths or rocks near them are reported to have rock paintings or engravings (Krishna Sastry 1983; Rajan 1996; Sundara 1998) and the excavations also have revealed a large number of art objects (Rea 1902-1903; Deo 1984; Mohanty & Vaidya 2017).

3. Megalithic typology and distribution

3.1 Dolmens and cist burials

These box-type chambered tombs are built by placing orthostats in an upright position on four sides with a capstone on the top, sometimes with a porthole in one or more of the orthostats.If raised on the ground, this is called a 'dolmen' and if constructed underground it is called a 'cist'. Besides cists and dolmens, *Topikals*, *Kudaikals* and rock-cut caves are also basically chambered burials. There are considerable architectural variations documented for both cists and dolmens. Sometimes a gap, arranged by placing slabs, is retained on one side of the orthostat providing a passage. This type of variation is known as either a 'passage cist or 'passage dolmen'. The passage is proposed to have

Fig. 1 – a. Dolmens at Mallasandram; b. Cists from Porunthal (Courtesy of K. Rajan).

ritualistic or symbolic value. A 'transepted cist' is the one in which the main chamber is divided longitudinally or laterally by one or more slab, creating single or multiple chambers. These types of cists have been excavated in Brahmagiri (Wheeler 1948) Near Terdal, HalingaJi, Jamkhandi, in Karnataka (Sundara 1967), Pudukkottai, Nattukkalpalayam, Thandikudi Porrunthal in Tamil Nadu (Rajan 2013) and Irdduki in Kerala (Fukao 1996; Das *et al.* 2013; Abhayan 2018). Often, orthostats are placed in a swastika pattern, set either clockwise or anticlockwise to prevent them from collapsing. At Kodumanal, an excavated transept cist had two subsidiary cists placed on either side, with a common passage (Rajan 2013). At Sittannavasal and Tudaiyur in Pudukkottai region, a stone bench or platform was noticed inside a cist (Rajan 2013). Twin cists entombed by a cairn circle were also found during excavations at Porunthal (Rajan 2016).

Both dolmens and cists are found enclosed by additional architectural elements such as a cairn, a circle of boulders or stone slabs. At Palani Hills, a group of dolmens was found inside a rectangular wall constructed using blocks of stones (Rajan 2010). Similar blocks were extensively used at the base of a dolmen excavated at Idduki District in Kerala (Das *et al.* 2013).

3.2. Hood stones, *TopiKals* and *Kudaikals*

The *TopiKals* and *Kudaikals* are typical of Kerala. *TopiKals*, generally fashioned out of laterite, are erected by placing three carved stones vertically in a triangular shape, arranged to incline inward at the top, capped by plano-convex slab resembling an umbrella. The *Kudaikal* or hood stone is a plano-convex capstone covering an underground pit, often containing grave goods within a large pot placed in a vertical position. Burial types with hood stones are found in Kerala and the southern part of Karnataka. Instead of boulders, they are arranged in an inwardly inclined circular manner enclosed by a heap of stone rubble. There is variation between hood stones in terms of the placement of the stone slabs. Sometimes in Kerala and Southern Karnataka, slabs are placed slanting, sometimes conical at the top, and sometimes they are arranged in a circular fashion with the remains of the deceased either in a pit, urn or sarcophagus. There is improvisation in the creation of a stone circle in the absence of locally available suitable stone boulders. This arrangement protects the inner filling from getting washed out. It is interesting to observe how, in this hilly terrain in a zone heavy rainfall on the west coast of India, burial architecture like *Topikals*, *Kudaikals*, rock-cut burials and hood stone megaliths are constructed from locally available laterite, modelled to withstand the adverse impact of climate.

Fig. 2 – A *TopiKal* from Kerala (Photo: K. Rajan).

Fig. 3 – Rock cut cave burial from Umichipoyil.

3.3 Rock-cut chambers

Rock-cut chambers of various dimensions and layouts are found in the northern part of the lateritic zones of Kerala and South Karnataka. These are dug out below the lateritic surface, sometimes with multiple chambers and pillars, and are furnished with a bench on which is placed the deceased or the remains. Steps lead to a well-carved entrance frame and the entrance seems to have been closed by a lateritic slab, which is often found decayed. The top of the chamber often has a circular opening covered by a circular slab of laterite. A person can easily enter the chamber from the top by removing the stone. In certain cases, grave goods and human remains suggest reopening and reorganizing on several occasions. The architecture appears to be a permanent abode for a loved departed soul. In some cases, the tombs were opened and reused, as evidenced by the presence of cultural contents of subsequent periods. These caves had easy access from the top and from the front, probably used in the event of a new death and on occasions of remembrance of the deceased. Large numbers of such rock-cut burial monuments have been recorded at Ummichiipoyh in Kasargod Distict of Kerala (Nair 2015).

3.4 Stone/cairn circles

These types of burials are common and found in almost all regions of the subcontinent during the megalithic period. Early antecedents are seen in a Harappan context at Dholavira and Daneti. These burial types are found associated with others such as cists, dolmens, sarcophagi, urns, menhirs, and anthropomorphic figures (Haricharan *et al.* 2013; Mohanty 2015; Sontakke 2015). Like the stone chambers and cists, they could be seen both above ground and below (Deglurkar & Lad 1992; Rajan 2013, 2016; Mohanty 2015). A dug-out stone coffin (IAR 1980-1981) and a menhir (Mohanty & Vaidya 2017) were recorded from Borgaon in Vidarbha. In most megalithic burials, funeral remains are placed in pits but there are also simple pit burials without visible surface indications and stone settings. They are rectangular or circular in shape, and contain primary or secondary skeletal remains along with some grave goods. At Maski, some of the pit burials have minimal lithic settings (Thapar 1957). At Mahurjhari, Dhamnalinga, Vyahad and Dhavalameti, rectangular pit burials without stone settings are found in open spaces surrounding contemporary stone circles (Mohanty 2005b, 2015). One such small pit burial, excavated at Mahurjhari, had a pebble outline without a rubble filling on top but was compactly filled with black cotton soil containing a BRW vessel and piece of iron (Mohanty 2005b). Stone circles usually have one, two or even three rows of boulders arranged in a circle filled with cairns. These are also found in Tamil Nadu, Karnataka, Andhra Pradesh, Kerala and in some northern Indian sites. Simple cairn circles comprise a heap of rubble without obvious boulders, as seen in large numbers at Bhagimohari in Vidarbha and some parts of South India (Rajan 1994; Abhayan 2018) and northern India (Misra *et al.* 2015).

Fig. 4 – Cairn with peripheral boulders from Bhagimohari, Vidarbha (Photo: R. K. Mohanty).

3.5 Urn burials

In a strict sense, urn burials may not be considered as megalithic burials (Chakrabarti 1971). However, they are found associated with several Neolithic megalithic sites, in association with megalithic monuments or separately placed in the same location. They are also found associated with some megalithic cemeteries belonging to the same cultural ethos and material culture. These are common in Tamil Nadu. Addichchannalur is a type site that has been extensively excavated (Rea 1902-1903; Rajan 1997; IAR 2003-2004: 267-68). Urn burials are also found in Kerala and southern Karnataka (Sundara 1975) where they are found placed in a pit, with or

Fig. 5 – Burial urns from Addichchannalur. Inset: *in situ* urns (Courtesy of ASI).

without a stone setting such as a cist, dolmen, or a stone circle (with or without periphery boulders or slabs). Urn burials are associated with all regional megalithic traditions in the mainland and have a common lineage. They occur from the Neolithic-Chalcolithic period and are widely reported in all the regions where megalithic traditions are part of the burial ritual, underlining the similar beliefs and practices of these early periods. The urn burials continued within Iron Age settlements, as can be seen at Tharsa (Ismail *et al.* 2015), Ramapuram (IAR 1983-1984) and Bramhagiri (Wheeler 1948). The burial urns were often predesigned, covered with varied decorations, motifs, or graffiti and, later, a few were inscribed. While large numbers of child urn burials are found in earlier situations, the tradition gradually moved to incorporate both children and adults with the latter found mostly in secondary contexts.

3.6 Sarcophagi

Sarcophagi are earthen containers of different sizes designed into various shapes like boats, animals, or simple boxes, sometimes with a decorative lid. A ram-shaped sarcophagus recovered at Sankavaram in the Cuddapah district of Andhra Pardesh (Sarkar 1969) is a unique example. The sarcophagi may have several pairs of legs, varying from 2-24, as can be seen from Paiyampalli (IAR 1964-1965: 22-23, 167-68: 26-30). These are common in the Chingleput district and in the Coimbatore region of Tamil Nadu. They

Fig. 6 – i Sarcophagi with legs: a. Irugur-Coimbatore region; b. Tennaru-Dharmapuri region (Photos: Courtesy a. Coimbatore Museum; b. Dharampuri Museum).

are found in isolation or within stone circles at Perambir, Kunnattur, Pallavaram, Sittamur and Kanthadu (IAR 1957-1958: 37-38; Rajan 1997) in Tamil Nadu. They have also been found placed inside a cist and dolmen excavated in the North Arcot region of Tamil Nadu (IAR 1978-1979: 72-73; Rajan 1997: 284). A unique example of a tiny boat-shaped sarcophagus was found with a child skeleton within a stone circle at Dhmanalinga, in a megalithic context in Vidarbha (IAR 2000-2001: 97-107). At Borgaon, a well-carved large stone receptacle like a coffin was found at the centre of the stone circle (IAR 1980-1981). The evolution of the concept of sarcophagi can be visualized by considering the four-legged jar burials at Chalcolithic Inamgaon (Dhavalikar *et al.* 1986).

3.7 Menhirs

Menhirs are upright, often undressed, monoliths, generally in the form of a massive boulder or quarried stone slab of varying height. They are recorded from the Neolithic period in the Kashmir region in the north and become quite visible during the Iron Age megalithic context in Peninsular India. The number of such menhirs at a site varies from a one to thousands. These can be massive blocks of stone up to 5-7 m in height. Menhirs are found across the country, and continue to be erected today by different ethnic groups (Elwin 1945: 340-359; Allchin 1956: 134; Binodini Devi 1993; Jamir 1997-1998; Shekhar & Mohanty, this volume, p. 475).

Although mostly found in isolation, in a few cases they are also found in large groups as at Mudumal in the Mahbubnagar district, Andhra Pradesh, where thousands of menhirs, some forming alignments or avenues, have been discovered (Rao 1989). In Vidarbha, although stone circles predominate, menhirs are found occasionally in Nagpur, Chandrapur and Gondia districts (Mohanty 2015; Sontakke 2018; Bhagat 2019). Excavation of menhirs at Pachkheri in Vidarbha (IAR 1992-1993: 64-73) and other places revealed that these were devoid of any cultural remains. However, at Bhagimohari, there were a few stone circles with menhirs placed at the centre (Mohanty 1993) and, similarly, in some cases in Kerala and southern Karnataka, menhirs are found erected over pit burials (Sundara 1979: 339). There is another variety of monolith of a triangular shape found at several places in Tamil Nadu and Karnataka. Finally, there are varieties of menhirs with creative depictions that accompany the stone circles, cists and dolmens, especially in Tamil Nadu and Karnataka.

It is fascinating to observe that in some places in South India, from the central Godavari valley to Tamil Nadu, menhirs are carved into rudimentary

Fig. 7 – A menhir from Tirumulavadi (Courtesy of K. Rajan).

Fig. 8 – Anthropomorphic stone at Mottur, Tamil Nadu (Courtesy of K. Rajan).

human figures (Rao 1989). Carved out of single slab, they are known as anthropomorphic figures or statue menhirs and occur at only at a few scattered sites. The carved figures are found isolated or associated with cists and dolmens surrounded by a circle. Morphologically, these huge anthropomorphic figures of stone resemble the anthropomorphic figures of the copper hoard culture of the Chalcolithic period in northern India.

3.8 Stone alignments

In a stone alignment site, several monolithic are placed parallel in a square pattern or in diagonal lines. These stone alignments and monolithic avenues are reported mainly from Telangana, Andhra Pradesh and Karnataka in the districts of Raichur, Gulbarga, Mahabubanagar and Nalganda, respectively (Sundara 1979). Some of these alignment sites were discovered by Allchin in 1956 at Hyderabad, Gudebelur, Gopalpur and at Devakadra (Allchin 1956: 135). According to Allchin, '*The alignments consist of parallel lines of standing stones set out with mathematical precision*'. Similarly, there were alignments at Hanamsagar Ivathalli and Shakapur (Aradn 1931: 44). Today, many of these sites have been destroyed for expansion of agriculture (Rao 1989). The most well-known stone alignments are those at Hanamsagar and Vibhutihalli in north Karnataka (Allchin 1956; Sundara 1975), the former being the largest with more than 2500 menhirs and the latter being the best preserved. Excavations carried out at Maski (Thapar 1957) and Piklihal (Allchin 1960) alignments did not yield any burials or offerings. These appear to be mostly commemorative memorials.

Fig. 9 – Avenue at Hanamsagar, Karnataka (Courtesy of Srikumar).

4. Impact of economy on megalithism

The emergence of organized monumental burial arrangements could not have developed without impetus from prior, intermittent burial customs along with emerging diverse socio-economic situations during this period. Although we are told that the introduction of iron played an important role in Iron Age megalithism, we are also asked to believe that these people belonged to mobile pastoral communities in the absence of settlements in most of the cases so far dated. It is ironic they that needed few iron implements for cattle raising and economic exploitation except for during the conflict arising out of cattle raiding, as revealed both in Sangam literature and depictions on Hero Stones (Nandhini *et al.* 2019). The surge of megalithic building, especially in Peninsular India, seems to have many facets. Economy certainly had a vital role. The emerging evidence suggests the usefulness of iron to all segments of the society, resulted in the abandonment or reorganization of some of the Neolithic economy. Instead of burning dung for ash mounds they probably used it as manure, adopting cultivation as part of the subsistence lifestyle, along with the domestication of animals, the adoption of suitable ecosystem or modification of the landscape by making artificial water bodies (Ramachandran 1962; Morrison *et al.* 2015). The introduction of new high-yielding crops like wheat, and barley coming from the western corridor and paddy (unmilled rice), and pulses like Tur (*Cajanus cajan*) from the eastern corridor must have invigorated the economy (Kajale 1989, 1990, 1994; Fuller 2011; Cooke & Fuller 2015). During the Neolithic period, cattle were smaller and a larger breed was introduced during the Iron Age at Veerapuram. This was quite significant both for meat and other by-products (Thomas 1984; Thomas & Joglekar 1994).

Coupled with all this, emerging diversified local craft productions and specialization brought dramatic changes to many aspects of social behaviour, one of which was probably reflected in the burst of varieties of megaliths and megalithism. The excavation of contemporary settlements provides ample evidence of subsistence systems that supported the demand for non-essential exotic commodities like stone beads, refined complex metal objects and art objects. Unlike in the previous period, there was a diversity of agricultural products, exploiting even marginally suitable landscape using water management for both winter (*Ravi*) and monsoon crops (*Kharif*) (Cooke & Fuller 2015; Morrison *et al.* 2015). The range of grains invariably suggests that, by this time, rice, barley, wheat, Kodo millet, Job's tear, common pea, lentil, grass pea, horse gram, red gram, and Indian jujube were cultivated in major parts of the subcontinent (Kajale 1989, 1991; Vishnu-Mittre 1989; Fuller 2011). A specimen of cotton from Hallur (900-800 BC) provides the first evidence for this important, non-subsistence 'cash' crop supported by spinning activity in Ramapuram in South India (IAR 1980 to 1983; Fuller 2008). As usual, pastoralism, hunting and fishing played important roles in the megalithic subsistence economy. Bones from domestic animals like cattle, buffalo, sheep, goats, pig, horse, ass, dog, domestic fowl and many varieties of wild animals, birds and aquatic species have been recovered. Among the animal species represented, cattle were the most numerous, followed by sheep and goats (Alur 1971, 1979, 1990; Thomas 1992; Thomas & Joglekar 1994). The introduction of the new, large cattle breed recorded at Veerapuram might have inspired breeding and trading and increased consumption requirements (Thomas 1984). In addition to horse skeletons found in the megalith burials, charred horse bones with butchering marks have been recovered from the habitation sites at Naikund and Bhagimohari, suggesting that horse meat was probably consumed (Badam 1982; Thomas 1993).

The emerging specialized professions and market driven economy were reflected in the evolving social dynamics of the societies, along with the appearance of deferential behaviour. This seems to have gradually emerged as a result of economic inequality, social diversification and the development of a complex and diversified society. This could have led to the beginning of local and regional craft specializations amongst communities and families where expertise and trade secrets were developed, leading to a professional oriented community now known as 'caste' in India. The artefacts recovered broadly reveal the kinds of craft specialization that created a separate group of people in addition to those engaged in the subsistence economy. These included basket making, wood working, leather working, lapidary, pottery, shell

working. People became mercenaries, traders, iron smelters, iron smiths, gold and copper smiths, stone carvers, agriculturalists, pastoralists, weavers, oil pressers, horse breeders and traders, and traditional medicine practitioners. Gradual improvements and improvisation of quality seen in metal objects made of iron, copper, bronze and gold speak to innovations and competitions for supremacy among artisans. This craft specialization reached its zenith, producing iron implements close to the quality of steel in around 900 BCE, as evidenced by objects from Vidarbha (Deshpande & Mohanty 2015). The copper artefacts of this period show the application of casting, forging and riveting techniques.

Megaliths and settlement at Mahurjhari have produced evidence of one of the largest semiprecious stone bead manufacturing centres and circulation known from an archaeological context in the subcontinent (Mohanty 1999, 2001-2002, 2003a-b-c, 2017; Mohanty & Thakuria 2016). Similarly, Kodumanal in the south is known for bead making during megalithic period, with some raw material procured from the Deccan region (Rajan 1996, 1998). These economic activities impacted on the burial architecture and the nature of grave goods. Most of the secondary burials with multiple skeletal remains might have taken place after a long period and the grave offerings may not always reflect the individual person but rather the family or the community at the time of megalithic dedication.

It is generally found across the country that the Iron Age megalithic people were very much aware of where to locate their burials monuments. The cemeteries are mostly located in what was then unproductive landscape – barren rocky hill slopes – enhancing their visibility, and they were often placed close to water sources, possibly for ritual purposes.

5. Discussion

The evidence of past burial tradition of various types during earlier period (Mohanty, this volume, p. 419) certainly had impact on the introduction of new types, modification, and further innovation by using available local material. The development seems indigenous with some cross cultural ethnic and professional interactions and influence. As some migration and movement of people was common at all times, movement of technology, behavioural aspects and ideological concepts must have played important roles in the process. The introduction of iron, acceptance of BRW in a wider region and giving importance to ritual burials during the Megalithic period is one of them. During this period probably it spread to neighbouring south East-Asian countries like Sri Lanka along with ritualist and architectural characteristics (Kennedy 1975). There was a marked difference regionally, nature of spread, chronology and how it manifested. Later it got subdued, found continued sporadically with many tribes, un-connected with mainstream megalithic builders to some extent, but it continued till medieval times by warrior professional caste groups in the form of *Virgals* or 'hero stones'more as a social-economic and power conflict achievement by individuals or community in many regions across the mainland. Mostly of the hero stones depict three frames of scenarios, in the bottom depiction of occupational life, in the middle – arising conflict and subsequent death, and the top one suggest achieving heavenly abode by religious merits.

The Megalithic tradition during the Iron Age seems a practice more by mixed economic group practicing craft specialization along with pastoralism, marginal agriculture and service provider as evidenced from Vidarbha. The agriculturally predominated regions and contemporary settlements situated there in micro cultivable ecologically niches did not show Megalithic activity. Rather some of these settlements continued, prospered and emerged as Urban Centers while Megalithism was waning, settlements getting abandoned. Probably, craft specialized groups belonging to megalithic builders got dispersed to urban centers for better prospect, close marketing of the products and service of various kind (Mohanty 2018). Emergence of Sixteen City States around early part of 1st millennium BCE in Northern India, establishment of cities and later expansion of Magadhan empire towards south in 3rd century BCE must have impacted social conflict and community behaviour on nature of Megalithism as can be seen.

The relative paucity of megalithic settlement sites is one of the widely discussed issues. It appears that the lack of systematic and intensive regional surveys, the poor detectable features of the habitation due to

use of perishable metrical like wood, short duration of occupation resulting in flimsy deposits, dispersed settlement pattern, frequent shifting of settlements in order to cope with resource availability, due to warfare/conflict with the neighbouring groups, appear to be some of the reasons for the lack of recognizing habitation at a large number of places in comparison to the burial sites (Mohanty 1993, 2005b). This concept of non-availability of settlement is gradually changing with intensive investigations with discovery of large number of contemporary settlement (Bauer *et al.* 2007; Rajan 2013; Johansen 2014; Vaidya 2014; Mohanty 2015; Roberts *et al.* 2015). The contemporary large agricultural settlements at quite a few instances as expected did not participate in Megalithic building even during the heydays of Early Irion Age. Agriculture mostly depended upon erratic monsoon and never provided stable economy in individual capacity. Accumulation of wealth for grand social cause may not have been possible till confederacy began.

The beliefs and rituals associated with contemporary megalithism are being investigated by many scholars providing ethnographic parallels to the past. These studies suggest that Megalithic monuments are not only erected for a funerary purpose, but also to commemorate feasts of merit and other events coupled with various faiths and beliefs. At times, it is an expensive affair and is not performed for each and every member of the community. Besides this, place, position, status, gender, economy, nature of death, emotion attached and community behaviour made a difference. The post megalithic tradition has left us with thousands of Memorial Stones or *Virgals* (Hero stones) which many times are with inscriptions telling us volumes about the way they died out of valour, fighting with wild animals, warfare and other odds (Settar & Sontheimer 1982). This social commitment to ancestor reverence, life beyond death still remains important part to many ethnic communities binding together with past ideologies. When combined system fell apart it reduced to individual capacity and dedication, as seen in *Virgals* (Hero Stones) found even in the very regions where Megaliths are predominating.

Though direct analogical reasoning cannot be applied as contemporary and ancient Megalithic building traditions belong to different cultural contexts, they certainly provide enough insight of social construct, which may not be possible to derive from archaeological excavations. At the end, our understanding of the Megalithic culture of the subcontinent remains in nascent stage, as large area needs to be explored, intensively documented, excavated before they are completely wiped out due to unmindful human interaction. With economic change and movement of ethnic groups from their ancestral settlements has impacted on rigid continuity of tradition.

Fig. 10 – Hero Stone (Courtesy of ASI).

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Tiatoshi JAMIR, Johannes MÜLLER

Northeast Indian megaliths: Monuments and social structures

Abstract: Different megalithic landscapes of Northeast India offer rich sets of archaeological and ethnoarchaeological information on the social implications of megalith building activities in a comparative perspective. This paper attempts to situate the megalithic building traditions in Nagaland, Manipur, Meghalaya, Assam, Mizoram, and Sikkim with specific reference to the nature of their social structures. Both memorisation practices (as displayed in standing stones) and ancestral practices (as displayed in different burial traditions), demonstrate that extensive communal and cooperative structures link different spheres of daily life. Feasting activities and the construction of megalithic monuments in the region of Northeast India represent a long-standing practice of both stratified and acephalous societies. The historical, archaeological, and ethnographic backgrounds to the megalithic traditions of Northeast India are thus examined and are linked to results from recent fieldwork undertaken in southern parts of Nagaland.

Keywords: *Northeast India, Khasi-Jaintia Hills, matrilineal, Naga Hills, patrilineal, feast of merit*

1. Introduction

The northeastern region of India encompasses the states of Arunachal Pradesh and Sikkim to the north, Manipur, Mizoram and Tripura to the south, Nagaland to the east, and Assam and Meghalaya to the west. The region is unique, not only because of its geopolity, but also in terms of its ecological diversities, culture, and history (**Fig. 1**) with the states of Mizoram and Tripura falling well within the 23° N Tropical zone. Richly endowed with natural resources, the region is considered to be one of the world's richest biodiversity hotspots, supporting diverse flora and fauna and several crop species native to the region. Major rivers, including the Brahmaputra, Barak, Siang, Tlawng, Gumti, Khowai, Kolodyne, Dawki, Umngot, Dhansiri, Kopili, Dikhu and the Tizu river systems, drain the hills, plateaux, and lowland areas. The region is characterized by the uplands and high-altitude mountains in the north, northeast, east, and southeast, while the southwestern and western regions are, comparatively, tablelands and low-lying flood plains. Of additional importance in the region are the rich megalithic monuments that dot the landscape, and which continue to survive as a living tradition. This tradition is linguistically associated with the Mon-Khmer and Tibeto-Burman language populations and is found densely concentrated in Nagaland, Manipur, Meghalaya, Assam, and Mizoram, with less frequent occurrences in Arunachal Pradesh and Sikkim. Such living memorization in standing

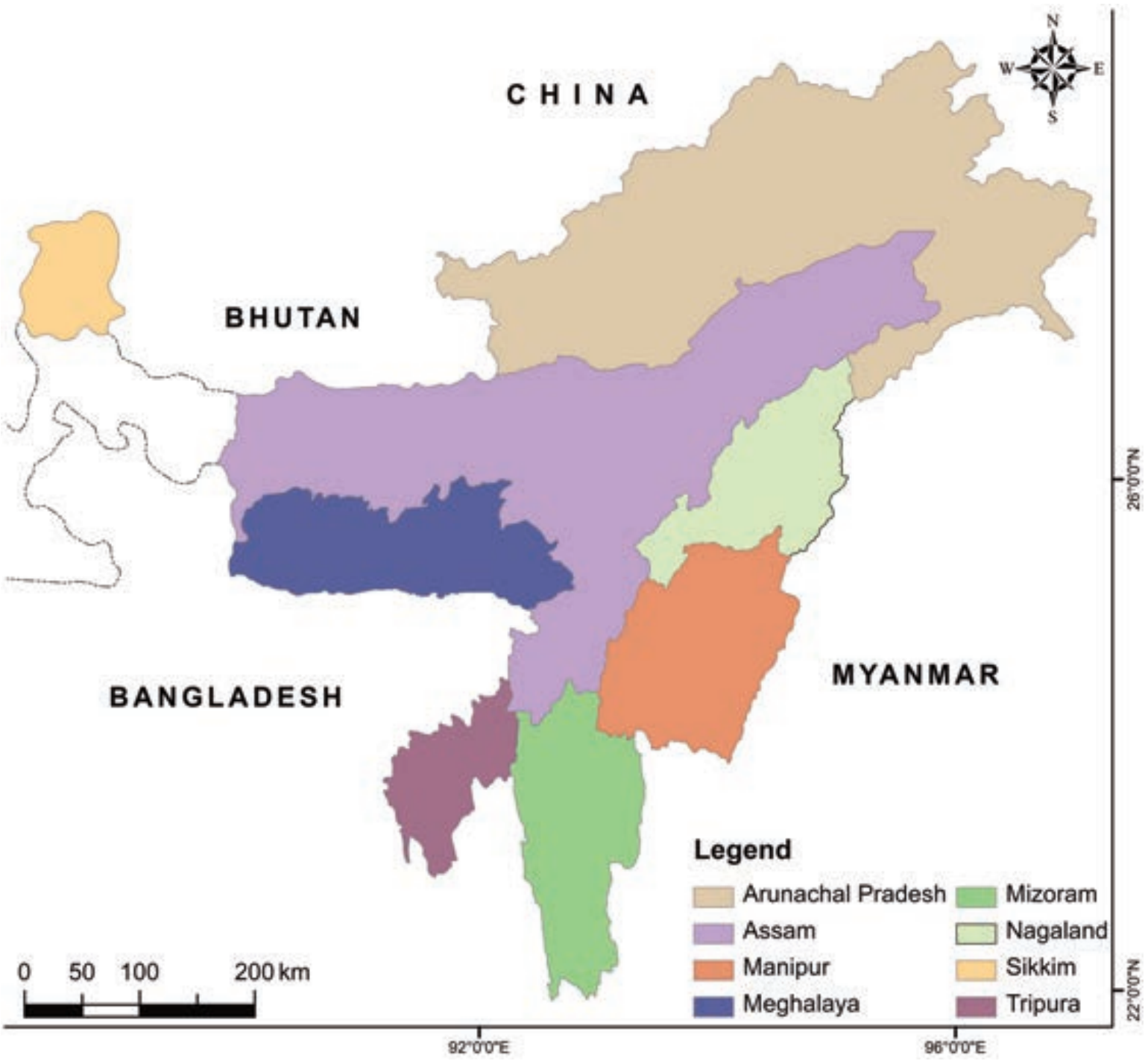

Fig. 1 – Regional map of Northeast India with its respective states.

stones is best summed up by Fürer-Haimendorf, who writes: '*Hundreds and thousands of megalithic monuments are scattered over the Angami country… Unlike the dolmens and menhirs of the dim past, they are not dumb mysterious remnants of the dead culture but are living and vital parts of Naga culture*' (Fürer-Haimendorf 1976: 19).

2. History of research

2.1 Stone monuments and early colonial ethnography

The most widely reported monuments in the region are those in the Khasi-Jaintia Hills, and the Naga Hills. In his account of his 1828 journey via the Khasi Hills, Henry Walters, a British magistrate in Dhaka, referred to some two or three hundred monuments, large and small, all formed of circular solid stone slabs, supported by upright stones that varied from 2 ft (0.6 m) to 6 and 8 ft (1.8 m and 2.4 m) in diameter, and disposed on the side of the hill, all close together, producing a singular effect. He also made notes of the large and small stone 'stools' which were, in fact, tombs. He further remarked that the dead bodies of the Casias were burned on a spot set aside for the purpose, a little higher up the hill, and that their ashes were collected and put into earthen pots, which were deposited under the stones; the upright granitic slabs, he described, were quarried by means of fire, and some of the central stones were carved on top like a crown (Walters 1832: 502, 504, 509). This account is considered the earliest colonial reference to the megaliths of Northeast India. Following this early report, Henry Yule (1844), while writing on the Khasi people, described the upright stones of the region. For the first time, he provided the names of Khasi villages, deriving their appellations from such stone erections: '*commencing with mau, which signifies a stone; e.g. mausmai, the stone of the oath, mau-inlu, the stone of salt, mau-flong, the grassy stone, maumlú, the upturned stone, and a score more; mausmai, the oath stone, suggests that these pillars were also erected in memory of notable compacts*' (Yule 1844: 619, original emphases). In 1854, during one of his botanical surveys, Joseph Dalton Hooker reported the remarkable monuments at Nartiang in the Jaintia Hills, referring to them as '*gigantic headstones some even measuring to as high as thirty feet* [9.1 m], *split by heat and cold water with great art, in part religious, as the grove suggests, and also designed for cremation, the bodies being burnt on the altars*' (Hooker 1854: 173).

Soon after this, in the winter of 1872-73, Godwin-Austen (then the Deputy Superintendent of Topographical Survey of India) undertook a survey operation in the Naga Hills and Manipur. He reported the presence of large standing stones in Kheruphima and dolmens in Sopvomah and Kezakenomi (Godwin-Austen 1875: 144-145). Around the same time, another exhaustive account by Godwin-Austen (1872, 1876) appeared, on the topic of the Khasi stone monuments and their association with the mortuary practices. Assisted by his field informants, Godwin-Austen for the first time provided more depth to the megalithic tradition: the stones, being in pairs, were assigned to male and female categories based on Khasi etymons: '*the tall upright stones were male or 'Mao shinran', while the flat, seat-like slab in front or 'Mao Kynthai' were female and representative of all life*' (Godwin-Austen 1872: 126, original emphases). He further suggested that the ashes of the dead were never deposited under the horizontal slabs but always to be seen in front of the upright sets, the monument having no connection with funeral rites, its role being purely to perpetuate the memory of a person long deceased, who has watched over or brought good fortune to a descendant, his family, or clan. Reference to the use of sledges and strong, curved tree branches, roughly trimmed and rounded, for transporting stones from quarry sites is also reported. The monuments were not set up facing any particular direction, however the front of the stone was generally positioned to have reference to the site and its surroundings: '*… thus a number [of stones] set up together on a hill-top will be found facing outwards* [not facing each other], *those by the wayside facing the road; however, single sets, standing on a hill-top or rising ground, as a rule, face to the southward*' (Godwin-Austen 1872: 126, 130, clarification added in parentheses). Godwin-Austen's first-hand account demonstrates the diverse cultural significance associated with the Khasi megalithic tradition.

Another contribution on the Khasi megaliths was the work of C.B. Clarke (1874) who provided three broad classes of these monuments: a) funeral pyres, b) cists containing pots of ashes, and c) monumental groups. He also included valuable geological descriptions of the rocks utilized for the monuments, such as Cherra stones, Shillong sandstones, and granite, and pointed to the provenances of the stones used to construct the monuments at Mausmai, Lirinow and Mamloo (Cherra sandstone), Laitlankote (granite and Shillong sandstones), and Nurtiung (granite). He also noted the use of wooden rollers placed beneath the stones and strung with rattans to transport the large blocks (Clarke 1874: 483, 487, 490-92). Although the ruins of Rajbari in Dimapur were first reported in 1839 by Lt. E.R. Grange during an expedition to the Naga Hills, a more detailed description of the carved standing monuments, along with sketches, was later provided by Godwin-Austen (1874).

Several years later, in 1882, Lt.-Col. R.G. Woodthorpe reported at length on the western and eastern Angami Nagas in 'Notes on the Wild Tribes Inhabiting the So-Called Naga Hills, on Our North-East Frontier of India', published in the *Journal of the Anthropological Institute of Great Britain and Ireland* (1882). In addition to other details, references were made to traditional dress and ornaments, weapons, agricultural tools, and the megalithic tradition.

The accounts by Godwin-Austen (1872) and Watt (1887) appear to be the earliest accounts of the megaliths of Manipur Nagas. Passing references were made to the upright stones in Maram village (Godwin-Austen 1872: 145), the standing stones of Kolyas, Murring Nagas and the construction of memorial stone tombs with carved wooden pillars hung with the skulls of animal slaughtered during the funeral feasts of great men among the Tangkhul Nagas (Watt 1887: 361, 364-67).

In the early and mid 20th century there are few references to monuments that are worthy of mention. The work of Stack and Lyall (1908) on the Mikirs (Karbis) (**Fig. 2a**) of Assam documents the funeral of a great man, leading to the setting up of a monument. They describe the practice at length:

A tall upright stone (*lòng-chòng*) and a broad flat stone (*lòng-pàk*), supported on short uprights, are brought and set up, as in the Khasi hills. The rīsōmār come and dance there the whole day, with manifold apparatus. The uchēpī sings and places food of different kinds on the flat stone for the dead man; his clothes and umbrella are put upon the tall stone, with flowers. A fowl is killed for the well to do at the bottom of the pit, and a goat, two ducks, and two pigeons are killed at the top, and their heads thrown to the rīsōmār. Then the people of thirty to forty villages assemble. The uchēpī sings extemporaneously before the memorial stone, and the people dance and eat there until dark (Stack & Lyall 1908: 42).

Early accounts of the Garos society and culture are provided in a monograph by Alan Playfair *The Garos* (1909). While not known for erecting enormous stone monuments like the Khasis and Nagas, the Garos raise wooden memorial posts known as *kima* that serve a similar function (**Fig. 2b**). Playfair remarked, '*Each kima consists of a pair of posts, two to four feet high, fixed into the ground. One of the posts is carved in resemblance of a human being supposed to be a likeness of the deceased, while another is adorned with several rows of notches to support the horns of the bull sacrificed at the time of cremation*' (Playfair 1909: 113). He also noted the use of sacrificial stones or *kosi* at the entrance of each village. These were rough, unhewn stones, seldom more than 3 ft (0.9 m) high, varying from four to fifteen in number, and associated with the *asongata* ceremony. They were regarded with reverence and could never be uprooted. When a village was moved to a new site, the stones remained in place and the villagers would return to the old site for an annual ceremony. The priest slaughtered a sacrificial animal and sprinkled blood over the stones. Playfair also reported the presence of other *kosi* stones that marked the place where a man was killed in war or in revenge (Playfair 1909: 96).

in his monograph, '*The Naga Tribes of Manipur*', T.C. Hodson (1911) mentions the tall monuments found at Uillong (Willong) (**Fig. 3**), the Maikel stone, the dolmens near Maram, the stone circles of the Marring areas, and the cairns and heaps of stones in Quoirengs and Tangkhul areas that he documented during his field visits of December 1900 and December 1904. He provides details on the dimensions of the 18 massive standing stones at

Fig. 2 – a. Karbi memorial stones of wealthy deceased members of the community, Tirkim village, West Karbi Anglong District, Assam (Photo credit: Salam Shyam Singh); b. Garo timber memorials or *Kima* for the dead, Sadolpara village, West Garo Hills, Meghalaya (Photo credit: Mepusangba).

Fig. 3 – 3D imagery of Willong standing stones, Senapati District, Manipur (Photo credit: Romano-Germanic Commission 2018, German Archaeological Institute).

Uillong, along with the distance between each stone and its respective orientation (Hodson 1911: 187). Towards the end of the publication he reproduces a lively account of a ritual associated with the erection of a stone memorial documented by Rev. William Pettigrew, the first missionary to the Tangkhuls, beginning in 1896. Subsequent to this, the work of P.R.T. Gurdon (1914) on the Khasis provided a more detailed description of the Khasi-Jaintia megalithic complex, the clan cist, and the matrilineal system.

The Mizo stone monuments are described in two prominent works: a monograph on '*The Lushei Kuki Clans'* by Lt. Col. John Shakespear (1912), the first Superintendent of the Lushai Hills District, and a second by N.E. Parry, a member of the Indian Civil Service who worked as the Superintendent of the Lushai Hills from 1924 to 1928. In addition to his accounts of the traditional political institution, traditional laws, marriage, religion, Shakespear refers to the *Kuang ur*, which is a traditional method among the Mizos of the collection of bones, their disposal in earthen pots, and rituals associated with the erection of the wooden sacrificial Y-post known as *Seluphan* (**Fig. 4**), set up at the courtyard of the feast performer (Shakespear 1912: 84-85, 90). Parry's monograph, '*The Lakhers*' (1932), is an account of the Mara clans, a community living in the south-eastern parts of Mizoram, bordering Myanmar. He gives a detailed account of the feasting ceremony called *Athiteukhei* ('sitting with the dead') performed during the time when a memorial stone and wooden posts, or *Thangri*, is erected for deceased relatives (Parry 1932: 414, 416).

In terms of colonial writings on Naga stone monuments, John Henry Hutton's seven publications (Hutton 1922a-b, 1923, 1926a, 1928, 1929a, 1933), four of which are published in the *Journal of Royal Anthropological Institute*, merit a mention. Particularly important is one of his earliest notes on the Angami Nagas, 'Carved Monoliths at Dimapur and an Angami Naga Ceremony' (Hutton 1922a). It is, perhaps, a typical example of what today is generally regarded as a direct historical approach in ethno-archaeology. When the Kachari kings of Dimapur were driven out in AD 1536, no literary record was left to explain the purpose of the enormous round and forked forms found in stones erected at Dimapur. Hutton sought explanations for the possible ceremonial behaviours surrounding them. Struck by the structural resemblances between the Kachari monoliths and the two wooden posts (one forked, the other straight) raised during the *Angami Naga Lisü* ceremony of Kohima village, and deducing from the oral tradition of the village that at least one clan claimed descent from the direction of Dimapur and the Dhansiri valley, he inferred that, like the

Fig. 4 – Mizo wooden memorial or *Seluphan* from Lianpui village, Champhai District, Mizoram (Photo credit: Salam Shyam Singh).

Angami Lisü observance, similar ceremonies and festivals, though more elaborate, could have accompanied the erection of the huge megaliths at Dimapur (Hutton 1922a: 57, 69). His subsequent reference to the Jamuguri monolith in Assam, previously reported by Col. L.W. Shakespear in his account of the '*History of Upper Assam, Upper Burmah and the North-Eastern Frontier*' (1914), draws comparisons with the Dimapur monuments in terms of the stylistic representation of motifs, their distribution pattern and orientation (Hutton 1923). Furthermore, in his publication, 'The Meaning and Method of the Erection of Monoliths by the Naga Tribes' (Hutton 1922b: 244), Hutton presents minute details of a stone dragging ceremony that he witnessed on December 1921, during the *Terhengi* festival of Kohima village. His note on 'The Use of Stone in the Naga Hills' (Hutton 1926a) also contains remarks on the types of megalithic structures built by the Angami Nagas, and the use of stones in the construction of graves, further associating this practice with ideas of fertility. Around the same time, in 1925, Hutton visited the Jaintia Hills with the aim of observing some of the megalithic works of the Synteng dynasty of Nartiang in the Jaintia Hills and Jaintiapur in the plains of Sylhet. This resulted in the paper 'Some Megalithic Work in the Jaintia Hills' (Hutton 1926b) published in the *Journal of the Asiatic Society of Bengal*.

An early account of the first standing stones known as *Kabi Long Chok* (also known as *Kabi Longtsaok*) in North Sikkim was published by Stocks (1927). In 'Folklore and customs of the Lap-chas of Sikkim' published in the *Journal and Proceedings of the Asiatic Society of Bengal*, he writes of a blood treaty between Lepchas and Bhutia chiefs that concluded with the erection of nine upright stones to mark the occasion (see Molommu 2018). According to Stocks, '*These stones stand to this day and prayers by both Buddhist monks and Lepchas are offered here. On the fifteenth day of the ninth month (by the Tibetan calendar), the Lap-cha worship at Karbi, offering Chi, the national drink, rice* (zo)*, Indian corn* (ta-fa)*, fish* (gnu)*, birds* (fo)*, sugar-cane* (mut pa-am)*, and flowers* (rip)*. These offerings are placed on plantain leaves* (kur-dong nyom) *resting on a bamboo carpet in front of the altar to the north of the nine stones facing the Himalayan Mountains*' (Stocks 1927: 330-331).

In the publication '*Assam Megaliths*', Hutton (1929a) takes a meticulous tour of the megalithic works of the Naga inhabited areas of Assam, including the 'chessmen' type (**Fig. 5b**) and the two types of 'Y'- shaped stone monuments (**Fig. 5a**) carved with naturalistic representations in the Kachari ruins in Dimapur; the motifs engraved on skull cists (conical shaped stone receptacles carved from sandstone meant for the disposal of skulls of clan members) of the Konyaks; the enormous standing stones at Gwilong (Willong) along with sketch plan and types of wooden sledge used for stone transportation; the roughly incised monolith from the Angami village of Kigwema; the carved menhir from Lyengmai village of Intuma; and the mortuary, phallic and fertility associations of the menhirs and dolmens. He also provides a brief account of the two methods used for stone transportation by the Nagas in 'Prehistory of Assam' (Hutton 1928). In his communique to *Nature*, featured under 'Megalithic Work in Assam' (Hutton 1933: 719), he further describes the fertility associations of megaliths and also the prehistoric stone jars of North Cachar Hills that most likely represented sex distinctions akin to the Konyak Naga stone cist. Another interesting feature of Northeast Indian megaliths, an account of which seems incomplete without a mention, is the presence of the stone jar sites of the North Cachar Hills in Assam. The discovery was first made by J. P. Mills in 1928 but drew little attention until its publication in 1932 by Mills and Hutton in the *Journal and Proceedings of the Asiatic Society of Bengal* under the title '*Ancient Monoliths of North Cachar*'. They reported a total of six jar sites: Derebore, Kobak, Bolasan, Kartong, Molongpa, and Ndunglo (**Fig. 6**).

Notwithstanding his tremendous contribution to Naga ethnography, the majority of Fürer-Haimendorf's studies focused on the Konyak Nagas. However, his paper 'Megalithic Ritual among the Gadabas and Bondos of Orissa' (1943) endeavoured to compare the megalithic traditions of the Gadabas and Bondos with those of the Khasis, Angamis, Aos, Konyaks, and the Kaccha Nagas of the northeast. In his later paper 'The Problem of Megalithic Cultures in Middle India' (1945), Fürer-Haimendorf delved into the megalithic problem of Middle India, indicating the widespread occurrence of megaliths as a result of waves of Austroasiatic and Austronesian migrations

Fig. 5 – a. A 'Y-shaped type Kachari stone monument, Rajbari, Dimapur, Nagaland (Photo credit: Tiatoshi Jamir); b. Rows of 'chessmen' type Kachari stone monuments, Rajbari, Dimapur, Nagaland (Photo credit: T. Jamir).

Fig. 6 – Stone jars from Bolasan site, North Cachar Hills, Assam (Photo credit: T. Jamir).

to the region. Because of widespread geographical distribution, he believed that, '*The megalithic complex found in Assam and many parts of South-eastern Asia appeared thus not as an accidental aggregation of various culture elements, but as a well-coordinated system of customs and beliefs, a philosophy of life and nature*' (Fürer-Haimendorf 1945: 74).

2.2 Post-Independence developments

The post-Independence situation in Northeast India saw a steady rise in the number of notable research projects devoted to megalithic studies. This resulted in several research dissertations and published volumes seeking to address issues on specific problems concerning typo-morphological variations, monumentality and other complex village polities, and the socio-economic dynamics and their interplay with the idea of monumentality (Bareh 1981; Syiemlieh 1981; Devi 1993, 2011; Mawlong 1996; Jamir 2005; Mitri 1998, 2016; Venuh 2000, 2005; Bezbaruah 2003; Choudhury 2004; Jamir 2005; Malsawmliana 2011, 2019; Sarma 2011; Meitei 2017; Imchen 2018; Marak 2019a; Wunderlich 2019a). With current theoretical and methodological approaches, new perspectives on the region's stone monuments are evident in the works of Burke (2014), Mawlong (2004), Jamir (2005, 2006, 2015, 2019), Mitri (2009, 2016), Marak (2012a-b), Khongreiwo (2014, 2015), Wangjin (2014), Wouters (2015), Wunderlich (2019b) and Wunderlich *et al.* (2019). These recent works not only utilised historical accounts, oral tradition, family histories, ecology, landscape concepts and spatial analyses of stone monuments but also examined the rise of monumentality alongside social formations, group identity and cosmology, territoriality, resource utilisation and the Neolithic-'Megalithic' transition, social memories, and notions of ideology.

A robust chronology for the megalithic sites of the region is far from complete but there are a few dates from both old and new excavations. Marakdola, a post-Neolithic site in the Khasi Hills, excavated by S.N. Rao in the 1970s, was assigned to 658±93 BP or AD 1292 (Rao 1977: 202), while recent dates emerging from sites like Lawnongthroh are assigned to the 5th century AD. Although the top layer from the site of Myrkhan remains to be analysed, dates from the 1st century BC to the 1st century AD are tentatively assigned by the excavators for the beginning of the megalithic culture in the Khasi-Jaintia Hills (Mitri *et al.* 2015; Mitri 2019b: 15). If such monument building activity can be linked to iron technology, the sites of Nongkrem and Raitkteng in the Khasi Hills appear significant, providing dates of 2140±80 BP and 1110±30 BP respectively (Prokop & Suliga 2013). Another significant date is suggested for the Kachari megalithic ruins at Rajbari (Dimapur, Nagaland). An early excavation undertaken by Nienu (1983) at the Rajbari site provided two ^{14}C dates obtained from charcoal samples of 1530±180 (AD 270-660) and 1300±180 (AD 570-940) (Hurst & Lawn 1984: 212-240). Radiocarbon dates are now available for new excavations at the Nagaland-Jotsoma burial site, estimated to 200±30 BP, at Chungliyimti, associated with the origin myth of six stones, and at Longtrok dated to 910±70 BP; 1020±80 BP (Jamir 2014; Jamir *et al.* 2014a); the sites of Khezakeno, Movolomi, Khusomi, and Phor found in association with stone monuments are dated to 500±50 BP (cal AD 1320-1350), 410±60 BP (cal AD 1420-1640), 530±40 BP (cal AD 1320-1350) and 230±60 BP (cal AD 1500-1600) respectively (Jamir *et al.* 2014b).

3. Megaliths and social structures: Khasi-Jaintias and Nagas

With regard to the social structures of the Northeast Indian megaliths, case examples from the Khasi-Jaintias and the Nagas have been considered. Not only is there a significant amount of documentation about these societies compared to other ethnic groups but their megaliths represent a wide range of meanings. They have a role as symbols of power and control in the socio-economic and political systems, feasting, mortuary practices and clan solidarity, and matrilineal/patrilineal social structures. Nonetheless, there has been a positive effort in more recent publications to incorporate the lesser-known megalithic practices of the region, such as those of the Mizos (Malsawmliana 2011, 2016), Garos (Marak 2012a; Bhuyan & Sangma 2019), Karbis (Hazarika 2016; Patar 2020) and the Lepchas (Molommu 2018; Lepcha 2019).

The Khasi-Jaintia people are inhabitants of the central and eastern Meghalaya Plateau and form a group of the Mon-Khmer language that belongs to the larger Austro-Asiatic group. A notable feature of the Khasi-Jaintia society is their matrilineal system. The social structure of the Khasi and Jaintia is composed of the *kurs* or the clans, and every member can trace their origin to a single primeval mother called *Ka Iawbei Tynrai*, who is the ancestress of the entire clan. They are an exogamous group and any marriage within the clan is considered taboo (Mitri 2016: 18). Similarly, in the case of Jaintias, all clans trace their origin from a common ancestress and their descent is from mother to daughter; sons also trace their descent from their mother (Marak 2015: 33). This pattern of social organization is seen in the *mawbah* or the clan cist (**Fig. 7a**), with a single horizontal capstone, the *mawthap*, perceived as a clear symbol of fecund femininity with its pregnant belly-like curvature. The first bones interred in the *mawbah* are those of the ancestress of the lineage, and all subsequent interments are of people who are direct descendants of her womb (Burke 2014: 371). The clan cist is the most important and central to the Khasi-Jaintia people. Current studies show that most of the megaliths in the landscape, except those found in cluster areas, are in some way connected with the post-cremation funerary rites performed during the bone placement ceremony at the time of the erection of the clan cist (Mitri 2019: 177). All megalithic monuments found in the Khasi-Jaintia Hills are directly or indirectly linked to the clans who erected them (**Fig. 7b, c**). These memorial standing stones are considered as purificatory stones that are raised after the bone placement ceremony, and generally comprise three upright stones and a table stone. The middle upright is always ascribed to the *Kni Rangbah* or the eldest maternal uncle of the clan, while those on each side are *Maw Pyrsa* or

Fig. 7 – a. The clan cist or *mawbah*, Mylliem Mawiong, Meghalaya; b. Khasi standing stones *Maw Shynrang* ('male stone') associated with table stone, *Maw Kynthei* ('female stone'), Mawpat, Shillong, Meghalaya; c. Jaintia standing stones *Mooshyarang* ('male stone') associated with table stone, *Mookynthai* ('female stone'), near Jowai area, Meghalaya (Photo credit: T. Jamir).

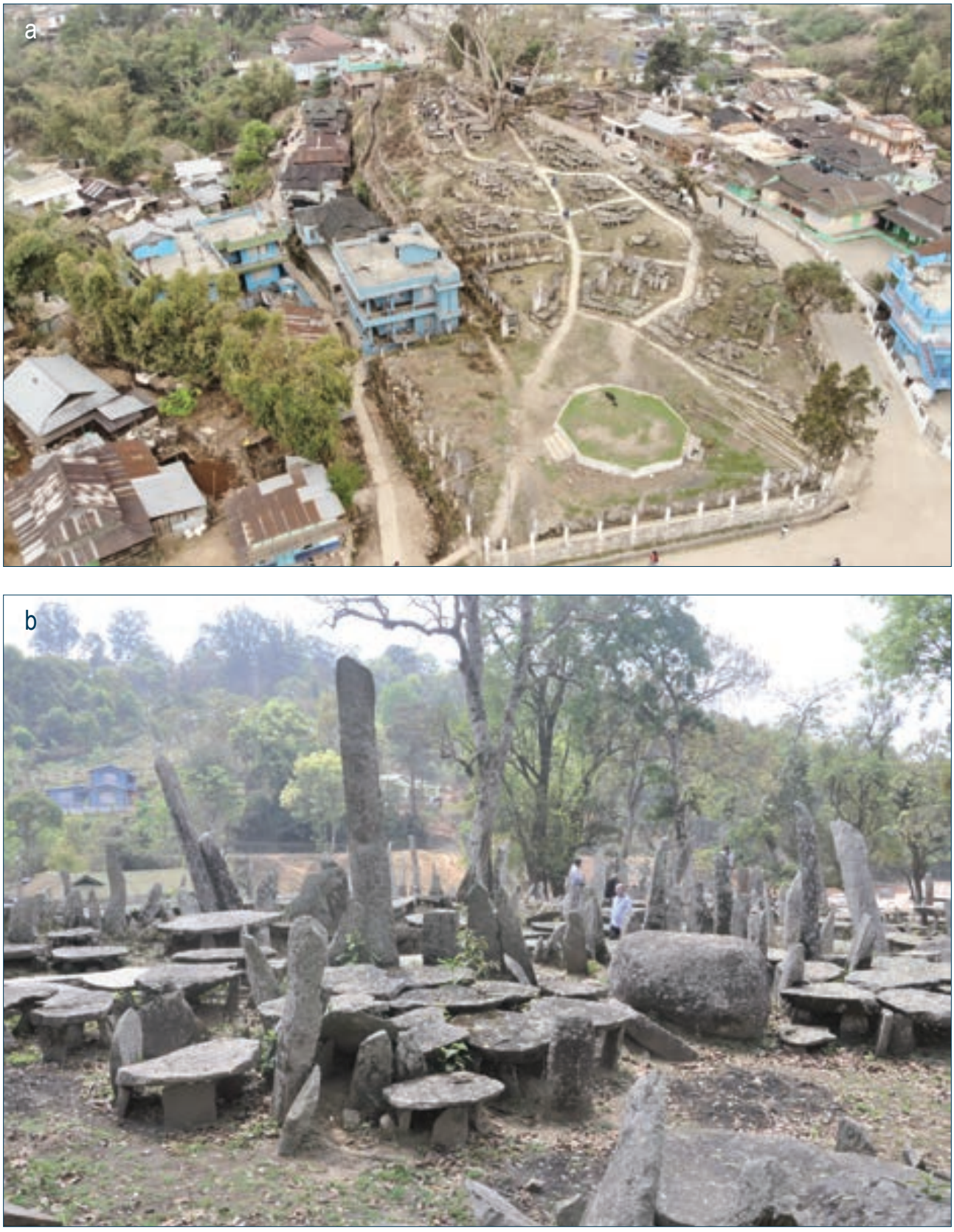

Fig. 8 – a. Aerial view of Nangbah stone monuments (Photo credit: Romano-Germanic Commission 2018, German Archaeological Institute); b. Clusters of stone monuments associated with market centres, Nartiang, West Jaintia Hills District, Meghalaya (Photo credit: T. Jamir).

'stone of the nephew' who will eventually take the role of the maternal uncle in the future. In front of the three upright stones is the table stone ascribed to the *Iawbei Tymmen* or 'the great ancestress' of the clan or to the *Iawbei Kpoh* or 'the great grandmother' of the family or to the Iawbei *Khynraw* or 'the grandmother' of the family (Mitri 2016: 27).

The number of large clan cists situated at a particular location in the landscape is also a clear indication of the ownership and occupation by these clan(s) of a particular village. However, the beginning of megalithic activity is marked by the construction of the small individual cists where, after cremation of a deceased clan member, the calcined bone is interred. At the time of the relocation of the calcined bones from the individual cists to the large clan cists (*mawbah*), standing stones are raised that denote different meanings. There are also standing stones seen in isolation, either with dolmens or single menhirs, that are testament to the long, complex rituals associated with the passage rite for the dead. There are, however, a few exceptions where monuments are raised for the establishment of a marketplace, such as those at Nartiang and Nangbah villages in the Jaintia Hills (**Fig. 8a**) and Iewduh in Shillong. These were more appropriately considered as exchange or barter centres, which grew into centres of power, clearly indicating the socio-economic and political transition of these early societies. Today these commemorative stone clusters comprising of standing stones associated with table-stones, that are the market centres of the village are prominent sites where the founding clans of the villages along with the priest or the *Lyngdoh* reserve the right to perform annual rituals to the deity of such sites known as *Iewmusiang* (see Mitri 2009, 2014, 2016) (**Fig. 8b**).

The monuments of the clan are located at the highest points in the landscape, which resonates with the *Hynniewtrep* ('seven huts') cosmology, which relates that the clan ancestors descended from heaven (the sky) to Lum Sophpet Bneng ('the holy mountain') by means of a ladder. Locating the *mawbah* (clan cist) and its associated megaliths at the highest point achieves the aim of placing the bones of the relatives as close to heaven and *U Blei* ('supreme god') as possible (Burke 2014: 371). Furthermore, the concentration of monuments at the highest point of the landscape in the Khasi and Jaintia Hills (usually on the ridge of a hill overlooking either two sides or one side of a valley) indicates that the areas are marked as the territorial boundaries of a village or settlement. This suggests that the Khasi megaliths are primarily territorial markers in the physical landscape, placed in a manner that exhibited clan solidarity and clan-based settlements (Mitri 2019a: 175, 177). In others cases, for example at the Jaintia village of Nangbah, the megalithic structures are set inside the sacred groves which suggests they were important to the ritual activities carried out in these places (Marak 2012b: 46).

The tradition of stone monuments among the Nagas of the Tibeto-Burman language group is shared by the Konyaks, Angamis, Chakhesangs, Rengmas, Zeliangs, Semas, and the Lothas of Nagaland (**Fig. 9**), while other Naga communities raise large wooden posts, which in significance and meaning are akin to what is similarly expressed in stone. The clan system among the Nagas plays a dominant role wherein every Naga village consists of several clans. In terms of their social structure, all Naga communities are exogamous groups of patrilineal descent, maintaining strict clan exogamy, while inheritance is traditionally held along the male line – something that continues to this day. This strong patriarchy may also be evident in the size of the stone monuments: '*the first stone erected after the name of the man is larger than the one erected for the wife*' (Venuh 2005: 62). The Naga stone monuments are principally linked to the idea of feasting which serves to increase social prestige. A series of feasts are held, with each feast having greater importance than the previous. These 'Feasts of merit' are hosted by the merit-seeker and his spouse, and result in several significant privileges: the house is adorned with 'house-horns', animal and other motifs are carved on the timber walls, particularly at the entrance, step-like carvings are added to the timber pillars of the house, the rights are earned to a shawl, and the final ceremony is marked by stone pulling and the erection of standing stones in the name of the host. Such events commemorate not only the completion of the feasting process but also the generosity of the couple. In addition, such feasting arenas are also an occasion where clans come together to display and reinforce their solidarity. With the completion of the

Fig. 9 – a. Standing stones also known as *Thaolong*, associated with head-taking ceremonies, Longwa village, Mon District, Konyak Naga (Photo credit: W. Wangjin); b. A circular stone platform, Khonoma village, Kohima District, Angami Naga; c. Standing stones with platform, Zhavame village, Phek District, Chakhesang Naga (Photo credit: T. Jamir).

whole series of feasts, if the host desires to raise himself up the social ladder, he is given a symbolic rebirth by being dressed up like a small boy and carried in a basket (Vasa 2019: 102). In the case of the Western Angamis, such a man must lie in a winnowing basket like a newly born child and cut his hair like that of a child; a new belt must be made for him and a new cloth (Fürer-Haimendorf 1939: 217). In sharp contrast, for the Konyak Nagas the feasting remains the monopoly of the chief (*Ang*); only the chief reserves the traditional right to host feasts in the village. No stones are erected during such feasts. Only a chief who has offered a Feast of merit is considered a 'Great Ang'. After feasting, a carved wooden post, the top shaped like a hornbill, is set up in front of the Ang's house; the carved post represents the Ang who must symbolically die and be reborn (Fürer-Haimendorf 1939: 219-220).

Among the Konyaks, stones were erected by warriors who brought back the heads of enemies slain during village raids. These stones were erected on the former site of *Thaolong* or 'foundation' or 'marker' stones placed when the new village was established. Men became eligible to erect stones depending on the number of heads taken. Here, unlike the Angami Nagas, the prestige gained by head-taking became a means to social status (Wangjin 2014: 326-328). Sometimes, a menhir was erected with a flat stone in front within the proximity of the *morung*, and after a successful raid, a bamboo pole was tied to this menhir and the head hoisted on it for several days (Fürer-Haimendorf 1938a: 350). Therefore, the Konyaks erect stones during their head-hunting ceremonies, but not in connection with Feasts of Merit (Fürer-Haimendorf 1938b: 215). In villages such as Yungya, the head is exposed on a flat stone at the foot of a palpably phallic menhir, or on a stone table (as at Chi) before a mound on which a small stone is erected for every head captured. A *euphorbia* plant, whose milk-like juice seems also to have fertility associations like that of the ficus, is grown on the top of the mound (Hutton 1929a: 332, 334).

It is apparent that in the case of the Naga, the collective and cooperative strategies that hold the utmost importance in feasting and megalithic building activity are characterized by a typical anarchistic form of socio-political organization

(Amborn 2016) observed in acephalous or non-state societies with increased decentralization. In most Naga groups, individuals involved in hosting elaborate feasts for the village might be equated with what Sahlins, in the Melanesian context, would call a 'man of importance', 'man of renown', 'generous rich-man', 'centre-man' or 'big-man' (Sahlins 1963: 289), with the exceptions of the *gumsa* (autocratic)/ *gumlao* (egalitarian) oscillation principle of social structure (Leach 1954; Jeunesse 2019) among the Thendu and Thenkoh Konyak Nagas. For most Naga groups, although social differentiation is traditionally present (and some of which is hereditary), control mechanisms prevent individuals from exerting too much influence, resulting in the absence of a social differentiation based on fixed hierarchies and rigid institutionalized social positions. Furthermore, while this association and the link between monuments and single individuals are accompanied by a materialization of economic inequalities connected to megalith-building activities, social authorities can mostly be described as based on achieved status (Wunderlich 2019a: 258-259). As far as the status and the politics of feasting is concerned, at debates which accompany any gathering, and similar to the traditions of the Nias people of North Sumatra, only men with titles won by feasting have any influence (Beatty 1991: 229). Hence, we see the emergence of resource ownership systems and investment in large-scale modifications of the environment, made possible by the ownership of many aspects of the world. This is particularly evident in the way that resource control and ownership led to the development of significant social and material inequalities (Grier 2014: 212). For the Konyak Naga, in the words of a Konyak historian, '*Konyak megaliths acted as a nucleus of socio-economic and religious activity 'til the recent past. The megaliths provided a passage for the warrior to enter the league of rituals and scaling of the social ladder. Erecting a megalith not only legitimized a hero-making but also bridged fertility of the soil, cattle, and humans to the community. On the other hand, the different megaliths erected by different persons at different times became a centre of collective histories and memories*' (W. Wangjin, personal comm., June 28, 2020).

4. Behind the wood

Except for a brief reference by Venuh (2005), Devi (2011), Malsawmliana (2019), and a recent overview by Marak (2019b), not much has been discussed regarding the wooden memorials of Northeast India. The use of wood as memorials set up for the dead, and during feasting, has been a common practice for most indigenous communities of Northeast India. This is important considering that the concept of megalithism, with its longstanding roots in early antiquarianism, may perhaps be redefined, not in terms of scale, size and permanence, but rather in terms of the values and meanings that are expressed utilizing different materials. Given that not all monuments may be intended to have a 'monumental' character, a contextual analysis of their meaning, function, and agency should be undertaken. The study of megaliths cannot overlook similar structures constructed from dry-stone, earth or wood and should approach these strictly within a local context and, further, should concern the cultural, economic, symbolic and social contexts of these monuments (Laporte 2019: 28). Particular species of wood were preferred, not simply because of their durable nature, but also due to their favoured materiality, perhaps involving a much deeper underlying connection, symbolically integrated within the social and cultural milieu. Hence, the question of why certain types of materials and their properties became important to these communities is fundamental and relevant. The Maras of Mizoram raise wooden posts known as *thangri* alongside stone monuments. These are made from the *khaimei* tree (*Schima wallichii*) and carvings on the posts generally convey the prosperity and status of the deceased (Malsawmliana 2017: 40). In one of the series of the Feast of merit, the Mizos also put up the *seluphan*, a Y-shaped wooden post, for commemorative purposes where the skull of the *mithun* was hung. Preferably, the timber used for this ceremonial post is the *thingsia* (*Castanopsis tribuloides*) (Zawla 1964: 23-24). The *kima* of the Garos are carved wooden memorials raised in front of the house of the deceased and which resemble the dead person. A commonly used wood is the branch of a jackfruit tree (*Artocarpus heterophyllus*) retrieved from the garden of the deceased (Bhuyan & Sangma 2019; Marak 2019b). Among the Aos (Mills

1926) and Northern Sangtams (Stonor 1950), such ceremonial posts are used during the highest form of the Feast of merit associated with *mithun* (*Bos frontalis*) sacrifices and the principal timbers used (in the case of the Aos) are *Schima wallichii* and *Albizia chinensis* (Mepusangba, personal comm., June 30, 2020), while the massive Y-shaped post carved with *mithun* head among the Semas of Iganumi village is said to be made from *Michelia champaca* (**Fig. 10**). Fürer-Haimendorf (1939) notes that the Iganumi memorials are set up with the same ceremonies that, in other Angami villages, accompany the erection of menhirs, and the two heads represent the donor of the feast and his wife. The Southern Sangtams of Primi, Phozami, and the neighbouring villages, which adjoin the western boundary of Burma, also use Y-shaped wooden posts (Hutton 1922a: 55).

Hutton (1926a: 81) observes that given a belief that life (or virtue) resides in stones, which are incorruptible, the substitution of stone for wood – which is dead and corruptible – follows naturally and that the forms in which stone is used are generally associated and expressed with similar forms in wood. The observation made by Hutton (1922a-b) of the *lisü* (wood-dragging) ceremony in Kohima village (Northern Angami) and the accounts by Zokho Venuh (2005) of Kigwema village (Southern Angami) suggest a megalithic practice that initially originated in wooden forms as an attempt at a permanent cultural expression. During the *lisü* ceremony, preceding the stone pulling ceremony, a pair of wooden posts are set up, one forked and the other straight, symbolizing the female and male principles. The ceremony is performed in various stages and lasts 18 days, finally culminating in dragging the wooden posts around the village and erecting them in front of the performer's house. In terms of the purification rites observed and the livestock slaughtered, the basic principles of the ceremonies are akin to the Feast of merit associated with the stone memorials that follow after the completion of the *lisü* ceremony. The ceremonies of the *kechiesü* and the *lisü* are similar, and both take place during the performance of the *terhengi genna*, a ceremony which celebrates the successful harvesting of the rice crop, but with a higher scale of expenditure in cattle and rice-beer demanded than for the previous ceremony with

Fig. 10 – Representational model of a 'Y-shaped' timber memorial post raised in front of the Sumi *morung* (Bachelor's dormitory) at Naga Heritage Village, Kisama (Photo credit: T. Jamir).

wooden posts (Hutton 1922b: 242). The Semas refer to the wooden post as *Alapabo*, while in Kigwema of the Southern Angamis, they are known as *Lüpe* and are erected during the Feast of merit (Venuh 2005: 108, 127). For the Lotha Nagas, stones are normally set up as monuments, but Y-shaped posts are sometimes substituted if no suitable stone is available for dragging or carrying to the village, and in Yekhum village there is a clan which is not allowed to set up stones at all but must use Y-shaped wooden posts instead (Hutton 1922a: 55). Perhaps the use of such wooden structures could be connected to the worldview in which the use of wood, an impermanent material, reflected the passage of life (Marak 2019b: 3). It is evident from the Angami and Tangkhul examples that timber also played a significant role alongside memorials made from stones. For the Tangkhul Nagas of Manipur, on completion of the Feast of merit or *Maran Kasa*, the performer of the feast may erect either a commemorative stone known as *Maran Lung* or a commemorative Y-wooden post carved from a large pine (*Pinus longifolia*) known as *Maran Tarung*, or both of these. It is interesting that the raising of the wooden memorial appears to be rather more expensive than the stone equivalent, as it requires resources to feed the villagers for days, perhaps up to several months or more, to complete the whole process. On completion, the performer is conferred with high social status and honour (Devi 2011, 2014).

Hence, given their quality, size and meanings, timber memorials have been shown '*to have had their own forms of monumentality – megaxyles rather than megaliths*' (Sherratt 2010: 164), nevertheless, distinctive variations within the broad stone/wood category perhaps carried more specific meanings (Darvill 2010: 10). Notwithstanding their cultural and historical context, the wood/stone dichotomy might therefore imply several possible explanations for the transition: a preferred choice of material or, for greater displays of power, the use of stone or, perhaps less tangibly, the recognition of qualities perceived as immanent within the stones (ApSimon 1997: 138) or the selection of stones that would have provoked and attracted specific meanings and associations through their material qualities: shape, colour, texture, size (Scarre 2004: 152). Alternatively, the move to stone, some would argue, could have been a consequence of both of the local occurrence of stone in new territories and the need for more permanent monuments (Sherratt 2010: 150) or perhaps it reflects a transformation within a context of kinship relationships, landscape setting, clan migration and changes in other forms of burial (Parker Pearson 1999: 40).

5. Stones of power and vitality

The Nagas perceived themselves as part of nature. In this harmonious, and steady-state, they maintained balance and harmony – a state of ideal equilibrium. Mountains, hills, forests, and rivers were held sacred and respected, for they were the source of all good things and had the power to affect crops and fertility; all were believed to be controlled by supernatural forces (Neinu 2015: 33-50). The significance of stones imbued with a source of power and life and an association with origins, ancestors, and status seems to be a central cosmological concept in Southeast Asia. This is more so within Southeast Asian ontologies, which regard the material world as made up of a constant flow of cosmic power closely identified with life itself, do not separate mind and matter, and see stone as alive (Janowski 2020: 105-112). The use of stone has been an integral part of Naga material culture within a utilitarian, ceremonial, and magical context. Stones are often considered as imbued with a vital force, which the Ao Nagas describe as *aren* (Mills 1926: 122), while in the Angami Naga, the soul of the deceased is said to reside in the small water-worn stones raised over the grave, and thus offerings are poured over these miniature stones during community feasting. They are also an agency or a medium for promoting the fertility of nature, earth and crops, as is the case for the menhirs, the wayside stone platforms and dolmens raised by the Angami and Kaccha Nagas associated with the dead to perpetuate such vital force; the virtue that resides in stones that possess the miraculous power to multiply paddy grains when asked, such as the dolmens in Khezakenoma (Hutton 1926a); stones associated with rain and wind such as the 'six stones or Lungterok' in old Chungliyimti that may not be touched, as this would cause storms of wind and rain or hail (Hutton 1929b) and the folklore of the powerful rock outcrop known as Jangjanglung, located in Waromung village,

considered to be a deity of veracity and worshipped by the people for bountiful harvests and good fortune (Aier *et al.* 2017: 40).

Given the vitality and life-essence of stones, it was considered essential to choose carefully when a stone was to serve as a memorial for the living and the dead. An early account of this is documented by Hutton (1926b: 336) in his October tour of the Jaintia Hills in 1925. Unlike the Khasis and Syntengs, who raised their monoliths with the larger end to the top and the smaller end downwards, the Angami Nagas (according to Visar, an Angami informant who accompanied Hutton on the tour) regard this as taboo and always put the large end of the stone in the earth. Because a large and prominent stone at Lakema (Kaccha Naga village) was raised upside down, the whole clan of the builder had become extinct. Hutton further noted Visar's accounts of the necessity to select a 'good' stone:

'*Any stone will not do, but the old men can determine which will. A man of Khonoma, who neglected their advice and pulled one of his own fancy, had no luck with it. The usual three watchers took their drink and kept vigil by the stone till midnight, and then went home, but in the morning the stone was flat, presaging death to the puller or at least to one of his family. His wife died shortly after*' (Hutton 1926b: 337).

Thus, basic attributes underlie what constitutes 'bad' and 'good' stones, judged from the intrinsic qualities of their materiality. Stones of good form were believed to bring good fortune to the man who dragged them. By contrast, stones considered ugly and deformed in physical form were considered to bring misfortune to the man and his family. Because stones were believed to be the abodes of spirits, every care was taken in the stone selection process lest a malevolent spirit inflict harm. In Kami village (Chakhesang Naga), a performer intending to host a feast is expected to know at least four types of stones:

a. Stones that have a concave feature in the middle are regarded as 'bad' stones. Such stones bring misfortune in the form of poverty and disharmony.

b. Stones with an uneven, rough, and scaly surface on the front face are believed to bring misfortune in the form of a sudden and tragic death.

c. Stones that are straight, smooth, and even in form are considered 'good' and bring prosperity to the man and his family.

d. Stones that possess rounded or weathered features on the top or are sloping at the shoulders (on the edges) symbolize strength and stability and are hence considered 'good' and bring prosperity, strength, and fame to their owner.

The qualities of these stones are said to have manifested themselves on the stone draggers who benefitted accordingly (Venuh 2005: 57-58).

6. Naga monuments: quarrying and transportation

As described by Hutton (1922a-b, 1928, 1929a) and Fürer-Haimendorf (1976), the stones to be pulled and erected are locally available sandstone, either quarried from a massive exposure or natural slabs or boulders lying close to a stream or from nearby rock outcrops around the periphery of the village. Most stones appear to have been found within the vicinity of the village, not far from where they were erected. The sledges used for transportation are generally made from a thick V-shaped branch of a massive tree or from two parallel branches or tree trunks that serve as runners. Once on the sledge, the stone is lashed with ropes made of creepers, then dragged to the desired site and erected (**Fig. 11**). In other cases, e.g., Lotha Nagas, the transportation of smaller monoliths is achieved using a huge rectangular frame of poles crossing at right angles and made as rigid as possible; the stone is lashed to the centre of the frame. About 60 men lift the wooden framework and carry the stone to the site. The male stone is always transported first, followed by the female stone (Wunderlich 2019a: 235). The pulling of a stone and the organization of feasts thus involves a good deal of labour mobilization, cooperation, and economic resources that have potential social implications.

Fig. 11 – A monolith dragging event using wooden sledge during the Hornbill Festival in Kohima, December 2016 (Photo credit: Ditamulü Vasa, 2016).

7. Recent fieldwork: Zapami, Chakhesang Naga

Zapami is one of the Kuzhami villages of the Chakhesang group under the Pfutsero sub-division of Phek district. The village is about 53 km from Kohima, the capital city of Nagaland and is located within coordinates 94° 14' 43.5624" E; 25° 32' 7.4688" N, at an altitude of 1600 above mean sea level (**Fig. 12a**). The village is roughly 12.5 km^2 in area. The villagers trace their descent from a neighbouring village known as Leshemi. Due to a lack of archaeological investigations, the period of the village settlement is unknown. However, oral tradition of the village remembers the first two male ancestors as *Pu Ketsü* and *Pu Wukhu* along with their spouses *Mezu Tsütshokezhie-ü* and *Mezu Ka-ü*, and their cattle who came to settle at the present site. To the people, what attracted the ancestors to settle in this place was the scenic beauty of the surrounding landscape, with the valley below. Since then, the village has been a prime location for wet-rice terrace farming. The 2019 census record of the village records a population of 1648 (male: 920; female: 728). Of these, the most numerous are the Khutso (approx. 360) and Wetsah clans (approx. 320). All clans of the village are patrilineal where the line of descent is traced strictly through the male lineage. Rules of residence in the village are neolocal for the elder sons, while a patrilocal residence is the rule for the youngest son who will later inherit the house. All households own agricultural lands for wet-rice farming. The traditional economy of the village continues to revolve around agriculture involving wet-rice terrace farming, swidden cultivation, and the raising of livestock such as cattle and pigs. The main crops cultivated include rice, millet, Job's tears, maize, pulses and taro, with a mixed cropping pattern.

There are 27 community forests, 23 clan forests, and 27 individual forests in the village. The traditional

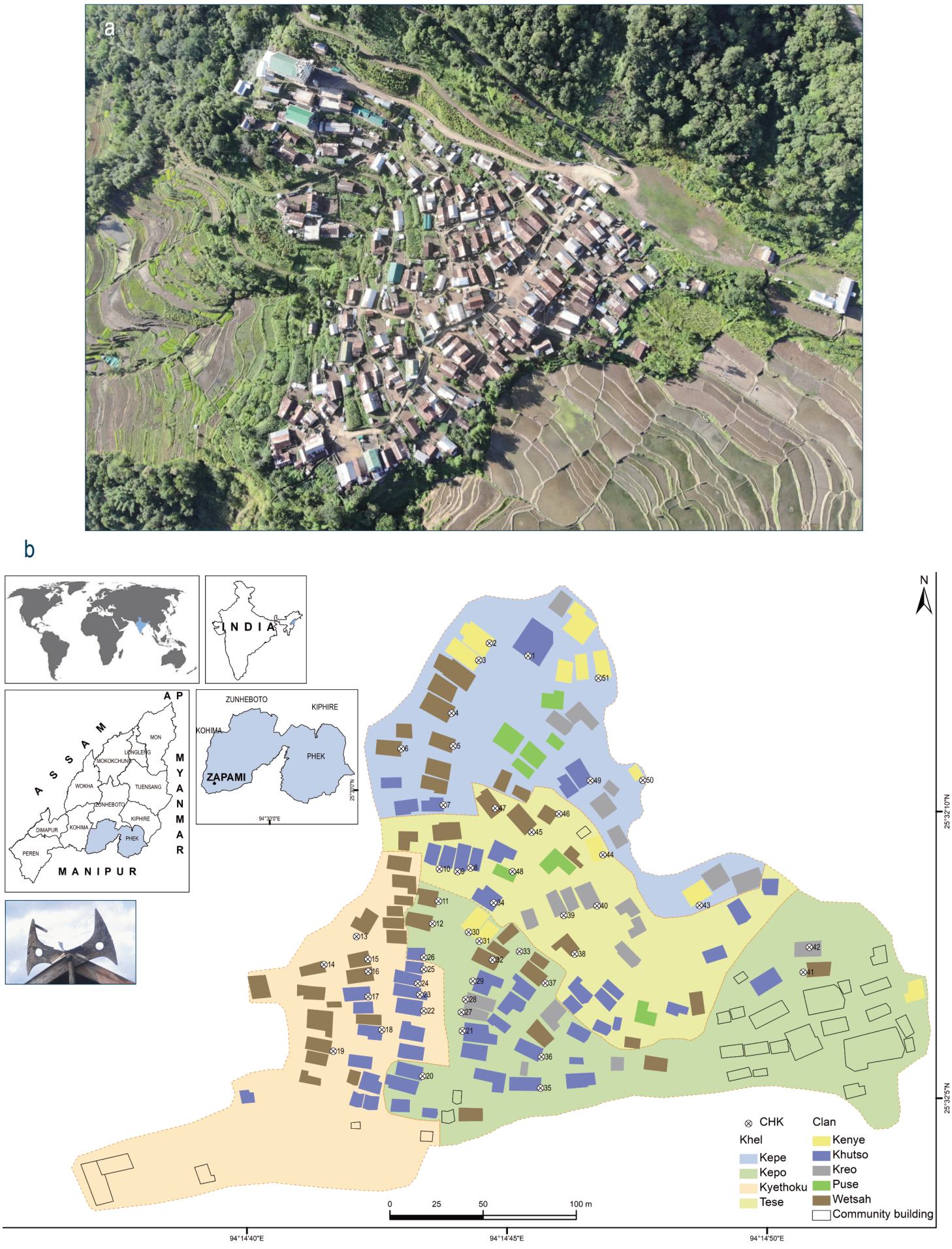

Fig. 12 – a. Aerial view of Zapami village with its surrounding wet-rice terrace fields (Photo credit: T. Jamir); b. Clan division with 'house-horns' (CHK) and number of localities or *khel*, Zapami village (Inset: representational image of a traditional house-horn or *kechikeh* from Zapami).

landholding system involves community land (*metshü kadzü*), clan land (*pfüsemi kadzü*) and individual land (*lede dye kadzü*) (**Fig. 13**). Such division of ownership begins at the time a new village is established. According to the traditional practice, individual households who first cultivate the land for wet-rice terrace farming take personal claim of that land, while the uncultivated portion is reserved for the community. For the clan forest, the clan divides the land among its members. These plots are later inherited as ancestral properties by the respective members. All houses face to the east, but orientation may be compromised if space does not permit. The village consists of five major clans: Khutso and Wetsah (descendants of the male ancestor Pu Ketsü), and Kenye, Puse, and Kreo (descendants of the male ancestor Pu Wukhu), distributed within five small localities divided according to topography and cardinal directions: Kepo Rikhu (top), Kethoku Rikhu (west), Tese Rikhu (middle), Kepe Rikhu (lower), and Tshünapa Rikhu (east) (**Fig. 12b**). The villagers do not consider these localities to be clan-specific. In the organization of the village, the affairs are run by the clan/*khel* representative, known as *krü*, and the village priest, or *Mewo*. By traditional convention there is no fixed tenure for the representatives of the clan. The *krü* nominated by the clan are men who are well-versed with their clan history and with other forms of traditional knowledge, and who possess charisma and the gift of oration. The clan representatives, members with influential personalities, and the village priest, pass

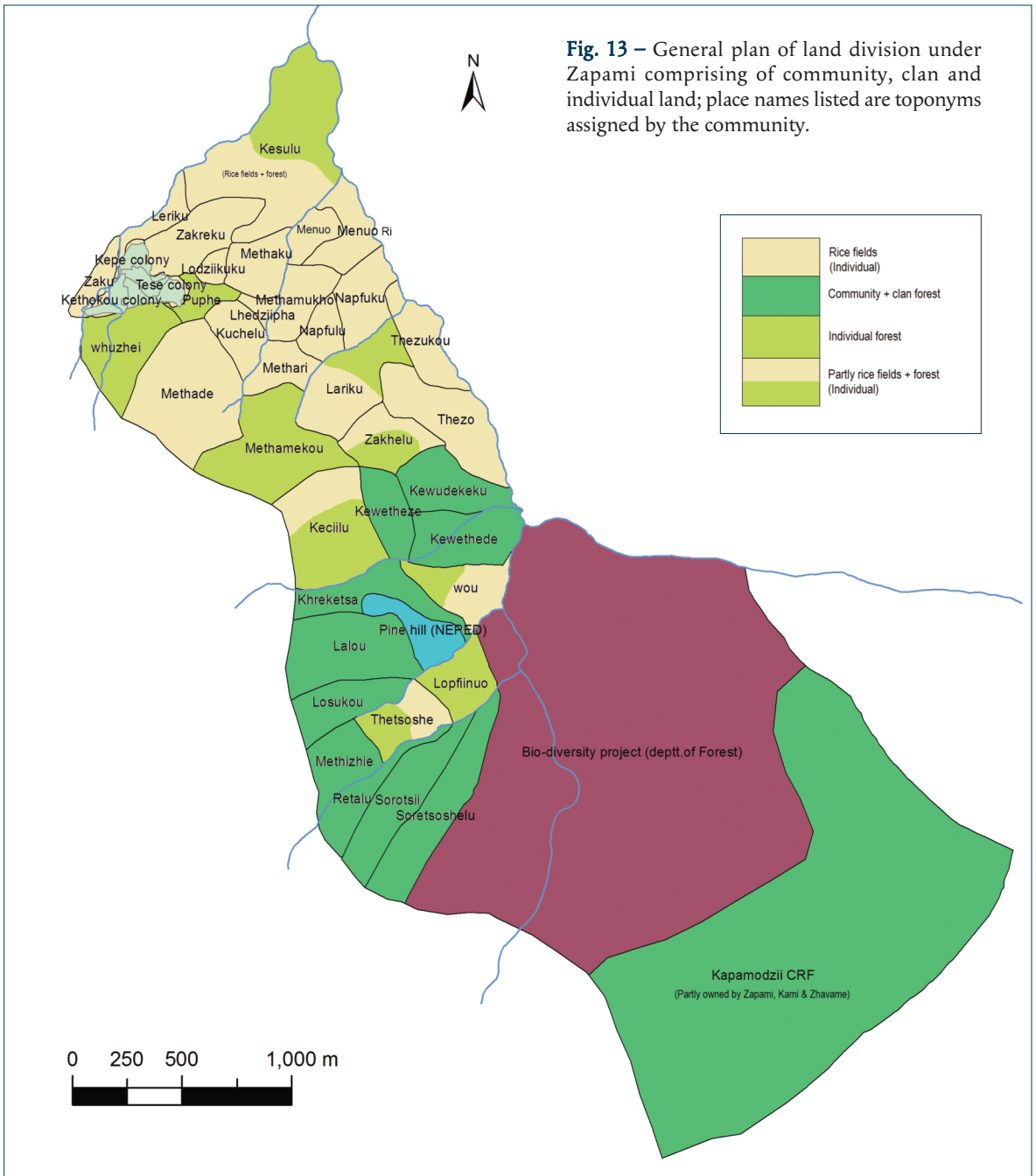

Fig. 13 – General plan of land division under Zapami comprising of community, clan and individual land; place names listed are toponyms assigned by the community.

important resolutions or *Seta* relating to matters of the village. Members who enjoy social prestige in the community include the hosts of numerous feasts (*zatshüzawe*), acclaimed warriors (*ritshü*), negotiators of peace between warring villages (*demi*), village priests (*mewü*) and men who possess oratory skills (*sepukeche*).

7.1 Feasting and stone monuments

Two elderly former feast performers were consulted about the complexities of the feasting procedures, but details of the process could not be gathered because the tradition has been long since lost to the new Christian faith. Only married couples of the village were permitted to engage in the feasting process. Because Leshemi is an ancestral village to both Zapami and Lasumi, before proceeding with preparations for the feasts the consent of the chief priest from Leshemi must be obtained by the intended host. This is given by the priest, pronouncing good fortune: 'Heaven Father, Earth Mother; let there be fine weather and good fortune'. Fürer-Haimendorf (1939) records a different version of the pronouncement among the eastern Angamis, given by the host himself, saying, '*I have not become rich through my own efforts, but because the spirits blessed me. Our forefathers dragged stones and I am going to see if I cannot drag stones too*' (Fürer-Haimendorf 1939: 217).

With permission granted from the chief priest, a pig is slaughtered and its entrails and meat are distributed to close relatives residing in Leshemi, Lasumi, and Zapami. This initial invitation and the meat distribution are also extended to all male and female members of Zapami village. Relatives from the paternal and maternal lineage, preferably in-laws and close relatives of the couple, distribute the meat while the host respects taboo by performing *Lei* (ritual) and drinking only rice beer. For this ceremony, two pigs are slaughtered, and the meat is distributed to the male and female members of the village who are assisting in woodcutting and collecting from the community forest. While gathering the firewood from the forest, the host places the leaves of an aromatic plant known as *thopi* (*Artemesia nilagarica*) on top of the firewood to ward off any malevolent spirits. Every item in the kitchen and granaries, including the bed, is taken out of the house of the host and cleansed before reuse. In the preparation of the feasts, the whole village assists in rice pounding to make the rice beer, which is generally fermented in large wooden barrels. At least four massive wooden barrels and four canoe-like, large cylindrical wooden vats (*thsürü*) are required to feed the three villages.

The stages of the feasting proceed as follows:

a. *Seseh*: hosted during September (*Mehthsa*) to October (*Ciedie*); 1 large basket of paddy equivalent to 100 medium-sized basket or *Vü* (a basket used as a traditional measure), 1 cattle/buffalo, 2 pigs.

b. *Trilo*: hosted during November (*Buhlo*); 1 large basket of paddy, 3 pigs.

c. *Dzüzeh*: hosted during the month of December (*Rünie*); 7-8 large baskets of paddy, 9-10 pigs, 6-7 cattle/buffalo. This feast entitles the couple to each wear a white shawl known as *therükedera* ('big stitch shawl'); in addition, the host is entitled to another colourful shawl known as *tshüketsüra*, decorated with animal motifs.

d. *Zhatho/Zatshü*: hosted during the month of December (*Rünie*) to January (*Zahtho*); 7-8 large baskets of paddy, 9-10 pigs, 6-7 cattle/buffalo. Completion of this last feasting earns the host the right to erect a monolith or *tsohshe* ('stone erection') in his name, and to adorn the front of the house with carved motifs of animals and a magnificent wooden 'house-horn' structure known as *kechikeh*. It is only with the completion of this stage that the performer's spouse earns the right to wear the colourful shawl, *tshüketsüra*.

On all feasting occasions, portions of meat are also distributed to the three priests of Leshemi, Lasumi, and Zapami, and men from the three villages who have hosted feasts during their lifetime and are known by the title *Tsüdethrü*, are invited to partake in the feasting; they are considered special guests. Each such member is given a share of boneless meat. During the event, the priest praises the host, noting that his share of meat is large, and that the brew is good. He is followed by the *Tsüdethrü*, who speak in turn. The completion of Dzüzeh, the third stage, entitles the couple to wear a white shawl known as *therükedera*. The performer is also entitled to the colourful shawl known as *tshüketsüra*, which

is decorated with animal motifs. This important ceremony is observed during the community *Rünye khrü* festival (post-harvest festival) that takes place in December (*Rünie*); the couple are dressed in the shawl by a former feast performer or *Tsüdethrü* who says, '*Put on this shawl of mine, stay healthy and prosperous*'.

On completion of the last feast or *Zhatho*, the host and clan members proceed to the forest in search of a stone, which may be taken from any member's land. With the right stone identified, it is slightly tilted and left for the day. The clan return home and dream for the night. If the dream is that of a rooster, it is considered a bad omen; if they dream of a person's name, it is considered a favourable sign. The process is repeated until a good stone is identified. The next day, just before the stone is levered onto a wooden sledge, a ritual is performed. Two men from different clans who are responsible for binding the stone make the pronouncement, 'Come forth to your place!' This act of calling out to the stone is known as *tsoko*, or 'the one who beckons the stone'. Four baskets of paddy (*Vü*) are offered to the person who entices the spirit of the stone. If a stone is retrieved from an individual's land, the host is obliged to offer four baskets (*Zalhe*) of paddy to the owner in return. In addition, thirty baskets of paddy are given to the rightful owner of the land where the site is chosen. Thirty baskets of paddy are also paid to the eldest member of the clan if the host chooses to raise the monument in that clan's land. Use of such land, unless his own, does not grant the feast performer the traditional right to claim ownership of the place where the standing stones are erected.

In commencing the stone dragging ceremony, a ritual is performed so that no misfortune befalls the people who aid in the stone pulling. Great care is then taken to drag the stone, heaving from its upper end first. If, on the way to the site, the stone accidentally tumbles below the road, it is predicted that misfortune will befall the host. During the stone pulling, a stone that fails to move any further must be erected on the spot. Once the stone is dragged to the site it is left for a day. Only on the third day is it heaved to the pit and erected. Because the stone is considered timid, care must be taken to allow the back of the stone to face the direction of the village. Thus, traditionally, all memorial stones in Zapami face away from the village footpath. All standing stones must be erected parallel to the road, unless a monument is relocated due to recent road construction activity and its orientation compromised due to lack of space. Such monuments, at Zapami, commemorate the personal achievements of the living rather than those of the dead.

With the completion of the entire ceremony, all participants are invited to the host's house to partake in a feast. As a token of appreciation, 11 slices of meat are distributed to each participant. The following year, during the month of April (*Kere*), the house of the host is decorated with carved animal motifs known as *tshüketsü* and 'house-horns' or *kechikeh*, and a pig is slaughtered for those who assist in the carving. As a mark of this achievement, the roof of the house is further installed with wooden planks or *kapvükeh*. Bucrania of animals slaughtered during the feasts are also hung on display in front of the house. It is only with the completion of this stage that the performer's spouse earns the right to wear the *tshüketsüra* shawl. Furthermore, if the couple desires to host the feast yet again, all cups, pots, and other wooden utensils must be discarded or presented to relatives and replaced with new ones. In the second series of feasting, according to traditional practice the host is relieved from the whole series of the feasting process; he may now begin with *Seseh*, the preliminary feast, and proceed to *Zhatho*, the final feast. It is during this second series of *Zhatho* that portions of meat, particularly the liver of the sacrificed livestock, are distributed to the households of all the three villages who assemble near the village gates and important public gathering places. It is in such public places that the people assemble and praise the generosity of the host. In the feasting event, all resources are managed by the host. Only towards the end of the feast are donations in the form of paddy offered to the host. Wealthy relatives of the host also assure the provision of resources in terms of paddy and livestock. There are occasional accounts of hosts who go to the extent of loaning paddy for the feasting process.

It is perhaps the socio-political dynamics of clan groups that encourages them to the arena of feasting. Titles earn a man influence in the affairs of the clan

and the village and reinforce alliances and support networks beyond the clan or village. This underlines the connection between megalith building and clan power, although the megaliths themselves do not fall under the collective ownership of the clan. It is also the case that the size of the megaliths does not reflect the wealth and prominence of the individual, the deceased or the kin or clan group. The titles achieved in feasting helps attract prominent marriage alliances for feast performers and their descendants. Non-megalithic signifiers such as domestic architecture and textiles also reflect the prominence of households, akin to the stone monuments. This provides an understanding of the wider picture of material displays within societies with an interplay between stone monuments and power, competition, and material display becoming apparent. Thus, disparities in the series of feastings accomplished, the number of house-horns and standing stones erected (although not in recent times) have encouraged competition between clans for political control of the village, through the distribution of key positions (such as priest, peace negotiator, etc.) and perhaps better access to more prosperous matrimonial alliances.

7.2 Standing stones

The field study led to the identification of 150 standing stones of various sizes classed into the following types:

Type-1A (single standing stone with platform)

Type-1B (single standing stone without platform)

Type-2A (twin standing stone with platform)

Type-2B (twin standing stone without platform)

Type-3A (stone row with platform)

Type-3B (stone row without platform)

In most cases, the ownership of the monuments is still held in the living memory of the community and the owners are recalled by their respective names and the clans they ascribe to. In order of the proportion of the total number of standing stones documented (n=150), the clan Khutso appears to possess the highest percentage of monuments raised by their clansmen (32%), while the Wetsah (24.6%), Kenye (20%), Kreo (6.6%) and Puse (4%) have fewer; a further, 'Indeterminate' category included those standing stones whose members could not be ascertained due to lack of memory or lack of records within the community. It was also evident from the oral history of the Zapami that the Khutso are considered the wealthiest of the clans.

Although disparities were observed, the E-W orientation seems to be the most favoured (29.3%), followed by N-S (27.3%), NW-SE (21.3%), NE-SW (18.6%) and an 'Indeterminate' category of fallen monoliths (3.3%). The monuments are dominated by Type-1B (38.09%), followed by Type-3A (17.85%), Type-2B (16.6%), Type-1A (14.28%), Type-2A (8.3%) and Type-3B (4.7%) (**Fig. 14**). The hard Barail greyish sandstone of Tertiary origin seemed to be the most preferred choice of raw material for all monuments. The distribution pattern of monuments in relation to the landscape (**Fig. 15**), shows that 40.6% of the standing stones are located facing the surrounding valleys, rice terrace fields and forest footpath (**Fig. 16**), followed by those by road sides (37.3%), around the periphery of the village (18.6%), in locations where community rituals are periodically performed and places of important folklore associated with the community belief systems (6%), and dispersed within the settlement area (3.3%). During fieldwork, a total of 51 houses were seen to retain their traditional house-horns or kechikeh, although the use of corrugated sheets, bricks, and mortar has taken its toll on most of the traditional architecture of the village. Of the 51 structures that carry the traditional house-horn, eight belonged to the Kenye clan, five to the Kreo, one to the Puse; the Wetsah and Khutso clans had 19 and 18 respectively. With modern concrete residential structures replacing the traditional ones, not every successful merit-seeker in the village today installs the house-horns. However, in the past, according to the elders of Zapami, members of the Khutso clan, in comparison, earned more house-horns in their village than other clans.

8. Conclusion

The stone monuments of Northeast India have been a subject of much interest since they were first documented in 1832. While this was initially confined to the colonial ethnographic tradition of description, later ethnoarchaeological research

Monument types	Kenye	Khutso	Puse	Wetsah	Kreo	Indet.	Total
Type-1A	1	4	0	6	0	1	12
Type-1B	3	12	1	8	3	5	32
Type-2A	0	0	2	2	0	3	7
Type-2B	2	3	0	6	0	3	14
Type-3A (cluster)	3	5	1	2	2	2	15
Type-3B (cluster)	0	2	0	2	0	0	4
Total	**9**	**26**	**4**	**26**	**5**	**14**	**84**

Fig. 14 – Clan-wise distribution of monument types (singular standing stone and clusters), Zapami village.

Fig. 15 – Distribution pattern of monuments in the landscape, Zapami village; MG refers to all documented monuments.

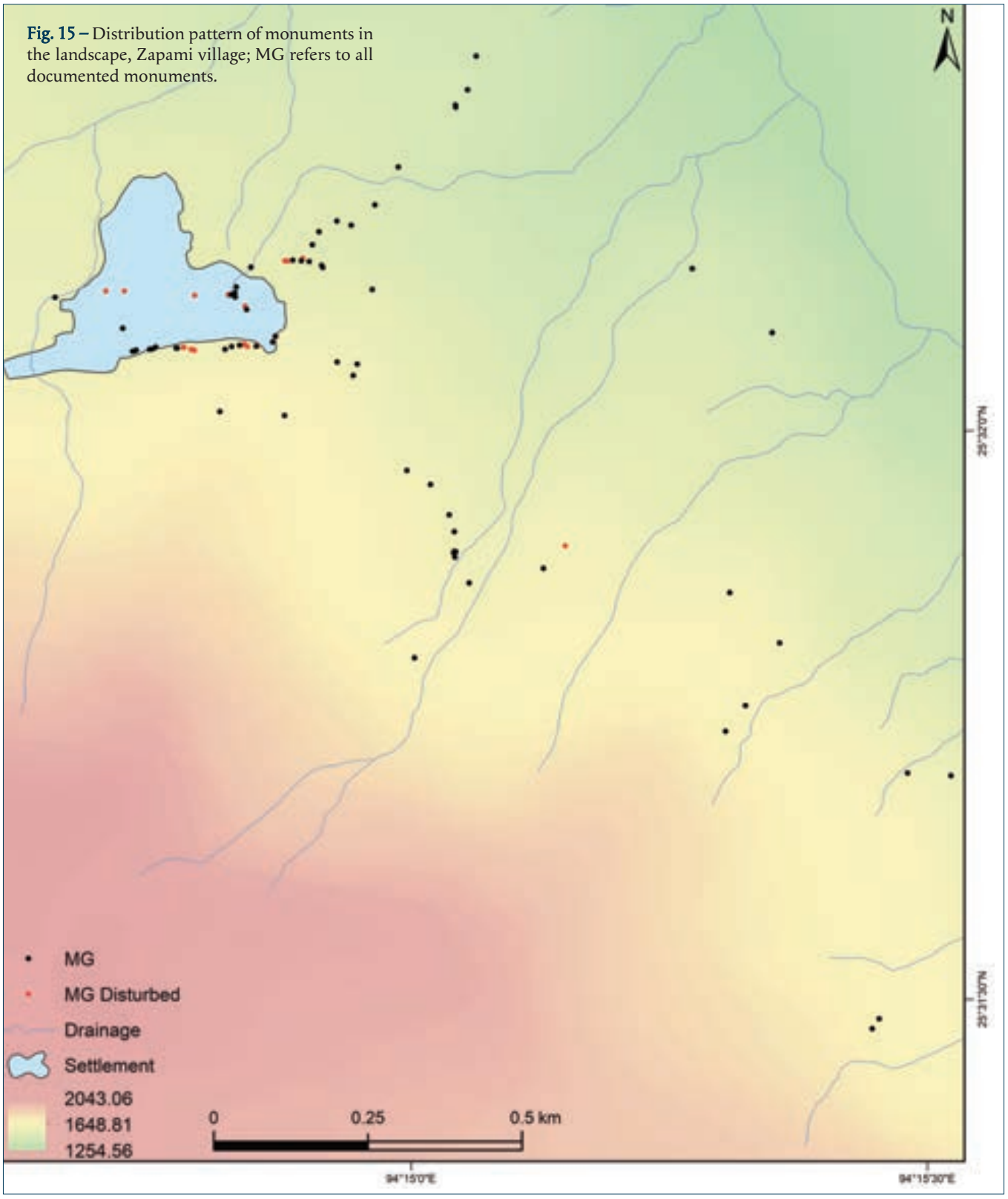

Fig. 16 – Standing stones located by the side of footpath facing the valley and rice fields, Zapami village (Photo credit: T. Jamir).

in post-Independence times has stressed issues of typology and functional variations, socio-political developments and notions of ideology alongside beginnings of megalithic building, the nature of social institutions and megalithic monuments, the association of mortuary practices and megalithism, resource utilization, community feasting linked to acephalous societies, social memory, and landscape. In the Naga context, commemorative and memorial stones intended to perpetuate the memory of the living or the dead (or both), occupied a permanent place in the landscape and offered new meanings to places by establishing a link with the people who built them. This is even more obvious whenever local people are prompted with questions about why standing stones appear outside the village. Their reactions are immediate: '*The stones must be set up in a particular place where all can see*'. They are thus marked with personal biographies of lifetime achievements.

The durability of the material enhanced the monumental character of the standing stones, allowing social memories to be encoded not only for the present generation but also for the future. In most Chakhesang villages, such memories in stones continue to inspire the community as they actively imagine and remembered the past deeds and personalities of their ancestors. The monuments embody not just the earth or stone from which they were built, but the people and experiences involved in their construction: they thus hold a special place in human memory, and in individual or group identity (Knapp 2009: 47). Given their durable nature, their wide visibility in the landscape, and their permanence, the monuments provide a medium that guarantees to carry memories into the future. If this is the case, when did such megaliths come to occupy the landscape in the Angami and Chakhesang region? What were the social circumstances that led societies to mark memories with

stones? Was there an interplay between changing economic and socio-cultural dynamics and the rise of monumentality in the region? Such relationships are far from evident and gaps in our knowledge remain, but in terms of the beginning of early monumentality, a popular Angami folktale of Sopfunuo is of worthy of mention:

If I become a piece of wood,
I will become rotten and mingle with the earth;
So I must become a stone.

This excerpt from a Naga folktale ('Folktales from Nagaland, Part I & II' 1971) together with the Angami practice of erecting a large Y-shaped wooden post before the commencement of the stone pulling ceremony, may hold underlying clues to the rise of monumental behaviour in the region. Megaliths, like other forms of material culture, are continually being reinterpreted within changing historical contexts in the region. The perception of these monuments by the present generation are mixed. While a few still consider the stones to be relevant in their lives today, providing a valuable link to their past and evoking a sense of cultural identity from the narratives surrounding them, others consider them to be a thing of the distant past, irrelevant, neglected, lost and forgotten. Perhaps this neglect is in part related to the notion, propagated in certain circles, that stone rituals and beliefs are part of a non-Christian past, a period some seek to denounce, perhaps unfortunately, as 'heathen worship' that is best forgotten (Wouters 2015: 25). For others, the monuments that continue to stand still offer the prospect of new memories to be engaged, recreated and imagined, intertwined within a sense of place alongside new monuments installed to commemorate important milestones in villages or towns. Such actions have led to a recasting of old cultural expressions in contemporary times, conveying and sustaining social memories into the future.

Acknowledgements

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Himanshu SHEKHAR, Rabindra Kumar MOHANTY

Megalithic monuments of Jharkhand: Archaeology and ethnography

Abstract: Megalithic archaeology in the Indian subcontinent is well documented and has been subject to various interpretations by numerous scholars since the first discovery in 1823 by Babington. Apart from the ancient monuments, there is a rich ethnographic heritage of megalithic traditions in different parts of the country. This paper is concerned with the study of ancient megalithic sites reported and explored in Jharkhand state in the eastern part of the country. The investigation uses an ethnographic model of research and inferences are drawn from the available ethnographic data, archaeological records and evidence recovered through exploration and surface surveys of megalithic sites.

Keywords: *capstone, dolmen, menhir, living tradition, death custom*

1. Introduction

Megalithic monuments in India are distributed widely across the subcontinent in different geographical zones, apart from the west, i.e., parts of Rajasthan and Gujarat. They are mostly distributed in the hilly areas of South India, the Deccan region, Eastern India and Northern India (Babington 1823; Sundara 1975; Moorti 1994; Rajan 1994; Mohanty & Selvakumar 2002; Mohanty & Thakuria 2013; Mohanty 2015; Mohanty & Vaidya 2017). There is also a rich tradition of raising megalithic monuments in Central, Eastern and Northeast India by the Gonds, Mundas, Khasis, Kharbis, Nagas and many more indigenous ethnic groups (Dalton 1873; Hutton 1929b; Elwin 1945; Roy 1963; Hodson 1989; Jamir 1997-1998, 2005; Jagdish 1999; Binodini Devi 2005; Thakral 2005). The monuments raised by these groups are commemorative as well as related to death rituals. In Jharkhand, the Mundas, Bhumij and Ho, three tribes belonging to same lineage practice megalithic traditions and raise sepulchral and non-sepulchral monuments as part of a death ritual and for other commemorative purposes (Shekhar *et al.* 2014; Shekhar & Joglekar 2015, 2016, 2017a, 2017b; Shekhar 2019).

1.1 Study area

The study area lies in the Hazaribagh and Ranchi plateau of Jharkhand, comprising four districts: Chatra and Hazaribagh in the north, and Ranchi and Khunti in the south. Altogether, 23 blocks of these four districts were surveyed and the entire study area covered up to 400 km (6623 km^2) (**Figs. 1** and **2**). The study area includes different types of granites, with the Archean and Dharwar formations in the south and the Upper Gondwana formation in the north together with Gondwana sandstone formations. The region is drained by three major rivers: the Damodar, the Subarnarekha and the South Koel, with their respective tributaries and rivulets.

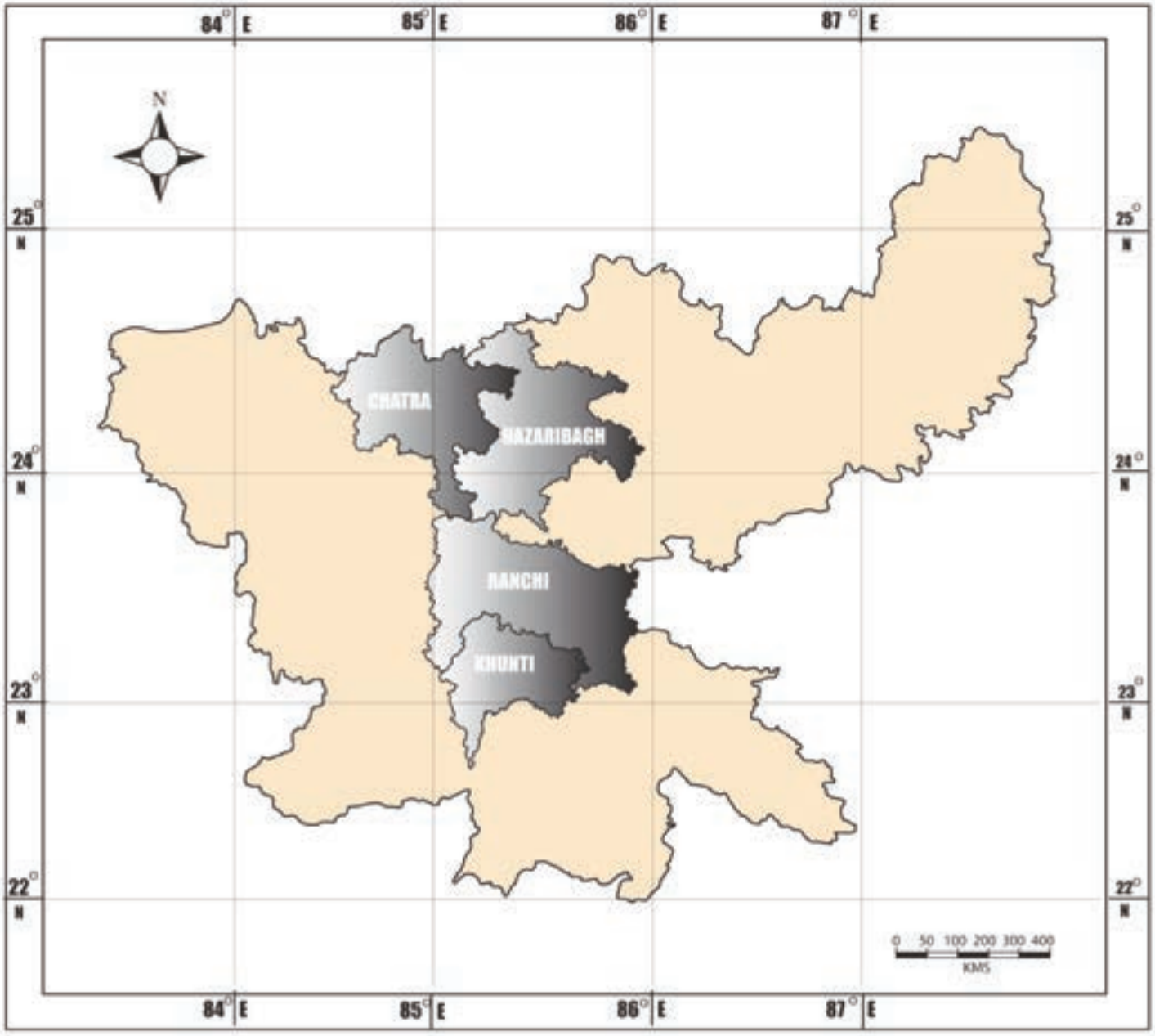

Fig. 1 – Map showing districts in study area.

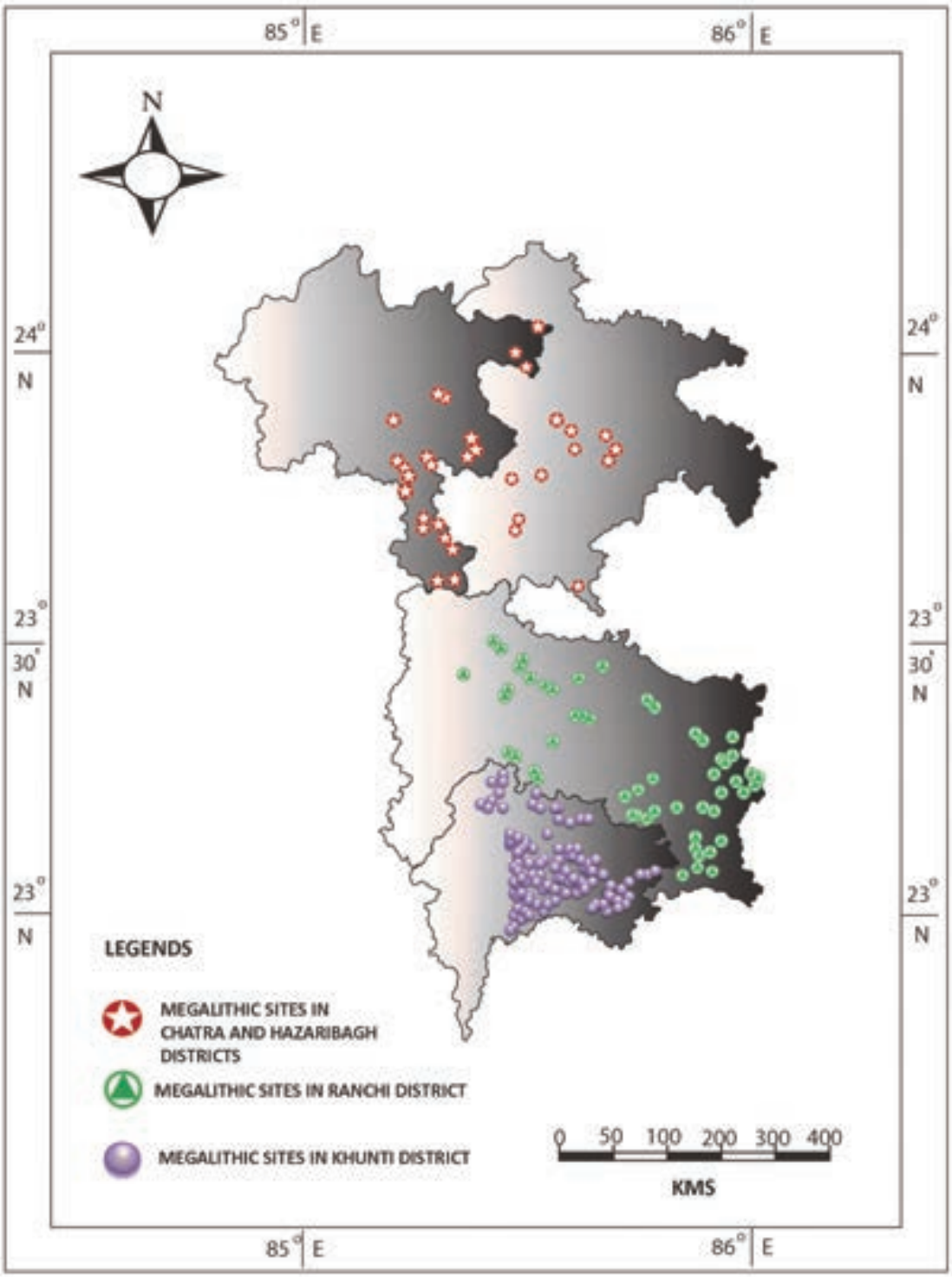

Fig. 2 – Map showing distribution of megalithic sites in study area.

Fig. 3 – Typology of megalithic monuments at different sites in the study area (Photos: H. Shekhar).

1.2 Aims and objectives and methodology

The work was conducted in order to explore how ethnographic data can be useful to the study of the ancient past. In this paper an attempt is made to draw comparisons between ancient megalithic monuments and their ethnographic counterparts by using ethnographic analogies and archaeological records. The methodology adopted was two-fold: an archaeological exploration including survey and documentation of ancient megalithic sites through photography, surface survey and ethnographic documentation of the mortuary practices prevalent among the Mundas, Bhumij and other branches of their tribe and associated megalithic traditions. Interviews and live documentation of funeral rites were also conducted. Direct historical and general comparative analogies were used to draw parallels between ancient and recent, along with archaeological interpretation of ethnographic data.

2. Typology and nature of megalithic monuments at the sites

The megalithic typology is predominantly represented by dolmens, capstones or slabs and menhirs. A few stone circles are also reported (**Fig. 3**). All these types are found separately as well as clustered together. Several sites in Ranchi and Khunti districts have recent structures erected by the Mundas alongside the ancient ones. The typology is similar, and recent examples have details of the departed soul, with clan name and genealogy, engraved on the stone slabs.

2.1 Nature of funeral remains

The funeral remains recovered from the site of Khuntitoli, which was excavated by Archaeological Survey of India, included the charred bones of multiple individuals kept in separate urns (IAR 1965-1966: 10) (**Fig. 4**). Other sites, like Obra, Murvey and Sillidih, produced similar bone fragments in pots exposed in disturbed burials (Shekhar *et al.* 2021). The bones show signs of cremation with a creamy white texture over the surface and transverse fractures, a distinctive feature of cremated bones (Unkule *et al.* 2018: 39-43).

Fig. 4 – Excavated burial of Khuntitoli (IAR 1965-1966).

2.2 Material culture

Cultural material recovered through excavation includes various copper and bronze objects such as bangles, bracelets, anklets, nose and earrings, bells, copper beads and beads of semi-precious stones such as agate, carnelian, jasper and quartz. Other megalithic sites, like Sanrigaon, Pokla, Kunjla, Bichna and Oskea in Khunti district and Bhagwantola in Chatra district, have yielded a few iron objects such as a chisel, an arrowhead, a nail pare and daggers, but these were surface finds by explorers (Roy 1920: 393-433; Imam 2014: 12). Apart from these, the pottery assemblage includes miniature pots containing cremated bones and associated funerary ritual objects (**Fig. 5**). The entire ceramic assemblage gathered through the field investigation included bowls, basins, dishes, storage jars, globular pots and miniature vessels of Red Ware, Red Slipped Ware, Black on Red Ware, and Black and Red Ware. Ceramics are mostly wheel-turned (slow wheel) with medium to coarse fabric. Decorated body sherds of Red Ware and Red Slipped Ware with incised designs were also collected from the surface.

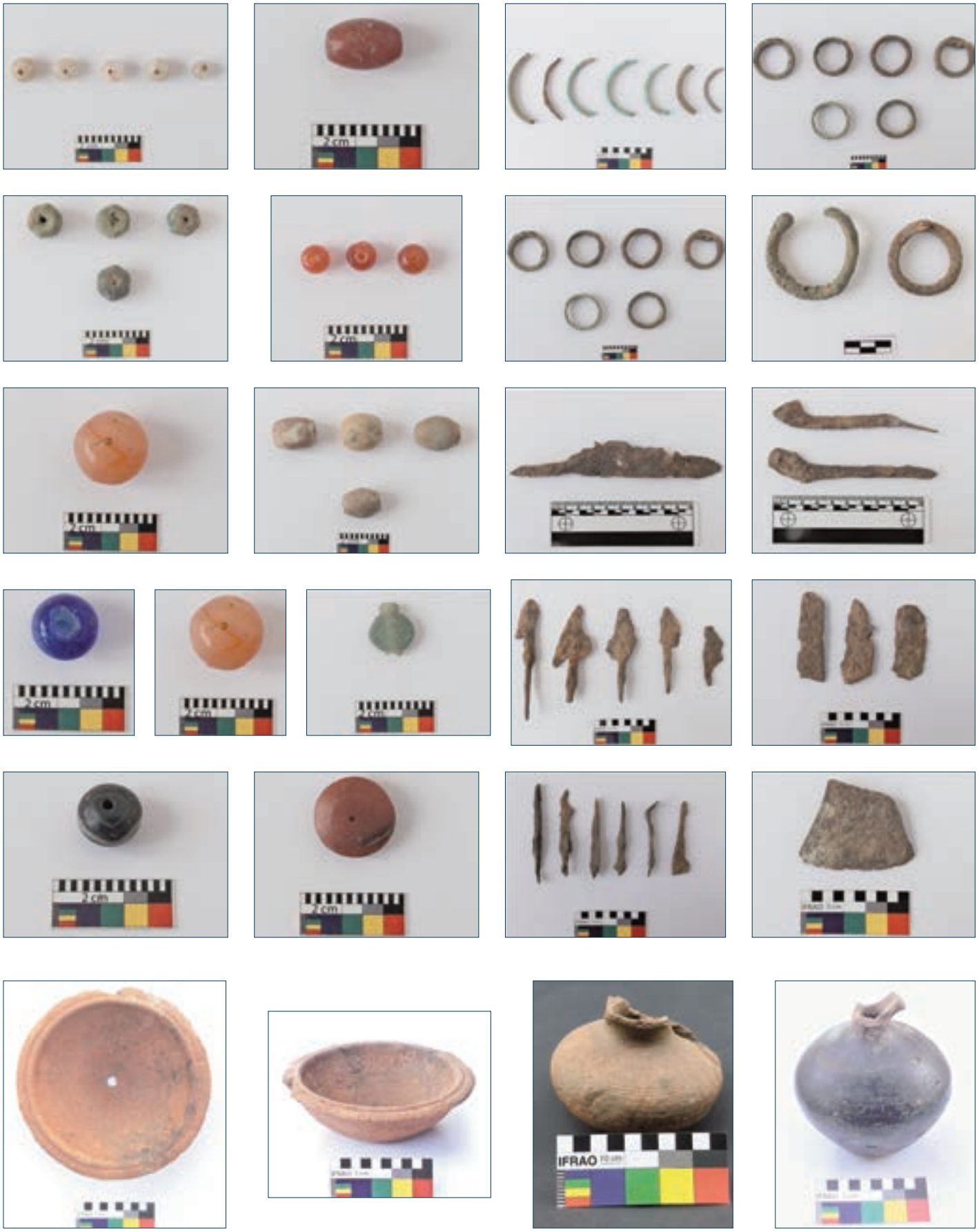

Fig. 5 – Cultural materials as grave goods recovered from different megalithic sites. Antiquities are documented from S.C. Roy Collection, State Museum, Ranchi, Jharkhand and ceramics are from author's fieldwork (Photos: H. Shekhar).

3. Funeral customs of the Mundas as ethnographic parallels

In addition to the ancient sites, there is a rich contemporary tradition of megalithism among the Mundas, Bhumij, and their branches. The entire funeral rite of these megalithic communities can be divided into primary and secondary traditions. Among the Mundas of Khunti and the western part of Ranchi district, both cremation and burial are practiced, whereas the Bhumij perform only cremation. The rituals are identical among both groups, with slight variations.

The funeral rites are further divided into four ceremonies: *Rapa/Topa* (cremation/burial), *Umbul ader* (calling the shadow back), *Pathalgarri* (raising megalithic structure) and *Jangtopa* (ceremonial burial of mortal remains).

The cremation process (*Rapa*) and burial ceremony (*Topa*) were documented by both Sharat Chandra Roy and M. Topno in the early decades of the 20th century (Roy 1912: 254; Topno 1955: 715). For cremation, selected bones are recovered and ceremonially buried and for the burial, the bones are dug out from the grave after a certain interval and reburied under a stone monument (Roy 1912: 257; Topo 1955: 730-31). Many of the rituals documented by Roy and Topo are no longer practised by the community but they are observed in relics that symbolize them. Generally, remains are buried under the family stone monument and due to lack of space a new structure is raised only when needed. This stone monument is known locally as *Saasandiri*. The first author of this paper has previously documented the process of secondary burial of cremated bones and tried to trace the continuity of these rituals through interviews with elders and other inhabitants of different villages, and also by live documentation of various case studies in different villages of Ranchi and Khunti districts (Shekhar *et al.* 2014: 716; Shekhar 2020).

3.1 Documentation of secondary funeral rites in Khunti district

This case study documents the secondary funeral rites of Shiba Munda, mother of Dasai Mundas of a village in the Murhu block of Khunti district. Unfortunately, the primary funeral could not be documented in this case as it was performed a year prior to the secondary rites. The ceremonies documented during the occasion are *Pathalgarri*, i.e., the erection of the megalithic monument for the dead; *Jang-topa*, i.e., deposition of mortuary remains under the megalithic structure (in this case, a symbolic burial); and the Feast of merit and *Hayom* i.e., the ritual bathing and shaving ceremony.

*Raising the stone monument (*Pathalgarri *ceremony)*

For the *Pathalgarri* ceremony, the village priest and other villagers were called to raise megalith. They arrived at a public place where prepared stone slabs were kept, to construct a composite megalithic structure. The slabs are purchased from a stone quarry 30 km from the village. The villagers informed us that three to four years earlier, they used to bring stones from nearby available sources using a cart (*Sagar*), or wooden mechanism prepared for the purpose, called a *Dirijangi* or *Koali*. The slabs were tied with ropes and bamboo sticks, oriented in an east-west direction so that *Paahan* (village priest) could purify the stone and pray to *Singbonga*, the sun god, to bestow blessings on the departed soul. The priest also invoked ancestral gods of the family to allow the departed soul to join them in their heavenly abode. The same procedure was followed for a smaller slab selected as a capstone and other supporting stones of the composite structure. Before the capstone was purified, the grandson (in this case) of the departed woman sat on it. The stone was purified by the *Paahan*, who then purified the parents of the youth. The stones were carried with the help of the community, and brought to the *Saasan* (a particular area for raising stone monuments for the dead of the village), where a foundation in which the monument would be set (about 40 cm in east to west orientation) had already been prepared (**Fig. 6**).

Fig. 6 – Community effort of transportation of stones to raise stone structure (Photos: H. Shekhar).

Fig. 7 – Community effort to pull the stone to set up the monument (Photos: H. Shekhar).

The capstone of the megalith was placed when the carriers arrived in the selected spot. The ropes used to attach the stone to the bamboo were tied around the stone slab and then two teams lifted the stone (**Fig. 7**). The slab displayed details about the departed soul, and the genealogy of the family into which the deceased had married. At the end of the ceremony a goat was sacrificed and participants were invited to the ceremony of *Jang topa* and the Feast of merit.

Ceremony of secondary burial festival (*Jang-topa*):

A day after the stone raising ceremony, the family began to prepare for the *Jang-topa* ceremony. As it was difficult to retrieve bones from the earlier grave (in which the decease had been buried over a year earlier) to rebury them under the megalith, a symbolic burial of an effigy was performed. An old woman of the family prepared a grass effigy and kept it inside an earthen pot. The pot was kept on a dough base and the top was covered by another piece of dough used as a lid. Three leaf cups, filled with mustard oil, turmeric, and rice were kept

beside the pot. The *Paahan* arrived at the house and prayed to the effigy to bestow blessings on the family and community. A woman brought two new earthen jars. Dasai Munda (daughter of the deceased) brought a bow and arrow and gave it to the youth who had sat on the capstone the previous day. Two young girls of the family lifted the jars over their heads and family members followed them to a stream near to the village for a ritual bath. The jars were filled with water and, finally, everyone proceeded to the *Saasan*, where the megalith had been raised.

When all participants arrived at the village *Saasan*, women purified the stone with water, mustard oil and turmeric in a procedure called *diri chappi*. *Paahan* stood over the capstone and began to invoke the ancestral spirits for the acceptance of the symbolic human effigy of the dead, as a relic of the soul, into the ancestral clan repository, i.e., the megalithic structure. Rice, bread/*Roti* and other food, like rice and vegetables were served to the megalithic stone slab. The two jars of water brought by the girls were placed in front of the capstone. A boy touched the water of the right-hand pot (or one of the pots) with the arrow and then poured the water into the earthen pot containing the grass effigy. This ritual, called *chuman*, symbolizes the rebirth of the deceased and return of the departed soul. Two of the participants then removed the capstone and dug a small pit for the earthen pot containing all the offerings along with the effigy (**Fig. 8**).

Finally, the megalithic structure was again purified by the women using water from the two jars. Then, Dasai Munda, the chief performer, wrapped the upright stone with a new cloth and the structure was garlanded by the women. The ceremony then ended and everyone returned to the house of the deceased where a black goat was sacrificed and the meat distributed to all the participants of *Pathalgarri* and *Jang topa*.

Community feast

The following morning, guests and relatives began to arrive with gifts in the form of grain and clothes. Even Dasai Munda, the feast donor, presented gifts to important guests and close relatives. After the exchange of gifts, musicians performed in the courtyard and in the afternoon a feast was organized for the villagers in which four full-grown goats

Fig. 8 – Purification of stone monuments and ceremonial deposition of symbolic effigy under the capstone (Photos: H. Shekhar).

(weighing around 80 kg) and chickens (weighing around 25 kg) were slaughtered in the house.

Grave goods and offerings

Mustard oil, turmeric, country liquor (rice beer), rice, rice cake or bread and water were common offerings. Coins were also offered by each participant. According to the villagers, precious metal objects such as gold, silver and copper were offered in the past, but due to incidents of robbery these traditions were abandonded. In some regions a broken arrowhead (used in ritual) is offered as a grave good. Today, offerings are generally given to the dead by placing them over the grave to avoid the threat of grave looting. Animal sacrifice during the death ritual is also part of the offering with goats and chickens commonly sacrificed at the site (**Fig. 9**).

Apart from the grave goods offered during the ceremony, there is a tradition of occasional offerings of votive goods for the dead. Such offerings are made during the various religious festivals or annually at a fixed date (Shekhar *et al.* 2014: 708). Topno and Roy reported evidence of offerings of precious materials, such as ornaments of bronze and copper and utensils of brass, and bronze and silver vessels inside the pit of the grave or within the stone structure (Roy 1912; Topno 1955). Today, the Mundas no longer offer such precious materials and instead use earthen vessels or stainless steel.

3.2 Raw material source, stone quarrying technique and transportation of stone

Most of the megalithic sites are located in the vicinity of hills, hillocks and outcrops of sandstone and granite. A few monuments and nearby outcrops have quarry marks made by iron chisels, which suggests that iron could have been used for quarrying the stone. In Ranchi and Khunti districts, the geology is mostly granite gneiss, which cleaves naturally into slabs. Such stones could have been fashioned by the megalith builders using iron tools. They might also have been carried using the country cart (similar to a bullock cart) or using a mechanism of wooden logs as the ethnographic survey of the Munda community suggests (**Fig. 10**).

3.3 Rituals in the case of unnatural death

The funeral ceremonies mentioned above are performed only in the case of the natural death of any person. In the case of an unnatural death, elaborate ceremonies are not performed, and the corpse is buried or cremated away from the settlement area, and separately from the village cemetery. Deaths during childbirth or pregnancy, infant deaths, accidental deaths, deaths from a snake bite, a wild animal (especially a tiger), from lightening, chickenpox, etc., are considered unnatural in Munda society. The deceased are considered to be unpurified/unclean and have the potential to turn

Fig. 9 – Sacrifice of goat during death ritual (Photos: H. Shekhar).

Fig. 10 – a. Country cart 'Sagarr'; b. Wooden mechanism 'Koali', constructed by the Mundas to transport the stone (Photo: H. Shekhar).

into an evil spirit and to haunt and harm the relatives and society. To appease such spirits, a stone monument or menhir is raised away from the settlement and occasional animal sacrifices are offered to it.

Variability in mortuary rituals among the Mundas can be observed on the basis of clans and the circumstance of death. Rituals vary according to gender, age and the socio-economic status of the corpse. Such variations cause diversity in the ritual economy e.g., the amount of labour, grave goods, ritual variations and even typology, size and geographical position of the monuments raised. They also affect the time interval between the different ceremonies performed over the entire process. In the case study presented here, the time interval between primary and secondary funeral depended on the clan and the economic situation of the family.

4. Observations and analysis of archaeological records based on ethnographic data

Ethnographic study of the mortuary rituals of the Mundas and their other branches provides a valuable insight into various aspects of ancient megalithic sites in the region. Many such sites in Ranchi and Khunti districts have continuity of the tradition, raising new megaliths alongside the ancient burials. These new structures are raised as part of the secondary funeral rites of the Mundas and Bhumij. Their typology is similar to that of the older monuments, which were perhaps raised by their ancestors. They are also similar in typology to megalithic monuments reported from the northern part of the state, i.e., Chatra and Hazaribagh districts. The distribution of megalithic sites fits with the theory of 'migration' or 'movement' of the Mundas into the Chotanagpur plateau, which formed the study area (Roy 1912: 3-5).

The ritual objects and grave goods used by the Mundas are made of both perishable and non-perishable materials. Among the perishable items are effigies made of clay or grass, rice, mustard oil, seeds and country liquor made of rice. These elements cannot be traced in archaeological contexts

by visual observation, although some can be detected by scientific analysis (e.g., by archaeobotanical study, trace element and lipid analysis). Ritual vessels, such as small pots and lids, and other offerings such as coins, arrowheads, weapons, and ornaments are made of non-perishable materials, and commonly recovered from archaeological contexts.

Skeletal remains recovered through excavation at Khuntitoli in Khunti district and disturbed burials at Obra, Murvey and Sillidih from Chatra and Ranchi districts show evidence of disarticulation in addition to cremation (and one sample from Murvey was not cremated). This indicates that the mortuary rituals of the ancient megalithic people in the region were exactly the same as those that the Mundas and Bhumij perform today. One of the burials at Bichna in Khunti region contained a bronze human figurine (Roy 1920). Empty miniature pots were recovered from the sites of Obra and Sillidih; the Mundas use similar vessels to hold a symbolic effigy.

Animal bones recovered along with human remains from the sites of Obra, Murvey and Sillidih are archaeological parallels of the sacrificed animals observed during the present-day rituals. The faunal remains belong to sheep or goat, which are both very common animals in Feast of merit and sacrifices performed during death rituals. The antler of a Barking deer (*Muntiacus*), was amongst the animal remains recovered from Sillidih. This species was commonly found in the region and a favourite food of the local inhabitants. It could have been offered as food to the dead (**Fig. 11**). The multiple burials seen at the ancient sites of Khuntitoli, Sillidih, Tetla and Obra also have ethnographic counterparts: the Mundas use a single megalithic structure as the ancestral bone repository for all members of a family.

5. Concluding remarks

The typology of the monuments, the nature of the funerary remains, and their ethnographic parallels indicate that there is a degree of continuity in the megalithic tradition in the region. Ethnographic evidence of multiple burials under a single capstone shows a tradition similar to that of ancient times. Ceramic assemblages recovered from megalithic sites in the region can be tentatively dated to between the 1st century BCE and the 2nd century CE. Ethnographic studies of the living megalithic tradition can be useful in understanding the ancient monuments and the social behaviour of the communities in the region. This is important due to the lack of intensive archaeological investigation and systematic excavation. The above observations indicate that both ancient and contemporary megalithic people share similar cultural traits, evident both in the archaeological record of the region and the ethnographic counterpart. The living megalithic tradition is, however, losing traditional ritual elements, replacing some with modern substitues or electing not to offer valuable objects for fear they might be stolen. Yet glimpses of their traditional ways of disposing of the dead and their post-death rituals are evident along with their many symbolic and relic behaviours. These clearly demonstrate that, in the past, these rituals must have been intense and elaborate, with extensive community participation befitting the social status and economic situation of those involved.

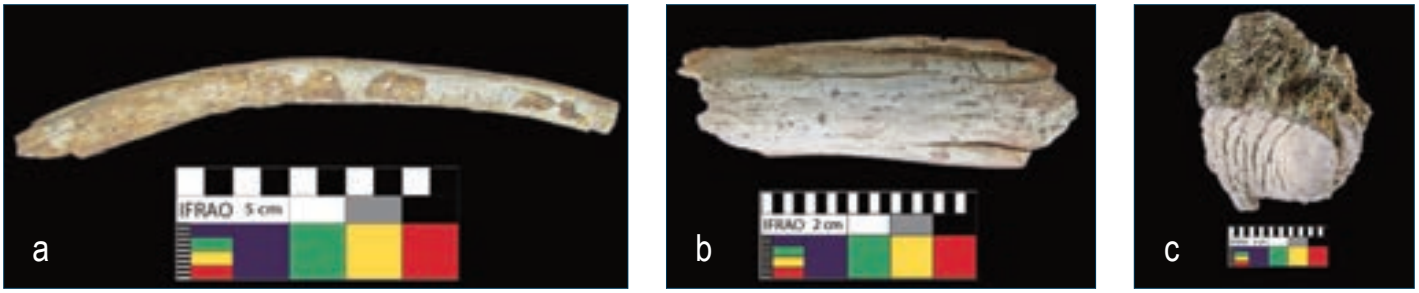

Fig. 11 – Faunal remains from megalithic sites: a. Antler of Barking deer; b. Tibia of goat; c. Talus of goat (Photos: H. Shekhar).

Limitations of the work

Since death is a sudden event, it was difficult to document the full extent of the mortuary rites. In the case study of secondary funeral rites documented in Khunti district, the primary funeral of *Shiba* Munda and the *Umbul ader* ceremony (ritual of calling the spirit back to the home of the deceased) was not documented for this reason. Further, no case study of cremation could be documented during the fieldwork. The data included regarding the cremation process is based on available literary sources and studies conducted in the past, along with the information gathered in interviews conducted during the present fieldwork. In addition, ethnographic analogies have their own limitations in terms of what can be concluded about the past culture, therefore careful inferences are drawn in this paper in order to correlate present traditions with ancient archaeological sites.

Acknowledgements

We would like to thank the Indian Council of Historical Research for the fellowship granted for the research topic to one of the authors of this paper. We are also thankful to the entire Munda society for their support in completing this work by providing the necessary information regarding their funeral rites and legends related to the ancient megalithic monuments.

22

Tilok THAKURIA

The stone jars of Southeast Asia and Northeast India: Problems and prospects

Abstract: Stone jars are a distinctive and enigmatic piece of the archaeological heritage of South and Southeast Asia. In 1912, Henri Parmentier, made the first academic note about the stone jars in Xieng Khouang province of Lao People's Democratic Republic. Later, in the 1930s, Madeleine Colani undertook extensive survey and documentation work on the stone jars of Xieng Khouang province. Stone jars were also reported from Indonesia and excavations at Sri Kestra in Myanmar. The Indonesian stone jars appear very similar to and seem to be affiliated to Laotian jars but the Sri Kestra stone jars represent a totally different burial tradition related to Buddhism. The stone jars of Assam, reported in 1928 by J.P. Mills and J.H. Hutton, are close to Laotian stone jars in many aspects and characteristics. The present paper offers a brief discussion of the jars from Southeast Asia and South Asia, including a historiography of their research, general characteristics of the jars and, in conclusion, explores some of the archaeological problems of the jars still to be addressed and the potential they hold for our understanding of a lost culture that once occupied a large geographical area covering Southeast Asia and northeastern parts of India.

Keywords: *stone jar, Lao, Assam, Dima-Hasao, engraving*

1. Introduction

Stone jars are one of the most distinctive types of archaeological evidence in the world. They are found mainly in Southeast Asian countries and Northeast India, regions that are geographically connected and ecologically quite similar although geo-politically, Northeast India forms part of South Asia. In Southeast Asia, most of the stone jar sites are in the Xieng Khouang and Laung Prabang provinces of Lao, with more than 2000 examples now documented (Genovese 2014: 87). Stone jars are also reported in Myanmar (Luce 1965: 9-25) and Indonesia (Bonatz 2008: 259-261; Prasetyo 2012; Umar 2010). In Northeast India, stone jars are found in the states of Assam and Meghalaya. In this paper, I offer a general discussion of the stone jars, highlighting some of the archaeological problems they pose and the potential they offer for future research.

2. The stone jars of Lao People's Democratic Republic

Most of the stone jars in Southeast Asia are in Lao. To date, there are about 80 jar sites reported in Xieng Khouang (**Fig. 1**) and Laung Prabang provinces. The first extensive work on the Lao jars was carried out by Madeleine Colani in the 1930s. She documented

Fig. 1 – Stone jars of Site 1, Xieng Khouang, Lao PDR (Photo: T. Thakuria).

the jars at 'Site 1', and excavated both around and beneath a few of them to recover the material culture of the region. The excavations beneath the jars did not yield anything but objects, which she termed 'grave goods', were reported from the excavations around them (Colani 1935: 431). These objects include polished stone, semi-precious stone and glass beads, a terracotta disc, potsherds, and bronze and iron items. Excavations around the jars also resulted in the discovery of buried terracotta jars, sealed with stones, some containing human bone fragments. The relationship between the terracotta jars and the stone jars remained unclear. A limestone cave at Site 1 was also excavated by Colani. She hypothesized that the cave had been used as a human crematorium since prehistoric times, and that the jars were perhaps used as repositories of cremated remains. Colani was certain that the jars did not predate the Iron Age, based on the finding of iron and bronze objects. She further argued that people who made the jars migrated to Northeast India by following an ancient salt trade route along the coast of Thailand. Colani's work is remarkable in that the jars were systematically and methodologically mapped and documented for the first time, and associated material culture was brought to the light. Although she was uncertain about the chronology and relationship between the stone jars and the terracotta jars, these added a new dimension to the tradition, and her work left no

doubt about the association of both forms with ancient human burial practice. After a gap of almost 70 years, new excavations and surveys were carried out at Site 1 by Nitta (1996: 14-19). He excavated around two stone jars, discovering several pits concealed by flat stones and a further pit containing a terracotta jar together with human bones, iron objects, and glass beads. Nitta pointed towards the contemporaneity of the pits and the placement of stone jars. He argued that placement of a stone jar might be a second phase of activity after the the actual burial in the pit or in a terracotta jar. He believed the stone jars to date from the end of the 1st millennium AD (Nitta 1996: 18-19). Sayavongkhmady and Bellwood worked at Site 1 in 1996. Their results were similar to those of previous researchers in that they found pits and terracotta jars with human bones and material culture around the stone jars (Sayavonghmady & Bellwood 2000: 101-110). Recent archaeological work at Site 1 by O'Reilly and his team further verified the presence of the same features and artefacts (O'Reilly *et al.* 2019: 970-989). This team, however, unearthed a secondary human burial concealed by a limestone pavement and a block of stone, which was similar to a limestone pavement noticed by Sayaynghmady and Bellwood. Existing knowledge of the stone jars of Lao is mainly derived from the above research along with the work of a few other individuals (Genovese 2014; Sokpal *et al.* 2020) undertaken as part of their doctoral research.

The jars are made of a single block of stone, predominantly sandstone, but also granite, limestone, conglomerate, and breccia. The jars have either a deep or a shallow cavity, and a rare example of a jar with cavities at both ends was also reported by Colani (1935: 318). Jars were carved mostly at quarries and then transported to their destination. At many quarries, unfinished examples can still be found lying around. The process of trimming a block to create a jar is yet to be studied, but it can be assumed that a block was either selected or extracted from the parent rock and the exterior was probably then chiselled to give the rough shape of a jar. The chiselling of exterior and interior to make the surfaces smooth were perhaps carried out simultaneously. The lip and rim were probably shaped at the beginning of the process of fashioning the cavity. The presence of unfinished jars at quarries indicates that jars were made in advance of their use and kept ready to transport when required. Most jars are barrel-shaped, although there are rare exceptions, as at Ban Xot where globular-shaped examples are reported (Colani 1935: 355). Although the basic shape is limited, the rims show more variation; Genovese identified six types (Genovese 2014: 93). Our present knowledge of rim styles is not sufficient to reveal their function, either as a symbolic or a differentiating feature. No single site has all the rim styles present however five types are reported from one site (Genovese 2014: 95). A number of explanations may account for the varying rim styles. They may reflect individual masons or be the 'signature' of particular quarries; or they may have symbolic values representing the nature of death, or the societal or economic status of the individual or family who placed the jar.

Some of the jars appear to have a hole in the base, for example at Ban Hin (Colani 1935: 351), however this feature is not common and may be a later addition.

The jars of Lao are between 3 m and less than 1 m in size; the largest weigh around 3 tons. The jars were rarely decorated with engravings but two examples have anthropomorphic figures (Colani 1935: 201; Sokpal *et al.* 2020) and zoomorphic designs are present on another (Genovese 2019: 57). Most of the stone discs found alongside the jar sites are decorated (**Fig. 2**), often with curved geometric patterns, and sometimes with anthropomorphic or zoomorphic figures. The function of the discs is not yet clear. They are generally assumed to be lids used to cover the jars, but no examples have so far been found *in situ* to support this. However, stone discs have been found concealing pits and covering terracotta jars. It is clear that some of the discs were used as grave markers but it remains unclear whether they all had this function; they may also have been used as lids for the stone jars.

Fig. 2 – A decorated disc at a jar site in Lao PDR (Photo: T. Thakuria).

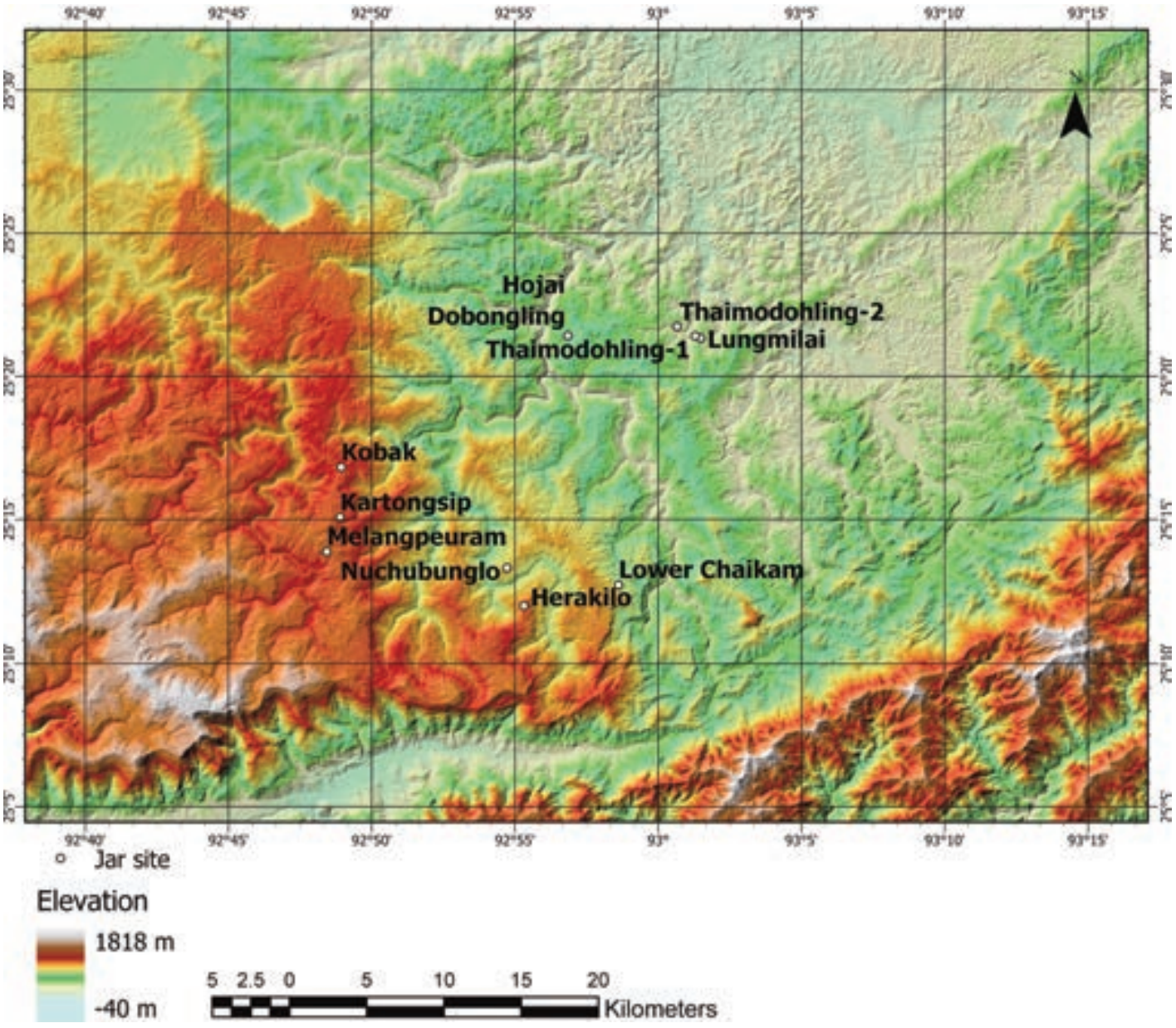

Fig. 3 – Distribution of jar sites in Dima-Hasao, Assam.

3. The stone jars of Indonesia

In Indonesia stone jars are mainly found distributed in Central Sulawesi, in North Sumatra, and Donggo (Sumbawa Island). The jars are cylindrical in shape with a maximum height of 400 cm and a minimum height of 70-60 cm (Steimer-Herbet 2018: 33). They are mostly made of locally available sandstone, but in Donggo volcanic breccia is also used (Prasetyo 2012: 3-4). The exterior of the jars is sometimes decorated with human and animal figures, or with geometric patterns. Some jars are still covered with lids but most have none. Lids are also decorated with human and animal figures. On one example, four human faces are carved, one at each of the four cardinal directions. In Central Sulawesi, stone jars are usually found alongside other megalithic remains like statues, cup-marked stones, tetralithes, stone mortars, and dolmens (Umar 2010: 5). Excavations conducted around jars in the Bada Valley and Beso Valley (Umar 2010) resulted in the discovery of human remains including skulls and teeth, glass beads, semi-precious stone beads, potsherds, iron tools and stone artefacts. DNA analysis of the bones indicated their affiliation with the Austronesian population (Umar 2010: 6-7). Though not in context, charcoal collected around the jars produced a date range of between 500 BC and AD 80 (Umar 2010: 7).

4. The stone jars of Myanmar

The stone jars of Myanmar are associated with royal burial and reflect Buddhist funerary concepts. In 1912, Luce noted the use of stone jars as a repository for the cremated remains of Pyu kings (Luce 1965: 9-25). The jars were made of local sandstone. These royal burial jars are known from Sriksetra, Beikthano, and Halin. Copper, bronze, and terracotta jars were also common for the process during the Pyu period. Pyu stone jars and Lao stone jars belong to different cultural traditions in both time and space.

5. The stone jars of Northeast India, South Asia

In Northeast India, jar sites are mainly found distributed in Dima-Hasao district of Assam and East Jaintia Hill district of Meghalaya (**Fig. 3**). In 1928, Mills and Hutton first reported stone jars, which they described as 'pear-shaped', at Ndunglo, and subsequently at Bolosan (Nuchubunglo) in Dim-Hasao (Mills & Hutton 1929: 28-300). They provided an extensive discussion of the jars, along with the localities of menhirs and celts found nearby. It seems that they were not aware of the Laotian jars as there is no mention of them in their lengthy report (Thakuria 2019: 151-161). The jars in Dima-Hasao were also later mentioned by Ursula Graham Bower (Bower 1952: 111-123), whose encounter with stone jars and collection of local memories about them is noteworthy. She noticed two new sites during her tour among the Zemi people at Khangnam and Haijaichak, and noted that at both the sites some of the jars were covered with stone slabs. She described the jars as 'funerary urns', based on the memories and beliefs prevalent among the Zemi.

In 2014, a systematic survey to explore the jar sites in Dima-Hasao was undertaken by the present author and his team. The survey was intended to relocate the jar sites identified by Mills and Hutton, to explore in and around the sites with the aim of discovering additional examples, to identify habitation sites, and to understand the shape, size, and spatial distribution of the jars (Thakuria *et al.* 2016). The survey was successful in locating the known sites and discovered evidence of engravings very close to jars at two locations. In 2016, survey and surface documentation work were undertaken at Hojai Dobongling (Derebore). Surface clearance at one of the localities discovered in 2014, some distance from the jars, revealed evidence of uniformly shaped and engraved stones placed systematically in a crisscross pattern. A flat slab with a human figure engraved on it was located quite close to one jar at the site. The engraved stones and slabs added significantly to understanding of the landscape in and around the jars.

The author further explored the area in 2020 on the invitation of Dima-Hasao Autonomous Council and reported three more sites. The State Department of

Archaeology, Assam, undertook exploration and excavation at Dima-Hasao between 2016 and 2017 (Deori 2017). Two new sites, Lungmilai and Bolsan, were reported, and the State Department excavated at a third site, Kobak, in a location around 1 km away from the jars. The excavation revealed several disc-shaped stones placed in linear patterns. Their association with the jars was, however, uncertain. The jars were found placed on a gently sloping hillock, at an average elevation of 800-1000 m. Most were badly damaged and, in some cases, only traces were left. To date, 11 sites have been discovered with around 790 jars (**Fig. 4**). Three new sites at Lower Chaikam, Herakilo and Thaimodohling were reported by the author and his team during the survey in early 2020. With 546 jars, Nuchubunglo seems to be the largest jar site known so far in the world (**Fig. 5**). The jars are of various sizes, the largest examples measuring between 170 and 150 cm in height. Interestingly, these large jars have shallow cavities of between 30 and 40 cm in depth. The smallest jars at the site are 60-40 cm in height and also have shallow cavities. The jars were made

Site Name	Numbers of Jars
Lower Chaikam	35
Melangpeuram	21
Kobak	25
Kartong	11
Nuchubunglo	546
Hojai Dobongling	39
Lungmilai	92
Herekilo	12
Thaimodohling-1	12
Thaimodohling-2	6
Total	799

Fig. 4 – Total number of stone jars reported from Dima-Hasao, Assam.

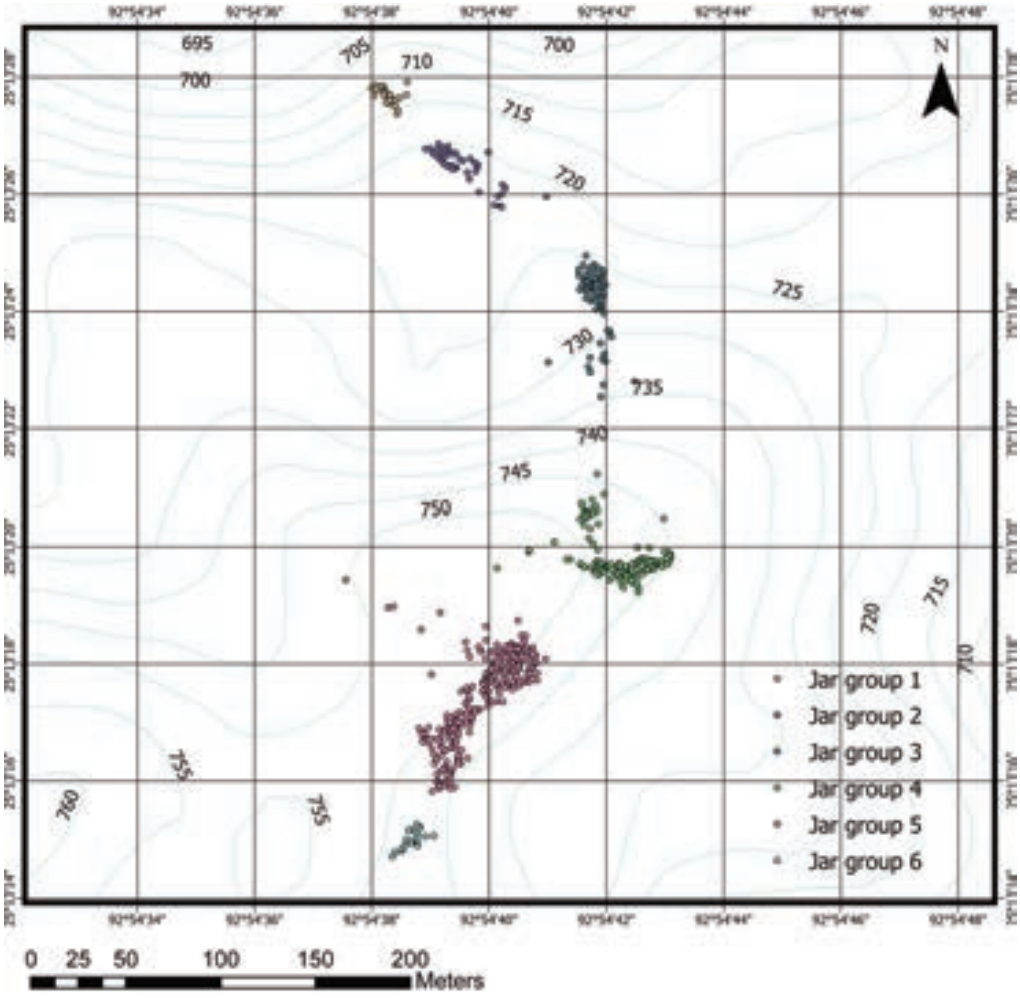

Fig. 5 – Mapped stone jars at Nuchubunglo, Dima-Hasao, Assam.

mainly of sandstone, which is locally available in the Bareil range. All the jars were shaped from single blocks of stone. A quarry site is yet to be identified in Dima-Hasao. Finding the source of the stones would allow an understanding of the methods of quarrying and shaping the jars, but the jar builders of Dima-Hasao seem to have selected localities with exposed sandstone outcrops and blocks (Thakuria *et al.* 2016: 49).

Mills and Hutton described the jars as mainly 'pear-shaped' (Mills & Hutton 1929), however this shape is not common at all the sites. In the 2014 exploration, six types were identified (Thakuria *et al.* 2016), although all are not present at any single site. Particular types are predominant at some sites, for example Lungmilai, Hojai Dobongling and Melangpeuram. Bulbous cavities are common at some sites, including Hojai Dobongling, Lungmilai, Thaimodohling and Kobak; straight sided cavities are seen in Kartong and Melangpeuram. At Nuchunbunglo, the jars have mostly shallow cavities of between 30 and 40 cm in depth, with a circumference of between 15 and 25 cm. The bulbous cavities in jars at Hojai Dobongling, Lungmilai and Lower Chaikam can accommodate a whole human body (**Fig. 6**).

No decorated rims have been observed on the jars at any site. The jars are of various size, from the tallest at 170 cm to the shortest at 50 cm. Jars at Nuchubunglo and Hojai Dobongling are mainly large, between 150 and 100 cm in height. Kobak has jars of all sizes ranging between 150 and 50 cm. Although Bower reported jars with lids, none have yet been recorded. At Kobak, two disc-shaped stones were noted to have fallen close to a cluster of jars. These exactly resemble the simple discs that were found in Lao. Jars are rarely decorated except for a few examples of engravings on the bodies of the jars found at Kobak. that were decorated with a human face, a buffalo face, hoes, a dragger, and zigzag lines near the middle portion and rims of the jars. The discovery of disc-shaped stones, all with identical engravings, at three localities in Hojai Dobongling is fascinating (**Fig. 7**). In 2016, one of these sites was selected for surface clearance in order to expose the shape, engraved patterns and placement. A double-lined square is engraved at the centre of each stone and this is surrounded by other symbols. The placement of the stones is not haphazard, but rather systematic, in a crisscross pattern. During the surface clearance, several fragments of flat slabs were observed between the disc-shaped stones. These were perhaps the remains of flat slabs possibly erected besides each disc-stone. Most slabs were damaged and no indication of engravings were noticed; perhaps such slabs were rarely engraved. An isolated disc-shaped stone, found in the compound of a house at Hojai Dobongling, has a different type of engraving: a stylistic star is placed

Fig. 6 – A stone jar with a bulbous cavity in Hojai-Dobongling, Dima-Hasao, Assam (Photo: T. Thakuria).

Fig. 7 – Engraved half-moon shaped discs at Hojai-Dobongling, Dima-Hasao, Assam (Photo: T. Thakuria).

Fig. 8 – Engraved human figure at Hojai-Dobongling, Dima-Hasao, Assam (Photo: T. Thakuria).

in the centre with zigzag patterns at the edge. The zigzags are similar to those on the jars at Kobak. Recently, another site with disc-shaped stones was discovered adjacent to jars. One of the new stones is decorated with four human faces in the four cardinal directions, and all four faces are linked to a star motif. Elongated stone slabs were found at Hojai Dobongling with an engraving of a human figure (**Fig. 8**). The figure was carved showing both hands extended upwards and to the side. During the archaeological work at Kobak in 2016, a statue (**Fig. 9**) was reported by the State Department of Archaeology, Assam. The statue represents a human figure similar to an example found on the stone slabs in Hojai Dobongling. The upper portion is carved to give the shape of a human head and the body portion is engraved.

Fig. 9 – Stone statue reported by Directorate of Archaeology, Assam at Kobak, Dima-Hasao, Assam (Photo: T. Thakuria).

6. Problems and prospects of stone jars

1. The first and most important challenge is to understand the distribution of the stone jars in such a large geographical area, covering Southeast Asia and Northeast India. The jars of Lao and Northeast India clearly have many similarities, and perhaps both represent the same cultural population. However, we cannot establish the link between the two, beyond the physical similarities of the jars. Further, the cultural behaviours of the jar peoples in both Lao and Northeast India are yet to be uncovered. Excavations in Lao produced cultural materials that provide hints but these are not enough to allow us to understand the entire extent of socio-cultural structures and behaviours.

2. Jars from Indonesia need to be examined to evaluate the possibility that they represent a tradition that is detached yet related to the Laotian jar tradition. Stone jars from Myanmar have a different cultural context and cannot be compared with jars from Lao and Northeast India.

3. A survey is required to evaluate the shapes of the jars in Lao. Although basic shapes were identified by Colani, an approach is needed to record the variations and sub-variations at the site level. Six jar types were identified for Northeast Indian jars, with some types predominant at certain sites (Thakuria *et al.* 2016: 37-40). Similarly, disc shapes and styles need to be documented in terms of their occurrence at individual sites. There is scope to record the relationships between jar shapes (and sub-shapes) and the presence or absence of discs and disc styles, and with rim types and styles.

4. Surveys are also needed to locate the habitation sites of the jar builders, both in Lao and Northeast India. No such sites have yet been reported but they may reveal more about the socio-cultural and socio-religious behaviour of the jar people.

5. It is important that the context of the terracotta jars and pit burials found between the stone jars, mostly at Site 1 in Lao, is further explored. Therefore, more research is needed at the multi-site level to verify their contemporaneity and possible cultural

association with the stone jars, as suggested by Nitta (1996: 14-19). If they are, indeed, contemporary this does not necessarily mean they have cultural associations but rather only indicates co-existence. No terracotta jars or pit burials have so far been reported from surveys in Northeast India. As there has not yet been an excavation in Northeast India, the nature of the connection between the terracotta jars and pit burials and the stone jars is entirely speculative.

6. No quarry site has so far been reported from Northeast India, but several have been identified in Lao. Extensive investigation is needed, focusing on the steps of selection and separation of a block from the parent rock, the sequences of production, and the process of transportation. Current hypotheses regarding the sequence of production need to be verified with detailed surveys and experimental studies.

7. Iron objects have been found in and around the jars in Lao, so the jar builders certainly used iron. It is not yet clear, however, whether they knew how to smelt it. Surveys to locate habitation sites and to explore in and around quarry sites are needed in order to find traces of iron smelting or melting. Moreover, scientific dating is required to determine when iron was used by the jar making people. A date for iron use in Lao may also suggest when it was used in Northeast India. No substantial evidence has yet been found from Northeast India to suggest the early use of iron, except for a piece of slag dated to 400 BC, found without any cultural context (Prokop & Suliga 2013: 767-768). Excavations and surveys around the jar sites in Northeast India are equally important to reveal the beginning of the use of iron in Northeast India. Iron has great antiquity in India (Tiwari 2003: 543-544) but the technology is believed to have arrived from Southeast Asia. The jar makers were perhaps one of the earliest groups to bring the knowledge of iron to Northeast India, although substantial evidence is required to establish this hypothesis (Thakuria 2014: 248-249).

8. A very pertinent question concerns about the nature of the creators of the jar culture. Colani suggested an Austro-Asiatic origin but could not offer much evidence. Southeast Asia was once populated by Austro-Asiatic populations and their descendants can be found in certain pockets of Southeast Asia and South Asia. DNA studies suggest the origin of the Austro-Asiatic people was in India and that they migrated to Southeast Asia and then undertook a reverse migration to India via Northeast India (Kumar *et al.* 2007; Chaubey *et al.* 2011), where Austro-Asiatic populations are still present in Assam and Meghalaya. These groups in Lao and Northeast India should be considered as subjects for detailed ethnographic studies of burial practice. Folklore pertaining to migration and mortuary practice may also provide information. Stories about the origin of one Austro-Asiatic clan tell of their migration across the River Kupli from Dima-Hasao to the Jaintia Hills; it also indicates mortuary practice with immediate disposal of the deceased and the use of terracotta jars as a repository for cremated human remains.

23

Zulfiqar Ali KALHORO

The dolmens of Karachi, Sindh (Pakistan)

Abstract: This paper deals with the dolmens of Karachi. Since 2005, during surveys in Sindh, and particularly Karachi district, I have discovered hundreds of megalithic sites. I have documented stone circles, circular stone structures, cairns, menhirs, stone alignments and dolmens, including 16 dolmen sites in Karachi district. I also discovered rock art near some sites. Most of the megalithic sites are located near to prehistoric settlements, although a few are isolated in the remote valleys of Karachi. The majority are located on hills and other elevated settings or on riverbanks. In the last three decades, many dolmen sites have been destroyed to make way for housing schemes and road construction. Dolmens mentioned in early reports by British administrators and travellers no longer exist. Many have been destroyed by the urban growth which has devoured the cultural landscape of Karachi.

It is not possible to discuss all the megalithic cemeteries here, so I have chosen to describe the dolmens at three key representative sites. These may also be lost in the next three decades given the fast pace of development.

Keywords: *megaliths, dolmens, standing stones, Karachi, Pakistan*

1. Introduction

The subject of megaliths is under-researched in Pakistan; very little has been written. A few published reports and articles mention the megalithic graves in Yasin, Gupis, Iskhoman, Upper Gakhuch in Gilgit-Baltistan (Biddulph 2001; Dani 2001; Kalhoro 2016; Hakal 2019). Biddulph (2001) was the first to report the megalithic graves in Ghizer district; he called them 'stone circular tables'. He also reported the magnificent Asota stone circle in Swabi district in Khyber-Pakhtunkhawa.

Dani (2001) was the first archaeologist to systematically study the megalithic graves in the valleys of Yasin and Ishkoman in Gilgit-Baltistan. He believed that the burials were those of the chiefs or nobles of the Dravidian tribes of the respective areas. I observed three megalithic graves in Yasin in 2001 and two at Hatun village in 2009. When I revisited the Yasin Valley, I was surprised to see one of the megalithic graves at Manich being destroyed by a local person. These sites were also documented by Hakal (2019).

In Sindh, megalithic sites were first reported by British administrators and travellers (Cousens 1929 [1998]). More recently, I surveyed and systematically documented the megaliths in Karachi, Thatta, Jamshoro, Dadu and Tharparkar districts (Kalhoro 2016). In India, megalithic monuments can be found in the states of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Mysore and Maharashtra Jharkhand (Wheeler 1948; Taylor 1989; Sudyka 2011; Menon

2012; Das 2015). Of all the various types of megaliths, the dolmens have received the least scholarly attention in Pakistan.

2. Distribution of dolmens in Karachi

Karachi boasts many megalithic sites, located in the various valleys of the district (**Fig. 1**). Prominent at many such sites are dolmens. Megaliths, especially stone circles and menhirs (Olivieri & Vidale 2005), are present throughout Pakistan, the most magnificent menhir, which is covered with petroglyphs, being located at Thohar Kanaro near Gadap (Kalhoro 2016). Dolmens, however, have been reported only from the province of Sindh where, together with menhirs, they are numerous in the Sindh-Kohistan region, which comprises three districts: Karachi, Thatta and Jamshoro. In this region of Sindh, many megaliths are still unknown to archaeologists, anthropologists, historians and lovers of national heritage.

The valleys of Maher, Moidan, Mol and Malir in Karachi are also famous for dolmens (Kalhoro 2016), which are found mainly on the ridges, crests of the hills and riverbanks. The whole district of Karachi is dotted with dolmens and they lie scattered on several hilltops where they are now being destroyed during the development of housing schemes and private farmhouses. Most of the dolmens in Malir Valley have now deteriorated or been destroyed. Earlier reports record cairns, dolmens, megalithic cists and cromlechs in Sindh (Cousens 1929 [1998]). One of the dolmen sites at Dumlotti in Malir district of Karachi was excavated by archaeologists of the Department of Archaeology, Government of Pakistan in 1975 (Qamar 1983). Most of the dolmens have now been destroyed beneath the urban sprawl.

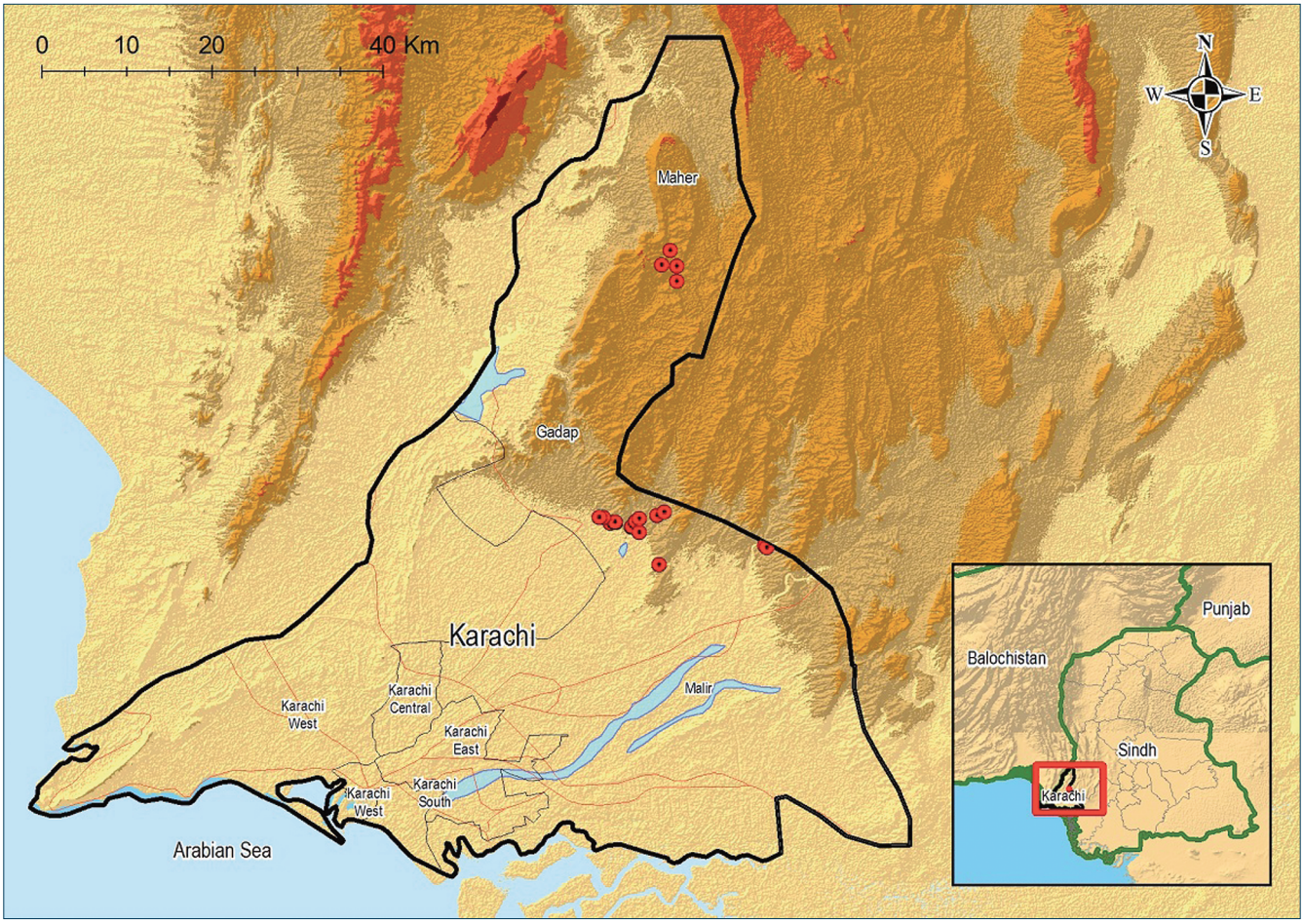

Fig. 1 – Distribution of megalithic sites in Karachi.

Wheeler discusses the travels of Captain Preedy, Collector of Karachi, in his district in the 1950s. Captain Preedy mentions the stone graves found in great numbers in the hilly district which extends along western frontier. They are found in elevated positions and consist of three or four large stones set on edge, with a flat stone placed horizontally on the top. These stone monuments are common on the road from Shah Bilawal, in Baluchistan and in the hills on the direct road from Karachi to Kotri. They are generally known as 'Kaffir graves'. A few megalithic cists were also found at Waghudur (Wheeler 1948: 301).

Khan (1968), who travelled extensively in Thatta and Karachi districts, discovered many Palaeolithic, Mesolithic, Neolithic, Pre-Indus, and Indus period sites in these districts, and a few sites from the Historic period. He also mentions the megalithic cists which he discovered during his survey and documentation of ancient settlements in Karachi. He believed that these belonged to different periods and were similar to those found in South India. He further argued that the Karachi megalithic graves lacked the porthole found in the South Indian cists. Khan (1968) did not excavate but believed that the sites might be the result of different burial practices, suggesting that they involved cremation and fractional burial.

The Department of Archaeology, Government of Pakistan, conducted a systematic excavation of the megalithic site of Dumlotti in the Malir Basin in 1975. There were 65 dolmens at this site. A few were excavated and produced grave goods but the excavation did not yield decisive results and failed to establish any chronology. Moreover, it was argued that the Dumlotti dolmens did not belong to the South Indian complex due to the different burial system and grave goods found. Qamar (1983: 100) argued that the Dumlotti burials were of a secondary nature, and that the body was burnt elsewhere and that the remains, salvaged from the ashes, were subsequently interred in the graves. All the semi-precious stone beads from the Dumlotti graves were of different sizes and shapes; all were made of agate (Qamar 1983: 102).

Citing the research of the late Sir Bartle Frere, Cousens (1929 [1998]: 36) wrote that cairns and cromlechs were numerous in Karachi. Dolmens were also found in Allah Dino (Kalmati 2007). During my recent visit in January 2020, I was told by local people that these were destroyed during the construction of new houses in the area.

A few dolmens were also found near Ghulam Muhammad Kanaro village on the left bank of the Maher gorge (Kalmati 2007: 467). Four vertical stones were used to construct the dolmens. The capstones are missing from all of them. The largest dolmen site, which I will discuss site below, is in Maher Valley near the village of Gul Muhammad Kanaro (Abro 2009: 81; Kalmati 2007: 467).

In Karachi, predominantly in Gadap, there are many places with dolmens. Here I will only describe the three key sites: Garhi Buthi, Amir Bakhsh and Maher Valley, in Gadap tehsil (township).

3. The Garhi Buthi Dolmens

The rural areas of Karachi are dotted with dolmens. The local people call these *'Kafiran jo qabrun'* or 'the graves of unbelievers'. Given this characterization, it is interesting that not a single dolmen has been damaged by the local community; any damage or destruction has been done by the owners of the new farmhouses and housing schemes.

One of the largest dolmen sites, with more than 40 dolmens and 7 menhirs, is located on the hill of Garhi Buthi, 2 km south of the village of Abdur Rahman Chhuto, near Kathore. Most of the dolmens are in a poor state of preservation (**Fig. 2a**). There are two groups of dolmens at Garhi Buthi, one in which the dolmens were made with three upright stones and a capstone and a second in which they have four supports and a capstone; most of the dolmens belong to the second group.

The capstones of a few of the dolmens are missing, either broken or lying nearby. Some dolmens are still in good condition; one is in a fair condition. Two dolmens close to the eastern side of the ridge are covered by capstones. They each have four orthostats with a larger capstone above (**Fig. 2b**). The northern side slab of one of these dolmens is badly weathered. The eastern side slab of the dolmen with the larger capstone is badly weathered. Most of the orthostats are either badly weathered or partially broken. To the north of the two dolmens is

a badly weathered dolmen whose orthostats are partially broken, but the capstone is still intact and in place (**Fig. 2c**) Nearby, on the northern side of the cemetery and close to a dolmen with a large capstone, are two unhewn, triangular shaped-monoliths which are oriented east-west (**Fig. 2d**). There are five other monoliths in the cemetery, all also unhewn and no more than 2 m in height. One of these overlooks a dolmen with a missing capstone and only three remaining orthostats.

The capstones of some of the dolmens lie over the fallen upright stones; perhaps they were too heavy and the orthostats could not bear the load. A few capstones are dressed but most are unhewn, as are the support slabs. Not a single dolmen has been vandalized by the local community despite the site being on the route to the village of Abdur Rahman Chutto, nor have they been damaged by the shepherds who frequently graze their herds nearby.

There are also other megalithic monuments north of Garhi Buthi. At Abdur Rahman Chhuto there is a menhir and a dolmenoid cist. The menhir, which is located north of village, is 3 m high and oriented east-west (**Fig. 3**). In an agricultural field 500 m east of Abdur Rahman Chhuto, is a dolmenoid cist within a stone circle covered by vegetation (**Fig. 4**). Some of the stones of the stone circle are now broken.

4. The Dolmens at Amir Bakhsh village

This megalithic cemetery, which contains about 25 dolmens, is located 3 km east of Konkar town near the village of Amir Bakhsh on a hill between the villages of Amir Bakhsh Gabol and Umeed Ali Gabol. Locally, these graves are, again, called *Kafran Jun Qabrun* (the graves of the unbelievers). The site lies to the east of the Thado river. There are around six megalithic cemeteries on the banks of the

Fig. 2 – a. General view of Garhi Buthi dolmens; b. Two dolmens with capstones at Garhi Buthi; c. Dolmen with a large capstone at Garhi Buthi; d. Menhirs at Garhi Buthi (Photos: Z.A. Kalhoro).

Fig. 3 – Menhir at Abdur Rahman Chhuto village (Photo: Z.A. Kalhoro).

Fig. 4 – Dolmenoid cist enclosed by stone circle at Abdur Rahman Chutto village (Photo: Z.A. Kalhoro).

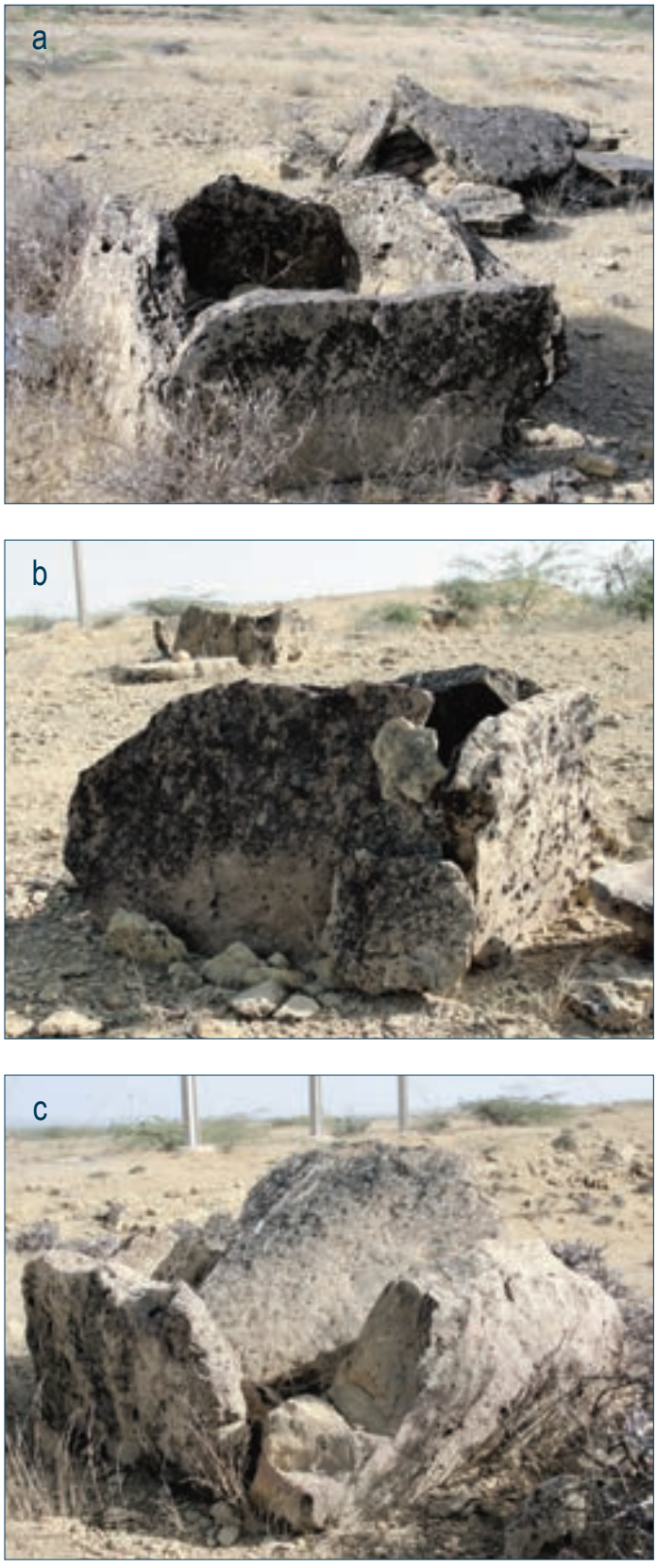

Fig. 5 – a. Dolmens at Amir Bakhsh village; b. Dolmens at Amir Bakhsh village; c. A dolmen at Amir Bakhsh village (Photos: Z.A. Kalhoro).

Fig. 6 – a. A hill dotted with dolmens at Maher Valley; b. Dilapidated dolmens at Maher Valley; c. A dolmen with engravings (Photos: Z.A. Kalhoro).

river, each containing between four and nineteen dolmens, most now destroyed. There are also many cairns, stone circles and rock art sites in the Thado Valley.

The megalithic cemetery of Amir Bakhsh Gabol is the largest in the valleys of the Thado and the Konkar. All the dolmens lie in a poor state of preservation (**Fig. 5a**). They were constructed with four orthostats and covered by capstones (**Fig. 5b**). The dolmens are less than 1 m tall and approximately 1 m long. All were covered with capstones, a few of which now lie adjacent (**Fig. 5c**). Some of the capstones were dressed; the orthostats appear to be rough and unhewn. The material – mostly limestone – used for the construction of these dolmens was brought from other areas as it is not available locally.

5. The Maher Valley dolmens

This megalithic cemetery, which contains more than 100 dolmens and 5 menhirs, is located about 20 km north of Gadap town, within walking distance, to the northeast, of the village of Gulo Kanaro. This is the largest megalithic cemetery in the whole district of Karachi (**Fig. 6a**). All the dolmens were constructed with four vertical slabs and covered by capstones. Most of the orthostats are broken or badly weathered (**Fig. 6b**). Some dolmens located below the ridge are partially buried in the sand; their uprights are badly weathered. These dolmens are less than 1 m high and no more than 1 m long. Their orientation varies; the dolmen builders did not strictly follow one direction.

One of the vertical slabs bears engravings which appear to represent the dolmen itself (**Figs. 6c** and **7**) and may provide information about the burial, shown by zigzag lines enclosed by a square below three horizontal lines. This is a smaller dolmen, no more than 1 m in both length and height. Dolmens with petroglyphs and pictographs have also been reported from Kerala (Kumar *et al.* 2020).

Close to the engraved dolmen is a menhir which does not exceed 1.3 m in height. Most of the menhirs in the cemetery are less than 1 m tall. One of the

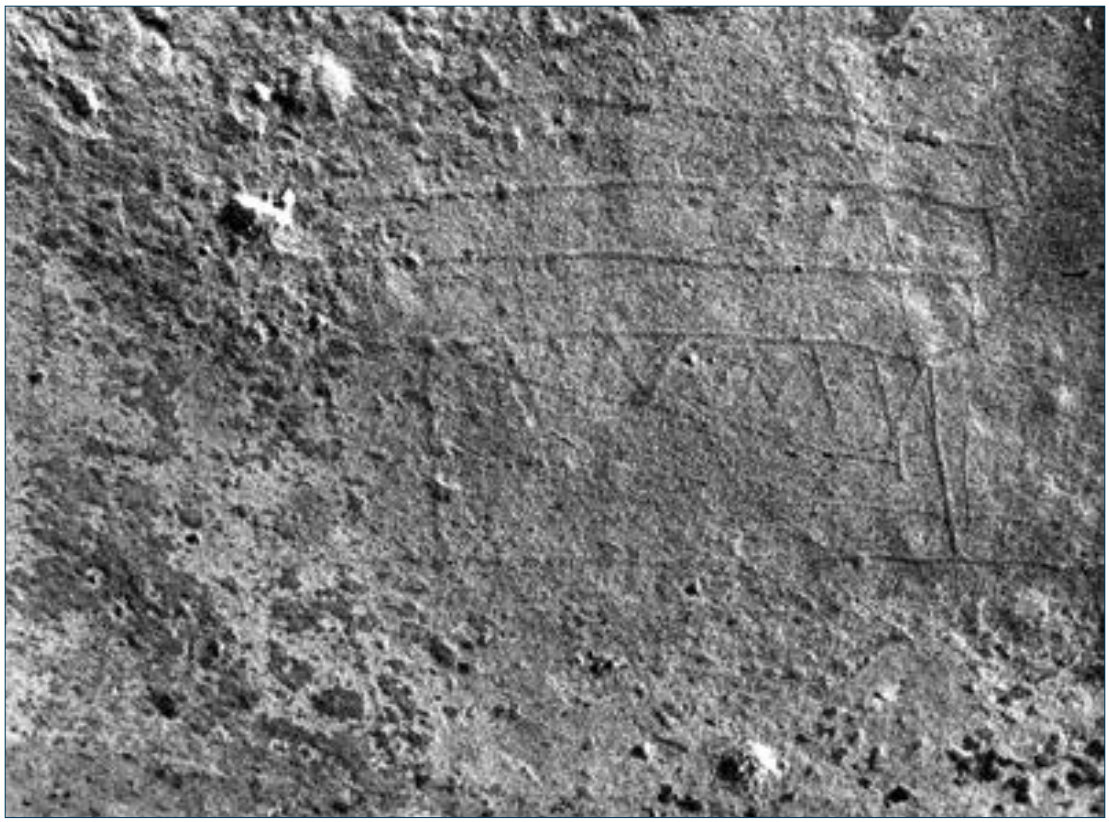

Fig. 7 – Engravings on dolmen at Maher Valley (Photo: Z.A. Kalhoro).

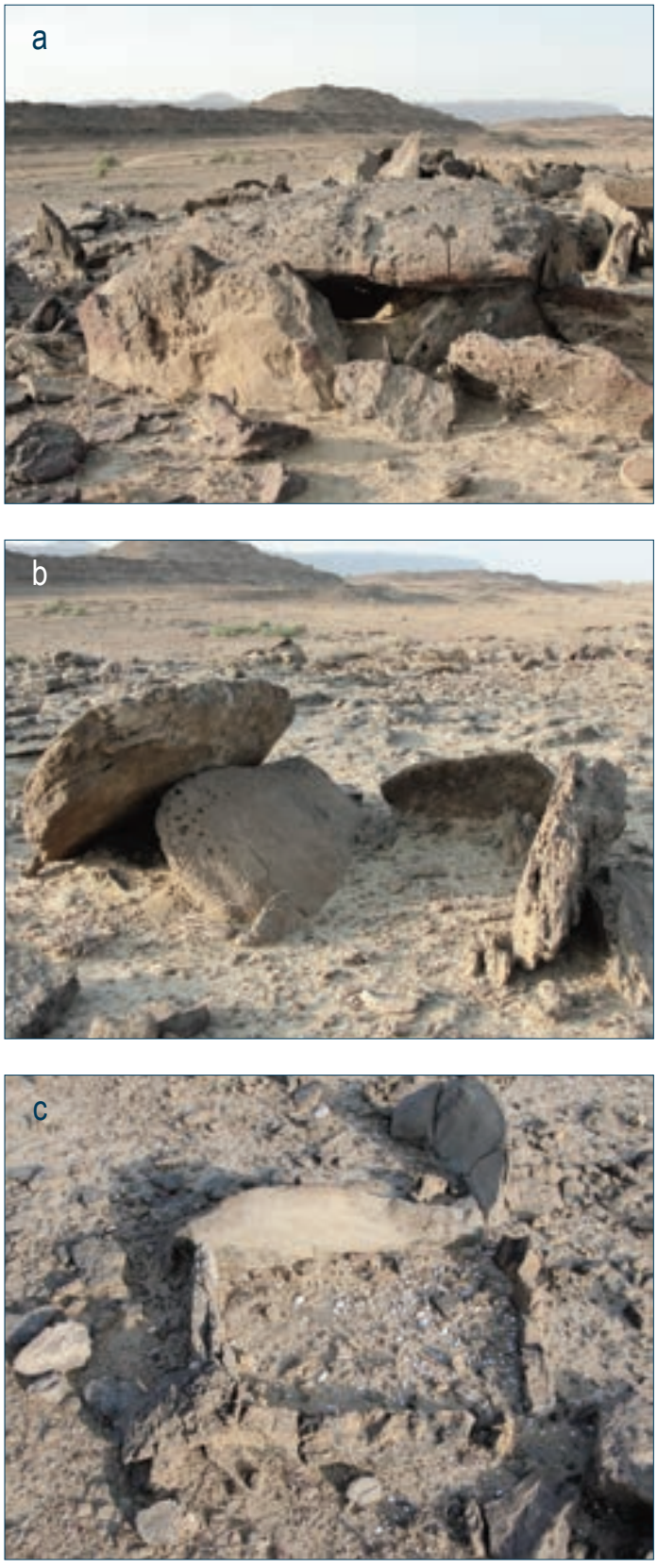

Fig. 8 – a. Dolmen with capstone at Maher Valley; b. Dolmen with dislodged capstone at Maher Valley; c. Pieces of charred bones in a dolmen at Maher Valley (Photos: Z.A. Kalhoro).

menhirs, which exceeds 2 m, is broken in half lies prostrate. It is clearly dressed when compared to the many unworked and unhewn monoliths in the megalithic cemetery of Tarari.

Most of the dolmens in the cemetery are without capstones. A few remain *in situ* (**Fig. 8a**); others have fallen nearby (**Fig. 8b**). Erosion has exposed charred bones in many dolmens, suggestive of cremation burials (**Fig. 8c**). Also in the cemetery is a row of four monoliths, each of a different size ranging from 0.6 m to just 0.3 m.

Dolmens and other megaliths are also seen at Thohar Kanaro village which is the major megalithic site in Karachi. It has one of the largest stone circles in Sindh, a cairn, a stone row and an engraved menhir (**Fig. 9**), located south, south-east and east of the village. I have described these elsewhere (Kalhoro 2016) but have not previously discussed a group of dolmens (ruined) which lie to the north,

Fig. 9 – Engraved menhir at Thohar Kanaro (Photo: Z.A. Kalhoro).

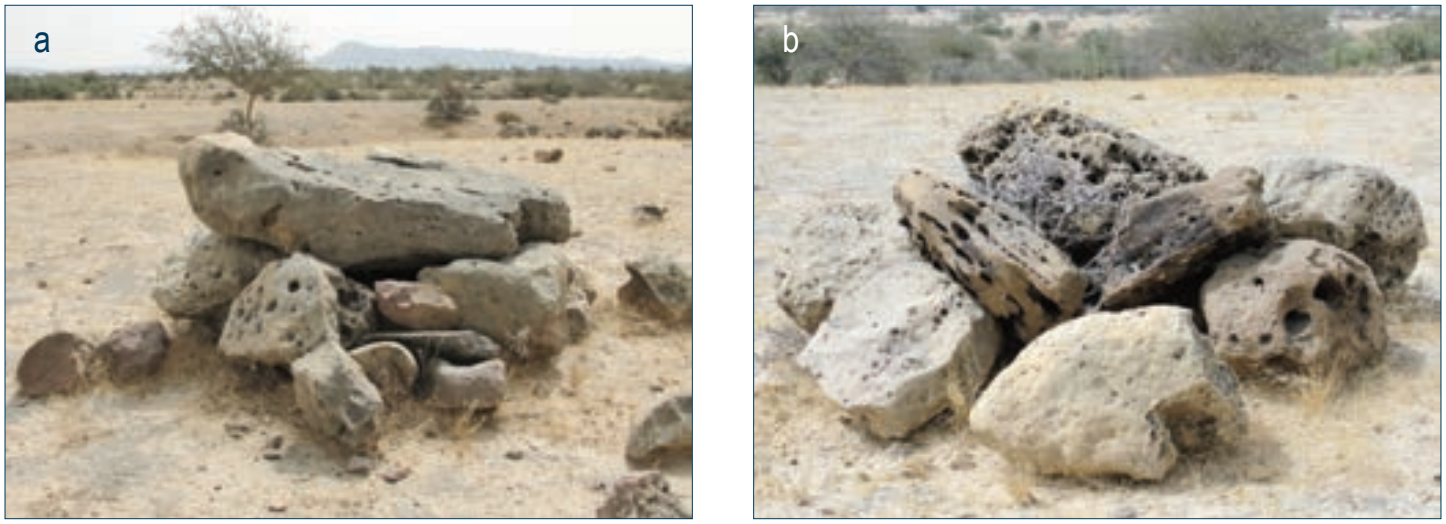

Fig. 10 – a. Dolmen at Thohar Kanaro; b. A cairn at Thohar Kanaro (Photos: Z.A. Kalhoro).

one of which exceeds 0.9 m in height and 0.6 m in length (**Fig. 10a**). There are also cairns (**Fig. 10b**), and a solitary dolmen on the road that leads to Gadap from Thohar Kanaro. There are also a few dolmens, square structures, and menhirs at Rozi Band, all of which are in a poor state of preservation (Kalhoro 2016).

6. Conclusion

It is difficult establish a provisional chronology for the dolmens of Karachi without excavations. Even the few sites excavated at Dumlotti in Malir Basin did not yield decisive results. Neither can we say whether the burial tradition was cremation, inhumation or fractional. This would be possible if several graves were excavated.

Comparative studies based on typological features may help to establish chronology but even this would require a survey of all the dolmen sites and analysis of the typology. This would be a helpful approach towards reaching an understanding of the dolmens of Karachi. I believe, however, that the proximity of some of the dolmen sites to rock art sites and Indus period sites provides a means to develop a tentative chronology. I believe that the dolmens belong to several different periods but that most were constructed in the Bronze Age.

The construction materials for the dolmens, from shell concrete to hard sandstone and limestone slabs, were brought from nearby gorges and, some cases, from distant areas where they were more abundant; some of the menhirs were extracted from nearby hill streams.

In the last three decades, fast-growing urban expansion has destroyed many megalithic sites in Karachi. Those described by the British administrators and travellors are now preserved only in the memory of the local community. Even those that have survived are in a poor state of preservation. These sites were considered unimportant and hence were neglected by the Department of Archaeology, leading to further deterioration. Local people call these dolmens either '*Kaffir qabrun*' ('graves of unbelievers') or '*Dak wariyo Qabrun*' ('graves with capstones'). Yet not a single grave has been vandalized or removed by the local community. Rather, they have been destroyed by turban developers who do not value this heritage.

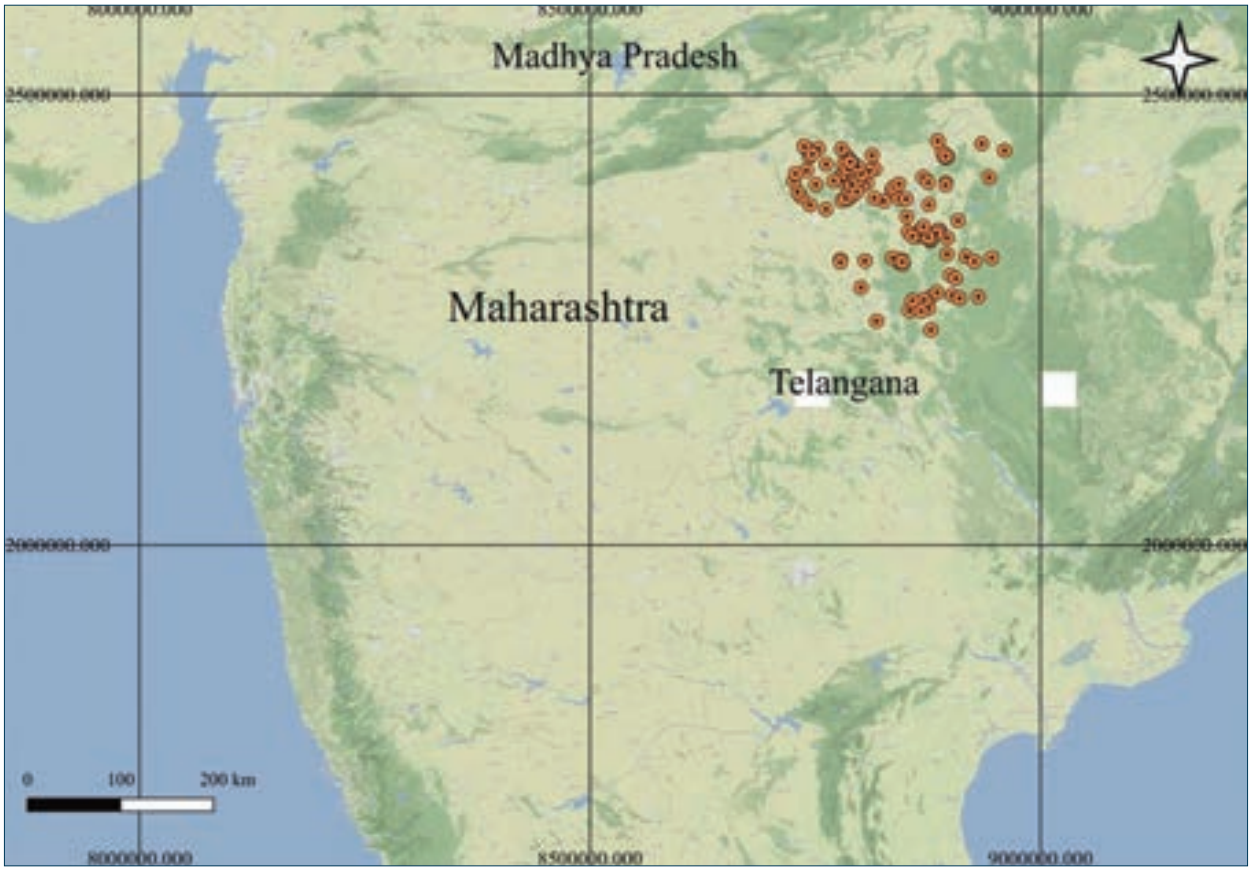

Fig. 1 – Distribution of sites in the Vidarbha region of India.

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Rabindra Kumar MOHANTY

Megaliths in Vidarbha region (India)

Abstract: Vidarbha, the northeastern part of Maharashtra state, has revealed more than 100 megalithic sites and a scores of contemporary settlements. Some of the burial sites have several cemeteries with the number of megaliths ranging from a few to more than 1000. Although all types of burials recorded in India are found here, more than 95% fall into the category of 'cairn circle'. This is a region where extensive excavation and exploration have taken place, providing a database that is large enough for intensive study.

Keywords: *Vidarbha, Deccan, megalithic architecture, Iron Age, Black and Red Ware, horse, artefacts, craft, skeleton, dates, profession, economy*

1. Introduction

In India, detailed observations of many megalithic burials, either during excavation or from surface investigations, has consistently revealed diversity, even within a particular category. There may be broadly similar architecture at any given site, but the burials vary in many aspects, with differences in dimensions, internal fillings, external embellishments, other accompaniments, the nature and size of stones used, the arrangement and placement of the remains of the deceased, the type, quality and quantity of grave goods, the placement of artefacts in the burial, and the nature of the pits dug and filled. When the burials are observed in detail many more such things come into focus.

These variations have been observed during nearly 25 years of investigations of the megalithic sites in Vidarbha as a supervisor, co-director and director of excavations, and through intensive observation and documentation of several important sites in the region between 1977 and 2004. Megalithic research in the Vidarbha region has provided a substantial amount of data, as many sites and burials have been excavated here in comparison to other parts of the country (Deo 1970, 1973a-b, 1982b; Deo & Jamkhedkar 1982; Deglurkar & Lad 1992; Mohanty & Selvakumar 2002; Mohanty 2005a-b; Mohanty & Thakuria 2013; Sontakke 2014a, 2015; Ismail *et al.* 2015). In addition to excavations, intensive surface documentation of three sites has provided interesting insights into the micro socio-economic cultural behaviour of the people who built the megaliths (Mohanty 1993, 2005b; Mohanty & Walimbe 1993; Mohanty & Vaidya 2017).

2. Experimental archaeology

To understand some of the behavioural aspects involved, an experiment on megalith building was carried out at Bhagimohari with the aim of calculating the 'energy expenditure' for a medium-sized cairn circle having a diameter of 13.5 m with an average mound height of 0.82 m, surrounded by 22 peripheral boulders of various sizes (Mohanty & Walimbe 1993, 1996). Taking into consideration all

related aspects of megalithic building, architecture, and the source of raw material, it was calculated that 200-230 man-days would be required for such a burial, and that it was possibly accomplished within 3-4 days with a workforce of 70-80 young adults. This could have been possible with a population of approximately 40-500 at the site or with help from neighbouring sites. It has been suggested that this population size is not acceptable for a 'nomadic hunting-gathering group' (Mohanty & Walimbe 1993).

Some of the observations were confirmed by excavating, on an experimental basis, a medium-sized megalith at Mahurjhari, before transporting the entire monument for 300 km and reconstructing it at an open landscape museum, part of the IGRMS (National Museum of Mankind), in Bhopal (Mohanty 2017b). The 17 m diameter stone circle had 37 large peripheral boulders weighing around 64 tons, the internal filling pebbles weighed 42 tons and, after part of the topsoil was washed away, the remaining packing soil weighed 14 tons. While the boulders were probably procured from weathered exposures in the basaltic hills located about 1.5 km from the site, the pebbles and soil came from the surrounding area.

Fig. 2 – Megalithic burial reconstruction (Photos: R. K. Mohanty).

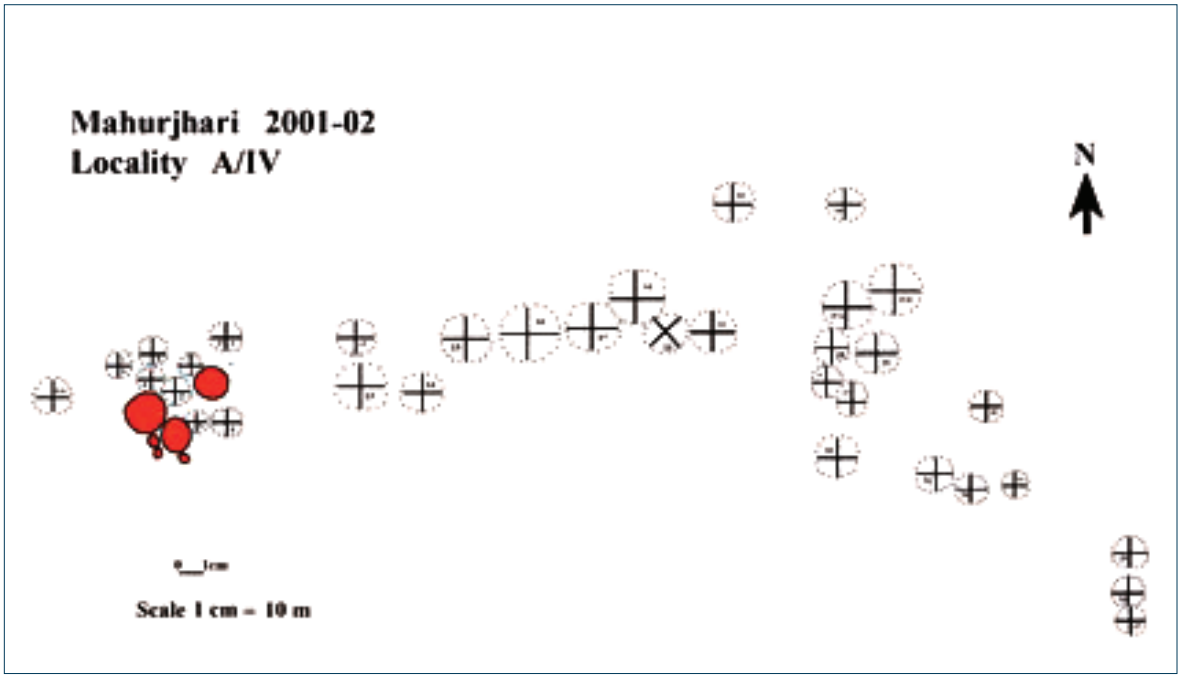

Fig. 3 – Intra site clusters of burials, Mahurjhari.

These experiments in megalithic building demonstrated the need for a capacity to organize and control the execution of the endeavour, and suggested the possible demographic profile of associated settlements based on the minimum manpower required. They also indicated the probable season of construction, based on the availability and procurement of building material (Mohanty 2017b). The internal structures and the placement of objects in large megalithic burials show strikingly different features for those constructed some time after the death and those built soon after, probably reflecting the immediate organizing capacity of the family/community, and the economic and manpower resources available both from local and extended relations nearby. It has been observed that, for immediate burials, deep rectangular pits were often dug in which to place the dead and some of the grave goods.These were covered with sticky 'black cotton' soil, probably as protection from scavenging animals.

3. Intra site variabilty and connections

Most of the earlier megalith excavations were of an antiquarian nature, focussing on large, imposing burials with a view to finding unique, impressive artefacts. Some of these excavations also threw light on cultural timelines, economic status and architectural variability. The results of our own excavation and intensive surface documentation have allowed us to further examine the social dynamics at sites like Bhagimohari, Mahurjhari and Junapani in the Nagpur district of the Vidarbha region. Although situated in close proximity, these sites are different in many aspects of their arrangement, being organized in various clusters with site-centric models.

There are rare, site-specific architectural models and improvised uses of local material within the broader categories; a diversity within the unity. Sometimes, the sites have a micro regional personality. At several sites in the Coorg region of Karnataka, slabs are used to enclose a central cist or dolman, with horn-shaped menhirs placed on the periphery. Similarly, a common construction pattern using a particular

Fig. 4 – Burial from Coorg Karnataka (Courtesy of Chandan Kumar).

type of loose pebble filling was seen at more than 1400 stone circles at Khairwada, with the same approach used in a few burials, as at Bhagimohari, for example, 80 km away (Mohanty 2012, 2018; IAR 1981-1982: 51-52). Likewise, the stones used to build a cist in one of the burials at Raipur Hingna near Nagpur in Vidarbha, do not have a nearby source and seem to have been brought from a region around the Malli megalithic site about 100 km away. The Gondwana and sandstone slabs found as menhirs in Bhagimohari burials seem to have come from at least 20 km away where local megalithic sites are built of the same stones, available in the surrounding rock formations (Mohanty 1993).

The procurement and market exchange network is clearly visible within the megalithic environ, and can be inferred from the presence of specialized craft objects such as the stone beads and copper items found in many burials across Peninsular India during this period (Thakuria *et al.* 2015; Mohanty 2018). This is further emphasized by the introduction of the horse, not only for transport, but probably also as a prized possession and for warfare. The date at which the horse was introduced to India from Central Asia remains debated but could reasonably have occurred sometime around the middle of the 2nd millennium BCE (Bökönyi 1997). Full or partial horse skeletons appear, along with stirrups and horse ornaments, in some of the megalithic burials in the Vidarbha region, at sites like Raipur, Mahurjhari, Naikund, Bhagimohari (Thomas 1992, 1993) and in many sites in South India including Pochampad (Alur 1979), Peddabankur (Alur 1990), and Veerapurum (Thomas 1984). The movement of objects along with horse traders might have disseminated ideas and ideologies to remote parts of the region, influencing megalithic ritual and architecture.

There is no relationship between the size of burials, the degree of elaboration, the amount of grave goods or the age of the dead. At Raipur, a seven-year-old girl was buried with a horse and a substantial number of offerings, probably signifying the status of her parents. While primary burials are found with medium-sized megaliths, and simple burials with sizeable offerings, secondary burials often contain multiple skeletal remains and a comparatively large amount of grave goods (Mohanty 2005a-b). The offerings are found placed at different levels during the process of construction and their craftsmanship varies considerably (Mohanty 2018) suggesting contributions from multiple sources. Some of the burials include a number of nail-parers and a variety of chisels from different workshops, exhibiting

Fig. 5 – Dolmen from Malli (Courtesy of Virag Sontakke).

varied craftsmanship. These appear to have been placed unsystematically in the grave, perhaps as people joined the ceremony during the process of construction. All of this evidence suggests that there was a strong socio-political-economic element which possibly influenced the whole display, and which emerged out of the reciprocal gift exchange and participation system. This may suggest that craft groups were not rigidly stratified at that time but enjoyed social cooperation on an economic or neighbourhood basis, becoming more socially segregated only during the Early Historic period, when megalithism declined. Understanding the complexity of the emergence and continuity of the society-, community-, profession- and ethnic-oriented caste system remained a challenge for Indian orientalist scholars for centuries, with literary sources beginning around the mid 2nd millennium BCE (Ghurye 1932, 1957). The megalithic burials, their types and especially their material content, reveal a very complex society, not only in terms of its economic hierarchy (Moorti 1994). The nature of the artefacts associated with the deceased suggest that a diversity of social behaviour and differentiation was already evident att this time.

The segregation of burial sites around settlements or locations, the concentration of particular types of megaliths within a cemetery, and the type of cultural material found associated with excavated burials from different cemeteries in sites like Bhagimohari, Mahurjhari and Khairwada, shows a diverse patterning suggesting professional grouping, probably leading to subsequent caste formation (Deo 1985; Mohanty 2005, 2015; Shettigar 2012; Thakuria *et al.* 2015; Vaidya & Mohanty, this volume, p. 535).

In addition to having external variations in size and content, the excavated burials at Raipur, Mahurjhari, Takalghat, Naikund, Borgaon, Khariwada, Bhagimohari, Dhavalameti and Vyahad (all in Vidarbha) show differences with internal architectures of varied types (Mohanty & Vaidya 2017; Sontakke, this volume, p. 523). Here, the demographic profile suggested by the megaliths in no way matches the size of the associated settlements and the duration of their occupation. In the majority of cases, the skeletal remains and the nature of their disposal with accompanying grave goods suggest an unnatural death, with preferential status-oriented treatment,

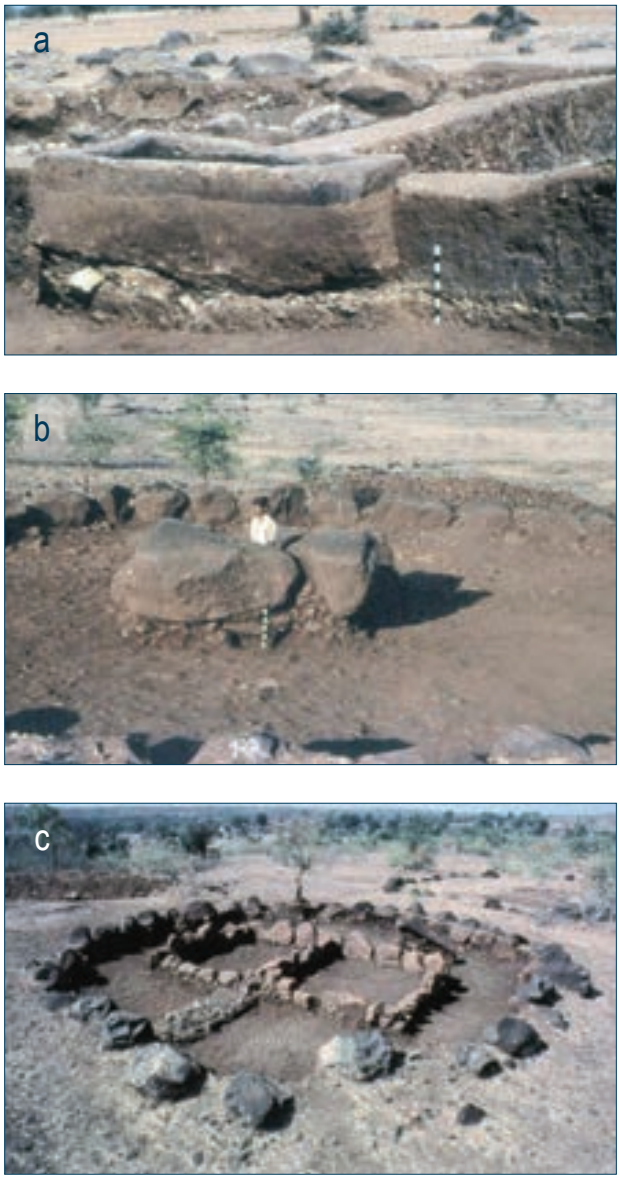

Fig. 6 – a. Stone trough in cairn at Borgaon; b. Chamber within cairn circle at Raipur; c. Internal variation seen at Bhagimohari (Courtesy of Deccan College).

accompanied by the placement of a lasting memorial (Deo 1985; Mohanty & Walimbe 1993, 1996; Mohanty 2018).

4. Grave offerings and possible socio-economic dimensions

The grave offerings in both megalithic and habitation sites included objects representing many different aspects of life and can be broadly categorized as follows: offensive and defensive weapons, tools for craft production, agricultural

implements, tools for carpentry, household objects, cooking and storage vessels (both in terracotta and metal), art objects, horse skeletons with ornaments and stirrups, stone pestles, copper bells, semi-precious stone beads, and gold and copper ornaments. There is little correlation between the quantity or quality of artefacts and the site, size and architecture of burials. In the case of secondary megalithic burials with multiple skeletal remains and a large and diverse range of artefacts, it may be difficult to assess the social status based on the objects found. These items, incorporated at a later date, reflect the intention, intensity, commitment and economic condition of the family at that time rather than the earlier social persona of the deceased individual.

The weapons of offence and defence primarily comprise spears, daggers, swords, battle axes (*Parasu*), knives, blades and tridents. The craft objects include varieties of chisels, axes, nail parers and adzes suggesting a group of specialized craftsmen skilled in fine woodcarving, leatherworking and probably also in bamboo and cane working, as observed from ethnographic data from the region (Sabnis 2017; Mohanty 2018). Working with bamboo or cane is known from the Early Neolithic period at Tekkalkota (Nagaraja Rao & Malhotra 1965). Large numbers of ladles found in some graves probably suggests the use of oil, as seen from types of lipid found in burial pots from Mahurjhari and from ethnographic observation (Mohanty 2018). Agricultural implements like hoes, ploughshares, sickles, axes, crowbars and digging equipment suggest that agriculture was also an important occupation. The presence of digging implements with a range of functionality suggests the exploitation of different kinds of soil, and the cultivation or use of crops in different seasons. Household objects include frying pans, lamps, saddles, querns, pestles and copper bowls, lids, *lotas* (water pots) and cooking and storage vessels. In addition, there were many copper objects including bangles, anklets, rings, bells and horse ornaments (Deo 1982a-b, 1984; Mohanty 2013-2014).

The workmanship evident in some of the objects suggests continuous improvement in technology through working in association with specialized craft groups, thereby producing new varieties of artefacts by innovating and preserving excellence. This is reflected in the burial offerings showing social relationships and reciprocal participation. Multifaceted or combined workmanship is evident in objects like a dagger from Mahurjhari with an iron blade and copper hilt skillfully covered with a thin sheet of copper and enclosed by a wooden frame, and in copper bells with iron clappers, an iron sword/dagger with a copper hilt, and copper horse ornaments having iron loops for fastening. The copper *lota*, vessels embellished with decorative birds, buds and animal finials, a tripod from Mahurjhari, adorned with deer, birds and fish belonging to three spheres (Mohanty & Vaidya 2017) and bells manufactured using the three techniques of casting, forging and riveting all speak to innovation and contribution to the overall economy (Mohanty 2013). The large number of bronze art objects discovered from Adicchanalur (Rea 1902-1903) and a tiger with an inlay of precious stone from Kodumanal (Rajan 1996, 1998) remind us of the achievement of craft specialists and the wide distribution of their creations. A type of etched carnelian beads seems to have been manufactured in South India as examples are found in many megalithic contexts in Peninsula India. Some of the better preserved, very thin copper vessels have a lustrous shine. These contain a substantial amount of tin which might have come from beyond the region. All these examples reflect a wide exchange network and the movement of goods along with cultural-ideological exchanges, often resulting in the adoption and adaptation of megalithic models practiced elsewhere. In contrast to South India, the rare occurrence of dolmens, menhirs and sarcophagi amongst the Vidarbha megaliths emphasize this aspect. It appears that cultural interaction, the movement of people with ideologies and identities, and the subsequent amalgamation of some traditions resulted in the occasional incorporation of the megalithic models so numerous in southern parts of India.

The association of the horse with megalithic people is very significant. The elaborate horse ornaments and partial skeletal remains in some of the burials suggest their importance in facilitating mobility and the dispersal of socio-economic ideologies (Deo 1970, 1973a-b, 1984, 1985; Deo & Jamkhedkar 1982; Mohanty 2018). The horse skeletal remains buried

Fig. 7 – Iron objects as grave offerings (Courtesy of Deccan College): A. Chisels; B. Adzes; C. Hoes; D. Axes; E. Ploughshare; F. Sickels; G. Spike; H. Battle Axe; I. Drager with copper hilt.

Fig. 8 – Horse bits and ornaments (Courtesy of Deccan College).

along with the deceased, accompanied by elaborate horse ornaments and offensive weapons speak to the personality, status and likely profession of the individual. Given the emerging social conditions, with moves towards organizational forms like Janapadas (socio-political entities and small republics), the horse riders with weapons probably served as a defence force. By the 7th-6th century BCE, there were more than a hundred such organizations of ethnic groups across the subcontinent. This must have necessitated a class of horse breeders and traders which extended to other parts of country and, later, to South India, as evidence of horse equipment has been recovered from megalithic sites at Porunthal and Kodumanal (Rajan 2010, 2015; Rajan *et al.* 2014).

From burial urns to the dedicatory vessels associated within the burials, variations can be observed in their numbers, types, placements, and contents, including cooked and uncooked food. Lipid analysis of pots from Mahurjhari revealed that they contained cooked food items like vegetable and animal proteins, carbohydrates, and aquatic food resources (Mohanty 2018). At Kodumanal, the pots contained paddy (Rajan 1998). As mentioned above, the ceramic assemblage in all four zones had a degree of regional variation and affiliation. However, Black and Red Ware was common to a great extent, becoming the companion of megalithic monuments and providing a fundamental link with Iron Age settlements. While the megalithic sites of Peninsular India are associated with Russet Coated Painted Ware, the Vidarbha region had Micaceous Red Wares and northern Indian sites are often associated with Painted Grey Ware. Graffiti marks appeared on pottery from the Harappan period and some similar markings became common in megalithic sites, both in settlements and burials. At Kodumanal, the ceramics have both Tamil Brahmi and non-scriptural graffiti marks, suggesting the owner's and potter's marks respectively (Rajan 1994: 116).

5. The nature of the remains of the deceased

Most of the megaliths contain fragmentary post-burial remains or cremated skeletal remains but sometimes lack any such evidence. Only a few reflect the primary disposal of the dead. Evidence of multiple simultaneous burials, or burials reopened to accommodate new remains are also found (Deo 1973b; Mohanty & Walimbe 1993). There is bias in terms of age and sex. Sub-adults and adults aged 18-35 years dominate. Although child burial predominated during the Neolithic-Chalcolithic periods in Peninsular India, in the megalithic period there was a negligible percentage of child burials (Mohanty & Walimbe 1993, 1996). This probably suggests that burials were not accorded to everybody in the society, or within a settlement. In addition to high status individuals, those suffering traumatic or untimely death were given more attention (Mohanty & Walimbe 1993, 1996). In the case of secondary burials, fragmentary bones were either collected from the immediate burial or the cremated residue or, in the case of unnatural deaths, the body was exposed to natural forces and buried later (Leshnik 1974: 1; Mohanty 2005). Evidence for cremation is also found at some sites (Walimbe *et al.* 1991; Walimbe 1992).

In comparison to the Neolithic-Chalcolithic phase in Peninsular India, during the Iron Age there was a shift in the type of locality selected for the burials. In the earlier period they are found within the settlement whereas in the latter they are found away from habitation, either scattered in the neighbourhood or in a designated cemetery. At times, the imposing burial monuments, which are visible and recognizable from a distance – particularly in the absence ofobvious habitation nearby – seem to dominate the landscapes. This may be the reason that burials sites outnumber habitation sites in the archaeological record.

6. Conclusion

The demographic profile shows a gradual expansion of settlements both in size and number around second half of the 1st millennium BCE, with the formation of confederations for self-protection and the safeguarding of specialized occupations within the various eco-zones. This had impacts on social investments, one of which seems to be the elaboration of the megalithic burial system compared to that of the preceding Neolithic-Chalcolithic periods. The multi-dimensional growth saw the population

surge, and the emergence of local crafts increased interactions between various regions leading to long-distance trade and communication. This is visible in the wide distribution of specialized artefacts like copper and high-tin bronze objects, semi-precious stone beads and ornaments of the period (Dikshit 1969; Deo 2000; Mohanty & Thakuria 2016; Mohanty 2017). Evidence from the Early Historic period at megalithic sites like Kodumanal shows an active participation of spice growers in long-distance supply. The highly skilled workers at the lapidary manufacturing centre at Mahurjhari and resulting economy seem to have contributed to the presence of rich burial goods there in comparison to megalithic sites elsewhere in the region and in the subcontinent (Deo 1973b; Mohanty 1999, 2003, 2017; Vaidya & Mohanty 2015).

Mahurjhari Megalithic Site (India)

Rabindra Kumar MOHANTY

At Mahurjhari there are 11 cemeteries with about 365 remaining stone circles (many were destroyed) dispersed surrounding the settlement at a distance of 1 to 2 km. Each cemetery has between 5 and 80 burials, placed in clusters separated by spaces. Each cluster includes between 3 and 12 burials of different shapes and sizes, suggesting the presence of family burials and cemeteries belonging to specific communities, each with a particular ideology (Mohanty 2018). The excavation of a cluster of four burials in locality 'A' at Mahurjhari showed that the northeast quadrant was dedicated to several fragmentary skeletal remains from many individuals, accompanied by minimal offerings, while the central space was occupied by the principal burial of a single individual (Mohanty 2005b). The layout, configurations, location in the landscape and disposition of stone circles in the 11 cemeteries surrounding the settlement clearly show social and economic dichotomy in various ways. Each cemetery had several clusters, frequently placed close to each other, of different sizes and exhibiting different degrees of passion in terms of the burial construction. One cluster in cemetery 'A' at Mahurjhari was excavated to investigate the evidence, if any, for possible conceptual relationships.

All four burials excavated in the cluster showed the placement of secondary skeletal remains of many individuals, with some offerings, in the northeast quadrant close to the periphery. The pit in the centre normally contained the primary burial, with a major concentration of artefacts. The pits were covered

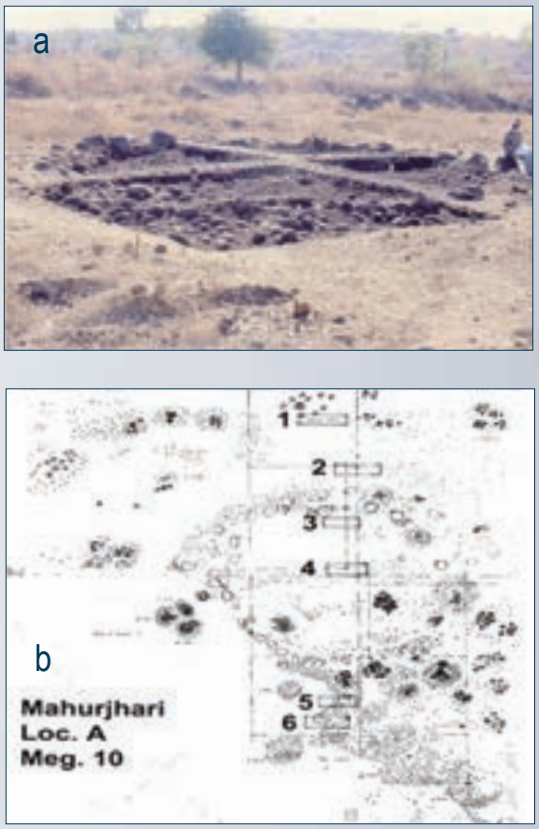

Fig. 1 – a. Megalith No. 10, Loc A (Photo: R. K. Mohanty); b. Plan of burials within and outside Meg. No. 10 Loc. A.

with fine silty black soil, which is normally available in the nearby bodies of water created during the post-monsoon months from December to May. The majority of the burials seem to have been constructed during the post-harvest period when extended family or community can assemble for disposal of the dead, to exchange social obligations, and to participate in the feasting, which remained an integral aspect of such social functions (Mohanty 2005b, 2015). Both the cluster and the surrounding burials seem to have belonged to the same family or the extended family in the community. Isolated burials excavated in other cemeteries appear to be different with regard to their character and content (Deo 1970; Mohanty 2018). In many sites in Vidarbha, some of the large megaliths have cup marks on one or more peripheral boulders, in varying arrangements. These were probably made as annual oblations to ancestors, as is the case even today. The configurations [of the cup marks?] may memorialize past lineages and societal connectivity.

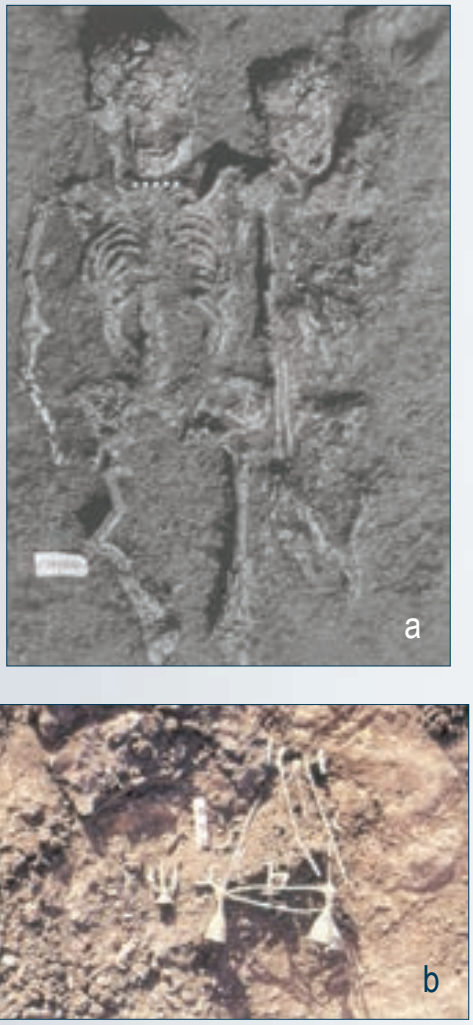

Fig. 2 – a. Skeletal remains at Mahurjhari; b. Copper tripod from burial at Mahurjhari (Photos: R. K. Mohanty).

Bhagimohari Megalithic Site (India)

Rabindra Kumar MOHANTY

The investigation of megaliths at Bhagimohari was designed to explore socio-economic aspects, taking into account the use of landscape, all the visible morphological features such as the nature of peripheral boulders, dimensions, orientation, filling material, and architectural features of the burials, along with growth of vegetation, cup marks, an unusual assembly of filling stones, the arrangement of boulders in relation to the topography, and the amount of filling in relation to the surrounding area (Mohanty 1993, 2015). There were multiple variations in the surface treatment of the stones and grouping and clustering in the cemetery suggests a complex society with varied economic and hierarchal status. A total of 332 cairn circles were documented and can be categorized into ten subdivisions based on their observable features, as follows:

A. Simple cairn circle without peripheral boulders (N=87).

B. Cairn circles with peripheral boulders (N=154).

C. Cairn circles similar to B, having a distinguishable chamber formed by the arrangement of larger boulders or slabs at some locations within the burial (N=44).

D. Cairn circles having chambers, with a menhir either in the centre or near the periphery (N=7).

E. Cairn circles with large peripheral boulders, with multiple chambers within the burial, and with or without menhirs (N=2).

F. Stone circles with a double row of peripheral boulders and having usual fillings (N=8).

G. Cairn circles having a huge pile of loose pebbles on the top (without clay filling). This kind of filling of the burial architecture is common at Khairwada (IAR 1981-1982: 51-52) (N=1).

H. Burials without peripheral boulders but where the top is filled with loose pebbles and without a clay filling (N=9).

I. Large cairn circles with peripheral boulders having loose pebble filling on the top. These have one or several funnel-shaped depressions in the centre with or without a chamber. The depressions appear to have occurred due to decay of underlying perishable material – possibly a wooden coffin, like the stone example found at Borgaon (N=17).

J. Cairn circles with peripheral boulders and a loose pebble filling on the top, and having one or several depressions near the centre, with or without chambers, and with a menhir. These combine many of the characteristics seen at this site (N=3).

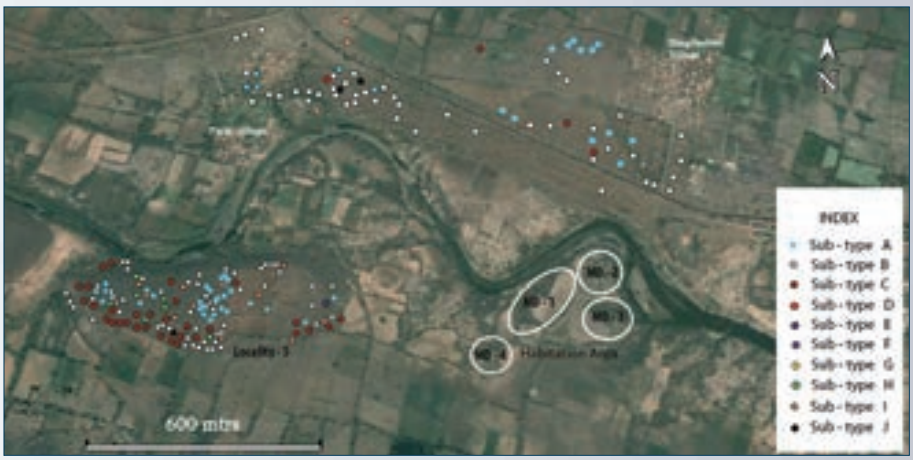

Fig. 1 – Map showing Bhagimohari burials.

Even though all the types mentioned above are found in the cemetery, no two burials were exactly similar in their shape, size, or the amount and nature of deposit they contained. The clustering of some of the sub-types is confined to a particular locality, suggesting a complex demarcation of space within the burial ground, perhaps for a family or community on a preferential basis (Mohanty & Vaidya 2017). Variations in the basic types and blends of types forming separate combinations show the dynamic and vibrant social behaviour emerging out of ideological conflict or complex social relationships and identity. Descriptions of the types of megaliths at a site do not therefore, merely provide morphological features, but reveal thr underlying socio-political-economic significance of the monuments and the people who created them.

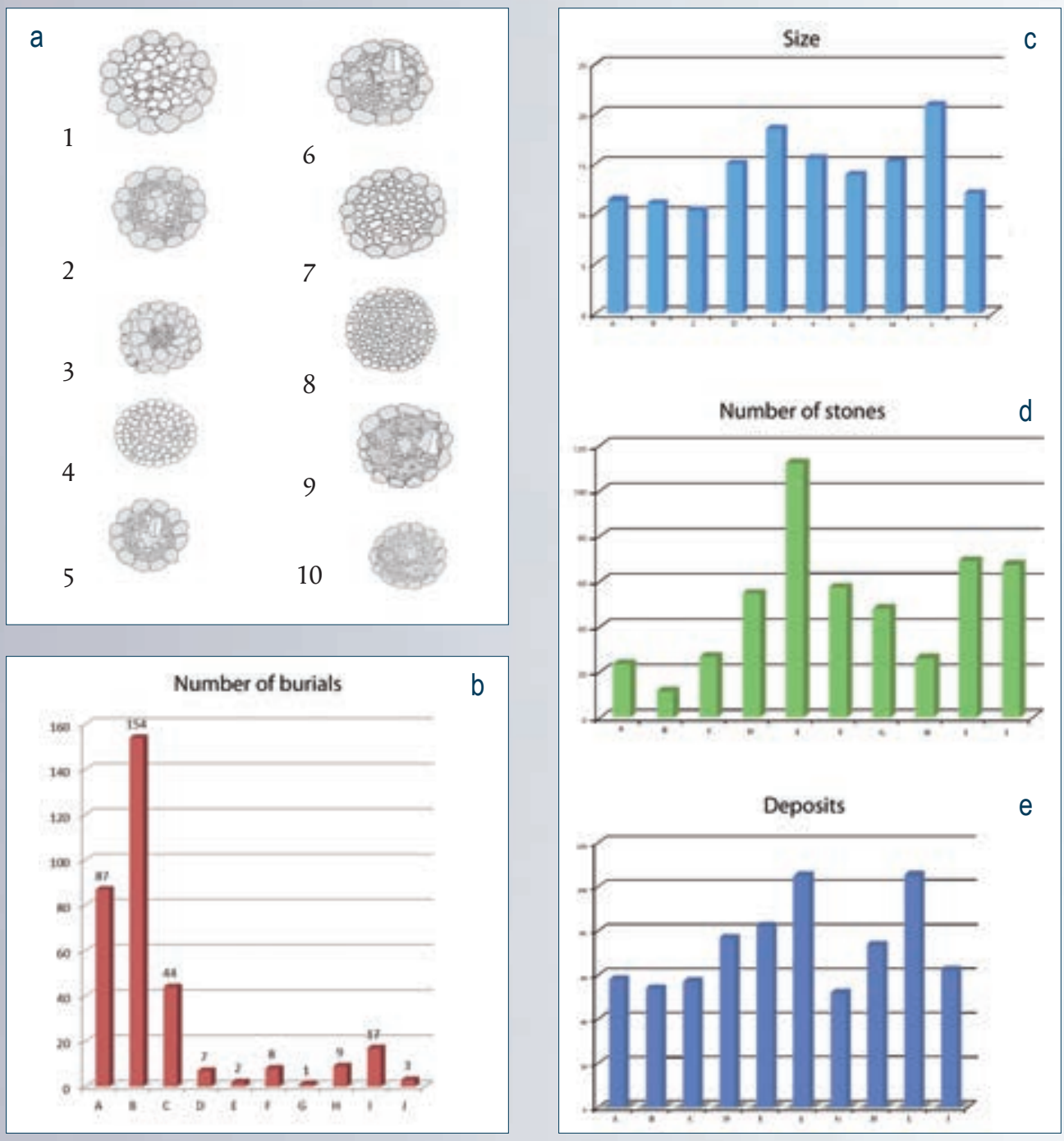

Fig. 2 – a. Ten sub-types of stone circles in Bhagimohari; b. Number of each sub-type; c. Size variation in each sub-type; d. Variation in use of stones in each sub-type; e. Variation in deposit of each sub-type.

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Virag SONTAKKE

Distributions and disparities in the megalithic burials of Vidarbha (India): a scrutiny

Abstract: Vidarbha is one of the most important regions of the state of Maharashtra, India. Archaeologically, it is known for its megalithic monuments, which are concentrated in the Nagpur district. Megalithic investigations carried out to date mention primarily stone circles and cairns as the basic megalithic types prevalent in the region, with sporadic reports of menhirs and dolmens. Recent explorations in the eastern part of Vidarbha, specifically along the banks of the Wainganga river, have brought to light hundreds of megaliths which not only display immense typological variety but also include novel forms hitherto unknown in Vidarbha. Their construction patterns, deposits, outer architectures and, especially, their inner architectures, differ from the typical megaliths reported from Nagpur district. This divergence is clearly of great significance. It can be postulated that the unique character of these sites relates to complex burial practices prevalent amongst the megalithic communities along the banks of the Wainganga and suggests that the region had a distinct megalithic tradition that differed from that in the core region of Vidarbha. It appears that regional variations, probably together with ecological adaptations, were in vogue during the megalithic period in Vidarbha. This paper documents and analyses the significant typological variations amongst the megaliths of Vidarbha and their implications.

Keywords: *megaliths, typology, architecture, Vidarbha, stone circles, cairns, dolmens*

1. Introduction

Megalithic monuments are found across the length and breadth of India. A glance at the distribution map of these remains indicates that they occur in regional 'pockets' These pockets demonstrate local traits in both their cultural and typological signatures. One such megalithic cluster is found in the region of Vidarbha. The typo-cultural fingerprint of the Vidarbha megalith group makes it a distinct class. Several works have compared the unique megalithic culture in Vidarbha with the remains in other parts of India, but studies dealing with variations within this large geographical unit are somewhat lacking. The present paper constitutes one such attempt, and aims to identify and interpret micro level disparities and similarities within the broad umbrella of the 'Vidarbha Megaliths'.

2. A brief review of megalith investigations in Vidarbha

Inquiries relating to megalithic monuments in India started in the 18th century, mostly in Peninsular India. Colonel Colin Mackenzie, the Surveyor General of India, was the first to notice the megalithic remains in South India between 1796 and 1807 (Paddaya 2006: 17-18) but John Babington undertook megalithic investigations in 1819 at Chattaperamba in Kozhikode district, Malabar coast, and published the first detailed report of this study in 1823 (Babington 1823: 324-30). Soon after this, various other megalithic sites were brought to light, mainly by the British officials. The first report of megaliths in Vidarbha was made in 1849 by Reverend Stephen Hislop, who is also credited with the first excavation of a megalithic burial at Khapa in Nagpur district, Vidarbha (Smith 1888: 207). Major George Godfrey Pearse continued the tradition, excavating stone circles at Wurregaon near Kamptee containment in Nagpur district in 1867. In 1869 he published the first ever report on the megaliths of Vidarbha in *The Journal of the Ethnological Society of London* (Pearse 1869: 207-17). Around the same time, John Henry Rivett-Carnac also excavated over a dozen stone circles (barrows) at Junapani and prepared the first detailed map of the megalithic burials of the area (Rivett-Carnac 1879: 1-16). In 1869, J.J. Carey documented 150 stone circles (mounds) at Khairwada and excavated a few (Carey 1871: 238-39). In the last decades of 19th century, C.L.R. Glasfurd (Sawant 2015: 410-23), Alexander Cunningham (1966 (reprint): 121-60) and Henry Cousens (1971: 3-24) carried out explorations in Gadchiroli, Chandrapur and Nagpur respectively. As a result of these investigations, Vidarbha secured a place on the megalithic map of India. In the 20th century, reports of megalithic finds in Vidarbha continued with new enthusiasts exploring the region. In 1933, G.A.P. Hunter reported and excavated stone circles at Mahurjhari, focusing on the identity of the builders of the megaliths and uncovering similarities, if any, with their European counterparts (Hunter 1933: 30-35). This was a defining moment for the Vidarbha megaliths as for the first time an effort was made to go beyond identifying the megalithic types and move towards an understanding of the associated culture. It also marked the beginning of comparative studies of Vidarbha megaliths.

A few decades after Independence there was a surge in megalithic studies focusing on Vidarbha. Interestingly, State Universities and associated inividuals took a special interest in exploring, documenting and excavating megalithic remains in the region. This led to the discovery and subsequent excavation of habitation sites along with megalithic burials. In 1960, Bal Krishen Thaper, from Archaeological Survey of India, excavated the megalithic burial site of Junapani near Nagpur (IAR 1961-1962: 32-33) but it was painstaking research by S.B. Deo and his team, the excavators of numerous megalithic burials and habitation sites, which established the relationship between megalithic burials and the Early Iron Age culture of Vidarbha. Never before had such an association been considered. In a span of 20 years Deo excavated Takalghat Khapa (Deo 1970: 3-12), Mahurjhari (Deo 1973b: 5-14), Borgaon (IAR 1980-1981: 40), Naikund (Deo & Jamkhedkar 1982: 12-13), and Bhagimaheri (IAR 1982-1983: 61-62; 1983-1984: 57-58). His work not only brought new insights into the megalithic culture of Vidarbha but also marked a paradigm shift in the discipline of megalithic studies, which he moved beyond the traditionally studied parameters, opening up novel possibilities for research aimed at understanding the megalithic community and their activities as a whole. His excavation reports dealt with subjects like technology, trade mechanisms, ecological adaptations, chronology, art and craft specializations, the use of scientific approaches to the study of megalithic remains; topics which were hardly talked about before this.

The last two decades of the 21st century saw a new generation of investigators becoming involved in detailed studies relating to various facets of the megalithic culture of Vidarbha, such as bead production and economic life (Thakuria *et al.* 2015: 188-203), regional variations (Sontakke 2014a: 188-231, 2014b), society and settlements (Vaidya: 2014: 68-80), ceramic traditions (Shete 2018), burial architecture (Thakuria 2009; Sontakke 2014b), and metal and metallurgy (Roy & Krishnan 2016: 86-104). These studies built upon the research foundations laid down by earlier pioneers and provided a new perspectives on the megalithic culture of Vidarbha. The new research drew on the results of excavations of new sites as well as the re-excavation of certain old ones. The sites of Mahurjhari (Mohanty 2003c),

Dhamnalinga (IAR 2000-2001: 97-107), Vyahad (Ismail 2006), Malli (Sontakke 2015), Hirapur (Pawar & Kim 2012), and Khopdi (Pawar *et al.* 2014) were excavated during this period.

3. The distribution of megaliths in Vidarbha

In terms of the diffusion of megaliths within India, the number of megalithic burials increases from north to south, particularly north of the River Narmada. The state of Maharashtra has abundant megaliths that together constitute a separate megalithic pocket with particular typological affiliations and cultural material. The megaliths of Maharashtra are principally concentrated in the eastern part of the state which is geographically and administratively identified as Vidarbha (19° 21' N; 76° 80' E). Geologically, Vidarbha lies on a basaltic plateau which extends to the city of Nagpur, while its eastern part lies on Gondwana formations. This diverse geophysical situation offers a variety of resources, making Vidarbha an attractive area for the megalithic settlers. Vidarbha currently comprises eleven administrative districts which are divided into two divisions, namely Western and Eastern Vidarbha. Western Vidarbha comprises Buldhana, Washim, Akola, Yavatmal, and Amravati districts whereas Eastern Vidarbha includes the districts of Nagpur, Bhandara, Gondia, Gadchiroli, Wardha and Chandrapur. Megaliths are found only in Nagpur, Wardha, Gondia, Bhandara, Gadchiroli and Chandrapur, where they are located away from settlements on barren land or rocky outcrops, near the source of a river or *nulla* (rain gully), and largely covered with vegetation.

Stone circles and cairns are the principal type of megalithic burials found in Nagpur and Wardha districts. By contrast, recent research carried out in Gondia and Chandrapur districts, presents a very different and quite astounding picture of megalithic typology. In these districts, in addition to stone circle and cairn circles, several new forms were recorded, including menhirs, cists, dolmens, and flat stones. The materials used to construct these megaliths also differed from that used in the Nagpur and Wardha districts. These striking deviations are not only seen in the broad typology but also in the numerous

S.N.	Features	Zone A	Zone B
1.	Geomorphology	Basaltic formation overlying Gondwana and Archean formation.	Gondwana formation.
2.	Political/Administrative divisions	Nagpur and Wardha districts.	Gondia, Bhandara, Chandrapur and Gadchiroli districts.
3.	Hydrology	Wardha, Kanhan, Nag, Venna, Kolar etc.	Wainganga and numerous tributaries and lakes.
4.	Rainfall	1100 mm	1400 mm
5.	Soil cover	More suited for cotton cultivation.	More suited for paddy cultivation.
6.	Mineral wealth	Iron and coal deposits.	Major deposits of iron, manganese, bauxite, coal.
7.	Vegetation	Less forest cover	Densely forested.

Fig. 1 – Zone based classification of Vidarbha Megaliths.

external and internal architectural variations. It is important to bear in mind that, despite administrative, geological and distributional variations, the megaliths from the whole of Vidarbha are grouped together and designated the as the 'Megalithic Culture of Vidarbha', implying a uniformity of megalithic cultures across Eastern and Western Vidarbha with regard to their cultural material and typologies. Although the label is generally accepted, this is not the case. It is vital to examine the disparities present within the area. To facilitate a better understanding of local variations, the area under study was divided into two zones: A and B. Nagpur and Wardha districts form Zone A whereas Gondia, Bhandara, Chandrapur and Gadchiroli districts together constitute Zone B. The characteristic features of the zones are described in **figure 1**.

3.1 Zone A

Politically and administratively, Zone A comprises Nagpur and Wardha districts. Its chief geological formation is the igneous Deccan Traps. The zone is drained by the rivers Wardha and Kanhan and their tributaries. Soil is typically dark in colour due to presence of the mineral montmorillonite and is commonly known as' black cotton soil'. This soil swells while wet and when dry it develops deep cracks. Although difficult to work, it is very fertile and conducive to the cultivation of cotton, jowar, wheat, ground nuts and lentils. Zone A has numerus megalithic burial and habitations sites (see **Fig. 2**); characteristic megalithic types are stone circles (**Fig. 3**) and cairns (**Fig. 4**).

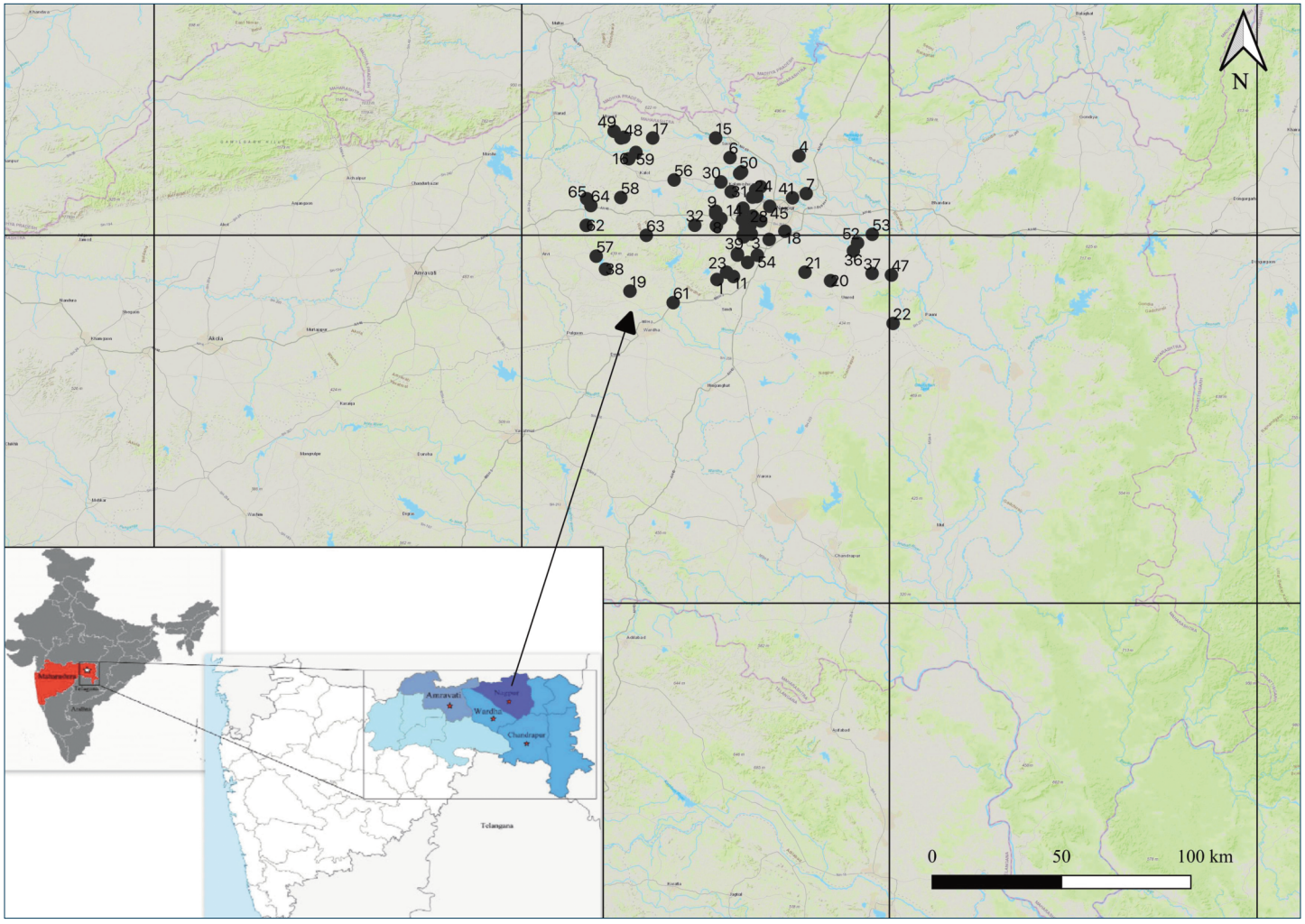

Fig. 2 – Cartographic distribution of burial sites in Zone A (Nagpur and Wardha District).

Fig. 3 – Stone circle at Nipani-Thugaon, Nagpur (Photo: V. Sontakke).

Fig. 4 – Cairn at Dharti-Murti, Nagpur (Photo: V. Sontakke).

3.2 Zone B

Zone B includes the districts of Gondia, Bhandara, Chandrapur and Gadchiroli. The zone is bordered by Madhya Pradesh to the north, Telangana to the south, Chhattisgarh to the east and Western Vidarbha (Maharashtra) to the west. Topographically, Zone B is a fertile plateau with an average altitude of 300-400 m above mean sea level. The major rivers of the region are the Wardha and the Wainganga. Zone B is distinct in having numerous lakes, ponds and reservoirs. Bhandara district alone comprises 15 000 lakes, reservoirs and ponds. The soil here is rich and fertile and is derived from granite, schist, gneisse and sandstone. The zone has a thick evergreen forest cover replete with faunal bio-diversity. Significantly, Zone B is highly rich in minerals like coal, limestone, manganese and especially iron ore deposits, which occur in almost all the districts. The zone is notable for its numerous megalithic remains (**Fig. 5**), however unlike in Zone A, the majority of sites in Zone B are known only from surveys and only three sites have been properly excavated. This may have a significant bearing on the information currently available about the megalithic burials in Zone B, which include dolmens, menhirs, cists (**Fig. 6a**), capstones (**Fig. 6b**), cairns and stone circles. Typological variations include the presence of single/multiple cists (**Fig. 6c**) and single/multiple menhirs inside the cairn circles and stone circles, dolmens inside the stone circles and single/multiple capstones above the cairns (**Fig. 6d**).

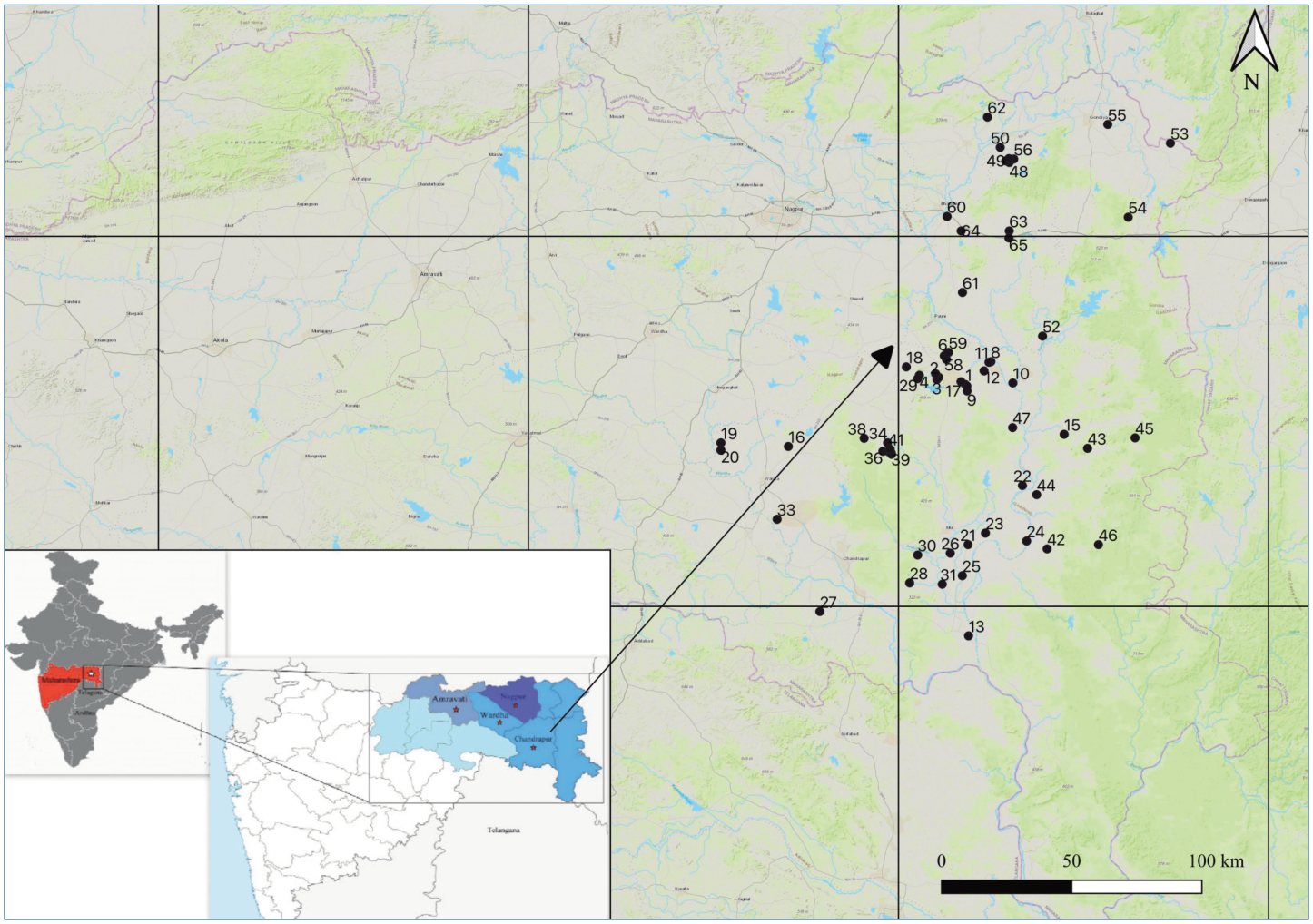

Fig. 5 – Cartographic distribution of burial sites in Zone B (Gondia, Bhandara, Chandrapur and Gadchiroli Districts).

Fig. 6 – Malli, Gondia : a. Cist; b. Capstone; c. Main cist connected with multiple small sub-cists inside the stone circle at Malli; d. Multiple capstones above the cairn (Photos: V. Sontakke).

3.3 Observations

Archaeological research carried out in the last few decades has provided new insights pertaining to the megalithic culture of Vidarbha. A review of these works by the author highlighted the presence of distinct megalithic traditions within the region and prompted the present zone-based identification of these diversities (**Fig. 7**), specifically with regard to the mode of disposing of the dead, mortuary practices, and burial goods. These were documented for the first time in the present study. The characteristic features of megaliths in Zone A and B are briefly described here (**Fig. 8**).

As elsewhere, the geomorphological formations in both zones played a significant role in defining the attributes of the megalithic culture in each area. Zone A rests on the igneous formation of the Deccan Traps while Zone B has the Gondwana formation. The two different geologies meet in the Nagpur district: the eastern part of Nagpur has Gondwana formation whereas the western part, including Wardha, falls within the basaltic formation. The megalithic sites in Zone A are concentrated in the western part, on the Deccan Traps. with fewer megalithic remains in the eastern part. This suggests a specific avoidance of the Gondwana formation

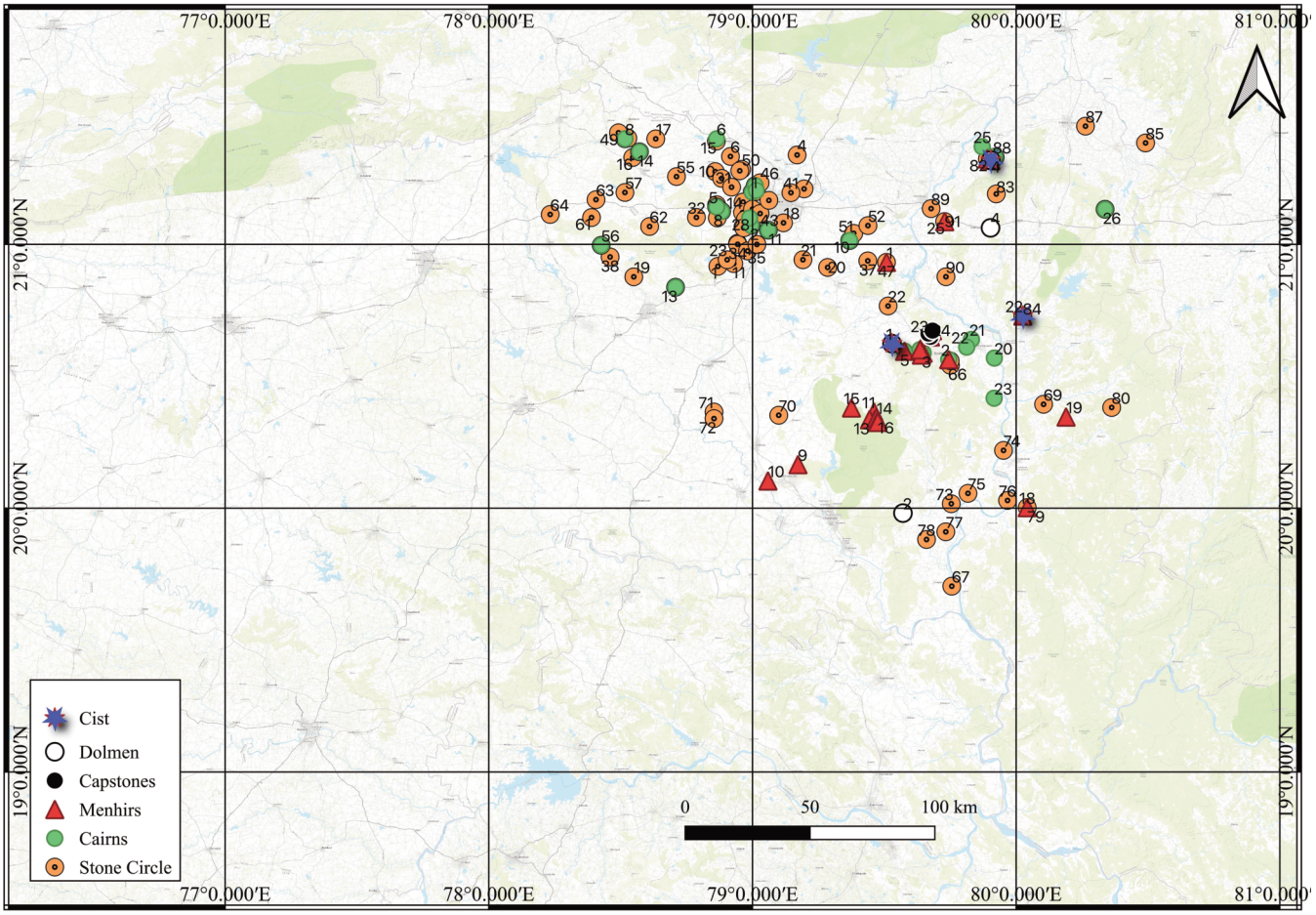

Fig. 7 – Zone-based variations in typology.

Characteristic Features	Zone A	Zone B
Number of excavated burial sites	20	3
Typology	Mostly Stone Circle and Cairns	Menhirs, Dolmen, Cists, Capstones, Cairns and Stone circles
Raw material	Deccan trap, basalt	Laterite, gneisses, sand stone
Inner architecture	Rare	Plenty
Burial appendages	Plenty	None
Burial pottery	All megalithic pottery types	Ill fired coarse-gritty red ware
Skeletal remains	Plenty	Negligible
Horse remains and ornaments	Present	Absent

Fig. 8 – Characteristic features of megaliths in Zone A and Zone B.

by the megalithic communities of Zone A, a very significant observation that indicates local preferences. This fact is also strange, as we can observe the preferential use of raw materials from the Gondwana formation by the people of Zone B. Once again, this calls for a comparative scrutiny of the megalithic remains in both zones to see if it is possible to attribute any socio-religious reasoning behind the selection and avoidance of Gondwana formations by the megalithic communities of the respective zones.

More generally, it appears that the megalithic societies of Vidarbha sought to make full use of their natural environment. The location of the megaliths on non-agricultural lands and not on the fertile ones demonstrates an intention to make the best use of the lands at their disposal. The exploitation of local resources also ensured easier accessibility and required less effort. Locational analysis and observations of the landscape around the megalithic burial sites suggests that the availability of raw material in the vicinity was an important factor for the megalithic community in both the zones and may have been one of the major criteria for site selection. This is evident at Mahurjhari, Raipur, Junapani, Vadegaon, Khapa, Malli, and Satona where in each case, the source of raw material was close to the burial site. At all these sites, large boulders and pebbles could be easily extracted from the open sources nearby, and these were used to construct the burials. For example, boulders of the Deccan Traps, which were readily available in Zone A, were the chief material used to construct burials in that zone, whereas in Zone B, where laterite formations are prolific, these were used for building. The Gondwana rock formation, visible across the entire area of Zone B, also produced gneisses, schists, and sandstones. (Dikshit 1986: 16). Use of all of these for burial making is clearly visible in Zone B. It is perhaps no surprise that the raw material typology of megaliths in Zone B is as rich and diverse as the rock formations present there. This diversity of raw material is lacking in the megaliths of Zone A. Despite having access to rock slabs from the Gondwana formation, the megalithic communities in Zone A displayed a strict adherence to the use of boulders, pebbles and soil and an almost complete avoidance of rock slabs in burial making. This decision restricted their burial typology to just stone and cairn circles. This is even more clear when we see that, besides copious stone and cairn circles, there are only a few menhirs reported from this zone. The stone and cairn circles are the prominent megalithic types in Zone A. In contrast, in Zone B a variety of megalithic types, like menhirs, dolmens, cists, and flat stones were built along with the traditional stone circles.

Besides these well-structured and well-defined types, micro variations within the same types were also documented at Bhagimaheri, Kharwada in Zone A and at Malli in Zone B. These selective, minor variations or 'localised traits' were expressed in the form of variations in raw material and inner architecture, the presence/absence of burial appendages, and the type of skeletal remains, etc. The addition of these localised traitsto the classical typology of megaliths, especially with respect to the inner architecture, created a vast array of experimental and indeterminate types in both the zones. The significant diversity of inner architectures demands further attention and analysis. Research has demonstrated that the construction of a megalith is a community act that requires labour, time and money (Mohanty & Walimbe 1996: 136-49). Archaeological evidence also suggests that ceremonial burials were not accorded to all people but only to a select few members of society who died unnatural deaths (Mohanty & Walimbe 1996: 136-49). Creating the inner architecture requires intensive labour – far more than that needed for a basic megalithic burial. Variations in the inner architecture may therefore shed light on the socio-economic status of the deceased and their position in the society (Binford 1972: 208-39). We can postulate that the megaliths with inner architecture probably belonged to the more important or wealthier section of the society who could afford the high costs associated with construction. It then becomes imperative to pose a question about the comparative socio-economic status of people in Zone A and Zone B. Since the construction of inner architecture in megalithic burial is an extravagant affair, and given that this practise was more common in Zone B, might this indicate that the megalithic communities in this zone were wealthier than their contemporary counterparts in Zone A? This is perhaps too great an inference, given that there is a possibility that the construction of inner architecture does not solely

depend on the economic status of the maker but also on his beliefs and cultural identity. It is therefore possible that, despite being affluent, the people of Zone A, cared less about investing in inner architecture due purely to their cultural and religious beliefs, which were different from those of the people in Zone A. Ethno-archaeological studies have also proven that every tribe with a megalithic tradition has its own processes and influences related to burial construction and accessories and that the variety of megaliths depends primarily upon the social customs and beliefs of the society (Devi 2014b: 398-407). It is also acknowledged, however, that mere beliefs cannot erect a costly burial. Despite having inner architecture, the megalithic burials in Zone B are devoid of burial accessories. It is not clear whether this was a way to economise and counterbalance the extra cost required for inner architecture. There appears to be a dynamic web of beliefs and economic conditions at play behind the construction of inner architecture. Furthermore, there may also be another explanation for the lack of inner architecture at most of the sites in Zone A: the constraints of the raw material. The rocky slabs required for the type of inner architecture witnessed in Zone B were absent in Zone A.

The megaliths in Zone A displayed a greater intensity of burial goods. Excavations brought to light a variety of grave goods ranging from iron implements (axes, chisels, adzes, nail pares, knives, sickles, plough-shares, etc.), copper objects (bowls, bangles, bells, horse gear, etc.), gold artefacts (rings, spirals), semi-precious stone beads (agate, jasper, carnelian, chalcedony, chert, etc.), stone household objects (pounders, mullers, pestles) along with ceramics like typical Micaceous Red Ware, Black and Red Ware (with or without painting), Red Ware (with or without paintings) and Black Burnished Ware. Conversly, excavations of megalithic burials in Zone B presented a completely different scenario with no burial accessories recovered except pottery and that, too, was of a different type to that found in Zone A. In Malli, eight megaliths were excavated and none yielded any kind of burial furniture. However, each megalith was extensively decorated, with internal architecture like central cists, multiple cists, small sub-cists, flat stones, etc. Pottery recovered from the megaliths at this site included badly fired course Red Ware with a gritty surface, a ceramic that was particularly used for burial rituals in Zone A. Many megaliths of Zone A yielded complete or fragmentary skeletal remains both inside and outside the periphery of the circle. Entirely the opposite situation was encountered in Zone B, where most of the megalithic burials appear to be symbolic in nature; no complete skeleton has yet been recovered from any of the excavated sites. Also, none of the megaliths from Zone B is yet associated with horse skeletal remains, nor have they contained any metal horse ornaments.

Besides typological variations, disparity is also seen in the number of burials present at different sites. The site of Khairwada includes 1400 megaliths, Mahurjhari has over 300 megalithic circles, Raipur and Junapani have 250 and 150 megalithic burials respectively, while 396 megaliths are reported from Malli. The presence of so many megaliths at certain places warrants some explanation, and this may lie either in the continuous usage of the burial site by many generations or in the use of a single site by many communities at the same time. Both scenarios suggest the importance to the megalithic people of specific landscapes and sites.

Attempts have been made to study the hierarchical order of habitation sites based on calculations either of estimated population or settlement size but such studies are lacking in relation to burial sites. With regard to habitation sites, a study by Moorti (1994) regarding site hierarchy and regional centres in South Indian megalithic sites is an exceptional piece of work but similar conjectures, i.e., taking the number of burials present as an indicator for site hierarchy, cannot be applied to burial sites because it cannot be established whether the site represents the burials of just one or multiple settlements. Yet it is very clear that there are two categories of burial sites: those with numerous burials, like Khairwada, Junapani, Raipur, Mahurjharai, Malli, and Tilota-Khairi, and those with comparatively fewer. It is likely that sites with a greater number of burials accommodated a larger population. So many burials must have taken a couple of centuries to construct and are also indicative of a long period of usage of the site. In this context it is interesting to note that those sites encompassing greater numbers of megalithic burials also have a settlement nearby. The construction of so many megaliths probably

necessitated habitation sites in the vicinity to accommodate the people who supervised or worked on the construction since megalith making was a communal act. There are also small burial sites within a short radius of large sites like Mahurjhari and Malli. The large sites were probably primary centres for first order settlements while their smaller neighbours were secondary sites. Thus, the number of megalithic burials present may provide insights into the hierarchy of sites in general and the megalithic culture of Vidarbha in particular.

One major disparities observed was the number of excavated sites in each zone. Whereas Zone A had numerous systematically excavated and well-documented megalithic sites, Zone B was not properly explored in the 20th century and, even in the 21st century, only a handful of sites have been excavated. Zone A was the focus of megalithic studies in the last century, owing to the discovery of numerous potential sites which kept the scholars preoccupied with excavations. This led to the establishment of a huge database with respect to the megalithic culture in Zone A, such that these sites came to define the main characteristics of 'Vidarbha Megalith Culture'. Any deviation was considered an exception. Explorations in Chandrapur, Gondia, Bhandara and Gadchiroli districts in the 21st century opened up the possibility of identifying megalithic signatures in regions other than Nagpur and Wardha. The findings from these districts were striking in their non-adherence to the so-called 'Megalithic Culture of Vidarbha' defined purely on the finds from Zone A, creating a need to re-address the characteristic features and regional variations present within the Vidarbha megalithic complex.

4. Conclusion

With a background of megalithic investigations stretching over more than 170 years, the megalithic culture of Vidarbha is a deeply researched aspect of Indian archaeology. In this long period of research, over 100 megalithic burial sites were reported from the region. Hidden within the plethora of finds, the distribution of megaliths showed a disparity indicating that, within the apparent uniformity, there was underlying diversity. This led to the identification of two distinct zones, A and B, which clearly show marked differences with respect to typology, inner architecture, the nature of skeletal remains, burial accessories, and filling material. The current study clearly indicates a distinct regional character within the megalithic culture of Vidarbha, based on environmental and cultural adaptations.

Although cultural affiliations and connection between the zones were observable in the form of the ceramic assemblage, the differences were much greater than the similarities. Moreover, the typological resemblance of the megalithic tradition of Zone B to the neighbouring Chhattisgarh megalithic complex cannot be altogether ignored. Similar megaliths, like capstones, cairns and stone circles without burial accessories are reported from sites in Chhattisgarh (Sharma 2000: 21-28). Comparison of the megaliths of Zone B with those of the adjoining area of Chhattisgarh show parallel megalithic traditions extending far beyond modern political boundaries. The divergent typological features, along with internal architectures, different processes of megalithic constructions, use of distinctive materials and treatment of remains indicate the 'independent identity' of megaliths in Zone B, particularly on the eastern side of the Wainganga river. It is important to note here that this hypothesis is based on the recent small-scale research carried out on the megaliths of Zone B. Further research may add new dimensions to this subject.

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Shantanu VAIDYA, Rabindra Kumar MOHANTY

Social organisation of the megalithic people in Vidarbha, Maharashtra (India)

Abstract: The 'Megalithic period' in Vidarbha is contemporary with the Early Iron Age. The burials of the period are mostly concentrated in the Wardha-Wainganga divide, i.e., the present-day districts of Nagpur, Wardha, Bhandara and Chandrapur of the region, in the eastern part of Maharashtra, India. The subsistence and settlement patterns of the people who built the megaliths had produced a degree of social and economic dynamism among the community that is clearly reflected in the burials. Statistical analysis of these burials gives an idea of the emerging classes and social complexity.

Keywords: *megalithic Vidarbha, grave goods, statistical analysis, social classes*

1. Megalithic culture in India

The 'Megalithic culture' was first identified in Kerala by Babington (1823), and further studies by Meadows Taylor, Hislop, Carnac, Pearse, Rea, and Hunter brought to light many sites in different regions. The common practice of using huge stone settings led to the term 'megalithic burials' and the culture became known as the 'Megalithic culture' (Mohanty & Selvakumar 2002). Later, the excavations by Wheeler (1948) at Brahmagiri confirmed the chronological association of the megalithic burials with the Early Iron Age. In the Indian subcontinent, the use of iron began somewhere around the early part of the 2nd millennium BCE and was widespread by the mid 2nd millennium BCE (Tewari 2003). The 'Megalithic culture' has an identity based on common cultural remains such as burials within cairn circles, stone circles, dolmens, menhirs, and cists, but also ceramics (e.g., Painted Grey Ware, Black and Red Ware), iron objects, beads, and ornaments – all of which are also quite common at non-megalithic Early Iron Age sites in the region (see Tripathi 2001 for details).

2. Introduction to Vidarbha

The region of Vidarbha, in central India, forms the eastern part of the state of Maharashtra. It comprises 11 districts with the city of Nagpur, often referred also as the centre of India, as its administrative centre. The region has extensive forest cover of various types but also has fertile soils and a moderate climate suitable for the cultivation of most plants and crops. Vidarbha is drained by many rivers and their tributaries, including the Wainganga, Wardha, Penganga and Purna and part of the Godavari river system of Peninsular India. The

region is also known for its many rich mineral deposits including iron ore, coal and manganese.

Vidarbha has been inhabited since the Lower Palaeolithic period (IAR 1958-1959: 18, IAR 1959-1960: 31-32) but is known archaeologically for its widespread Early Iron Age/'Megalithic culture' (see **Fig. 1**), found mostly in the districts of Nagpur, Wardha, Amravati, Chandrapur and Bhandara. These societies continued to emerge and gradually manifested as Early Historic urbanization.

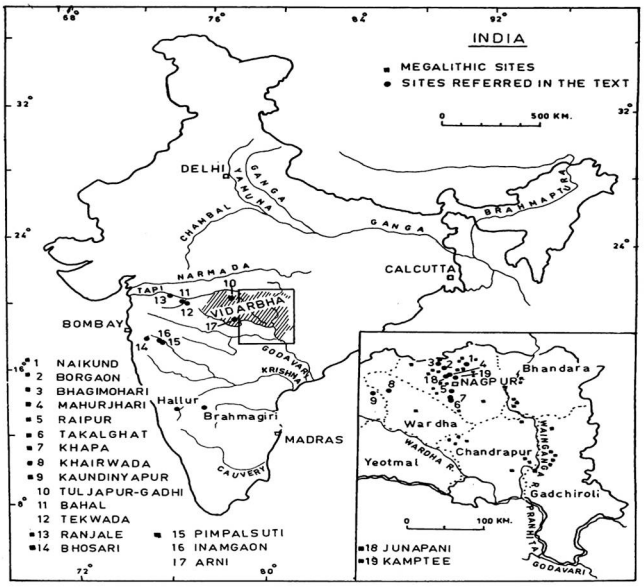

Fig. 1 – Vidarbha in India with major Early Iron Age-Megalithic sites (Modified after Joshi 1993).

3. Megalithic culture-Early Iron Age in Vidarbha

The foundations of self-sufficient villages were laid down by the early agro-pastoralists of South Asia who were a part of the Neolithic and copper using Chalcolithic cultures dated towards the end of the 4th millennium BCE and early 3rd millennium BCE, however the semi-complex nature of these societies is more widely and more visually evident from the Iron Age. In Vidarbha, Early Iron Age burial is mostly characterised by megalithic graves, mostly stone circles with cairn fillings (**Fig. 2**). Three site types can be observed: sites with burials only, sites with habitation and burial, and sites with only habitation (Mohanty & Joshi 1996).

The sites with only burials are the most numerous but, after excavation, both the burials and the settlements have shed considerable light on the lifestyles of the megalithic people, including their animal husbandry, lapidary, smithery, and agricultural practices as well as their burial practices (for details see Mohanty, this volume; Deo 1985; Vaidya 2014; Mohanty 2015). Recent studies of the 'Megalithic culture' of Vidarbha have, however revealed 16 new sites with habitation remains, which lack any visible

Fig. 2 – A general view of the stone circle type burial at Raipur (Photo: S. Vaidya).

burials (Vaidya 2014, 2016; Vaidya *et al.* 2015). A detailed analysis of the settlement pattern of these sites by the author suggests a trend towards the expansion of agriculture and an increasing complexity through the settlement of areas with desirable natural resources (see for details Vaidya 2014, 2016).

4. Analysis of mortuary remains for the identification of social structure in Early Iron Age Vidarbha

Analyses of mortuary remains were initially guided by ideas of primitive religions, body-soul relationships, and the fear of the life after death (Binford 1971: 6-29; Chapman & Randsborg 1981: 1-24) but the focus subsequently moved towards investigating social dimensions using a historical-distributional approach (Chapman & Randsborg 1981: 1-24). Goodenough (1965), Saxe (1970) and Binford (1971) first introduced the concept of social inference, with the examination of mortuary remains used to explore the social persona of the deceased (i.e., all their various social identities, carried even after death) as well as the composition and size of the social group to which they belonged, their status and responsibilities (Binford 1971: 18-25). Such a social persona is reflected in age, sex, social position, social affiliation, and the conditions/location of death. Saxe (1970) notes that social identities differ depending on the mode of subsistence practiced. The work of Peebles and Kus (1977) and Brown (1981) are also helpful in these reconstructions.

Against this background, Moorti (1994) identified two categories in the population of megalithic Vidarbha: 'Super-ordinate' and 'Subordinate'. These were defined by the presence or absence of technomic, sociotechnomic and ideotechnomic artefacts in the burials. The results of his analysis hint at stratification in the society, which might have arisen due to agricultural surplus. Hence, an attempt was made by the first author (Vaidya 2014) to reanalyse the excavated burials in Vidarbha in order to understand the social dynamics as reflected by the burial repertoire. The groups identified by the analysis of the presence/absence or the percentage of grave goods were confirmed by Principal Component Analysis (Anderson 1972).

Published data is available for 76 burials of the approximately 100 excavated burials from various sites in Vidarbha. The burial goods used for the analysis included pottery, iron, copper and stone objects, and beads. Some burials also contained horse remains, ornaments, bits and other horse-related items. The objects were classified into variables according to their function (**Fig. 3**), i.e., 'Agricultural tools' (hoes, ploughshares, sickles), 'Craftsmen tools' (chisels, adzes, nail parers, rods and nails), 'Offensive weapons' (arrowheads, daggers, swords, spikes, spears, lances, battle-axes), 'Ornaments' (copper bangles, chains, and rings, and beads of semi-precious stones), and 'Horse' (remains or any related artefacts). The count for each variable was obtained from various sources. For the 'Horse' and the 'Ornaments' variables, the numbers indicate their absence or presence along with the other variables.

Fig. 4 shows the factor loadings of the components of PCA and reveals that the 'Craftsmen tools' and 'Offensive weapons' are the main components that create the variation among the burials. The analysis also shows that burial building was an activity which increased with the status and social position of the deceased. Eight clusters were identified from the analysis, as shown in **figure 6**, and these are represented in the cluster diagram and the PCA spread chart in **Figs. 5** and **7** respectively, highlighting the differences present.

Cluster no. 1 shows a comparatively high presence of 'Offensive weapons'. The presence of axes but minimal presence of other agricultural tools suggests a pastoral, rather than a purely agricultural affiliation. Since agricultural tools are under-represented they can be associated with pastoralists who are engaged in or associated with warfare.

Cluster no. 2 is completely dominated by the 'Craftsmen tools' but 'Offensive weapons' such as the arrowhead and spear show a nominal presence. However, except for K3 and K5 (Khairwada site), the burials with offensive weapons do not also have horse remains, and K3 includes only horse bits and no skeletal remains. This suggests that this cluster reflects groups of craftsmen who were engaged in the manufacture of horse-related equipment such as carts and carriages.

Site and Abbrevation	Megalith No		Agricultural Tools		Offensive Tools				Craftsmen Tools					Ornaments	Horse	Primary/ Secondary burial
		AX	HO /	SC	SP	AH	SK	DG/	CH	AD	RD	NP/	BD			
KRD (K)	KRD1(I)	1	0	0	0	0	0	0	0	1	1	0	0	0	1	S
	KRD2(I)	2	0	0	3	1	2	1	3	4	1	2	1	1	1	S
	KRD3(I)	0	0	0	0	2	0	0	0	6	0	1	0	1	1	S
	KRD1(II)	0	0	0	0	0	0	0	0	1	0	0	0	1	0	S
	KRD1(III)	0	0	0	0	1	0	0	1	4	0	1	0	1	1	S
	KRD3(III)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S
BMR (M)	BMR1	8	1	1	1	0	4	1	13	10	0	0	0	1	1	-
	BMR2	6	0	0	2	0	1	1	3	4	0	0	0	1	0	-
	BMR3	0	0	0	0	0	5	2	0	9	0	0	0	1	1	-
	BMR4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	-
	BMR5	0	0	0	1	0	0	0	0	1	0	0	0	1	0	-
	BMR14	1	1	0	0	0	0	0	0	2	1	12	1	0	0	-
	BMR15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	-
	BMR28	0	0	0	0	0	0	0	0	6	0	9	0	0	0	-
	BMR331	0	0	0	0	0	0	0	0	4	0	1	0	0	0	-
BRG (B)	BRG3	6	2	0	0	0	0	0	1	0	0	0	0	1	1	S
	BRG7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	P
	BRG35	5	1	0	1	1	2	0	4	5	0	2	0	1	1	NA
	BRG36	3	2	1	0	0	0	0	1	0	0	0	0	1	0	NA
NKD (N)	NKD3 (I)	1	1	0	0	0	0	1	1	1	0	0	0	1	1	S
	NKD7 (I)	3	0	0	0	0	0	0	0	0	0	0	0	1	1	S
	NKD8 (I)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S
	NKD1 (II)	2	0	0	2	0	0	1	2	1	0	0	0	1	1	S
	NKD1 (III)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S
	NKD13 (IV)	3	0	0	0	0	0	0	0	1	0	0	0	1	1	S
RPR (R)	RPR3 (III)	2	0	0	2	0	0	0	1	11	0	7	0	1	1	S
	RPR4 (III)	2	0	0	0	0	0	0	0	1	0	1	0	0	1	NA
	RPR1 (IV)	0	0	0	0	1	0	0	0	5	0	0	0	1	1	P
	RPR2 (IV)	2	0	0	1	0	0	0	3	8	0	6	0	1	1	P
	RPR 5	0	0	0	0	0	0	0	1	0	0	0	0		0	NA
	RPR 6	0	0	0	0	0	0	0	0	4	0	4	1	1	0	S
	RPR 7	1	0	0	0	7	0	0	4	18	0	12	0	1	1	S
	RPR 8	0	0	0	0	0	0	0	0	2	0	4	1	1	0	NA
GGP (G)	GGP2 (I)	2	0	0	1	2	0	0	1	1	0	0	0	1	0	NA

Fig. 3 – The distribution of artefacts in all burials from excavated burials from the Early Iron Age in Vidarbha; used for PCA and cluster analysis. BMR=Bhagimohari, KRD=Khairwada, BRG=Borgaon, TKP=Takalghat and Khapa, GGP=Gangapur, MHR=Mahurjhari, NKD=Naikund, RPR=Raipur. The numbers beside the site name are burial numbers (along with their localities) given in excavation reports. For Naikund: Deo & Jamkhedkar (1982); Mahurjhari: Deo (1973) and Antiquity Register in Deccan College for 1978-1979; Raipur: Deglurkar & Lad (1992); Takalghat and Khapa: Deo (1970); Gangapur: Deo (1970); Borgaon, Khairwada, Bhagimohari: Antiquity Register in Deccan College and Moorti (1994); Deo (1985); Mohanty & Walimbe (1993). Abbreviations: AX=Axe, HO=Hoe, PL=Plough, SC=Sickle, SP=Spear, AH=Arrowhead, SK=Spike, DG=Dagger, SW=Sword, CH=Chisel, AD=Adze, RD=Rod, NP=Nail parer, NL=Nail, HK= Hook, BD=Blade.

Site and Abbrevation	Megalith No		Agricultural Tools		Offensive Tools				Craftsmen Tools					Ornaments	Horse	Primary/ Secondary burial
		AX	HO /	SC	SP	AH	SK	DG/	CH	AD	RD	NP/	BD			
	GGP3 (I)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	NA
	GGP1 (II)	0	0	0	0	0	1	0	1	0	0	0	0	1	0	NA
TKP (T)	TKP1 (I)	2	0	0	0	0	0	2	1	1	0	0	1	1	1	S
	TKP4 (I)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	NA
	TKP6 (I)	0	0	0	0	0	0	1	2	0	0	0	0	0	1	NA
	TKP7 (I)	0	0	0	0	0	0	0	0	1	0	2	0	1	1	NA
	TKP8 (I)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
	TKP2 (II)	2	0	0	0	1	1	0	0	1	0	0	0	0	0	NA
	TKP3 (II)	0	0	0	0	0	0	1	0	0	0	0	0	1	0	NA
	TKP5 (III)	0	0	0	0	0	0	0	1	0	0	0	0	1	0	NA
	TKP9 (III)	1	0	0	0	0	0	0	0	0	0	1	0	0	0	S
MHR (J)	MHR1 (I)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	NA
	MHR2 (I)	3	0	0	0	0	2	2	2	0	0	0	0	1	1	S
	MHR3 (I)	1	0	0	0	0	0	3	0	0	0	3	0	1	0	P+S
	MHR1 (II)	3	0	0	0	0	1	0	2	0	0	2	0	1	0	S
	MHR2 (II)	0	0	0	0	0	0	0	0	0	0	2	0	1	0	NA
	MHR1 (III)	0	0	0	2	2	1	2	1	2	0	2	0	1	0	NA
	MHR2 (III)	1	0	0	2	1	0	0	2	0	0	3	0	0	1	S
	MHR3 (III)	4	1	0	0	0	2	2	2	2	0	3	0	0	1	P+S
	MHR4 (III)	4	0	0	2	0	2	0	2	1	0	4	0	1	1	S
	MHR5 (III)	2	1	0	0	0	2	1	2	3	0	0	0	0	0	NA
	MHR6 (III)	0	0	0	1	0	1	1	0	0	0	1	0	1	0	P
	MHR7 (III)	0	0	0	1	0	0	1	2	3	0	4	0	0	1	S
	MHR8 (III)	0	0	0	1	0	0	0	1	5	0	4	0	1	1	P+S
	MHR9 (III)	2	0	0	3	0	0	0	2	1	0	0	0	1	1	P
	MHR178-79	1	1	0	0	3	0	0	1	10	0	3	0	1	0	P
	MHR2	1	0	0	2	0	0	0	2	1	0	1	0	1	0	P
	MHR3	6	1	0	4	0	3	0	10	11	0	12	0	1	1	P
	MHR4	2	1	0	2	1	6	2	5	7	0	10	0	1	0	S
	MHR5	0	1	0	1	0	0	0	1	3	0	3	0	0	0	S
	MHR7	4	0	1	5	0	6	0	9	22	0	22	0	1	1	P
	MHR8	4	0	0	0	0	2	0	4	6	0	6	0	1	0	S
	MHR9	4	0	1	1	0	0	0	1	0	0	5	0	0	0	S
	MHR10	0	0	0	0	0	0	0	0	2	0	2	0	0	0	P
	MHR11	8	1	0	0	0	4	1	8	7	0	11	0	1	1	P
	MHR29	8	1	0	2	0	3	0	14	16	0	6	0	1	1	P

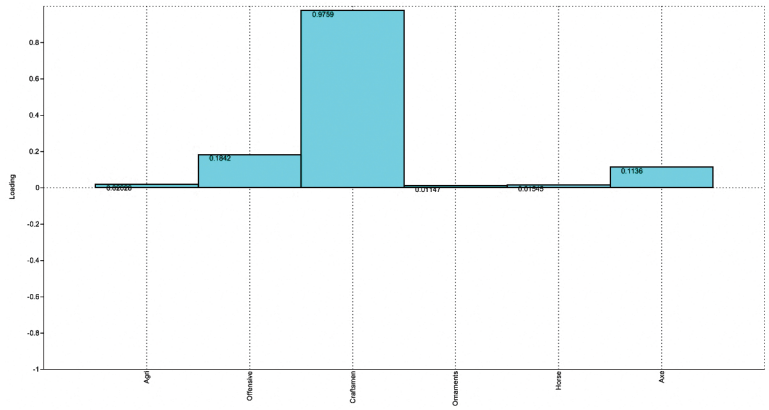

Fig. 4 – Factor loadings of PCA showing important components.

Cluster No.	Burial Nos.
1	J8, J9, M2, B5, M3, K2, *J6*
2	R3, K5, K3, J19, R8, *J23, M9,* J16, J4, J10, J22, J7, J13, R6, J12
3	M8, M6, J15, R4, R1, J21
4	J11, T6, J2, J14, N4, T1, *J3, G1,* B6, B3, *N6, N2*
5	N5, N3, T2, B4, J1, T7, *T8, K4, G3, M5* ; R5, M7, M4, K6, *T5, G2, T9,* T4, J5, *N1, T3*, R2, K1
6	J20
7	J25, J17, R7
8	J24, M1, J18

Fig. 6 – Table showing secondary clusters from the Cluster Analysis. Amongst the clusters above the burial numbers underlined are identical in character.

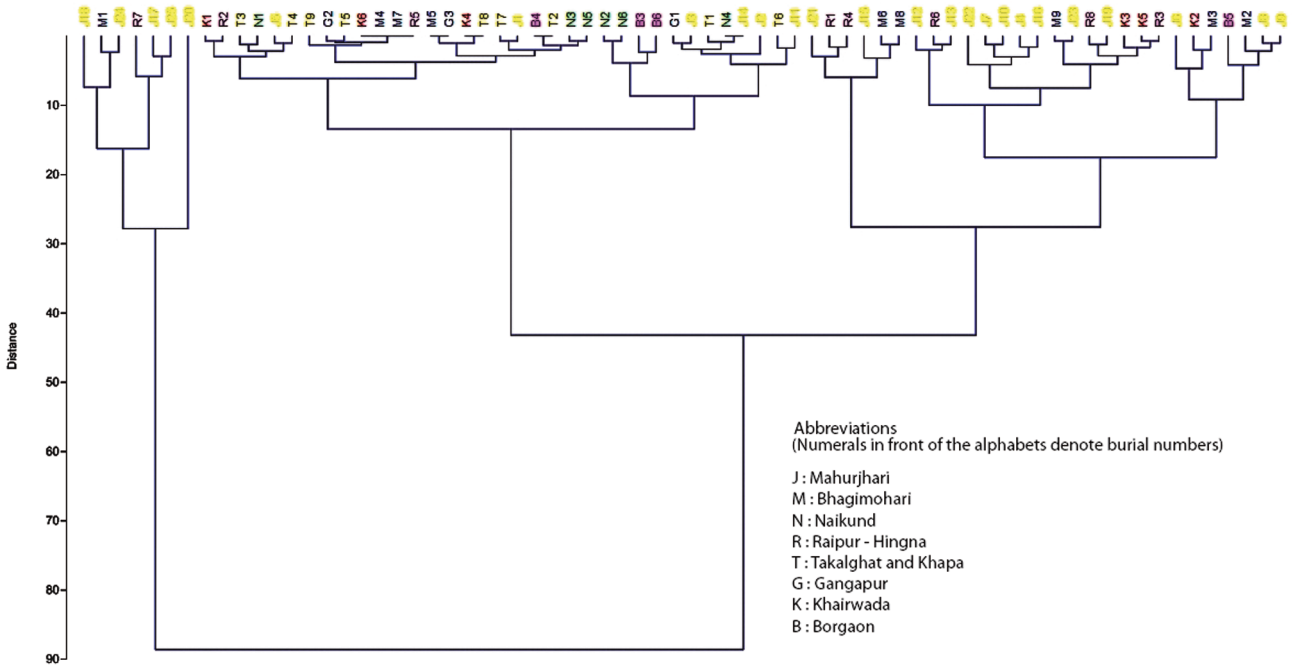

Fig. 5 – Cluster diagram of burials.

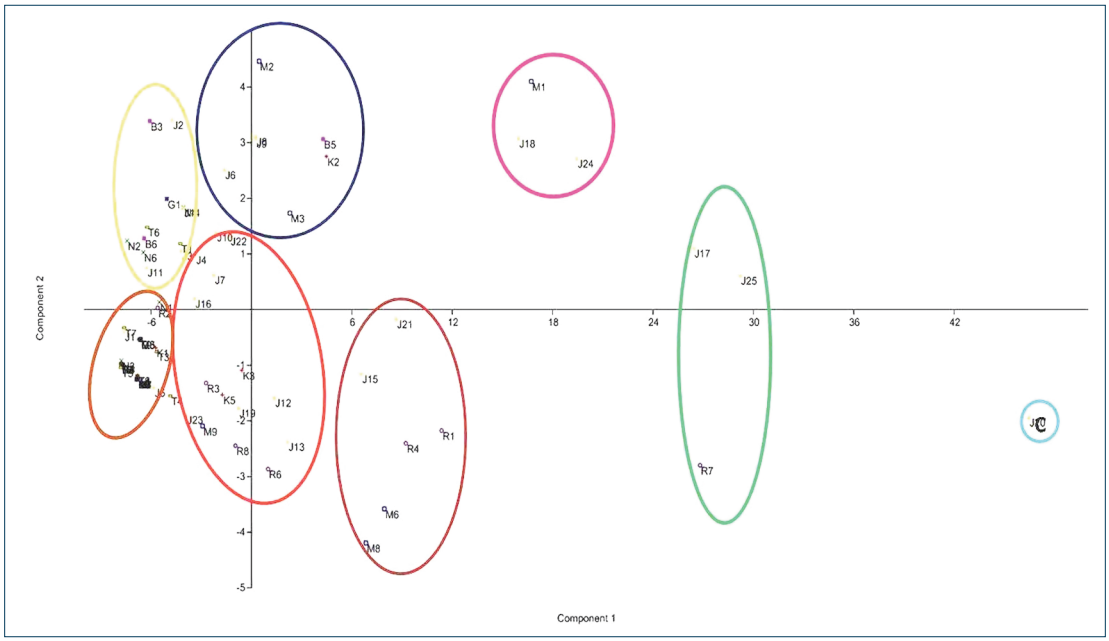

Fig. 7 – Principal Component Analysis showing clusters. The variance of Component 1 is 93.49% and for Component 2 it is 3.35%.

Cluster no. 3 includes mostly 'Craftsmen tools'. The horse is represented only along with 'Offensive weapons' (but only in the form of horse gear). Hence, this cluster reflects craftsmen associated with a group of the society which required weaponry for conflict and security. They might have been the exclusive manufacturers of the offensive weapons and the horse equipment, especially horse ornaments, possibly a specialised smithery group employed by the elite/authority groups. Ornaments are also present which suggests the economically secure position of this group within the society.

Cluster no. 4 shows fewer 'Craftsmen tools' and 'Agricultural tools' are also uncommon with only axes present. Only the 'Offensive weapons' category is well represented. The presence of axes in association with the weapons and with minimal agricultural tools suggests a group primarily involved in pastoral activities but also in affairs of authority over land. The appearance of ornaments in almost all the burials in this cluster suggests a better social position and indicates that the group might be of an elite nature.

In **Cluster no. 5**, 'Agricultural tools', including axes, are almost absent. Indeed, grave goods are very minimal in number and only 'Craftsmen tools' like adzes are present in almost all burials. This suggests some alternative mode of subsistence, but the presence of horse-related items (both skeletal remains and equipment) hints towards an elite group not involved in activities like defence or authority. Almost all the burials are secondary in nature but there is a lack of grave goods, whereas the presence of horse remains and ornaments suggest ritual aspects and social status. The group probably reflects a community involved in control of the exchange of goods and objects, who were also involved in horse rearing or riding.

Cluster no. 6 has only a single burial, namely J20. This is isolated because it has the highest number of 'Craftsmen tools' and also a very high number of 'Offensive weapons'. It also has axes but only a single agricultural tool. However, the presence of ornaments, and even horse-related items, is suggestive of this individual's extreme importance to the sites as well as within the burial groups. This may be the burial of an important person or a member of an important or powerful group. The presence of offensive weapons along with axes, horse remains, and agricultural tools also suggests a combination reflecting agro-pastoralist communities; the presence of weapons and crafting tools may suggest the association or allegiance of the individual.

Cluster no. 7 includes horse gear, but only a small number of offensive weapons. Axes are also found in a good number and an agricultural tool is also present. This suggests a different category of craftsmen who were probably important but were more involved with the manufacture of tools for agro-pastoral and related activities as well as with offensive activities. The cluster may represent important individuals among the productive classes who held an influential position, perhaps possessing authority over resources or their distribution.

Cluster no. 8 has a large number of axes and other 'Agricultural tools' with a fair number of 'Offensive weapons', and perhaps reflects important members of agro-pastoral communities who might be involved in affairs related to authority and control of basic resources and aspects of production such as arable land and pasture.

It is relevant to mention here that the presence of primary skeletal or secondary mortal remains is also very important in identifying social identity. However, the analysis of grave goods presented here was designed to detect groups among the people of the Early Iron Age/'Megalithic period' who formed a social structure based on hierarchy and economic activities.

In summary, Cluster nos. 2, 3 and 7 show an affinity towards the craftsmen community; Cluster nos. 1 and 4 show affinity towards agro-pastoralist and authoritary groups; Cluster nos. 6 and 8 show a dominating character linked with the authoritary classes; Cluster no. 5 is an isolated example for whom status in the form of goods was less pertinent than the erection of a burial. This suggests a wealthy group associated with emerging new classes who were probably not strongly bound by kinship but shared identical characteristics across distant sites and followed the practice of burial only for those with status.

The clusters which have affinity towards the craftsmen category (nos. 2, 3 and 7) have differences amongst them. Cluster no. 2 might be craftsmen who were involved in domestic crafts such as woodwork, cart making, oil crushing, and household activities. In Cluster no. 3, the additional presence of ornaments and axes suggests an elite status, probably involving manufacturing, either within their own group or for the authority class. This variation highlights the fact that groups might be craftsmen on a general level but, through their expertise, they might have acquired certain unique or special social identities. Cluster no. 7 further illustrates this concept. With mainly 'Craftsmen tools' and few 'Agricultural tools', the affinity of the group is clear, yet the presence of other categories indicates that this cluster reflects a group who were considerably more affluent than other groups of craftsmen and probably suggests that a few members were either specialized in production for the elite or might be influencing this elite manufacturing.

Another group of people, identified from Cluster no. 5, were probably involved in the exchange of manufactured goods. They were accorded a burial, but had not accumulating a wide range of social identities. They might be travellers using horses for transportation.

From the analysis it can be seen that there were several groups, such as craftsmen, who were accumulating a vast range of social identities within the same community.

Similarly, Cluster nos. 1 and 4 with greater numbers of axes, horse-items and offensive weapons, mostly show affiliations with pastoralist groups rather than with craftsmen or agriculturalists. In fact, there are identical burials in Cluster no. 4 suggesting common kinship ties across sites in this pastoral community. There can be a class envisaged among the Early Iron Age people who were probably involved in issues like authority over land, and the procurement of raw materials (like pastures, iron ores, and bead making material) and who were not directly involved in agricultural production or craft specialisation.

Other groups involved in affairs of authority and power can also be found represented in Cluster nos. 6 and 8, in which the high presence of all the variables suggests that these groups had acquired the supremacy of maximum social identities.

The craftsmen were more affluent and constructed burials for status and wealth, and to attain legitimacy through rituals, as was necessary in a kinship-based society. Such kinship ties are important in agricultural communities, where there is a need to preserve links and retain social identities. Being less affluent, the agricultural groups do not seem to be

greatly involved in elaborate megalithic burial building, but there were some among them who were involved in issues like authority, status and power. The agro-pastoral community was therefore involved in burial rituals in order to strengthen kinship ties.

Simple burials without any accessories in the cemetery at Mahurjhari (Mohanty 2005b: 106-107) might be evidence of a labour class, if it existed at this time, involved with certain elite classes in the social and economic realms of life.

5. Discussion

Analysis of the burials can help us to see that the Early Iron Age society was semi-stratified society with distinct groups of craftsmen, agriculturalists and agro-pastoralists (mostly involved in matters of authority), with some people involved in exchange, some in rituals and probably also a labour class. The PCA analysis helped to show that some of the clusters were very different in terms of social identity while others shared some common characteristics. Interestingly, clusters showing affinity to a broad category such as 'craftsmen' had variations and were distinct from each other. Those clusters that had different professional affinities but were close to each other might reflect inter-marriages among the communities or the inter-dependency of different professions with the agro-pastoralists. We believe that, at the level of an agrarian village, in the period under study there was a greater chance that marriages would be within a larger social group, though there may have been mixing between groups at a more specific level. Similar dynamics are observed in contemporary village communities in rural India (Altekar 1927). This leads us to think that the Early Iron Age people were laying the foundations for the later stratified and complex society in Vidarbha.

We must add that some burials also contained children (e.g., burial 13 in loc IV at Naikundand at Raipur), along with horse gear and agro-pastoral tools. This shows that the megalithic people were not at all egalitarian since such societies do include this kind of social identity as part of child burials in (Saxe 1970). Many characteristics of chiefdomship (Stickel 1968; Pebbles & Kus 1977; Brown 1981) are present in the burials of the Early Iron Age period. The gradation in modes of disposal relative to the importance of the deceased, the increasing wealth and effort and variations in these as reflected through various clusters, the higher representation of male individuals (Mohanty & Walimbe 1993), and the hereditary or non-communal representation of artefacts (as seen especially in Cluster nos. 4 and 1) all suggest that the society was not simple but rather was very structured, having a hierarchy based on social and economic relations.

The finding of iron smelting at Naikund (Gogte 1982) and evidence of iron smelting at sites like Shirkanda (IAR 1991-1992), Sasra (Vaidya *et al.* 2015) gives some sense of the extent of iron extraction in the larger area. However, not all sites were producing iron and some exchange is evident both in terms of the raw material and the finished iron objects (Thakuria *et al.* 2015). A recent study of chisels and other craftsmen tools (Sabnis 2017) has proposed the existence of professional variations that, in turn, suggest the movement/communication of these craftsmen throughout the region. The site of Mahurjhari is known for bead manufacturing (Thakuria 2010) and Kaundinyapur (Dikshit 1969) is known for etched carnelian beads. The evidence indicates a considerable amount of active exchange among the people of the region, leading to the emergence of new communities. Issues such as prestige, status, descent and authority are also reflected by the burials, as well as by some public architecture (e.g., the ramparts at Adam (Nath 2015), and Pauni (Nath 1998). The use of the horse for prestige is also seen. It seems that horses might initially have been related only to the warrior-soldiers but gradually also became associated with communities like craftsmen and people involved in exchange and with horse rearing and riding, etc. Craftsmen also used the horse as a symbol of their status and profession.

The literature provides us with details about the social, economic and political conditions of Vidarbha in the period of around the 7th-8th centuries BC. Such details have been discussed exhaustively by Sawant (2006, 2012) and so have not been detailed here, but some interesting aspects should be mentioned. A hymn in the Rigveda refers to the emergence of four groups from the body of the god

Prajapati – the *Brahmans* (*Brāhmaṇas*), *Kshatriyas* (*Kṣatriyas*), *Vaishyas* (*Vaiśyas*), and *Sudras* (*Śūdras*). This is a mythologized account of the origin of the four varnas, which came to be regarded as the four major classes in Indian society. In the Later Vedic texts like the *Taittiriya Samhita* (Kane 1941 vol II and personal knowledge) there is a mention of *rathakaras* (chariot-makers), *takhsna* (carpenters), *kulals* (potters), *karmaras* (metalworkers), *Vanijyas* (traders), *sutas* (charioteers) and *gramani* (troopleader/ village headman). These groups largely constitute the *Vaisya* fold. The position of *Vaisyas* was very interesting at that time, in that they had to give up a part of their earnings (texts say that they could be subjugated at will). The importance of the *suta* (charioteer/related to horses), *rathakara* (chariot-maker) and *takshna* (carpenter) is reflected in their inclusion in the twelve *ratnins* (representatives of various professions advising the chief) along with the *Kulals* (potters) and *Karmaras* (metalworkers) [Kane 1941 Vol II (1)]. Thus, the *Vaisyas* were becoming an influential community. This is clearly visible in the megalithic burials of Vidarbha where, within clusters of craftsmen and simple agriculturalists (both broadly *Vaisyas*) there seem to be variations. For example,whereas in some instances (e.g., Cluster no. 3) the craftsmen group was more was more affiliated with groups involved in exchange (e.g., Cluster no. 5). The *Kshatriyas*, another of the four mythological groups, started to increase in importance and were probably connected to both animal wealth and land, the protection and expansion of which was very important. The same is reflected in the literature of this period where the *Gopati* aspect of the king becomes transformed to *Bhupati* and later to *Nrupati* (Apte 1971). The Buddhist texts also describe *Kshatriyas* as protectors of fields and agriculture. This tendency among the pastoralists and the agriculturalists might have led to lineage groups and is thought by some scholars to be the background for statehood (Thapar 1990). But *Kshatriyas* were probably not a community who were directly involved in production. They had previously controlled pastoral wealth since this was of more importance in the early stages of protohistoric life. Now, they controlled even agriculture since this was the marker of increasing wealth. Hence, in the few burials which can be ascribed to this class (Cluster nos. 6 and 8), there are elements of agriculturalists-pastoralists as well as some representation of craftsmen. These people were involved in affairs relating to authority and control. Even Carneiro (1970) mentions that the agriculturalists accepted the authority of surrounding pastoralists since they had a broader resource base and could expand into a wider landscape. Thus, the class structure was beginning to form by the Early Iron Age period.

To summarize, by the Early Iron Age period in Vidarbha, there was a stratified society with varied occupations and activities, and with a hierarchy and socio-economic differentiation. These were the true antecedents of the caste-based society. People were engaged in agriculture, animal husbandry, carpentry, basketry, lapidary, oil crushing, stoneworking and leatherworking; they were coppersmiths, blacksmiths and goldsmiths. The society was probably already divided according to profession and craft specialization, probably as we see in the emergence of caste forms within the *Varnas* known from the Vedic texts. The Early Iron Age settlements, with their agricultural base and craft production, played a role in preparing a foundation for urbanization and a complex society. The groups controlling land and the agriculturalists were automatically gaining power. However, further archaeological work is required to validate the analysis presented here.

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K. RAJAN

Situating megalithic monuments in Tamil Nadu: Content and context

Abstract: The study of megalithic monuments is an important area of research in India. Beginning in the early part of the 19th century, the early explorations and excavations were largely sporadic and of an antiquarian nature, most being carried out by the colonial and Princely state administrators. The size of the megalithic monuments and the wealth of antiquities that were encountered in the graves attracted many scholars. Initially, many studies were focused on graves rather than habitation mounds. This led to the discovery of more graves rather than settlements, leading to theories that the megalithic people were nomads or semi-nomads. Anthropometric studies of the skeletal remains also pulled the research towards racial theories regarding the origin of these people, i.e., Dravidian or non-Dravidian, based on geographical distribution. In the post-Independence era, the research focused on the documentation of megalithic monuments and excavation of selected sites. By this time, the typology was almost standardized and organizations like Archaeological Survey of India, State Archaeology departments, University departments and individual scholars started documenting megaliths based on the standardized terminology, which facilitated the understanding the monuments which were spread all over India. Despite this recording work, the establishment of a chronology of the megalithic monuments evaded scholars for a long time. The main reason was that the cultural material unearthed in the graves could not be stratigraphically compared with that from settlements as there were hardly any excavations exclusively concentrated on habitations with burial sites. Further, it was widely believed that Black and Red Ware and iron were integral parts of the cultural milieu of the megalithic culture and the date associated with these influenced, indirectly, the chronology assigned to the monuments. Over time, the date for the start of iron usage in India changed progressively from 700 BCE to the current estimate of the early 2nd millennium BCE; Black and Red Ware appeared from the Chalcolithic period. All these issues contributed to the determination of the chronology of the megalithic sites. In addition, all the megalithic monuments fall under the umbrella term of 'Megalithic Culture' although they are encountered in pre-Iron Age, Iron Age and Early Historic cultural phases covering a period between the early 2nd millennium BCE to the beginning of the Common Era. The cultural, structural and ritual transformations that occurred with respect to the erection of megalithic monuments over a period of 2000 years could not be assessed due to limited excavation. There is enormous variation in both surface features and sub-surface cultural items. Above ground, all the megalithic monuments appeared similar but excavation revealed an entirely different picture. For example, cairn circles found during surveys were grouped in a single category based on visual appearance. On excavation, they were found to have many different forms, such as a simple cist, simple cist with a passage, transepted cist, double cist, pit burial,

sarcophagus, urns and many more variants across the wider chronological period. Most theories and hypotheses were based on surface features. The cultural material unearthed in graves was selective in nature whereas the cultural material exposed in the excavation of settlements was more comprehensive. In the meantime, multi-disciplinary approaches such as archaeo-zoologicy, archaeo-botanical studies, archaeo-metallurgy and anthropology, provided new dimensions for understanding the megalithic monuments. Ethnographic studies and contemporary literary works provided clues regarding the rites and rituals involved in the erection of the megaliths. Science-based investigations supported by a theoretical framework led to further clarity of the nature of megalithic monuments in South India.

This paper attempts to understand the megalithic monuments based on the extensive explorations and selective excavations carried out by the author in Tamil Nadu, the southernmost state of India. The author discovered more than 1500 archaeological sites associated with megalithic monuments in the landscape of Tamil Nadu, particularly in the river valleys of the Palar, Pennaiyar, Kaveri, Amaravathi, Bhavani, Vaigai, Vaipar and Tambraparni. The author excavated settlements with burial sites such as Mayiladumparai, Thandikudi, Thelunganur, Porunthal and Kodumanal to understand the cultural transformation. Mayiladumparai has Microlithic, Neolithic and Iron Age phases; Thandikudi has Pre-Iron Age and Iron Age phases; Thelunganur has an Iron Age phase; and Porunthal and Kodumanal have an Early Historic phase. All five sites are invariably associated with megalithic monuments. The results obtained from these excavations are discussed in order to understand the issues involved in the megalithic monuments of Tamil Nadu. The chronological aspects of the megalithic monuments and their cultural association with pre-Iron Age, Iron Age and Early Historic periods are discussed against the background of the cultural material unearthed in the excavated sites.

Keywords: *South India, megalithic monuments, history of research, multidisciplinary approaches, Mayiladumparai, Thandikudi, Thelunganur, Porunthal and Kodumanal excavations, megalithic issues*

1. Introduction

The 'Megalithic Culture' constitutes one of the important areas of study in India, particularly in South India. The term 'megalithic' as applied to a particular type of sepulchral monuments is not only a misnomer but also an inadequate term to define the wide ranging and complex sepulchral monuments that are found in different ecological zones. The vague definition of the term and its loose application exascerbate the difficulties involved in studying these burials. It describes a system of burying the dead, which is followed in different cultural contexts. The terms 'megalithic monuments' and 'Megalithic Culture' have an important cultural implication. Used in a South Indian context, the term 'Megalithic Culture' is suggestive of a culture defined by the material unearthed in megalithic monuments such as Black and Red Ware (BRW) and iron. Although the term stands for the cultural material collected both from habitation sites and graves, in most cases it reflects only the grave goods. In general, megalithic monuments are associated with the Iron Age, both in a chronological and a cultural context. The reality is a little different. These monuments are found in association with pre-Iron Age, Iron Age and Early Historic cultural material. Thus, the term 'Megalithic Culture' reflects all these three cultures, covering a wider chronological span of more than two millennia. The monuments that survived in these different social and environmental contexts cannot be designated by or restricted with the simple term 'Megalithic Culture'. In most cases, the burial system does express homogenous cultural traits like BRW and iron objects but this is not the

case if one compares habitation material with grave goods obtained from the same habitation/burial sites. Most excavations conducted in South India concentrated more on graves than on settlements, which produced an entirely different picture of the society. As stated, the graves are ritual in nature, and do not contain only a single deposit. Unlike excavations in settlements, the graves do not produce much stratigraphy. The evolutionary pattern of the various forms of the graves can only be detemined by large-scale excavation. A clear picture of the slow change in mortuary practices and the placement of grave goods still evades researchers. Studying one group of material, either from graves or settlements, cannot help us to understand this culture. We need to address or reassess the nature and potentiality of this culture using available archaeological material (Rajan 2016a-b). Further, the urn burials found mostly in the deltaic region, which have no lithic association were also placed in the category of 'megalithic monuments' or 'Megalithic Culture', as the content of the grave is same as of that of other megalithic monuments. Keeping these deficiencies and difficulties in mind, an attempt is made here to understand the megalithic monuments of the Iron Age and Early Historic period of South India with special reference to Tamil Nadu, where the author has been involved in exploring and excavating the Iron Age and Early Historic megalithic monuments for the past three decades.

2. History of research

Since the recognition of megalithic monuments in South India at Bangala Motta Paramba in Kerala by Babington in the early part of the 19th century, innumerable megalithic monuments have been brought to light in the region, particularly in Tamil Nadu (Babington 1823). Every day the list is updated. Besides sporadic explorations, systematic excavations are also regularly conducted. Today (June 2020), excavations are in progress at four places, namely Keeladi, Sivakalai, Adichchanallur and Kodumanal. The first three of these are urn burial sites and the fourth is a cist burial. Despite the documentation of the surface features of thousands of megalithic monuments, knowledge of the subsurface architectural features and material culture of the megalithic system is poor as a result of limited excavation. Due to the inadequacy of the data, understanding of the origin, structural and cultural transformations, chronology, authorship, and other minor details still evades the researchers. Beyond these lacunae, the megalithic monuments have generated considerable interest among scholars leading to the accumulation of a vast literature. This can be traced from the early part of the 19th century and it provides a panoramic view of the advancements made in the field (Ramachandran 1971; Leshnik 1974; Rami Reddy 1992; Moorti 1994). In the initial stages of research, all the megalithic monuments were considered to be a cultural component of the 'Megalithic Culture', although later this nomenclature was slightly altered to the 'Iron Age'. Today, South India has pre-Iron Age, Iron Age and Early Historic megalithic monuments. In India, the tradition of venerating the dead started from the Mesolithic Age and slowly percolated into Neolithic and Chalcolithic periods, reaching its pinnacle during the Iron Age (Allchin & Allchin 1983: 62-96; Leshnik 1974: 21-5; Sahi 1991: 211-16; Rajan 1994: 39-40). Two cultural items, namely iron and BRW, became an inseparable part of the 'Megalithic Culture', though this is not, in fact, the case in the field. On some occasions, the presence of BRW without any megalithic context is also designated as 'Megalithic Culture'. The inadequacy of the term 'megaliths' has been debated and many scholars have expressed their frustration with it (Begley 1965; Gupta 1972b: 188-91; Leshnik 1974: 12). Today, an understanding is slowly emerging with regard to the difference between 'megalithic monuments', 'Megalithic Culture' and the Iron Age, although there are cultural and chronological overlaps.

In the pre-Independence era, infrastructure developmental activities, ethnographic studies, the hunt for natural resources, the mapping of India through topographical survey, and many other such activities carried out by the colonial administrators, missionaries, Princely states and treasure hunters led to the discovery of many megalithic monuments in South India. Most investigations were antiquarian in nature and only a few could be considered to be excavations (Babington 1823; Taylor 1841, 1851, 1852, 1862; Breeks 1873; Caldwell 1877; Rivett-Carnac 1879). Anthropometric-based racial theory and culture-based diffusionist theory dominated the

analysis of the megalithic data and various interpretations were proposed to identify the authors of these monuments. The linguistic-based Aryan and Dravidian interpretation prevailed and, finally, megalithic monuments were placed within the Dravidian group as a large percentage of the monuments came from Dravidian language-speaking areas of India i.e., South India (Hunt 1916: 238-40, 1924: 140-56; Kennedy & Levisky 1985; Taylor 1852; Zuckerman 1930). Ethnographic studies of contemporary aborigines also led to the association of the megalithic monuments with particular tribal groups such as the Todas, Kurubas, Kurumbas, Khasis, Gadabas and Bondos, based on their living traditions and rituals performed around the erection of similar monuments (Breeks 1873; Walhouse 1874a-b; Thurston 1909: 133-77; Gurdon 1914; Hutton 1922a; Fürer-Haimendorf 1943). Despite large-scale documentation and limited excavations, researchers failed to establish any concrete chronological framework. This shortfall was tackled by M.H. Krishna through his excavations at Brahmagiri and Chandravalli in Karnataka, where he made an important observation that ceramics unearthed in the megalithic monuments were similar to those found in the Iron Age level of the settlement excavations. He further extended his interpretation by stating that these ceramics were found in contexts succeeding the Neolithic ceramics, with an element of overlap (Krishna 1931, 1941, 1943; Sundara 1998). These important observations prompted Wheeler to re-excavate Brahmagiri to determine the chronology of South India. He had recently completed the Arikamedu excavations where he had established the chronology of the Early Historic period based on Roman artefacts like amphorae, Arretine Ware and Rouletted Ware, although he wrongly interpreted the latter as Roman (Wheeler *et al.* 1946; Wheeler 1948: 181-5).

The establishment of Archaeology departments in Central India, States and Universities in the post-Independence era accelerated both explorations and excavations (Gururaja Rao 1972; Leshnik 1974; Chakrabarti 1988: 22-3, 42-3, 142-43, 184-86; Raman 1988; Moorti 1994; Rajan 2004: 74-89, 2005; Sridhar 2004, 2005; Rajan & Athiyaman 2011; Rajan & Yathees Kumar 2014; Sivanantham & Seran 2019; Rajan & Balamurugan 2019). The data obtained in explorations carried out in the 1960s helped the scholars like V.D. Krishnaswami (1949 and K.R. Srinivasan (1958-59: 1-14) to propose morphologically based nomenclature for the megalithic monuments based on their own field observations. These classifications were followed by the scholars of South India and provided a level of uniformity in designating types of megalithic monuments (Banerjee 1956; Das 1957; Kosambi 1962; Singh 1985b; Raman 1970; Chakrabarti 1971; Gupta 1972a; Gururaja Rao 1972; Subbayya 1972; Deo 1970a-b, 1973a, 1973c, 1981, 1982a-b, 1983: 64-88, 1984; Deo & Jamkhedkar 1982; Leshnik 1969, 1970, 1971a-b, 1974; George 1975; Sundara 1967, 1975; Ansari & Dhavalikar 1976-1977; Noble 1976; Misra & Misra 1977; Narasimhaiah 1980; McIntosh 1982, 1985; Krishna Sastry 1983: 51-116; Pant 1985; Ramakrishna Rao & Dhananjayudu 1988; Sharma 1985; Rajan 1986, 1990, 1991a, 1991-1992, 1994, 1997, 1998a; Rajan *et al.* 2009; Rajan & Athiyaman 2011; Rajan & Yathees Kumar 2014; Rajan & Balamurugan 2019; Rao 1988; Moorti 1989, 1990, 1994; Sathyamurthy 1992; Joshi 1993; Tripathi 1993; Mohanty 1993; Kharakwal 1994; Paddayya 1995; Rambrahman 1995-1996; Selvakumar 1996, 1997; Chedambath 1998; Darsana 1998). In time, Gururaja Rao (1972) and Leshnik (1974) consolidated the explored and excavated sites of South India providing a full picture of their distribution and variations in cultural material (**Figs. 1** and **2**).

Moorti initiated the work of analyzing the megalithic monuments using socio-economic perspectives based on more than 2000 sites and tried to contextualize the monuments within particular zones (Moorti 1989, 1994). His records of these monuments are still used today and a similar number of new sites (or more) have been added to the list. All the sites have been studied at a macro level, with less attention given to habitation sites. There are hardly any micro-level studies except that carried out by Mohanty at Bhagimohari in Vidarbha region (1993). Unyil the 1980s, all the excavations focused on the material remains of the 'Megalithic Culture', but the investigations slowly diversified leading to a multidisciplinary approach (Kennedy *et al.* 1982; Kajale 1982, 1989; Gogte 1982a-b; Chattopadhyay 1984; Deo 1985; Walimbe 1988, 1992; Gogte & Kshirsagar 1992; Joshi 1993; Kshirsagar 1992; Thomas 1992a-b, 1993 ; Mohanty & Walimbe 1993; Mohanty & Joshi 1996). Among the new approaches, human

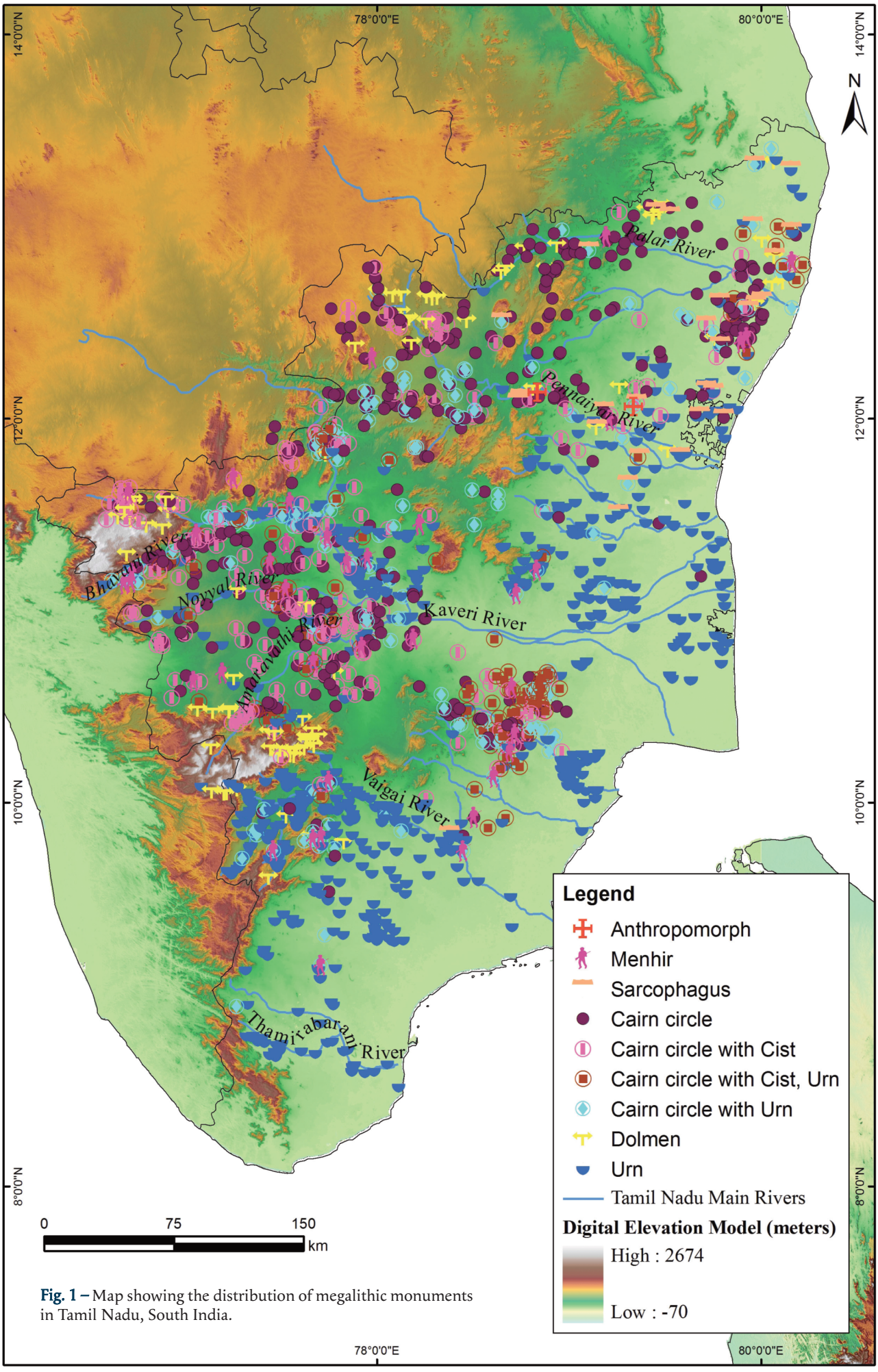

Fig. 1 – Map showing the distribution of megalithic monuments in Tamil Nadu, South India.

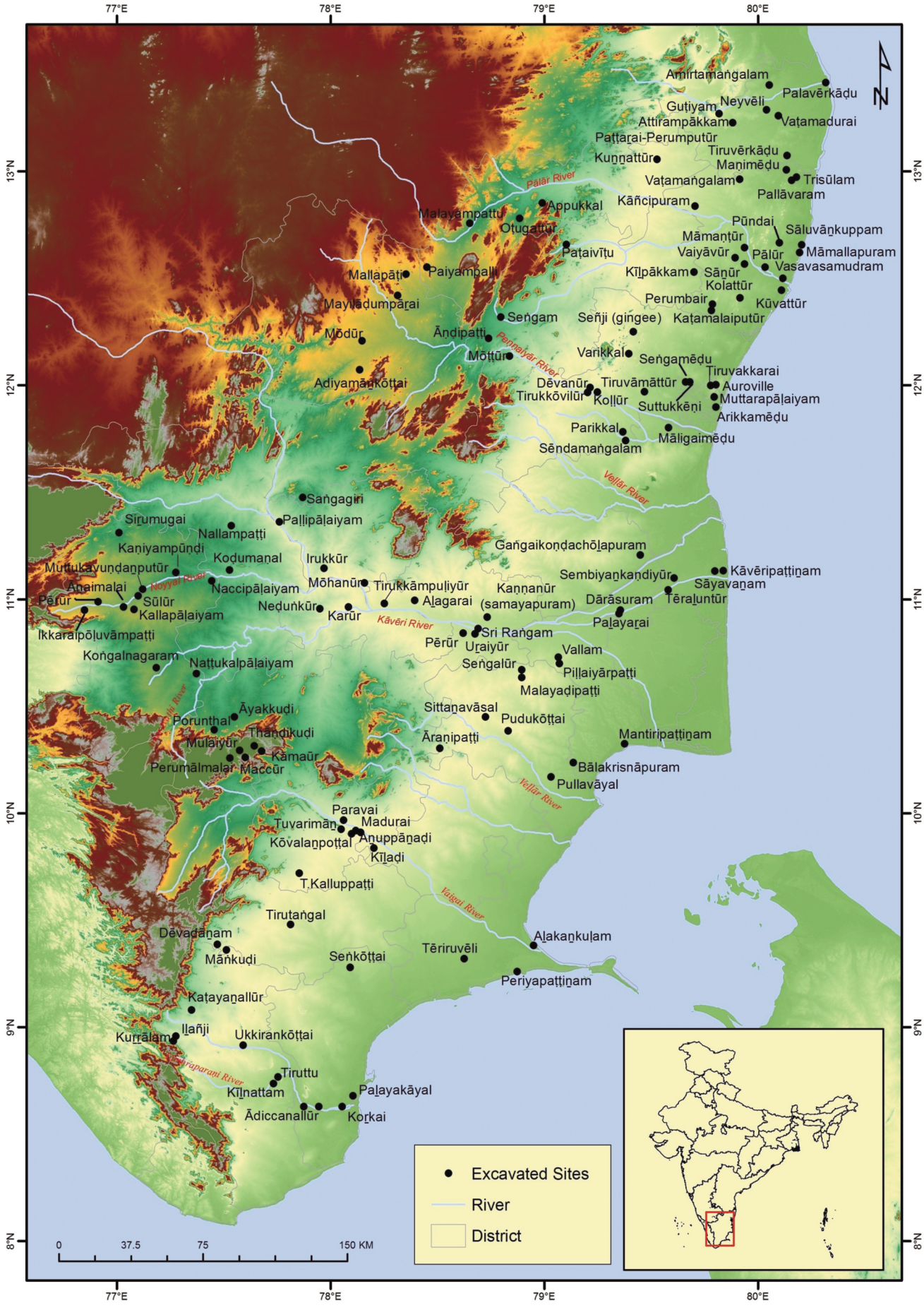

Fig. 2 – Map showing excavated sites in Tamil Nadu, South India.

skeletal remains received much attention followed by archaeo-zoological, botanical and metallurgical studies. Very recently, DNA has taken centre stage in identifying biological diversities.

2.1 Archaeo-anthropological, zoological and botanical research

The study of human skeletal, faunal and plant remains carried out for sites from the South Indian states of Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu provided vital information. These included the sites of Maski (Nath 1957; Vishnu-Mittre 1957), Sanur (Bose 1959), Brahmagiri (Sarkar 1960, 1972; Nath 1963), Yeleswaram (Gupta & Dutta 1962; Sarkar 1972; Alur 1979b), Adichchanallur (Chatterjee & Gupta 1963 ; Sarkar 1972; Kennedy 1986; Swamy 1972), Raigir (Kennedy 1965, 1990: 455-464), Nagarjunakonda (Gupta *et al.* 1970; Subrahmanyam & Rao 1975: 185-195; Nath 1963), Kaundinyapura, Paunar (Shah 1968: 477-480 ; Vishnu-Mittre 1966, 1968) ; Sanganakallu (Alur 1969), Khapa (Rao 1970), Mahurjahri (Rao 1973; Lukacs 1981), Naikund (Kennedy *et al.* 1982; Badam 1982; Kajale 1982), Satanikota (Pal 1986), Borgaon (Walimbe 1988), Takalghat (Rao 1970), Bhagimohari (Thomas 1993; Kajale 1989: 132-4), Tharsa (Joglekar & Thomas 1998), Khairwada (Walimbe 1988), Raipur (Walimbe 1988, 1992; Thomas 1992b; Deglurkar & Lad 1992), Kaniyatirtham (Walimbe *et al.* 1991), Kodumanal (Rami Reddy & Reddy 1987; Pal 1994; Veena Mushrif *et al.* 2011; Kajale 1994), Tadakanahalli et Komaranahalli (Caldwell & Kennedy 1995), Hallur (Alur 1971b; Vishnu-Mittre 1971; Kajale 1988-1989), T. Narasipur (Alur 1971a; Swamy 1971), Jadigenehalli (Seshadri 1960), Koppal (Sundara 1976), Pochampad (Alur 1979a), Veerapuram (Thomas 1984; Kajale 1984), Peddabankur (Alur 1990), S. Pappinayakkanpatti (Walimbe & Selvakumar 1998), Mutrapaleon (Mutrapalayam) (Casal & Casal 1956).

The information gained from these studies played a vital role in our understanding of the palaeo-demography. However, it focused initially on racial affinities such as those with Proto-Australoid, Negroid and Mediterranean groups. Later the focus shifted towards biological and cultural adaptations (Kennedy 1975, 1984 ; Kennedy & Levisky 1985; Walimbe 1988, 1992: 81-91; Caldwell & Kennedy 1995: 47; Mohanty & Walimbe 1993, 1996). The study of human skeletal remains further indicated that the megalithic builders were not a homogenous ethnic group as suggested earlier and also negated any large-scale migration.

The faunal remains provided valuable information on the nature of domesticated and non-domesticated animals, subsistence patterns and ritual practices. The animal bones collected from the settlement excavations and the bones collected from the graves showed distinct characteristics with the former reflecting the subsistence pattern and latter revealing the ritual practices, e.g., the deposition of horse bones in the graves (Thomas 1984, 1992a; Thomas & Joglekar 1994, 1995). The pollen analysis and studies of phytoliths gave a broad view of the nature of cultivation of crops such as rice, barley, wheat, millet, Job's tear, common pea, lentil, grass pea, horse gram, red gram, Indian jujube, etc., and other rituals associated with agricultural activities and ritual ceremonies sites (Kajale 1989: 132-34, Table 3; 1994).

2.2 Archaeo-metallurgical studies

The megalithic monuments and associated habitation mounds yielded enormous numbers of metal objects made of iron, bronze, high-tin bronze and copper, reflecting the contemporary technological advancements achieved by the society (Hegde 1981:, 1991; Prakash & Tripathy 1986). The occurrence of iron ore, iron slag, iron furnaces, crucible furnaces, tuyères, crucibles and other associated discoveries at Naikund (Gogte 1982a-b), Kodumanal (Rajan 1994: 65-6, 93-88, 140, 2015), Banahalli (Srinivasan & Nayal 1986: 42-6) and Khuntitoli (Swamy 1996) reflected the various techniques like lamination, quenching and tempering embraced by the megalithic artisans. The recent recovery of a high-carbon steel sword from a megalithic grave at Thelunganur near Mettur in Tamil Nadu suggests their high level of metallurgical skill (Rajan *et al.* 2017). High-tin bronze objects were recovered from an urn burial at Adichchanallur, Sivakalai and Kodumanal (Srinivasan 1998: 44-7). Likewise, the copper and bronze artefacts such as horse ornaments, a tiger figurine inlaid with lapis lazuli and carnelian,

bangles, rings, bowls, bells, iron daggers with copper handles, and others have been analyzed to determine their properties. A considerable number of gold objects were recovered from sites like Mahurjhari in Maharashtra (Nasnolkar 1973), Kodumanal in Tamil Nadu (Rajan 2015) and Arippa in Kerala (Rajendran & Iyer 1997) suggesting an expertise in locating the gold-bearing zones and in the subsequent mining of these. Silver was also recovered along with gold at Kodumanal.

2.3 Literature and megalithic monuments

In archaeological investigations, different aspects of the megalithic society are studied using material remains but these are inadequate for understanding the non-material culture such as rites and rituals performed at the time of burying the dead. This gap can be filled by the literary works which, though later in date, still reflect the continued traditions. One of the earliest available documents in South India is the Sangam literature, dated to the early part of the Common Era. This is considered to be one of the closest literary sources to the Iron Age and records contemporary events. It reflects some of the finer aspects of the megalithic society of the period. Researchers today, living in a different social milieu, can find it difficult to understand the non-material culture of a bygone age. The comparative study of the material evidence and the literary sources provides a better image of ancient societies. An attempt is made here to use this literature to provide insights into the nature of rites and rituals.

Sangam literature describes various forms of megalithic monuments like cairn circles, cists, menhirs and urns. The descriptions coincide well with the existing monuments, generally those dating from the terminal phase of the Iron Age. Works such as *Tolkappiyam, Akananuru, Purananuru, Malaipadukadam, Aingurunuru* and *Pattinapalai* describe various forms of megalithic monuments and their structural transformation. These structural changes observed in the construction of megalithic monuments can be tentatively arranged into four distinctive stages.

In the first stage, megalithic monuments, particularly the cists (*patukkai*) were erected for the heroes who were killed with an arrow by the warrior people (*maravas* or *kanavas*). These monuments to heroic acts are variously referred to as '*ambin visai ida vilndor ennu varambu ariya uval idu patukkai*', '*ambu ida veelndor vamba patukkai*', '*vil ida vilndor patukkai*' '*ambu ida veelndor vamba patukkai*' – all meaning 'cairn circle entombing a cist burial raised for the man who died by charging an arrow' (*Akananuru* 109: 7-8, 157: 5; *Purananuru* 3: 21), and '*al azhittu uyartta anchuvar patukkai/ patukalattu uyartta mayirt talai patukkai*' meaning 'cairn circle entombing a cist raised in the burial ground for the dead' (*Akananuru* 215: 10, 231: 6). These references are clearly indicative of Iron Age burials. The term *patukkai* (cist) could be assigned to any type of cist such as a simple cist, double cist, transepted cist, and transepted cist with subsidiary cists.

In the second stage, phrases such as '*naanudai maravar peyarum peedum ezhuthi atharthorum peeli suttiya pirangu nilai nadukal ... nirai kandanna uval idu padukkai* and *paraludai marungin patukkai serthi ... peyar porittu ini nattanare kallum kanrodu karavai tandu pakaivar ottiya neduntakai*' explain the erection of a cairn circle entombing a cist burial having a menhir inscribed with the name and fame of a hero who retrieved the cattle in the cattle raids (*Akananuru* 67: 9-15; *Purananuru* 264).

In the third stage it seems that the building of cists is discarded or avoided and only the menhirs (*nadukal*) or memorial stones are installed in memory of the heroes who died in cattle raids. The term '*natta polum nataa nedunkal*' (*Akananuru* 269: 6-7) refers to a tall menhir (*nedunkal*) with script, probably devoid of any sculptural representation. The discovery of three memorial stones at Pulimankombai and one menhir at Thathappatti on the Vaigai riverbed engraved with a Tamil-Brahmi inscription dated to around the 4th century BCE was a revelation for understanding of the evolutionary process of burial systems. All four inscriptions refer to the erection of a memorial stone for a hero who died in a cattle raid. These are the earliest memorial stones so far discovered in India. Interestingly, they are found in the midst of cist and urn burials dating from the Iron Age.

In the fourth stage of the Sangam Age (Early Historic), the graphic descriptions explain the nature and content of the memorial stones. These include

'*ezhuttudai nadukal*' ('menhir/memorial stone having script') (*Akananuru* 53: 10-1; *Ainkurunuru* 352: 1-2); '*pem mudir nadukal peyar peyam padarat thondru kuyil ezhuttu*' ('ancient memorial stone engraved with the name of the hero') (*Akananuru* 297: 7-8); '*kur uli kuyindra kodumai ezhuttu*' ('memorial stone having script engraved out of sharp chisel') (*Akananuru* 343: 5-7); '*viluttodai maravar vil ida veelntor eluttutai nadukal*' ('the memorial stone with letters raised for the heroes (*maravar*) who died pierced with arrows'). The practice of raising memorial stones continued until the 16th century CE in different forms. Thus, the Iron Age graves were essentially purely sepulchral at the initial stage and slowly transformed into memorial stones which were mostly commemorative.

The Sangam literature and the earliest Tamil grammar treatise, *Tolkappiyam*, provide information on rites and rituals performed during the burying the dead. *Tolkappiyam* lists the funerary rites in order as *katchi* (body lying in state), *kalkol* (exposure of the body to the elements), *nirpadai* (ceremonial washing or purification), *nadukal* (erection of the stone), *perumpadai* (the great offering), and *valttal* (praising or adoration). The majority of the references refer to the dead person himself becoming the *nadukal* (memorial stone). This *nadukal* was always decorated with flower garlands made with sweet-smelling flowers of the tall vengai (*Pterocapus* Sp.) and peacock plumes, and offered with liquor and animals (*Puranaanuru* 221: 11-3; 265: 1-5; *Malaipadukadam* 394-96). *Akananuru* (35: 6-10) states that the offering included large balls of rice (*turu-u*) and liquor that was brewed from fermented rice (*toppi-k-kal*), accompanied by the beating of the drum called *tudi*. The recovery of paddy from the four-legged jars placed in the transepted cist and in the double cist at Porunthal and from the urn burial at Adichchanallur clearly reflects what is described in the literature.

3. Chronology

The chronology of megalithic monuments in India is still debated. The uncertainty is mainly due to the lack of scientific dates obtained directly from the graves. Krishna's preliminary investigations and Wheeler's subsequent excavations at Brahmagiri and Chandravalli placed the megaliths tentatively between the 2nd century BCE and the 1st century CE, based on stratigraphical and comparative typological evidence (Wheeler 1948: 200, 300). This scenario changed with the availability of radiocarbon dates.

3.1 Date of megaliths

Today, more than 60 radiocarbon dates for megalithic sites have been obtained and these have pushed back the antiquity of Indian megaliths such that they now fall broadly within the range of the 2nd millennium BCE to the early centuries of the Common Era (Seshadri 1955; Deo 1973a, 1991; Sundara 1973; Possehl 1988, 1994; Moorti 1994; Rajan & Yathees Kumar 2013). As stated, most ^{14}C dates are from settlements with only a few directly from graves, as at Naikund, Porunthal, Kodumanal and Adichchanallur. Thermoluminesence (TL) dates obtained from the burials at Komaranahalli (Singhvi *et al.* 1991) support the early date. Spectroscopic and fluorine/phosphate methods have also been attempted (Rajendran & Kshirsagar 1993: 148; Ravisankar *et al.* 2012; Raja Annamalai *et al.* 2014). Leshnik (1974: 246) attempted to date the megalithic monuments on typological grounds, proposing a date around first two centuries of the Common Era, which never fit into the chronological scheme of the megaliths. By combining the radiocarbon dates and typological analysis of the artefacts, McIntosh worked out the internal chronology of the South Indian megaliths and dated them to between 1100 and 100 BCE (McIntosh 1985: 469). The Vindhyan megaliths have been dated to between 1500 BCE and 300 BCE (Sharma 1985: 480; Singh 1985: 475). Despite all these dates, a complete picture of the time range of the practice of building megalithic monuments has not yet been established. Recent AMS dates obtained for samples collected directly from the cist burial at Mangadu, a pit burial at Thelunganur, from an urn burial at Adichchanallur, a transepted cist and double cist at Porunthal, and from settlement excavations from Kodumanal in Tamil Nadu, place the date of the megalithic monuments between the 2nd millennium BCE and the 1st century BCE.

3.2 Date of iron

Due to the emergence of new radiometric dates there is a broad convergence among the scholars regarding the date at which iron was introduced. Dates such as *ca.* 1300 BCE at Ahar (Sahi 1979; 1991), *ca.* 1200 BCE at Nagda, cal 885-580 BCE at Noh and cal 1265-1100 BCE at Atranjikhera (Banerjee 1965; Chakrabarti 1976, 1985, 1992; Agrawal 2003; Tewari 2003) and *ca.* 1100 BC at Hallur (Nagaraja Rao *et al.* 1971) led scholars to place the origin of iron somewhere between 1300 BCE and 1100 BCE, based on the radiometric dates of the context in which the iron was recovered. The TL dating of Kumaranahalli pushed the date a little further back to 1300 BCE (Agrawal & Joshi 1990), and recent investigations push it still further to somewhere around 1500-1400 BCE or much earlier in the heartland and in Peninsular India (Tripathi 2008: 28). The iron smelting sites of Raja Nala-Ka-Tila, Malhar and Lahuradewa, located in the iron-rich mineral zone of the Mid-Ganga valley in the heartland of India, took the origin of iron back to around 1800-1700 BCE (Tewari 2003; Tewari *et al.* 2002). Subsequent investigations at Malhar near Banaras (Tewari *et al.* 2000) and Watgal in North Karnataka again pushed the date to around the start of the 2nd millennium BCE (Devaraj *et al.* 1995). A series of dates obtained from different ecological zones clearly placed the introduction of iron to India in 1800 BCE (Tewari 2010). The TL and SAR-OSL ages of two pottery samples (GBLD-3 and GBLD-4) from the excavated megalithic burial pits within the campus of Hyderabad University at Gachibowli are 4150 and 4800 BP (TL), and 4000 and 4510 years BP (SAR-OSL) respectively. With respect to the datum year (2005) in which the luminescence dating is carried out, these ages correspond to 2145 BCE and 2795 BCE (TL) and 1995 BCE and 2505 BCE (SAR-OSL) respectively (Thomas *et al.* 2008). Radiometric dates obtained for three samples of wood charcoal taken from a forge and a fourth from ashy dung deposits at Bukkasagara placed the earliest iron production at 1620 BCE (Johansen 2014). These dates clearly place the introduction of iron to India to the 2nd millennium BCE. Any megalithic monuments erected in pre-Iron Age, such as that observed at Thandikudi in Tamil Nadu, could eventually push the date further back.

3.3 Date of steel

Recent investigations of the Indian wootz steel process have concentrated on material from the known sites of Konasamudram, Nizamabad district, Andhra Pradesh (Voysey 1832; Lowe 1990) and Gatihosahalli in the Chitradurga district of Karnataka (Freestone & Tite 1986; Rao 1989: 1-6). These investigations have shown the existence of specialized, standardized, and semi-industrial production techniques dating from at least the late medieval period. During field investigations of copper mining and smelting in South India, Jaikishan came across several sites in northern Telangana (Jaikishan 2007) and Srinivasan discovered a previously unrecorded archaeometallurgical site in Mel-Siruvalur, South Arcot district, Tamil Nadu (Srinivasan 2007). She identified high-carbon steel at Kodumanal and from Kadebakele with a secure date of 880-440 BCE (Srinivasan *et al.* 2009). Identification of these production centres supports the idea that wootz steel production was relatively widespread in South India and further extends the known horizons of this technology. In addition, Park and Shinde foundhigh-carbon steel products among the iron artefacts excavated from the 2nd century BCE to 1st century CE site at Junnar in Maharashtra (Park & Shinde 2013).

The date of the introduction of steel to different parts of South India is yet to be clearly established. The crucible furnace unearthed at Kodumanal is firmly dated to the 6th century BCE based on radiometric dates and also on associated findings like punch-marked coins, Northern Black Polished Ware, Rouletted Ware and more than 500 Brahmi inscribed potsherds collected from a well-stratified context. Five charcoal samples were collected at depths of 15, 60, 65, 85 and 120 cm respectively in a well-defined archaeological stratigraphy in excavations conducted at Kodumanal during the field seasons of 2012 and 2013. The samples yielded uncalibrated dates of 200 BCE, 275 BCE (cal 380 BCE), 300 BCE (cal 370 BCE), 330 BCE (cal 380 BCE) and 408 BCE (cal 480 BCE) respectively. The time range of 200-408 BCE (cal 200-480 BCE) is assigned to the cultural deposit between 15-120 cm (Rajan 2015b: 407). At Kodumanal, the total cultural deposit measures 185 cm. Below this dated level there is a 65 cm-thick cultural deposit which would

have taken another 130 years to accumulate, thereby taking the earliest deposit to the middle of the 6th century BCE. Recent AMS dates obtained for samples collected from the graves at Thelunganur and Mangadu near Mettur in the iron ore bearing zone of Salem region placed the manufacture of the steel somewhere around the 13th century BCE. As noted, the introduction of iron in India goes back to the 2nd millennium BCE, thus, the megalithic monuments in the pre-Iron Age level overlap with the final phase of the Neolithic period, Iron Age and Early Historic period.

4. Main archaeological sites

4.1 Mayiladumparai

Mayiladumparai (78.3050 E; 12.4200 N) is a small hamlet located in foothills about 3 km west of Togarapalli village in the Krishnagiri district of Dharmapuri region of Tamil Nadu. Surveys yielded two Palaeolithic sites, five Neolithic sites, 170 Iron Age sites, ten rock art sites and 125 memorial stones besides a number of medieval sites, within radius of 5 km of the hamlet (Raman 1977-1978: 50; Narasimhaiah 1980; Rajan 1991a, 1997: 125-95, 2000: 138-89). Mayiladumparai has produced cultural material dating from the Mesolithic to Early Historic periods. The rock shelters with paintings yielded microlithic tools and Neolithic deposits. Three trenches laid in the terrace yielded material from three cultural phases namely the Neolithic, Iron Age and Early Historic periods, without any cultural break, which clearly indicate the cultural transformation from the Neolithic to the Iron Age. The subsequent transformation from the Iron Age to the Early Historic period is well attested by the finding of a solitary potsherd with a short Tamil-Brahmi inscription reading 'cata' and a graffiti-bearing potsherd.

The impressive complex of about 1000 burials, consisting of cairn circles enclosing cist burials capped with huge capstones, extends over 40 ha (100 acres) of undulating rocky terrain dissected by numerous bodies of water. The careful exposure of the burials revealed funerary objects such as BRW, black slipped ware, red slipped ware, and iron objects such as knives, arrowheads, a sword and an axe, which were placed inside the cists and also outside. One of the rock shelters has paintings, both in white and red. The red pigment is superimposed by the white pigment indicating the red to be of an earlier date. Recent AMS dates obtained for samples collected from Keeladi, Alagankulam, Adichchanallur, Thelunganur, Mangadu, Kodumanal and Porunthal suggest that the Iron Age could be placed between 2000 and 600 BCE and the Early Historic period between 600 BCE and 300 CE.

4.2 Thandikudi

The village of Thandikudi (77.6444 E; 10.3069 N) lies 1320 m above mean sea level, about 44 km northeast of Vattalakundu in the lower Palani Hills in the Kodaikanal *taluk* of Dindugal district of Tamil Nadu. Of the ten graves, four were excavated in 2004 and the remaining six in 2006 (Rajan *et al.* 2005, 2008: 60-70; Rajan & Athiyaman 2011). There were four types of burial, in pits, urns, cists and dolmens. All but the dolmens were covered with cairn packing. Each type had examples of sub-types. For instance, the cist burials had simple, transepted and double cist varieties with a passage to the east. One of the cist burials yielded four urns (**Fig. 3**). The pit and urn burials can be dated to the pre-Iron Age and the remaining burials to the Iron Age. The pit burial enclosed within a stone circle yielded grave goods consisting of pots, ring stands, bowls, dishes and plates (**Fig. 4**). Among these, the BRW pots and ring stands are a unique discovery. Such pots were reported in Karnataka and Andhra Pradesh in a Neolithic-Chalcolithic context where they were dated to the pre-Iron Age period. Allchin dated the pre-Iron Age pots to *ca.* 1300-1000 BCE as they were reported from Late Neolithic levels at Piklihal, Maski, Hallur, T. Narashipur and Sanganakallu. He further suggested that these grave groups shared six of eight traits with the pre-Iron Age contexts of South India (Allchin 1974). Interestingly, in pit and urn burials, the iron and carnelian beads were totally absent but BRW was present whereas cists and dolmens, the BRW was totally absent but iron and carnelian were present. This served as a clue to understanding the different phases of the graves. The BRW is similar to the ceramics reported in Chalcolithic levels of Central India and Neolithic-Chalcolithic levels

Fig. 3 – Thandikudi: a cist burial having four urns placed on the floor slab (Photo: K. Rajan).

Fig. 4 – Thandikudi: placement of grave goods in pre-Iron Age pit burial (Photo: K. Rajan).

Fig. 5 – Thandikudi: double cist (Photo: K. Rajan).

of Karnataka and Andhra Pradesh. Based on the evidence, the two graves at Thandikudi were dated to the pre-Iron Age and the remaining eight graves were dated to the Iron Age (**Fig. 5**).

4.3 Thelunganur and Mangadu

Thelunganur (77.74194 E; 11.9016 N) lies 10 km north of Kolaththur, in Mettur taluk of Salem district, Tamil Nadu. The graveyard (80 ha), which consists of more than 500 graves, lies on the eastern bank of the River Kaveri. Three types of graves are present, namely cist burials, urn burials and pit burials entombed within a cairn circle, indicating the existence of three different forms of ritual/faith system. In one of the disturbed burials, two polished stone tools, iron objects and several pieces of BRW and Black Ware were collected. An iron sword in a good state of preservation was collected from a disturbed pit containing an urn and sealed with a capstone. The metallographic analysis carried out on this sword revealed that it was made of ultra high carbon steel with a carbon concentration of 1.2% or above, based on weight fraction. The radiocarbon analysis of a sample collected from the hilt and blade of the sword yielded two AMS dates of 2900-2627 BCE (4208±35 yr BP) and 1435-1233 BCE (3089 ±40 yr BP). The wide chronological gap between the two dates poses a great problem in understanding the nature of the sword. However, the sample collected from a sword obtained from a grave at Mangadu (the nearest other site) gave a date of 1604-1416 BCE (3213±34 yr BP). The lower limit of the earlier date obtained for the Thelunganur sword is therefore unlikely to be accurate. Even if we accept the most recent date of 1233 BCE, this is very significant in this cultural, chronological and technological context (**Fig. 6**). It is the earliest date for steel

Fig. 6 – Thelunganur: cairn circles with a capstone, excavated grave and the steel sword (Photos: K. Rajan).

after the site of Kadebakele which is dated between 800-400 BCE (Srinivasan *et al.* 2009; Rajan *et al.* 2017; Park *et al.* 2020).

4.4 Adichchanallur

The famous urn burial site of Adichchanallur (77.87527 E; 8.62833 N) lies on the east bank of the River Tamraparani in Thuthukudi district of Tamil Nadu. This is one of the most southern Iron Age sites in India ever excavated. It was discovered in 1876 by Jagor of Berlin and was later explored by M. Louis Lapicque of Paris. Alexander Rea of Archaeological Survey of India excavated the site in 1903-04 and estimated that theentire 24 ha (60 acres) of land may hold over a thousand urns (Rea 1902-1903; 1903-1904; 1915). His spadework brought to light several Red Ware urns having both secondary and primary burials along with plain and white-painted BRW, gold, iron, copper and bronze objects. In view of the richness of artefacts, the Archaeological Survey of India excavated the site over two seasons in 2004 and 2005 (**Fig. 7**). Nearly 160 urns were exposed in a 600 m^2 area. The exposed urns could be placed within two broad cultural phases. The first, earlier phase inclued the Red Ware burial urns containing primary burials whereas the second, later phase, although including both primary and secondary burials, was domination by the latter type which were placed in both BRW and Red Ware urns. Two samples of paddy collected from urns of the early and late phases provided dates of 850 BCE (Beta 519500) and 650 BCE (Beta 519499) respectively. Thus, the exposed urn burials could be safely placed within the time range of 650-850 BCE. As stated, there were very few megalithic settings at the site except for a capstone placed on the surface to indicate the grave, however the occurrence of BRW, graffiti marks and megalithic monuments in the vicinity suggests their close relationship.

4.5 Porunthal

The tiny village of Porunthal (77.4772 E; 10.38277 N) is situated on the east bank of the River Porunthilaru in the foothills of the Western Ghat about 12 km southwest of Palani, the taluk headquarters. The excavation of a settlement mound locally called '*paci-medu*' (meaning bead mound) over an area of 5.5 ha revealed a glass-polishing furnace. The graves, which include more than 60 stone circles, lie 2.5 km west of the settlement

Fig. 7 – Adichchanallur: exposed urns of different phases (Courtesy: Archaeological Survey of India).

mound. In total, four graves were opened. Two were transepted cists placed at the centres of stone circles. The remaining two were double cists. Both varieties had a passage on the eastern side. The rectangular transepted cist had two chambers on its northern and southern sides. The southern chamber was further divided into two or three compartments. The grave goods were placed in the northern and southern chambers and in the passage. Grave goods were also observed outside the chamber, but mostly within the circle. A first group of grave goods lay on the floor slab with a second group placed at the porthole level. In the northern chamber, several pots, four-legged jars, plates, ring stands, bowls, miniature bowls, stirrups, beads, arrowheads, skeletal remains, swords, pots and knives were placed on the floor slab (**Fig. 8**). Some of the pots had identical graffiti marks. Disarticulated bones, collected from elsewhere, were placed in the central part of the chamber. In the two graves with double cists, each cist had an independent passage on the east side, connected through the porthole. Each chamber had two urns placed within it along with usual grave goods like a stirrup, arrowheads, swords, dagger, four-legged jars, bowls, conical vases, pots, ring stands, plates and basins (**Figs. 9** and **10**). Several pots had graffiti marks on the exterior surface. In total, four urns were present in each grave. The westernmost urn in both the cists contained important antiquities along with the skeletal remains. Several beads of carnelian, steatite, glass, quartz and agate were collected. Another important discovery was the presence of paddy, stored in the four-legged jars present in all the graves. An interesting piece of evidence is a ring stand engraved with Tamil-Brahmi script reading '*va-y-ra*' recorded in Meg-I and found in association with a graffiti mark. Around this ring stand, 22 etched carnelian beads were placed. Four similar beads, a small sword and an arrowhead were placed inside the ring stand. The Tamil-Brahmi script, graffiti marks, carnelian beads, an iron sword and arrowhead found in association with ring stand clearly points to their importance. The paddy grains collected from the four-legged jars of MEG-I and MEG-IV were sent for radiometric dates and the uncalibrated dates were 2440±30 BP (490 BCE) (Beta 302854) and 2400±30 BP (450 BCE) (Beta-305904). The date of 490 BCE relates to the grave having the ring stand with Tamil-Brahmi script, indicating the emergence of the Early Historic period. Thus, these megalithic monuments are of the Early Historic period (Rajan & Yathees Kumar 2014; Rajan *et al.* 2014).

4.6 Kodumanal

The Early Historic habitation-burial site of Kodumanal (77.51416 E; 11.1116 N) lies on the north bank of the River Noyyal, a tributary of the Kaveri, in Perundurai Taluk of Erode district, Tamil Nadu. The settlement and the cemetery cover areas of 15 and 40 ha respectively. Sixty-two trenches were laid in the habitation area and 17 Early Historic megalithic graves were opened in the cemetery area (Rajan 1990, 1991b, 1996, 1998b, 2015). The excavations yielded extensive information on the nature of the settlement, its gemstone industry, methods of iron and steel production, the weaving and shell industries, types of graves and their architectural features, the types and placement of grave goods, the modes of burial, the usage of graffiti marks and Brahmi characters, the stratigraphical position of the Russet Coated Painted Ware, Rouletted Ware, Northern Black Polished Ware and punch-marked coins, the extent of internal and external trade and other interrelated topics. Nearly 551 Tamil-Brahmi inscribed potsherds and 598 graffiti bearing potsherds were collected from the habitation trenches and, very importantly, an inscribed potsherd reading '*visaki*' was collected from a transepted cist similar to those encountered at Porunthal (Rajan *et al.* 2014). A similar inscribed potsherd was also recovered from an urn burial site at Marungur near Vadalur (Sivaramakrishnan & Kalaiselvan 2010) clearly indicating that the erection of megalithic monuments continued from the Iron Age into the Early Historic period.

The site yielded two different modes of burial, one in the cemetery and another within the settlement. The burials in the cemetery were disarticulate secondary burials placed on the base slab of the cist whereas those unearthed in the settlement trenches were articulated pit burials found near the surface. The graves opened in the burial complex were in four types of cist, for example a simple cist with a passage on the east, double cist, transepted cist and

Fig. 8 – Porunthal: grave goods exposed in a northern chamber of a transepted cist (Meg. I) (Photo: K. Rajan).

Fig. 9 – Porunthal: grave goods exposed in one of the chambers of a double cist (Meg. III) (Photo: K. Rajan).

Fig. 10 – Porunthal: grave goods exposed in double cist with passage (Meg. IV) (Photo: K. Rajan).

transepted cist with subsidiary cists (**Fig. 11**). The graves contained etched carnelian and agate beads, a copper tiger figurine inlaid with carnelian and lapis lazuli, a spoon, bowls, a strainer, bangles, silver spiral bangles, a spiral gold ring, iron objects such as swords, arrowheads, horse bits and stirrups. In addition, the burials yielded BRW and Black Polished Ware in large quantities and Red Polished Ware and Red Ware in smaller quantities. Each burial had distinct graffiti marks engraved on all its pottery.

Three pit burials were unearthed in the settlement. In the first, an adult male was buried in the *padmasana* posture. In the second, a child was buried in a crouched position. The third contained multiple burials, probably a father, mother and a child, laid in a pit dug into the natural soil. The bodies were laid in an east-west orientation with the head facing upward. No grave goods were found in these burials except for a few BRW pots. In total, fifteen human skeletal specimens were identified. The secondary nature of the burials suggests that the

Fig. 11 – Kodumanal: a. Transepted cist with a single subsidiary cist; b. Transepted cist with two subsidiary cists (Photos: K. Rajan).

bodies were initially exposed or buried somewhere else and were later collected and buried ceremonially in the chamber. There were no signs of carnivore, vulture or fish activity on the bones, nor any marks and chipping suggesting that de-fleshing might have taken place. This clearly hints that the body was exposed to nature but not to vultures (Rami Reddy & Reddy 1987; Veena Mushrif *et al.* 2011).

Based on five AMS dates, the site can be dated to the 6th century BCE and the entire cultural deposit is assigned to the Early Historic period (**Fig. 12**). Thus, the associated burial complex of more than 150 cairn circles was also placed in this period (Rajan & Yathees Kumar 2007, 2013; Rajan *et al.* 2007).

The seven type sites of Mayiladumparai, Thandikudi, Thelunganur, Mangadu, Adichchanallur, Porunthal and Kodumanal clearly suggest that the erection of megalithic monuments began in the pre-Iron Age, proliferated in the Iron Age and culminated in the Early Historic period, thus extending over a period of more than two millennia from the 2nd millennium BCE to the 1st century BCE.

5. Megalithic monuments - major issues

From the foregoing discussion it is clear that 'Megalithic Culture' constitutes an important area of study in India, particularly in South India. But it is also evident that understanding of the megalithic monuments of South India requires more explorations and excavations as there are micro and macro regional variations. The survival of these monuments for more than two millennia in different social and environmental contexts requires close attention. For instance, megaliths were constructed with the same intensity during Early Historic times and this continues even today in certain pockets of the country. This phenomenon cannot be designated or restricted by a simple term like 'Megalithic Culture'. In most cases, the burial system does express homogenous cultural traits like the presence of BRW and iron objects, and these have been equated to an homogenous culture. In fact, if one compares the habitation material with the grave goods obtained from the same sites this is not the case. The habitation/burial site of Kodumanal provides a good example of the different nature of settlement and

S. No	Laboratory and Sample No.	Site Name and Trench No.	Depth	AMS Date	Conventional Age (uncalibrated)	Calibrated Date	Calibration à 2 Sigma
1	Beta Analytic Lab. 351053	Kodumanal KDL-ZD20	15 cm	2150 +/- 30 BP	**200 BCE**	**200 BCE**	cal BC 350 à 290 (cal BP 2300 à 2240) cal BC 230 à 220 (cal BP 2180 à 2170) cal BC 210 à 110 (cal BP 2160 à 2060)
2	AMS Laboratory, University of Arizona AA99856	Kodumanal KDL-ZE10	60 cm	2225 +/-41 BP	**275 BCE**	**380 BCE**	cal 389 à 199 BCE (cal BP 2339 à 2149)
3	Beta Analytic Lab. 349958	Kodumanal KDL-ZD20	65 cm	2250 +/- 30 BP	**300 BCE**	**370 BCE**	cal BC 390 à 350 (cal BP 2340 à 2300) cal BC 320 à 210 (cal BP 2270 à 2160)
4	Beta Analytic Lab. 330303	Kodumanal KDL-ZD10	80 cm	2280 +/- 30 BP	**330 BCE**	**380 BCE**	cal BC 400 à 350 (cal BP 2350 à 2300) cal BC 290 à 230 (cal BP 2240 à 2180)
5	AMS Laboratory, University of Arizona AA99855	Kodumanal KDL-ZE9	120 cm	2358 +/- 40 BP	**408 BCE**	**480 BCE**	cal BC 731 à 691 (cal BP 2681 à 2641) cal BC 661 à 651 (cal BP 2611 à 2601) cal BC 545 à 368 (cal BP 2495 à 2318)

Fig. 12 – Kodumanal radiometric dates.

burial as described above (Rajan & Yathees Kumar 2013). A Tamil-Brahmi inscribed potsherd, beads of carnelian and agate, few pieces of Russet Coated Painted Ware and BRW collected from the graves are identical to material found in the settlement. In addition to the above items the settlement produced innumerable cultural objects that demonstrate the various dimensions of the society. The different types of furnaces and crucibles demonstrate iron, steel and copper technology; graffiti marks and inscribed potsherds establish their literacy level and linguistic patterns; the presence of Prakrit words along with scripts peculiar to Sri Lankan Brahmi and raw materials like carnelian, cat eye, lapis lazuli and agate prove their external contacts; the availability of raw material and beads in different stages of manufacture testify to their bead making technology; a collection comprising a piece of cotton with a woven pattern and a large number of spindle whorls demonstrates the existence of a weaving industry. Overall, the Iron Age and Early Historic habitation material provides a holistic view of the society that practiced megalithism. The multi-faceted and advanced nature of the society, in all spheres of life, would not have been not realized if only graves were opened. It is true that all the material found in the graves was encountered in the habitation, but not all of that found in the settlement was present in the graves of the Iron Age and Early Historic period. If only the grave goods were studied, leaving aside the settlement material, then an altogether different picture would be created. The majority of the excavations conducted in Tamil Nadu have, indeed, concentrated more on graves than on habitation, with exactly this result. As stated earlier, the graves are ritual in nature, and do not represent a single act of deposition. Unlike the trenches in the settlements, the graves do not produce much stratigraphy. The evolutionary pattern of the various forms of the graves can only be discerned by large-scale excavation. The slow change in the mortuary practice and the placement of grave goods remains unclear and studying just one group of material from the Iron Age and Early Historic, either from graves or habitation, would not help. We need to address or reassess the nature and potentiality of this culture with the help of the available archaeological material.

Since the discovery of megalithic tombs by Babington (1823), thousands of megalithic burial sites have been discovered and some also subjected to systematic excavation. Despite the massive amount of data available to us – second only to that for the Indus Culture – the material culture obtained through selective excavations comes mostly from graves and just a few from settlements which, ultimately, present only one part of the picture. The vast body of literature accumulated over the years cannot provide much-needed knowledge of the socio-economic structure of the society. The studies so far carried out are mostly typological in nature and have devoted much of their energy to reconstructing the culture-history of the region. Yet understanding of this culture still eludes scholars. It is very difficult to ignore this culture due to the lack of sufficient material, as it is so widely spread, both spatially and temporally. But doing so makes it difficult to understand the emergence of the state or of urbanization in South India. The material remains of this culture are found in different ecological zones and the diversity in the utilization of the resources available in each vicinity is enormous. It is very difficult to consider the authors of the culture as nomads or semi-nomads as suggested by Leshnik. They produced goods that were highly valued by the contemporary society, including gold, etched carnelian, bronze items, silver ornaments and also utilitarian goods like various pots and iron objects. They showed enormous technological skill. As suggested by Banarjee, Srinivsan, Sundara, Narasimhaih, Leshnik, Moorthi and many others, this culture must be carefully contextualized in each given context and ecological zone. One of the basic questions that still eludes is how to interpret the data obtained both from the graves and their associated Iron Age and Earl Historic settlements. In most cases, theories are built on the basis of the grave goods obtained from the burial. Whether these grave goods reflect the true nature of the society is a point to ponder. For instance, excavations of the habitation/burial site at Kodumanal clearly show that there is a remarkable variation in the availability of grave goods and the objects that are found in the settlement. Although the grave goods were placed by the people living nearby, the graves within the settlement contained very different items. Recognizing the details of these variations is important to understanding the culture.

Therefore, understanding the culture in a specific context rather than generalizing the data is crucial. The three important components of the culture widely accepted by the academic community are BRW, iron and sepulchral monuments. These three elements have played a crucial role in the research. In most archaeological reports, the data is generalized based on the presence of just one or two of them. The three components have not been considered independently but rather observed as a package: if one of them is present at a site, then it is designated as belonging to the 'Megalithic Culture'. This situation led to the creation of enormous discrepancies in interpretation. Even today, scholars are not unanimous in designating a single cultural name due to its great diversity. It is variously called 'BRW Culture', 'Iron Age Culture' and 'Megalithic Culture', based on the impact or the prominence of one of these cultural traits. In some excavations, the mere presence of BRW alone is considered sufficient to identify the 'Megalithic Culture'. The excavations at Mangudi, Mangadu, Perur, Vallam and Adichchanallur could be cited in this respect. The site at Mangudi yielded three cultural phases, which the excavator designated them as 'Microlithic', 'Megalithic' and 'Early Historic' (Shetty 2003: 16-20). The presence of tiny stone tools led them to designate the first phase 'Microlithic'. The second phase was designated 'Megalithic' merely based on the presence of the BRW although no associated megalithic burials were recorded. Urn burial sites like Mangadu and Adichchanallur have been designated as belonging to the 'Megalithic Culture' based on the presence of urn burials associated with BRW. In fact, the urn burial sites in the southern part of Tamil Nadu do not have the massive stone settings seen in the cairn circles or stone circles of the northern region. This lack of a lithic association did not prevent them being labelled 'Megalithic Culture'.

There is another issue which needs immediate attention. Generally, the accepted norm for the emergence of a historic period is the presence of deciphered script. At Kodumanal, more than 500 Tamil-Brahmi inscribed potsherds were collected from the entire 180 cm cultural deposit. As per the convention, the total deposit should have been designated Early Historic based on the presence of inscribed potsherds. Instead, the excavator initially designated the lower phase 'Megalithic' as it was associated with the burial complex. The inscribed potsherds were collected directly from a cairn circle entombing a transepted cist. This was, however, revised and the entire cultural phase was reassigned to the Early Historic (Rajan 1991b, 1991c: 47-54). In fact, the truth here is that the burial practice ('megalithism') continued into the Early Historic period. At this site, the presence of inscribed potsherds clearly demonstrates this and the site serves as a good example of the fact that the mere presence of huge megalithic monuments is not in itself enough to designate the culture as 'Megalithic' (**Fig. 13**). Rather, the burial system should be considered as a way of expressing a faith or fear towards the dead which resulted in the creation of monuments. The different sizes of the monuments and the nature of goods in the graves are related to their economic, social, political and ritual status. The belief system continues even today in northeastern states, in the same structural form as documented. Therefore, the data obtained from the associated settlement is more important than that from the burial. The culture should be identified based on the material obtained from the habitation site rather than that collected from the graves. One should always disassociate the burial while assigning a name to the culture. Using this logic, the Kodumanal material would have been easily designated as Early Historic megalithic monuments.

There was an earlier attempt to understand this culture in a specific landscape. Moorti (1994) coordinated a vast database and situated the sites within their ecological background. He tried to understand the locational aspects of settlement and burial sites and the reasons for the existence of such sites. He aimed to explain the existence of various megalithic sites based on resource utilization within the site catchment analysis and to understand the distribution of sites based on the drainage system, mineral resources, soil and forest cover. However, the lack of data and the specific information needed to formulate a hypothesis prevented Moorti from putting forward any concrete proposal. Despite this, using archaeo-botanical evidence and the types and amounts of agricultural implements found, he concluded that a highly specialized agro-pastoral economy was practiced during the megalithic period. In line with Moorti, Selvakumar made a modest

Fig. 13 – Karattupalayam: cairn circle (Photo: K. Rajan).

Artefact		$\delta^{13}C$ (‰)	1σ ^{14}C age (yr BP)	95.4% (2σ) cal age ranges (BCE)	Lab Code
Thelungan ur sword **(steel sword)**	Sample #1	-23.2	3089 ±40	1435-1233	AA99857
	Sample #2	-31.0	4208 ±35	2900-2627	AA104832
Thelunganur arrowhead		-22.9	2835 ±34	1109-909	AA104113
Mangadu iron object		-25.8	3213 ±34	1604-1416	AA104114

Fig. 14 – Results of the AMS radiocarbon measurements on carbon samples extracted from the iron objects of Thelunganur and Mangadu. The measurements were made in the University of Arizona's NSF-Arizona AMS facility for ^{14}C analysis.

attempt to identify the transformation from one culture to another in the Gundar River basin of Tamil Nadu. Selvakumar (1996, 1997) and was probably the first to propose the existence of different cultural phases in southern Tamil Nadu. Based on excavations concentrated mostly in northern Tamil Nadu, at sites such as Paiyampalli, Appukallu, Guttur etc., he proposed that the people in the south moved from a lithic stage to a megalithic stage, bypassing the Neolithic phase. Though this needs further validation, evidence obtained from the recent excavations at Teriruveli, Mangudi and Keeladi support Selvakumar's view.

The above analyses clearly suggest that problems with assigning the Iron Age or 'Megalithic' or Early Historic archaeology of South India are not due to the lack of data but rather the fact that the data is not understood in the right perspective. New archaeological inputs in recent years, like those from Adichchanallur, Korkai, Mangudi, Teriruveli, Alagankulam, Karur, Perur, Vallam, Uraiyur, Paiyampalli, Appukkal and a host of other sites, have helped us to reevaluate earlier ideas. In addition, the excavations conducted at Mayiladumparai, Thandikudi, Thelunganur, Adichchanallur, Porunthal and Kodumanal yielded essential information on the nature of cultural traits. The AMS dates obtained at Thelunganur and Mangadu suggest that megalithism arrived in South India in around the 2nd millennium BCE and the dates obtained from Kodumanal and Porunthal indicate that the Iron Age or 'Megalithic' people entered the Early Historic period by around the 6th-5th century BCE but continued to follow the same rituals (**Fig. 14**). They were involved in an industrially based economy with the manufacture of steel, iron, cotton fabrics and semi-precious stone beads. They become a completely literate society, using an archaic form of Tamil-Brahmi script dated to the 5th century BCE. They were also actively involved both in domestic and foreign trade as evidenced by words loaned from Prakrit, and scripts exclusively associated with Sri Lankan Brahmi, Roman coins, Rouletted Ware and Northern Black Polished Ware. The volume of trade, the use of a script, the nature of industries and the size of the megalithic monuments clearly prove that they were not nomads as suggested by Leshnik but rather that they were people who were very much instrumental in transforming the Iron Age into the Early Historic period (Rajan 1998b). This new picture is now slowly emerging thanks to the efforts of innumerable scholars. The Early Historic period of South India began in around the 6th century BCE and the Iron Age began in around 2nd millennium BCE and megalithic monuments were erected in both cultural phases. There is a possibility of identifying pre-Iron Age megalithic monuments in South Indian in the future. Let us approach, receive and analyse the data with an open mind in order to understand the megalithic monuments of India.

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Volume I

Résumés

Résumés - Volume I

Partie I : Mégalithes

1

p. 27-48 – Du projet architectural aux ruines mégalithiques : une vision dynamique de vestiges "pétrifiés" par Luc LAPORTE

Les mégalithes apparaissent souvent dans le paysage comme autant de très grosses pierres simplement érigées vers le ciel, reposant sur le sol ou soigneusement agencées au sein de constructions plus vastes, mais toujours défiant l'apesanteur. La taille ou le poids des pierres ainsi déplacées frappe l'imagination de nos contemporains, malgré l'aspect grossier que beaucoup, encore aujourd'hui, attribuent implicitement à de telles ruines. Ce procès en "primitivisme", issu des tréfonds de l'histoire de la recherche archéologique, a longtemps freiné toute étude véritablement détaillée des architectures mégalithiques. Au-delà d'une valeur patrimoniale incontestable, mais trop souvent perçus comme pétrifiés pour l'éternité, les mégalithes s'inscrivent alors dans une perspective dynamique.

Mots-clefs : *Mégalithes, ruines, architecture*

2

p. 49-62 – Mégalithisme et autres monumentalismes : pour élargir le débat par Alain GALLAY

La Rencontre Internationale tenue à l'Historial de la Vendée en septembre 2019 permet de mettre en évidence un certain nombre de difficultés concernant la définition de ce qu'il faut comprendre sur le terme de mégalithisme. Il est en effet impossible d'isoler une pratique architecturale dite mégalithique d'autres formes architecturales ne comprenant pas de "grosses pierres". La limite de 15 tonnes proposée par Bruno Boulestin pour isoler un mégalithisme au sens strict, qui impliquerait un pouvoir coercitif, pose également un certain nombre de questions. Notre proposition repose sur les apports de deux anthropologues qui sont à l'origine de percées spectaculaires dans le cadre d'une anthropologie comparative : Alain Testart et Philippe Descola, et sur une approche cladistique de ce que pourrait être un développement dynamique du phénomène. Dans cette perspective, les sociétés relevant du mégalithisme au sens large sont situées dans cet espace laissé libre entre les sociétés sans richesses dite acrématiques par Testart et les États despotiques. Elles découlent de la pratique du stockage qui a généré richesse, mais également une instabilité certaine des sociétés. La compréhension du "mégalithisme" nécessite un renversement complet de nos manières d'appréhender le phénomène intégrant une vision anthropologique absolument nécessaire.

Nous sommes ici devant un renversement de perspective radical par rapport à la vision que nous avions précédemment développée dans notre livre sur les sociétés mégalithiques, qui restait encore partiellement dépendante d'une définition architecturale du phénomène.

Mots-clefs : *Mégalithisme, monumentalités, Alain Testart, Philippe Descola, anthropologie comparative, structures politiques, cladisme, iconographie, évolutionnisme*

3

p. 63-82 – Du siège de roc à la chambre funéraire. Histoire, mythes et mégalithes au Japon par François MACÉ et Laurent NESPOULOUS

À la différence des mégalithes européens dont on ignore complètement le contexte culturel en dehors de ce que l'archéologie révèle, la péninsule de Corée et l'archipel japonais permettent de mettre quelques mots sur ces monuments relativement muets. En effet, tout particulièrement au Japon, l'écart temporel est relativement faible entre les premiers textes (*Kojiki* 712 ; *Nihon shoki* 720) et la fin des grands monuments funéraires de la Protohistoire. D'un côté, ces textes donnent quelques précisions sur la construction de ces tertres, d'un autre, les mythes mettent en lumière le rôle de la pierre dans l'imaginaire des élites de l'archipel. C'est cet aspect sur lequel sera centré cet exposé. Dans les mythes, *Iwa*, le roc, renvoie à l'idée d'immuable ou de majestueux comme dans *iwa kura*, le siège de roc des dieux, ou dans *Iwanaga hime*, la princesse porteuse d'immortalité. *Iwa* se trouve aussi associé à la mort dans l'expression "se cacher dans le roc". Cela renvoie à deux mythes : celui de la caverne céleste où s'enferme le soleil et celui du Yomi, le pays de la mort. On les a parfois interprétés comme des transpositions des chambres funéraires avec couloir d'accès. Il y a pourtant d'autres pistes que cette interprétation à suivre. Les données archéologiques comme la majorité des textes nous orientent en effet vers une autre direction, celle de la majesté et d'une ouverture vers l'immuable.

Mots-clefs : *Monument mégalithique, texte, mythologie, Japon,* kofun*, période Kofun, funérailles, mort, au-delà*

4

p. 83-91 – Genèse du mégalithisme : la construction d'une identité culturelle pour une meilleure circulation des marchandises par Tara STEIMER-HERBET

Le mégalithisme dans le monde, à la Préhistoire comme aux périodes historiques, est l'œuvre de communautés capables de générer, gérer et commercialiser des marchandises. Aux Proche et Moyen-Orient, l'apparition des tombes tours au 4e millénaire avant notre ère est un exemple particulièrement intéressant pour illustrer le lien entre mégalithisme et enrichissement des communautés. Plusieurs facteurs indiquent que l'économie pastorale combinée à la chasse et à l'agriculture des communautés à mégalithes ait contribué à l'approvisionnement des sociétés étatiques mésopotamiennes et pharaoniques. Installées dans des zones marginales, les communautés autochtones contrôlent des carrefours stratégiques et commerciaux en utilisant la profondeur de l'espace désertique auquel elles sont parfaitement adaptées. Le mégalithisme dans ce contexte fonctionne comme un code culturel commun. D'un point de vue transactionnel, adopter les mêmes codes culturels du Yémen au Sinaï offre des avantages non négligeables : en augmentant le capital de confiance entre les communautés adoptant des codes de conduite identiques, ils réduisent les risques liés aux échanges. La construction d'une identité culturelle ostentatoire comme le mégalithisme a permis à des communautés qui se sont développées essentiellement grâce aux transactions de marchandises, une nette augmentation de leurs ressources financières et économiques.

Mots-clefs : *Mégalithisme, tombe tour, commerce, Arabie*

5

p. 93-102 – Les pierres dans le paysage : des monuments mégalithiques dans un cadre plus vaste par Chris SCARRE

Les monuments mégalithiques ont depuis de nombreuses années attiré l'attention à la fois populaire et savante par leur importance et leur monumentalité, mais ils ne peuvent pas être compris isolément. Ils étaient situés dans des paysages plus vastes qui étaient à la fois naturels et culturels dans leur formation. Ces paysages ont joué un rôle particulier pour fournir des matériaux à partir desquels les monuments mégalithiques ont été construits et les paysages naturellement constitués de gros blocs peuvent avoir été une source d'inspiration pour la construction de mégalithes culturels. Il y a aussi l'importance du lieu à considérer. L'ethnographie nous rappelle que de nombreuses sociétés investissent les caractéristiques "naturelles" de la terre, de la mer et du ciel avec une signification culturelle et cosmologique. À un niveau plus immédiat, les problèmes de topographie et d'intervisibilité peuvent être traités par le biais d'une analyse SIG. Plus généralement, cependant, le paysage était l'arène de l'expérience vécue, et la relation des monuments avec les sites d'occupation de ceux qui les ont construits est une question clé. Prises ensemble, ces approches peuvent aider à expliquer pourquoi des monuments mégalithiques ont été construits dans des endroits particuliers, mais nous devons également déplacer notre regard vers le haut et considérer la pertinence de l'archéoastronomie et les mouvements des corps célestes – soleil, lune et étoiles – dans ce choix.

Mots-clefs : *Mégalithe, géologie, paysage, ethnographie, SIG, archéoastronomie*

Partie II : Mégalithes en Amériques

p. 121-129 – Introduction par José R. OLIVER et Luc LAPORTE

6

p. 131-158 – Mégalithes précolombiens des Caraïbes : *bateyes* et *plazas* des Grandes Antilles par José R. OLIVER

Cette contribution présente un aperçu des constructions mégalithiques pré-colombiennes dans les îles des Caraïbes. Les ouvrages mégalithiques sont répartis entre le sud-est d'Hispaniola et les îles Vierges, Porto Rico affichant la plus grande concentration. Les ouvrages mégalithiques dans les Caraïbes sont toujours utilisés pour délimiter des enclos à vocation civique et cérémonielle : places, *bateyes* (terrains de balle / jeux) et autres espaces rituels. Dans l'est de Cuba et dans la majeure partie d'Hispaniola, les enclos civiques et cérémoniels sont plutôt délimités par de longs talus, tandis qu'ailleurs dans les Caraïbes, ces espaces cérémoniels sont restés inconnus. Après une discussion de la définition de la "mégalithicalité" et de la "monumentalité", est retracé le développement historique des places et terrains de jeux de balle se concentrant sur Porto Rico, avec Las Flores (700-1200 de notre ère), Tibes (900-1200) et Caguana (1210-1450/1500) qui servent d'exemples au sein d'une trajectoire évolutive vers la consolidation de centres cérémoniels disposant de multiples cours encadrées de grands monolithes et de rochers. Cette séquence se termine par le site de Bateyes de Viví (1225-1445 de notre ère), avec la mise au tombeau rituelle des monolithes de l'une de ces places, après une inondation destructrice, puis sa reconstruction (renaissance). On fait valoir que l'importance des grosses pierres, par opposition aux travaux de terrassement, réside dans la notion indigène selon laquelle les pétroglyphes capturés dans les monolithes incarnent des êtres sensibles, des personnes imprégnées de la vitalité et de

la puissance du *cemí* (signifiant littéralement "doux"). Cette force vitale, plus que les dimensions de ces pierres, en fait des monuments et exprime la monumentalité. Les personnages ont évolué en taille, passant de petites icônes portables fabriquées à partir de divers matériaux jusqu'à des mégalithes, ancrés au sol et encadrant des enceintes cérémonielles. Il y a eu un processus de "mégalithisation" et de fixation spatiale que les *cemí*-personnages en pierre ont vécu à travers le temps. Pour comprendre le caractère et la signification des pétroglyphes monumentaux (personnes imprégnées de *cemí*), cet article examine comment les êtres humains et ces personnages sensibles, incarnés dans des monolithes, ont interagi dans le cadre de cérémonies *areíto* (chant-danse) qui ont soutenu l'ordre social, politique et religieux des "*Taíno*". Cela contraste avec les *bateyes*, où des segments de la société se livraient à des compétitions cérémonielles de jeux de balle et où les pétroglyphes étaient absents. Bien que ces îles des Caraïbes ne livrent pas autant de mégalithes, individuellement, que de nombreuses autres régions du monde, l'effet global, visuel et perceptif des grands enclos délimités par des pierres présente sans doute des proportions mégalithiques. Par ailleurs, la question des centres cérémoniels méga-terre, par rapport aux sites mégalithiques des Grandes Antilles est abordée ici. Les Caraïbes ajoutent ainsi un autre exemple d'archéologie mégalithique, avec ses particularités et son originalité, qui enrichit notre compréhension des mégalithes et des monuments du monde entier.

Mots-clefs : *Caraïbes, Porto Rico, monumentalité, centre cérémoniel, places, terrain de jeux de balle (*batey*), ouvrages en terre, pétroglyphes, Las Flores, Tibes, Caguana, Bateyes de Viví*

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p. 159-191 – Mégalithes des Andes colombiennes : Boyacá, Sierra Nevada del Cocuy et San Agustín par José R. OLIVER

Les hauts plateaux andins de Colombie présentent un corpus riche et varié d'ouvrages mégalithiques allant de hautes pierres dressées, de statues monolithiques monumentales richement sculptées et de structures funéraires en forme de dolmen, jusqu'à des sarcophages massifs en pierre et des alignements de monolithes délimitant des espaces cérémoniels. Les mégalithes semblent avoir fait leur apparition à la fin de la période formative (environ 400 avant notre ère) et sont toujours utilisés parmi les U'wa actuels de la Sierra Nevada del Cocuy. Ce chapitre vise à fournir une synthèse de l'état actuel des connaissances sur les manifestations mégalithiques trouvées dans le département de Boyacá, dans le nord des Andes, et dans la région du massif de San Agustín, dans le bassin supérieur du fleuve Magdalena, en Colombie.

Mots-clefs : *Mégalithes, San Agustín, Boyacá, dolmens, pierres dressées, Colombie*

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p. 193-200 – Les structures mégalithiques de l'Holocène supérieur dans la partie orientale de l'Amazonie par João DARCY DE MOURA SALDANHA

Les structures mégalithiques de l'Amazonie la plus orientale (État d'Amapá, Brésil) peuvent être décrites comme un arrangement circulaire ou irrégulier de blocs de granite disposés au sommet des collines. Bien que connu depuis le XIXe siècle, il existe peu d'informations sur ce type de site archéologique. Depuis 2005, un projet archéologique a été mis en œuvre. Ses principaux objectifs sont la promotion de la préservation du site et la collecte de données empiriques sur les phénomènes archéologiques associés à ces structures. Nous présentons

ici quelques résultats, apportant de nouvelles données sur l'occupation précolombienne dans la région.

Mots-clefs : *Mégalithisme, Amazonie, occupation amérindienne*

p. 201-203 – De la pierre au dégraissant : granite, céramique et mégalithisme à Amapá (Brésil) par Marina DA SILVA COSTA

Selon l'archéologue Denis Williams (2001), l'introduction de roches traitées dans la fabrication de pièces précoloniales provenant des Guyanes augmenterait le niveau de dureté de ces céramiques. Sur la base de cette hypothèse, l'expérience visait à fabriquer des plaques et des rouleaux en céramique en ajoutant du granite broyé. Les résultats de la recherche proviennent d'analyses de céramiques mégalithiques du site archéologique AP-CA-18 - Rego Grande, Calçoene, dans l'État d'Amapá, au Brésil. L'analyse des tessons de céramique mis au jour sur ce site a révélé la présence de granite broyé dans l'argile de certaines céramiques précoloniales. Dans le même contexte, des sépultures secondaires et une grande structure mégalithique avec des signes d'usages astronomiques, également construits en granite, évoquent un réseau de relations entre les humains du passé et ce matériau primordial. À la suite de l'expérience, il a été observé avec l'utilisation de l'échelle de Mohs que l'intrusion de "granite broyé" dans des pièces en céramique augmente sensiblement leur dureté, montrant ainsi l'amélioration suggérée par Williams. La recherche est conçue comme un projet de thèse où seront réalisés des tests d'archéométrie et d'analyses des lames pétrographiques de tessons précoloniaux, associant ainsi les connaissances scientifiques modernes à une théorie, encore en cours de construction, sur une symbologie possible des divers usages du granite par les peuples anciens de la région, dans l'état d'Amapá (nord du Brésil). Notre objectif est de comprendre les utilisations du matériau primordial dans le paysage et dans la vie passée des habitants de cette partie de l'Amazonie brésilienne, en suggérant une relation de symétrie dans laquelle des approches pratiques et symboliques formeraient une réalité unique pour ces peuples, différente de la précédente.

Mots-clefs : *inclusions, céramiques pré-coloniales, dureté, expérimentation*

p. 205-216 – Mégalithisme non funéraire chez des chasseurs-cueilleurs et des pasteurs non sédentaires : Tulán-52 et Tulán-54 (désert de l'Atacama, Chili) par Catherine PERLÈS et Lautaro NÚÑEZ

Les deux centres cérémoniels de Tulán-52 et Tulán-54, au cœur de l'un des déserts les plus arides du monde, constituent un exemple sans équivalent dans l'aire andine. Tulán-52, qui date de l'Archaïque récent, représente en effet un cas unique dans cette aire d'un centre cérémoniel mégalithique érigé par des communautés de chasseurs-collecteurs non sédentaires. Il se présente comme un prototype de Tulán-54, d'un millénaire plus récent. Daté de la phase ancienne de la période Formative, Tulán-54 atteste le développement de l'élevage de camélidés et de l'horticulture. Ce centre cérémoniel est lui aussi unique sur le plan architectural avec son enceinte mégalithique centrale semi-enterrée, cloisonnée par des murs de partition convergeant vers une cellule centrale et ses sépultures de nouveau-nés accompagnés de riches offrandes. Les données provenant des habitats et des inhumations ne corroborent pas l'idée d'un monumentalisme associé à des sociétés stratifiées où les élites rituelles accapareraient les richesses. Elles conduisent au contraire à se tourner vers d'autres

formes anciennes de monumentalisme non funéraire, mégalithique ou non, datant du début du processus de néolithisation, et dans lesquelles les élites seraient organisées de façon corporative, sans accumulation personnelle de richesse.

Mots-clefs : *Atacama, Chili, Archaïque récent, Formatif, centres cérémoniels, chasseurs-cueilleurs*

Partie III : Mégalithes de l'île de Pâques à l'Indonésie

p. 236-239 – Introduction de Nicolas CAUWE et Tara STEIMER-HERBET

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p. 241-255 – Monument aborigène pléistocène dans le nord de l'Australie par Chris URWIN, Bruno DAVID, Jean-Jacques DELANNOY, Joshua A. BELL et Jean-Michel GENESTE

Les emplacements, les arrangements et les constructions de grosses pierres – le plus souvent appelés "monuments mégalithiques" – ont longtemps occupé l'imagination de la communauté archéologique mondiale. Les soi-disant "traditions mégalithiques" ont été largement étudiées en Europe centrale et septentrionale et, dans une moindre mesure, dans d'autres parties du monde telles que le Moyen-Orient, certaines parties de l'Afrique, de l'Asie et de l'Océanie. En raison de la nature des archives archéologiques relativement uniques de l'Australie et des hypothèses sur les paysages des "chasseurs-cueilleurs", on a longtemps supposé que les populations aborigènes australiennes n'avaient pas (ou ne pouvaient pas) construire des lieux monumentaux en pierre. À partir des recherches transdisciplinaires menées au cours de la dernière décennie, nous montrons comment de grands affleurements rocheux ont été façonnés pour créer de nouvelles formes d'architecture monumentale dans le nord de l'Australie. Nous retraçons à travers le temps les formes anthropogéniques des affleurements rocheux qui changent, avec des implications sur la façon dont les communautés autochtones ont organisé et marqué leur monde depuis 35 000 ans.

Mots-clefs : *Australie aborigène, Terre d'Arnhem, archéologie australienne, mégalithes, monumentalité, Pléistocène*

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p. 257-275 – Mégalithisme de Polynésie orientale par Nicolas CAUWE

Le monumentalisme polynésien, s'il est reconnu depuis les premières explorations du Pacifique par les Européens, n'est que très rarement qualifié de mégalithique. C'est que les matières mises en œuvre sont assez variées (pierre, bois, corail, terre…), et qu'il est même parfois question de l'inclusion dans les architectures du monde végétal vivant. Par ailleurs, les monuments polynésiens, au-delà de leur éventuelle ampleur, ne sont pas systématiquement édifiés avec des "grands" éléments, tandis qu'ils ont souvent subi des démontages organisés, suivis de reconstructions. Il n'existe donc pas de mégalithisme polynésien, dans le sens d'un mouvement architectural général. En revanche, des moyens mégalithiques sont sporadiquement sollicités pour les architectures et/ou la statuaire. Dans la synthèse qui suit, on ne fera pas l'inventaire de tous les types de monuments dans lesquels intervient du mégalithisme ; la tâche serait d'ailleurs prétentieuse et sans intérêt dans le cadre de cette publication. On tentera plutôt de dégager les traits généraux qui traversent toutes ces productions. Il apparaît ainsi que le mégalithisme en Polynésie ne peut être considéré comme une catégorie à part entière, formes et fonctions permettant d'accéder plus facilement à une

typologie, quoi qu'il en soit de la variété des techniques mises en œuvre. Cependant, on ne peut limiter le mégalithisme à ses seules caractéristiques techniques. Le recours à des grands blocs de pierre est signifiant, dans le sens où les matières premières sont souvent sacrées en Polynésie, tandis que les formes, naturelles ou sculptées, sont toujours chargées d'un pouvoir efficient nommé *mana*. De plus, des comparaisons avec les stèles, très abondantes en Polynésie orientale, suggèrent un anthropomorphisme de nombre de grandes pierres. Par ailleurs, le paysage est important dans le cadre de la monumentalité polynésienne, non tant parce qu'il livre un cadre approprié, mais parce qu'il est un des éléments fondamentaux de la conception même des espaces sacrés : autels, sépultures, chemins pavés, stèles ou pétroglyphes renforcent souvent des particularités géographiques, telles que volcans, cascades, vallées, plages, falaises, tunnels de lave, affleurements rocheux… Il est possible que la totalité des îles étaient considérées comme des monuments. Dans un tel cadre, la Polynésie nous fournirait un des rares exemples d'un "mégalithisme" naturel.

Mots-clefs : *Architecture généalogique, matières premières sacrées, anthropomorphisme des mégalithes, mégalithisme naturel*

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p. 277-290 – Architectures mégalithiques dans un monde océanique de "petites îles (Micro-nésie)" par Christophe SAND

La Micronésie, qui regroupe les îles et archipels de la plus grande partie du Pacifique nord, progressivement peuplée à partir de 1300 avant notre ère, comporte une diversité et une richesse de structures mégalithiques sans véritable parallèle ailleurs en Océanie. Cet article se propose de présenter certains parmi les ensembles les plus emblématiques et originaux de cette région. L'approche chronologique adoptée permettra de montrer que ces structures se sont développées dans des contextes culturels sans nécessaires liens les uns avec les autres, l'émergence de traditions architecturales apparaissant plutôt associée à des dynamiques sociopolitiques internes. Dans l'archipel des îles Mariannes a émergé, à partir de la fin du premier millénaire après notre ère, une tradition de production de colonnes monumentales avec chapiteau, les *Latte*, extraites de carrières à l'aide d'outils exclusivement en pierre et en coquillage. Placées en doubles alignements et pouvant atteindre plusieurs mètres de hauteur totale, elles servaient probablement de support à des habitations de nobles et à des structures cérémonielles en bois. Dans les îles Carolines ont été édifiées, au cours du deuxième millénaire après notre ère, de véritables villes monumentales, dont l'emblématique "Venise du Pacifique" appelée Nan Madol avec sa centaine de plateformes artificielles aménagées dans le lagon, portant des murs pouvant atteindre plus de 8 m de hauteur et construites grâce à un savant emboîtement de colonnes basaltiques polygonales. Enfin sera discutée la tradition récente de production de grandes "pierres-monnaies" utilisées sur l'île de Yap, dont le gigantisme n'a été permis qu'à partir de l'introduction du métal et le transport des blocs sur des navires à vapeur occidentaux.

Mots-clefs : *Océanie, Micronésie occidentale, monumentalité, Nan Madol,* Latte*,* rai*, pouvoir centralisé, changement climatique*

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p. 291-306 – Mécanismes de l'apparition et de la disparition des mégalithes indonésiens par Tara STEIMER-HERBET

Le phénomène mégalithique indonésien est contemporain des grands royaumes hindou-bouddhistes de Sriwijaya, Majapahit et Malayu. Il s'agit d'un patrimoine culturel exceptionnel par son ampleur avec des milliers de monuments présents dans les forêts, les montagnes, les plateaux et près des côtes, édifiés par des peuples autochtones dont les

croyances religieuses, fondées sur le culte des ancêtres et les esprits de la Nature, témoignent d'un fond culturel commun de Bondowoso (Java est) à Toba (Sumatra nord) en passant par Sukabumi, Kuningan, Lampung, Pasemah, Jambi et Minangkabau pour les régions les mieux étudiées. Les échanges de ressources et de services avec les royaumes hindou-bouddhistes donnent aux peuples autochtones la possibilité d'acquérir des biens de prestige à l'origine d'une compétition sociale elle-même favorable à l'apparition d'une culture mégalithique. Il est fort probable que l'émergence de chefs précéda la création originale de monuments mégalithiques servant à inhumer les défunts, honorer, commémorer et/ou communiquer avec les ancêtres. Pour ces peuples qui n'utilisaient pas l'écriture, ces pierres, brutes ou taillées, marquaient le paysage et transmettaient la mémoire des Hommes d'une génération à l'autre. À Java, Sumatra (centre et sud) et Sulawesi (centre : Lore Lindu), les monuments mégalithiques cessèrent d'être érigés dès que les royaumes hindou-bouddhistes perdirent leur puissance. En revanche, et selon une logique similaire, l'utilisation des mégalithes s'est diffusée plus tardivement dans les îles de Sumba, Florès, Nias, Sumatra nord (Toba) et Sulawesi centre (Tanah Toraja) au contact des marchands européens. Malgré des conversions massives au catholicisme et protestantisme à Sumba, Florès, Toba, Tanah Toraja et à Nias, cette tradition est restée vivante. Ces monuments témoignent d'une période d'échanges à l'origine du développement des sociétés complexes indonésiennes. Cette présentation s'efforcera de mettre en relief le mécanisme d'apparition et de disparition du mégalithisme en Indonésie.

Mots-clefs : *Indonésie, royaumes hindou-bouddhistes, Sriwijaya, Majapahit, Malayu, phénomène mégalithique, apparition, disparition*

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p. 307-321 – Menhirs de Tana Toraja (Indonésie) : une évaluation ethnoarchéologique préliminaire par Ron ADAMS et Guillaume ROBIN

La pierre est une caractéristique importante du paysage naturel et culturel de Tana Toraja, en Indonésie, où les formations de basalte et de karst calcaire créent un décor spectaculaire. Dans ce contexte, la manipulation de blocs est un aspect important des anciennes traditions culturelles qui perdurent jusqu'à nos jours. L'extraction et l'érection de grands menhirs font partie de cette tradition de travail de la pierre qui comprend également le creusement de caveaux funéraires dans la roche et le placement de petites pierres dressées. Les menhirs sont extraits, transportés et érigés à l'occasion du plus grand type de fête funéraire organisé à Tana Toraja, qui implique des pratiques rituelles complexes auxquelles participent jusqu'à plus d'un millier d'invités, et l'abattage d'un nombre impressionnant de buffles et de porcs sur une période de plusieurs jours. Dans cet article, nous donnons un aperçu de la pratique de l'érection de menhirs en pierre à Tana Toraja et de sa signification sociale. Notre documentation ethnoarchéologique préliminaire aborde les méthodes, la logistique et les dynamiques sociales associées à cette tradition mégalithique. L'extraction et le façonnage des menhirs sont effectués par des ouvriers carriers spécialisés, tandis que le transport et l'érection des menhirs impliquent une main-d'œuvre plus importante. Les places monumentales dans lesquelles sont érigés les menhirs servent à commémorer les ancêtres et marquent l'importance et la richesse des groupes familiaux auxquels ils sont associés. Ces espaces emplis de mégalithes servent également de cadre à certaines phases importantes des fêtes rituelles. D'un point de vue général, la signification durable de ces monuments est indissociable des fêtes complexes dans lesquelles ils sont ancrés et dont ils deviennent un symbole éternel. Le lien entre les menhirs et les implications sociales des grandes fêtes est conforme aux pratiques mégalithiques observées ailleurs dans l'archipel indonésien, où la construction monumentale est souvent liée à des entreprises rituelles élaborées.

Mots-clefs : *Menhirs, ethnoarchéologie, fêtes, Indonésie*

p. 322-339 – Mégalithes de Sumatra et de Nias (Indonésie) : concepts de "valeur" derrière la fabrication de monuments en pierre par Dominik BONATZ

Cet article vise à résumer les phénomènes du mégalithisme à Sumatra et sur l'île voisine de Nias. Il s'agit en effet d'une tâche ambitieuse, car cette zone abrite le plus grand nombre de monuments et de constructions mégalithiques de toute l'Asie du Sud-Est. De grands complexes mégalithiques se trouvent sur le plateau de Pasemah au sud de Sumatra, dans les hautes terres de Jambi, sur les terres des Minangkabau à l'ouest de Sumatra, dans les terres Batak au nord de Sumatra et dans toute l'île de Nias. Les pierres, les sculptures et les bâtiments en pierre de ces régions présentent des différences caractéristiques formelles et iconiques et datent de différentes périodes, du début du premier millénaire de notre ère à nos jours. Compte tenu de cette étendue spatiale et diachronique, la variété des formes d'expression mégalithiques et leurs différents contextes sociaux constituent un champ d'investigation important. Ils nous permettent de mieux comprendre la signification des monuments en pierre dans les sociétés et les concepts de "valeur" derrière leur fabrication. Telle est l'approche essentielle de cet article.

Mots-clefs : *Mégalithes, archéologie, "valeur", Indonésie, Sumatra, Nias*

p. 341-364 – Le contexte social du mégalithisme, approche ethno-archéologique : ce que nous enseigne le cas de l'île indonésienne de Sumba par Christian JEUNESSE

L'île de Sumba, au sud-est de l'archipel indonésien, est le dernier lieu au monde où l'on construit encore couramment des mégalithes à vocation funéraire. L'existence, au sein d'un environnement culturel homogène, de deux formes bien différenciées d'organisation sociale, l'une segmentaire et l'autre stratifiée, porte ouverte à une approche comparatiste, en fait un laboratoire idéal pour l'étude de l'arrière-plan social et politique du mégalithisme. Les deux types de sociétés ont chacune leur manière de vivre et de pratiquer le mégalithisme : monuments de taille modeste, peu décorés et abritant une population funéraire pouvant couvrir plusieurs générations pour la première et, pour la seconde, variabilité dimensionnelle plus importante, avec des dolmens "royaux" de grande taille, souvent richement décorés et réservés, en général, au couple royal. L'examen des mutations actuelles, qui tendent à atténuer les différences tout en créant les conditions favorables à l'apparition de nouveaux clivages, nous offre une possibilité précieuse d'observer "en direct" comment un système mégalithique – puisque la construction de tombes mégalithiques reste un medium privilégié pour l'expression des identités – s'adapte à des conditions sociales et politiques en mutation. Une fois le modèle "sumbanais" caractérisé, nous tentons de montrer comment il est susceptible d'affiner notre regard sur les mégalithismes néolithiques européens, notamment en favorisant l'élaboration de nouvelles problématiques de recherche inspirées par les données fournies par l'anthropologie sociale.

Mots-clefs : *Ethnoarchéologie, Sumba, mégalithes, organisation sociale, tribu, chefferie, tombes élitaires*

p. 365-371 – Techniques mégalithiques sur l'île de Sumba (Indonésie) : de la carrière à l'abandon par Noisette BEC DRELON et Christian JEUNESSE

Différentes techniques de construction de tombes mégalithiques ont été observées sur l'île de Sumba en Indonésie où cette tradition est toujours vivante. À travers plusieurs études de cas, des carrières à l'abandon, en passant par le transport et la construction, nous proposons

une synthèse de ces pratiques vivantes afin d'alimenter nos réflexions sur celles du passé. Il sera également question des dispositifs liés à l'utilisation et à la restauration des tombes qui, outre leur originalité technique, sont aussi des indicateurs du fonctionnement collectif et de l'investissement de ces communautés dans la pérennité de leurs monuments.

Mots-clés : *Sumba, carrières, transport, construction, restauration*

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p. 373-390 – Établir un cadre plus large. Une comparaison des traditions récentes de construction de mégalithes à Sumba (Indonésie) et au Nagaland (Inde) par Maria WUNDERLICH

Au cœur des disciplines archéologiques se trouvent l'envie de reconstruire les récits de la vie humaine passée et les significations derrière les vestiges matériels trouvés aujourd'hui. L'ancienneté de la Préhistoire requiert des aides pour tenter de telles reconstructions et le raisonnement analogique constitue une approche importante à cet égard. Les stratégies de recherche comparative, y compris l'utilisation d'études récentes de cas ethnoarchéologiques, présentent un potentiel élevé car elles offrent la possibilité de s'engager dans les débats archéologiques actuels et conviennent particulièrement à l'étude de phénomènes complexes tels que les traditions mégalithiques. Cet article présente une étude comparative utilisant des ensembles et des perspectives de données à la fois quantitatives et qualitatives. Les études de cas récentes présentées ici comprennent des remarques sur le mécanisme social influençant les activités de construction de mégalithes sur l'île de Sumba, en Indonésie, et dans la région sud du Nagaland, au nord-est de l'Inde. Les deux exemples présentent des similitudes structurelles frappantes, concernant les activités et le mécanisme des activités de fête, les inégalités économiques et les efforts collectifs impliqués dans le processus de construction de mégalithes. Pourtant, les études de cas sont caractérisées par des particularités et des stratégies individuelles de communautés, à la fois dans les régions concernées et dans la comparaison plus large entre elles. Ces particularités représentent des interprétations individuelles et des expressions particulières du mécanisme global et méritent la même attention que les similitudes structurelles. Cette étude montre que les approches comparatives doivent utiliser et combiner des approches qualitatives et quantitatives, permettant ainsi une synthèse comparative de différentes études de cas tout en évitant les généralisations de cadres régionaux plus larges.

Mots-clefs : *Inde du Nord-Est, Sumba, approches comparatives, ethnoarchéologie, festivité, action collective, construction de paysage*

Partie IV : Mégalithes en Inde et en Asie du Sud-Est

p. 415-417 – Introduction par Rabindra Kumar MOHANTY et Johannes MÜLLER

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p. 419-430 – Cultures mégalithiques en Asie du Sud par Rabindra Kumar MOHANTY

L'origine et le développement du mégalithisme en Inde ont fait l'objet de débats, qu'il s'agisse de mouvements indigènes ou de l'influence de sources étrangères. Ici, la notion de culture "mégalithique" incorpore toute une diversité de sépultures avec ou sans dispositifs en pierre. Les monuments correspondent à un contexte d'expression socioreligieuse quant à l'inhuma-

tion du défunt dans une tombe, accompagnée de certains objets spécifiques à la culture de l'époque. Cette pratique plus large coïncide avec l'utilisation étendue du fer qui constitue un complément à la culture mégalithique au travers du sous-continent. Les mégalithes de l'Âge du Fer apparaissent dans différentes régions du pays entre le XIIIe et le XIIe siècle avant notre ère et perdurent jusqu'au début de la période historique, vers le IIe ou IIIe siècle de notre ère. Ils se trouvent en grande partie dans la partie sud du pays, d'où leur nom de mégalithes de l'Inde du Sud. Cependant, l'existence de pratiques funéraires organisées au sein du sous-continent indien peut être datée dès la période mésolithique, lorsque les inhumations apparaissent entre le 8e et le 4e millénaire avant notre ère, et se poursuivent à travers la civilisation de la vallée de l'Indus, comme au travers de cultures régionales du Néolithique et du Chalcolithique. Les sépultures construites avec des pierres fouillées à Dholavira et Dhaneti au cours des premières phases de la culture Harappéenne vers 2800-2000 avant notre ère ont leur importance. Elles ressemblent beaucoup au mégalithisme de l'Âge du Fer. Ce dernier se superpose souvent à l'existence préalable de telles pratiques sépulcrales sélectives et de leur continuité dans des contextes néolithiques et chalcolithiques ultérieurs, pour de nombreuses régions du pays. Les permutations et les combinaisons de modèles architecturaux, l'utilisation de matériaux de construction, les éthiques socio-économiques et traditionnelles du départ rituel des défunts, ont généré une représentation assortie de monuments mégalithiques que l'on trouve dans de nombreuses régions en Inde, et en particulier dans l'Inde péninsulaire.

Mots-clefs : *Mégalithes, monolithes, Chalcolithique, Néolithique, Âge du Fer, Gandhar, Vindhyan, Ganga plain, Deccan, Inde péninsulaire, céramique, tombes*

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p. 431-445 – Architectures mégalithiques en Inde par Rabindra Kumar MOHANTY

Les monuments mégalithiques se trouvent dans un grand nombre de sites, en particulier en Inde péninsulaire. Ils sont assez rares depuis la région de l'Himalaya jusqu'au centre de l'Inde. Ils présentent une variabilité architecturale, l'utilisation de matériaux structuraux et du mobilier funéraire associé. Les mégalithes antérieurs à l'Âge du Fer pourraient être antérieurs à 1200 avant notre ère, tandis que des mégalithes seront construits depuis l'Âge du Fer ancien jusqu'au IIIe siècle de notre ère, aux débuts de la période historique. Dans les mêmes cimetières apparaissent des enterrements contemporains des mégalithes mais sans appendices en pierre, tels que des sarcophages et des sépultures en vase, dans la continuité d'une tradition plus ancienne en Inde du Sud. Il semble que l'architecture funéraire incorpore des formes de base comme le cairn circulaire, le dolmen, la ciste et les menhirs dans certains cas.

Mots-clefs : *Mégalithes, tradition actuelle, Kashmir, Inde du Nord-Est, Uttarakhand, Vindhya, Vidarbha, terminologie, chronologie*

20

p. 447-473 – Mégalithes du nord-est de l'Inde : monuments et structures sociales par Tiatoshi JAMIR et Johannes MÜLLER

Différents paysages mégalithiques du nord-est de l'Inde offrent de riches ensembles d'informations archéologiques et ethnoarchéologiques sur les implications sociales des activités de construction de mégalithes dans une perspective comparative. Cet article tente de situer les traditions de construction mégalithiques au Nagaland, Manipur, Meghalaya, Assam, Mizoram et Sikkim en faisant référence à la nature des structures sociales des populations concernées. Tant les pratiques de mémorisation que l'on retrouve associées aux pierres dressées que les pratiques ancestrales que l'on retrouve dans les différentes traditions

funéraires démontrent que de vastes structures communautaires et coopératives relient différentes sphères de la vie quotidienne. Les activités festives et la construction de monuments mégalithiques dans la région du nord-est de l'Inde représentent une pratique de longue date des sociétés stratifiées et acéphales. Un tour d'horizon du contexte historique, archéologique et ethnographique des traditions mégalithiques du nord-est de l'Inde est ainsi examiné, tout en y associant les résultats des récents travaux sur le terrain entrepris dans les parties méridionales du Nagaland.

Mots-clefs : *Nord-est de l'Inde, Khasi-Jaintia, matrilinéaire, Naga, patrilinéaire, fêtes du mérite*

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p. 475-487 – Monuments mégalithiques de l'État de Jharkhand (Inde) : archéologie et ethnographie par Himanshu SHEKHAR et Rabindra Kumar MOHANTY

L'archéologie mégalithique dans le sous-continent indien est bien documentée et a été soumise à diverses interprétations par de nombreux chercheurs depuis la première découverte de mégalithes en 1823 par Babington. Outre les monuments anciens, il existe un riche patrimoine ethnographique de tradition mégalithique dans différentes parties du pays. Cet article s'intéresse à l'étude des anciens sites mégalithiques signalés et explorés dans l'État de Jharkhand, dans l'est du pays. L'enquête suit le modèle ethnographique de la recherche et les inférences sont tirées sur la base des données ethnographiques disponibles, des données archéologiques et de celles issues de l'exploration des sites mégalithiques ou de prospections de surface.

Mots-clefs : *Tables de couverture, dolmen, menhir, tradition vivante, coutumes funéraires*

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p. 489-498 – Jarres en pierre d'Asie du Sud-Est et d'Inde du Nord-Est : problèmes et perspective par Tilok THAKURIA

Les jarres en pierre sont des éléments archéologiques uniques et énigmatiques de l'Asie du Sud et du Sud-Est. Henri Parmentier, en 1912, a écrit pour la première fois une note académique sur les jarres en pierre dans la province de Xieng Khouang au Laos. Plus tard, dans les années 1930, Madeleine Colani a entrepris un vaste travail de prospection et de documentation sur les jarres en pierre de la province de Xieng Khouang. Outre le Laos, des jarres en pierre ont également été signalées en Indonésie et par des fouilles à Sri Kestra au Myanmar. Les jarres en pierre indonésiennes sont, dans une large mesure, similaires et semblent être affiliées aux jarres laotiennes, mais les jarres en pierre de Sri Kestra représentent une tradition funéraire totalement différente liée au bouddhisme. Les jarres en pierre d'Assam signalées en 1928 par J. P. Mills et J. H. Hutton sont proches des jarres en pierre laotiennes par de nombreux aspects et caractéristiques. Le présent article tente d'offrir une brève discussion sur les jarres d'Asie du Sud-Est et du Sud, sur l'historiographie de la recherche, les caractéristiques générales des jarres, et à la fin, tente d'aborder certains des problèmes archéologiques concernant les jarres ; que représentent ces jarres en pierre dans la compréhension d'une culture disparue qui occupait autrefois une large zone géographique couvrant l'Asie du Sud-Est et les parties nord-est de l'Inde ?

Mots-clefs : *Jarres en pierre, Laos, Assam, Dima Hasao, gravures*

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p. 499-507 – Les dolmens de Karachi, Sindh (Pakistan) par Zulfiqar Ali KALHORO

Cet article traite des dolmens de la région de Karachi. J'ai fait l'inventaire des mégalithes du Sindh en général et du district de Karachi en particulier. Au cours de mes prospections, j'ai repéré plus de cent sites mégalithiques dans la province du Sindh. Cercles de pierres dressées, structures circulaires en pierre, cairns, menhirs, alignements de pierres et dolmens sont ainsi répertoriés. En particulier, j'ai décrit 16 sites avec des dolmens. Je ne peux traiter de tous les cimetières mégalithiques et j'ai choisi de présenter trois sites importants de façon à discuter des dolmens représentatifs de tous les autres dolmens similaires découverts dans d'autres nécropoles. J'ai voyagé au sein du district de Karachi, comme dans d'autres du Sindh, depuis 2005. Pendant toutes ces années, j'ai découvert non seulement des mégalithes mais aussi des sites d'art rupestre près des mégalithes. Un grand nombre de ces mégalithes se trouvent près d'habitats préhistoriques. Dans quelques cas, ils se trouvent dans des vallées isolées où il n'y a pas d'habitat à proximité. La plupart des cimetières mégalithiques sont placés sur des collines, ou tout autre point près des rives d'un cours d'eau. Au cours des trois dernières décennies, nombre de sites présentant des dolmens ont été détruits du fait de la construction de maisons ou de routes. Les rapports anciens réalisés par des administrateurs britanniques ou des voyageurs mentionnent des dolmens qui n'existent plus de nos jours. La plupart ont été détruits du fait du développement urbain qui dévore le paysage culturel de Karachi. Les trois grands sites dont je parle dans cet article pourraient disparaître d'ici à une trentaine d'années si le développement urbain se poursuit au même rythme. Le rapide développement des schémas urbains a déjà détruit une grande partie de ce paysage culturel.

Mots-clefs : *Mégalithes, dolmens, pierres levées, Karachi, Pakistan*

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p. 508-517 – Mégalithes de la région de Vidarbha (Inde) par Rabindra Kumar MOHANTY

Vidarbha, la partie nord-est de l'État du Maharashtra, a révélé plus de 100 sites mégalithiques et de nombreux établissements contemporains. Certains sites disposent de plusieurs cimetières et d'un grand nombre de mégalithes, allant de quelques-uns à plus de 1 000. Tous les types de sépultures peuvent être observés en Inde. Mais plus de 95 % appartiennent à la catégorie des cairns circulaires. Des fouilles et des prospections intensives ont été réalisées dans cette région, fournissant une base de données suffisante pour des études approfondies.

Mots-clefs : *Vidarbha, Deccan, architecture mégalithique, Âge du Fer, poteries noir et rouge, chevaux, objets, artisanat, squelette, date, profession, économie*

p. 518-519 – Site mégalithique de Mahurjhari (Inde) par Rabindra Kumar MOHANTY

Les sites mégalithiques de Mahurjhari sont en cours de fouille depuis 1933 jusqu'à récemment. Le très grand nombre de mégalithes étudiés, à des moments différents et par différents chercheurs, associé à des prospections intensives ont livré des données précieuses non seulement pour l'étude de l'économie ou de la stratification sociale, mais aussi pour la profession des personnes inhumées. La fouille du site d'habitat a révélé l'un des plus grands centres de fabrication de perles en pierre connus dans le sous-continent, et ailleurs.

p. 520-521 – Site mégalithique de Bhagimohari (Inde) par Rabindra Kumar MOHANTY

La fouille et l'exploration intensive comme la documentation des mégalithes dans différentes localités, ainsi que l'étude de leur architecture interne et externe, montrent une relation culturelle avec les sites du voisinage, avec échange de mobilier. Les habitats livrent beaucoup de preuves du travail du fer.

Mots-clefs : *Prospections de surface, stratification sociale, reconstructions*

p. 523-533 – Disparités dans la répartition des sépultures mégalithiques de Vidarbha (Inde) : un examen minutieux par Virag SONTAKKE

Vidarbha est l'une des régions importantes du Maharashtra, en Inde. Archéologiquement, Vidarbha est connue pour ses monuments mégalithiques. Les sites mégalithiques situés à Vidarbha sont géographiquement concentrés dans le district de Nagpur. Les études mégalithiques menées jusqu'à présent mentionnent principalement des cercles de pierres et des cairns, suivant la typologie de base prévalant dans la région, à côté de découvertes sporadiques de menhirs et de dolmens. Les récentes explorations effectuées dans la partie orientale de Vidarbha, en particulier le long des rives de la rivière Wainganga, mettent en lumière des centaines de mégalithes présentant non seulement une immense variété typologique, mais aussi de nouvelles variantes dans la forme des mégalithes, qui étaient jusque-là inconnues de Vidarbha. Leur mode de construction, les dépôts et leur architecture externe sont différents des mégalithes typiques rapportés au district de Nagpur. Cette diversité des mégalithes en ce qui concerne l'architecture interne est d'une grande importance. On peut supposer que leur architecture interne singulière, comme la disposition des pierres et des biens funéraires se rapportent à des pratiques funéraires complexes répandues dans la communauté mégalithique le long des rives de Wainganga. Ce modèle singulier suggère également que la région de Wainganga disposait d'une tradition mégalithique différente de celle observée dans la région centrale de Vidarbha. Il semble que ces variations régionales, probablement en phase avec les adaptations écologiques, étaient en vogue pendant la période mégalithique à Vidarbha. Le présent article documente et analyse les variations typologiques significatives entre les mégalithes de Vidarbha et les inférences associées.

Mots-clefs : *Mégalithes, typologie, architecture, Vidarbha, cercles de pierres, cairns, dolmens*

p. 535-544 – Organisation sociale du "peuple" mégalithique dans le Vidarbha, Maharashtra (Inde) par Shantanu VAIDYA et Rabindra Kumar MOHANTY

La période mégalithique de Vidarbha est contemporaine du début de l'Âge du Fer. Les sépultures sont principalement concentrées dans la division de Wardha-Wainganga, c'est-à-dire les districts actuels de Nagpur, Wardha, Bhandara et Chandrapur de la région de Vidarbha dans la partie orientale du Maharashtra, en Inde. Les modes de subsistance et d'implantation de ces populations ont certainement conduit à un certain dynamisme social et économique au sein de la communauté, qui se reflète dans les tombes. Celles-ci, après analyse statistique, donnent une bonne idée de l'émergence de classes et de la complexité sociale afférente.

Mots-clefs : *Mégalithes de la région de Vidarbha, mobilier funéraire, analyse statistique, classes sociales*

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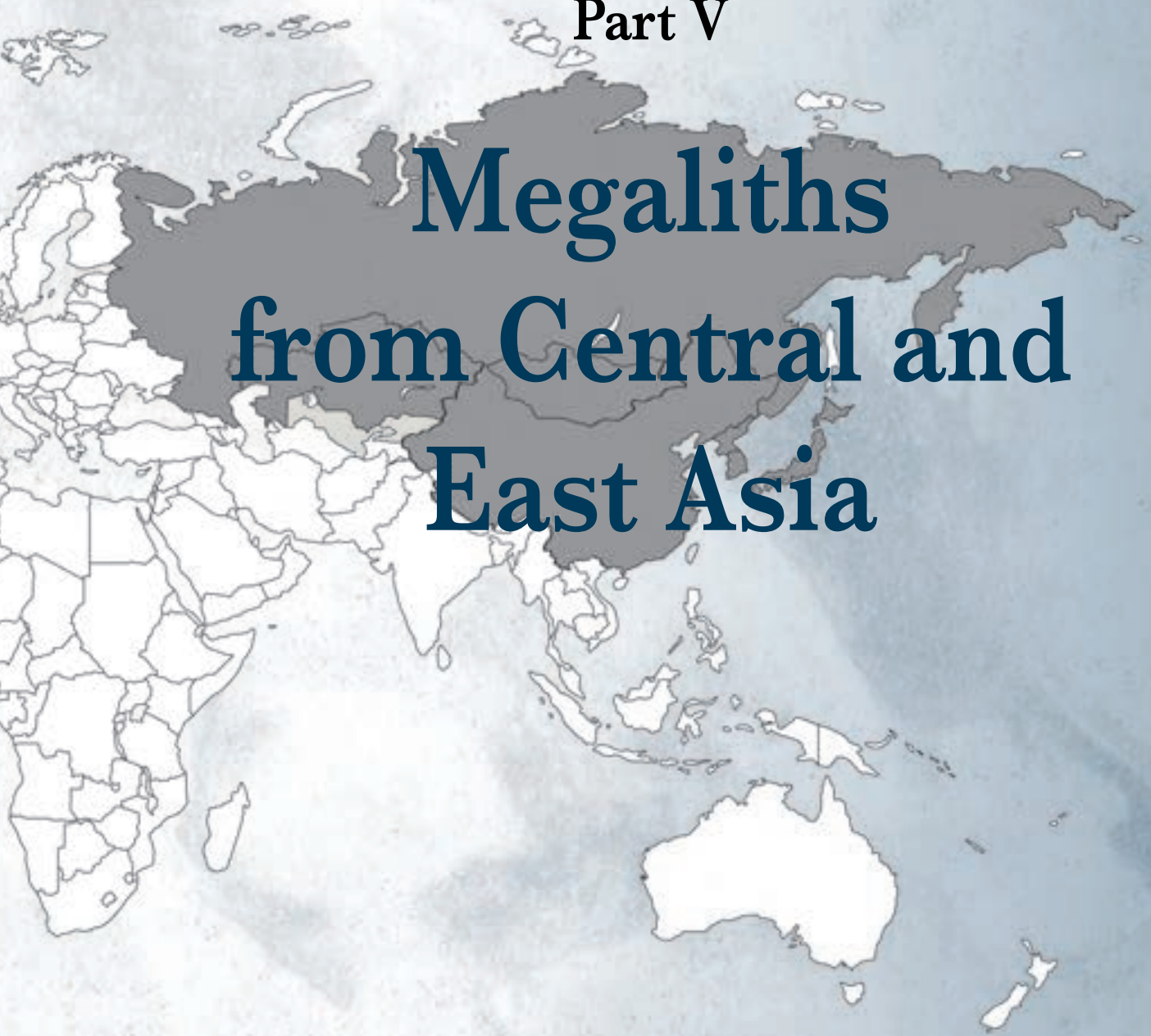
p. 545-566 – Les monuments mégalithiques au Tamil Nadu (Inde) : contenu et contexte par K. RAJAN

L'étude des monuments mégalithiques est un domaine important en Inde ; elle a débuté au début du XIXe siècle et se poursuit jusqu'à ce jour. Les premières explorations et fouilles étaient surtout sommaires et le fait d'antiquaires. Elles étaient surtout effectuées par les administrateurs de l'État colonial et princier. La taille des monuments et la richesse des antiquités rencontrées dans les tombes ont attiré de nombreux chercheurs vers ces monuments mégalithiques. Au début, de nombreuses études étaient axées sur les tombes plutôt que sur les vestiges d'habitats. Cette approche méthodologique a conduit à la découverte de plus de tombes que de sites d'habitat, menant à la formation de théories telles celles prônant que les peuples mégalithiques étaient nomades ou semi-nomades. Les études anthropométriques des restes humains ont également entraîné les discussions vers des théories raciales, dravidiennes et non dravidiennes, basées sur leur distribution géographique. Dans la période postérieure à l'Indépendance, la recherche a été axée sur la documentation des monuments mégalithiques et la fouille de sites particuliers. À cette époque, la typologie des monuments mégalithiques était presque standardisée. Des organisations comme Archaeological Survey of India, State Archaeology Departments, les départements universitaires et les chercheurs individuels ont commencé à documenter les monuments mégalithiques sur la base d'une terminologie normalisée et cette normalisation a permis de mieux comprendre les monuments répartis dans toute l'Inde. Indépendamment des données documentaires, la mise en place d'une chronologie des monuments mégalithiques a longtemps échappé. La raison principale en est que le mobilier culturel mis au jour dans les tombes n'a pas pu être comparé avec celui retrouvé dans les stratigraphies de sites d'habitat, car il n'y avait pratiquement aucune fouille pratiquée dans les sites non funéraires. De plus, on croyait alors largement que les céramiques en noir et rouge, comme la métallurgie du fer faisaient partie intégrante de la culture mégalithique. La datation de la métallurgie du fer, ou de la céramique noir et rouge, a influencé indirectement la datation des monuments mégalithiques. Au fil du temps, la date d'apparition du fer a également progressivement changé de 700 avant notre ère au 2e millénaire avant notre ère en Inde, et dans le cas des poteries en noir et rouge, elles apparaissent dès la période chalcolithique. Toutes ces questions sont regroupées autour de la chronologie. En outre, tous les monuments mégalithiques sont placés sous un terme parapluie appelé la culture mégalithique, bien que des monuments mégalithiques érigés avant l'Âge du Fer, pendant l'Âge du Fer et au cours des premières phases culturelles historiques couvrent une période comprise entre le deuxième millénaire avant notre ère et le début de l'ère commune. Les transformations culturelles, structurelles et rituelles qui ont eu lieu lors de l'érection de monuments mégalithiques sur une période de deux mille ans n'ont pas pu être évaluées en raison de fouilles limitées. Il y a une énorme différence entre les caractéristiques de surface et les éléments culturels sous-jacents. En surface, tous les monuments mégalithiques se ressemblent mais les fouilles ont révélé une image complètement différente. Par exemple, les cairns circulaires forment la caractéristique de surface commune que l'on pourrait rencontrer pendant l'exploration et ces monuments sont classés dans une catégorie particulière basée sur l'apparence visuelle. Mais les fouilles de cairns circulaires ont rencontré différents types de monuments comme des cistes simples, certaines avec un passage, des cistes transeptées ou doubles, des fosses sépulcrales, des sarcophages, des urnes et beaucoup d'autres types couvrant un large cadre chronologique. La majorité des théories et des hypothèses ont été générées en fonction des caractéristiques de surface. Le mobilier culturel mis au jour dans les tombes fut sélectionné, tandis que le mobilier culturel présent dans les sites d'habitat est de nature exhaustive. Les discours ethnographiques et les œuvres littéraires contemporaines ont fourni quelques indices sur les rites et les rituels impliqués dans l'érection de monuments mégalithiques. Les recherches scientifiques appuyées

par un cadre théorique ont permis de clarifier quelque peu la nature des monuments mégalithiques dans le sud de l'Inde. Cet article tente de comprendre les monuments mégalithiques sur la base d'explorations étendues et de fouilles sélectives effectuées par l'auteur dans le Tamil Nadu, l'état le plus au sud de l'Inde. L'auteur a découvert plus de 1 500 sites archéologiques associés à des monuments mégalithiques dans le paysage du Tamil Nadu, en particulier dans les vallées fluviales de Palar, Pennaiyar, Kaveri, Amaravathi, Bhavani, Vaigai, Vaipar et Tambraparni. Il a fouillé des sites d'habitat stratifiés tels que Mayiladumparai, Thandikudi, Thelunganur, Porunthal et Kodumanal pour comprendre les transformations culturelles. Mayiladumparai dispose de phases microlithiques, néolithiques et de l'Âge du Fer, Thandikudi appartient à des phases antérieures et contemporaines de l'Âge du Fer, Thelunganur à la phase de l'Âge du Fer, Porunthal et Kodumanal correspondent à une phase historique précoce. Ces cinq sites sont invariablement associés à des monuments mégalithiques. Les résultats de ces fouilles sont discutés pour comprendre les enjeux de la compréhension des monuments mégalithiques du Tamil Nadu. Les aspects chronologiques des monuments mégalithiques comme leur association culturelle avec des ensembles antérieurs à l'Âge du Fer, contemporains de l'Âge du Fer, puis de la période Historique précoce, sont discutés en arrière-plan du mobilier culturel mis au jour sur les sites d'habitat.

Mots-clefs : *Inde méridionale, monuments mégalithiques, histoire de la recherche, approches multidisciplinaires, études mégalithiques, Mayiladumparai, Thandikudi, Thelunganur, Porunthal, Kodumanal*



Part V

Megaliths from Central and East Asia

Laurent NESPOULOUS, Anke HEIN

Introduction

Considering the vast geographical space and the differences in sociocultural developments over time in a multitude of different ecotones and cultural zones, it is only to be expected that the megalithic structures found across Central and East Asia would be highly diverse. This considerable diversity is complicated by a lack of unified terminology or clear definitions in the field of research for large stone-built monuments.

Central and High Asia have seen a long-lasting use of megaliths in the context of the expanding nomadic societies of the steppes, widespread in Kazakhstan, Russia, Mongolia and China, and the building and reuse of megalithic structures occurred during a long period stretching from the 3rd to the 1st millennium BC. These behaviours and phenomena are found associated with a broad range of cultures and societies: herders and cattle breeders, and agricultural societies that eventually adopted a nomadic way of life (Liu & Chen 2012; Koryakova 2014; Perriot 2016). The relatively abrupt emergence of the Chermuchek culture of the Mongolian Altai region during the 3rd millennium BC still raises many questions (Chapter 36 - Kovalev, this volume, p. 767). Further north, in South Siberia, and almost as early, are the stelae of the Okunev culture (Leontiev *et al.* 2006), dated to between *ca.* 2400 and 1800 BC (Poliakov & Lazaretov 2020). In Mongolia, the Deer Stone Stelae Culture dates from the 2nd millennium BC, and the funeral practices of the Iron Age Tagar Culture to the 1st millennium BC (Chapter 35 - Magail *et al.*, this volume, p. 747). Neighbouring relationships with the southern part of the steppes have also been the subject of a significant interest recently and we might hope for increasing insights into evolutionary perspectives and the dynamic role of these societies in the Central and Eastern Asian context (Linduff *et al.* 2017). In the Kazakh steppes, a group of anthropomorphic stelae and rows of menhirs are related to burial mounds of the 1st millennium BC (Tasmola culture – Beisenov 2017). Finally, in southern Siberia, megalithic constructions and menhirs are integral parts of huge pyramidal burial mounds (Marsadolov 2010) [(1)]. Both are believed to be related to the Iranian-speaking nomads of the 1st millennium BC. Central Asia, the north of the Tien Shan, the vast area of the Kazakh steppe, southern Siberia, Xinjiang in China and eastern Mongolia are certainly under-represented in our synthesis.

Very little information is available on large stone structures across the area of modern China. Indeed, such structures have received scant attention even among Chinese archaeologists. The use of stone in the construction of graves, both in small stone-cist graves (*shiguanzang*, 'stone-coffin graves') and in larger structures such as megalithic graves

(1) Our thanks go to Viktor Trifonov for these complementary elements.

(*dashimu*, 'large-stone graves') or dolmen (*shipeng*, 'stone tents') in the Chinese border regions was first prominently discussed by Tong Enzheng in 1987, together with other phenomena that he observed throughout that area. He argued for the existence of a 'crescent-shaped cultural-communication belt' (*banyuexing wenhua chuanbodai*), more recently dubbed 'the arc' (Rawson 2017), stretching from Yunnan in the southwest via Sichuan, Gansu, and the northern steppe all the way to Manchuria in the northeast (**Fig. 1**). In this vast area Tong saw similarities in material culture from different periods and attributed these not to diffusion, let alone the presence of one unifying culture, but rather to the contacts between ecologically similar regions with different economies that prompted people to exchange goods along the mountain corridors (Hein 2014c: 6). While different types of stone-cist graves are very common throughout this entire region and appear from the Neolithic through the Bronze and Iron Ages into historical periods, larger stone structures are much less common, appearing exclusively in the northeast and the southwest, which Tong explained as related to the presence of stone-built dwellings for the living in those areas, while in other parts of China these were largely wooden or mud-built structures for most of prehistory and into historic periods. It is therefore not

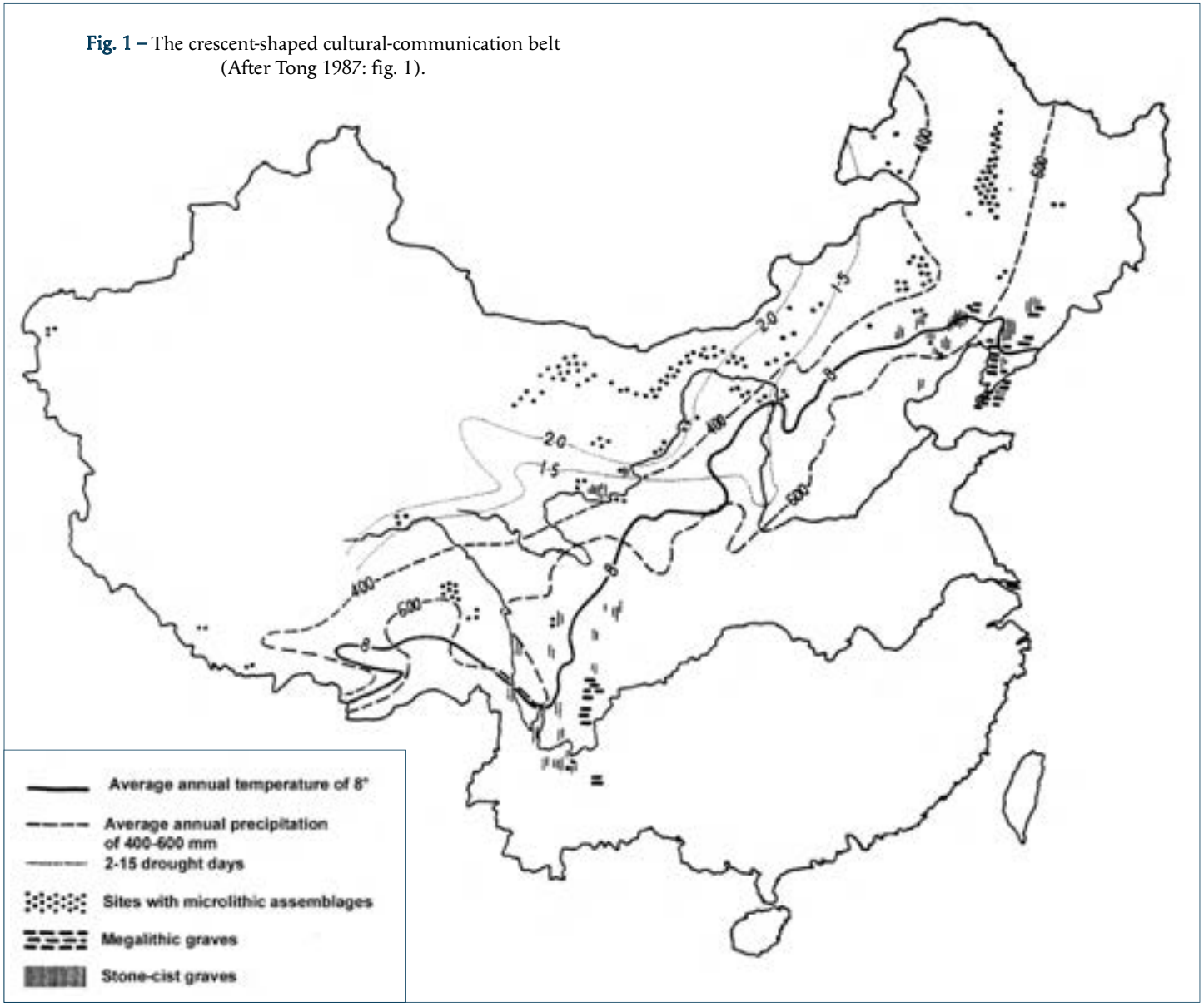


Fig. 1 – The crescent-shaped cultural-communication belt (After Tong 1987: fig. 1).

surprising that there are only two contributions on China in this volume. In the southwest, large above-ground stone structures suitably addressed as megaliths are concentrated in only one region, the Anning River Valley (Chapter 28 - Hein, this volume, p. 619). They appear to be a local development, starting from small structures for single use during the Neolithic period, developing into centres of increasingly complex rituals that continue all the way into the Han period (206 BC-220 AD) when they eventually end, except for a single incident of reuse in the Tang period (617/18-907 AD). They seem to be connected with sedentary agricultural populations displaying limited social hierarchy, though some groups focusing on hunting and/or fishing also seem to have built smaller graves with slightly different material assemblages (Hein 2017b). The situation in the northeast is quite different (Chapter 29 - Miyamoto, this volume, p. 641), with two types of large stone structures called megalithic graves (*dashimu*) or dolmen (*shipeng*) and stone-construction graves (*jishimu*) by Tong Enzheng, or designated dolmen and cairns by K. Miyamoto. Cairns in the Liaoxi district associated with the Hongshan culture of the middle Neolithic period (*ca.* 3500 BC) are distinct from those of the Liaodong Peninsula (Xiaozhushan Upper Layer culture, Late Neolithic, *ca.* 2500 BC), both found in the context of agricultural societies but with different social structures leading to different burial systems. Additionally but independently, table-type dolmens appear in the Liaodong area of China and the northwestern Korean Peninsula, unrelated to similar monuments on the eastern Mongolian plateau according to the author.

Megaliths of Korea and Japan have been 'well known' to the scholarly western public since the end of the 19th century (Gowland 1895, 1897; Chavannes 1907; Munro 1908; Torii 1917b). Early Japanese archaeologists working in Japan and Korea (and South Manchuria) actively used the terms borrowed from western archaeological research translating 'cairn', 'stone circle', 'stone chamber' and 'dolmen' into sinographs that are still used today in China, Korea and Japan. The oldest forms and contexts of megalithic structures here do not belong to agrarian societies but to the highly collectively organized, pottery making, sedentary hunter-gatherers of the Honshū and Hokkaidō Japanese islands (Chapter 34 - Kikuchi, this volume, p. 733), and take the shape of stone circles erected during the Late Jōmon Period (2nd millennium BC). A second context is connected with the converging emergence of rice growing societies and megaliths (mainly dolmens, *goindol* in Korean) and their development on the Korean Peninsula after the turn of the 9th century BC, at the beginning of the local Bronze Age (Chapter 30 - Nakamura, this volume, p. 663). Although being in contact with highly stratified societies in neighbouring Northeast China, peninsular societies responded with a good measure of local agency and diversity, and the same applies for northwestern Kyūshū in western Japan and the beginning of the Yayoi period (Chapter 33 - Nespoulous, this volume, p. 709). A third and final context is two-fold, starting with the enduring implantation of the colonies of Han China (the more noticeable of these being Lelang in 108 BC) in the vicinity of present-day Pyeongyang (Chon 1998; Tamura 2001) triggering the rise of a broader spectrum prestige goods economy, as can be seen in the proto-Three Kingdoms of Korea and the mounds of the Late Yayoi period (from the mid 1st century BC to the 3rd century AD) in western Japan. Then followed a period of weaker and less direct Chinese governance (as the Chinese colonies fell to local powers) from the 3rd century AD until the 7th century, and the rise of the strong local political entities of the period of Three Kingdoms of Korea (Chapter 32 - Yamamoto, this volume, p. 689) and the Kofun period of Japan (Chapter 34 - Kikuchi, this volume, p. 733). On the peninsula, rather than building dolmens or cairns, the use of raw stones continued in the evolution of ancient funerary practices, entangled in later distinctive funerary customs of the necropolis of the various Korean ancient capitals (Yoshii

2010). In Japan, the emergence of the *kofun* (literally 'ancient mounds period') and its abundant use of raw stone, was part of the elaboration of a trans-insular elite culture, reflecting the rise of the political regime of an early state. From Kyūshū to the south of the northeastern region of Honshū, with its centre around present-day Nara, Ōsaka and Kyōto, the Kofun period is characterized by a strong cohesive dynamic whereas on the peninsula, differentiation between existing powers was the norm (Chapter 33 - Nespoulous, this volume, p. 709). Both in Japan and Korea, because of strong pressure of urban development and the risk of natural hazards (specifically in Japan which is prone to earthquakes), the relocation of built heritage is not a rare occurrence: wooden buildings can be dismantled, stored and rebuilt elsewhere (Marquet *et al.* 2015). The same is occasionally done with *goindol* or smaller *kofun* stone chambers (Chapter 31 - Son, this volume, p. 681). South of the Shangdong peninsula, where other *goindol* stand just in front of Korea, megaliths are also expected to be found along the Chinese coastline as far south as the island of Taiwan which, indeed, has numerous examples. First documented at the end of the first half of the 20th century by Japanese archaeologists (Torii 1925; Kano 1929, 1930a-c; Kanaseki & Kokubu 1957; Song & Lian 1983; Lian 2008) some standing stones here (**Fig. 2**) could have been raised as early as the Chilin and Peinan cultures of the Late Neolithic period (*ca.* 1500-800 BCE) in the eastern and southeastern parts of the island. These could be linked with the northernmost distribution of people with Austronesian languages. Burial cists or rock coffins were in use during the Iron Age, as well as some rather small 'stone-wheels' – or anchors (cf. also Chapter 12 - Sand, volume 1, p. 277, for similar stone discs, some much bigger, and exchange networks still in use among the Yap islands in Micronesia).

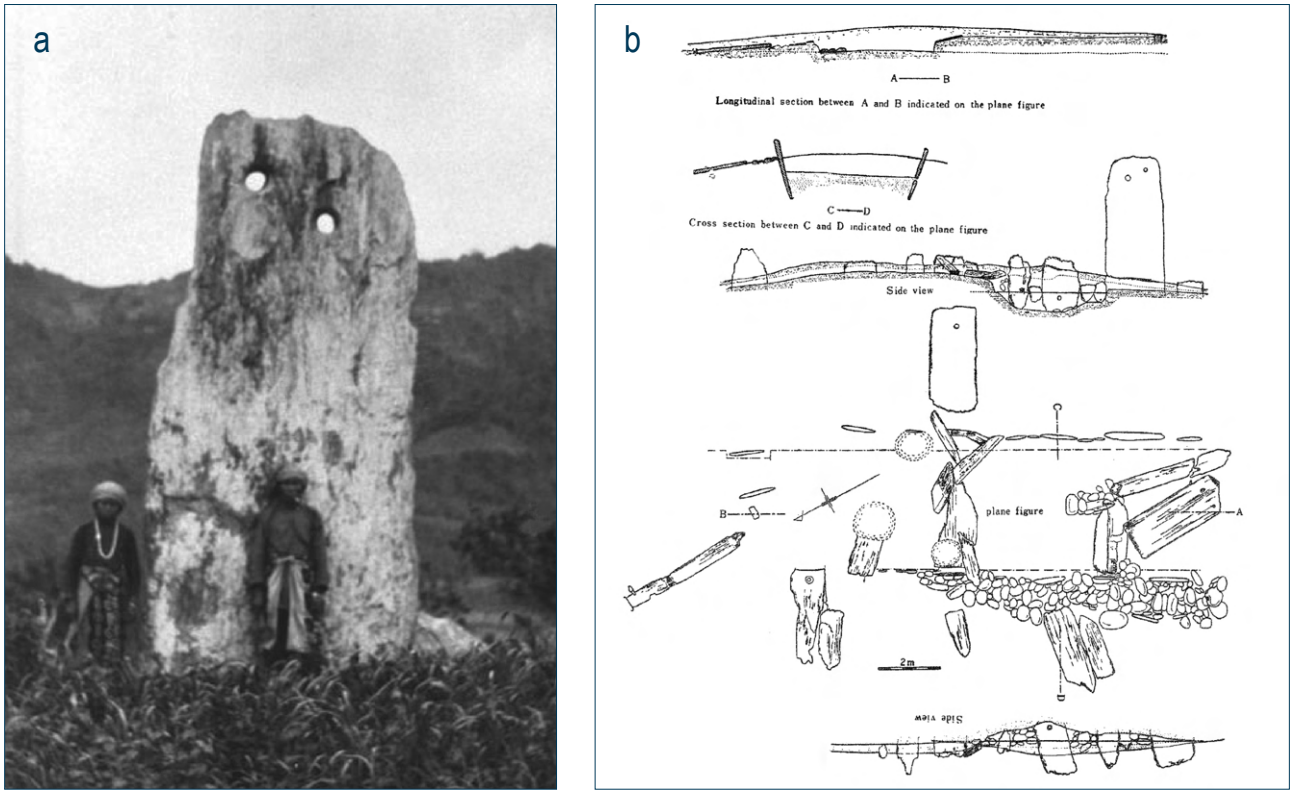


Fig. 2 – Megaliths of the Peinan culture, Taiwan: a. Menhir of Peinan (Photo: R. Torii, 1896); b. Excavations at the menhir, its surroundings and its excavated house structure (After Kanaseki & Kokubu 1957).

The megaliths of Central and East Asia do not fit into a clear temporal or cultural framework, being built from late prehistory, through protohistory and antiquity, and it is even possible to consider phenomena rooted in later societies, such as the arrangements of huge natural stones in the context of the gardens of elite medieval residences in Japan (**Fig. 3**). There is much room for future research.

Fig. 3 – Natural stone blocks arranged in the garden of the Suwa residence's archaeological site in the medieval town of Ichijodani, destroyed by siege and fire in 1573 (Photo: L. Nespoulous).

28

Anke HEIN

Monuments in the mountains: The megalithic graves of western China

Abstract: While the megaliths of Europe are world-famous and the dolmens of Korea, Japan, and Northeast China have received much scholarly attention, few have heard of the stone-built graves of western China. Even scholars interested in stone graves in this region tend to focus on the small stone-cist graves located underground which are common throughout much of the Chinese border region. This paper draws attention to the largely overlooked above-ground grave structures made of large stones that can be found chiefly in Southwest China. These megalithic graves are peculiar in many ways, both within East Asia and in comparison to megalithic structures found world-wide. Other parts of East Asia (Northeast China, Korea, Japan, and parts of the southeastern Chinese coast) are characterized by dolmens, but dolmens do not appear in Southwest China. Here, structures that could be described as passage graves, barrows, and constructions similar to the Celtic *cistvaens* can be found. Cistvaen-like structures appear in various places on and along the eastern rim of the Tibetan Plateau, but the larger structures seem to be limited to the Anning River Valley and the surrounding mountains of southern Sichuan and northern Yunnan. This paper will briefly introduce the stone-built graves of western China and then focus on the only megalithic structures that can be found in the region, the megalithic graves of Southwest China. This region is extremely mountainous with lush greenery obstructing views of the monuments. The paper considers the distribution of the graves in relation to their natural environment and to each other, both spatially and in terms of usage patterns, suggesting possible connections as well as differences between them.

Keywords: *megaliths, human-environment interaction, East Asia, Southwest China, Liangshan*

1. Introduction

While the megaliths of Europe are world-famous and the dolmens of Korea, Japan, and Northeast China have received much attention, few have heard of the stone-built graves of western China. This is partly because nearly all relevant publications are in Chinese, and partly because archaeologists working in China – both local and foreign – tend to concentrate on the Central Plains or the northern border regions, so much less research is conducted in Southwest China where these monuments are found. Even scholars working on graves in Southwest China tend to concentrate on the much more ubiquitous stone-cists that show clear connections in both burial form and grave goods with archaeological finds throughout much of the frontier areas of modern-day China (**Figs. 1** and **2**) (Tong 1987; Hein 2014b). Remarkably, the megalithic graves of Southwest China seem to be a relatively contained phenomenon, occurring only in the north-south lying Anning River Valley and its tributaries in the Liangshan Region, Sichuan Province, on the eastern rim of the Tibetan Plateau. The object assemblages show very little connection with archaeological cultures in the Sichuan Basin, let alone those of

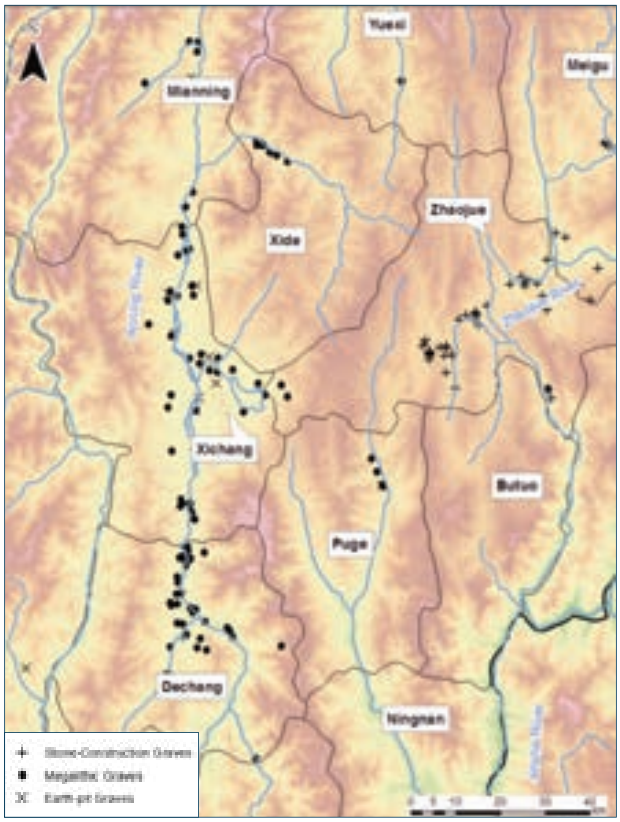


Fig. 2 – Graves in the Anning River Valley by type.

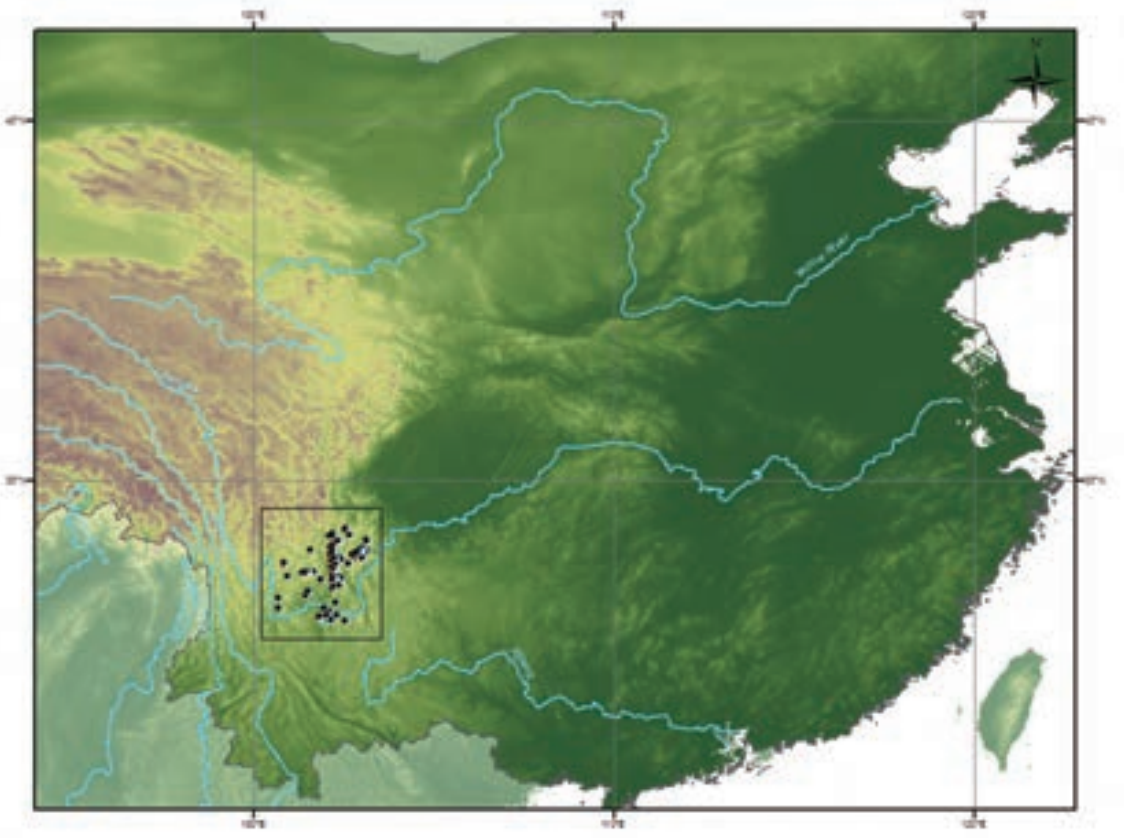


Fig. 1 – Overview map of the research area and its location within China.

the Central Plains of China which, being seen as the cradle of 'Chinese civilization', has received a disproportionate amount of scholarly attention. While archaeological assemblages from other parts of Southwest China show clear signs of interaction with areas occupied by the early dynasties of Shang (*ca.* 1600-1046 BC) and Zhou (*ca.* 1045-249 BC), it is only in Qin (221-206 BC) and Han periods (202 BC-220 AD) that evidence for eastern connections can be seen in the Anning River Valley. The megalithic graves seem to be particularly resistant to outside influence, only occasionally containing knives suggesting a steppe influence or – in the case of the most recent megalithic graves – a few coins of Han origin (Hein 2014a). It is only with the Han expansion into Southwest China that we see a major shift in material culture, including the arrival of Han-style ceramics and brick graves (see e.g., Hein 2017a; Wu *et al.* 2019), eventually leading to a discontinuation of the local tradition of megalithic graves. There have been attempts to include the region in historical narratives based on texts written by and for people in the heartland of Han China, mainly by trying to connect the megalithic graves to the Qiongdu Yi mentioned in the *Hanshu*, *The Book of Han*, compiled in the 1st century AD (Sichuansheng & Anninghe 1976: 330), or suggesting the existence of a custom among the Qiang of venerating large stones, Qiang being an exonym for a wide range of groups in Southwest China mentioned in the *Hou Hanshu*, *The Book of the Later Han*, written in around AD 445 (e.g., Shen 1982; see Wang 1992 and 1998 for a discussion of the Qiang). Trying to forge a connection between later texts written in a completely different part of China (by people who most likely never set foot into Sichuan) and much earlier megalithic structures that are not even mentioned in these texts is obviously problematic and has been criticized (e.g., Hein 2013). At the same time, the inevitable failure to integrate the megalithic graves of Southwest China into the larger narrative of Chinese archaeology and pre- and early history has meant that they have been overlooked despite their impressive size. Through this paper we hope to draw attention to them and introduce them to a larger audience.

2. History of research

The scholarly world has been aware of the existence of stone-built graves in western China since the explorations of Feng Hanji in 1928 (Xu 1958: 58). Excavations on small below-ground stone-cist graves in Northwest China commenced soon after, and this type of grave has since seen a significant amount of research. Fieldwork in the mountains of Southwest China commenced significantly later. The 1970s saw the first systematic survey of the home of the megalithic graves, the Anning River Valley, and adjoining regions. This survey revealed a broad range of feature and site types but until the mid-1980s, scholars focused on the most eye-catching type of monuments: megalithic graves.

A first survey of megalithic graves was published in 1958 (Xu 1958), but the first excavation took place only in 1975, at Mianning Sanfentun, marking the beginning of a very active period of research on megalithic tombs. The particularly well-preserved graves of Xichang Bahe Baozi were the first to be published in preliminary excavation reports (Sichuansheng & Anninghe 1976). These reports coined the term *dashimu* (megalithic graves), which has been used in all subsequent publications. This was also the first time that a date range for the graves was estimated, from the late Warring States period (475-221 BC) to the early Western Han period (206 BC-AD 9).

During the late 1970s and early 1980s, over 40 megalithic graves were excavated, the most remarkable of which, Lizhou Chenyuancun and Lizhou Zhongxue, both overlie earlier earth-pit graves and settlement remains, thus contributing to discussions on local relative chronology. Other sites also saw the excavation of earth-pit graves. Archaeologists have also reported different kinds of graves with stone installations, either termed *shiguanzang*, literally 'stone coffin burials', but usually translated as 'stone-cist graves' in English publications, or *shibanzang* or *shibanmu*, 'stone slate burials' or 'stone slate graves' (Hein 2013: 5-7).

During what might be termed the second phase of archaeological research in the Liangshan region, the focus shifted from the megalithic graves to other

kinds of burial sites [1]. This new phase commenced with the Survey of Cultural Relics of the Liangshan Prefecture conducted from March 1987 to August 1988. After this, very few excavations of megalithic graves were conducted, mainly because due to the size of the monuments as such projects were cumbersome and time-consuming, and in most cases revealed only a very small number of objects. During the following decades, excavations were generally rare, but several surveys were conducted, revealing many graves with different kinds of stone installations in the mountains east and west of the Anning River Valley. Several scholars have developed typologies of these graves, but without taking earth-pit graves or megalithic graves into consideration (e.g., Song 2004).

Since the late 1990s, most scholars have focused on settlement material in order to develop a local chronological framework. A major issue in this endeavour is that the sites tend to be single-phased and thin-layered while graves rarely cut into each other or superimpose earlier sites. Only a small number of multiphase sites exist in the region and very few radiocarbon dates are available. The assignation of most relative and absolute dates thus relies on typological comparison with objects from well-dated sites elsewhere, most importantly Yunnan, the Sichuan Basin, the Central Plains, and the northern steppe. Over the years, several chronological frameworks have been suggested but they have remained rather general and none has been widely accepted (e.g., Jiang 2007). I recently conducted a study of all graves in the Liangshan region, including a fine-resolution analysis of the typological structure of the megalithic graves, and developed the most detailed chronological framework for the Liangshan region to date (Hein 2017a). This framework is applied in the present discussion.

3. State of knowledge

In 2014, field research on megalithic graves was brought to a preliminary conclusion with a five-month survey of the Anning River Valley, recording locations, measurements, and the state of preservation of all known megalithic graves. Six megalithic graves were excavated: four at Dechang Arong and two at Xichang Wanao (Sichuansheng *et al.* 2006a). Previous excavations, most conducted in the 1980s, had been rather quick in removing objects and bones without recording their placement or details of grave construction. In 2004, however, the excavators carefully recorded deposition layers, item locations and construction details, greatly advancing our understanding of the construction and use-life of the graves.

Furthermore, all objects connected with previously excavated megalithic graves were re-cataloged, drawn, photographed, and published. The resulting volume, somewhat misleadingly entitled *The Megalithic Graves along the Anninghe River* (as it also includes graves from the mountains further east) summarizes the current state of field research on these remains (Sichuansheng *et al.* 2006b). The volume unfortunately lacks detailed maps and GPS points. Such data was, however, captured during the most recent Third Nation-Wide Cultural Relics Survey, from June 2007 to December 2010. That survey also revealed that many sites present in the Liangshan region in 2004 had since been destroyed. Hence the results of the First and Second Nation-Wide Cultural Relics Surveys, although less detailed, remain an invaluable source of information for estimates of the original distribution of megalithic graves. In my 2017 publication on the graves of the Liangshan region, I also included unpublished excavation documentation generously provided by colleagues in Sichuan and Yunnan, relating to original objects studied, and I incorporated location data and measurements into a geodatabase covering all known pre-Han (i.e., pre-AD 220) sites (Hein 2017b).

There are 305 known megalithic graves from 112 sites. The amount and type of available information varies widely by site and grave depending on preservation conditions and previous research and state of publication. For most of the graves excavated in the 1980s there are only preliminary reports; the original excavation documentation has been lost. Furthermore, preservation conditions vary widely; no tumulus remained entirely intact and, in many

(1) For a detailed description of the history of research in the Liangshan region, consult Hein 2013: 5-17 and Tab. 1.1.

cases, some of the stones had been removed. This unevenness in preservation, field research, and reporting is taken into consideration in my 2017 publication where I developed a reliability index based on state of preservation, fieldwork, and publications, evaluating each grave on that scale. The results form the basis of this paper (Hein 2017b).

3.1 The graves

Grave construction

External measurements and orientation are recorded for nearly all the 305 known megalithic graves but only 55 have been excavated, so all information regarding internal organization, contents and dates is limited to these very few graves. The average size of the grave chambers is 9.0 × 2.7 × 1.6 m but length measurements vary widely from 1.0 to 41.0 m (**Fig. 3**). Most graves are rectangular but a few are particularly long and narrow, square, or even trapezoidal.

All megalithic graves are constructed above ground from various types of igneous rock (**Fig. 4**). The grave floors consist of levelled soil, sometimes with a layer of pebbles or, more rarely, with stone slabs. The graves have stone walls, stone covers consisting of one or several large boulders, and sometimes additional external construction elements. The walls consist of large boulders, large slabs, or a combination of the two with small stones filling the gaps, with large boulders below and small stones above,

Excavated	Length	Width	Height	Proportions	Area	Volume
Mean	6.09	1.70	1.67	4.06	11.57	21.49
Median	6.20	1.30	1.73	3.75	8.76	12.92
Mode	8.40	1.00	2.00	6.08	8.76	N/A
Standard deviation	2.82	0.94	0.58	1.99	12.53	31.26
Range	15.95	4.24	2.40	8.05	83.95	211.80
Minimum	1.05	0.76	0.40	1.05	1.05	0.70
Maximum	17.00	5.00	2.80	9.10	85.00	212.50
Count	55	54	52	54	54	51
Unexcavated	Length	Width	Height	Proportions	Area	Volume
Mean	9.47	3.00	1.54	3.06	28.33	49.17
Median	8.60	3.00	1.40	2.90	24.30	35.53
Mode	11.00	3.00	2.00	3.33	24.00	160.00
Standard deviation	4.92	0.99	0.58	1.62	19.01	50.05
Range	39.98	4.65	3.15	15.77	106.24	298.07
Minimum	1.02	0.35	0.35	0.02	0.36	1.18
Maximum	41.00	5.00	3.50	15.77	106.60	299.25
Count	182	160	144	160	159	126

Fig. 3 – Grave measurements (in m).

Fig. 4 – Megalithic grave at Daba Hongmiao (Photo: A. Hein).

several large boulders with many small cobbles in between, or small cobbles arranged in layers in a brick wall-like construction (**Fig. 5**; see also **Fig. 13**). Large slabs and boulders are usually set in a foundation ditch that secures them in place; only two graves had wall boulders placed directly on the levelled ground, secured with earth and small stones piled on both sides.

The smoother sides of slabs or boulders always faces inward, and in at least seven cases the stones were artificially smoothed on the inside. The walls of Zhaojue Qianjinshe M7 consist of one artificially smoothed, pale-coloured slab of igneous rock in the centre of each side surrounded by small irregular grey cobbles. For the brick wall-like constructions the chosen stones are carefully worked to shape the 'bricks'; only rarely are the walls of such graves made of unworked cobbles. These graves very likely imitated the Han-style mud-brick graves common

Fig. 5 – a. Megalithic grave Wanao M1 ; b. Detail of wall construction of megalithic grave at Huangshui (Photos: A. Hein).

throughout large parts of China from early imperial times.

About one third of all known graves have an entrance consisting of stone slabs or irregular cobbles (**Fig. 6**). These are mostly located on one of the short sides of the structure; when on a long side, they are flanked by further stone slabs building a 'doorway' (**Fig. 7**).

A very small number of graves have internal construction features, for example, partitions separating a smaller front chamber from a larger rear chamber and, in one case at Xide Lake Sihe M1, a three-step staircase facilitating entrance into the grave (Liangshan 1978). Given that this particular grave also has an access ramp and a doorway, the staircase simply reemphasizes the intended accessibility. The function of the partitioning is less clear, but it

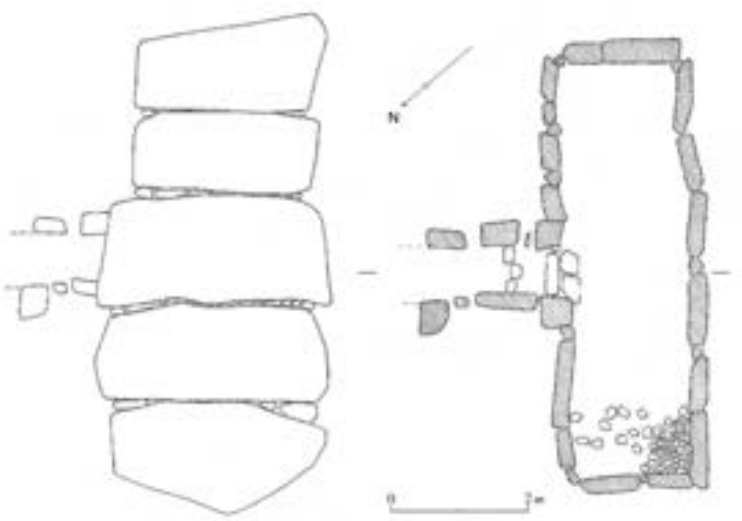


Fig. 7 – Xide Lake Sihe M1 (Type 2.2.1.2) (After Sichuansheng *et al.* 2006b: Fig. 31).

Outside Installation Type	Count	Frequency
Earth tumulus		
Present	95	31.35%
None observed	964	68.65%
Stone mound		
Present	7	2.30%
None observed	1052	97.70%
Access ramp		
Present	35	11.55%
None observed	1024	88.45%
Other external installations		
Present	17	4.25%
None observed	1042	95.75%
Types of other external installations		
Ba-shaped arrangement of stone	8	2.64%
Doorway of erected stones	6	2.00%
Small stone assemblage close to door	3	1.00%

Fig. 6 – External additions.

Fig. 8 – Megalithic grave at Dayangdui (Photo: A. Hein).

appears only with particular grave types, potentially signifying a chronologically or spatially limited custom.

Some graves also show external features such as tumuli, ramps, 'tails', doorways, and various other stone arrangements (**Fig. 8**). All earthen tumuli are disturbed and some may have been completely destroyed. Those still extant at the time of reporting are round or oval, measure up to 40 m in diameter and up to 5.5 m in remaining height. Seven megalithic graves are covered with round or oval stone mounds consisting of irregular cobbles covered with a layer of soil. These were found at only two closely situated sites, indicating a short-lived local tradition.

Access ramps have been observed at several locations, and vary significantly in size (**Fig. 9**). Given the small number of cases and uneven preservation conditions, it is not possible to interpret the significance of the differences in length, but the ramps were most likely used during ritual proceedings surrounding the graves. All other external features are even less common. The trapezoidal constructions referred to as '*ba*-shaped' (with reference to the Chinese character for the number eight) or 'screen-shaped', consist of one or several stones standing on either side of the grave and giving it a cross- or T-shape. The standing stones forming a doorway mentioned above can also be categorized as external features rather than essential construction elements.

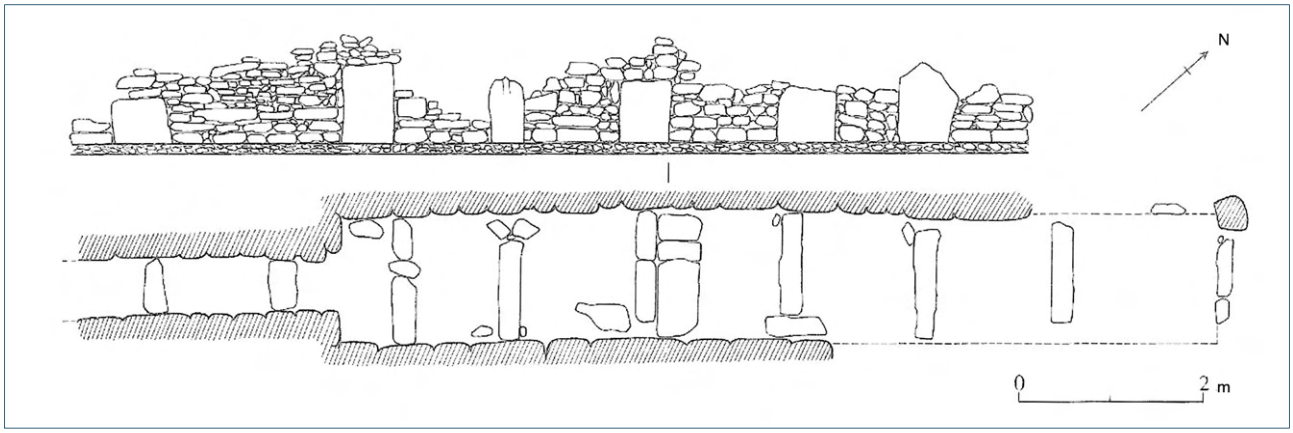


Fig. 9 – Xichang Xijiao Gongshe M1 (After Sichuansheng *et al.* 2006b: Fig. 25-26).

Piles of stones outside the grave are recorded but are rare and their function remains obscure.

Many of these features occur in combination. For instance, all graves with an access ramp have a clearly identifiable entrance suggesting that the ramp was used to approach the grave during burial ritual and/or post-burial activities. It is notable that all graves with a tumulus also have an entrance but not all have an access ramp, so the tumuli may have been erected only after the final closure of the grave. These graves were thus not meant to be re-accessed in perpetuity but only for a certain duration. Stone mounds tend to have 'and in all of these cases the graves are set on a mountain slope, suggesting that the tail may have been used to roll stones downhill to the construction site (**Fig. 10**). Some of these graves tend to have large boulders on top that would be more easily slid into place using such a construction feature. Not all graves with particularly large cover stones are, however, set on a slope. Many are located on the open plain thus neither requiring nor allowing for a tail.

Construction techniques and labour investment

The graves were constructed by first levelling the ground, then sometimes digging a rectangular ditch to secure large stone slabs or boulders, and finally slotting the wall construction parts into place. Additional layers of fine soil and/or pebbles may have been added as ground cover either at this point or prior to erecting the wall slabs/boulders/cobbles and filling any holes with smaller stones and soil. Doorways were constructed before sliding any covering stones into place. Where required, access ramps and further external features would be constructed at this point. As discussed above, the so-called tails, i.e., soil beds clopping up the hill behind the graves, were most likely built to facilitate sliding the cover stone(s) into place. Similarly, the short path made of smooth pebbles observed at Dechang Arong may have been used to facilitate dragging stones towards the construction site.

The earthen tumuli consist of several layers of earth. In the case of Xichang Tianwangshan M10, 22 layers

Fig. 10 – Megalithic grave Guadi M2 (Photo: A. Hein).

of about 20-25 cm thickness have been observed, compacted with round pestles of about 20 cm diameter that left impressions in the soil (Liangshan 1984). This rammed-earth technique is well known from wall constructions in other parts of China where the layer is thinner with much more strongly compressed layers made using smaller pestles (e.g., An 1993; Henan 2000). The cases known from the Chengdu Basin are, furthermore, considerably earlier in date, so it is difficult to tell whether the rammed earth of the Liangshan region was inspired by a rather crude understanding of the foreign technique or was an independent local development.

Regardless of the origin of the technique, constructing a tumulus would have required a major labour investment, especially for the largest graves measuring over 40 m in diameter and over 5.5 m in height. For the more sophisticated and thus more labor-intensive rammed-earth walls o Baodun in the Chengdu Plains, it has been suggested that one person could dig 3 m^3 soil, move 13.3 m^3 by 20 m, or compact 10.1 m^3, averaging out to 1.97 m^3 per 8-hour work day (Chengdushi *et al.* 2000). It is unclear how many people were engaged in construction activities or how long they worked each day, so it is impossible to give a definite number of days or weeks. For the city walls of Baodun, the process would have taken months or years, but moving the amount of soil needed for the largest tumulus in the Liangshan Region could have been accomplished by 50 people in two to three weeks. Nevertheless, adding the tasks of preparing the location, choosing and transporting the stones, putting them in place, and conducting any necessary rituals, one or several communities must have been engaged in this enterprise over months if not longer.

Grave typology

Various typologies have been developed, most focusing only on the external shape of the grave and disregarding internal features or questions of construction techniques or sequence. Taking a *chaîne opératoire* approach and using a key diagram, I suggest a new typology consisting of four main types and several sub-types (**Figs. 11** to **14**):

Type 1: graves with large boulders or slabs for walls and cover, with or without entrances (251 examples).

Type 2: graves with walls made of combination of large boulders, slabs and smaller stones with boulders as covers, with or without entrances on short or long side (22 examples).

Type 3: graves with brick wall-like stone walls, with boulders as covers (12 examples).

Type 4: small graves with stone slab walls and covers (10 examples).

The large bouldered variety, Type 1, is by far the most common; Types 3 and 4 are rare. Type 4 graves are particularly small, often square rather than rectangular, and consist of thin slabs rather than boulders. This type is found only in the eastern mountains, as are the smaller varieties of Type 2, while the Anning River Valley is characterized by large rectangular graves, though other shapes also occur. Only the large graves of Types 1 and 2 are combined with stone mounds, adding to the already considerable labour investment necessary for their construction. They also tend to have access ramps showing continued use. Both factors reflect the considerable importance of these monuments for the groups who constructed and used them. Furthermore, it is clear that these graves were constructed in several stages and most likely used over extended periods [(2)].

3.2 Grave location and cemeteries

There is some variability in the location of megalithic graves. The majority are found on even ground, often in close proximity to a river; around one third are built on slopes. Surprisingly, in the northeast they are mostly built on the few patches of even ground in the river valleys. The majority of those built on slopes are found in the Anning River Valley, albeit in its narrower northern and southern reaches rather than in the wide flood plains. The small Type 4 and Type 3 graves are found almost exclusively in the northeast while Types 1 and 2 appear throughout most of the region, suggesting a chronological rather than regional distinction.

(2) For an overview of the individual graves, their construction and contents, consult Hein 2017b.

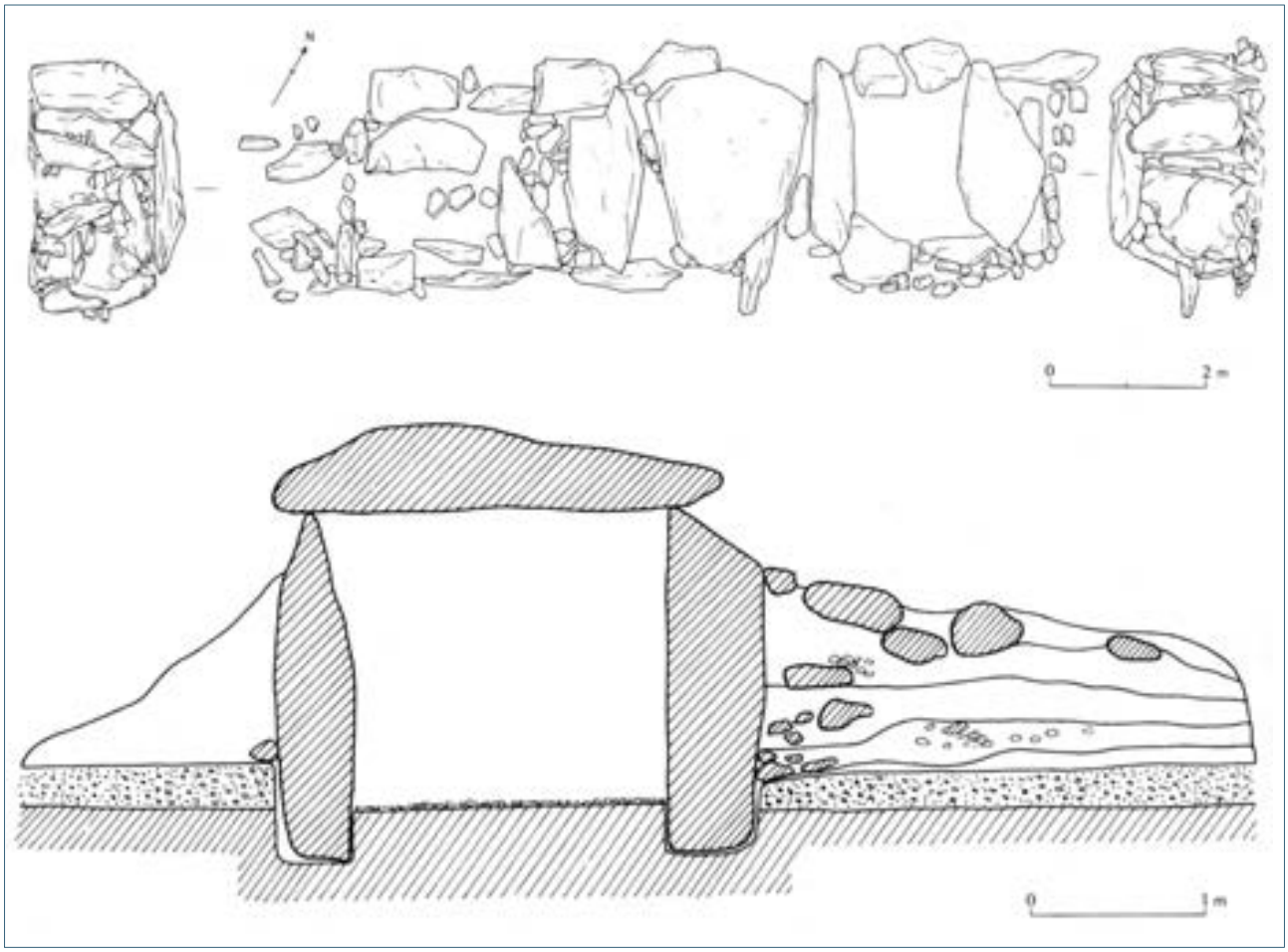


Fig. 11 – Type 1 megalithic grave Dechang Arong M4 (After Sichuansheng *et al.* 2006b: Fig. 12-13).

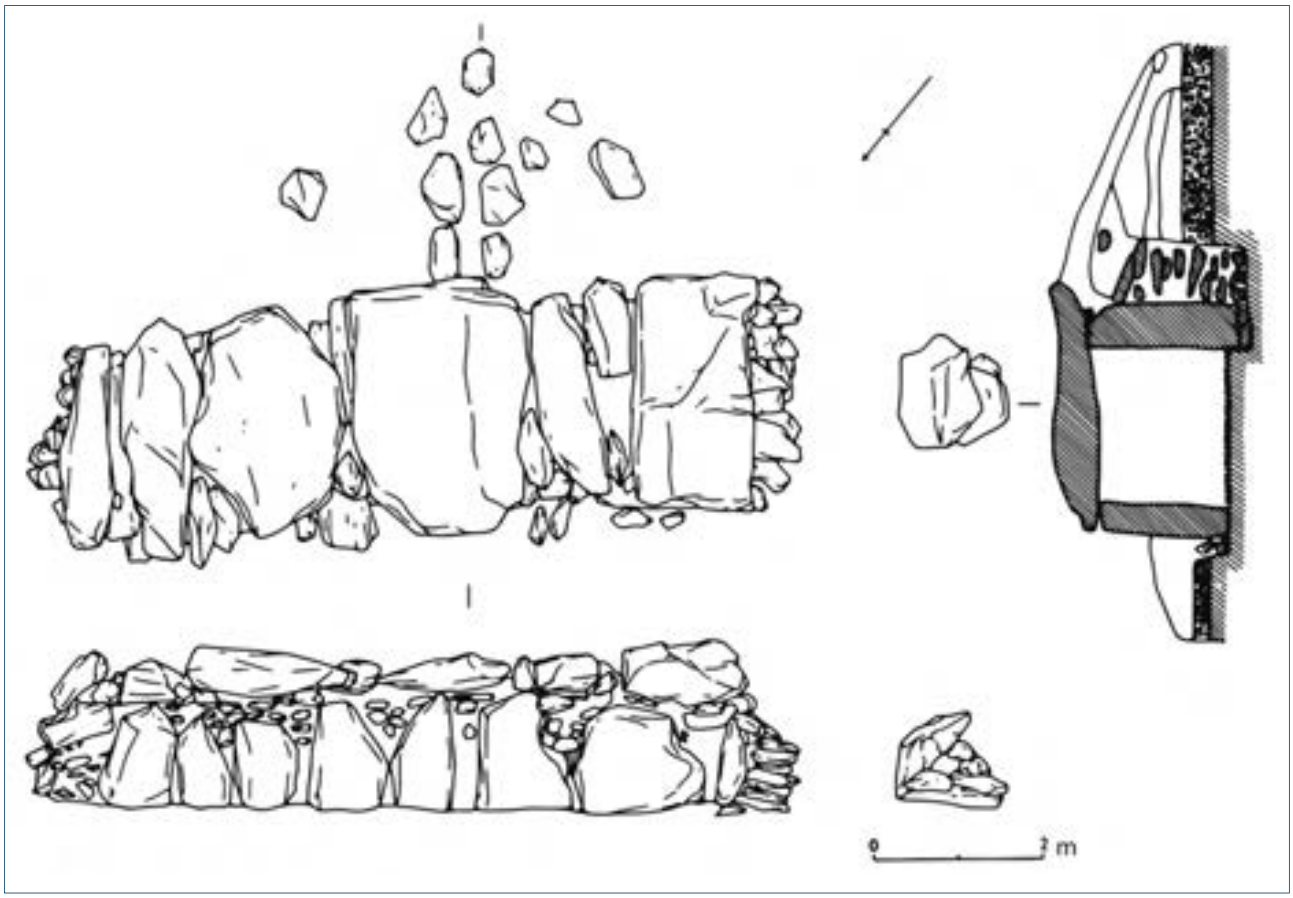


Fig. 12 – Type 2 megalithic grave Dechang Arong M3 (After Sichuansheng *et al.* 2006b: Fig. 28).

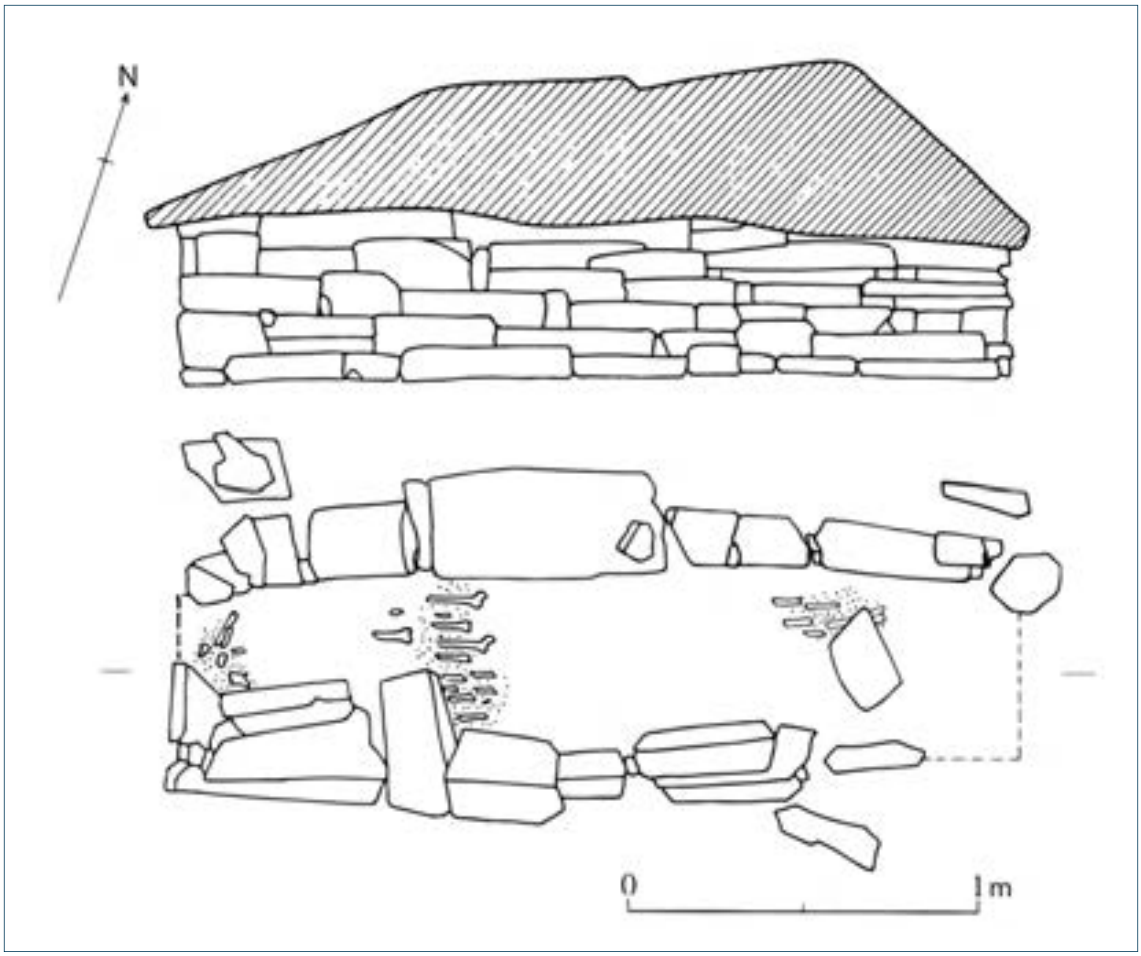


Fig. 13 – Type 3 megalithic grave Xichang Dayangdui DM1 (After Xichangshi *et al.* 2004: Fig. 22).

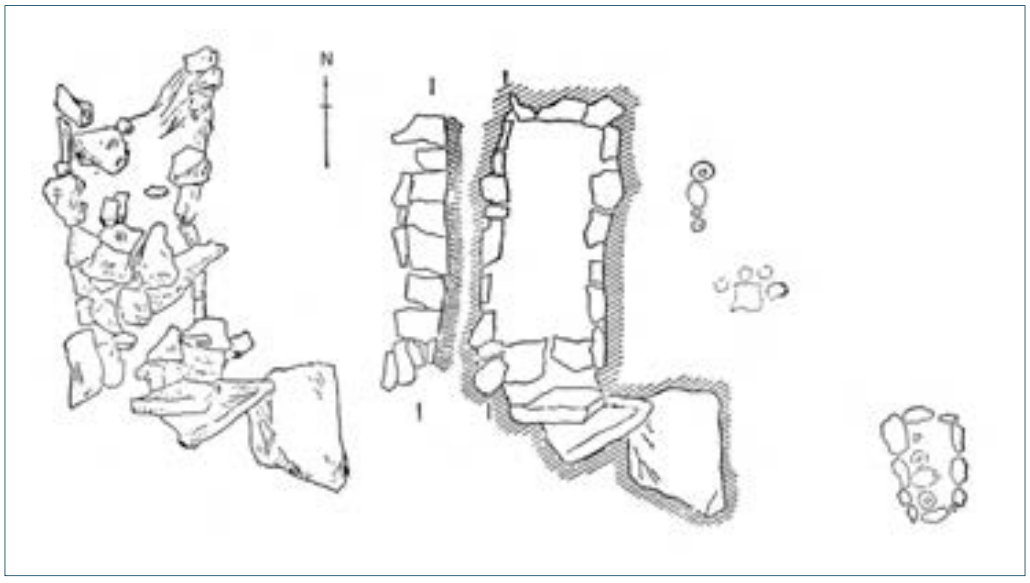


Fig. 14 – Type 4 megalithic grave Tianwangshan M10 (After Liangshan 1984: Fig. 1).

The graves built on slopes are usually oriented along the profile of the mountain or, more rarely, are exactly perpendicular, while those in the river valley tend to lie parallel to the rivers and mountain ranges. Given the size of these graves, one might assume that they were built with visibility in mind, however those built on mountain slopes cannot be seen from a distance, so this does not seem to have been a major concern. Nevertheless, they were built from large stones, though not as large as some of the graves built in open fields and river valleys which were – and still are – visible from a distance.

Megalithic graves occur either singly or in small groups of up to six graves, however, even those that are not part of a cemetery are usually no more than 2 km from other graves, forming a megalithic landscape with high intervisibility. Only two graves are in rather inaccessible places on mountain slopes, making them clear exceptions. In the central Anning River Valley, megalithic graves occurring close to each other tend to have a similar orientation, and at Xide Lake Sihe nearly all graves had their entrance facing the same direction. Given the amount of evidence for graves referencing each other, there may have been rituals and processions around and in between them, creating a ritual landscape.

3.3 The interred

A total of 35 graves contained human remains, varying from 1 to 125 individuals per grave, although in some cases the actual number of interments remains unclear due to poor preservation conditions. For 15 megalithic graves in the Anning River Valley, information is available on the age and sex of the interred. In all but two cases, both male and female adult and senile individuals were present; in two graves there was also a single juvenile individual but infants do not appear. This form of burial thus seems to have been reserved for older individuals, and potentially for an even more limited sub-group of the population distinguished by more than just age. Other parts of the local population may have been interred in single-interment earth-pit graves dating to the same period, however the number of known earth-pit graves is far too small to account for the entire juvenile and young adult population that died before reaching advanced adulthood.

Among the 35 graves with known numbers of skeletons, we can distinguish between single and multiple (4-6 individuals) interments, group burials (9-12 individuals), mass interments (48-125 individuals), and graves containing several individuals though the exact number is unclear due to poor preservation or lack of documentation (**Fig. 15**).

Regarding types of interment, it is generally assumed that megalithic graves contained 'secondary disorderly interments', but the few excavation reports with detailed descriptions suggest that this may not be the case here. The grave site of Mianning Sankuaishi M1, for instance, contained 17 extended-supine primary burials, individually wrapped in cloths and piled on top of each other during successive instances of interment. For graves with poor preservation conditions or in the case of less careful excavation, such arrangements could easily be misinterpreted as secondary interments. The site of Xichang Xijiao Gongshe M1 bears evidence of a complex interment processes. The grave held 123 individuals, mostly found in heaps of disarticu-

Number interred	Count	Percentage
Single	3	8.6%
Multiple (4–6 skeletons)	5	14.3%
Group burial (9–20 skeletons)	9	25.7%
Mass interments (48–125)	7	20.0%
Several interments (unclear number)	11	31.4%
Sum	*35*	*100.0%*

Fig. 15 – The interred by number.

lated bones toward the rear of the grave, while a small number of complete skeletons were found immediately behind the entrance. Here, as in other graves, some of the bones were still directly associated with ornaments such as earrings or bracelets. This arrangement indicates that these remains were the result of several instances of interment during which the bones from previous episodes were pushed to the rear and ended up in disarticulated heaps. Other graves also show evidence for being re-entered and the bones neatly stacked at the rear. These examples can all be classified as disarranged primary burials but there are also a few graves containing only long bones and skulls, sometimes carefully sorted by type, suggesting true secondary interment. Additionally, there are rare cases of cremation (in an urn) or a combination of inhumation and cremation (with scattered ashes) (**Fig. 16**).

In terms of body treatment, the most common custom is the rearrangement and sometimes stacking or sorting of bones, but in rare cases, fire treatment or wrapping of the bodies has been observed. The wrapping and wooden stretchers reported in a few cases may have been a common custom but that is difficult to determine (**Fig. 17**).

There are thus two main patterns of burial behaviour: single or small group primary and/or secondary interment without re-opening of the grave, and several instances of probable primary interment that required a reopening of the grave.

3.4 Traces of ritual acts

There are some signs of ritual activity in and around the graves, including evidence of burning inside the grave and the presence of object pits outside. In several graves, there are traces of burning of various substances, in most cases unknown materials, but in one case rice and in another, human bones and other objects. Additionally, there are scorch marks and ash throughout eight graves. The excavators interpret these as traces of the light sources that were brought into the graves during instances of re-opening and re-entering.

Deposits of ceramic vessels have been recorded outside only three graves but, as the areas around

Number interred	Count	Percentage
Extended supine	1	2.9%
In urn	1	2.9%
Irregular placement	24	68.6%
Mostly piled in rear, some scattered	4	11.4%
Stacked in layers throughout grave	2	5.7%
Unclear	3	8.6%
Sum	*35*	*100.0%*

Fig. 16 – Skeleton positions.

Interment type	Count	Percentage
Primary disarranged	13	37.1%
Secondary	3	8.6%
Inhumation + cremation	2	5.7%
Cremation	1	2.9%
Unknown	16	45.7%
Sum	*35*	*100.0%*

Fig. 17 – Interment types.

megalithic graves have not been surveyed systematically, it remains unclear whether this was part of a more general custom. In all cases, the ceramic vessels were complete without signs of intentional damage. The range of items suggests that they had been used in rituals involving food and/or drink consumed in connection with rituals during or after the burial or may have been dining/drinking sets for the deceased.

In several graves, there are clear signs of re-opening and re-entering: the presence of several distinct layers of skeletons, signs that the bones of previous interments had been pushed to the rear or crushed by the closing stones, and the neat stacking of some bones at the rear while one or more complete skeletons were present at the front. Re-opening does not, of course, mean complete re-entering, which would have been difficult in the case of graves measuring less than 1.4 m in height, especially those that were extremely long and narrow and presumably already filled with objects and decaying bodies.

There are thus different scenarios of grave usage. In connection with the first instance of interment, the grave chamber may or may not have been closed with a covering stone and/or a doorway and/or a tumulus with an access ramp leaving the way to the grave entrance free. Later, the grave may have been re-opened either to be re-entered to varying extents (potentially including a rearranging of bones and/or objects) or further bodies and objects may simply have been pushed in without anyone physically entering the chamber. There may have been multiple instances of re-opening, re-entering and re-usage before the final closure of grave and tumulus. What happened in each case can be ascertained based on the following kinds of evidence:

- *accessibility* (grave height, length, width; presence/absence of a doorway; size of door closing stones; percentage of grave above ground; presence/absence of stairs);

- *content and internal organization* (bones or objects crushed under door; presence/absence of layers; objects and/or bones overlaying or crushing each other); and

- *bone findings* (interment type, skeleton position, number of skeletons, traces of rearrangement of the bones).

Based on these criteria, over 80% of all megalithic graves were most likely reopened [3]. The assemblages present must therefore be carefully scrutinized, as they may not be contemporary and should be treated separately by deposition layer if possible.

3.5 Object assemblages

The majority of graves contained objects but the number present varied widely from 1 to 199 and seven graves were entirely devoid of items (**Figs. 18** and **19**). The most common object types are ceramic

(3) For a breakdown of the various criteria and the calculations behind this assessment, consult Hein 2017b.

Number of objects	Number of graves
199	1
62–86	6
41–53	3
25–38	4
11–19	13
6–10	9
1–5	13
0	7
All	*55*

Fig. 18 – Number of objects per grave.

Object type	Count	Percentage
ceramics	484	40.43%
stone	86	7.18%
bronze	436	36.42%
iron	20	1.67%
bone	139	11.61%
other	32	2.67%
Sum	*1197*	*100.00%*

Fig. 19 – Frequency of different object types.

vessels (mostly jars of various sizes, jugs, and cups) and bronze objects, usually small personal ornaments such as bracelets, earrings, finger rings, chains, pendants, and clothing ornaments such as buttons, belt ornaments, belt buckles, clothing applications, small bells and, more rarely, tools or weapons (mostly knives). In addition, there are ornaments and tools made of various types of stone or bone (grinding stones, knives, spindle whorls) (**Figs. 20** and **21**). Only a small number of graves contained Han coins.

Most of the personal ornaments, tools, and weapons were closely associated with the bones, suggesting that they were part of the attire of the deceased at the time of burial. In the few cases where Han coins were reported, they were found among the bones, suggesting they may have been kept in a bag attached to the clothes, as ornaments, or placed with the deceased in connection with the burial procedures. The graves in Puge in the northeast often additionally held arrowheads and boars' fangs, placed by the door rather than on the body of the deceased, suggesting a local tradition fitting for this thickly forested mountain region.

In the Anning River Valley, in a few cases, small heaps of items were found in a grave corner, probably deposited there as gifts for the interred. Larger ceramic vessels, presumably containing provisions for the dead, were placed at the rear or sides of the graves while pouring and drinking vessels were usually placed in the front part of the chamber, often crushed by the closing stones suggesting they were the last items to be placed in the graves after the burial rituals had been completed. Very few objects, both ceramics and personal ornaments, show evidence of burning but further details of the actions associated with the use of fire are unknown.

Based on the few graves for which exact object placement is recorded, it seems that many individuals had no objects at all while those with ornaments, tools or weapons usually had only one or two ornaments, weapons or tools each. In the rare cases where metal tools or weapons occur, they are often associated with stone rods most likely used as sharpeners.

There are considerable differences in assemblages between graves at the same site suggesting either differences in chronology or in the identity of the deceased. All graves with particularly large assemblages were found next to graves with very few items even though all contained similar numbers of skeletons – in all cases both male and female – suggesting that different social subgroups were buried separately with different objects accompanying them.

There are considerable differences in contents between different sites and graves. Some graves held mostly weapons and tools, others mainly ornaments, others ceramics, and yet others included all types of items. Graves with ornaments often also contained swords or daggers, arrowheads and grinding rods, but not knives; graves without ornaments usually held knives and arrowheads as well as spindle whorls. As men and women were not buried separately, there was no clear division between warrior and craftsperson, male and female, and ornaments could be associated with people bearing either weapons or spindle whorls. It is notable, however, that the only graves containing body armour also had a considerable number of swords and daggers, but also many clothing applications and hair ornaments in addition to the more ubiquitous knives, bracelets and finger rings. There may thus have been two groups of people buried separately, one carrying weapons and more elaborate hair-arrangements and decorated clothes, and a second with one or two tools and a few simple ornaments. The graves containing weapons and more elaborate clothing decorations and hair ornaments are also often associated with items of foreign origin, emphasizing the potentially special status of the people interred in these graves [(4)]. Overall, there is much variability in grave contents and individual attire, suggesting differentiation between various social groups but also chronological differences.

(4) For a discussion of culture contacts throughout and beyond the Liangshan region, consult Hein 2014a.

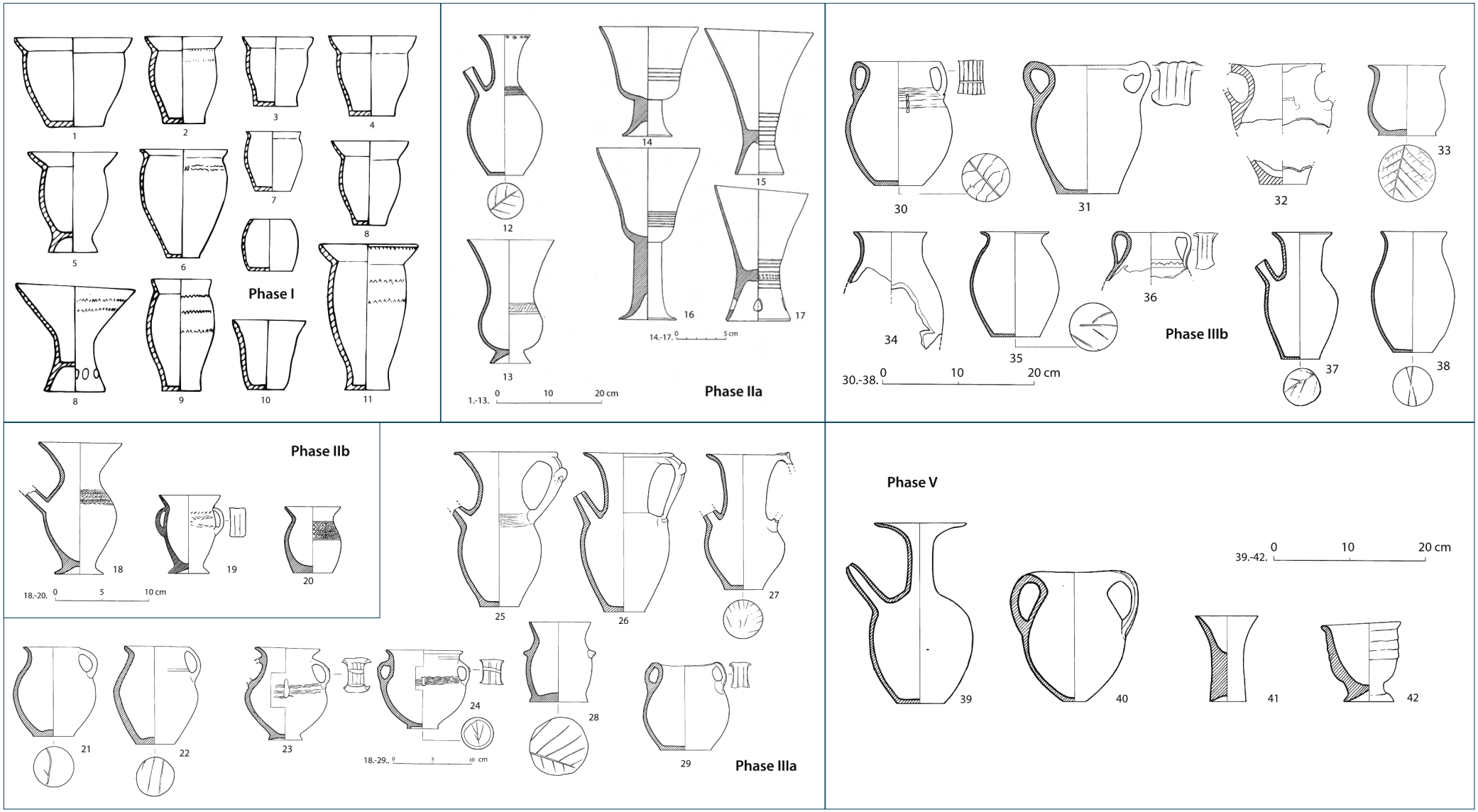


Fig. 20 – Ceramic vessel types from megalithic graves: 1-11. late phase ceramics from Xichang Dayangdui (After Xichangshi *et al.* 2004: Fig. 25); 12-17. Xichang Bahe Baozi M4 (After Sichuansheng *et al.* 2006b: Figs. 67.5, 66.3, 66.5, 66.1, 65.8, 71.13) ; 18-20. Xichang Lianghuan (After Sichuansheng *et al.* 2006b: Figs. 63.7, 66.4, 68.2); 25-29. Miyi Wanqiu M1 (After Liangshan 1981: Fig. 6-7); 30-38. Dechang Arong M4 (After Sichuansheng *et al.* 2006a: Fig. 15) ; 39-40. Xichang Xijiao M1; 41. Xichang Hexi M3; 42. Xichang Bahe Baozi M3 (After Sichuansheng *et al.* 2006: Figs. 67.4, 57.4, 66.7-8).

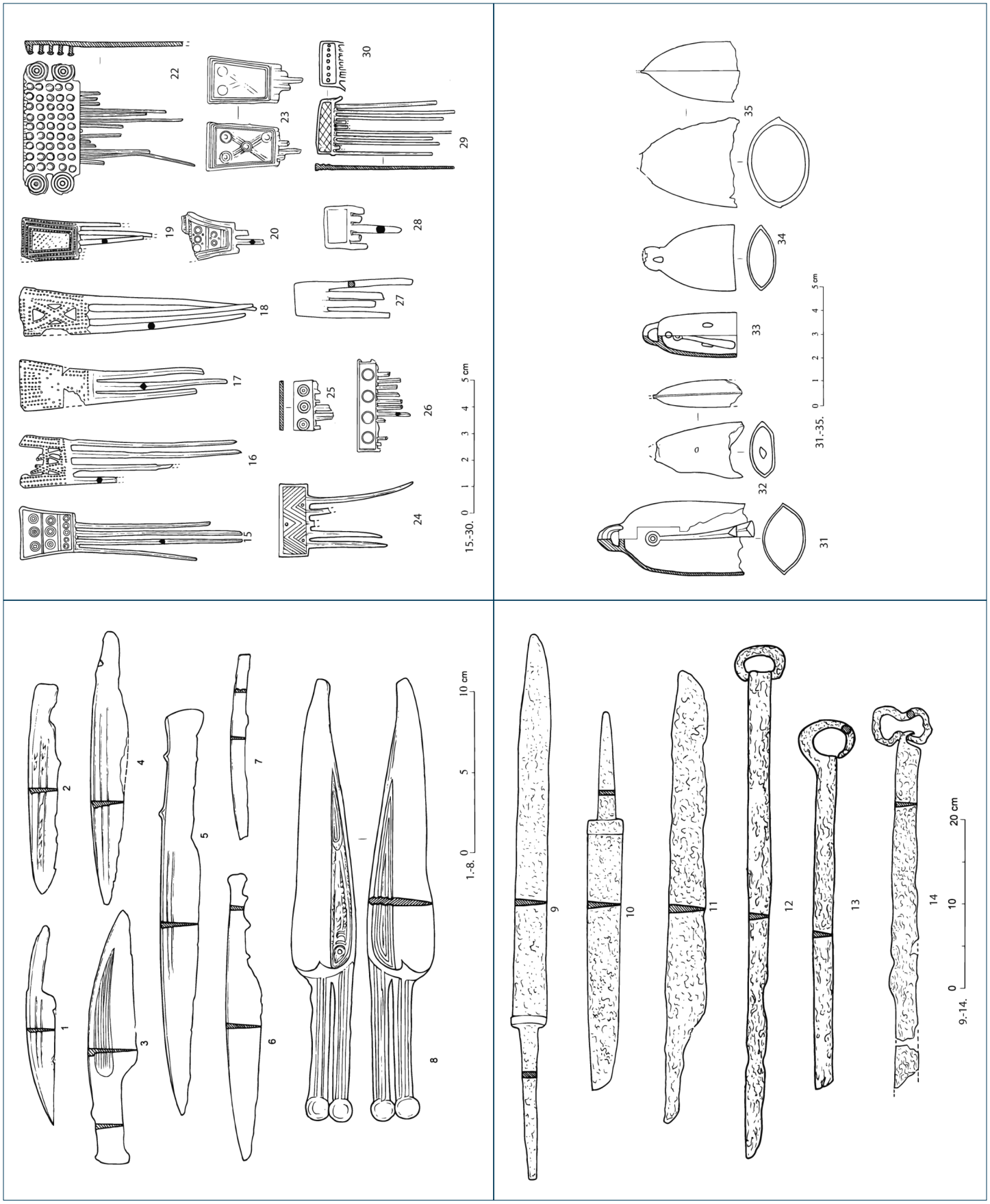


Fig. 21 – Metal objects from megalithic graves: 1-8. bronze knives from Xide Lake Sihe M8, Xichang Bahe Baozi M1, Guoyuan M2, Lake Sihe M7, Xiaoxingchang AM2, AM1, Lake Sihe M6, M8, Hexi M2 (After Sichuansheng *et al.* 2006b: Fig. 88.8-16); 9-14. Iron weapons from Xichang Wanao M1, Guluqiao M1, Huangshuitang M1, Xiaohuashan M1, Dechang Arong M3 (After Sichuansheng *et al.* 2006b: Fig. 90.1-6 and 8); 15-30. Hair combs from Puge Xiaoxingchang BM4, Xichang Xiaohuashan M1, Bahe Baozi M1, Xijiao M1, Xide Guluqiao M1, Puge Xiaoxingchang BM4, BM2, BM4, Xijiao M1, Beishan M1, Xiaoxingchang BM2, Xichang Xijiao M1, Beishan M1 (After Sichuansheng *et al.* 2006b: Fig. 84.5); 30-35. Ling bells from Xichang Hexi M2, Xide Lake Sihe M8, Xichang Bahe Baozi M1, Xide Guluqiao M1, Xichang Beishan M1, Xijiao M1 (After Sichuansheng *et al.* 2006b: Fig. 82.1, 5, 7-10).

3.6 Chronology

Developing a chronological framework is problematic because of the long use-life of some of the graves, the large variability in grave goods, and the paucity of objects. By combining object typology, grave typology, and the combination of grave and artefact types it is, however, possible to suggest several phases and sub-phases of grave development for graves containing objects. Over time, there is a clear development from small graves with single instances of interment to increasingly large graves with increasing instances of interment and ceramics connected with drinking or libation rituals placed either inside or outside the grave, but there are also regional differences [(5)].

The earliest megalithic graves of Phase I, which occur only in the central Anning River Valley, are small and were used for single instances of burial for one or several individuals as primary and/or secondary interments with a small number of ceramics. If placed inside the grave, the ceramics were large, possibly storage vessels for food provisions for the dead.

From Phase II onwards, megalithic graves start appearing further north, south, and east. In this phase the graves increase in size and are used for multiple instances of primary interment accompanied by increasing amounts of ceramics in various parts of the graves – mostly pouring and drinking vessels probably used in connection with burial rituals; the large jars and urns of Phase I are no longer used. All Phase II graves in the Anning River Valley also hold a few tools (knives, grinding implements, spindle whorls), and personal ornaments (bracelets, rings, beads), all found as part of the attire of the deceased, interred as primary extended supine burials. The number of ornaments increases substantially during the latter Phase IIb period, but this may be due to the increased number of interments per grave. At the same time, pits containing ceramics become common outside the megalithic graves, suggesting that ritual activities continued after the closure of the graves.

Phase II graves in the eastern mountains hold only a few bracelets but large numbers of arrowheads, bronze knives and perforated animal teeth – assemblages quite similar to the earlier local earth-pit graves – suggesting a focus on hunting also indicated by the assemblages of contemporary local settlement sites. In the northeastern graves, ceramics are rare and appear only in the form of simple food containers, while drinking equipment is entirely absent. The rituals connected with megalithic graves thus seem to have differed markedly between the Anning River Valley and the eastern mountains.

Phase III sees a major transition in ceramic quality from high-fired, dark fine ware to red coarse ware; at the same time, globular double-handled jars appear, soon becoming dominant in ceramic assemblages. These may be the result of increased contacts with Northwest Sichuan where such vessels first appear in stone-cist graves. The custom for the interred to wear a set of personal ornaments and tools or, more rarely, weapons, that started in Phase II continues and the number and variety of items increases over time. These inclue hair combs, small bells, and earrings during Phase III and iron swords and knives in Phase IV, suggesting developments in attire.

In Phase IIIb and especially in Phase IV, increasing numbers of people are interred successively in the same grave, and the graves become increasingly long, sometimes providing room for over a hundred individuals, making dating problematic. Graves from this period also show other signs of increasingly complex burial rituals such as the rearrangement of the bones of previous interments, the burning of offerings or lighting of fires inside the graves, and increasing numbers of ceramic sherds. Elaborate hair combs, an increasing variety of ornaments, clothing applications, and various objects of Han origin also appear in this phase.

Stratigraphic evidence from two sites, Xichang Dayangdui and Yingpanshan (Chengdu *et al.* 2007; Xichangshi *et al.* 2004), helps to place the megalithic graves within the local chronological framework, as do typological comparisons of ceramics and

(5) For an in-depth discussion of the local chronology consult Hein 2017a.

metal objects. The latter, combined with a very few radiocarbon dates and some Han coins, are the main source of evidence for absolute dates. Based on this evidence, Phase I can be dated to the 8th-6th centuries BC, Phase II to the early 5th century BC, Phase III to the 4th-3rd centuries BC, and Phase IV to the 2nd to early 1st century AD; however, as the use-lives of some of these graves are very long, there may be an overlap between Phases II and III and between Phases III and IV.

4. Elements of synthesis

It is generally agreed that megalithic graves are a phenomenon limited to the Anning River Valley and the adjacent mountains of the northeast. So far, debates on the megalithic graves of Southwest China have revolved around typology, chronology, ethnic attribution, origins, and meaning. It has been speculated that the custom of using stones in grave construction came from northern China where small below-ground stone graves are found from the Neolithic period onwards (Xu 1958). This would not explain, however, why the inhabitants of the Anning River Valley suddenly decided to build large above-ground structures that required whole communities to invest many hours of labour over a considerable period. In the 1980s, several articles speculated that these and other types of stone graves indicated a '*religious veneration of stones*', but these naturally remain extremely speculative (Jing 1986). They mainly draw on ethnographic evidence as well as textual sources reporting on the customs of the population of Southwest China.

The same evidence is also cited in debates on the ethnic attribution of the builders of the various types of graves in prehistoric Southwest China. The megalithic graves have usually been associated with the Qiongdu Yi people mentioned in the *Hanshu*, but this attribution is highly problematic (Sichuansheng & Anninghe 1976: 330). The historical records postdate the archaeological material by centuries and were written by inhabitants of the Central Plain who had never set foot into Southwest China [(6)]. Furthermore, assigning an etic ethnic label to a body of archaeological material does not improve our understanding of the past behaviours that created the objects and features in question. Such attempts should therefore be avoided. Indeed, over the last decade or so, debates on both meaning and ethnic attribution of the megalithic graves have fallen silent.

Discussion on issues of grave typology and chronology have been brought to a preliminary conclusion (Hein 2017a). The general development of the megalithic graves of Southwest China thus commences from small graves with single interments and a few ceramic objects in the first phase to large graves used in elaborate rituals and housing large numbers of interments in the final phase. In the interim, the interment of people in an attire involving personal ornaments and tools became customary, as did ceremonies involving communal drinking, both during burial ceremonies and after the final closing of the grave. The ceramics of Phase II show a connection with contemporary earth-pit graves, suggesting that part of the population may have been interred individually in less ostentatious graves. This seems to have been the case both in the Anning River Valley and in the northeastern mountains. The custom of erecting megalithic graves clearly emerged from the central Anning River Valley but was soon adopted throughout the whole valley and finally also in the northeastern mountains, where the early graves were considerably smaller and were connected with local burial rituals. Only the later period graves in the mountains are nearly identical in object assemblages to those from the Anning River Valley.

It is remarkable that this trend of erecting large burial monuments – that became the centre of increasingly complex rituals – reached the northeast but did not expand beyond this point. While the Anning River Valley is marked by wide, fertile plains and a pleasant climate allowing for several crops a year, the mountains are much cooler, thickly forested with steep slopes and few level areas

(6) The sources usually cited are the *Shiji Xinan Yi liechuan*, the *Hanshu Xinanzi liangyue chaoxian chuan*, the *Hou Hanshu Nanman xinanyi liechuan*, and the *Huayang guozhi*. Although the *Shiji* incorporates earlier sources, it was written only in around 100 BC; the *Hanshu* and *Hou Hanshu* were compiled in the second half of the 1st century AD; the *Huayang guozhi* was composed around 350 AD (Loewe 1993).

allowing for agricultural exploitation. The object assemblages of the two areas differ markedly and the settlement finds suggest very different modes of subsistence. I thus argue that the megaliths and associated ritual practices suggest the emergence of a new form of supra-local group identity that nevertheless does not replace preexisting local identities. Why this did not expand beyond these two areas is not clear, as the finds from the Anning River Valley – including those from megalithic graves – clearly show outside connections, especially to Northwest Sichuan and Northwest China but also to areas further south and further east, even into Han realms (Hein 2014a; 2016). Nevertheless, these contacts seem to have been superficial and the Anning River Valley seems to have been largely self-contained economically and to a certain extend culturally, until at least the late 1st millennium BC. There may have been closer trade relations with the northeastern mountains whose inhabitants may have provided game, timber and other resources, while the inhabitants of the Anning River Valley could have provided agricultural products. This would explain how people from the northeast (but not from other regions) came to encounter and adopt the custom of erecting and using megalithic graves. At present these are only speculations but further research into subsistence practices and potential connections between the various parts of Southwest Sichuan will hopefully soon provide further insights.

5. Future Perspectives

Beyond gaining insights into prehistoric developments in Southwest China, the megalithic graves of the Anning River Valley and the northeastern mountains can also provide a valuable case study for various common issues in archaeology. One is the methodological issue of how to approach a body of material so unevenly preserved and reported and so varied in expression as these graves. It has been shown that careful separate analysis of the various elements followed by a combined view is a very fruitful approach (Hein 2017b). Seen from a spatial and environmental perspective, a comparison between the megaliths of the Anning River Valley and those of the northeastern mountains is also a great case study showing how similar customs can be adapted to different geomorphologies and societies with different subsistence systems. At the same time, the graves in both regions warrant a detailed study of how the local environment shapes and is in turn shaped by ostentatious burial traditions leading to the development of ritual landscapes built and maintained with significant investment of labour. Further insights into labour investment and management, including raw material extraction and transportation, will require collaboration between archaeologists and geologists as well as an ethnoarchaeological and comparative approach considering material from past and living megalithic traditions worldwide. Such research, which is currently underway (Hein and d'Alpoim Guedes in preparation), also promises to provide insights into human behavioural patterns that might be useful in the interpretation of megalithic graves in other parts of the world.

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Kazuo MIYAMOTO

Prehistoric cairns and dolmens in Manchuria (China)

Abstract: Stone grave structures and megaliths in prehistoric China are distributed throughout Manchuria and the eastern Tibetan Plateau, as shown by the famous model of the 'Crescent-Shaped Exchange Belt' proposed by Tong Enzheng. These burial systems were, however, introduced and developed individually between two areas during the foundation of the Northern Bronze culture. Cairns were established independently in Manchuria during the Neolithic period. One type of cairn existed in the Liaoxi district during the Hongshan culture period of the Middle Neolithic, in around 3500 BC, and another type existed in the Liaodong Peninsula during the Xiaozhushan Upper Layer culture period of the Late Neolithic, in around 2500 BC. In the case of the former, jade grave goods and the grave structure indicate a developed social stratification based on fertile agriculture. On the other hand, the latter suggests a concentrated or linear grave distribution based on a clan system. The burial system changed in both areas during the Bronze Age. In the Liaoxi district, stone cists or pit burials and stone chambers were used in graveyards and in the Liaodong district and northwestern Korean Peninsula, stone cists were used. First built below ground, it is believed that stone cists gradually became constructed on the surface to become table-type dolmens, however the processes by which these table-type dolmens developed differed between the Liaodong Peninsula and inner Liaodong, despite both being in the same district. Larger dolmens developed from the table-type dolmens in the Liaodong Peninsula and northwestern Korean Peninsula. These dolmens were built on the tops of hills or on geographical borders as symbols of ancestor worship among each social group. It is probable that cremated human bones were placed in these table-type dolmens on a continual basis.

Keywords: *cairn, Hongshan culture, Xiaozhushan lower layer culture, table-type dolmen, stone cover grave*

1. Introduction: regional division based on subsistence activities in East Asia

At the beginning of the Neolithic period, in around 8000 BC, millet agriculture developed in the middle and lower Yellow River basin of northern China (Liu & Chen 2012), and rice agriculture developed in the middle and lower Yangtze River basin of southern China. Both types of agriculture gradually mixed to form agricultural societies on the Chinese mainland in the Hypsithermal period of the Holocene from 7000 to 3500 BC, a time of wet and warm climatic conditions. On the other hand, to the north of the Great Wall region, areas of grassland became increasingly fertile from 3500 to 3000 BC, a time of cooler climatic conditions (Miyamoto 2000). Subsequently, East Asia became divided into four areas according to differences in subsistence activities: agricultural societies in mainland China, herding societies in northern Asia, and two secondary agricultural areas: 1) Northeast Asia, which includes the south of the Russian Far East, the Korean Peninsula and the Japanese archipelago (Miyamoto 2014b, 2015b, 2019); and 2) southern China and Southeast Asia (Bellwood 2005) (**Fig. 1**). The existence of these two secondary agricultural areas suggests that hunter-gatherer societies were influenced by agricultural societies from the Chinese mainland, in turn becoming agricultural societies themselves.

Manchuria lies in the border area between agricultural and herding societies (**Fig. 2**). The Liaoxi region of Manchuria was occupied by a millet agricultural society in the Neolithic period, but in the Bronze Age they became a herding society (Shelach 2009). The Liaodong region, on the other hand, was a secondary agricultural area. Millet agriculture first spread from Liaoxi to Liaodong in around 4000 BC, then rice agriculture spread from

Fig. 1 – Regional divisions based on subsistence activities in East Asia.

the Shandong Peninsula to the Liaodong Peninsula in around 2500 BC (Miyamoto 2014b, 2019).

2. Cairns in Manchuria during the Neolithic period

Stone-built graves like cairns and dolmens were not commonplace in agricultural areas of the Central Plains of prehistoric China. They were built in areas peripheral to agricultural regions like Manchuria and the eastern Tibetan Plateau (Tong 1990). Two types of cairns were established independently in Manchuria during the Neolithic period: one in the Liaoxi district during the Hongshan culture period of the Middle Neolithic, in around 3500 BC, and another in the Liaodong Peninsula during the Xiaozhushan Upper Layer culture period of the Late Neolithic, in around 2500 BC (**Fig. 2**). Both types were established in the northeastern periphery of an agricultural society.

2.1 Cairns of the Hongshan culture

The presence of jade grave goods and the grave structure of the cairns of the Hongshan culture indicate a developed social stratification based on fertile agriculture. The Hongshan culture, which was based on millet agriculture, was influenced by the Yangshao culture of northern China (Liu & Chen 2012) but the jade objects and grave construction are highly distinctive and unique. Given the scale of the graves and the quantities of jade goods, we can infer that social stratification increased at this time. Each cairn features a single stone coffin with jade items in a mounded stone structure, around which were placed many cylindrical pottery items (Shelach 1999).

One of the cemeteries of the Hongshan culture is that of Niuheliang in Liaoning province (**Fig. 2**). The site is divided into 27 grave clusters, located in an area of around 100 km^2 in the upper basin of the Dalinghe River. Archaeological finds here include a ritual construction featuring female clay figures and thought to have been created for agricultural ceremonies. The clusters of cairns are distributed

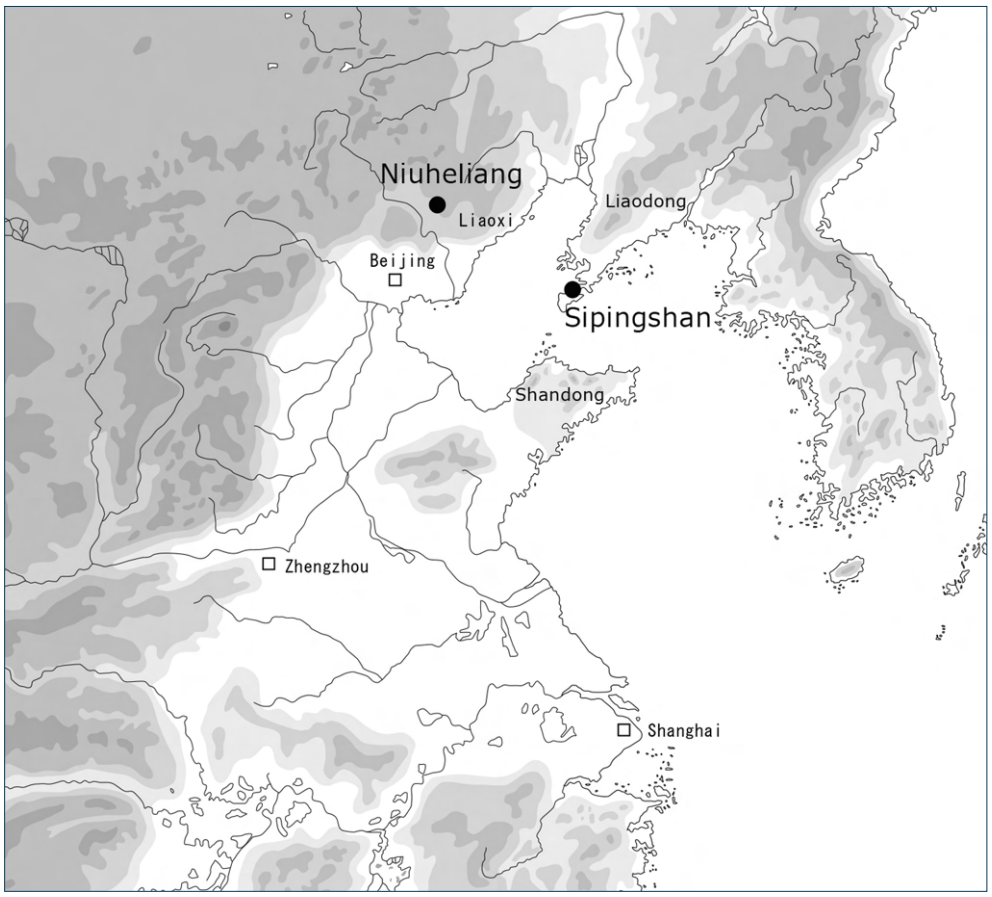


Fig. 2 – Location of Niuheliang site (Hongshan culture) and Sipingshan site in the Liaodong Peninsula.

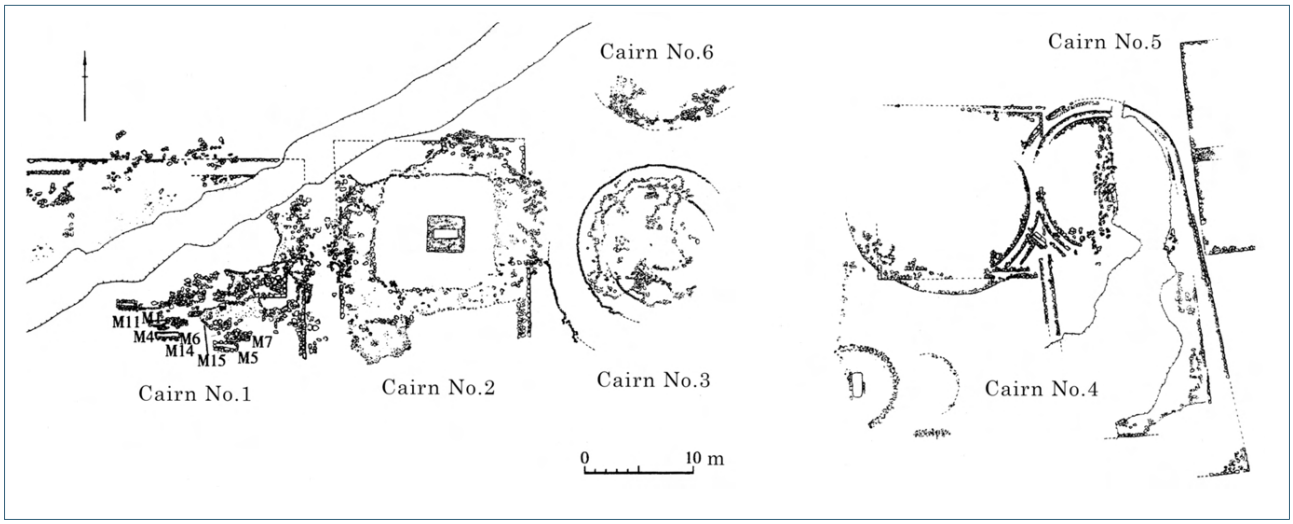


Fig. 3 – Grave Cluster 2, Nieuheliang.

around the central ritual construction. Grave clusters 2 (**Fig. 3**), 3, 5 and 16 have been excavated (Liaoning Provincial Institute of Archaeology and Cultural Relics 2012).

The cairns are divided by cultural layers into two phases from 3700-3000 BC. Graves in the upper layer have both square and round cairns. Cairns 1 and 2 of Grave Cluster 2 are square. Cairn 1, which includes 25 burials, is 34 m long (east-west), 22 m wide (north-south), and 1.2 m high, consisting of soil mounds faced with stones (**Fig. 4**). There are multiple stone cists within the square cairn. Burials 25 and 26 are larger than the others. Differently sized cists are located separately. Every stone cist is different in terms of the scale and quantity of jade. This indicates some degree of social differentiation, even within the same cairn based on the same social unit. Analysis of human bones dates Burial 8 of Cairn 1 to 3360-2920 cal BC.

Cairn 2 of Grave Cluster 2 was constructed with a stone boundary and a clay soil mound in the centre. It is 19.5 m long (north-south) and 17.2 m wide (east-west) (**Fig. 5**). It contains only a single burial: a stone cist containing an individual aged 13-15 years.

Cairn 4 of Grave Cluster 2 has overlapping round stone mounds in both the lower and upper layers (**Fig. 6**). There are nine burials in the lower layer and six burials in the upper layer. These overlapping burials were constructed continuously during two phases. Individuals were buried in the same place in what finally became a single cairn due to some form of social connection, perhaps a genetic relationship. Burial 5, in the lower layer (**Fig. 7**), consists of a round stone mound measuring 6-7 m in diameter, surrounded with cylindrical painted pottery of the Hongshan culture. This burial contains a single individual accompanied by a single jade object in a burial pit.

DNA analysis on human teeth indicates that Burial 2 of Cairn 2 in Grave Cluster 2, and Burial 1 of Cairn 1 in Grave Cluster 5 had a genetically maternal relationship (Liaoning Provincial Institute of Archaeology and Cultural Relics 2012), although there is no archaeological evidence to support this. It is inferred that these grave clusters are related genetically through a marriage system amongst elite classes. It is likely that each cluster might represent a genetic relationship, such as a clan system, even though there are multiple burials in a single cairn. In summary, it is thought that cairns of the Hongshan culture are elite graves constructed based on a clan system of chiefdoms.

Individuals interred in cairns in the Hongshan culture demonstrated their social status as chieftains in a fertile agriculture society through the scale of their graves, their ability to fund the construction of the burial, and through the burial goods included. Although the Hongshan culture predates the Xiaozhushan Upper Layer culture, dated to around

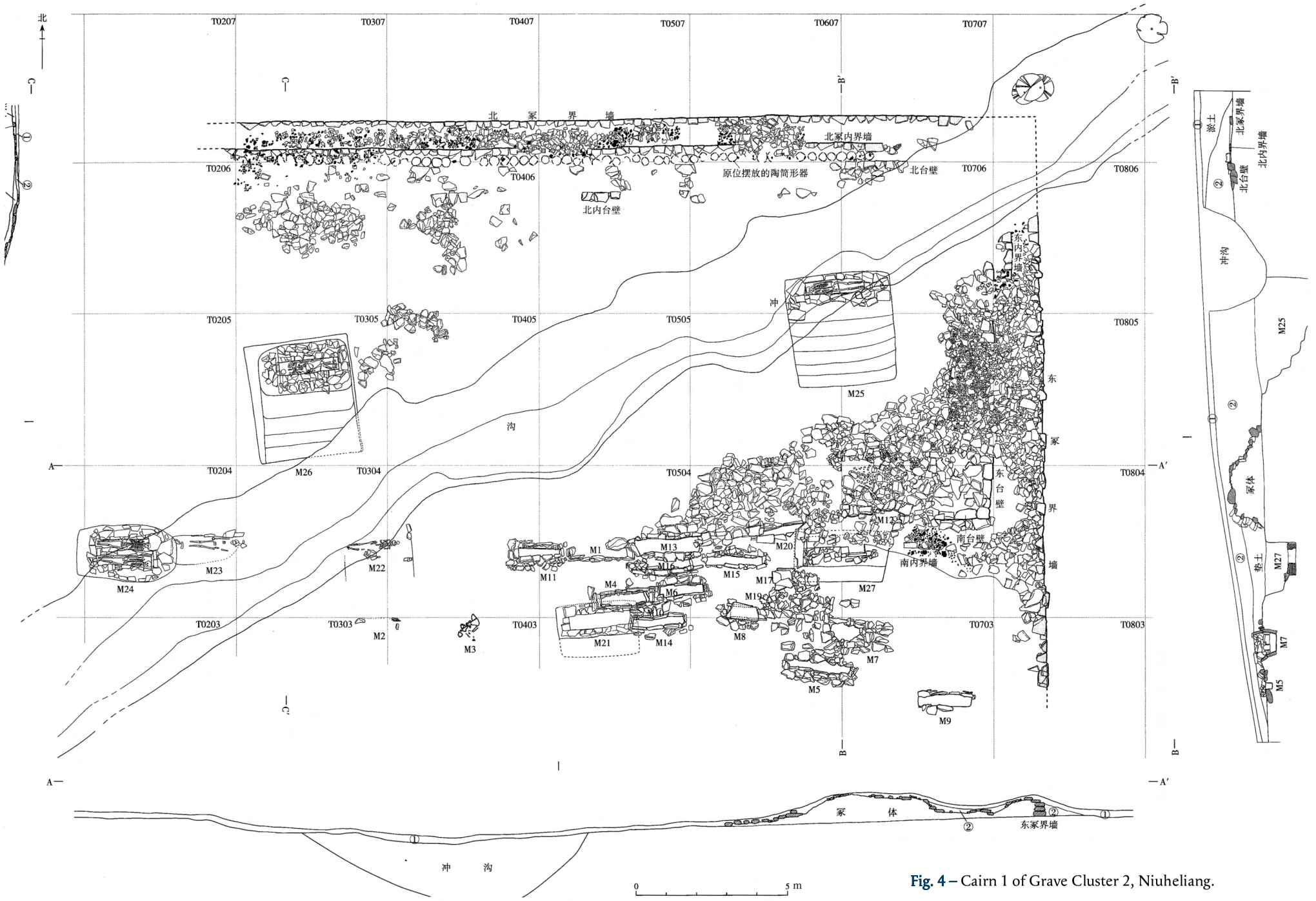


Fig. 4 – Cairn 1 of Grave Cluster 2, Niuheliang.

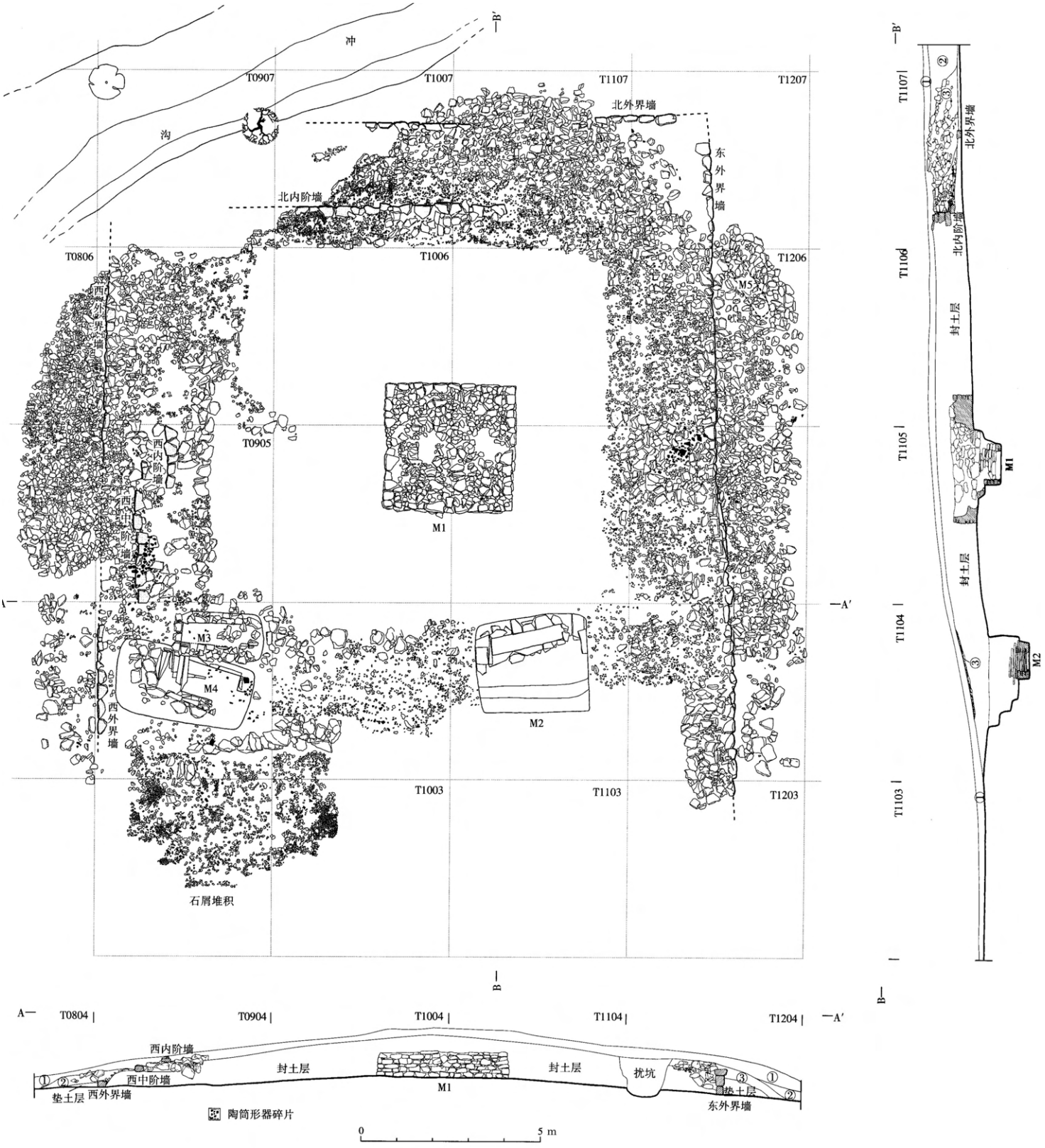


Fig. 5 – Cairn 2 of Grave Cluster 2, Niuheliang.

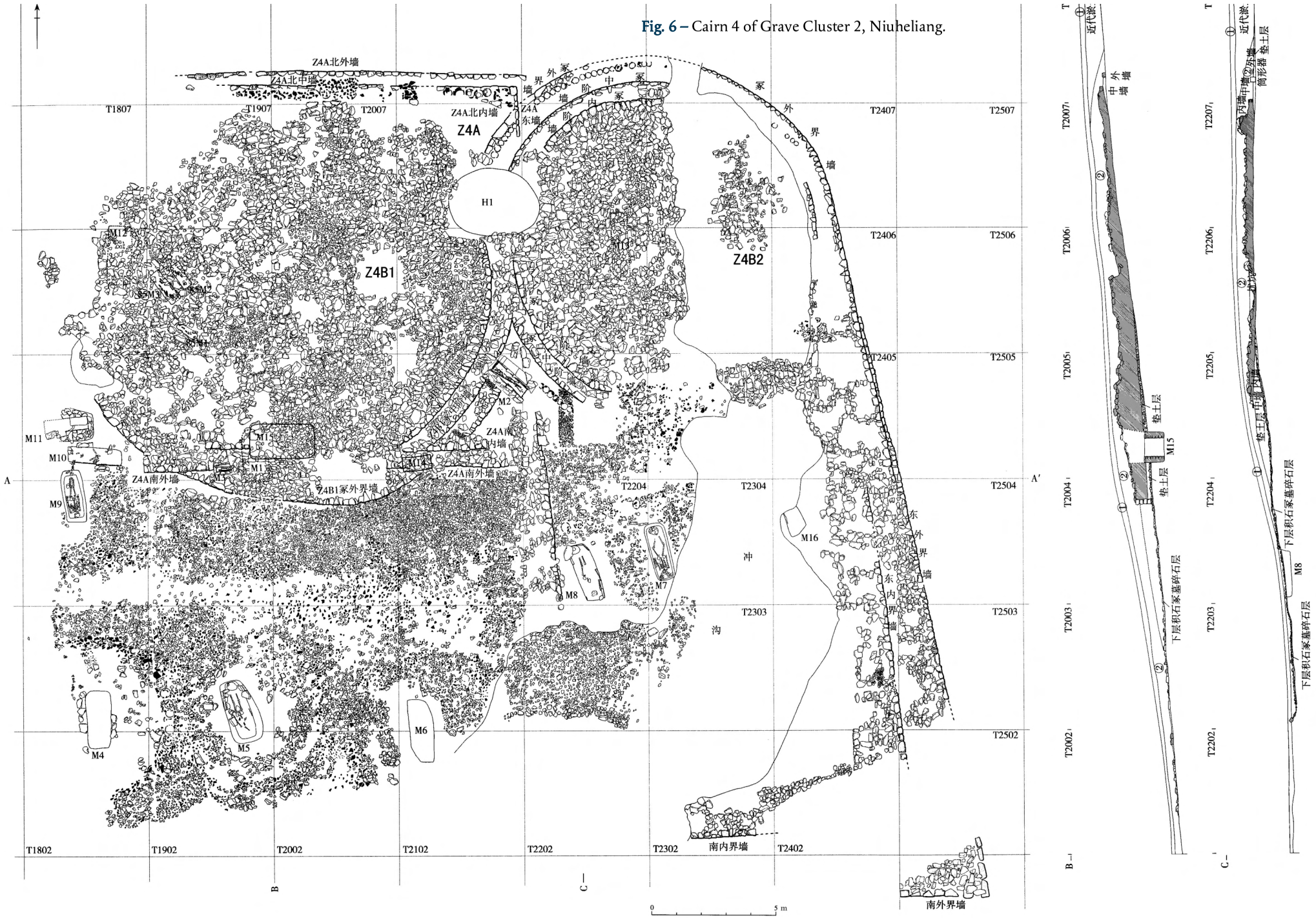


Fig. 6 – Cairn 4 of Grave Cluster 2, Niuheliang.

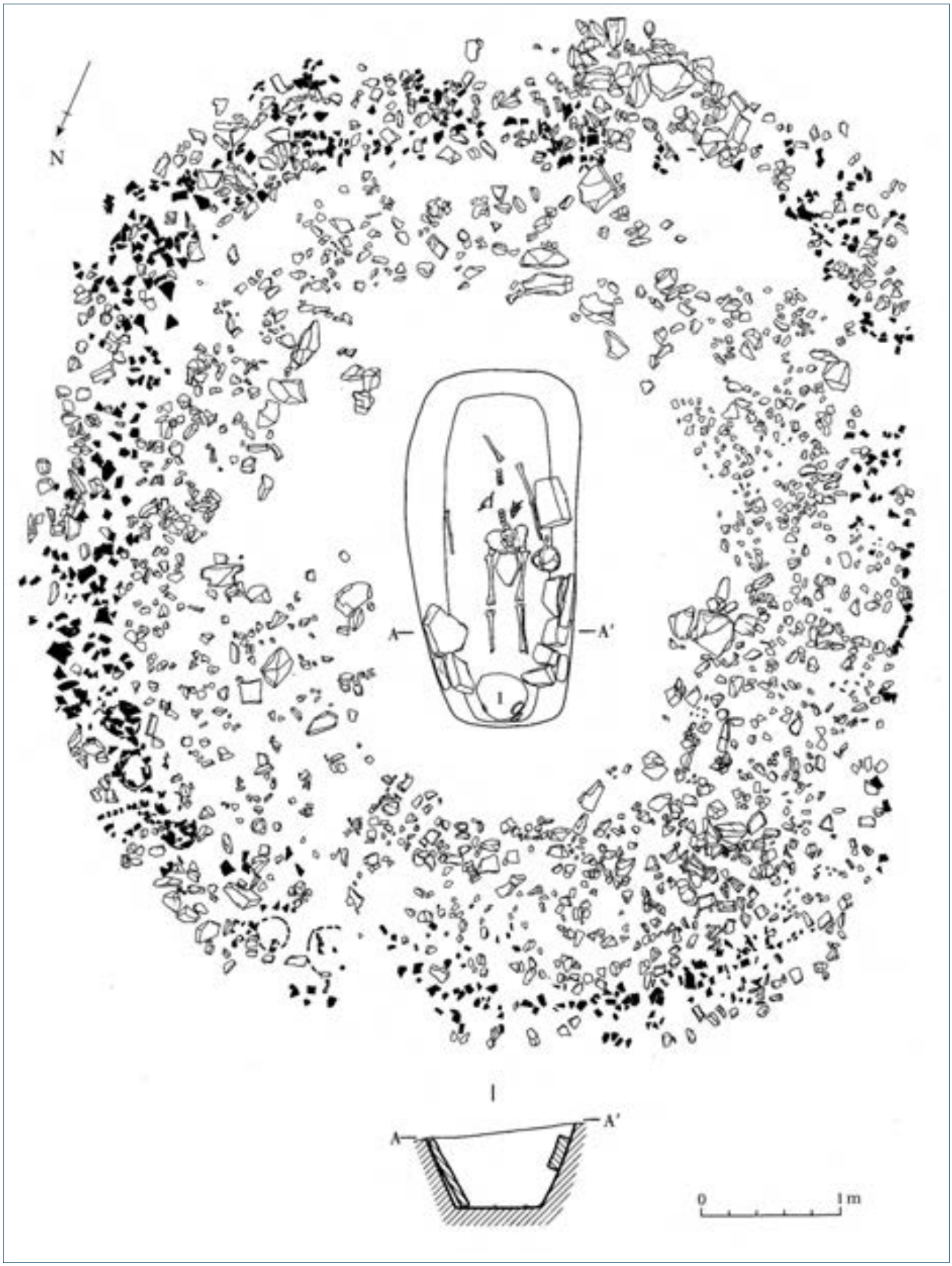


Fig. 7 – Burial 5 in Cairn 4 of Grave Cluster 2, Niuheliang.

2500 BC, the Hongshan culture possessed a much higher level of social development and complexity (Liu & Chen 2012). This accounts for the difference in the degree of development of agriculture between the two cultures. It is also interesting to note that social complexity declined after the Hongshan culture, as herding societies became established in northern Asia.

Another notable fact is that the climax of social development for the agricultural society came at the end of the Hongshan culture in Manchuria in around 3000 BC. The subsequent Xiaoheyan culture maintained mutual relationships with other groups in the Great Wall region (Miyamoto 2000). The Xiaoheyan culture practiced small-scale pit burials, with pottery, bone knives and microliths featuring among the grave goods (Shelach 1999). At the same time, herding societies developed in the grassland areas of Eurasia. Differences between the agricultural society of the Hongshan culture and the mixed agricultural and herding society of the Xiaoheyan culture relate to the emergence of herding societies in northern Asia.

2.2 Cairns of the Xiaozhushan Upper Layer culture in the Liaodong Peninsula

Another type of cairn existed in the Liaodong Peninsula during the Xiaozhushan Upper Layer culture period of the Late Neolithic in around 2500 BC. The emergence of this type of cairn accords with a second spread of early agriculture from the eastern region of the Shandong Peninsula to the Liaodong Peninsula among the secondary agricultural societies of northeastern Asia. At the same time, rice agriculture spread from the east of the Shandong Peninsula to the Liaodong Peninsula with the Longshan culture (Miyamoto 2014b, 2019), but the new type of cairn originated in the south of the Liaodong Peninsula. This suggests a concentrated or linear grave distribution based on a system of clans.

The cairns of Sipingshan, which stand 192 m high, are located on the ridge of Mount Sipingshan in the Huanglongwei Peninsula near to Yingchengzi, Dalian City (**Fig. 2**). They were excavated in 1941 by a team of Japanese scholars headed by Professor Sueji Umehara of Kyoto University (Sumita *et al.* 2008). Eighteen burial sites have been excavated, including no. 36 on the summit of Mount Sipingshan. Cairn 48, at Gaolicheng on the extended ridge of Mount Sipingshan, was also excavated along with other cairns.

The Sipingshan cairns are believed to belong to the Xiaozhushan Upper Layer culture in the Liaodong Peninsula, corresponding to the Longshan culture at the end of Neolithic period in the Shandong Peninsula. The Sipingshan cairns were undisturbed and many items were found in the graves during the excavations, including jade and black pottery. The burial sites at Cairns 32, 35, 37 and 36, which were located centrally among the cairns in the area at the summit of Mount Sipingshan (**Fig. 8**), were chosen for excavation based on their good state of preservation.

The cairns are divided into two types: burials concentrated in a line located along the ridge, and burial sites that have only a single burial chamber. Every burial chamber contains one skeleton. Although the human skeletons found had been fired at a low temperature, there is no evidence of cremation. Instead, it appears that the ground was burned after burial, perhaps during a forest fire. The burial chambers on the ridge were enclosed by a stone cairn (**Fig. 9**). Some chambers had stone covers. The pottery found associated with the graves was most likely placed on the stone cover, and objects such as jade, black pottery and red pottery were placed inside the burial chamber. There is no evidence for the use of wooden coffins, yet this remains a possibility due to the presence of black soil on the floor of the burial chamber. The construction of cairns in the Liaodong Peninsula is clearly different to that of the cairns in the Hongshan culture of the Liaoxi district (Middle Neolithic period); the Sipingshan cairns are therefore believed to be indigenous burial sites of the Liaodong Peninsula region.

Cairns forming a line are constituted by many single stone mounds, the linear arrangement only visible after the construction of all the component burials. The cairns are all single mounds, but their arrangement indicates a relationship between the graves, i.e., relationships within the clan unit or blood relations.

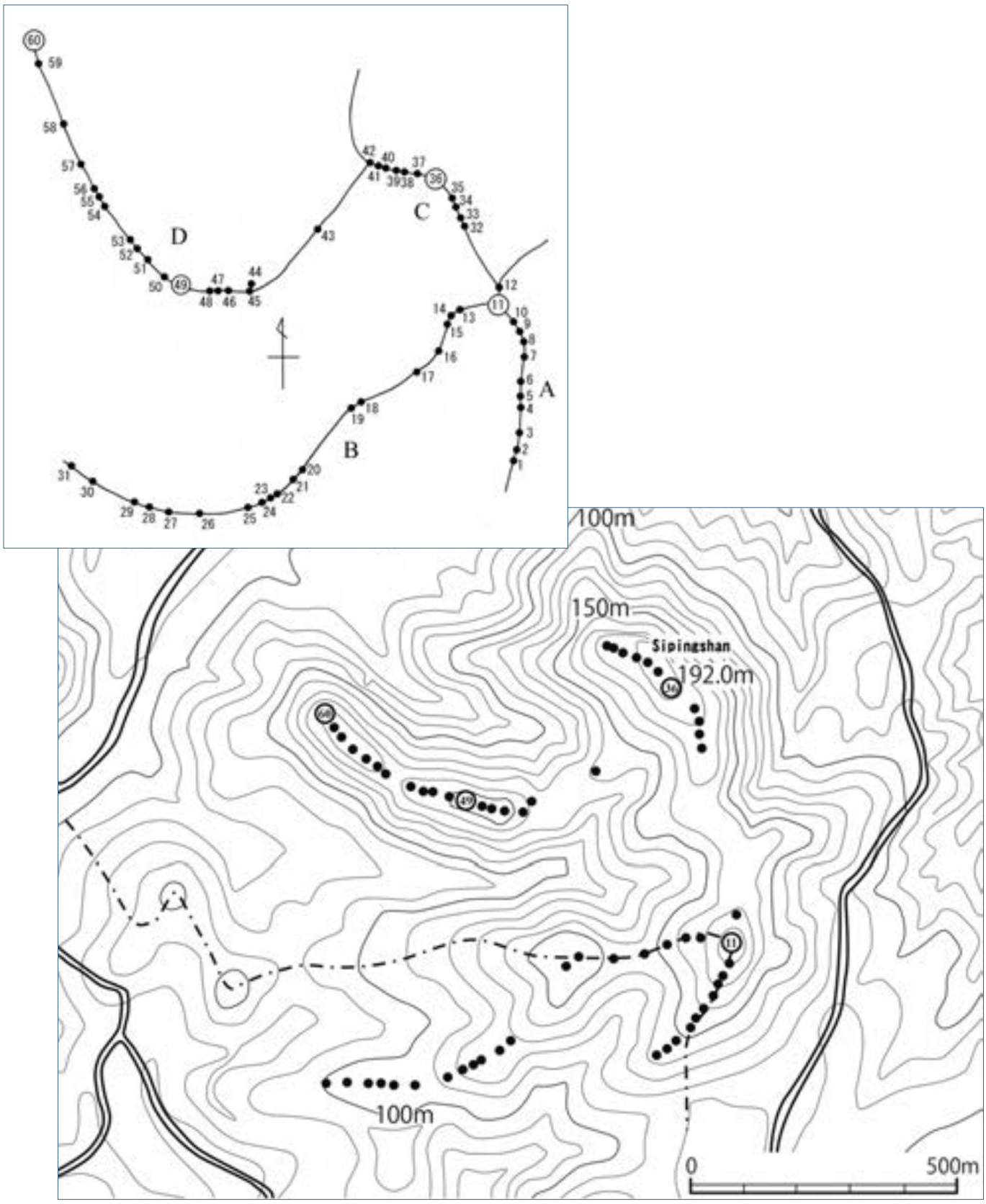


Fig. 8 – Distribution of cairns at Sipingshan.

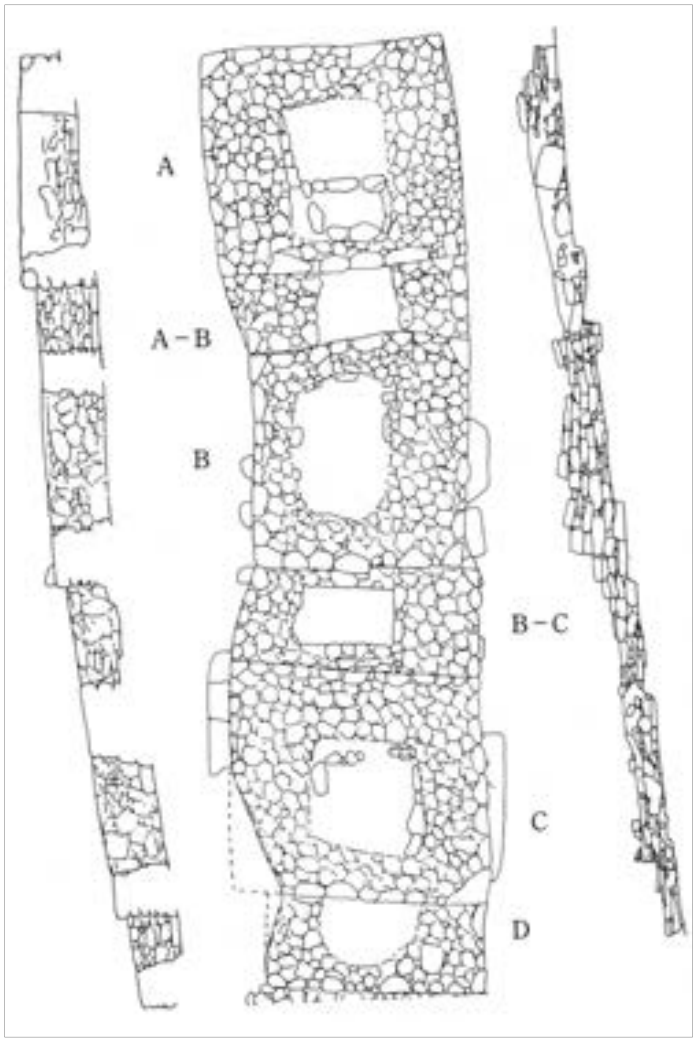


Fig. 9 – Stone structure of Cairn 35 at Sipingshan.

The date of these burials corresponds to the period of the Longshan culture in the Shandong Peninsula and the Xiaozhushan Upper Layer culture in the local chronology (Sumita *et al.* 2008; Miyamoto 2017). Based on the type of *gui* (a round-mouthed food vessel with two to four looped handles; **Fig. 10: 216**) and the black pottery (**Fig. 10: 14, 23, 24, 31, 43, 44, 143**) found in the graves, these burials are assumed to belong to the early part of the Longshan culture (2500-2400 BC). The early period is further divided into three chronological phases based on differences in types of locally made red pottery and comparisons of assemblages among burials (Sumita *et al.* 2008; Miyamoto 2017). We believe that the Sipingshan cairns were constructed gradually over these three phases (**Fig. 11**).

The combinations of *gui* and the black pottery grave goods of the Sipingshan cairns indicate affiliations as well as hierarchical difference (**Fig. 12**). The pottery can be divided into five groups: Type A - *bey* wine glasses; Type B - *bey, guang* and *hu*, plus storage pottery; Type C - *bey, guang, hu* plus *bo* as serving pottery; Type D - *bey, guang, hu, bo* and *gui*, plus pottery for heating wine; and Type E - *bey, guang, hu, bo* and *gui*, plus ding pottery for boiling. The Type E pottery combination is seen in the grave goods of Burial P in Cairn 36 (**Fig. 10**). There are clearly hierarchical differences in pottery combi-

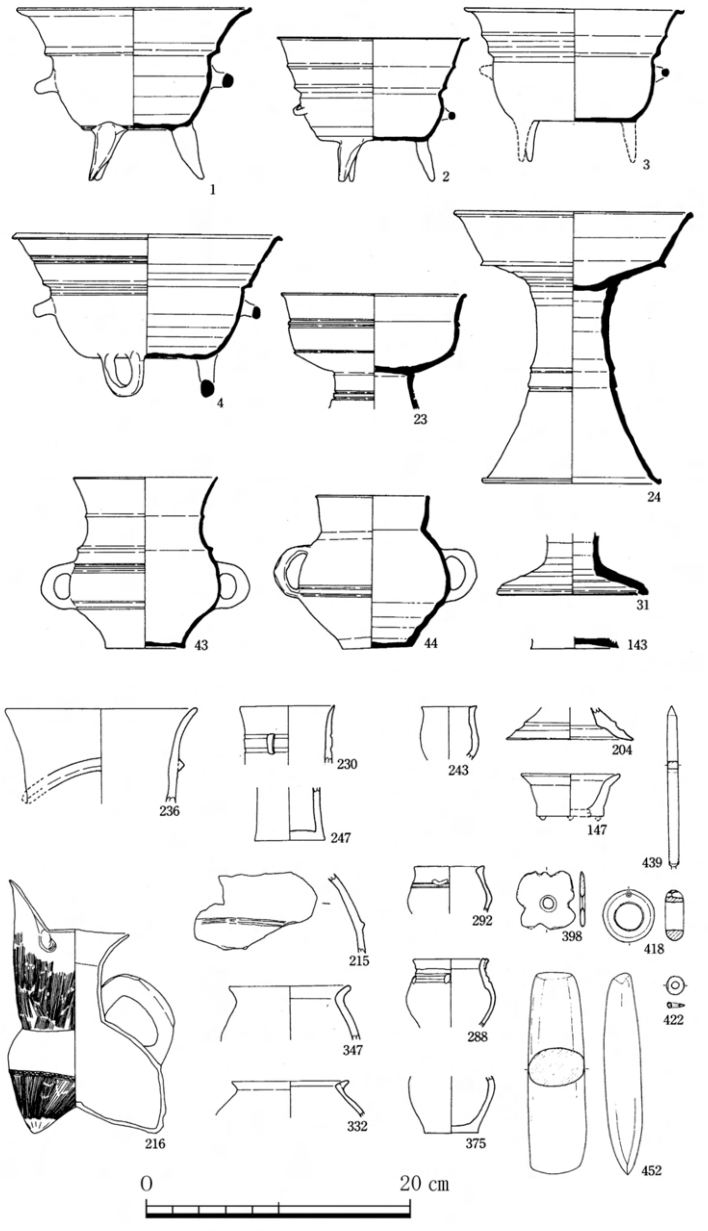


Fig. 10 – Grave goods in Cairn 36, Burial P, Sipingshan.

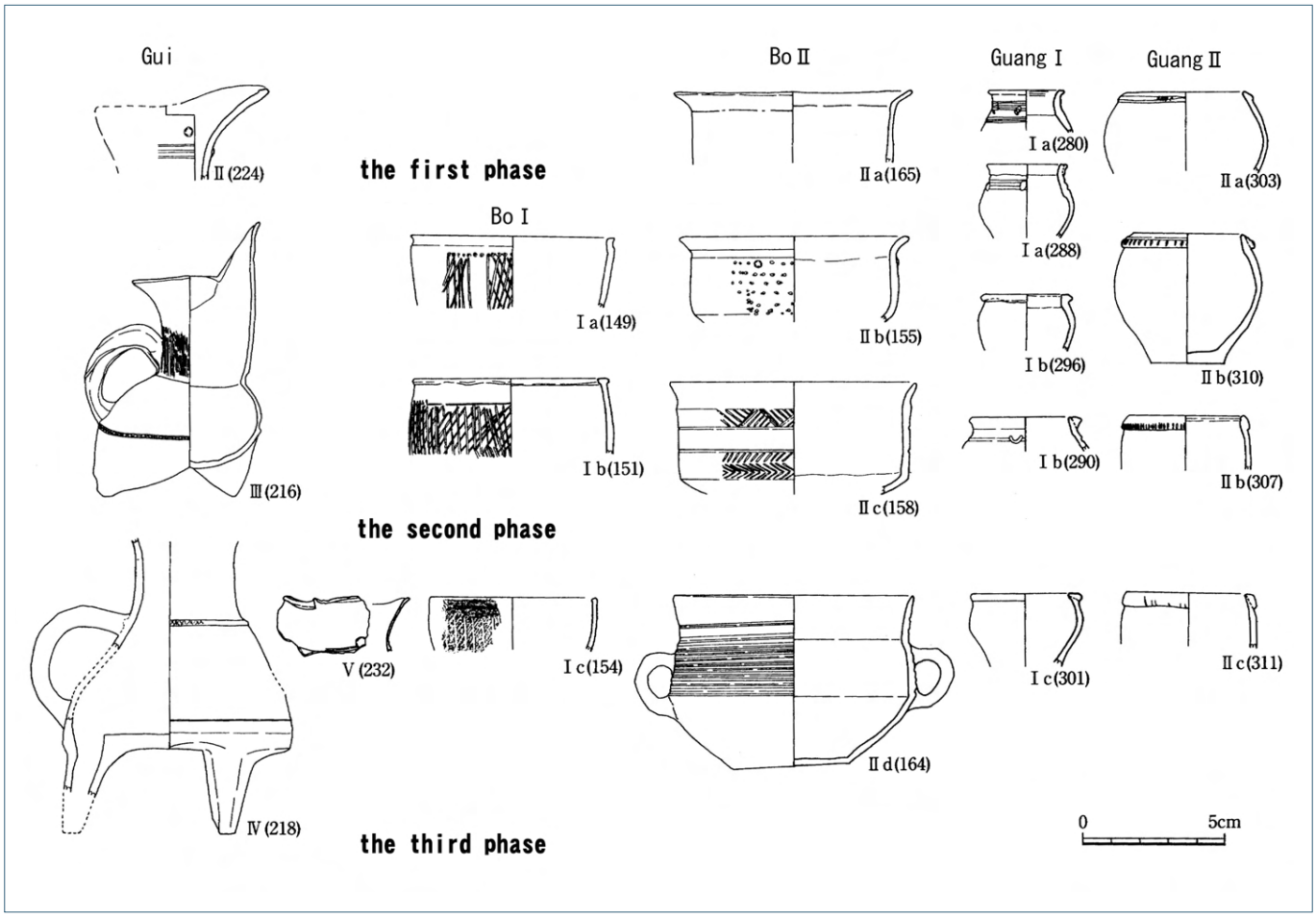


Fig. 11 – Chronology of red pottery at Sipingshan.

nations that are assumed to indicate the social status of the deceased (**Fig. 13**), for example, the amount of pottery and the existence of jade items such as a *yabi* (a 'denticulate disc', Fig. 10-398). The Type E pottery combination is believed to be associated with people of the highest rank, followed by types D, C, B and A, representing five decreasing ranks (**Fig. 14**).

Applying this hypothesis to the distribution of the grave sites, it appears that first or second ranked burials like Cairns 36, 37 and 38 are located at or near the summit of the mountain, while lower ranked burials like Cairns 32, 35 and 39 are located on the lower slopes (**Fig. 15**). Cairns 35 and 36 form a line, and here the clan unit is assumed to be related to the social rank. Even amongst the cairns forming lines, burials of the first rank such as Burials P and Q of Cairn 36 are located on the mountain summit (**Fig. 15**), while the second ranked burials are positioned lower down, and those below the third rank are much further down the mountain. This indicates that even within the same clan, social hierarchy was strictly defined. In addition, Cairn 36, which contains first and second ranked burial sites, is clearly indicative of social stratification based on the combination of grave items like *gui* and black pottery (**Fig. 14**). While first ranked burials contain jade items such as *yabi*, burial sites of the second rank contain large quantities of pottery but no jade. There are also differences between the sexes in the same clan.

Fig. 11, which was created through typological analysis (Sumita *et al.* 2008), shows three phases indicating the chronology of red pottery, which was locally made in the Liaodong Peninsula. We can use this to reconstruct the chronology of graves

Grave number	Ding	Bo	Dou	Gui	Gaobingbei	Bei	Hu	Guang	Cover	Amount
No. 32										0
No. 35A		1				2	2			5
No. 35A-B		1				2	1	1		5
No. 35B		1				1		1		3
No. 35B-C						2	1	1		4
No. 35C		1				2		1		4
No. 36E		2	1	2		15	5	2		27
No. 36K-L			1	1		3		4	2	11
No. 36P	4		3	1		2				10
No. 36Q	2	3	2	2		4	4		1	18
No. 36S	1			1		3	1	1		7
No. 36U-V						1			2	3
No. 36V						3	1	1		5
No. 36W						3	1			4
No. 37	1		1		1	3	1		2	9
No. 38E	2		1	1		4				8
No. 38G-H						1		1		2
No. 39						1	1			2

A type : *bey*, wine glasses
B type : *bey*, *guang* and *hu*, plus pottery for storage
C type : *bey*, *guang* and *hu*, plus *bo* as serving pottery
D type : *bey*, *guang*, *hu*, *bo* and *gui*, plus pottery for heating wine
E type : *bey*, *guang*, *hu*, *bo* and *gui*, plus *ding* pottery for boiling

Fig. 12 – Combination of grave pottery in burial pits at Sipingshan.

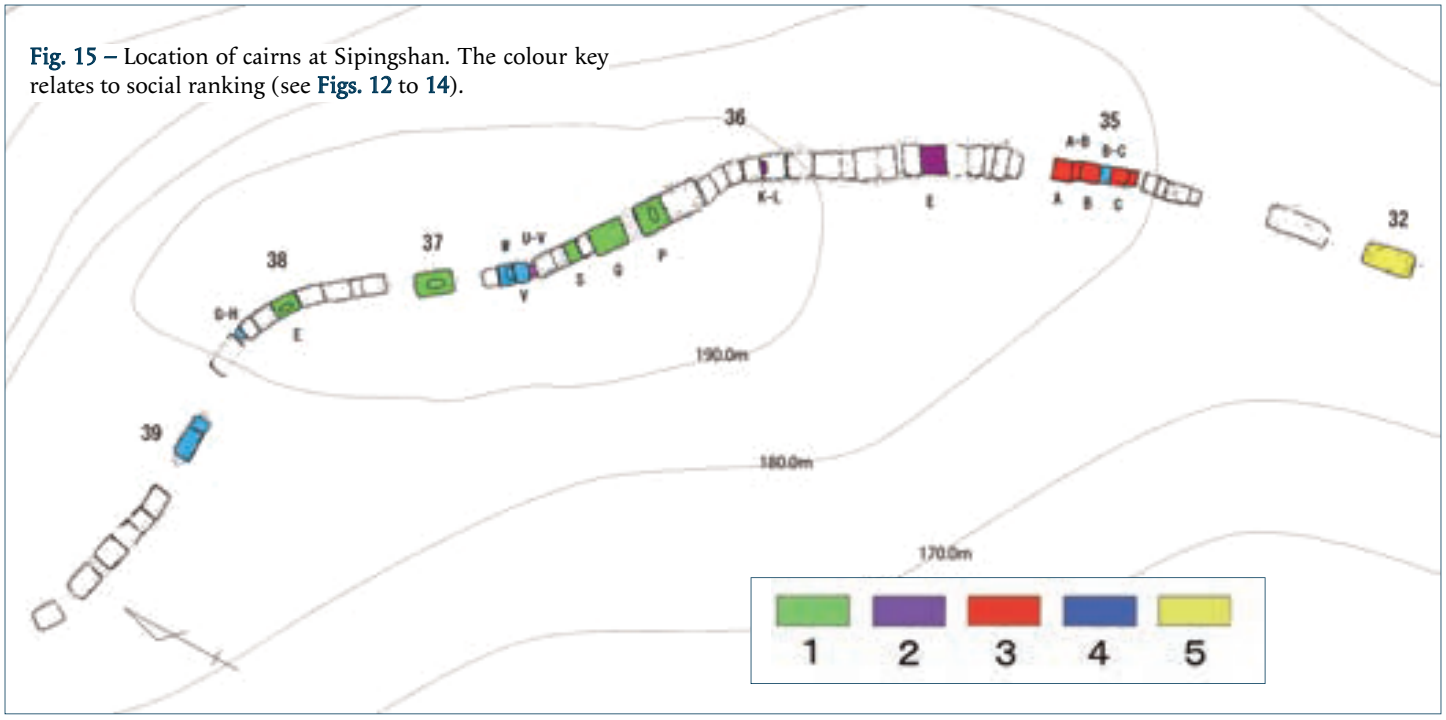
Grave number	Type of Pottery Combination	Jades			
		Yabi	Huang	Axe/Adze	Others
No. 32					Hairpin 1
No. 35A	C				Bead2
No. 35A-B	C	1			
No. 35B	C	1	1	1	Ornament 1
No. 35B-C	B			1	
No. 35C	C	2			
No. 36E	D			2	Ring 1、Arrow head 1
No. 36K-L	D				
No. 36P	E	1		1	Ring 1、Bead 1、Gimlet form ornament 1
No. 36Q	E	1	2		Bead 1、Tube bead 1、Ornament 1
No. 36S	E	1	1		Ornament 1
No. 36U-V	A		1		Bead1
No. 36V	B		1	1	
No. 36W	B				Hairpin 1、Ornament 1
No. 37	E	1	1	1	Raw material2、Breslet 1、Bead2、Tube bead2、Small bead 1
No. 38E	E		2	1	Tubebead2
No. 38G-H	B				
No. 39	B	1	1		Ornament 1

Fig. 13 – Jade found in burial pits at Sipingshan.

Grave number	Type of Black pottery	Amount of black pottery	Amount of red pottery	Amount of pottery	Jades			Social stratification
					Yabi	Huang	Axe/Adze	
No. 32		0	4	4				5
No. 35A	C	5	10	15				3
No. 35A-B	C	5	4	9	1			3
No. 35B	C	3	2	5	1	1	1	3
No. 35B-C	B	4	6	10			1	4
No. 35C	C	4	2	6	2			3
No. 36E	D	27	36	63			2	2
No. 36K-L	D	11	18	29				2
No. 36P	E	10	10	20	1		1	1
No. 36Q	E	18	27	45	1	2		1
No. 36S	E	7	5	12	1	1		1
No. 36U-V	A	3	3	6		1		5
No. 36V	B	5	8	13		1	1	4
No. 36W	B	4	11	15				4
No. 37	E	9	8	17	1	1	1	1
No. 38E	E	2	11	13				1
No. 38G-H	B	8	11	19		2	1	4
No. 39	B	2	8	10	1	1		4

Fig. 14 – Social ranking indicated by the combination of grave goods in burial pits at Sipingshan.

Fig. 15 – Location of cairns at Sipingshan. The colour key relates to social ranking (see **Figs. 12** to **14**).



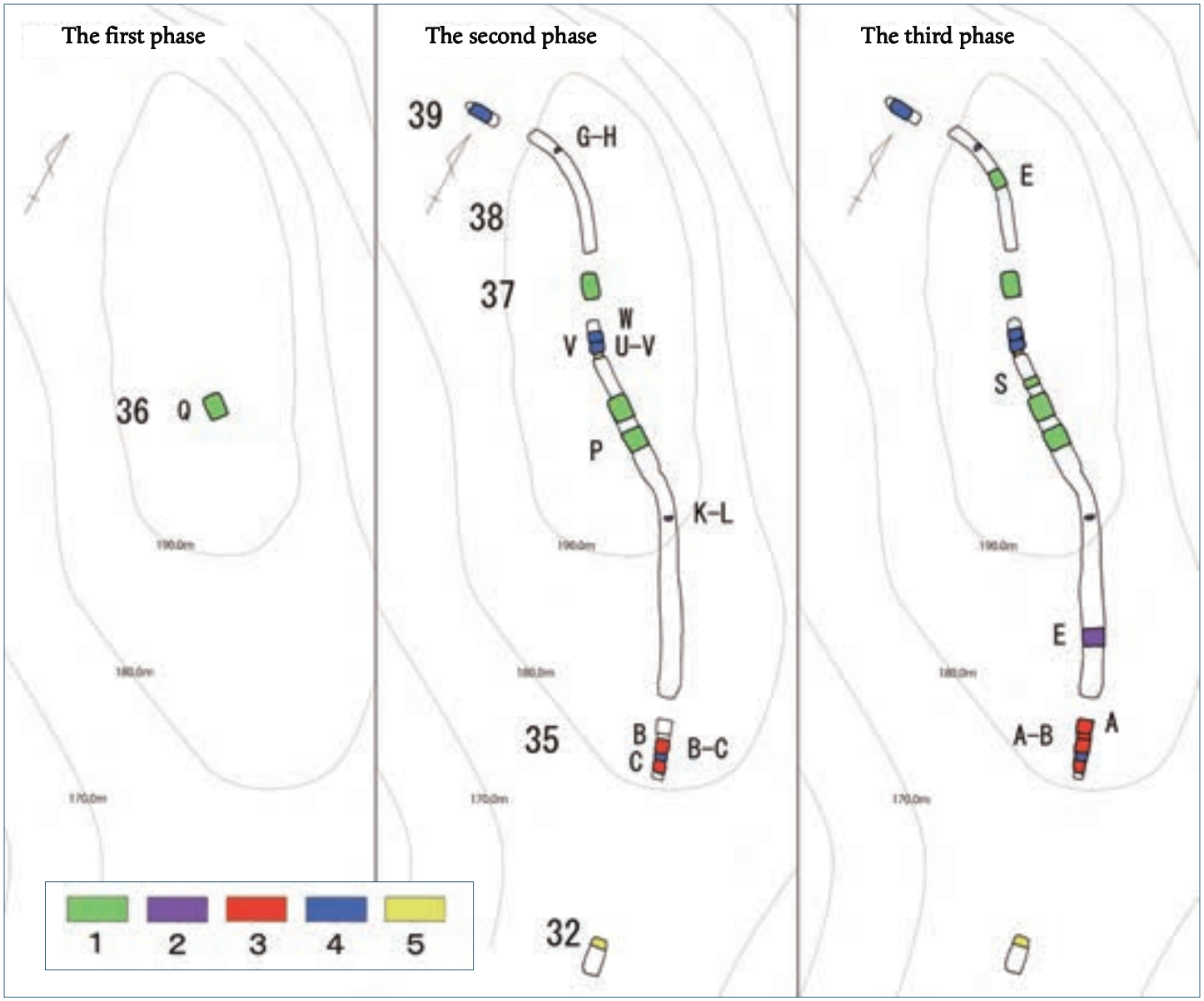


Fig. 16 – Process of development of cairns at Sipingshan. The colour key relates to social ranking (see **Figs. 12** to **14**).

construction according to the three phases contained within them (Fig. 16). Burial Q of Cairn 36, in the highest ranked burial site, was constructed ahead of the others on the summit of Mount Sipingshan, during the first phase. The arrangement of grave goods from the earliest Longshan culture is similar to that of the Dawenkou culture in terms of the particularity of the 'pig'-type *gui* and Type A *gui*, which are both tripod vessels for serving wine in the ritual ceremony of the Dawenkou and Longshan cultures in Shandong Peninsula (Underhill 2002). In the second phase, highest ranked graves like Burial P in Cairn 36 (Fig. 10) were constructed at or close to the summit of the mountain. At the same time, the second and the fourth ranked burials in the same cairn were constructed in a lower position. Grave position is clearly associated with social stratification. The first ranked Cairn 37 was constructed near Cairn 36 but Cairn 38, of slightly lower rank, was constructed on the same slope near Cairn 37. The much lower ranked Cairns 35 and 39 were constructed below Cairn 36, and Burials B and C in Cairn 35, typical of the third ranked burials, were constructed in this phase. It is evident that the socially stratified Cairn 36 was the burial site of leaders. In addition, Cairn 37 contained only a single burial site. Construction of a second site was perhaps halted due to the demise of the clan. Although the leading clan of Cairn 36 proceeded to construct the first ranked Burial S in the third phase, the newly prominent clan associated with Cairn 38 constructed the first ranked Burial E. These circumstances suggest that the strict social stratification existed until the second phase had declined, indicating the end of the Sipingshan cairns as well as the associated ranking system.

Archeological evidence suggests that the people who built the Sipingshan cairns were influenced by Shandong Longshan culture in around 2500 BC. The distribution of ceramics such as black pottery and *gui*, and jade objects such as the *yabi* and a gimlet-type tool (a small T-shaped tool with a screw tip for boring holes; Fig. 10: 439) shows that they originated from southeastern Shandong along the Yellow Sea coastal area, travelling through the eastern Shandong Peninsula to the Liaodong Peninsula (Miyamoto 2014b, 2019). This route of pottery and jade matches the route of the spread of early agriculture, mixed millet agriculture and rice agriculture. The strong presence of black pottery of the Shandong Longshan culture on the Liaodong Peninsula attests to the spread of early agriculture incorporating rice agriculture. In this process, the people of the Yantai district, on the eastern edge of Shandong Peninsula, most likely immigrated to the Liaodong Peninsula. This is why similarities can be recognized, not only in artefacts such as black pottery and yabi but also in other burial customs such as the use of shell items. In addition, the social stratification of burial customs as indicated by the combination of black pottery and gui is the same as that of the Shandong Longshan culture.

At the same time, trends in the forms of local ceramics such as red pottery shifted from jars, such as *Tongxingguan* (large cylindrical jars), to cooking pottery in the Liaodong Peninsula (Miyamoto 2015a). Significant cultural changes also took place in the region during this period; movement was clearly a key factor, and new forms of culture and new systems and religions were carried by immigrants (Miyamoto 2017). In this context, we can observe a dual process i.e. new burial systems such as cairns were conceived independently, but the burial customs of the Shandon Longshan culture were brought in by outside groups and these were used only in the burial chamber and were not visible once the burial ceremony had finished. It is key to understand that the acculturation of the immigrants with native people of the region yielded new cultural customs. While this led to the establishment of a new identity, it is assumed that these mixed people employed strategies to maintain the social structure and social customs of the Longshan culture while incorporating the immigrants (Miyamoto 2017), although this social structure gradually broke down over subsequent generations, developing into a new clan system.

3. Burial system in Manchuria during the Bronze Age

At the end of the Neolithic period in around 2000 BC, bronze production techniques and products spread through the Eurasian grasslands to the Central Plains

of China (Fig. 17), wheat and barley arrived from western Asia, and a technique emerged for creating ritual bronze vessels using clay molds. In this way, the Central Plains developed a unique bronze culture with a mixture of agricultural practices, leading to the establishment of early states like the Xia, Shang and Zhou dynasties. Elsewhere, the Northern Bronze culture of the Eurasian grassland area developed with bronze weapons, particularly daggers, and spread both to Northeast Asia – i.e, the Liaoning dagger culture of Liaoxi, Liaodong and the Korean Peninsula – and to the eastern Tibetan Plateau and Yunnan areas, where bronze daggers featuring a three-pronged design influenced by the Northern Bronze culture can be found (Miyamoto 2014a).

The burial systems in the Liaoxi and Liaodong districts of Manchuria changed during the Bronze Age. In the Liaoxi district, stone cists or pit burials and stone chambers were adopted in cemeteries in

Fig. 18 – Distribution map of dolmens in the Liaodong district.

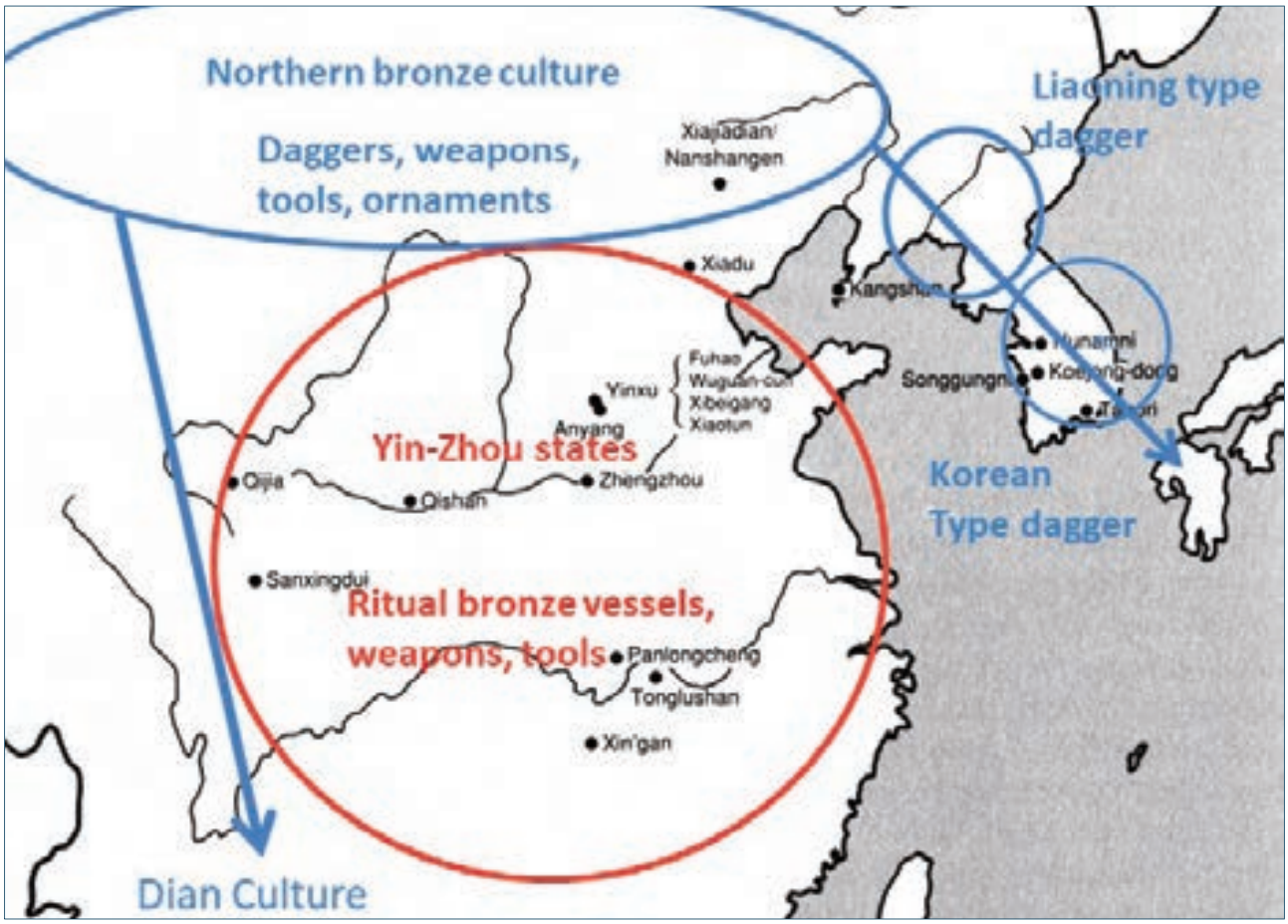


Fig. 17 – Bronze Age cultural groups and their genealogical relationships in East Asia.

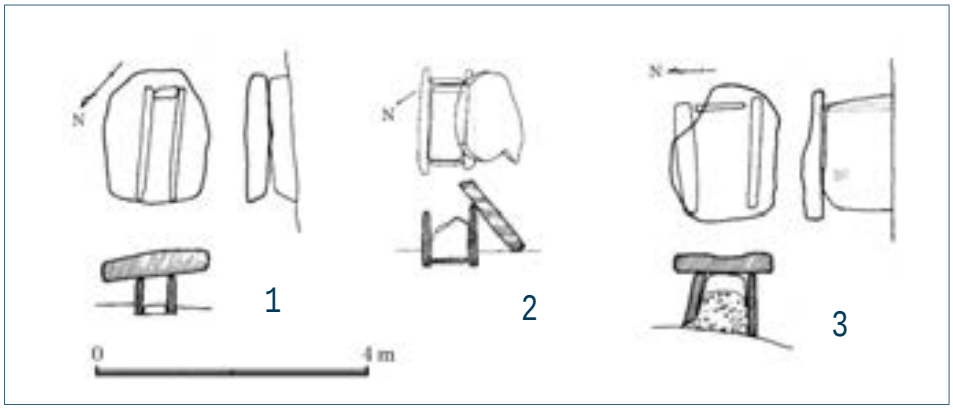


Fig. 19 – Type A table-type dolmens in the Liaodong Peninsula.

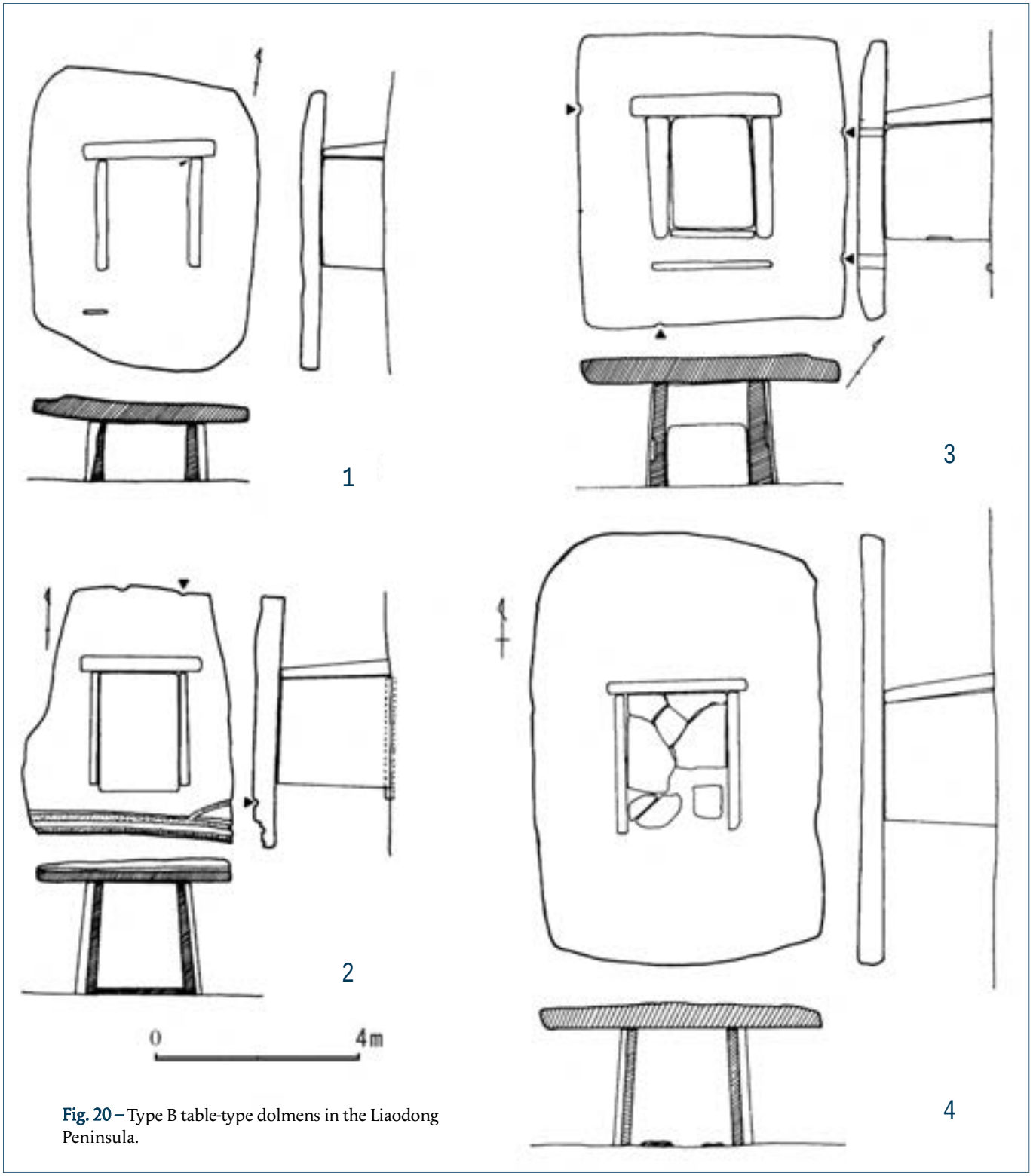


Fig. 20 – Type B table-type dolmens in the Liaodong Peninsula.

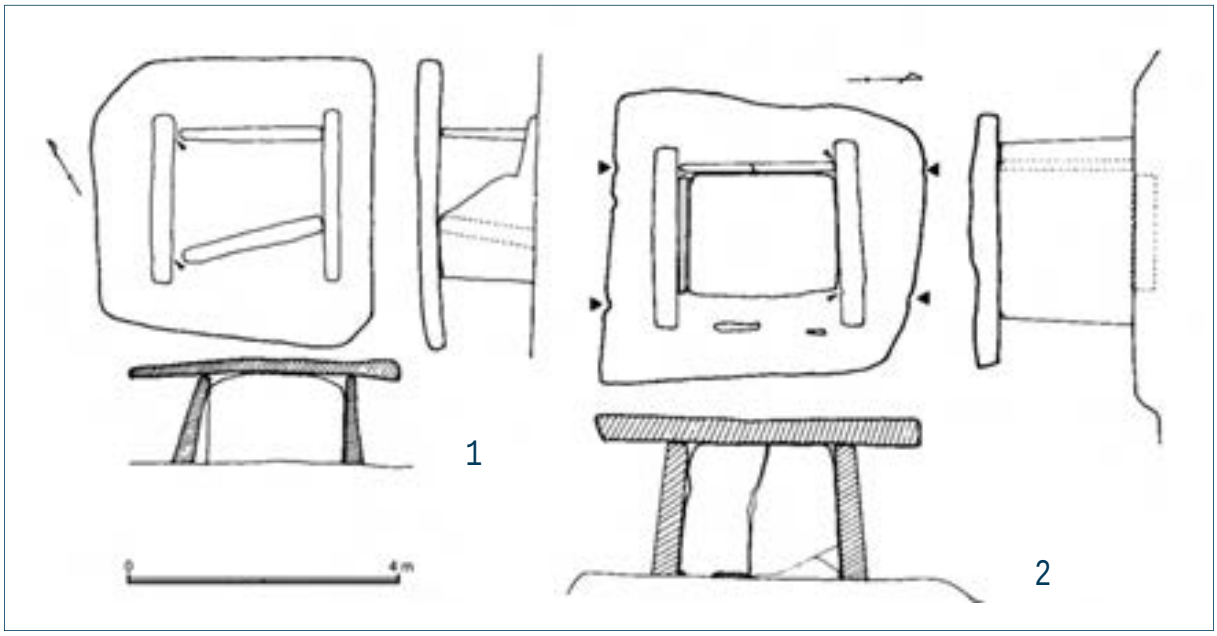


Fig. 21 – Type C table-type dolmens in the Liaodong Peninsula.

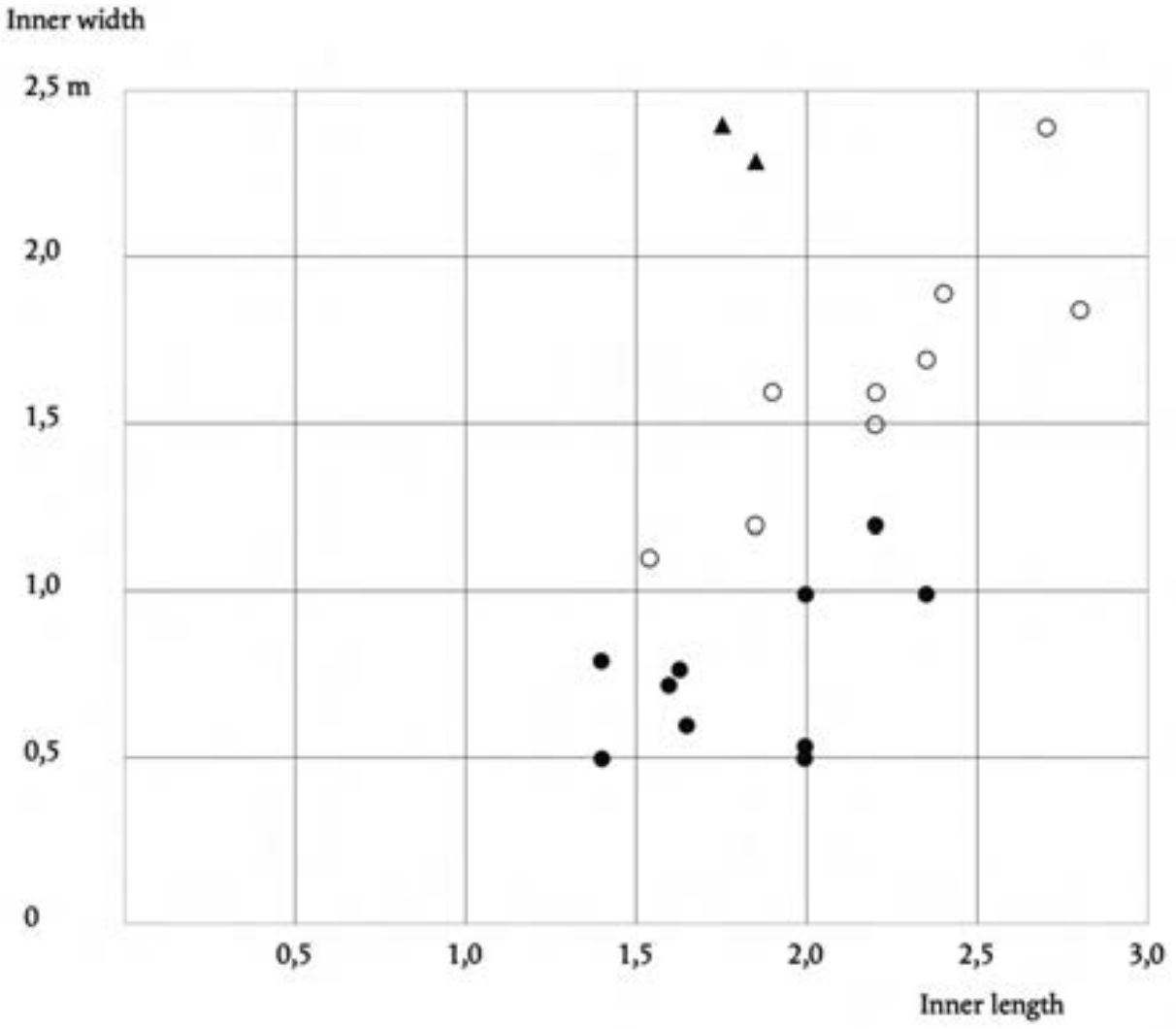


Fig. 22 – Ratio of length and width of inner stone cists of table-type dolmens in the Liaodong Peninsula (● type A, ○ type B, ▲ type C).

the upper Xiajiadian culture which produced the Liaoning-type daggers in the 1st millennium BC. It is thought that stone chambers were used for chieftains due to the grand scale of the burials and the opulent grave goods they contain, while stone cists and pit burials were used for other individuals.

The Liaoning-type dagger culture spread to the Korean Peninsula via the Liaodong district, and the two regions joined to form the same bronze culture, although their burial systems differed to that of the Liaoxi district. In the Liaodong district and Korean Peninsula Bronze Age burials involved dolmens (**Fig. 18**): table-type dolmens in the Liaodong district and northern Korean Peninsula and cover stone-type dolmens in the southern Korean Peninsula.

Stone cists were constructed in the Liaodong district and northwestern Korean Peninsula in the latter half of the 2nd millennium BC. Cists built below ground gradually came to be constructed above the surface, developing into table-type dolmens from the 11th to the 8th centuries BC, but evolving in different ways in the Liaodong Peninsula and inner Liaodong, despite these being the same Liaodong district.

In the Liaodong Peninsula, table-type dolmens are divided into three types: Type A, Type B and Type C, all with stone cists constructed on the surface. The stone cists of Type A dolmens have a shorter side slab inserted between two longer side stone slabs (**Fig. 19**); those of Type B dolmens have a shorter stone slab placed outside the two longer side slabs (**Fig. 20**). The stone cists of Type C dolmens have similar constructions to Type A, but cist is wider (**Fig. 21**). The scatter diagram in **Fig. 22** shows the ratio of the inner length and inner width, demonstrating how Types B and C increased in size. The larger dolmens of Types B and C in the Liaodong Peninsula and northwestern Korean Peninsula developed from Type A. These dolmens were located on hilltops or along geographical borders as a symbol of ancestor worship among each social group. It is probable that cremated human bones were placed in the table-type dolmens on a regular basis. Burnt bones were found in Shuangfang Dolmen 2 and Huojiaguopu Dolmens 1 (**Fig. 19: 2**) and 2. A handful of pottery was found at dolmens in the Liaodong Peninsula. Pottery found in the same dolmens as the remains of cremation is indicative of the lower and upper Gaolizhai culture, dating from the 11th to the 9th centuries BC (Miyamoto 2015a).

Dolmens in the inner Liaodong district are mainly of Type A (**Fig. 23**). The scatter diagram in **Fig. 24** shows that the ratio of the inner length and inner width of Type A dolmens in the inner Liaodong district is the same as that of those in the Liaodong Peninsula. These were also intended as graves for multiple cremations.

Both the Liaodong Peninsula and the inner Liaodong district had Type A dolmens, which are chronologically earlier than Types B and C, based on the typology in the Liaodong Peninsula. It is therefore believed that stone cists constructed under the surface in the latter half of the 2nd millennium BC gradually came to be constructed above the surface, developing into table-type dolmens from the 11th to the 9th centuries BC. These stone cists graves and Type A dolmens spread to the southern Korean Peninsula to become the southern Korean type dolmens.

Following the disappearance of dolmens, stone cists with Liaoning-type daggers spread to the middle of the Liaodong district from the Liaoxi district from the 9th to the 5th centuries BC and in the Liaodong Peninsula and the inner Liaodong district, stone cover graves with Liaoning-type daggers replaced the dolmens. These graves are burials for individuals. The spread of the Liaoning-type dagger culture triggered the development of chiefdoms among social groups but cover stone graves in the inner Liaodong district still featured multiple cremations. Stone cover graves with individuals also spread to the southern Korean Peninsula.

4. Conclusion

Stone grave structures and megaliths in prehistoric China are distributed across Manchuria and the eastern Tibetan Plateau, as shown by the famous model of the 'Crescent-Shaped Exchange Belt' proposed by Tong Enzheng (1990) but these burial systems were introduced and developed individually between two areas during the foundation of the Northern Bronze culture.

Stone-built graves are distributed in peripheral areas of Neolithic China. Different forms of cairns were

Fig. 23 – Type A table-type dolmens in the inner Liaodong district.

constructed independently, based on agricultural societies. In the Liaoxi district, the Neolithic Hongshan culture (3700-3000 BC) had a millet agriculture; in the southern Liaodong Peninsula the Neolithic Xiaozhushan Upper Layer culture (2500-2000 BC) had a rice and millet agriculture. Differences in the level of social development produced different burial systems in the two areas.

After the establishment of herding societies in northern Asia in around 3000 BC, the Northern Bronze culture, with Liaoning-type daggers, spread to the Liaoxi district in the latter half of the 2nd millennium BC and the 1st millennium BC – i.e., the upper Xiajiadian culture. At the same time, table-type dolmens were built in the Liaodong district and northwestern Korean Peninsula. The individuals buried in these graves were cremated. The stone burial structures stood on the surface, very similar to the stone-slab burial culture in the eastern Mongolian Plateau (Miyamoto 2016, 2018). Although there is no known relationship between this region and the Liaodong district, it is interesting how these two areas became part of the same Northern Bronze culture at the same time.

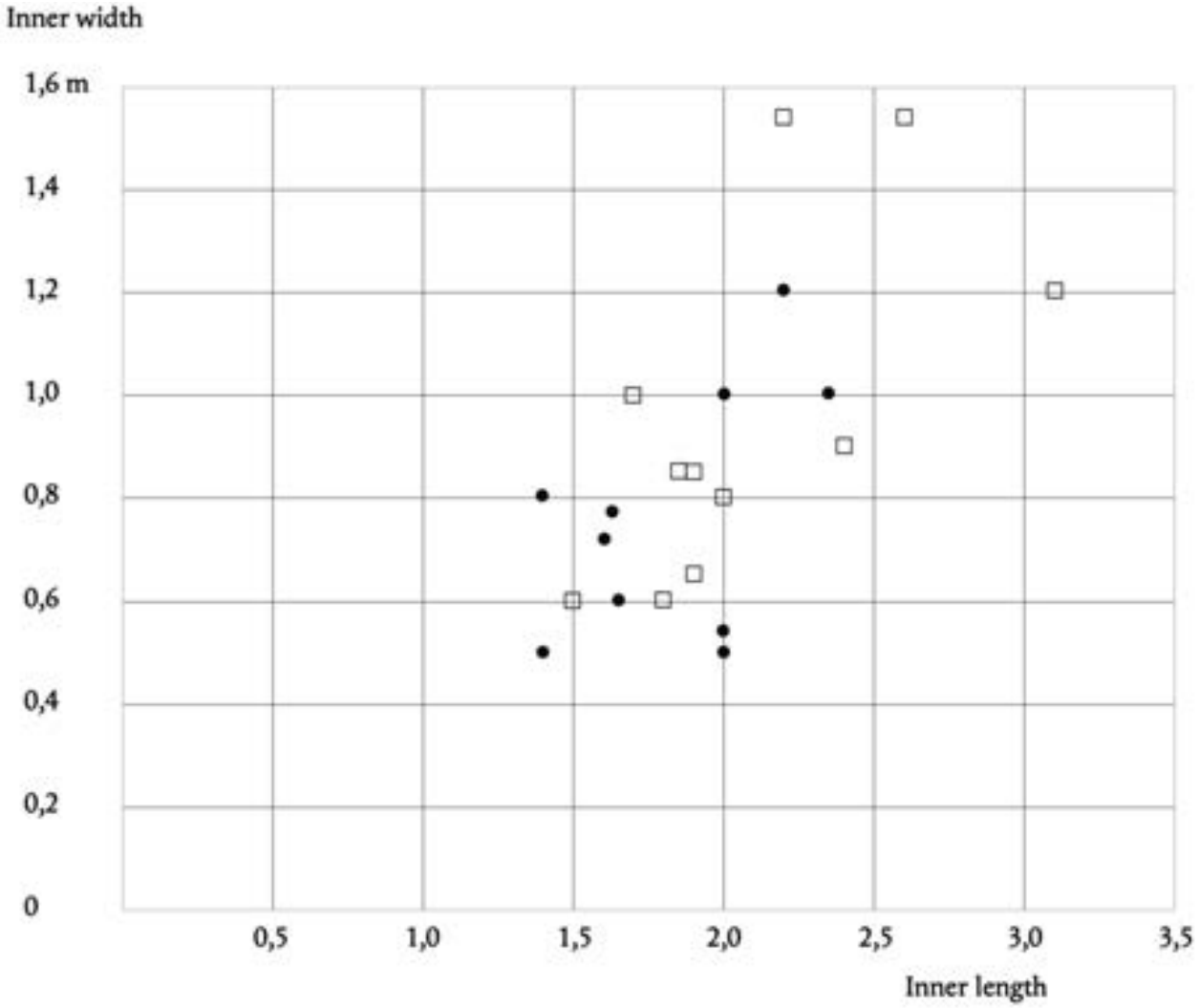


Fig. 24 – Ratio of length and width of inner stone cists of table-type dolmens in the inner Liaodong district (□ dolmens in inner Liaodong, ● A type dolmens in the Liaodong Peninsula).

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Daisuke NAKAMURA

Dolmens and societies in the Korean Peninsula

Abstract: The presence and distribution of dolmens (*goindol* in Korean) is well known in the northeastern regions of China as far as the western Japanese island of Kyūshū. In South Korea, these structures appear in Bronze Age contexts, beginning with the advent of an archaeological culture with new types of pottery and lithic industry from northeastern China in the 13th century BCE. Dolmens and stone tombs, built on elevated sites, appeared in the second half of the Early Bronze Age, at a time when grouped settlements began to emerge. The presence of a very large covering slabs is common to all the dolmens of the peninsula but this capstone can be supported by a rather diverse range of structures. The external appearance of these structures varies from one region to another and it is quite clear that they do not represent the dissemination of a single model. This contribution therefore endeavours to present and organize this diversity, and addresses the transformations experienced by societies and their funerary structures.

Keywords: *Korean Peninsula, megalithism,* goindol*, dolmen, Bronze Age, social stratification*

The presence and distribution of dolmens is well known in the northeastern regions of China. extending as far as the western Japanese island of Kyūshū, (**Fig. 1**). In South Korea, these structures appear in Bronze Age contexts, and more than 26 000 had been documented in 1999. Intensified field research brought that total to more than 31 000 by 2005, which is far higher than the numbers recorded in the northern Korean Peninsula and northeastern China. The highest concentration of this expression of megalithism is found in the South Jeolla Province, in the southeast of the peninsula.

The Bronze Age in the Korean Peninsula began with the arrival of an archaeological culture with new types of pottery and lithic industry from Northeast China in the 13th century BCE. No land related to irrigated rice cultivation has yet been discovered dating to this period, but the Hanam Misari site with its Doldaemun pottery (the earliest type of pottery with a notched clay-strap on the rim), yielded examples with rice (*Oryza sativa*) inclusions in the clay. Since there is no unequivocal evidence of the introduction of rice in the Neolithic period, it is commonly believed that the first rice-farming agrarian societies on the peninsula developed in the Bronze Age (Son *et al.* 2008). Nothing is currently known, however, about burial practices during the Incipient phase and the first half of the Early Bronze Age (Bae 2018: 34-35). Dolmens, and also stone tombs, concentrated on elevated sites, appear in the second half of the Early Bronze Age at a time when the settlements also took on a grouped form. At the same time, a form of double-mouthed rim pottery (*ijung guyeon*) and pottery with hole patterns (*gongyeolmun*) was produced in a context where funerary practices and settlements were undergoing profound changes. Korean archaeology dates the emergence of these first dolmens to the

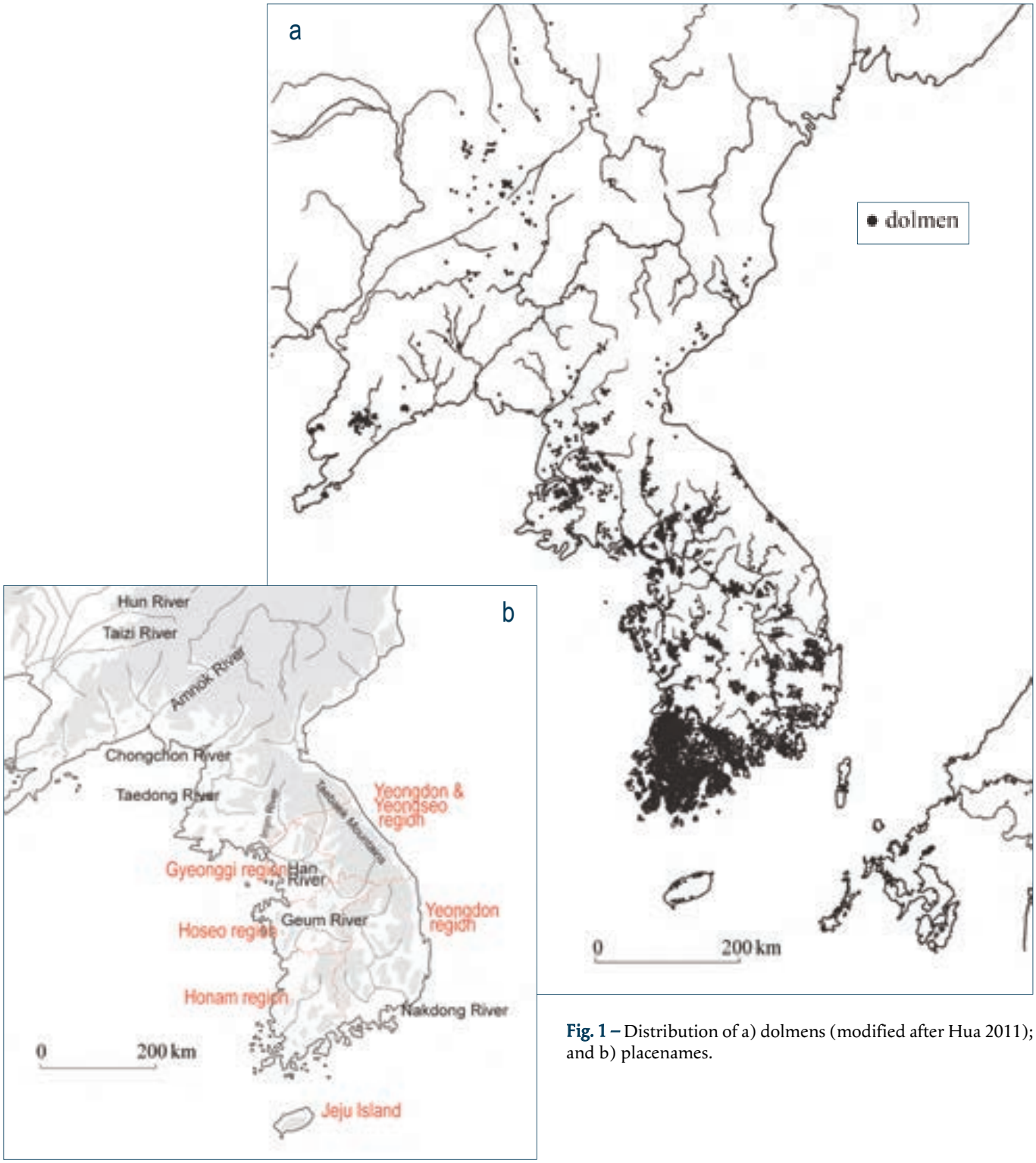

Fig. 1 – Distribution of a) dolmens (modified after Hua 2011); and b) placenames.

État	Province	Région	Décompte de 1999 [a]	Décompte de 2005 [b]
Corée du Nord			3 100 (14 000) [c]	4 217 (15 000) [c]
Corée du Sud	Gangwon	Yeongdon, Yeongseo	380	412
	Gyeonggi	Gyeonggi	500	957
	North Chungcheong	Northern Hoseo	200	218
	South Chungcheong	Southern Hoseo	500	743
	North Jeolla	Northern Honam	1 660	1 969
	Sorth Jeolla	Southern Honam	19 000	22 560
	North Gyeonsan	Northern Yeongnam	2 800	3 125
	North Gyeonsan	Southern Yeongnam	1 240	1 660
	Jeju	Jeju	140	105

Fig. 2 – The number of dolmens in the Korean Peninsula (a. Choi *et al.* 1999; b. Lee 2005; c. Estimation by North Korea).

11th and 10th centuries BCE (Korean Archaeological Society 2010), which presents serious discrepancies with the cross-dating of objects found in dolmens in the peninsula and in Northeast China respectively.

Many archaeologists in Korea associate the presence of dolmens with the advent of chiefdom societies in the peninsula. The transport of the very large cover slabs would only have been possible in a sedentary society able to mobilize a substantial workforce (Lee 2002: 278). Great quantities and varieties of funerary goods have been found in megalithic tombs, including bronze and stone daggers, cylindrical jasper beads, amazonite beads, and comma-shaped amazonite beads, but the existence of an individual or a group of individuals clearly ascribed to the upper ranks of society has yet to be demonstrated (Nakamura 2012b).

The presence of a very large cover slab is common to all the dolmens of the peninsula, but this capstone can be supported by a diverse range of structures. The burial chamber also varies and may be a stone cist, a dry-stone construction, or the burial may be directly in the ground or in a coffin; in the largest tombs, burials may have consisted of a coffin placed in a stone burial chamber. The external appearance of these structures varies from one region to another, and it is quite clear that this was not a case of a single model spreading everywhere. This contribution therefore endeavours to present and organize this diversity and to address the transformations experienced by societies and reflected in their funerary structures.

1. History of the subject and dating of dolmens

William Gowland first used the term 'dolmen' for the Korean Peninsula and Japan, by analogy with what he knew in Europe. He grouped together under this term both Bronze Age tombs and much more recent mounds – and these are the most numerous – including those of the Three Kingdoms period in Korea, contemporary with the Japanese Kofun period. After Gowland reported the presence of 'dolmens' in Korea (Gowland 1895), Japanese anthropologists studied them, both in Korea and in China, and made them a research subject in their own right in East Asia. These dolmens (*shisekibo* 支石墓 in Japanese, and *lu goindol* in Korean) display considerable diversity, and Torii Ryūzō (1917) was the first to perceive north/south differences and to propose a distinction between '4-legged Go game board' dolmens (*goban shiki* 碁盤式 in Japanese) from the provinces of Gyeongsang and Jeolla, and 'tabletop' dolmens featuring uprights (*takushi shiki* 卓子式 in Japanese) further north (**Fig. 3**). Using this distribution map, Mikami Tsugio later designated these variants 'southern type' and 'northern type' (Mikami 1961). In the 1960s – a period of renewed interest in archaeological research on Korean dolmens – the terms 'non-supporting stone style' (無支式) or 'direct cover-stone style' (蓋石式) were added (**Fig. 3**; Im 1964; Kim & Yun 1967; Kim 1974). New types were sub-sequently added: the 'pillared' type without a sepulchral chamber from Gochang in northern Honam (Kim 1997), and the 'kerbstone' type (囲石式; Ha 1994) from Yeungnam

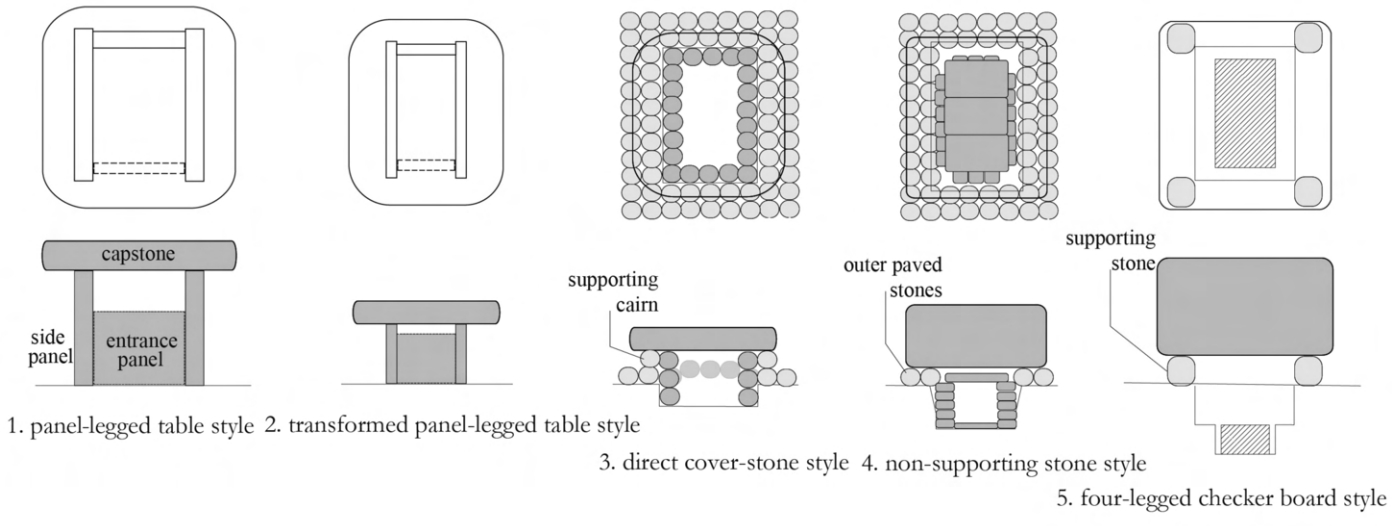

Fig. 3 – Main variations in dolmen architecture in the Korean Peninsula.

and southern Honam, a simplified cover version of direct slab burials. Finally, in the north of the peninsula, the so-called 'Mukbangri' type (Kiung 1961) was added, characterized by a burial chamber, a cover slab and a cairn. In Northeast China, 'Go game board' type dolmens are non-existent, and the term *shipeng* (石棚; literally 'stone shelf', sometimes referred to in Western literature by the distorted term, *tchepin*), used by Chinese scholars (Xu 1991; Chen 1991) corresponds to the Korean 'tabletop' type (*goindol*), and the term *daishidaimu* (大石蓋墓), literally 'megalithic cover tomb', corresponds to *goindol* 'under cover slab.'

As mentioned above, the sepulchral space presents wide-ranging structural diversity. It can be above ground, half-buried or completely buried. Some studies particularly emphasize this distinction between *above* and *below* ground (Im 1976; Jeong & Lee 1998; Lee 2006; Nakamura 2008). The additional structures become particularly imposing in the Late Bronze Age, which is why they are not only interpreted as a sign of the increasing complexity of funeral rites (Yun 2009; Song 2020), but also as a marker of the complexification and stratification of society itself (Lee 2006; Kim 2007; Yun 2009; Lee 2011).

The typo-chronology of these tombs has long been debated, but taking into account a multitude of cultural factors, it is commonly accepted that the epicentre of the phenomenon is located in north-eastern China, from where the practice spread to the Korean Peninsula. The earliest dated dolmens are the table and stone upright types, located in the Liaodong Peninsula at the Shuangfang site (Miyamoto 2000; Nakamura 2008). The hypothesis of the development of slab tombs into upright and Go game board types has also been proposed (Arimitsu 1969) but is contradicted by pottery typo-chronology arguments which indicate that the latter pre-date the former. The North Korean archaeologist, Do Yuho, on the other hand, posits that the upright table type was the archetypal *goindol*, with variants in the case of tombs with a cover slab seemingly set on a cist tomb (Do 1959). He sees the origin of the archetypal dolmen form in the north of the peninsula and believes that this model produced many variants as it spread northwards. Sok Kwangjun proposes that the *goindol* table with uprights evolved from these variants (Sok 1974, 1979) and, following on from this, Kōmoto Masayuki sees the Korean Go game board dolmens being the result of a multi-staged evolution of these variants (Kōmoto 1973, 1980). However, grave goods indicate that these cases do not correspond to earlier stages of development. It is difficult to argue that the origin of *goindol* is situated in North Korea, but Do Yuho perceptively points out that the encounter between *goindol* and cist tombs produced mutations in the typology of funerary monuments.

2. Dating problems

Dating human remains with ^{14}C is difficult due to the acidity of peninsular soils, but some data are nonetheless available. Grave 3 of Jeonseon Arauji in the Yeongdon region yielded the remains of a neonate dated to 2930±40 BP, or 1260-1010 cal BC (95.4% confidence) (GRICP 2019a). If this dating is accurate, this burial would be an Incipient Bronze Age cist tomb, but since the C/N ratio is not determined here, we cannot rule out the possibility that these results may be distorted by the 'freshwater reservoir' effect. Since small urns from the first half of the Early Bronze Age were found in the same cemetery, it is likely that Grave 3 of Jeonseon Arauji also belongs to this context. The earliest bronze 'lute' daggers found in the southern part of the peninsula date to the second half of the Early Bronze Age. An example from Biredong Dolmen 1 (Daejeon), contained charcoal dated to 2860±50 BP, or 1202-906 cal BC (95.4% confidence) (Lee 2002: 308). The cremated human remains from burial chamber 1 of the Yeokdong (Gwanju) tomb in Gyeonggi Province, which also contained the pommel of a similar weapon, were dated to 2955±25 BP, 1265-1111 cal BC (90.6% confidence) (HRICH 2012). Meanwhile, charcoals considered to have been used for *in situ* cremation yielded a date of 2985±20 BP, 1267-1194 cal BC (62.9% confidence). A dry-stone coffer in tomb 20 of Pyeongchonri (Dalseong) from the first half of the Late Bronze Age contained a poorly preserved skeleton which yielded a somwhat extreme dating result of 4590±60 BP, 3520-3090 cal BC (95.4% confidence) (GICP 2010). The dating of charcoal from Goindol 4 at Hwajandong (Yeosu), estimated to be from the second half of the Late Bronze Age, yielded a result of 2630±40 BP, 900-

767 cal BC (95.4% confidence) (MNUM 2001). Other tombs containing funerary material corresponding to the same period have yielded dates a hundred years older. It is to the west of the Liadong in the Liaoxi region, however, that lute-type bronze daggers emerged, and not before the 9th century. On this basis, the Yeokdong and Biredong tombs (Nakamura 2012a) are dated to the same chronological horizon. The dating of settlements faces the same difficulties and yields very old and debatable results, clearly illustrating that the use of ^{14}C in this chronological context in Korea is hazardous. In the present contribution, we will assume that the Early Bronze Age of the peninsula corresponds to the 9th century BCE.

3. Dolmens of the north, dolmens of the south

3.1 In the north of the Korean Peninsula

The *goindol* in the north of the Korean Peninsula extend over a vast area from the Liaodong Peninsula and the course of the River Hun to the Huifa River. They present an elaborate sepulchral surface or half-buried structure, and belong to the 'table with uprights' type. In the case of the Kwansangri tomb in the Unnyul District (**Fig. 4c**), uprights support a megalithic capstone measuring 8.75 by 4.5 m, indistinct from the Liaodong tombs with similar dimensions. These structures, in their Northeast Chinese context, are known to have yielded cremated human remains (Nakamura 2012a: 204-205) and are attributed a role as an ossuary.

In the case of the Yongsanri Dolmen (Seongcheon), a half-buried sepulchral area points to the connection of several stone burial spaces (**Fig. 4c**; Kim 1995). In the second half of the Early Bronze Age, the earliest cases of lute daggers appear with the introduction and spread of cist tombs such as those at Seonamri (Sinpyeong) and Daeari (Baegcheon) (Jeong 1983; Lee 1983). In these tombs, the sepulchral area seems to result from the linking together of two spaces, representing a hybridization between a *goindol* with a table with uprights and a cist tomb. The structure of the lower part of some of these dolmens is very similar to that of a cist tomb, as in the case of the tombs of the Chimchonri necropolis in Hwangju, and the Kindong and Chonjindong dolmens, with a chamber and table stone reinforced by a cairn (**Fig. 4e**). This is one of the variants mentioned by Do Yuho (1959). We will refer to this type of *goindol* as 'transformed panel-legged table style' (**Fig. 3: 2**). At Chimchonri, several of these cairn tombs are aligned and their immediate surroundings are paved. As we will see below, there are similar cases in the southwestern part of the peninsula.

In the Liaodong Peninsula, from the course of the Taizi River to the higher land further south, there are also very imposing slab tombs containing Shuangfang type necked-jar vessels, but in the North Korean context, this type of vessel does not extend beyond the Taedong River. Mukbangri type dolmens (**Fig. 4d**), however, contain necked vessels (Mukbangri type necked-jar) that can be considered a variant of the Shuangfang type. The tomb structure corresponds to the megalithic slab tombs of the Liaodong Peninsula. In contrast, most of the Mukbangri tombs comprise ground-level burials with an entrance structure and thus illustrate a different relationship with burials (Nakamura 2008; 2016). Research conducted in recent years tends to show that these structures are related in some way that is yet to be defined, with the emergence of the first dry-stone tombs of a political entity mentioned in Chinese texts at the end of the 1st millennium BC: the kingdom of Koguryo (Lee *et al.* 2016). These dry-stone tombs with megalithic covers built at the time of Koguryo are mainly distributed along the Yalu River (Amnok in Korean). It is important to understand that the genesis of the constituent elements of Koguryo funerary practices is part of the continuation of the Bronze Age.

Given the present state of knowledge, even with reference to Sok Kwangjun's almost exhaustive study of northern Korea (Sok 2003), *goindol* with direct burials under slabs do not seem to have spread to the north of the peninsula, which is mainly characterized by its dolmens with uprights, and burials at ground level. In the rare cases where the sepulchral space is half-buried, it is very shallow.

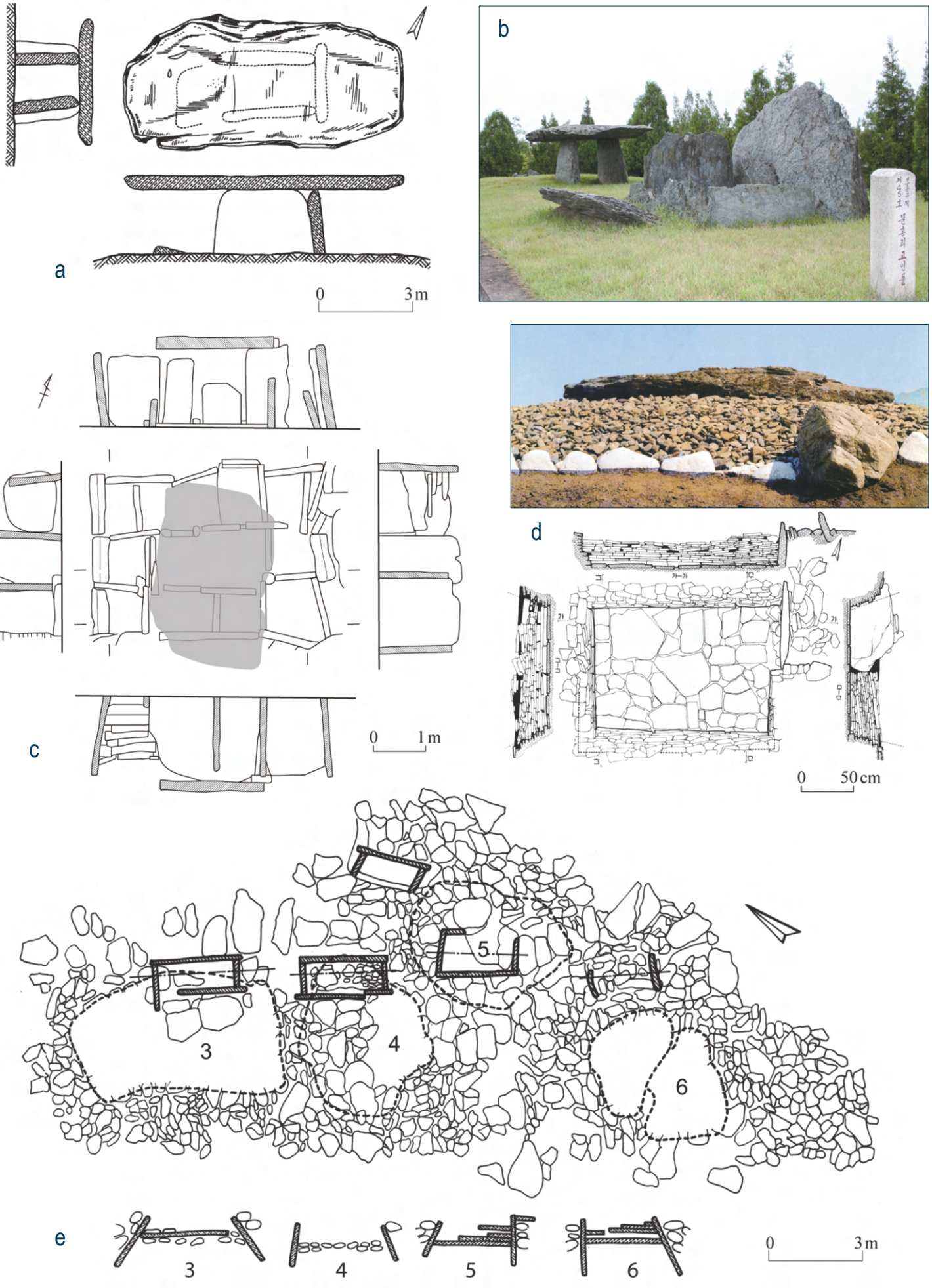

Fig. 4 – Dolmens in North Korea: a. Eunyul Gwansanri (ECIBRRK 1988); b. Pyeongyang Munheungri (Photo: D. Nakamura); c. Seongcheon Ryongsanri (traced from Kim 1995); d. Kaecheon Mukbangri dolmen no. 30 (ECIBRRK 1989); e. Hwangju Chimchonri Kindong dolmen (ECIBRRK 1988).

3.2 In the south of the Korean Peninsula

More dolmens were built in the southern part of the Korean Peninsula than elsewhere, mainly in the Honam and Yeongnam regions, where they consist of 'Go game board' or *goindol*. The distribution of table *goindol* with uprights shows east-west divergences.

Yeongso and Yeongdong regions

Dolmens are widespread in Yeongso, the region west of the Taebaek Mountains, but they are much less frequent in the east, in Yeongdong. In both these regions they are, however, of the same type: a table dolmen on uprights. At Jeongseon Auraji, in the mountainous regions of Yeongdong, small table *goindol* as well as the 'kerbstone' type (**Fig. 5a, b**) are recorded in the vicinity of cist or stone burial chamber tombs. Two ditched tombs (**Fig. 5c**) are also part of this complex but the burial chambers have now been destroyed. As noted above, the funerary material in these cist tombs is from the second half of the Early Bronze Age, and marks the earliest chronological horizon in this region. In the Joyangdong 1 grave in Sokcho, a slightly sunken burial chamber is observed, which contained a bronze 'arc-shaped' axe and several stone arrow heads (**Fig. 5d**). This type of axe originated in the Xituanshan culture of the Songhua River (tributary of the Amur River) and has also been found in a nearby dwelling, E269, at the Jungdodong site in Chuncheon. Since the excavation of house 55-8 at the Songgukri site in Yeongso, such axe moulds have been documented even in a peninsular context (NMK & NMG 1992). The arrow heads are part of the *jeomtodae* pottery culture context (clay band-rim pottery culture), from the second half of the Late Bronze Age, which would probably date them to the 6th century BCE. The same types of armatures are found in the Pyeongchang Hari 240-4 Cist Grave 2, as well as a new type of bronze axe (GRICP 2019b).

In the Yeongso region, large-scale excavations undertaken in recent years in the middle Han River region, around the Jungdodong site in Chuncheon, have uncovered the remains of numerous dwellings and 152 graves. The first surveys carried out in the 1980s revealed mainly slab graves with cairns and ground-level burials, but more recent campaigns have confirmed the presence of transformed panel-legged table-style dolmens, buried or half-buried cist tombs with cairns, and tombs with stone burial chambers (**Fig. 5e, g**). In practice, upright graves and cist graves are only distinguished by the presence or absence of a cover slab and they are both aligned and mixed in the cemetery (**Fig. 5f**). There is also the case of the Chimchonri necropolis in Hwangju, where the same type of dolmens with uprights are intermixed and form a large cairn (**Fig. 5g**). The same trend can be observed at the Cheonjeonri site in Chuncheon (Kim & Yun 1967), where there are also several graves surrounded by ditches (GRICP 2008). We can tentatively put forward the hypothesis that each of these burial structures corresponds to that of a lineage, but there are too few human remains to confirm and refine this idea.

Gyeonggi and Honam regions

This is the region with the greatest number of dolmens in Korea, where we find the tomb complexes of Gwanhua (Gyeonggi, the region around Seoul), Gochang (in the north of Honam), and Hwasun (in the south of Honam), all of which were listed with UNESCO at the same time although it is important to note that these complexes are not typologically homogeneous. At Gwanhua, the large Bugeunri dolmen with uprights has a 6.6 m by 5.2 m cover slab at a height of 1.40 m, while the Osangri dolmen, consisting of 13 burials and standing to a height of 0.50 m, is a small table dolmen with uprights (**Fig. 7: 1**). On the opposite shore, in area of the Imjin River, this type of tomb is also well documented, as at Paju, at the Deogeunri site, where there are many examples. Increased archaeological activity in recent times confirms that the table and upright dolmen is the dominant funerary structure in Gyeonggi.

In the case of the Gochang complex, in addition to the table dolmens with standard uprights and the ensuing transformed type, there are also Go board table tombs and tombs under slabs. Very often, the two first types of *goindol* are in a central position and the latter two are arranged immediately around them. Another case observed at Geumpyeongri consists of transformed-type table tombs and upright tombs arranged in a circle (**Fig. 7: 3**), with cist and

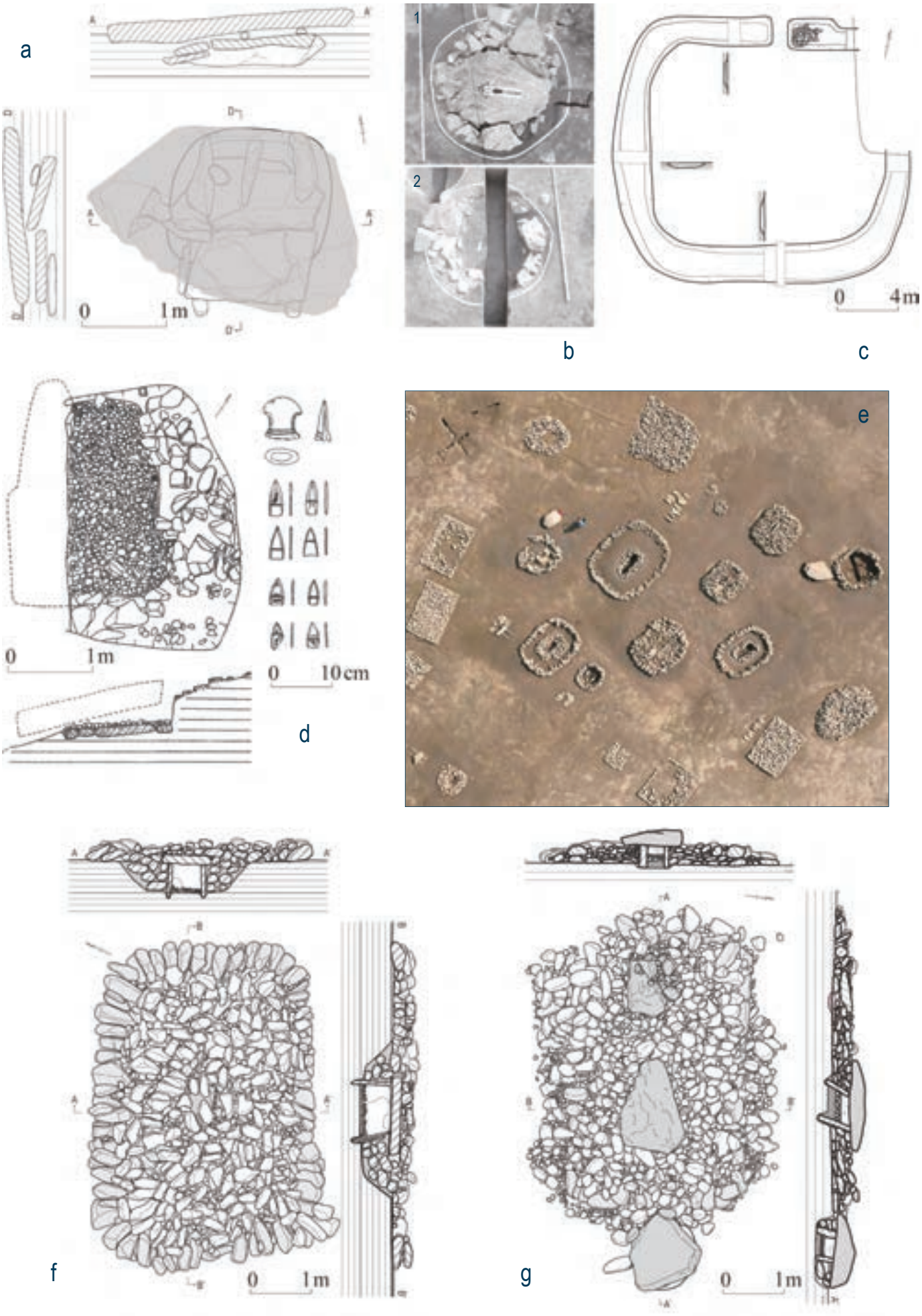

Fig. 5 – Dolmens in the Yeongdong and Yeongseo regions: a. Jeongseon Auraji dolmen no. 6 (GRICP 2019a); b. Auraji dolmen no. 8 1) before excavation and 2) after excavation (GRICP 2019a); c. Auraji mound burial with the surrounding ditch (GRICP 2019a); d. Sokcho Joyangdong dolmen no. 1 (Ji 1999); e. Chuncheon Jungdodong, part of section A (JERTJC 2020); f. Jungdodong burial no. A-33 (JERTJC 2020); g. Jungdodong dolmen no. C2-1 (JERTJC 2020).

chamber tombs inside the circle (**Fig. 7: 6**). Some upright and Go board game dolmens do not have a sepulchral space and were therefore more symbolic than functional. Elsewhere, as in the case of the table with uprights dolmen of Ganchon at Bugokri, excavations revealed a tomb with a modest-sized cover of 2.6 m by 2.2 m, set 1.2 m high, with what appears to have been a rectangular-shaped pavement around its perimeter (**Fig. 7: 2**). The same pattern can be observed at the Angor dolmen of Muan Seongdongri (**Fig. 7: 4**). This tendency thus seems to have been present as far west as Honam.

The Hwasun complexes, located between the southern Honam uplands and the Gamtaebawi complex, comprises mainly slab tombs (**Fig. 7: 6**) and Go board tombs (**Fig. 7: 5**), with a mixture of table dolmens with uprights. In cases where paving is added, it becomes very difficult to distinguish between the first two of these types. At Daesinri, Go board tombs without a sepulchral space are concentrated in the southeast of the necropolis, and in the northwest, tombs with slabs and paving are clustered together (**Fig. 7: 8**). The sepulchral space of the latter may be a dry-stone or slab burial chamber, although in some cases burials were placed directly in the ground, not very deep, corresponding to buried or half-buried funerary structures. In northern Honam, graves with dry-stone chambers at ground level have been confirmed to date from the second half of the Early Bronze Age. This is also the case for Graves 1 and 9 of Anjadong in Jinan where these structures were then used as additional spaces, which indicates that during this period this type of practice was also widespread in the south of the peninsula. With the shift to the Late Bronze Age, additional structures such as dolmens but also other stone chamber tombs become increasingly connected and display links within a specific lineage. In the northern part of Honam, the cover slab also began to change shape. As a result of mixing the rather flat cover slabs of table dolmens with uprights, slabs more reminiscent of the raised blocks used in Go game tombs appear (**Fig. 6**). In the Gochang tomb complexes, the use of this type of block must have been facilitated by nearby deposits and quarries, but the use of these embossed slabs is

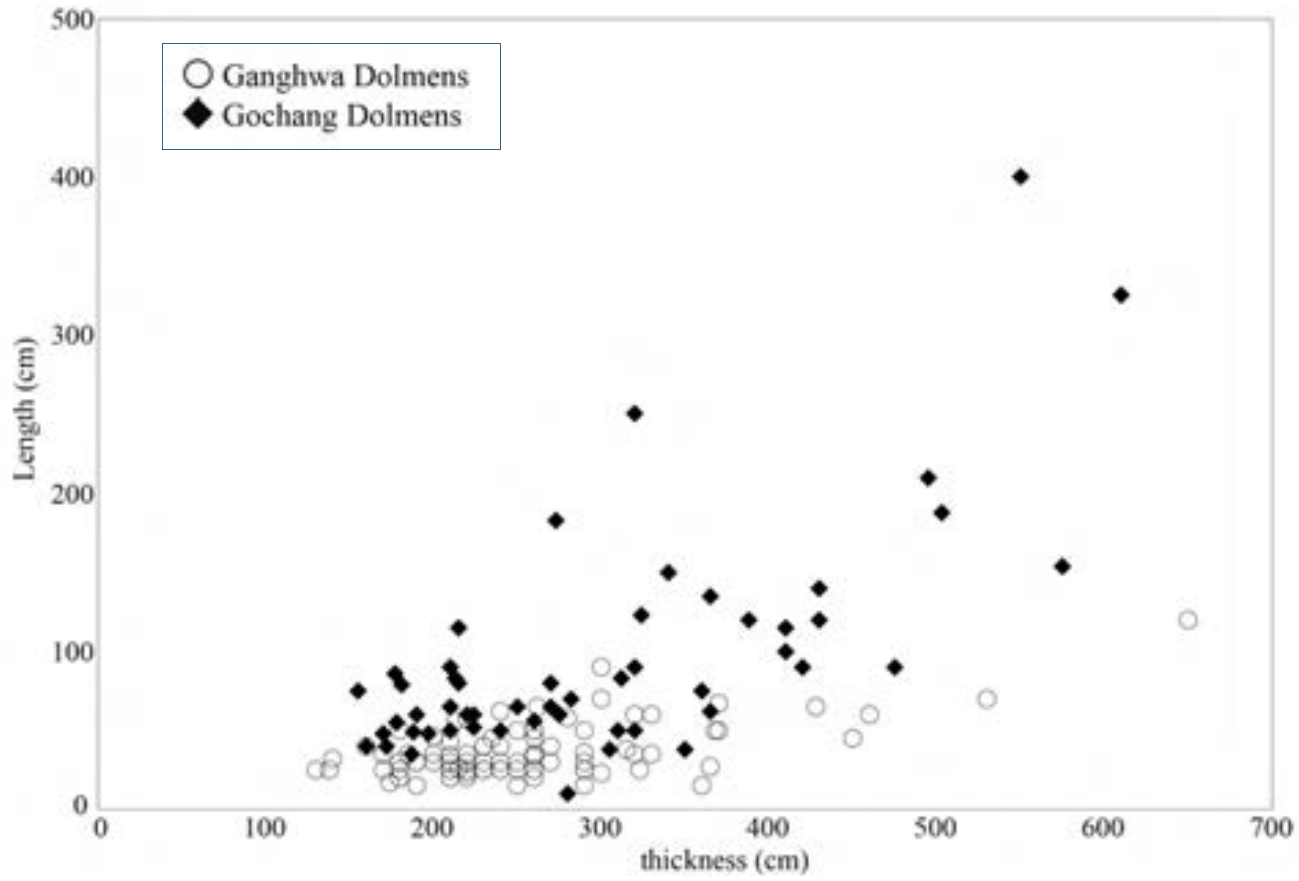

Fig. 6 – Capstone size in Ganghwa and Gochang dolmens (based on Lee 1993; Hong 1999).

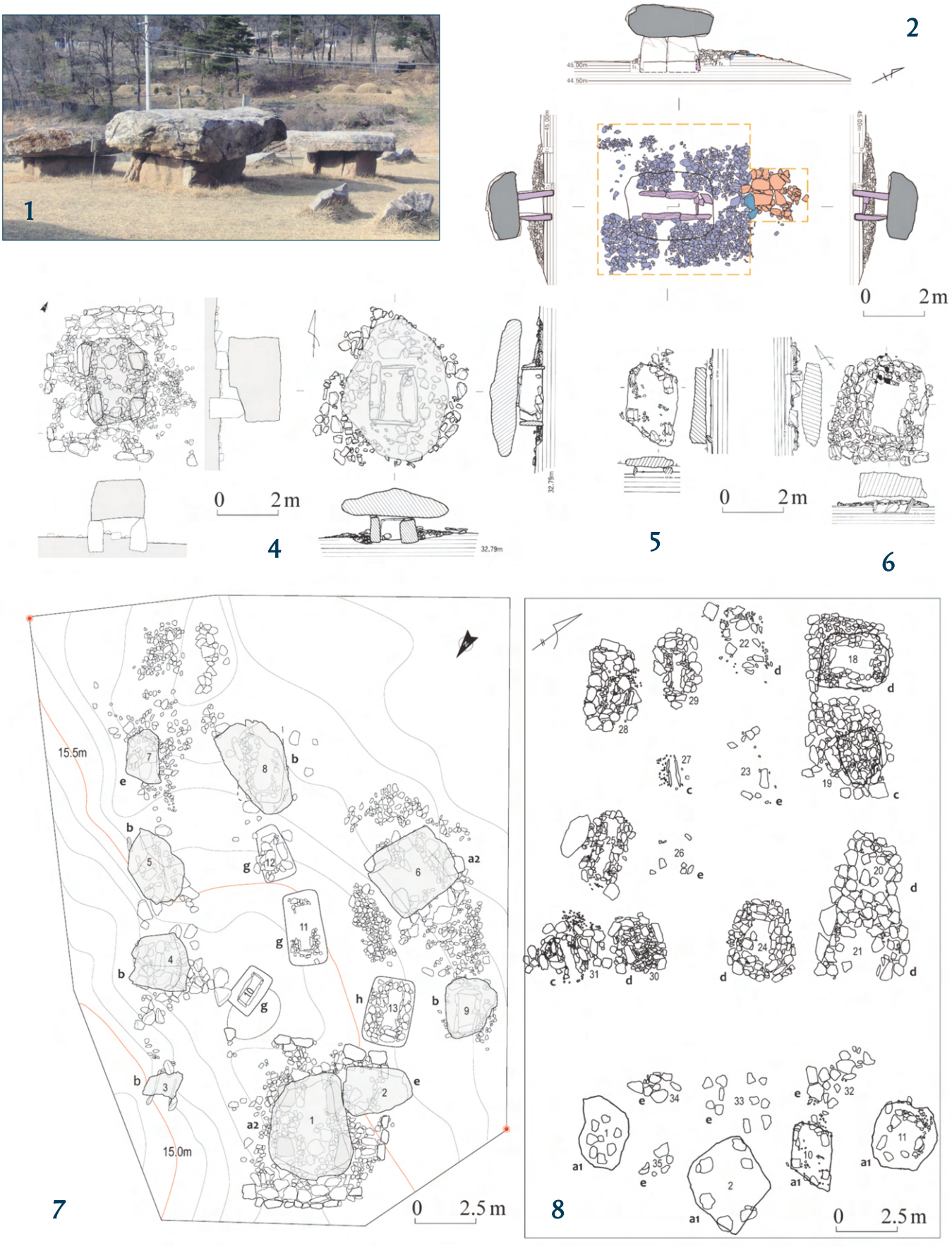

Fig. 7 – Dolmens in the Gyeonggi and Honam regions: 1. Gwanhua Osangri dolmens (After Lee 2005); 2. Gochang Bugokri Ganchon dolmen (JCPRI 2020); 3. Dolmen no. 1 (pillar-shaped supporting stone type) at Gochang Geumpyeongri sect. 1 (JCHI 2015); 4. Muan Seongdongri Angol dolmen no. 4 (MNUM 1997); 5. Dolmen no. 10 at Hwasun Daesinri (MNUM 2002); 6. Dolmen no. 18 at Hwasun Daesinri (MNUM 2002); 7. Graveyard and burial types at Gochang Geumpyeongri 1 (JCHI 2015); 8. Graveyard and burial types at Hwasun Daesinri (MNUM 2002); 7 & 8. a1 - four-legged checkerboard style; a2 - pillar-shaped supporting stone type (four-legged checkerboard style); b - transformed panel-legged table style; c - no supporting stone style; d - direct cover-stone style; e - unknown; f - stone chamber burial; g - cist burial; h - stone chamber burial.

not limited to this area and seems to have spread extensively from the north to the south of Honam and to Yeongnam.

In the Yeosu Peninsula in southeastern Honam, the vast majority of burials are below ground level. Most of the dolmens have associated paving, which is often in contact with that of the neighbouring grave, forming dense arrangements (**Fig. 8a**). Most of these dolmens do not have cover stones (**Fig. 8b**). In the southern part of the Sanchong III necropolis at Wolnaedong, there is a Go game dolmen (**Fig. 8a**) without a sepulchral space, placed in clear view. This feature is similar to examples known for the Gochang and Hwasun tomb complexes. The tombs of the Yeosu Peninsula are the most abundantly endowed of southern Korea. The Sanchong and Jeokryangdong dolmens, for example, yielded numerous lute daggers (**Fig. 8c**), the most valuable prestige item of this period, found in high concentrations in the Yeosu Peninsula. Although each cemetery contained a large quantity of prestige goods, the types of goods seem to be distinct at each site, and this does not appear to be a society where an elite concentrated all the wealth. We will return to this point later.

The dolmens of Yeongnam

In Yeongnam, in addition to cemeteries composed exclusively of dolmens, there are also numerous mixed complexes with tombs with a stone burial space or a pit dug directly in the ground. Among the cist tombs and in burial chambers, we find daggers and stone arrowheads with typologies indicating their origin in the second half of the Early Bronze Age, although most dolmens seem to have been built from the Late Bronze Age onwards.

In the northern part of Yeongnam and in the centre of the Daegu basin, Go game board type dolmens with an underground sepulchral space are dominant. In this region, particular care is taken with the funerary chamber, which is built of large stone blocks that are also used to create paving. The funerary chambers at Sijidong and Icheondong 308-10, in Daegu, are made by stacking stone slabs (**Fig. 9: 1**). At Jincheondong in the Dalseong District, table dolmens can be found that are similar to the transformed types (Nakamura 2012a) of Cheonjeonri in Chuncheon, or Kindong in Chimchonri, suggesting an influence from the north, from Yeongnam, for the Daegu region.

In the southern part of Yeongnam, dolmens with underground chambers became increasingly architecturally accomplished. Particularly in eastern Gyeongnam, around Changwon and Gimhae, stone burial spaces were built with deep pits. Dokcheonri Dolmen 1 **(Fig. 9: 3)**, with its rectangular platform and dry-stone chamber built more than 2 m deep to accommodate a coffin, is a good example of the development of this type of tomb. Taking advantage of the depth of the pit, tombs with multiple stacked cover slabs appeared in southern Yeongnam (Yun 2009: 12-13), which seem to have had an influence on burial arrangements as far east as the Honam region. Not far from the northern part of the latter region, stone slab or dry-stone burial chambers became the norm as exemplified by the tomb of Jeopori at Hapcheong; some were built at ground level (**Fig. 9: 2**). At the Jindong site in Masan, a pavement appears to face the lower level of a tumulus, on top of which a burial chamber was built (**Fig. 9: 4a**). Burial chambers occur both underground and above ground in this region; they are generally simpler in form and kerbstone dolmens are also common. At the Yulhari site in Gimhae (**Fig. 9: 6**), 33 dolmens, 49 stone chamber tombs (to which a certain number of cist tombs have been added), 14 coffin tombs and eight direct burials have been uncovered, although only two of the 12 coffin tombs are truly indisputable. Some archaeologists tend to see dolmens where stand all block or slab chamber tombs (Hashino 2015), but in this case, tombs with large cover slabs (dolmens) are mixed with other tombs that do not have this feature. Some tombs are marked by a surrounding paving and, whether they are dolmens or tombs without a large cover slab, stone funerary monuments generally acquired an ostentatious dimension. This is also the case at the aforementioned site of Jindong where, in addition to a tomb with a burial chamber on top of a tumulus, another burial was placed in a dolmen built in and above a pit in a large rectangular platform (**Fig. 9: 4b**).

Through a study of changes in the appearance of these tombs, Yun Hopil (2009) demonstrated a trend of increasing size during the Late Bronze Age.

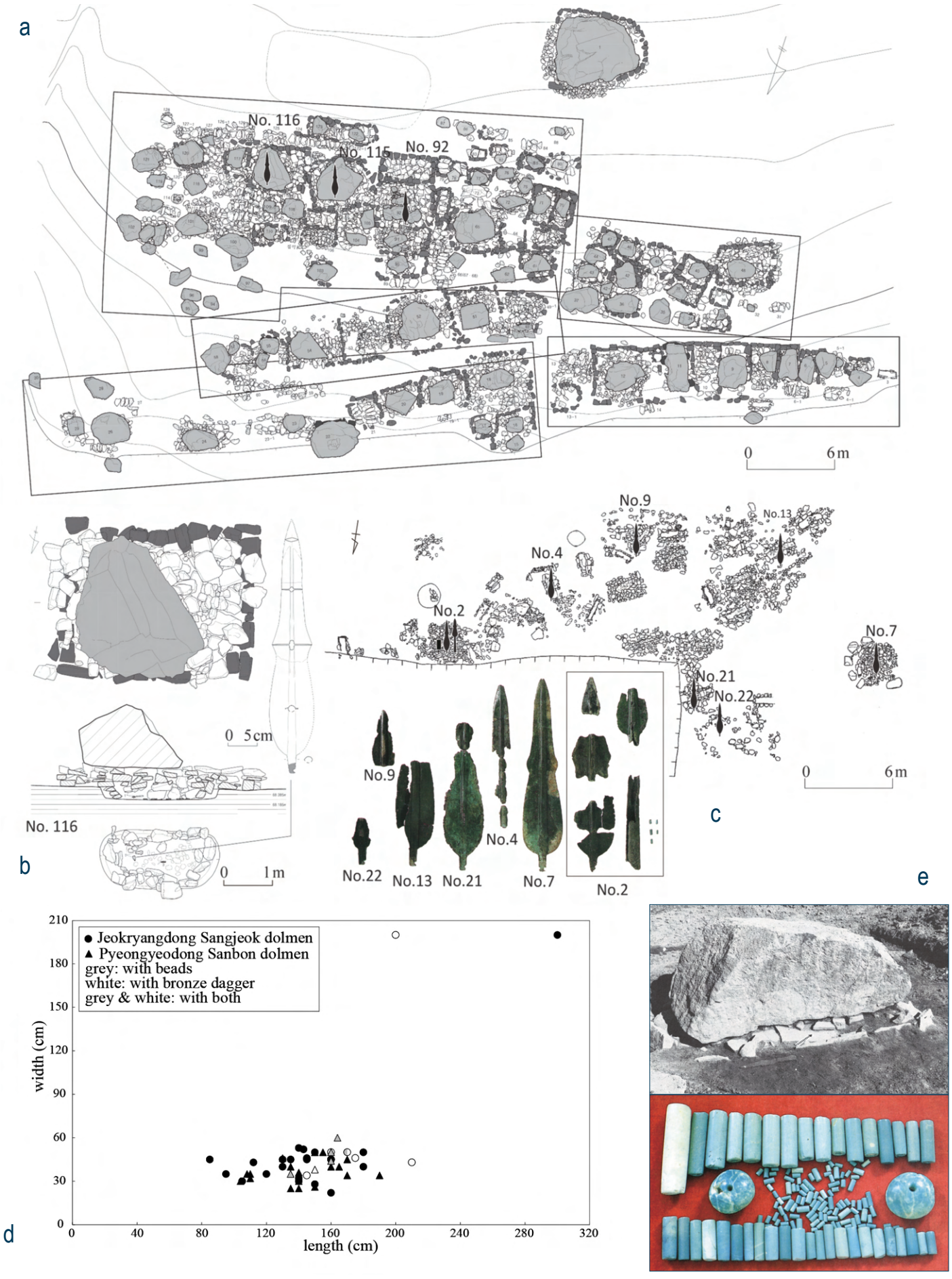

Fig. 8 – Dolmens in the Yeosu Peninsula: a. Graveyard of Wolnaedong Sangchon III (RCDNA 2012); b. Burial no. 116 and bronze dagger Wolnaedong Sangchon III (RCDNA 2012); c. Graveyard and bronze weapons (CNUM 1993a, NMK and NMG 1992) at Jeokryangdong Sangjeok; d. Size of burial facilities and burial goods (based on CNUM 1993a & b); e. Dolmen no. Ta-3 and beads found in Pyeongyeodong Sanbon (CNUM 1993b).

Tombs built at ground level used tumuli to attain greater heights, while underground tombs were endowed with increasingly deeper pits. Some dolmens were built on large platforms in order to mark the space more visibly. Yet, at the Gusandong site in Gimhae – the tomb with the largest cover slab in the whole of the southern Korean Peninsula and a large platform – no burial site could be detected. It is therefore reasonable to assume that, as with the Go board dolmen at the Sanchong III necropolis in Wolnaedong, Honam, the community to which this cemetery belonged used this particular construction as a symbol of its presence.

4. Aspects of stratification

It is now accepted in Korean archaeology that South Korean Bronze Age societies were class-based or stratified (Choi 1981; Kim 2004, 2007; Bae 2007). As stated at the beginning of this chapter, the labour force required for the construction of the Korean dolmens is considered evidence of social stratification. This view is reinforced by the presence of tombs built for individuals of exceptional status in the second half of the Late Bronze Age, with large quantities of bronze goods in their tombs, in the context of a pottery culture with an imprinted cord on the rim, which is often indicative more complex societies (Ji 1999; Lee 2007).

Among the studies addressing the issue of the classification of Bronze Age societies in Korea, Kim Seungok (2007) applies the notions of '*group-oriented chiefdom*' and '*individualizing chiefdom*' proposed by Renfrew (1974) using them to distinguish between dolmen societies (Bronze Age culture) and those bearing 'tapered' type swords (imprinted cord edge pottery culture). Identifying the latter – from the Liaodong – as having a different social structure from the former, seems sensible but great caution must be applied when interpreting the evolution of funerary practices as a transition from one type of society to another. Indeed, data are sparse and not at all unequivocal in this matter.

In the south of the Korean Peninsula, stone daggers were widely deposited in graves in all regions whereas the geographical distribution of bronze lute daggers is very limited. We note that there was a tendency to deposit this latter type of dagger in the largest and most spectacular tombs of the Yeosu Peninsula. On the other hand, in the east of Gyeongnam, these objects are not found in the tombs of Dokcheonri cemetery, but in the more modest tombs on its periphery. Based on differences in the depositional practices for these two types of objects, Bae Jinsung (2007) distinguishes 'stone dagger graves' from 'iron dagger graves', and thus seeks to reconstruct the different types of stratification in the whole peninsula. He concludes that regions '*with necropolises with a group of tombs ostentatiously standing out from the others' and those 'without remarkable tombs, but with burials with stone or bronze daggers*', are placed at the top of the social pyramid, and share the same type of stratification. This completely ignores any regional differences such as those existing between the Yeosu Peninsula and the east of Gyeongnam, on which we will now dwell for a moment.

The course of the Geum

The area around the course of the Geum River in Hoseo is a region in which the Songgukri culture developed during the second half of the Late Bronze Age, and where funerary practices consist of a cist tomb – a Songgukri-type tomb – with a sepulchral space formed by slabs assembled between orthostats that support a cover slab. These tombs are not unrelated to dolmens but display a distinct spatial distribution (Son 2002). Grave 1 at Songgukri was constructed in a large two-level pit in which a stone burial space was installed. A considerable quantity and variety of objects were placed inside, including a stone dagger, a lute dagger, and a number of beads (**Fig. 10: 1d**). Other two-level pit graves occupied by a coffin (as opposed to astone burial chamber) are part of another type of funerary structure and are devoid of objects. In the necropolis at Songgukri, they rank below Grave 1. Not far from this site, at Namsanri, there are differences in the type and size of tombs; the larger the two-level pit, the more objects were deposited. Yet, while stone daggers were placed in medium-sized graves, the larger burials contain none (**Fig. 10: 1d**).

These funerary traditions cannot be applied to the entire Geum River region but it is at least possible to assume that, for the region around Songgukri, the

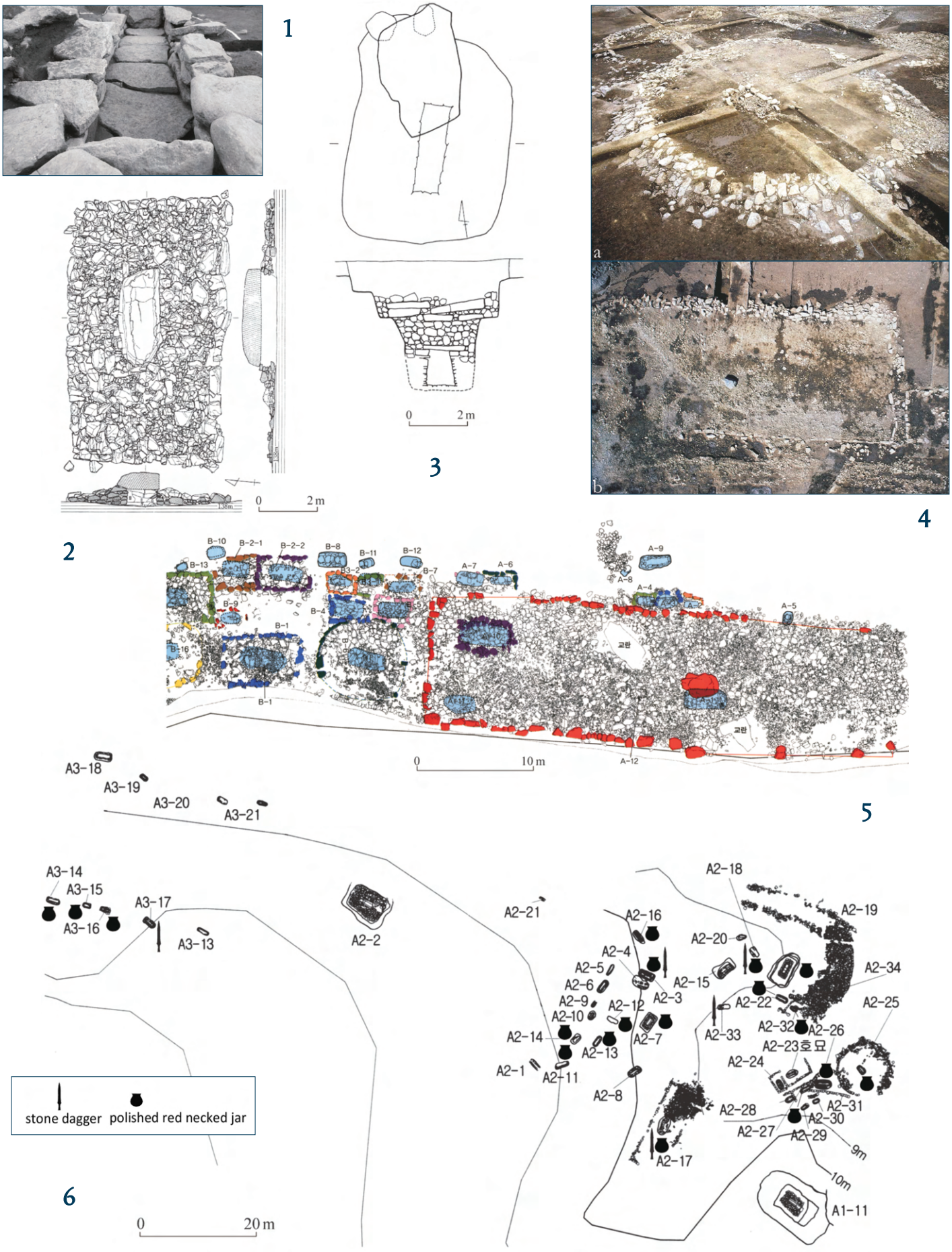

Fig. 9 – Dolmens in the Yeongnam region: 1. Daegu Icheondong 308-10 burial no. 3 (After YICP 2012); 2. Hapcheong Jeopori dolmen no. 5 (After PUM 1987); 3. Changwon Dokcheonri dolmen no. 1 (After Lee 1994); 4. Burial with mound (a: no. A-1) and dolmen with platform (b: no. E-1) at Masan Jindong (After CHCGDI 2011); 5. Connected dolmens with outer paved-stone at Sacheong Igeumdong (After GIA 2003); 6. Burial goods and graveyard at Masan Yulhari (based on GHCGDI 2009).

cemetery including Songgukri Tomb 1 occupied the highest hierarchical level, followed by Namsanri (**Fig. 10: 1b**). Tomb 1 in the Songgukri necropolis is also the only example with a large number of funerary goods and is a marker of a particularly high social status in the Late Bronze Age. It is impossible to know whether the deceased was able to transmit this status to any possible heirs, but it is an important indicator of the pyramidal structure of society, whether this was temporary or not. Regular exchanges took place with the corded pottery culture in this region, and a significant number of peripheral tombs contain large quantities of tapered type bronze swords. If we consider the Bronze Age culture as it is manifest at Songgukri, especially in its chronological complexity, the picture is very different to that usually proposed. Indeed, strong social influences originating in the context of the corded pottery culture are apparent (Nakamura 2012b).

The Yeosu Peninsula

The Yeosu Peninsula has the highest number of Liaoning-type daggers in the entire Korean Peninsula, and also many dolmens. Necropolises with dolmens are separated from each other by only a few kilometres and thus form a regional cluster.

Among these cemeteries, the Jeokryangdong dolmens yielded seven daggers and one bronze Liaoning type spearhead (**Fig. 8c**), pointing to the particularly high status of the occupants of these graves (Takesuke 2002). By contrast, the Pyeongyeodong cemetery, just 1 km away, yielded a very large quantity of beads (ornaments), but very few Liaoning type bronze items. Conversely, the Jeokryangdong dolmens yielded very few beads (**Fig. 8e**). Dolmens and burial areas are similar in these two cemeteries, although differences in the arrangement of paving can be perceived. In recent years, the discovery of a large quantity of Liaoning type bronze funerary material at the Wolnaedong III site highlights the fact that this type of object is concentrated in the northeastern part of the Yeosu Peninsula (**Fig. 8a**). In this region, tombs containing such artefacts have relatively extensive paving, but burials covered with the largest cover slabs contain no bronze, and tombs with bronze objects barely outnumber those without.

At the Jeokryangdong Sangjeok site, a relationship between the presence of grave goods and the size of the burial area was established for groups of graves. Burial spaces measuring between 1.70 and 2.10 m in length contained a deposit of Liaoning daggers. Most grave spaces of less than 1.60 m in length, contained only stone daggers and arrowheads, or no deposits at all (**Fig. 8c**). Relationships between the different groups of graves seems to have been relatively similar (Takesuke 2002). The same kind of pattern occurs with the bead-rich graves at Pyeongyeodong: only graves longer than 1.80 m contain this type of adornment (Nakamura 2006). On the basis of these elements, and on the extent of the pavements connecting the tombs and seeming to signify links between them, if we consider that these sets of tombs represent lineages, we can imagine a situation in which groups competed. Moreover, since each group of tombs presents its own characteristics in terms of funerary goods, we can suppose that this competition extended over a relatively large geographical scale. In the Yeosu Peninsula, beads and bronze objects from outside the area were procured by sourcing strategies which gave rise to competition between local societies, centred on exchange.

The east of Gyeongnam

As Kim Seungok (2007) and Bae Jinsung (2007) have pointed out, in the Gyeongnam region, the size of the sepulchral space and the surrounding pavement are much more important markers of rank in necropolises than funerary goods. Thus, at the Igeumdong site in Sacheon, bronze deposits are found in small tombs, while the larger ones are mostly endowed with beads (Nakamura 2006). Pavements link certain tombs together, and each lineage materialized in this way seems to maintain a form of competition with the others. At the Yulhari site in Gimhae, tombs with pavements are isolated from each other. The tomb with the most funerary goods is not that with the most extensive and imposing paving, A2-19, but a smaller example, A2-17. Tombs with the largest burial space contain the most stone daggers. In this cemetery, the group of tombs in sector A2 is the largest, with the most goods, and is thought to correspond to the tombs of the most powerful figures (**Fig. 9: 6**). It remains impossible to determine, on the basis of funerary

material, which of the Yulhari or Igeumdong groups was the most powerful regionally. This region is characterized by large pavement tombs, grouped in clusters in the cemeteries. There does not appear to have been a dominant chief or lineage over a large area, but rather a social organization based on a group entity – as shown in the cemeteries – with smaller necropolises orbiting around a larger main necropolis. At Yulhari, there are several cemeteries within a perimeter of 500 m and social entities probably corresponded to these types of groups. Given the present state of knowledge, it is very difficult to demonstrate the existence of a social stratification encompassing the entire eastern region of Gyeongnam, or of a large area such as that of Gimhae or Changwon.

While it is certain that dolmens required substantial social mobilization on account of their monumentality, it should also be noted that, except for the case of the Yeosu Peninsula, funerary goods are not based on any capacity to control exchange networks over long distances. In addition, many tombs without a large cover slab often contain bronze weapons, indicating that there is no automatic correlation between the size of tombs and the wealth they contain. This fact is particularly noticeable in the southeast of Gyeongnam where there are many particularly imposing dolmens in terms of their cover slabs but they contain very few goods. We find the same stone daggers and arrowheads as elsewhere throughout the region, but very few bronze objects. Instead, polished red vases appear to have been markers. With the exception of the situation observed along the course of the Geum, dolmen-building societies did not showcase their elites by depositing lavish funerary goods in the largest tombs, and no clearly pyramidal social structure emerges. On the contrary, the two parameters of 'size' and 'wealth' seem to be organized separately and sometimes meet to form a sort of mosaic.

5. The end of dolmens and the beginning of a new culture

In the second half of the Late Bronze Age, the corded pottery culture arrived from Northeast China, and with it new funerary practices materialized in the form of coffin burials using dry-stone construction techniques. In some cases, dolmens were initially mixed with these new practices, as was a new type of lute dagger and tapered type dagger, but dolmen construction soon ceased. The appearance of the tapered type daggers suggests that dolmens were still built at the very beginning of the Iron Age, i.e., in the 5th century before our era.

Corded pottery culture graves, in their original Chinese context, such as in Zhengjiawazi Tomb 6512 in Shenyang, included a large quantity of these bronze daggers. Zhengjiawazi cemetery is characterized by a very high concentration of tombs in one area, but Tomb 6512 was placed further away (**Fig. 10: 3**). This kind of very lavishly endowed tomb, where bronze objects, beads, and all varieties of precious or prestige goods known at the time are found together, can also be observed in southern Korea in the context of the corded pottery culture. These burials are, however, generally isolated and do not form complexes like the clustered dolmen cemeteries. The Mudangdong graves at Gimcheon, from the second half of the Late Bronze Age and part of the corded pottery culture, contain only bronze lute daggers mixed with amazonite beads (**Fig. 10: 3**). This is out of step with practices elsewhere on the peninsula at that time (apart from Tomb 1 at Songgukri).

At the beginning of the Iron Age, tombs with numerous bronze objects appeared, as well as ritual objects and beads, as at the Goejeongdong site in Daejeon (**Fig. 10: 4**) and near Buyo, at Dongseori. Shortly afterwards, tombs such as those at Kubongri contained a great variety of bronze objects. In this respect, they inherited the trend observed in the burials of the Late Bronze Age corded pottery culture, but with an even greater variety of goods. These new funerary practices point to at least three distinct social levels, materialized by tombs with abundant bronze objects, followed by tombs with fewer bronze items and, finally, tombs with only pottery.

The social position of the deceased was reflected here by the quantity of goods and the rite at the time of burial. The tomb itself does not present any particularly ostentatious sign. This point marks a clear divergence from societies of the previous period, with their very visible tombs around the theme of the dolmen. As a result, tombs with large

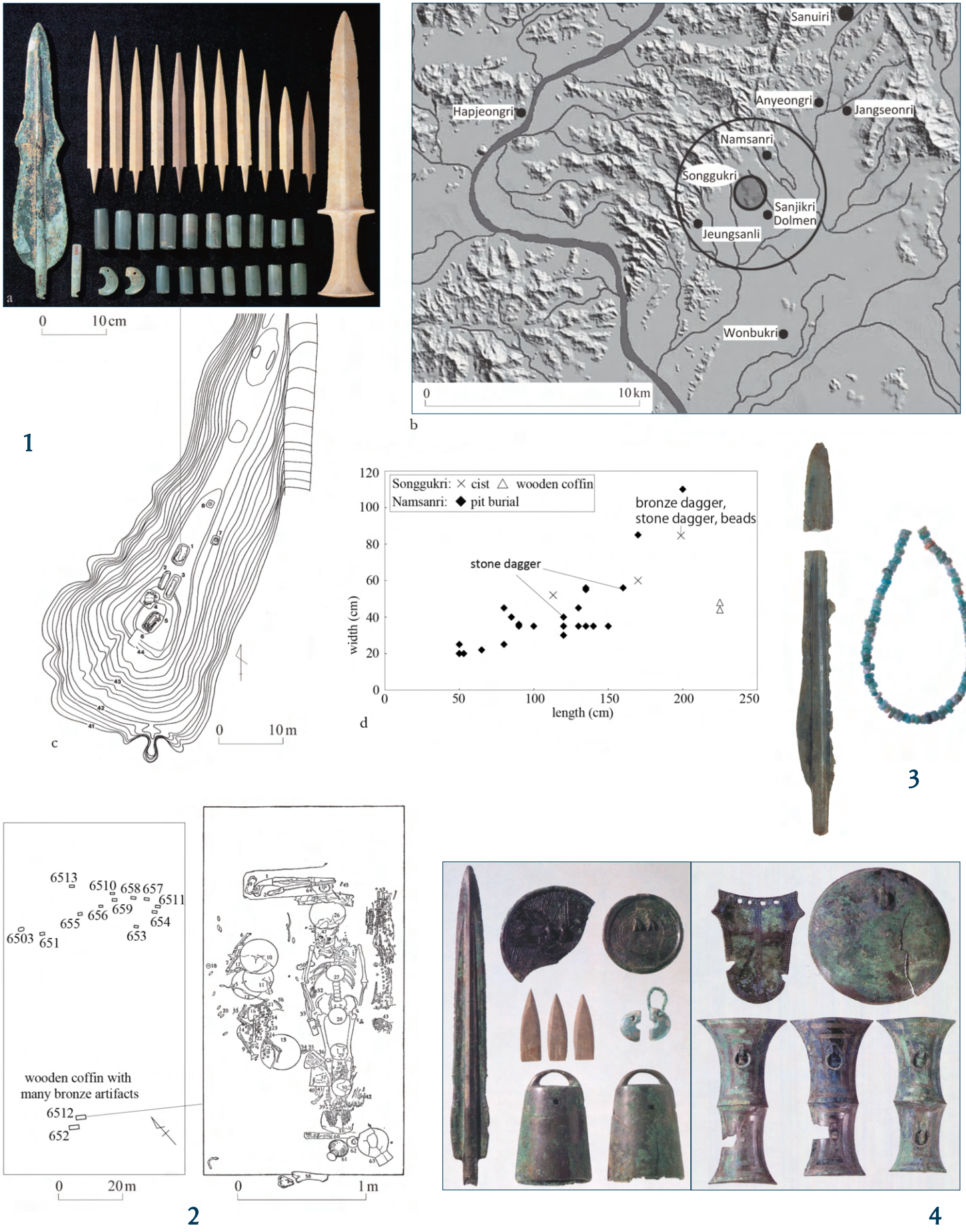

Fig. 10 – Burials and artefacts of Songgukri culture and clay band-rim pottery culture: 1a. Grave goods from Songgukri cist no. 1 (After NMK and NMG 1992); 1b. Graveyard of Songgukri site (After Kim 1998); 1c. Settlements and graveyard around Songgukri site (After Lee 2008); 1d) burial-pit size and grave goods (Nakamura 2012); 2. Shenyang Zhengjiawazi (After FPMS and SCCPAM 1975); 3. Grave goods from Gimcheon Mundangdong burial no. 1 (After GICP 2008); 4. Grave goods from Daejeon Goejeongdong (After NMK & NMG 1992).

stone blocks disappeared before the period of the Three Kingdoms of Korea. It is important to point out that although the structure of societies during the Korean dolmen period may have been replaced by the exogenous structure of new societies from elsewhere, it was not simply through the evolution of the latter that Bronze Age societies engendered the first state societies on the peninsula. It is in the south of Korea that the most dolmens were built, due to the influence of Northeast China and the development of agrarian societies, but we believe that these societies had a transitional role.

By comparison, from the southeastern part of Northeast China to the course of the Yalu River in the far north of the Korean Peninsula, the situation is quite different. Dry-stone tombs sharing characteristics with dolmens were built thoughout. The builders of these tombs were part of the context of the birth of the Koguryo kingdom, and their funerary monuments evolved into the highly accomplished dry-stone mounds of the Three Kingdoms period in Korea. Here, unlike in the southern part of the peninsula, Bronze Age societies retained their characteristics and continued to evolve until the formation of the first state societies.

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Joon-ho SON

Dolmens of the Korean Peninsula: Conservation and utilization in Hoseo (South Korea)

Abstract: A field survey was conducted to explore the current conservation state and usage of dolmens in South Korea's Hoseo region. There are 57 dolmens across 13 locations designated as Cultural Heritage sites and 49 non-designated dolmens spread across 20 sites. The results of the survey show that conserved dolmens are in a reasonable state of condition. This is not, however, an indication of vigilant conservation but is due to the fact that dolmens are made of stone. In reality, most sites are improperly maintained and neglected. The inclusion of dolmens in public education is particularly inadequate. The best solution would be to build a theme park that would accommodate various types of dolmens at a single site. While serving as a research centre, the park's facilities, including a hall to exhibit artefacts, an education centre, and a research library (with regular experimental work and programmes) would help draw public attention and increase visitor numbers.

Keywords: *dolmen, conservation, theme park, Hoseo, South Korea*

1. Introduction

Dolmens are some of the most representative archaeological features of the Bronze Age in the Korean Peninsula. A great range of dolmen types has been identified throughout the country. So many scholars have carried out analysis of dolmens and published their discoveries that it is difficult to assimilate all related studies. In current academia, the quality of investigations has increased along with the quantity of research. Recent studies provide a comprehensive analysis of dolmen culture and society that goes beyond earlier research focused on chronology and geographical aspects. There is, however, relatively little research on the Hoseo region as there are only a few dolmens in this area.

This paper starts with a review of the general characteristics of Korean dolmens, and this is followed by a discussion of current conservation practices applied to the dolmens in Hoseo. The region includes 57 dolmens in 13 locations (**Figs. 4** to **6**) that are designated and managed as cultural properties, plus 49 undesignated dolmens across 20 sites that are excavated and conserved (**Figs. 2** and **3**). Observations were focused on the present circumstances surrounding the conservation of dolmens in the region. Based on this analysis, I present my views on preservation and usage and suggest measures to improve these processes in the future.

2. Dolmens of the Korean Peninsula

To date, about 33 000 dolmens have been found on the Korean Peninsula, more than half of which are concentrated in the Jeonnam area. They were constructed from the latter part of the Early Bronze Age (EBA), concomitant with the spread of intensive rice farming during the Late Bronze Age (LBA) (800-400 BCE). Although large dolmens sometimes stand as independent structures, most are situated in groups and presumed to function as communal burial sites for blood relatives. The dolmens typically have either an above ground or underground chamber topped by a large capstone. They can be classified into four types: (1) table, (2) Go-table, (3) stone-covered, and (4) encircled. The stone-covered type is the most common and most widely distributed across the country; most dolmens with orthogonal or circular burial sites belong to this type. In contrast, the table and Go-table types are distributed exclusively on the northern and southern sides of the Korean Peninsula respectively. The encircled type is found mainly on Jeju Island.

Various artefacts have been excavated from the burial chambers, including a mandolin-shaped bronze dagger, jade ornaments, a stone dagger, stone arrowheads, and red-burnished pottery. The excavated grave goods demonstrate the social status of the deceased and reflect the era's societal emphasis on military power. The areas surrounding the dolmens also yield artefacts, both intact and damaged, relating to mortuary rituals practiced during and subsequent to dolmen construction. In addition to their role as tombs, dolmens also functioned as altars, community landmarks and monuments in agricultural societies.

3. The conservation and application of Hoseo dolmens

Hoseo is in the midwestern region of South Korea, encompassing the cities of Daejeon and Sejong, as well as the provinces of South Chungcheong and North Chungcheong (**Fig. 1**). Although there are some differences between dolmens designated as cultural properties and those that are not, the overall condition of preservation of the dolmens in Hoseo is reasonable. This is, however, largely due to the fact that dolmens are made of stone, and cannot be attributed to any conservation efforts as few

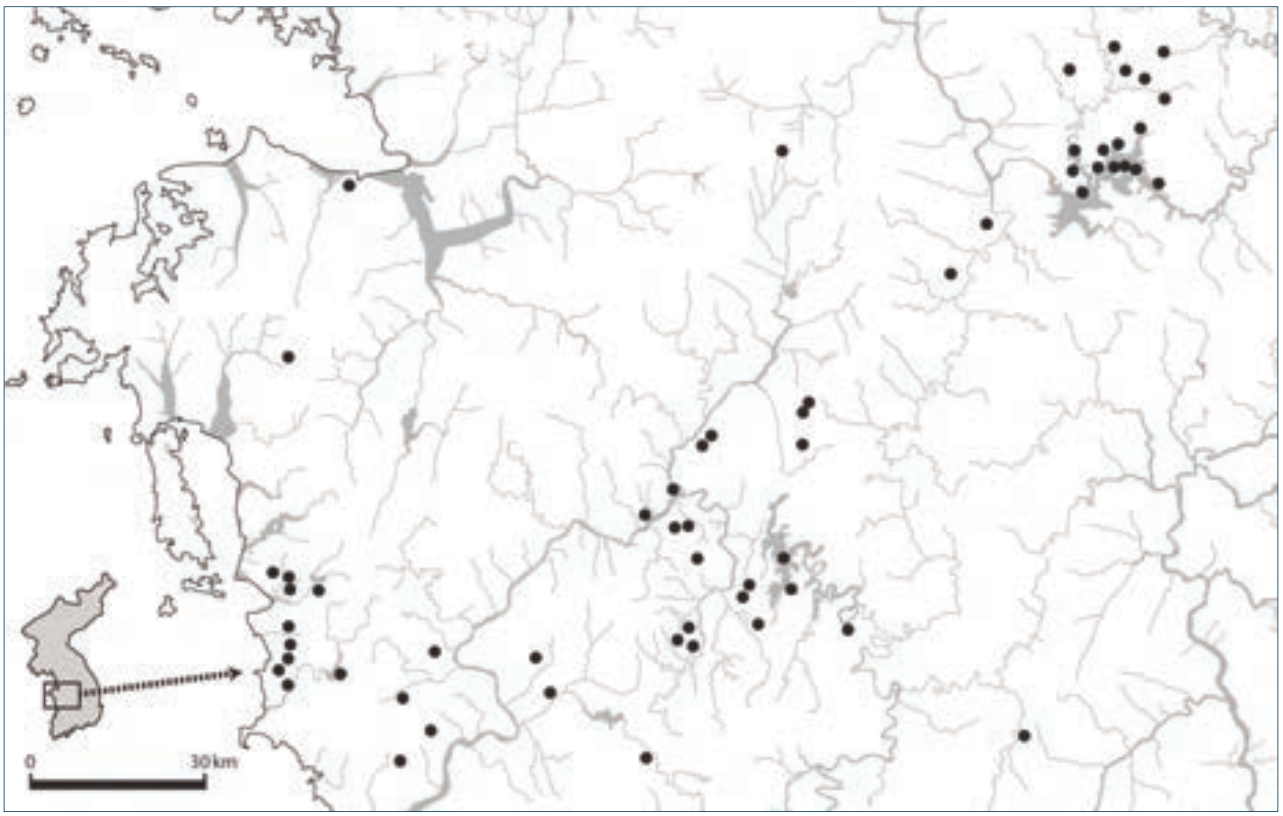

Fig. 1 – Distribution of excavated dolmens in Hoseo.

dolmens receive maintenance and most are badly neglected. Here, I will summarize the problems related to dolmen conservation in Hoseo based on field observations and discuss potential future measures to improve their protection.

First, I will consider the case of damaged dolmens. These include buried dolmens with an exposed capstone (**Fig. 2a**), dolmens with a capstone damaged during relocation but never restored (**Fig. 2b**), and dolmens with a capstone damaged by overlying stones stacked in the vicinity (**Fig. 2c**). Trenches created for survey purposes are also possible causes of collapsed capstones (**Fig. 2d**). These conditions are pertinent to non-designated dolmens.

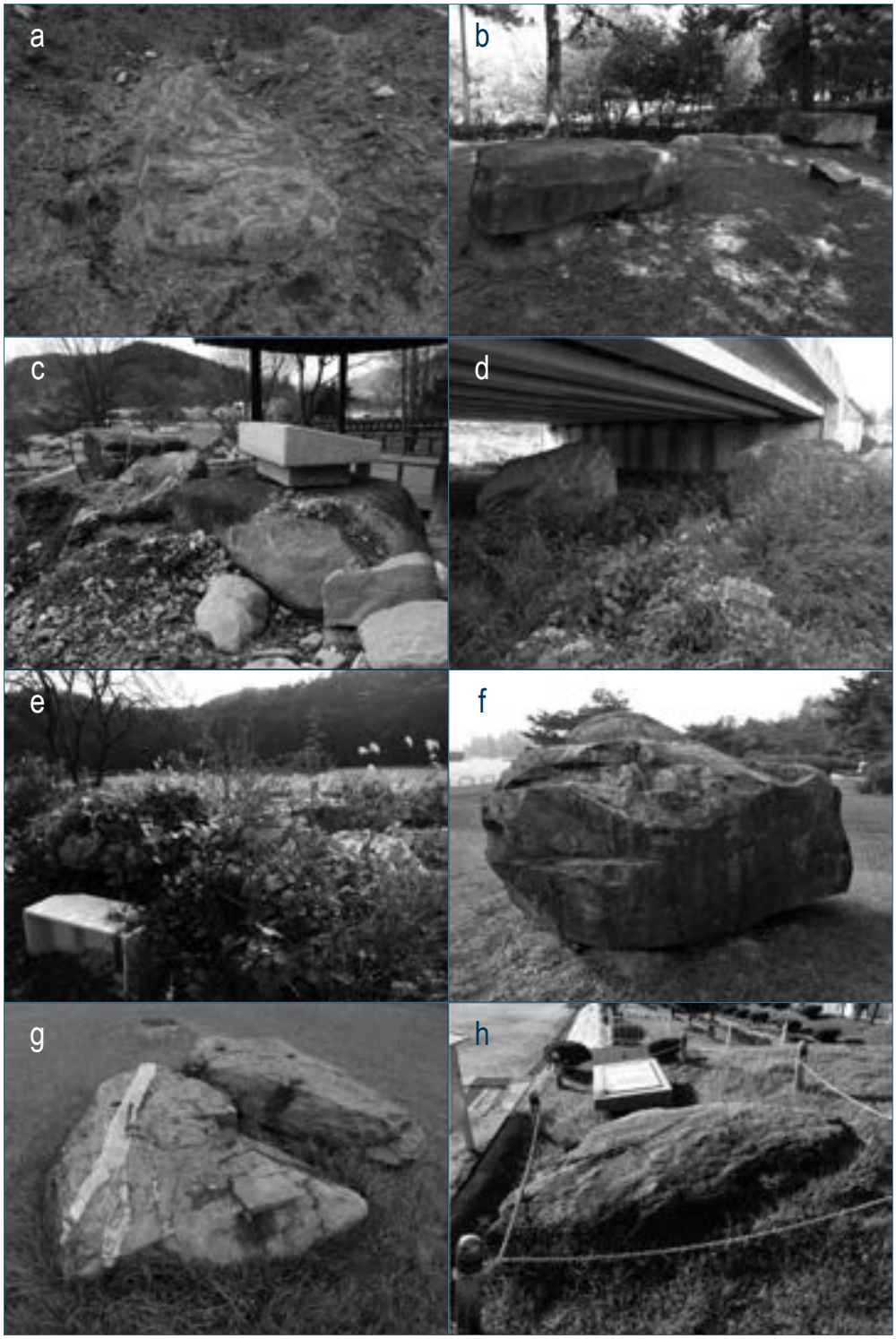

Fig. 2 – The conservation status of dolmens non-designated as cultural properties in Hoseo (Photos: J. Son).

a. Pyeongdongri, Jecheon;
b. Daejeongdong, Dajeon;
c. Neunggangri, Jecheon;
d. Gwanchangri, Boryeong;
e. Hyunmiri, Buyeo;
f. Yangdeokri, Eumseong;
g. Chumokdong, Daejeon;
h. Guryongri, Jecheon.

No	Site	Number		Location	Related facilities	Conservation process	Notes
		Relocation	In situ				
1	Guryongri, Jecheon	2	1	Geumseong Elementary School	Information board, Guard fence, Bench, Exhibition hall	○	Good preservation, Information board partially damaged, Excavation photos on the information board, Use for education
2	Bangheungri, Jecheon	2		Chungbuk University	Information board, Guard fence	×	Good preservation, One dolmen is from Mundeokri, Cheongwon, Stone-covered type as opposed to go-table type on the information board, Reconstructed as go-table type, Use for education
3	Dohwari, Jecheon		1	Road side (Dohwaro)		○	Poor preservation, Close to greenhouse and dryfield, Hard to recognise dolmen
4	Wangamdong, Jecheon	1		Wangbawee park	Information board, Bench	×	Good preservation, Stone excavated together with dolmen are present, Trees and grass disturb close access for observation
5	Pyeongdongri, Jecheon		1	Buried in the residence area		○	Poor preservation, Capstone is partially exposed, An executive order to restore was issued to the owner, But is not carried out yet.
6	Neunggangri, Jecheon	2		Cheongpoong Cultural Property Complex	Information board, Pavilion, Exhibition hall	○	Poor preservation, Parking lot construction work damaged the dolmen and relocated it, No related artefacts to Neunggangri dolmen in the exhibition hall
7	Gwanchangri, Boryeong	1	2	Relocation: Dolmen park, In situ: beneath the bridge (Gwanchang 2)	Information board, Guard fence, Bench	×	Good preservation (relocation), Poor preservation (in situ), High risk of collapse due to test trench (in situ), Go-table type as opposed to table type on the information board
8	Hwasandong, Boryeong	3	1	Relocation: land owned by Hanyang Cho clan, In situ: road side (local road no. 36)	Information board, Guard fence	○	Good preservation (relocation), Poor preservation (in situ), Partially restored to its original state, Relocation plan because it is located within the planned road construction area (in situ)
9	Isari, Seocheon	9		Seocheon Bongseonri site park	Information board	×	Poor preservation, Capstone covered with grass, Different location from the excavated point
10	Naegokri, Buyeo		2	Road side (local road no. 611)	Information board	×	Poor preservation, Local site No. 37, Close to the rubbish deposits and greenhouse, Visibility is low, No introduction to the dolmen in the information board
11	Hyunmiri, Buyeo		5	Road side (local road no. 723)	Information board, Bench	×	Poor preservation, Local site No. 41, Close to the rubbish deposits, Capstone covered with grass
12	Chumokdong, Daejeon	1		Jaundae Fitness Centre (Golf club)	Information board	○	Good preservation, No access without permit, Located inside the army squad
13	Daejeongdong, Daejeon	3		Hansaem park	Information board, Bench	×	Good preservation, No. 2 dolmen damaged, Information board partially damaged, Excavation photos in the information board
14	Gaodong, Daejeon	1		Gao park	Information board, Bench	×	Good preservation, Carved stone information board
15	Seokgyori, Yeongi	2		Naseongdong Dongrakjeong history park		×	Plan for relocation to Naseongdong Dongrakjeong history park after completion of its construction
16	Songwonri, Yeongi	2		Hansoldong Baekje tombs history park	Bench	×	Good preservation, Different location from the excavated point, Hard to recognise dolmen
17	Jangjaeri, Yeongi	1		Gongju National University		×	Good preservation, Close to the grass and tree, Hard to recognise dolmen
18	Yangdeokri, Eumseong	1		Jungbu Express Eumseong resting area	Exhibition hall	×	Good preservation, Hard to recognise dolmen, Exhibition hall is closed
19	Gahori, Cheongwon	3		Munui Cultural Property Complex	Information board, Guard fence	×	Good preservation, One is from Hakpyeongri and one from Susanri, Restored to the original state
20	Hwangcheongri, Cheongwon	2		Nation Museum, Cheongju branch	Information board, Bench	×	Good preservation, No introduction to the dolmen in the information board

Fig. 3 – The conservation state of non-designated dolmens either relocated or *in situ* in Hoseo.

Unfortunately, there are no regulations in place to resolve or prevent these matters (Choi 2015: 79-80). Administrative directives are required to prevent further destruction.

On the other hand, there is an abundance of dolmens that have not been damaged but lack maintenance. These include dolmens covered in grass or those located next to greenhouses, farmland and various waste deposits (**Fig. 2e**). Non-designated dolmens, especially those *in situ*, face diverse challenges. Several non-designated dolmens are poorly conserved and managed because, unlike designated cultural assets, it is unclear which public body should be responsible (Kim 2015: 33). There is a need for enhanced regulations concerning the care of these dolmens. The relatively poor supervision of *in situ* dolmens indicates that relocation is a more effective measure from a management perspective.

There are also issues regarding the methods used to restore dolmens. In most cases, they were restored to show their appearance at the time of excavation, but it would be more ideal to reconstruct them as they were originally built (**Fig. 4a**). As many dolmens are damaged from exposure at ground level over several years, they should be restored to their initial state so that the public can more easily appreciate their original grandeur and significance. Existing research should be consulted to avoid further misdirected restoration attempts. For dolmens that are yet to be investigated, excavation should be carried out to determine their exact structures and features. Some dolmens are, however, difficult to restore to their original state due to cost, safety, and management concerns. In such cases, dolmens and their surrounding landscape can be graphically reconstructed and augmented using digital technology. Real-world applications would help increase public understanding and interest based on maximized visual impact (Heo & Ahn 2012: 323).

An information board is placed in front of most preserved dolmens but is absent from the sites of some non-designated dolmens, making it difficult for visitors to accurately ascertain the structures on view (**Fig. 2e**). In addition, there are inaccuracies regarding the type and number of dolmens that require rectification (**Figs. 2d** and **5d**). The information provided on the boards is generally insufficient. Supplemental explanations about the circumstances of excavation and accompanying artefacts is necessary to further the visitor's understanding of the

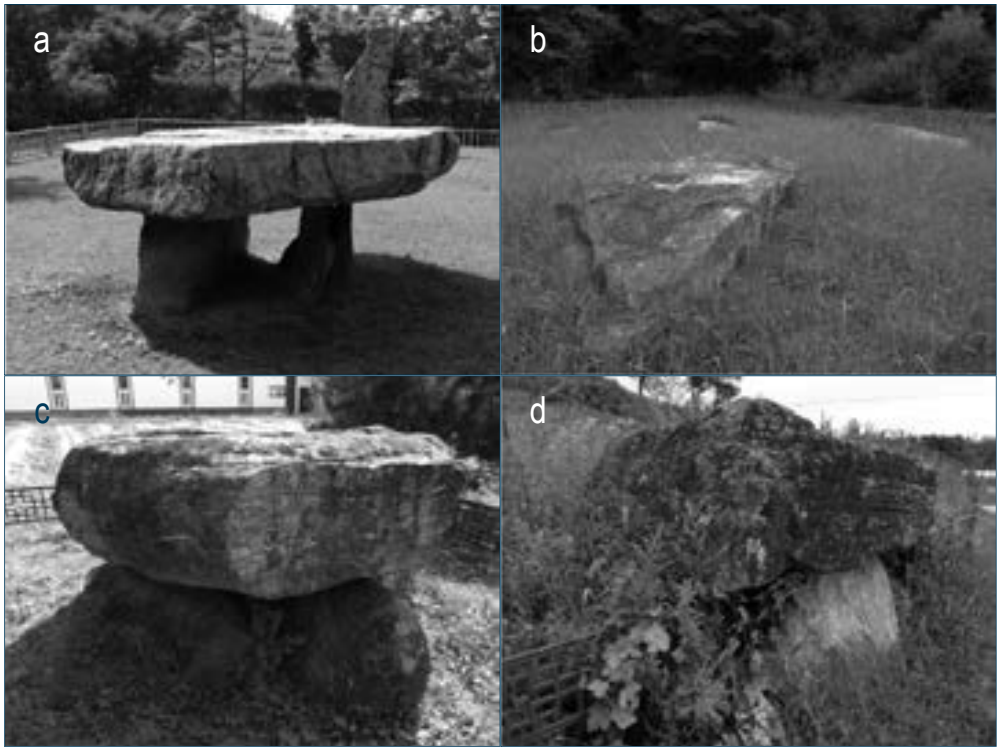

Fig. 4 – The conservation status of dolmens designated as cultural properties in Hoseo (Photos: J. Son).

a. Seoktanri, Okcheon;
b. Naedongri, Daejeon;
c. Hongseong, Haksanri;
d. Hongseong, Geumgokri.

Fig. 5 – The conservation status of dolmens designated as cultural properties in Hoseo (suite) (Photos: J. Son).

a. Jukcheongri, Boryeong;
b. Chilseongdang, Daejeon;
c. Younghwari, Guemsan;
d. Singiri, Nonsan.

No	Region	Site	Designation type	Designation No.	Number (excavated)	Information board	QR code	Guard fence	Convenient facility	Notes
1	Chungbuk	Jodongri, Chungju	Memorial	119	1	○	○	×	△	Poor preservation, Worn out bench in front of dolmen
2		Sincheongri, Chungju	Memorial	133	1	○	×	×	×	Good preservation
3		Seoktanri, Okcheon	Memorial	147	(1)	○	○	○	○	Good preservation, Pavilion and bench, Restored to the original state
4	Chungnam	Hongseong	Memorial	28	4	○	×	○	×	Poor preservation, Information board and capstone partially covered with grass, Incorrect address on the website of Hongseong city and Cultural Heritage Administration
5		Sanjikri, Buyeo	Memorial	40	(2)	○	×	○	×	Good preservation, The significance of landscape recognised
6		Dundangri, Seosan	Memorial	63	1	○	×	○	×	Good preservation, The significance of landscape recognised, Assumed table type as opposed to go-table on the information board
7		Singiri, Nonsan	Cultural property data	278	5+(5)	○	×	△	○	Poor preservation, Pavilion, Lack of some guard fence, 10 dolmens remain as opposed to 15 dolmens on the information board
8		Cheonnaeri, Geumsan	Cultural property data	335	9	○	○	×	×	Poor preservation, The significance of landscape recognised, 9 dolmens remain as opposed to 12 dolmens on the information board
9		Younghwari, Guemsan	Cultural property data	336	3	○	○	×	×	Good preservation, The significance of landscape recognised
10		Jukcheongri, Boryeong	Cultural property data	372	12	○	○	△	○	Good preservation, Pavilion and bench, Lack of some guard fence
11	Daejeon	Naedongri	Memorial	3	(4)	○	×	○	×	Poor preservation, No free access to dolmen due to entrance closure by the company owning land
12		Biraedong	Memorial	33	(2)	○	○	○	×	Good preservation, Low visibility due to cultivation and tree growth
13		Chilseongdang	Cultural property data	32	7	○	×	○	×	Good preservation, Annual ritual *Dangje* on *Chilseok day* by locals

Fig. 6 – The conservation state of designated dolmens in Hoseo.

dolmens. Providing QR codes linked to web sites is an effective method of engaging the visitor through the visual display of pertinent information. There has also been a call to increase the number of information boards for the protection and maintenance of non-designated dolmens (Park 2004: 171).

The next challenge is accessibility. Local dolmens are harder to access than those designated as cultural assets and which have information boards that attract visitors. Examples include dolmens with entrances blocked by the landowner (**Fig. 4b**) or those located on a golf course and thus requiring a visitation permit (**Fig. 2g**). These structures should be relocated to places with unrestricted access. For designated dolmens, most sites can be searched via the internet or in automotive navigation systems (except for those registered with erroneous addresses) (**Fig. 4c, d**), but there are not enough resources dedicated to verifying information about non-designated dolmens. It is necessary to make it easier for the public to find and reach dolmens by providing relevant details through the Cultural Heritage Administration or local websites.

An additional issue is the application of dolmens. Excluding a few examples located on school grounds (**Fig. 2h**), most dolmens are not being used for educational purposes. Dolmens can be expected to best function as effective learning tools when programmes are developed at a level appropriate to the student and operated with dolmens and at sites most relevant to the educational objectives (Shin 2012: 68). Other dolmens situated in parks or adjacent to benches and pavilions (**Figs. 4a** and **5a**) serve as resting areas with no other meaning or use, aside from a few examples that still serve as objects of worship (**Fig. 5b**). Current emphasis on the imperative responsibility to explore our cultural heritage necessitates the employment of practical measures in the application of dolmens (Shin 2014: 283).

4. Utilization measures

The previous sections have summarized the problems and proposed solutions for the conservation and application of dolmens in the Hoseo region. This discussion is the basis of a customized plan for the preservation and utilization of the Hoseo dolmens.

As stated in my previous research, Hoseo dolmens rarely have large capstones and seldom form large clusters (Son 2016: 108-109). In addition, Hoseo's dolmen culture was relatively underdeveloped in comparison to other regions in that there are few cases of burial mounds or grave construction. Hence, preserving dolmens *in situ* or relocating the structures to a nearby site are both inadequate methods of drawing public attention and interest.

A concrete solution to these problems would be the establishment of a theme park for the exhibition of various kinds of dolmens from different sites. Although local governments have recently made competitive endeavours to promote theme parks, very few have been successful. In consequence, the construction of ineffectual theme parks has become a dissipation of budgetary and administrative resources. That said, while an exclusively economic approach to the conservation and use of cultural heritage is problematic, we cannot disregard the financial reality of the situation. The public's interest in sharing and enjoying culture has increased nationwide, along with the growth of the national economy. Thus, building a theme park could fulfill new demands, enabling the conservation and use of cultural heritage. Moreover, it would prevent further damage to dolmens caused by desultory management.

In principle, plans for the construction of a dolmen theme park should reflect a variety of perspectives as well as an archaeological approach (Kim & Ahn 2006: 174-175). It would be necessary for local people to participate in the entire process to secure their interest and support (Han 2005: 25-26). In addition, the active involvement of relevant scholars would be essential to preserving the academic integrity of the theme park (Kim & Jeung 2012: 128). The park itself must be situated on an accessible site, on land either owned or purchased by the government (Park 2015: 97). Not all Hoseo dolmens are suitable for relocation. Some must remain *in situ* and undergo evaluation to achieve optimum maintenance and use, for example, dolmens positioned in locations or landscapes with recognized importance (**Fig. 5c**); structures central to a dolmen cluster (**Fig. 5a, d**); dolmens that simultaneously function as a resting area or public space (**Figs. 4a** and **5a**); and dolmens that are regarded as objects of worship (**Fig. 5b**).

The ideal theme park would exhibit structures suitable for educational purposes, and of varying sizes and forms to represent the diverse types of dolmens. The selected dolmens should be restored to their earliest state at the time of construction to best convey their original grandeur and meaning. Moreover, the park could best attract visitors and retain public interest through dolmen restoration in combination with the preservation of various human activities surrounding the structures via innovative graphic techniques. These objectives could be accomplished by running regular experimental activities and education programmes as well as putting up information boards and opening convenience facilities, halls to exhibit artefacts, and an educational centre, ideally using public designs (Hur *et al.* 2009: 501-02; Lee *et al.* 2010: 433-435).

A dolmen theme park could also serve as a research centre with the establishment of a library for the collection of excavation records, information on relocation processes, reports, related literature, and scholarly findings. The comprehensive management of such records would not only draw public interest but also attract researchers, thereby contributing to the productive application of dolmens and relevant educational programmes. As continual support from tourism influences the use of dolmens, which in turn directly affects dolmen conservation, it would be necessary to expand theme park infrastructures, develop connections to tourist attractions in the vicinity, and strengthen publicity efforts (Jeon 1999: 195-196).

The various conservation measures described in this paper must be employed concurrent to efforts to improve public perception of the value of dolmens. Without these synchronous efforts it would be impossible to build a theme park, which requires substantial financial resources and public support. Among the cultural heritage sites of Korea, dolmens are ranked the lowest in terms of recognition, attractiveness, and satisfaction (Lee *et al.* 2011: 2). This mediocre standing reveals the severe deficiencies in the marketing, education and application of dolmens for the general public. While the failure to provide public access to archaeological data on dolmens necessitates introspection (Lee 2006: 152), it is also an opportunity to recognize the need for efficacious implementation of prevailing dolmen conservation strategies.

5. Conclusion

This paper has examined the current state of conservation and application of Hoseo dolmens, and proposed possibilities for future improvements. Previous studies have already addressed the issues of dolmen conservation (Choi 2015: 72-74) and dolmen management (Lee 2008: 103-108). Although this paper does not go far beyond the scope of existing research, it particularly emphasizes the dolmens in Hoseo, an undeveloped area and an apropos case study in demonstrating the challenges of dolmen management. This paper has proposed suitable solutions to these issues based on field observations in addition to the distribution patterns and characteristics of dolmens.

Dolmens are synonymous with Korean archaeology and a representative structure of the Korean Bronze Age. The designation of the Gochang, Hwasun, and Ganghwa dolmens as UNESCO World Heritage Sites in 2000 further demonstrates their significance in the scheme of Korean art, history, and culture. Subsequently, conservation efforts improved considerably and most excavated dolmens have now completed or are undergoing restoration. Yet, preservation measures thus far have been inadequate in terms of educational and practical programmes to publicise cultural value of the dolmens. To address these concerns, several suggestions for dolmen preservation and use have been outlined but these recommendations are only a starting point; additional plans for the comprehensive conservation and utilization of dolmens must be prepared. It is hoped that preservation will be implemented for the sake of dolmen utilization rather than conservation alone.

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Takafumi YAMAMOTO

The development of stone art culture in ancient Korea

Abstract: Around the beginning of our era, the culture of the proto-kingdom period in Korea witnessed the almost complete disappearance of any notable use of stone as a building material throughout the peninsula. This continued for several centuries to a thousand years, until the first phase of the Three Kingdoms period when stone structures flourished once again. In this new culture, however, stone processing techniques progressed significantly; shaping and sculpting techniques developed and reached a high level of technicality. Unlike in the prehistoric context where megaliths were used without any notable transformation, from the Three Kingdoms period onwards, stone was used as a building material and was used to express forms with precise meanings; it became a vehicle for the expression of religious thought and political order. This paper therefore examines the types of stone structures and monuments that appeared during the Three Kingdoms period on the Korean Peninsula. It focuses mainly on presenting examples of the symbolic use of stone, and on developments and techniques at both national and regional levels.

Keywords: *Korea, Antiquity, Paekche, Koguryo, Silla, Kaya, formation of the State, monumentalism, culture of the use of stone*

1. Introduction

At the beginning of the 20th century, several European explorers described monumental tombs in Korea, sometimes associated with large upright blocks, with a burial chamber consisting of a single covering slab resting on large stone uprights on what looked rather like a pyramid (e.g., Chavannes 1907). These elements are worth mentioning in a book on megaliths in the world, but they are in fact only specific cases and cannot be dissociated from the diversity of stone architecture contemporary with the *Kofun* in Japan. For this reason, this article deals more generally with stone arts in ancient Korea and underlines the occasional presence of a few megalithic elements in contexts that are otherwise not megalithic at all.

The use of megaliths on prehistoric sites in the Korean Peninsula reached its peak with the construction of dolmens (*goindol* in Korean) in the Bronze Age. In contrast, a lull in the construction of stone architectural buildings occurred in the subsequent period of protohistory. During the culture of the proto-kingdom period in Korea, around the beginning of the present era, the use of stone as a building material almost completely disappeared from the whole of the peninsula, and from sites such as major urban centres, regional settlements, dwellings, burials and ritual sites. This is particularly evident in the development of funerary tumuli: dolmens and graves with stone burial spaces were replaced by slab burials and simple earthen burials and after a few centuries, in the proto-kingdom period of Korea, wooden coffin burials and wooden burial chambers were built.

This continued for several centuries to a thousand years, until the first phase of the Three Kingdoms period when stone structures flourished once again. In this new culture, stone processing techniques and forms progressed to achieve a high level of technicality. Stone was used as a building material and became a vehicle for the expression of religious thought and political order. Unlike in the prehistoric context where megaliths were used without any notable transformation, from the Three Kingdoms period onwards, shaping and sculpting techniques developed, and stone was used to express forms with precise meanings. This paper asks what types of stone structures and monuments appeared during the Three Kingdoms period on the Korean Peninsula. It focuses mainly on presenting examples of the symbolic use of stone, and on developments and techniques at both national and regional levels.

2. Examples of the uses of stone in ancient Korea

2.1 The environmental characteristics of the use of stone: a geological overview of the Korean Peninsula

From a historical point of view, the difference between the use of stone or wood for the construction of buildings and structures depends largely on the local climatic and geological environment. The Korean Peninsula is located at the easternmost point of the Eurasian continent and has a diverse climate ranging from the sub-polar zone with dry winters to the temperate zone. Under the influence of the monsoon (seasonal wind variation), there are four clearly distinguished seasons, and the region is relatively favourable for the development of vegetation and trees (**Fig. 1**). In this context of lush forests, many wooden buildings were constructed throughout history and there was no large-scale stone architecture in the domains of housing, temples or palatial architecture.

In comparison with the Japanese archipelago and southern China, however, rainfall remains low and there are long periods of drought. Moreover, due to the small area of deciduous forest, the humus layer on the soil surface is scant and soil erosion is widespread. As there are many areas where the bedrock is exposed, stone extraction is relatively straightforward. The bedrock of the Korean Peninsula consists of granitic gneiss and shale, which underly 43% of the territory (Mitsuya 1996; Tokuhashi 2004). Granite is very hard and requires advanced shaping techniques but it is resilient to climatic variations and retains its shape for a long time, even when left in the open air. It has been used as a material for all types of stone structures since ancient times. Furthermore, the Korean Peninsula is slightly removed from the Pacific Ring of Fire, so there are very few active volcanoes on the peninsula. Tuff, which is comparatively easy to work, does not

Fig. 1 – Map of the Korean Peninsula in the Three Kingdoms period (Google Earth).

occur, which also explains the virtual absence of structures in this material, unlike in Japan.

In the 7th century CE, the use of stone, which had previously concentrated solely on tuff, came to include granite, with the introduction of the granite working techniques of stonemasons on the Korean Peninsula into the Japanese archipelago. Differences in the cultural use of stone in each region can be explained to some extent by their relative environmental differences. From the Three Kingdoms period onwards in the Korean Peninsula, stone working was closely associated with a high level of craftsmanship, and highly specialized techniques for working the hardest granite flourished and developed. We must now address the reasons for this difference in the use of stone in comparison with the preceding prehistoric period, when stone was used without any transformation.

2.2 The remains of structures built in stone on the Korean Peninsula

In the following section, we present elements of classification and forms of stone constructions from the Three Kingdoms period onwards.

City walls and mountain fortresses

Ramparts for the defence of cities and mountain fortifications are important on the Korean Peninsula and required the most abundant quantities of stone. From the Three Kingdoms period to the Choseon period, many capitals and regional cities were walled, and are designated by sinograms referring to fortified cities, capitals or fortified chief towns (都城 and 邑城). During the Three Kingdoms period, some walls were built of rammed earth, other ramparts were built in stone from the time of the very first earthworks, while others again, originally of earth, were later rebuilt in stone. The construction of these walls involved the use cut rocks of several tens of centimetres, shale fragments and finely polished ashlars.

Mountain fortresses are similar in form to walled towns. The ramparts are located near the summit, built around the whole mountain from a very large number of stones. They fulfil a military function, but are also symbolic constructions visible from the plain below (**Fig. 2a**). Construction methods and the stones used vary by region but the most common form is an assembly of levelled rectangular stone blocks and the stacking of thin stone slabs. There are also examples of stacked unworked natural stones but as these create problems of stability they were rarely used for capital cities and surrounding ramparts. Finally, from the last phase of the Three Kingdoms period onwards, ramparts built of large blocks of cut stone also appeared. In addition to the solidity of these structures, particular attention seems have been paid to their imposing appearance and the beauty of the exterior surface.

Funerary tumuli, funerary chambers and the stone decoration of funerary mounds

Bronze Age dolmens (*goindol*) are remarkable in terms of the use of megaliths in the funerary domain on the Korean Peninsula. The Bronze Age, in the context of the early phase of the non-decorated pottery culture, began in the 9th century BCE and ended in the 5th century BCE (see Chapter 30, Nakamura, this volume, p. 663) but the use of stone for burial mounds disappeared between the beginning of the Iron Age, i.e., between the 5th and 1st centuries BCE, and the proto-kingdom period of Korea. From the beginning of the Three Kingdoms period onwards, the use of stone in ancient mounds was reinstated although during the first phase of this period, the standards of construction varied greatly between kingdoms and regions. On the one hand, the use of stone on the outer surface of *kofun*, as in the case of cairns (dry-stone burial mounds) in the Koguryo and Paekche regions, may have been intended to create an ostentatious effect. On the other hand, there are also stone funerary structures with an earthen mound, such as the dry-stone and wooden burial mounds in the Silla region or the stone chamber mounds with vertical access in the Kaya region. In addition, some burial mounds comprise only an urn to contain the remains of the deceased and do not use stone at all, such as the urn mounds in the Yeongsangang River region (far southwest of the Korean Peninsula).

From the second half of the Three Kingdoms period onwards, with the construction of stone burial chambers with side entrances, the use of stone

Fig. 2 – Fortifications: a. Chengshan Mountain Fortress, Liaoning, China, Koguryo (Photo: Korea Broadcasting Corporation); b. Naseong, Buyeo City (western South Korea), Paekche (Photo: T. Yamamoto); c. Ondal Mountain Fortress, Danyang City (east-central South Korea), Silla (Photo: T. Yamamoto).

Fig. 3 – Taiwangling burial mound, Jian City (North Korea border, China), Koguryo (Photo: Jilin Laboratory of Archaeology & Jian City Museum).

in burials became more standardized throughout the Korean Peninsula. Before this, burial practices generally varied from region to region. Although the term 'side-entrance stone burial chamber' is used generically, the shapes and structures, stone workmanship and construction methods were specific to each region. The practice of building side-entrance stone burial chambers on the Korean Peninsula spread to the Japanese archipelago in the Kofun period. In Japan, there was a gradual trend towards the use of megaliths for the stones of the burial chamber, whereas in the Korean Peninsula, the only discernible trend was towards increasingly fine stonework and construction methods. Stone cutting techniques, i.e., the fine shaping and polishing of stone faces until they are flat, were first developed in the Koguryo and Paekche kingdoms, and became a technical prerequisite for the construction of stone burial chambers, which became standardized in the form of pyramid-shaped dry-stone burial mounds. The stone cutting technique continued in the next period during which the Silla Kingdom took control of the whole Korean Peninsula.

Between the final period of the Three Kingdoms and the period of unification by the Silla Kingdom, the practice of placing stone objects around and in front of mounds began to emerge. This particularly applied to royal burial mounds (thought to belong to members of the royal family but not including the royal burial itself) which have large stone tables assumed to have been used for ritual offerings. The surroundings of these tombs were also decorated with stones. In addition, objects fashioned from different types of stone decorated both sides of the pathway leading to the royal tomb in the burial area. This practice originated from the Tang Dynasty in China, whose culture and political system was taken over by the Silla at that time. It was subsequently introduced to the Korean Peninsula during the Silla Kingdom period and continued from antiquity to modern times, persisting in royal tombs until the Choseon period.

Stelae

The erection of stelae with sinogram inscriptions began in the Three Kingdoms period. These stelae were erected for various purposes: to praise the actions of the king and the kingdom, to strengthen relationships between states, to announce and arbitrate conflicts, to mark the comings and goings of the king, to mark out the territory, or to record the building of fortifications, etc. The first stelae appeared in the Kingdom of Koguryo, which is the closest to China. They then flourished in the Kingdom of Silla, under the political influence of the Kingdom of Koguryo (**Fig. 4a, b**). The size of the stelae vary. Some are less than 1 m high, while othersreach more than 6 m. Most have a four-sided prismatic shape but some are natural rocks used in their original state, where only one side was polished and engraved with an inscription. The well-known Kwanggaeto royal stele from Koguryo, consisting of a single block of shaped stone, is recognized as the largest monolith of this period. The use of shaped stones with a regular form was gradually introduced. A pedestal to support the stele and an epitaph with engraved titles were added during the last period of the Three Kingdoms until the period of unification by the Silla kingdom. These are also signs of the influence of the Chinese stele culture.

Building foundation terraces, foundation stones and pedestals

From the Three Kingdoms period onwards, stone was used extensively in palace and temple architecture. As mentioned above, wooden buildings were the most common type of building on the Korean Peninsula but the palace and temple architecture inherited from China was designed to support heavy tiled roofs. The greatest quantities of tiles are found in the archaeological sites of walled city palaces and temples dating to between the Three Kingdoms and the Choseon period. As the weight of roof structures and their tile coverings increased considerably, the structure of these buildings was designed to distribute the weight. The weight of the roof structure rested on pillars on the ground, so it was necessary to erect solid building foundations. Thus, a foundation terrace (solidified rammed earth) with foundation stones (stone base supporting the posts) became an indispensable element of the lower structure of tiled roof buildings.

Fig. 4 – Stelea: a. Bukhsan ; b. Jeokseong ; c. Hwangchoryeong ; d. Maunryeong, Silla (Photos: National Museum of Korea).

These foundation terraces were usually built using the rammed earth method (hardened earth between two wooden planks) and then faced with stones. Representations of protective Buddha deities were sometimes engraved in relief on the facing stones of temple foundation terraces. The foundation stones were then aligned on the terrace to provide a base for the pillars, prevented them from sinking into the ground under the weight of the roof. The use of large foundation stones was particularly widespread for supporting the central pillars of the central pagodas of Buddhist temples. Due to the square plan of these high buildings, the large central pillar supported all the weight of the building. The use of large stones

may also have been a strong symbolic element, for example, as such stones are also found in the main building of Buddhist temples where they serve as pedestals for Buddha statues (Fig. 5).

Stone pagodas

Wooden pagodas are commonly observed in Buddhist temple complexes on the peninsula, but numerous stone pagodas were also built from the Three Kingdoms period to the Goryeo period. Stone pagodas are assemblages of separately worked quarried stones. There are cases where stone constructions are severely dilapidated compared to their wooden counterparts, but most stone pagodas are particularly resistant to deterioration. It is not uncommon for them to remain after all the other buildings in the religious complex (Sangharama) have been destroyed by fire or decay. This is particularly evident at the temple sites of the Three Kingdoms and Silla Unification period where the only surviving ancient constructions are generally the stone pagodas (Fig. 6a).

Stone Buddhas, stone altars and stone basins

Buddhist temples contain a great variety of stone fixtures intended to express the religious and solemn character of the buildings. Many of the Buddha statues that form the core of Buddhist belief are also made of stone. As stone Buddhas are more durable than wooden ones, stone examples account for the majority of remaining outdoor statues (Fig. 7). There are many types of stone Buddhas, but a major distinction can be made between those that cannot be moved and those that can. The first category comprises Buddhas carved on natural rock faces or large boulders, as well as Buddhas in cliff caves carved into rock crevices. The second category includes monolithic stone Buddhas carved on pieces of quarried rock or on small stones. Both were produced from the end of the Three Kingdoms to the beginning of the Silla Unification period onwards. A wide variety of carving techniques were used, such as line carving, relief carving, and in the round (three-dimensional) carving. Line carving (hollow relief carving) depicts the figure of Buddha by engraving fine lines on the flat surfaces of the stone or rock face. As such, they are closer to 'images' of the Buddha rather than Buddha 'statues'. In light relief (embossed) sculpture, the figure of the Buddha stands out only slightly from the surface of the wall. In bas-relief or medium relief (half-relief), about half of the thickness of the body is cut into the rock, whereas in high-relief almost the entire body is carved but remains attached to the substrate. For sculptures in the round, the entire body is detached from the substrate and even the back of the Buddha is represented.

Fig. 5 – Remains of the main hall of Hwangryongsa Temple, Gyeongju City (South-East Korea), Silla (Photo: T. Yamamoto).

Fig. 6 – Stone pagodas: a. Remains of Gameunsa Temple, Gyeongju area (southeast South Korea), Silla (Photo: T. Yamamoto); b. Jeongrimsa Temple, Buyeo City (west South Korea), Paekche; c. Mireuksa Temple, Iksan City (west South Korea), Paekche (Photos: Ireuksaji Museum 2005).

In addition to stone architecture, temples contain a range of stone objects, including the jewels symbolizing the remains of Buddha contained in the altar receptacle, and various stone objects in stone altars, some of which bear inscriptions, buried under the central pillar of the pagoda, at the heart of the temple complex. The circular or square stone basins that collected water were also an integral part of the temple complex. These were probably used during Buddhist rites, among other things.

This overview has examined the various objects and structures built from relatively large stones during the ancient period of the Korean Peninsula. Some of these structures simply used natural non-transformed stones but most were built with worked stones and had elaborate carvings. Depending on their use and the type of construction, the choice of shaped and carved stones reflects a desire to be conspicous, and expresses a particular system of thought. In all cases there is evidence of stone working techniques developing in the background throughout this period.

Fig. 7 – Triad of Buddhas carved in the rock of the Seosan cliff (northwestern South Korea), Paekche (After Uehara 1988).

3. The culture of stone craftsmanship in the different kingdoms of the Korean Peninsula

3.1 The Three Kingdoms period: the formative period of the ancient state of the Korean Peninsula

In the following section, we will discuss specific and significant examples of stone constructions dating to the ancient period of the Korean Peninsula.

From the 3rd to the mid-7th century CE, various kingdoms and regional powers emerged sequentially on the Korean Peninsula. The Koguryo, Paekche and Silla Kingdoms were particularly powerful and formed a well-balanced tripartite system. This period is known as the Three Kingdoms period because of the very detailed references to these three kingdoms in historical texts, however other regional powers such as the Kaya Federation and the Yeongsangan River also existed during the period, indicating that control of the peninsula was not necessarily limited only to these three political and cultural powers.

According to the *Samguk sagi* (*The Historical Chronicles of the Three Kingdoms*), which is the historical compendium of the Korean Peninsula, the three kingdoms were founded in the 1st century BCE: Koguryo in 38 BCE, Paekche in 18 BCE and Silla in 57 BCE. The creation date of Koguryo is relatively close to the period of actual state formation in this part of the world. In contrast, for Paekche and Silla, no real state form was discernible in the 1st century BCE, so it is very likely that the founding myths of these two states are an afterthought. The Chronicles of the Three Kingdoms of China (Book of Wei, Biographies of the Wuhuan, Xianbei and Dongyi (三国志, 魏書東夷伝) report, among other things, that until about the 3rd century CE there existed on the Korean Peninsula a population group called Han 韓, divided into several separate small kingdoms. These *Chronicles* distinguish the Three Kingdoms period from the period of the proto-Korean kingdoms or the period called 'Samhan' (of the 'Three Han') where three regional powers, the Mahan 馬韓, the Jinhan 辰韓, and the Byeonhan 弁韓 co-existed (Korean Archaeological Society 2010).

The archaeological criteria marking the beginning of the Three Kingdoms period are the appearance of fortresses and royal tombs with large tumuli, the appearance and spread of a new type of pottery, and the spread of prestigious metal goods. Other important indications of the development of specific political entities into states are the advent of mountain fortresses that protected borders and strategic points, and the development of foreign trade focused on the import of prestige goods. The period from the 3rd to the 4th century appears to be a time of preparation for these changes. The use of stone in many archaeologically documented structures also began during this period. Characteristically, the Three Kingdoms period is when the largest tumuli were built on the Korean Peninsula. It is a period when the visibility of power flourished. The building of large-scale burial mounds and walled cities in which the powerful resided, were not just representations of power for society, but also designed to emphasize that power to the outside world (Yamamoto 2018a). Buildings and stone structures were a means of expressing that power.

3.2 The use and characteristics of stone in Koguryo

The political entity of Koguryo emerged in the Yalu Basin, near the border between present-day China and the North Korean border. Koguryo eventually extended its power over the entire region from the north of the Korean Peninsula to Manchuria. It was the earliest of the three kingdoms to develop into a state. According to historical records, Koguryo moved its capital from Huaren to Jian and then to Pyeongyang. Abundant mountain fortresses and ancient mounds are concentrated in these three politically strategic regions.

In the Koguryo region, there was a clear tendency to use large proportions of stone in the structural elements of constructions. The stone ramparts of fortified towns and mountain fortresses, which are important political and military strategic locations, are common archaeological sites in Koguryo. In the regions of the three capitals mentioned above, lowland fortifications were always combined with those at higher elevations to form a system of fortified towns. Fortress walls were constructed from stone, mixed earth and stone, and compacted earth. Lowland sites were built of earth or a mixture of earth and stone, while mountain forts were mostly built of stone.

These walls contained stones worked in various ways. They were occasionally built by assembling unworked stones but most were constructed from roughly cut rectangular blocks. Depending on the region, they also used split stones, arranged in fine scales, and walls were built with shaped ashlar-like stones. The structure of entrances and walls was often elaborate (Compilation Committee for the Illustrated Book of Ruins and Relics of Korea 1989). Rock outcrops are ubiquitous on the Korean Peninsula, and the stoneworkers of the kingdom of Koguryo adopted a construction method exploiting the natural bedrock – which is particularly accessible in the mountains – by resting the heavy stone ramparts directly onto it (**Fig. 8**). The ramparts of the Koguryo mountain fortresses often reach great heights. It can be assumed that this height played a defensive role as well as having a ceremonial or symbolic function, as the ramparts were visible from the valley below the mountain (Korean Broadcasting Corporation 1994).

The trend towards the use of massive blocks of stone can also be observed with regard to ancient mounds. Several dry-stone burial mounds were built under Koguryo rule (Jilin Laboratory of Archaeology & Jian City Museum 2004). This type of cairn was also built for a while in the Paekche kingdom, but tombs built in regions outside Koguryo were mostly earthen burial mounds with no stone facing like the Japanese *kofun*. In the Korean Peninsula, stone mounds are mostly concentrated in the Koguryo region. They developed in stages from a type with no foundation terrace to one with a terrace, and then to a stepped form. They are characterized by a sepulchral space in the upper part, and the pyramid-shaped tombs accentuate the ostentatious character of the monument. At Janggunchong, Taewangreung, Imgangchong, Seodaechong and Cheonchuchong, where tombs measure more than 30 m on each side, tiles were uncovered at the top of the tumuli, leading to the hypothesis of the existence of a building. The structure of these tumuli, particularly those thought to be the tombs of members of the highest classes of society (such as generals), is an elaborate assemblage of cut stones built in the shape of a pyramid (**Fig. 9**).

Fig. 8 – Fortifications: a. Chengshan Fortress (South Korea), Koguryo; b. Cheoleung Fortress, Koguryo (Photos: Korea Broadcasting Corporation).

Fig. 9 – Janggunchong burial mound, Jian City (North Korea border, China), Koguryo (Photo: Jilin Laboratory of Archaeology & Jian City Museum).

The interior of the mound consists of a stone burial chamber with an ashlar side entrance. This indicates that Koguryo's stone-cutting and masonry techniques reached a high level of development at an early stage. The burial space of these mounds evolved from a stone chamber with vertical access to one with a side entrance. The burial tumuli also changed from stone mounds to earthen mounds with stone burial chambers. The large number of square burial chambers among the large earthen mounds is probably due to the influence of the previous stone burial mounds.

A final feature of the ancient Koguryo mounds is the large number of tombs with diverse paintings on the inner walls of the stone burial chambers with a side entrance. These tombs were built of split stone in the first half of the period, and their walls were plastered to provide a base for the paintings. In the second half of the period, the walls consisted of large stone slabs. Their surfaces were then polished and smoothed, and paint was applied directly. The development of stone-shaping techniques and wall painting techniques seem to be linked.

Inscribed stelae were erected at Koguryo as a means of affirming the actions of the king and the vitality of the country (**Fig. 10**). The stele of King Kwanggaeto is an important source for the ancient history of East Asia. The text on the stele describes the history of Koguryo, its relations with the other kingdoms in the peninsula, and even with pre-Japan. This stele was erected in the vicinity of the fortified site of Hwando by Kwanggaeto's son, Jangsu, in 414 CE in praise of his father's achievements during the height of his sovereignty of Koguryo (late 4th to early 5th century CE). The stele is made of tuff. It is 6.3 m high, about 1.5 m wide and shaped like a quadrangular prism. A total of 1802 Chinese characters are engraved on its four sides. It is the largest surviving megalith from the Three Kingdoms period. This stele appears to be an attempt to maximize the greatness of the ruler, as it is a megalithic monument with a visual effect and the inscriptions give a detailed account of his achievements (Wang 1984).

Another Koguryo stele, known as the Chungwon-Koguryo stele, is located in the Chungwon region in the centre of present-day Korea. The stele is a natural stone with a quadrangular prismatic shape, which is 50 cm wide and 2 m high. The surface is almost totally covered with inscriptions on all four sides. It is modest in size but displays the same style as the Koguryo stone stelae. The content of the inscriptions

Fig. 10 – Kwanggaeto Stele, Jian City (North Korean border, China), Koguryo (After Wang Jianqun 1984).

on this stele concerns the relationship between Koguryo and Silla. It is clear from this stele that the Kingdom of Koguryo had expanded to the south of the Korean Peninsula and subjugated the Kingdom of Silla by that time. The process of erecting stelae on the borders of the territory as it expanded thus resumed from the middle of the 6th century onwards when Silla extended its power. This stele appears to correspond to an attempt to leave an eternal stone monument in order to clearly mark the newly acquired territory.

Koguryo had the most stone structures of the various countries of the ancient Korean Peninsula, largely because the northern part of the peninsula is rich in rocks but also because the royal leaders of Koguryo made active use of the visual attributes of power; structures emphasizing the symbolic aspect of stone attract particular attention.

3.3 The use of stone in Paekche

The historical core of the Kingdom of Paekche was a Mahan kingdom, also called Paekche, located in the lower Han River basin. The country of Paekche comprised and unified about 50 Mahan kingdoms and occupied the west-central region of the Korean Peninsula, corresponding to the present-day regions of Gyeonggido, Chungcheongdo and Jeollado. Paekche, like Koguryo, moved its capital several times, first to the location of present-day Seoul, then to Gongju and finally to Buyeo. Each of these regions contains major archaeological sites. The history of this kingdom has been divided into periods marked by the change of capital. Thus, the Hanseong period runs until 475 CE, the Eungjin period from 475 to 538 CE, and the Sabi period from 538 to 660 CE.

The fortified towns and mountain fortresses of Paekche were built on natural hilltops, supplemented with earthen embankments, but the use of stone became increasingly common for the construction of ramparts. There are, however, few exclusively stone enclosures in Paekche, which instead is characterized by stone-faced earthen fortifications. Unlike Koguryo in the north of the Korean Peninsula and Silla in the east, which encompassed mountainous areas rich in rock resources, the territory of Paekche lay in the plains, which may account for this specificity. The Naseong fortress of the Sabi period is representative of Paekche stone enclosure walls. Its wall was built in a straight line from the mountain to the plain – regardless of the terrain – to protect the eastern flank of the walled city. Rectangular cut stones were mainly used on the side facing outwards from the earthen embankment (**Fig. 2b**). Many of the Paekche wall stones were cut in a similar rectangular shape, but ashlars were also eventually used for rampart walls. This is related, as we shall see below, to developments in the stone used in the burial chambers of mounds and to an increase in the building of Buddhist temples. Cut stone was also used on part of the ramparts of the mountain fortress of Buso in the Buyeo area, the last capital of Paekche.

Burial practices in the Paekche region consisted mainly of wooden coffins in tumuli, a tradition inherited from the ditch burials of the proto-kingdom period in Korea. No stone was used. From the 4th to the 5th century onwards, stone burial chambers with vertical access and side entrances became more widespread, and the use of stone became standard practice (Yamamoto 2018b). On the other hand, Paekche was influenced by burial practices from Koguryo for some time, and the stone tumulus with a simple or stepped foundation terrace (typical of the Koguryo region) used for royal mounds in the Hanseong period was gradually introduced. These stone tumuli probably sparked and encouraged the spread of stone burial practices in the Paekche region. A few stone tumuli have been preserved in the Seokchon-dong group of tombs in Seoul. Their shape is similar to that of the stepped burial mounds of Koguryo. Seokchon-dong Grave No. 3 is a large square cairn, 55 m long and wide and over 4 m high, with the first three levels still standing today (**Fig. 11a**). This tomb is sometimes attributed to King Geunchogo who expanded the territory of Paekche in the second half of the 4th century. It should be noted that the pyramid-shaped tumuli of Koguryo used as generals' mounds were built of ashlars, whereas those of Paekche were built of split stones and are of very modest height. The latter were built for only a short period. It can be assumed that the use of these stone monuments was mainly to strengthen relations with Koguryo. In general, large mounds with a high visual impact were not built in Paekche but is likely that the

introduction of Koguryo-type tombs, with their emphasis on the outward appearance of monuments, was the starting point for future uses of stone in the kingdom.

Tombs with stone burial chambers and side entrances, which played a key role in the funerary practices of the second half of the Paekche period, were also of non-native origin. In these new constructions, stone formed the internal structure of the mound, which was itself made of earth. The use of stone cannot, therefore, be seen from the outside. These early stone chambers with side entrances were assembled with split stones, and with corbelled ceilings supporting large roof slabs. Considerable differences in type and structure are observed between regions. From the Sabi period onwards, the chambers were made of finely dressed and standardized ashlar, to such an extent that it is possible that funerary practices and the construction of funerary tumuli seem to have been regulated by the different levels of political class (**Fig. 11b, c**). Cut stone techniques allowed for the measurement and rigorous setting of the dimensions of stone burial chamber and would have developed according to political regulation (Yamamoto 2017).

According to the texts, Buddhism was introduced to Paekche in 384 CE and a temple was built the following year, but no archaeological remains related to Buddhism in the Hanseong period have yet been discovered; the remains of excavated Paekche temples all date to the Sabi period. In the Buyeo area, the temple sites of Jeongrimsa, Wangheungsa, and Neungsa, as well as Mireuksa in the Iksan area, have been excavated (among others), revealing that many temples were built in important regions around the (walled) capital in the Sabi period. Stone altars engraved with inscriptions have also been unearthed in the remains of the temples (**Fig. 12**).

In Paekche temple complexes, the central door, the pagoda, the main hall and the reading hall are designed along a north-south axis. For the Mireuksa temple in the Iksan region, three such complexes were arranged in a row. Pagodas were initially built of wood but subsequently of stone. On the site of Jeongrimsa Temple, a five-storey stone pagoda is preserved in almost perfect condition and is a significant example of this type of building in the Paekche style. No complete structures were uncovered in the Mireuksa temple, but two large stone pagodas, which originally stood nine storeys and more than 20 m high, were built to the west and to the east, with a large wooden pagoda between them. The stone pagodas of Paekche were built by assembling granite ashlar elements, revealing the high level of development of stone working and construction techniques (**Fig. 6d, e**). The pagoda is the pre-eminent feature of Buddhist architectural complexes as the 'Buddhist relics' (Śarīra) were deposited i them; they were probably built in stone for the purposes of durability (Mireuksaji Museum 2005).

As mentioned above, during the early Paekche period, there is no evidence of the use of stone on the outer faces of fortified enclosures, nor on the visible parts of the tombs. Around the 4th century, Paekche burial practices were temporarily influenced by the construction of Koguryo burial mounds, and many later stone architectural features attest to this influence. If, however, we leave aside structures such as fortifications, with a practical function, the assertion of power by the elite classes through the use of stone remains comparatively rare compared to the evidence observed for the Koguryo kingdom. Paekche is a state in which no particular meaning is attached to the size of the tombs, and where ostentatious monuments of this nature (intended to be seen) developed only to a limited extent. It is likely that frequent exchanges with China and the introduction of the court ranking system made the visible expression of power less essential.

3.4 The Silla culture of stone craftmanship

In the proto-kingdom period of Korea, Silla was formed by the unification of several political entities by Saro in the vicinity of the Jinhan in the present-day Gyeongju basin (Lee 2007). Silla was initially under Koguryo rule, and the Koguryo influence is clearly perceptible in Silla culture. From the 5th to the 6th centuries onwards however, Silla gradually gained power and annexed Kaya in the mid to late 6th century. In the second half of the 7th century, Silla joined forces with Tang China and defeated Paekche and Koguryo. This unified the whole Korean Peninsula for the first time in history. In

addition to textual sources describing the extension of the power of Silla, archaeological sources also document the phenomenon: the erection of stelae by the new kingdom throughout the peninsular territory, pottery, mountain fortresses, tombs with stone burial chambers and side entrances, all reflect the extension and dissemination of the Kingdom of Silla (Gyeongsangbuk-do 2016). The Unified Silla period lasted until its demise in 935 CE. The late phase of the Three Kingdoms period was succeeded by the Goryeo period, which unified the kingdoms of the peninsula once again. The pre-unification Silla kingdom is referred to as the Early Silla.

Fig. 11 – Funerary monuments : a. Tumulus necropolis of Seokchondong, Seoul City (northwestern South Korea); b. Corbelled chamber of tumulus 5 of Songsanri (Gongju, western South Korea); c. Burial chamber of tumulus 36 of Neungsanri (Buyeo, western South Korea), Paekche (Photos: T. Yamamoto).

The Early Silla

During the Early Silla phase of the Three Kingdoms period, there are few constructions apart from fortifications, for which stone was used with remarkable visual effect. In contrast to the Paekche enclosures, which consist mainly of an earthen embankment, the defence system of Silla made significant use of stone. The extension of a fortified enclosure around the whole capital of Silla has not been confirmed, but the presence of a defensive network on the hills around the capital has been documented. Most of the stone used for the mountain fortresses of Silla consisted of thick cut rectangular blocks, for example, those near the capitals of Koguryo or Paekche. Fortress walls in the border area with Paekche are often made of dry-stone shale flakes (**Fig. 2c**). Fortresses with long circular enclosures encompasing steeply sloping mountain peak plateaux were common, built with the abundant local materials of the eastern and central Korean Peninsula. These constructions are characterized by the presence of a stone foundation terrace supporting the base of the fortification wall. In addition to their defensive purpose, these high stone fortifications built on top of mountains were probably intended to provide a strong visual reference point when viewed from below.

Silla burial mounds were the largest of the states of the Three Kingdoms period and used a substantial amount of stone for the internal structure of the burial mound, which was invisible from outside. The dry-stone burial mounds and wooden burial chambers of the Gyeongju basin, where the capital was located, are characteristic of the burial culture of the Silla region. Most are circular, but many are gourd-shaped (double) where two or more burial tumuli/burials are joined together. For this type of burial, there is a time gap between the construction of the different burial spaces, which shows that these are radically different structures from the keyhole-shaped *kofun* (zenpōkōenfun) of Japan. Another feature of Silla burial mounds is that they contain only one burial structure each, unlike multi-burial tumuli, such as Paekche burial mounds and Kaya tombs. Although each of these mounds contains only one occupant, they are extremely high and extend over unusually large surfaces for burial mounds on the Korean Peninsula. These exceptional

Fig. 12 – Stone altar found at the Neungsa temple site (Buyeo City, western South Korea), Paekche (Photo: T. Yamamoto).

dimensions are thought to be linked to the type of burial space, which is half-buried. A wooden coffin was placed in the wooden chamber. The remains of the deceased and their funerary goods were place inside the chamber and coffin. A mound of cut stones covered the burial and the entire monument was then covered with earth. This explains the height of the mounds and renders secondary burials impossible. There are many theories as to the origin of these tombs. Some consider them to be a developed form of traditional wooden tombs, others discern the influence of the Koguryo tombs, while yet others link them to the *kurgan* mounds built by the nomadic and horse-riding peoples of Eurasia. These constructions make extensive use of stone, but the stone remains invisible and therefore does not have a symbolic character, although it was used for the protection and preservation of the burial space.

Stone burial chambers with side entrances emerged in Silla from the middle of the 6th century onwards. Many natural stone stelae were also erected, the most remarkable of these being the Bukhansan Stela of King Jinheung, which was one of several stelae

erected in each of the regions of the kingdom to celebrate the expansion of the territory (Fig. 4c, d). In the burial mounds of rulers the pile of stones disappeared from the inner part but in the 7th century, when Silla was forging links with Tang China, other stone burial constructions appeared, including tombstones. At the same time, another custom from China was adopted: the use of *Gwibu* 龜趺 and *Chishu* 螭首, which are, respectively, the base and upper part of the stele representing a tortoise and a dragon in stone carvings (Fig. 13a). From this period onwards, stone artefacts were placed around royal Silla burial mounds to express the rank and identity of the deceased (Uehara 1988).

Unified Silla

During the Unified Silla period, the royal capital was developed in a systematic way. The city area was expanded and palace buildings, administrative

Fig. 13 – Southeastern South Korea: a. Funerary monument for King Muyeol, Gyeongju City (After Uehara 1988), Silla; b. Gwaereung Royal Mound, Gyeongju City (After Gyeongsangbuk-do 2016), Unified Silla; c. Seokkulam Temple, carved directly into the cave rock, Gyeongju City, Unified Silla (Photos: Korean Archaeological Society).

buildings, residences, temples and infrastructures such as roads, sewers, wells, fences and bridges were built. All these elements were designed in the capital and provincial centre according to a predetermined plan. Most of the structures were built in wood and stone, and many traces of the latter survive. All the constructions were ordered by the authorities, to who it is very likely that groups of stonemasons were directly answerable. The royal tombs of this period were built independently of each other at the foot of the mountains and on the plain around the city of Gyeongju. Burial structures consisted of round earthen mounds containing a stone burial chamber with a side entrance, with various stone monuments placed around the mounds or royal mausoleums. The base of this type of earthen tumulus was faced with stone slabs, enclosing the mound, forming panels representing 12 carved deities. In addition, an altar was installed in front of the royal tombs, and stone lions, scholars, and soldiers, and columns were aligned along the path leading to the tomb (*Hwapyo* 華表) (National Museum of Korea 2003). This layout is particularly clear in the case of the Gwaereung burial site in Gyeongju, which is assumed to have been the resting place of King Wonseong (785-798 CE), the 38th king of Silla (**Fig. 13b**). The practice of placing stone artefacts, among other things, around and in front of the royal burial site, originated from the burial practices of the imperial burial sites in China and continued in the Korean Peninsula until the Choseon period (Uehara 1988).

Stonework related to Buddhism during the Silla Unification period includes Buddha statues, stone pagodas, stupas, stone lanterns and banner pillars. The Seokka and Dabo pagodas of Bulguksa Temple in Gyeongju, and the Buddha statue of Seokkulam are representative of this period and show the high level of technical skill in the stone carving techniques (**Fig. 13c**). In addition, temples, stone Buddhas and stone pagodas are scattered all over Namsan Mountain in the southern part of the Gyeongju region, which was worshipped during the Silla period (Gyeongju National Research Institute of Cultural Properties 2002).

3.5 Other regions

During the Three Kingdoms period of the Korean Peninsula, many other regional powers operated in addition to Koguryo, Paekche and Silla. Among them, the Kaya and Yeongsan groups held significant regional power. Kaya, in the south of the peninsula and was wedged between Paekche and Silla. From the first half until the end of the 6th century when it was absorbed by Silla, Kaya did not manage to unify into a single state. The name 'Kaya' is therefore a name for a group of political entities. The suffix 'gaya' is used to refer to individual groups in this region, such as Daegaya, Sogaya, Aragaya, Keumgwangaya. These four 'gaya' had more clearly identifiable cultural characteristics than the others. The region was renowned for its high level of iron metallurgy, pottery production (which became the source of Japanese Sue pottery), and its equestrian culture as seen in the manufacture of harnesses and horse-shaped pottery, but especially because of its links with the Kofun period of the Japanese archipelago. Huge numbers of funerary tumuli were built in the Kaya region from the 4th to the 5th century CE on the edges and slopes of hills. These were originally developed in same forms as Silla tumuli during the proto-kingdom period of Korea, i.e., circular mounds with a dry-stone burial chamber and a vertical entrance. Construction of stone burial chambers with side entrances began in the 6th century and gave rise to a type of burial site specific to the Kaya region, with the access path to the chamber opening into the short side of a long and spacious dry-stone burial chamber with a vertical entrance. Stone was, however, used exclusively in mountain fortresses and tombs.

A similar context is observed along the Yeongsan River. The community of that region had its own culture but does not appear in the historical chronicles. Nonetheless, it instigated a funerary practice consisting of the deposition of numerous large urns in sizeable burial mounds. Many structural remains, as well as grave goods, indicate strong links with the keyhole *kofun* of Japan. In the 6th century, under the influence of Paekche and the powerful Japanese archipelago, stone burial chambers with side entrances were introduced, but no other stone structures were built. Stone working techniques do not indicate a high level of technical mastery with

respect to cutting or shaping; there was probably no specialized group of craftsmen to carry out stone cutting.

The differences between regions that, during the same period, used stone extensively and those that did not, probably indicates a difference in the degree of penetration of royal authority or the state system and organized religion. It is clear that stone artefacts carried and disseminated powerful symbolic meaning in the ancient society of the Korean Peninsula.

4. Conclusion – The significance of the use of stone in the Korean Peninsula in antiquity

As we have seen in this chapter, stone was used in various ways in the Korean Peninsula during the Three Kingdoms period. To distinguish and classify these uses, five main categories are proposed: a) defensive structures, such as city fortifications and mountain fortresses; b) burials of the powerful in stone tumuli; c) burial areas with vertical or side entrances; d) monuments such as stelae; and e) religious creations such as sculptures and architectural elements linked to temples.

Categories a), b) and d) are stone structures bearing political and social significance. They are examples of the use of stone to visually assert the authority of the powerful. This practice arose from a combination of several factors combining the rock-rich environment of the Korean Peninsula and the context of social competition in the Three Kingdoms period, where several states of similar levels confronted each other. In the history of the peninsula, it was during the Three Kingdoms period that the largest burial mounds were built for the powerful. These tombs were not only imposing but also conveyed social significance and emphasized permanence through the use of durable materials. The shape of the tombs varies from state to state and region to region; this was not simply a race for grandeur but also a form of expression of exclusive identities between neighbouring entities. In this respect, the construction of burial sites using megaliths became an emblem and specific practice of the kingdom of Koguryo (and for a time for Paekche also). From the Unified Silla period onwards, during which the Three Kingdoms were unified, the need to assert the authority of the powerful diminished, and consequently the stone structures that visually embodied power began to disappear.

One of the main purposes of the construction of stone burial chambers of type c) appears to have been to protect the world of the dead by building a permanent tomb for the deceased. The dry-stone burial chambers with side entrances, which spread throughout the Korean Peninsula in the second half of the Three Kingdoms period, ranged from the double burial of a couple to a family burial containing several deceased. This is corroborated by the discovery of pottery used in daily life such as foodstuffs and miniature ovens – among other things – in stone burial chambers. In addition, in the painted chambers of the Three Kingdoms mounds, of which Koguryo is the most important, the conditions in which the deceased lived before his death, the buildings or his personal effects, were painted on the walls. This suggests the deceased was expected to live a life after death that was similar to his worldly existence. The context of the construction of the burial chamber in solid stone, interpreted as a home after death, shows that the grave was not simply a structure for holding human remains, and that it was intended to be as durable as possible.

The backdrop to religious type e) productions from the mid-Three Kingdoms period to the Koryeo period was the spread of Buddhism. Temple buildings and related structures, in particular places of worship and symbols such as pagodas, and objects of worship such as Buddhist statues, incorporate the notion of permanence and sustainability for future worship through the use of stone. At the same time, since one of the functions of Buddhism during this period was the spiritual protection of the state, it is possible that this symbolic aspect was especially necessary and integrated the idea of the sustainability of religion.

Thus, in the various states of the Korean Peninsula in ancient times, various stone-working techniques such as carving and sculpting were developed to meet the different requirements of society at that time. Unlike the period of the first religions, when non-transformed megaliths were worshipped as symbols in prehistoric times, the society of the Korean Peninsula from the Three Kingdoms period onwards experienced an increasing demand for meticulously crafted stone artefacts with specific

forms, to bring together successful political entities, to contend with competing entities, and to unify the thinking of the members of these societies. This brings to a close our summary of the specificities and objectives of the use of stone in ancient state societies.

Translated from Japanese to French
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Laurent NESPOULOUS

From megalithic contexts in the Japanese archipelago, to megalithism as a context: Reflections for consideration, from the first sedentary societies to the first State societies

Abstract: The archaeology of Japan, as it continued to develop after 1945, advanced with a great deal of autonomy from Western or colonial archaeology, and often formulated its own vocabulary and its own research agenda. The question of megalithism did not really come to the fore. It is therefore necessary to seek it in the various material expressions found in the prehistory and protohistory of the archipelago. In addition to historical and epistemological reasons for the absence of a lexical field of megalithism familiar to the European archaeologist, there are also factors related to the chrono-cultural and regional diversity of the archipelago's societies since the beginning of the Holocene. Advances in archaeological research over the last half-century have clearly highlighted phenomena that do not exclusively fit with the chronological context of the Kofun period and its burial chambers and which could legitimately re-launch reflections not only on the nature of megalithism in the archipelago, but perhaps even beyond. Before WWII, the Jōmon period (from the extreme end of the last ice age to the very beginning of the 1st millennium BCE) and Yayoi period (from the 9th-8th centuries BCE to the middle of the 3rd century CE), as well as the Kofun period (middle of the 3rd century to the beginning of the 7th century CE), were still poorly understood from both a cultural and chronological viewpoint. It is clear today, however, that each of these periods, with different temporalities and without automatic links to each other, saw the development of practices – not always clearly associable with the funerary domain – which could prove interesting to examine within the modern 'megalithic question' reading frame. In this respect, the Japanese archipelago constitutes an opportunity to further develop what should be understood by 'megalithism' in the world.

Keywords: *Japan, megalithism, monumentalism, Jōmon period, Yayoi period, Kofun period, neolithisation, hunter-gatherers, formation of the State*

The notions of dolmen, megalith and particularly that of megalithism and the related lexical field, are not very common in Japanese scientific literature. There are several reasons for this, and although it is not our intention to go into detail here, it is nevertheless appropriate to shed some light on this situation. Megalithism in Japan was first mentioned by the British engineer William Gowland (1842-1922) (Harris & Goto 2003; Nespoulous 2003, 2004), after his stays in Japan from 1872 to 1888, in three contributions with unambiguous titles: *Dolmens and burial mounds in Japan, The dolmens of Japan and their builders and The burial mounds and dolmens of the early emperors of Japan* (Gowland 1897, 1899, 1907). Both the term 'dolmen' and the more general question of megalithism in the archipelago were subsequently regularly discussed and sometimes rejected in Europe (Peet 1912: 120-122) and in Japan (Munro 1908: 326-386; Torii 1917a-b). These debates focused mainly on the large stone block tombs dating from the protohistory of the archipelago (what archaeology now designates as the Yayoi period, from the beginning of the 1st millennium BCE to the middle of the 3rd century CE, and the Kofun period, from the middle of the 3rd century to the beginning of the 7th century CE), in a context where the relative chronological setting of these structures was still far from clear.

The terms, as well as the relevance of defining a megalithism of the archipelago, did not gain a foothold or compete with the term *kofun* (literally 'ancient mound'), which was already in use in Japan at that time and still is today. For the Yayoi period, the term *shisekibo* 支石墓, literally 'tomb with supporting stones', which can, in certain contexts, be synonymous with 'dolmen', was barely used. Before WWII, the term 'megalithism' can be found in the scientific publications of archaeologists from the University of Kyōto (Hamada *et al.* 1937), used to refer to some of the *kofun* with literally megalithic blocks (*kyoseki* in Japanese). This usage became insignificant after the war, in the work of researchers such as Kobayashi Yukio (1961), who studied and truly gave substance to the archaeological period known as the *kofun*. The same applies to the funerary archaeology of the Yayoi period with, for example, the systematic work of Kondō Yoshirō (1977) on stone-faced mounds, the *funkyūbo* (literally, 'tumulus tombs'), a term proposed to distinguish them from *kofun*, which appeared later in southern Kinai (in Japan, Kinki refers to the Kansai region and Kinai refers, in the same region, to the territories of Nara, Ōsaka, Kyōto and Kōbe). As for the prehistory of the archipelago, i.e., that of the societies of the Jōmon period, the question of its stone structures became an important topic in the 1960s, especially for heritage conservation. The term *kanjōresseki*, which had been used since the end of the 19th century in Japan, was still in use at that time, as an adaptation of the term *cromlech* used in Western archaeology.

The archaeology of Japan (Mizoguchi 2013; Kaner & Steinhaus 2016), as it continued to be constructed after 1945, developed with a great deal of autonomy from Western or colonial archaeologies, and often formulated its own vocabulary and its own questions. In addition to the historical and epistemological reasons for the relative absence of a lexical field of megalithism familiar to the European archaeologist, there are also factors related to the chrono-cultural and regional diversity of the societies of the archipelago since the beginning of the Holocene (cf. periodization of archaeology in Japan). Advances in archaeological research over the last half-century have clearly highlighted phenomena that do not only fit exclusively into the chronological context of the Kofun period, and which could legitimately re-launch reflections not only on the nature of megalithism in the archipelago, but perhaps even beyond. Before the WWII, the Jōmon period (from the extreme end of the last ice age to the very beginning of the 1st millennium BCE) and Yayoi period (from the 10th-8th centuries BCE to the middle of the 3rd century CE), as well as the Kofun period, were still poorly understood from both cultural and chronological perspectives. The very terms of their periodization still varied widely from one author to another (Nespoulous 2004). It is clear today that each of these periods, with different temporalities and with no automatic links to each other, saw the development of practices – not always clearly associable with the funerary domain – which could prove interesting to cross-examine within the modern 'megalithic question' reading frame. In this respect, the Japanese archipelago constitutes an opportunity to further develop what should be understood by 'megalithism' in the world.

1. Megalithism among sedentary hunter-gatherers: the Jōmon period

From the end of the 19th century to the 1910s, certain archaeologists advanced arguments minimizing the place of megalithism in Japan, namely the absence of 'true dolmens', the prevalence of earthen rather than stone tumuli, and the rarity of tombs using literally, 'megalithic' material (Peet 1912; Torii 1917b). Therefore, the idea of megalithism will not be reinstated in Japan by drawing on the Jōmon period. The same is true, moreover, if we consult more recent literature (since the 2000s) on 'megalithic societies' and proposing models of definition (Testart 2005, 2012; Gallay 2006). These societies, indeed, are often associated with agrarian societies and formation of inequalities among them: what Testart describes as 'World II societies' (with the latter's ostentatious wealth and expenditure).

1.1 A complex organization, without a 'complex society'

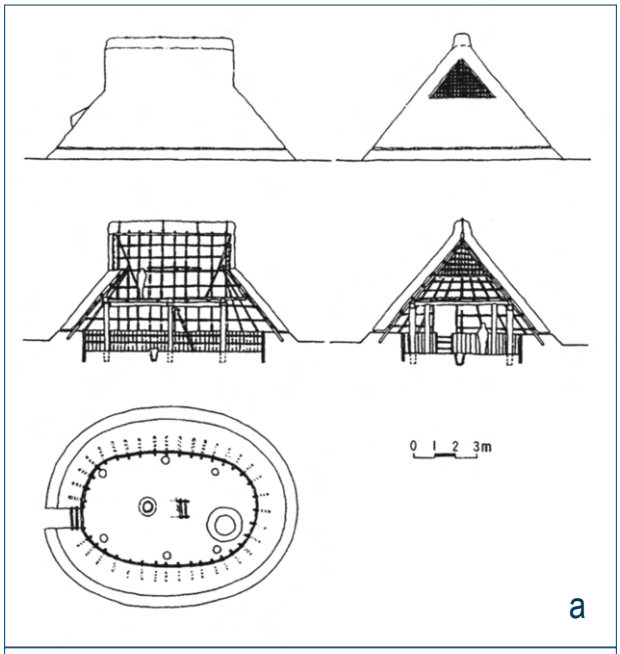
In seeking to understand societies and their evolution, Testart (2005: 18-21) warns against an searching obsessively for characteristics underpinning their complexity (as opposed to their 'simplicity'). This notion of complexity, which leads straight to that of a complex society, can easily lead to an archaeology focusing on elites and elite phenomena in order to outline, precisely, the formation of 'complex societies', capable of the mobilization required for certain achievements, particularly in terms of monumentalism.

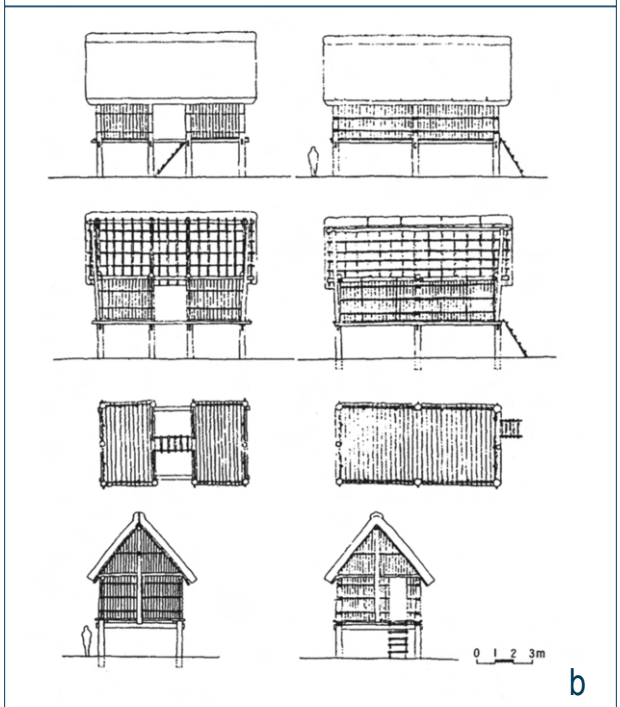
Over the 10 000 years or more of the Jōmon period, (which began with the appearance of pottery in around 13 000 BCE and ended with the formation of the first agrarian societies at the beginning of the 1st millennium BCE), the societies of the archipelago naturally underwent transformations. These are well illustrated by the six major phases of the period as defined by current Japanese archaeology (Kosugi *et al.* 2007-2010, 11 vols., vol. 9 for death and burial; Nespoulous 2007, 2010, 2013). At least some of the pottery societies of the late Tardiglacial period of the archipelago seem to have been spatially immobile at a very early stage, without ever converting to an agropastoral economic system (**Fig. 1**).

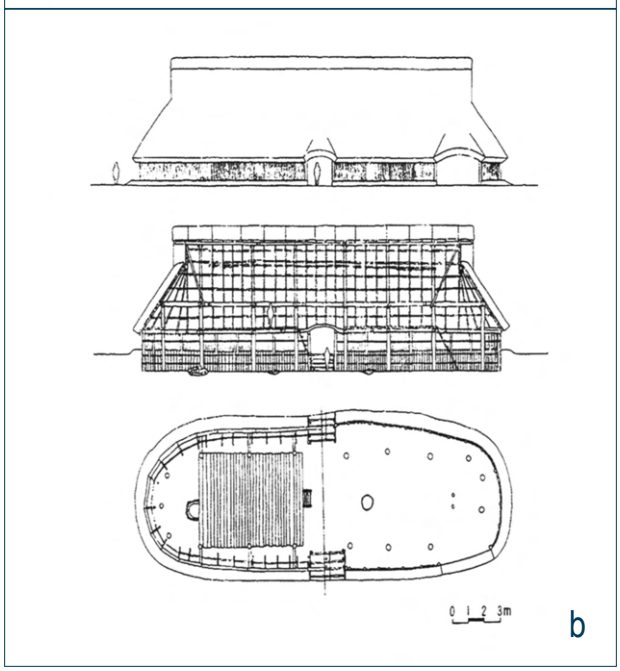
Phases of the Jōmon	Date
Initial Jōmon (*sōsōki*)	from -13000 to -9500
Archaic Jōmon (*sōki*)	from -9500 to -5000
Early Jōmon (*zenki*)	from -5000 to -3500
Middle Jōmon (*chūki*)	from -3500 to -2400
Late Jōmon (*kōki*)	from -2400 to -1200
Final Jōmon (*banki*)	from -1200 to the middle of the 1st millennium BCE depending on the region

Fig. 1 – Chronology of the Jōmon period.

This immobility has long been clearly documented by studies of shell heaps, *kaizuka*, which reflect the activity of the human groups who produced them throughout the annual cycle (Sugihara & Serizawa 1957; Teshigawara 2003). The occupants of the archipelago were hunter-gatherers with pottery even before becoming sedentary, and from an early stage they formed grouped habitats of half-buried houses. These societies developed in very rich ecological niches in the forests (with acorns, horse chestnuts and chestnuts), in contact with an equally rich fishing environment, particularly in regions with a warm and humid temperate climate in the east and northeast of the archipelago (Yoshikawa 1998). In these regions, in the early (5000-3500 BCE) and middle (3500-2400 BCE) phases of the Jōmon period, clustered settlements, such as that at San.nai Maruyama (Aomori Prefecture) (Kokuritsu rekishi minzoku hakubutsukan 2001) (**Fig. 2**), could comprise several hundred active buildings, some of which were particularly imposing in terms of size. The settlement, as perceived for the early Jōmon period onwards, was no longer always merely a grouping of dwellings and domestic activities. San.nai Maruyama is organized into groups of dwellings surrounding a central 'square'. The area includes 'domestic' and collective storage facilities (buried silos), located at the outer edge of the 'village'. Alongside the domestic area (consisting of half-buried houses), a number of imposing buildings, with a collective use and mixed functionality, were constructed in the central part of this settlement in the Early Jōmon period, including a place of storage and a structure







dedicated to the 'production' of domestic goods (basketry, lacquer work, and 'processing' of chestnuts and acorns). Finally, a funerary space, in which it is very difficult to perceive any elite tendencies, was active during the several hundred years of activity at the site, and was clearly integrated into the living space, being organized and distributed along the access roads leading to the heart of the 'village'.

The operative mode of Jōmon societies (the optimization of predatory strategies on the environment and the economy of resource processing), as much as their 'architectural' achievements, clearly reveal a high level of organization. Yet, few signs are visible of a social stratification that we might traditionally be tempted to associate with this level of achievement. Most of the constructions, moreover, are made of vegetal matter and earth.

1.2 Megalithism and the erasure of perceptible social structures

The appearance of structures made of stones arranged on the ground or erected in a circle in the late Jōmon period (from 2400-1200 BCE) is therefore very notable. These stone circles, *kanjōresseki* 環状列石, such as the emblematic Komakino (Aomori Prefecture, Aomori) (Kodama Daisei 2006) (cf. above Kikuchi, this volume, p. 734: Fig. 2) or Ōyu (Akita Prefecture, Kazuno) (Bunkazai Hogo Iinkai 1953) (Fig. 3), are erected on high plateaux and composed of thousands of large pebbles, the heaviest of which required no more than two individuals to transport them, generally over short distances, from a nearby stream. Here, then, there is neither gigantic monumentalism nor 'mega'-lithism, but a significant mobilization of a community to build a structure with an extensive footprint. At Ōyu, the ground structures form two circles, one of more than 40 m (Manza circle) and the other of more than 50 m

Fig. 2 – San.nai Maruyama, a grouped settlement of hunter-gatherers: a. Reconstruction of a large half-buried 'house'. The settlement includes a number of dwellings and buildings with dimensions indicating a strong collective aspect to their use; b. Reconstruction of a 'pile dwelling' in hard materials; c. The most imposing type of building at San.nai Maruyama is this 'long house' with traces of communal domestic activity as well as a raised floor on which gathered foodstuffs were stored (acorns, chestnuts etc.) (After Rekishi minzoku hakubutsukan 2001: 24-26).

(Nonakadō circle) in diameter. The interpretation of these areas is still largely problematic, particularly due to the relative scarcity of archaeological material, but their cultic and sometimes funerary nature is unmistakable. These specific areas, marked by stone block structures, are one of the characteristics of the late Jōmon period in the east and northeast of the archipelago as far as Hokkaidō, constructed in an economic context that may have been more difficult than that of previous phases, and which is marked by the decline of large sites such as San.nai Maruyama. This coincided with a period of climatic cooling and pronounced marine regression contrasts with the relative stability and growth experienced by the societies of the archipelago until the beginning of the Middle Jōmon period. This means that these forms of social mobilization occurred at a time when it is even more difficult to determine where the mechanisms of wealth concentration and social stratification would be than in the Early and Middle Jōmon periods. This Jōmon megalithism is therefore very difficult to explain in terms of the linear reasoning of the evolution of societies, their mechanisms of production, growth, and complexification.

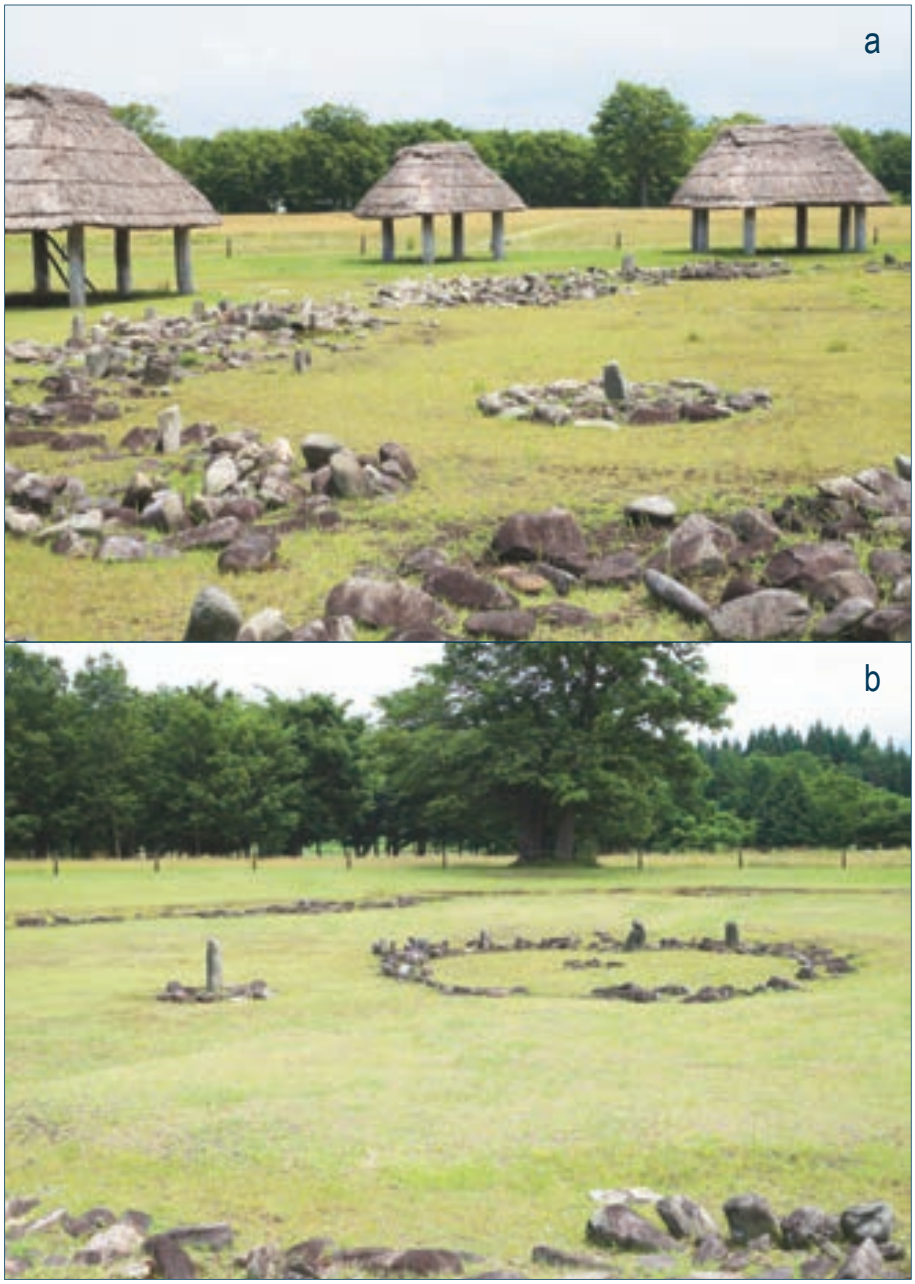


Fig. 3 – Ōyu circles. Above: the circle of Manza; below: the circle of Nonakadō (Photos: L. Nespoulous).

2. From the first agrarian societies to the advent of a first age of chiefs: the Yayoi period

The Yayoi period, from the 10th century BCE to the middle of the 3rd century AD, is marked by the expansion of farming in northeast Asia towards the archipelago. In this sense, in terms of European archaeology, the first centuries (up to the Middle Yayoi) of this period can therefore be described as a stage of 'neolithization', characterized by the establishment of irrigated rice cultivation (**Fig. 4**).

2.1 Dolmens of Korea and Japan: so near and so far

New modes of burial came into being amongst the first agrarian societies of the archipelago, to the north of the western island of Kyūshū, along with the development of agrarian societies on the Korean Peninsula. Some of these are an expression of a megalithism referred to by the pioneers of Japanese archaeology by the term synonymous with 'dolmen': *shisekibo* (cf. above Kikuchi, this volume, p. 737: Fig. 4). These tombs are certainly part of the wider distribution of this type of structure, from north-eastern China to Korea, but in different materials and social contexts. The elite dimension of certain funerary practices in China or the Korean Peninsula, reflected in the dimensions of their dolmens and/or their funerary goods is absent – or at the very least tenuous – among their neighbours in the northwest of Kyūshū. Anthropologically, too, the place of weaponry (especially stone daggers) among the funerary goods of individual Korean burial dolmens is ubiquitous, but relatively discreet in very similar types of dolmens from the same period in the first half of the Yayoi period in northern Kyūshū (Hashiguchi 2007: 4-39; Teramae 2010: 26-51). The builders of these burials clearly did not emphasize the same social attributes as their peninsular neighbours. It is thus difficult to perceive the expression of a particular social group of individuals in the megalithism of the archipelago's early agrarian societies, either forming an elite set, a warrior-type aristocracy, or other faction (Nespoulous 2020). Another important point is that these dolmens were specific to the new societies of the Archaic (10th-8th centuries) and Early Yayoi (8th-5th centuries) periods of northern Kyūshū, and were short-lived once these societies became well established and ubiquitous in the three main islands of Kyūshū, Shikoku, and Honshū (Shitara *et al.* 2008-2011, 9 vol.) in the Middle Yayoi period.

2.2 The formation of the major regions of the archipelago

During the Middle Yayoi period, the chrono-cultural context was conducive to grouped habitats among almost all the societies of the archipelago, and some were very densely clustered together. During this phase, large regional complexes were established and the territorial grid of various sized settlements (several thousand, several hundred, or several dozen occupants), and the circulation between them, allowed for collective, interdependent management of resources (lithics, fishing, pottery, irrigation, infrastructure, etc.) within a given territory (Kanaseki & Sahara 1985-1989, 10 vol.; Nespoulous 2008; Shitara *et al.* 2008-2011, vol. 8). In this latter context, in the west of the archipelago, funerary practices, which varied from one region to another, gradually became polarized around individuals or groups of individuals, although we cannot always detect an ostentatious or elitist phenomenon.

In the cemeteries of the Early Yayoi and the Middle Yayoi periods, we observe the appearance of groups

Phase	Sub-phase	Date
Archaic Yayoi *sōki*	Pre I	from -1000 to -800 (north of Kyūshū)
Early *zenki*	I	from -800 to -400
Middle *chūki*	II to IV	from -400 to 50
Late /final *kōki*	V to VI	from 50 to the middle of the 3rd century

Fig. 4 – Chronology of the Yayoi period (the debate is still open in Japan for the earliest phases).

with tombs containing bronze objects and mirrors from China, as in the case of the alignments of funerary urns at Kyūshū. These usually contain only the deceased and some pottery, but sometimes also a metal object or two, or a glass ornament. Even more rarely, between one and four imported mirrors also accompany the deceased. More exceptional still, a large stone slab is placed on top of a 'richly' furnished urn grave. It is therefore possible to observe a pyramidal progression in the wealth and staging of death, although in the first stage this mainly concerns the specific region of Kyūshū.

From the end of the Early Yayoi to the end of the Middle Yayoi period, a gradual 'polarization' of tombs occurs. This evolution is apparent at sites such as Yoshinogari (Saga Prefecture, Kyūshū), which was active from the beginning of the Early Yayoi until the Late Yayoi period. Tombs are increasingly built around a central group of tombs, or even a single tomb, for example, around earthen mounds, or *funkyūbo*. The wealth of funerary goods seems to follow this 'law of gravity', although apart from in the northern Kyūshū cultural zone, it is difficult to detect a funerary economy with prestige goods.

2.3 The age of chiefs and regional political entities: the Late Yayoi period

The Late Yayoi is a phase marked by a clear rupture with previous practices. New phenomena emerged in a number of regions in the west of the archipelago: the metallization of tools (until then made of wood and stone) through the use of iron, the dispersion of settlements that had been grouped since the Early Yayoi period, the appearance of significant inter-human violence by means of weapons, and the emergence of social elites with an ostentatious character, particularly in the field of funerary practices. In this latter domain, the transition to the Late Yayoi is manifest in the appearance of tombs in earthen mounds of unprecedented dimensions, sometimes containing only one or two occupants. These mounds are referred to as *funkyūbo*, or 'tumulus tombs'. The largest *funkyūbo* found to date are illustrated by the rectangular tomb at Nishitani 3 (**Fig. 5**; cf. above Kikuchi, this volume, p. 740: Fig. 7), a fine example of *yosumi tosshutsugata funkyūbo* 四隅突出型墳丘墓 (*funkyūbo* with four projecting corners) in the territory of Izumo town, and the circular tomb at Tatetsuki in Kurashiki (**Fig. 6**; cf. above Kikuchi, this volume, p. 739: Fig. 6). The rectangular example measures 30 × 40 m with 7 m-long projecting corners; the circular example has a diameter of 38 m and two extensions on either side of the mound, of 16 and 22 m respectively. The height of each mound varies from 4 to 6 m. They both date from the end of the Late Yayoi period. Generally, the dimensions of such mounds are smaller, and their shape is usually square or rectangular with the length of the sides varying from 10 to 20 m and height from 1 to 2 m.

These funerary structures consist of an earthen mound, but they also make use of stone, which is why we include them in a reflection on megalithism in Japan. In the case of Tatetsuki, large blocks are erected around the perimeter of the monument, but the blocks and pebbles used to face, or to 'lithify' the sloping sides of the tumulus are anything but imposing in size. The single term funkyūbo is misleading: there are regional variations. These are not limited to the shape of the tumulus alone, but also concern the shape of the area delimited by ditches, the projections from the tumulus, the stone alignments, the types of grave goods, the burial space, the construction material (wood or stone), all of which create variants reflecting regionalism in the funerary culture of elites (Kondō 1998: 68-73; Nespoulous 2007: 222-231, 2008: 48-60). These burial mounds comprise only two main generic forms (irregularly circular and parallelepipedal), which are relatively stable throughout the last phase of the Yayoi period. One of the pioneers of the archaeology of these burial monuments, Kondō Yoshirō, proposed that at least three or four areas could be distinguished.

1) The Chūgoku-San'in region is define by the presence of the 'four projected corner' type. At the end of the Middle Yayoi period. The first examples of this type emerged in a still 'embryonic' form, with the corners of the mound simply marked by the accentuation of their situation, as at Munesukeikenishi 1, Hiroshima Prefecture (**Fig. 7a**). They extend to the San'in region (west coast of the Sea of Japan between Yamaguchi and Tottori) during the Late Yayoi period. With time, the projecting corners became longer (**Fig. 7b**), and their

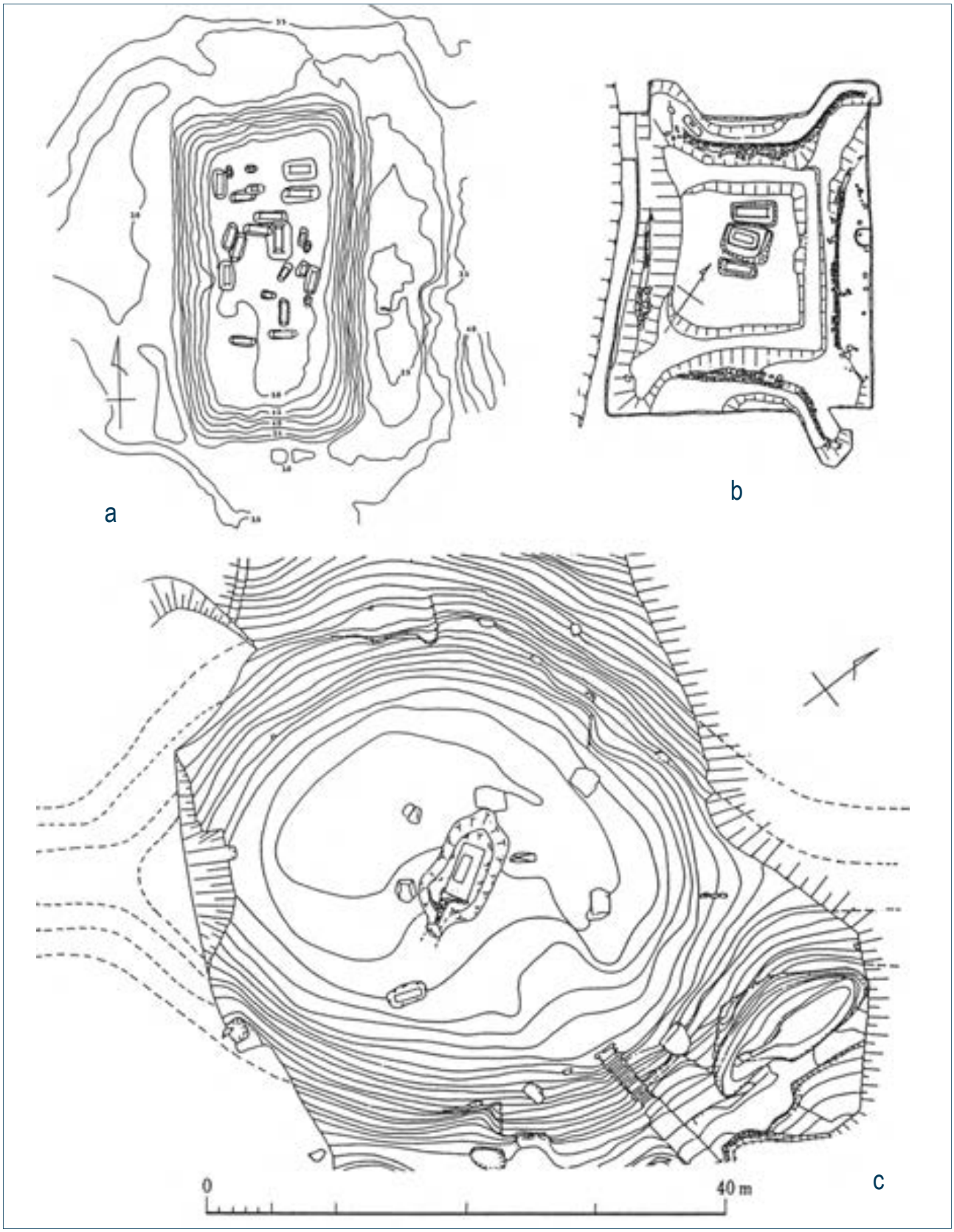


Fig. 5 – The evolution of *funkyūbo* from the Middle Yayoi to the Late Yayoi: a. Kami mound, Ōsaka. About 20 individual graves cluster around a first coffin burial; b. Chūsenji mound (prefecture of Shimane). Around a coffin burial and in a well-tended grave, two other individuals are 'lined up' alongside the deceased, placed in smaller tombs made with the same care; c. Large circular mound of Tatetsuki, Okayama. A grave is placed at the top of the mound and is accompanied by a single grave to the south (After Tsude 1989: 2).

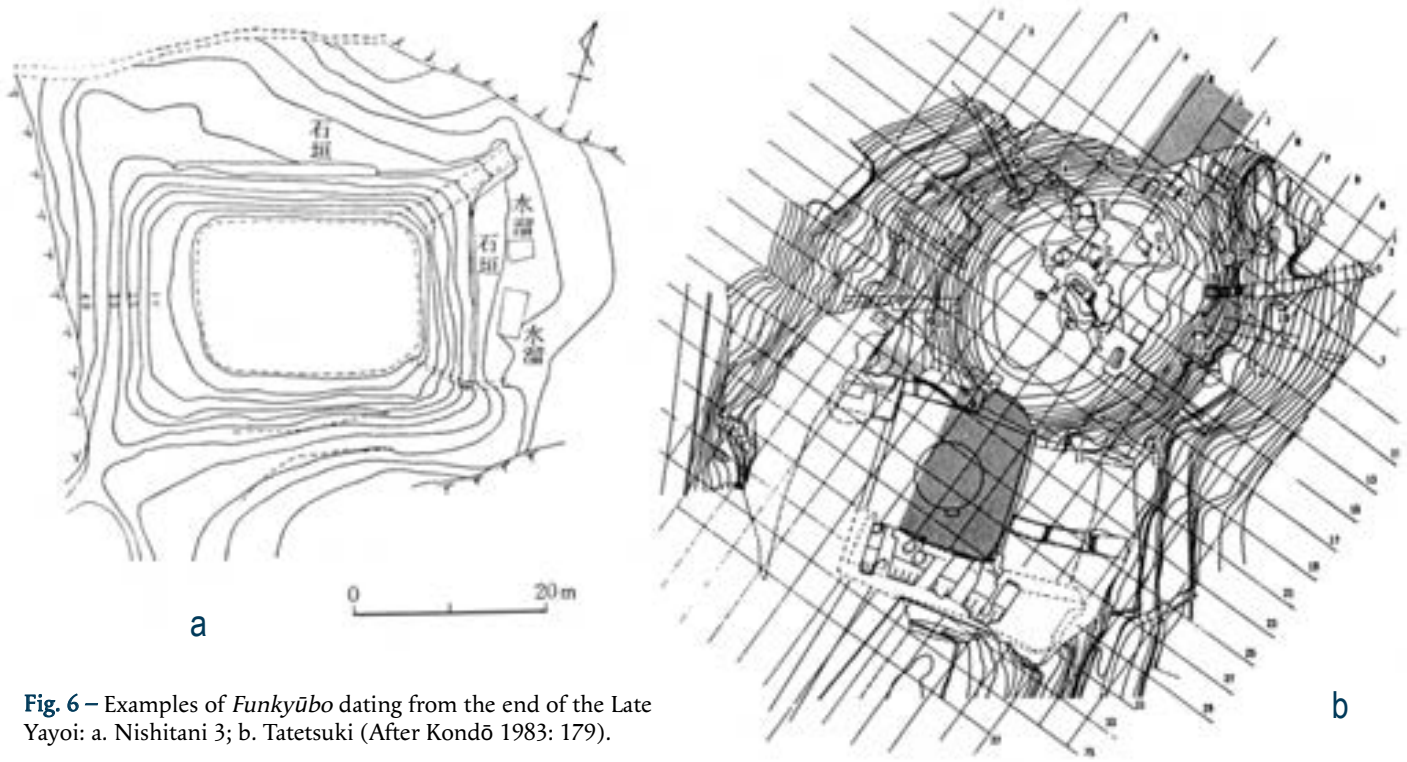


Fig. 6 – Examples of *Funkyūbo* dating from the end of the Late Yayoi: a. Nishitani 3; b. Tatetsuki (After Kondō 1983: 179).

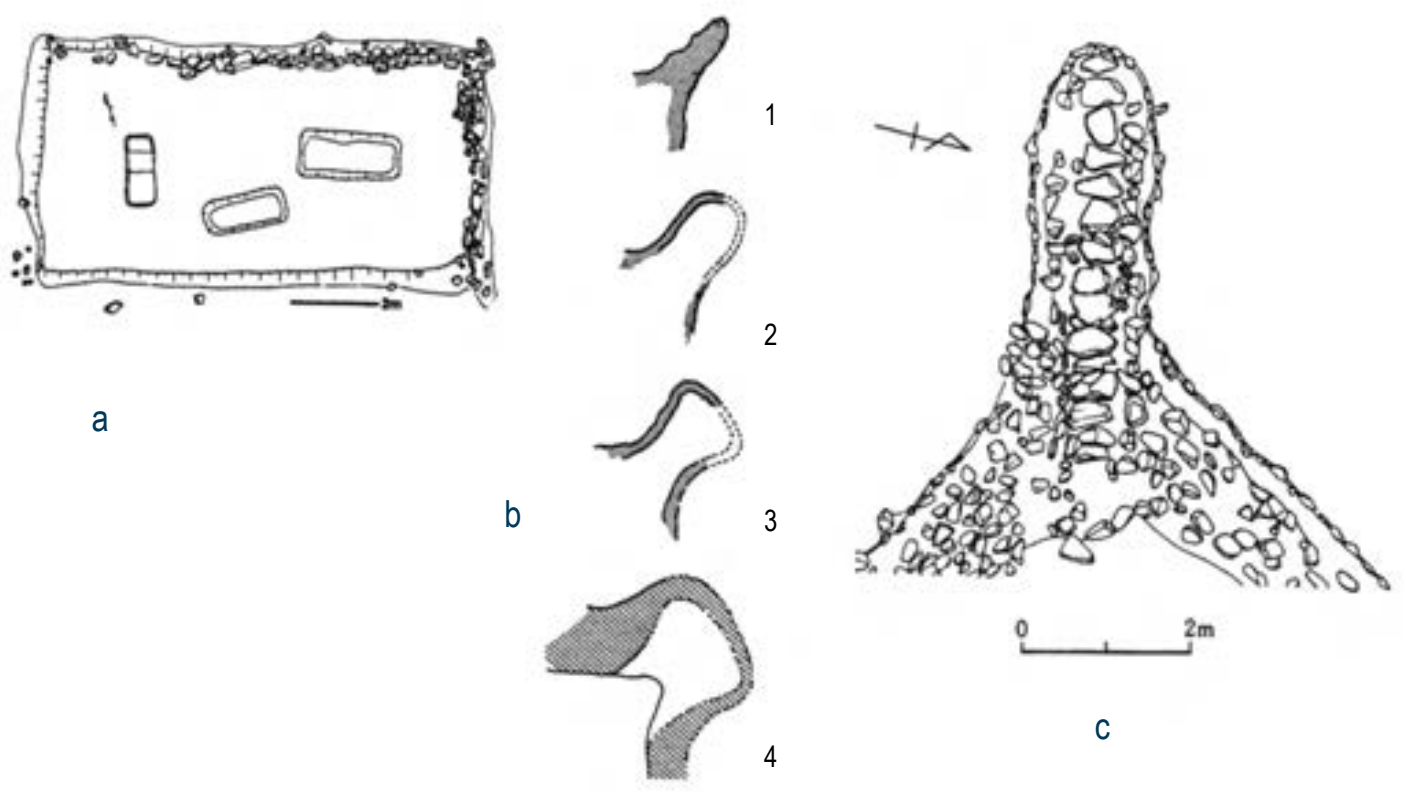


Fig. 7 – Projecting angles and delimitation of the the funkyūbo: a. Munesukeikenishi tumulus; b. Evolution of the angles of the mounds. The shaded parts indicate the presence of facing. 1. Tottori, Ayaōji 1 tumulus; 2. Tottori, Chûsenji tumulus; 3. Tottori, Miyayama tumulus; 4. Toyama, Sugitani 4 tumulus; c. Development of the surface of one of the projections of the Ayaôji 1 mound (After Kondō 1983: 158, 181).

upper surface was gradually organized as a flat paved surface marked by small stones embedded or placed on the surface of the mound (**Fig. 7c**), aligned on the mound or on its perimeter. In the same phase of complexification, the tumulus was increasingly marked on its surface (at the top or on its sloping sides) by 'alignments of stones', or *resseki*, integrated into the facing of the tumulus (Kondō 1983). A ditch was also added, doubling the perimeter. This type of *funkyūbo* is referred to by Kondō Yoshirō, who carried out the first systematic studies of these Late Yayoi burial mounds, as the *Chūgoku-San'ingata* mound (Chūgoku-San'in type) (Kondō 1998: 68).

2) The second major region is less definitively identified due to the scarcity of large tombs, apart from the very large Akasaka Imai Mound (Kyōto Prefecture, Kyō Tango, Mineyama). The region encompasses the northern Hyōgo Prefecture, northern Kyoto Prefecture and western Fukui Prefecture. Here, there are no projecting angles on the tombs but a special feature, the presence of circular mounds with faced slopes, which were built from the late Middle Yayoi period (Kondō 1998: 70). At the very end of the Yayoi period, the Akasaka Imai burial mound (36 m east-west and 39 m north-south with a height of 3.5 m) accommodated nearly 25 burials, some of which were accompanied by prestige goods (e.g., sword, sabre, imported glass beads) (Mineyamachō Kyōiku I.inkai 2004).

3) The third main region in this classification of *funkyūbo* is located to the east of the previous regions in Hokuriku (Fukui, Ishikawa, Toyama, Niigata counties). The mounds here are of the 'projecting angle' type, like the Chugoku-San'in type and are dated to the very end of the Yayoi period. The mounds are quadrangular and rarely faced. Although there is an obvious connection with the San'in tombs, no stone was used. These characteristics make these *Hokurikugata yosumi tosshutsu* (four-cornered Hokuriku-type projection) type *funkyūbo* mounds. The best-known example is Sugitani 4 in Toyama City, measuring 25 × 25 m, 2.5 m high and with projections 10-12 m long. Until the 1974 excavations, this was thought to be a *kofun*, i.e., a mound from the later period, due to the regular contours of the complex (**Fig. 8a**) (Kondō 1998: 70-71).

4) The fourth region faces the Inland Sea and includes the departments of Okayama and Hyōgo. No examples of the 'four projected corner' type are known to date in this area. Here, we present two examples, Yakuyama 5 (**Fig. 8b**), in Hyōgo Prefecture, and Tatetsuki in Okayama Prefecture. For the former, the rectangular tumulus of 13 × 8.5 m is associated with two extensions of rectangular-to-open trapezoidal shape. These are so well integrated into the tumulus that they seem to form an access route to the top of the complex, where the access shaft to the burial is located. The burial is in a stone tomb oriented along the length of the tumulus. The tumulus itself is stone faced on two levels (terraced). The inclined planes are also faced but this does not fully extend to their extremities, which again points to the presence of an access 'ramp' to the top of the tomb. In the case of Tatetsuki, we can add that one of the two extensions (southwest) could clearly be estimated to be 22 m long and 15 m wide at its end. A ditch, 3-5 m wide and about 4 m deep, separating the access to the mound from the surrounding area, was also clearly identified.

At the same time that grouped habitats disappear and elite, fortified burial domains appear, we lose trace of more minor burials, such as those found from the Early Yayoi period both without, and later with, tumulus tombs. The Late Yayoi period is therefore a time when political entities headed by individuals or groups of individuals stand out from the rest of society, primarily in the west of the archipelago. This ostentatious expression of the elites in death is located on the east-west circulation routes (coasts of the Inland Sea, west coasts of the Sea of Japan), towards the Korean Peninsula and the continent, for goods that had become indispensable: prestige goods, of course, but also resources such as iron, the reduction of which was not mastered until several centuries later. The Kinki region (present-day Ōsaka, Kyōto, Nara, etc.), which was to become a driving force in the funerary culture of the elite class from the middle of the 3rd century CE, remained, during the Late Yayoi period, relatively aloof from these showy practices (Fukunaga 1993).

Thus, in addition to the megalithism that emerged at the end of the diffusion of agriculture in the Archaic and Early Yayoi periods, several centuries later – and in a more endogenous way – new practices

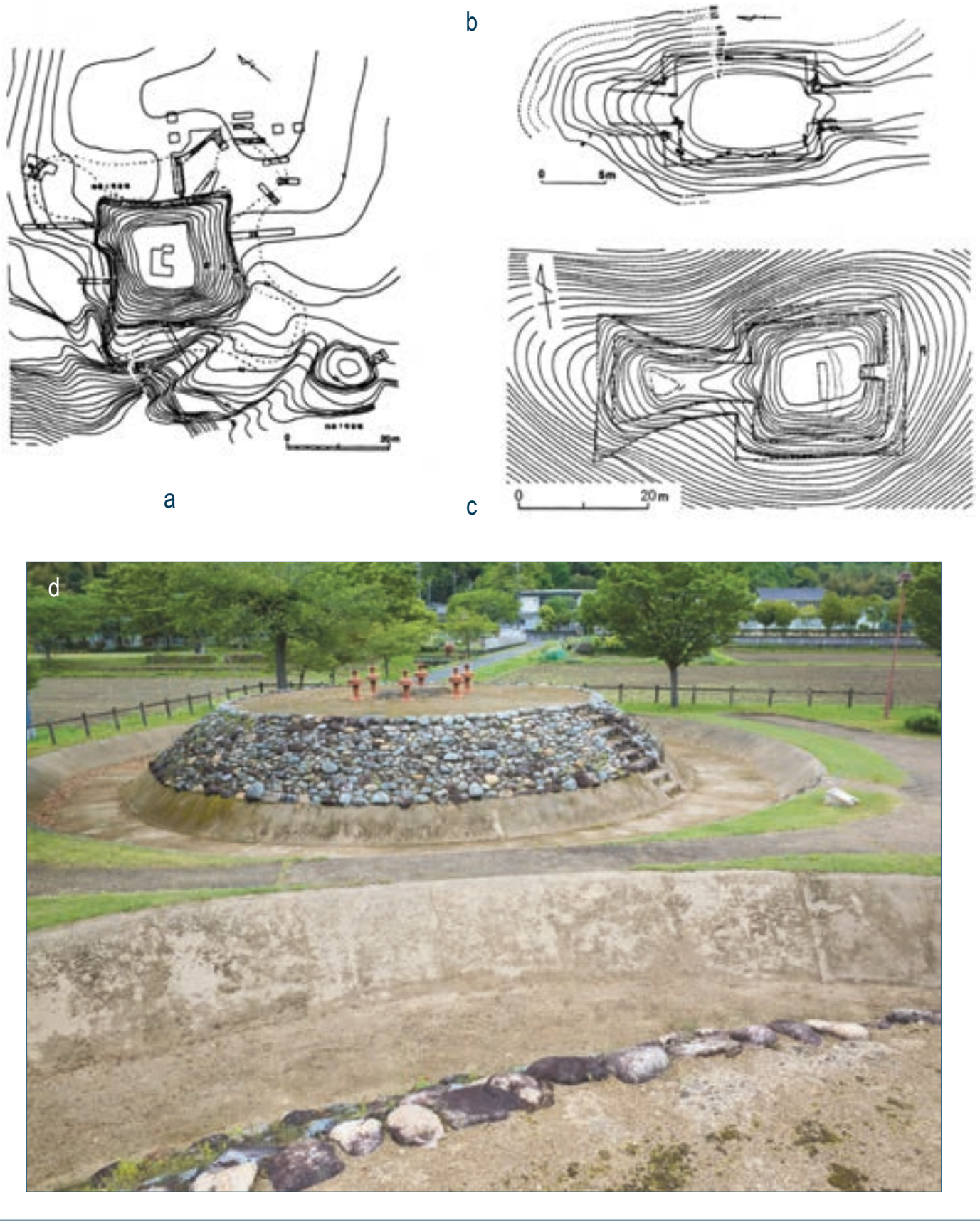


Fig. 8 – Resemblances between *funkyūbo* and *kofun*: a. Sugitani 4 and its quadrangular tumulus; b. Yakuyama 5 and its two extensions; c. In comparison, the *kofun* of Yuba kurumazuka (Kondō 1998: 72) [Photograph: on-site reconstruction of the tumuli of the Unehara Tanaka necropolis (prefecture of Hyōgo); photo: L. Nespoulous].

involving and associating stone and the emergence of social elites thus arose. These developed at the same time as the emergence of burial practices in the top of mounds. The Yayoi period must therefore be approached in terms of two very distinct temporalities that are urelated in terms of megalithism.

3. The age of princes, or the success of a programme of chiefs: the Kofun period

During the most recent phase of the Yayoi period, we can observe the formation of regional elites and their respective identities. This mechanism is also seen in the context of the Korean Peninsula, where it led to the formation of what history refers to as the period of the Three Kingdoms (Koguryo, Paekche and Sylla kingdoms). In the 3rd century, the peninsula was composed of political entities with clearly distinct identities.

In the archipelago, elites grew stronger and more complex as in the peninsula but the Kofun period, the period of 'old mounds', from the mid-3rd to the early 7th century (Ishino *et al.* 1990-1993, 13 vol.; Ichinose *et al.* 2011-2014, 10 vol.), ushered in a period during which, unlike in Korea, the material culture of the elites became uniform with its epicentre in the Kinki region, which had remained somewhat discreet until then. Geographically, the Kofun period saw the presence of socially active elite individuals from Kyūshū in the west to the southern regions of northeastern Honshū (the Fukushima region, for example), with the construction of tumulus tombs of unprecedented dimensions. This is not to deny that regional particularities existed, or were emerging, but the building of *kofun*, according to specific forms and practices, rapidly became a trans-insular phenomenon (**Fig. 9**).

3.1 Establishment and dissemination of a model for organizing society

It is still difficult to define the circumstances that led to the genesis of the first *kofun* but the first of these gigantic several hundred metre-long burial mounds was built in the southern part of the present-day city of Nara. The *kofun* of Hashihaka is regularly cited as the oldest of its kind. The typology of *kofun* was well-established from the beginning of the period: keyhole (*zenpōkōenfun* or *zenpōkōhōfun*), circular, or quadrangular (Tsude 1992) (**Fig. 10**). This typology seems to correspond, in each region, to a hierarchical organization that placed the 'keyhole' mounds – or the 'champagne cork' mounds as we would say in the east of France – at the top of the social pyramid, below which the intermediate and lower echelons of the elites were organized. In the region where the phenomenon originated, without being able to fully demonstrate the mechanisms of its genesis we can see that the first large tombs presented, in a condensed way, most of the elements specific to the mounds of the regions of the Inland Sea and the Sea of Japan in the Late Yayoi period: a high earthen mound, use of stone (pebbles) on and around the tumulus, deposits of terracotta cylinders on and around the tumulus (the *haniwa*), the shape of which recalls the ritual crockery placed on the mounds of the Inland Sea. All these elements must have resonated from the beginning with the previous funerary practices of the neighbouring regions of Kinki. In addition to the trend towards gigantic tombs, these funerary practices also embraced new grave goods, notably bronze mirrors from the Wei dynasty. The Kinki elites seem to have had a monopoly over these mirrors until the end of the 4th century (Fukunaga 2005) (**Fig. 11**), and their redistribution makes it possible to plot trade networks radiating out from the Kinai. The mirrors eventually ran out, but in the 5th century the same

Fig. 9 – Chronology of the Kofun period.

Phases of the Kofun period	Date
Early phase *zenki*	3rd century – end of 4th century
Middle phase *chūki*	5th century
Recent phase *kōki*	6th century – beginning 7th century

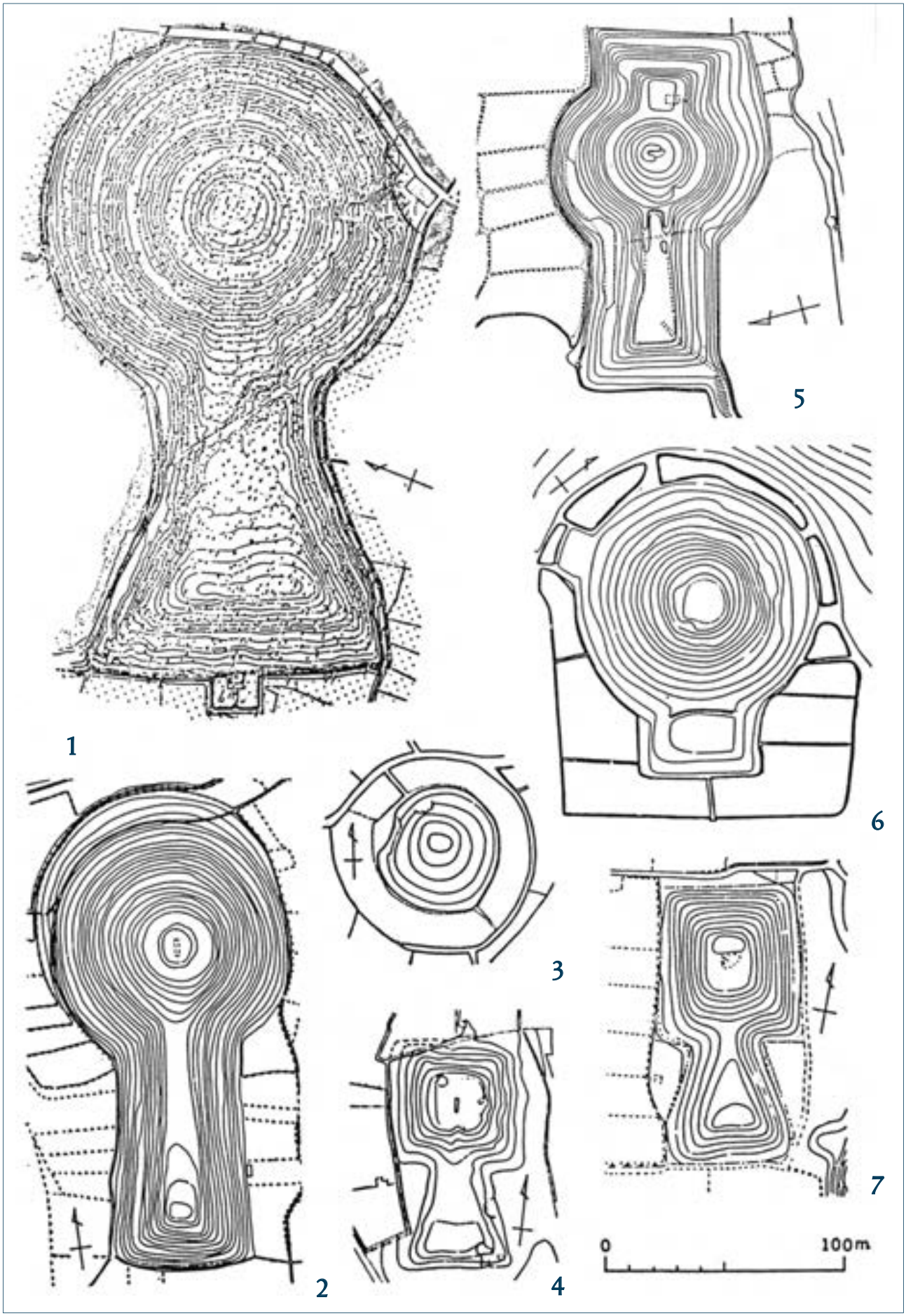


Fig. 10 – The different types of *kofun.* Zenpōkōenfun (quadrangular front and circular rear): 1. Nara, Hashihaka *kofun*; 2. Nara, Chausuyama *kofun*; 3. Ōsaka, Ōtsuka *kofun*; Hotategaishiki *kofun* (scallop-shaped); 4. Kyōto, Motoinari *kofun*; 5. Nara, Kushiyama *kofun*; 6. Nara, Otomeyama *kofun*; Sōenpun (in concentric circles); 7. Ibaragi, Kamizamuraizuka *kofun*; Hōfun (quadrangular) (After Ishino 1990-1993, 7: 18-19).

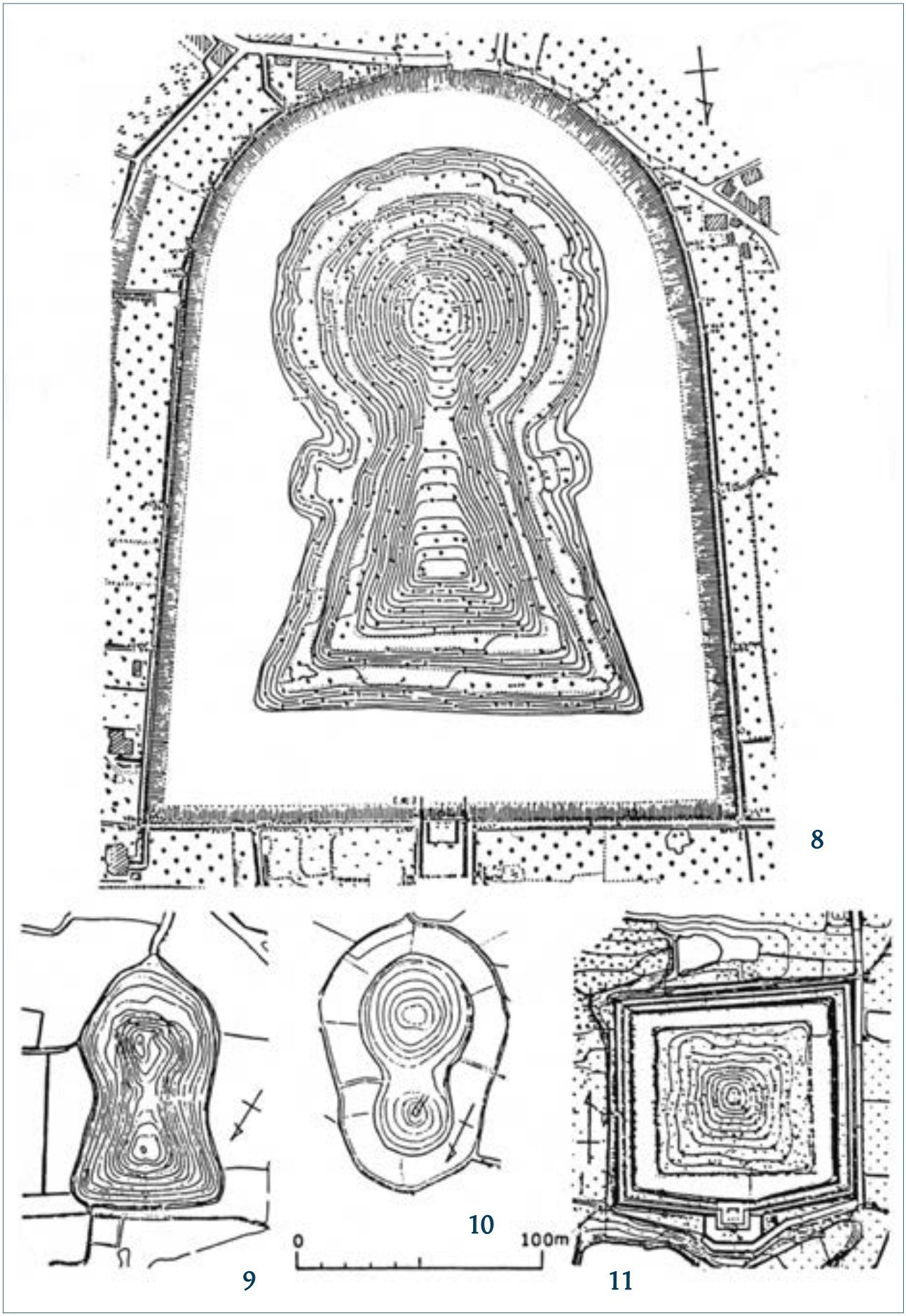


Fig. 10 (suite) – The different types of *kofun*. Zenpōkōenfun (quadrangular front and circular rear): 7. Ibaragi, Kamizamuraizuka *kofun*; Hōfun (quadrangular); 8. Ōsaka, Inkyōryō *kofun* (classified as an imperial tomb); 9. Gunma, Kannonyama *kofun*; Zenpōkōhōfun (quadrangular front and rear); 10. Ōsaka, Kaneyama *kofun*; Sōhōchūenfun (circular with quadrangular extensions); 11. Ōsaka, Yōmeiryō *kofun* (classified as an imperial tomb); Enpun (circular) (After Ishino 1990-1993, 7: 18-19).

elites replaced them with other goods, especially those made of iron such as armour, weapons, iron farming tools, and the first Sue stoneware pottery.

The elites of the archipelago and the societies on which they relied were quick to integrate these new practices at the initiative of the powerful Kinki. Both the tombs and the material culture of the period show that this ensured a supply of prestige goods and techniques controlled by the Kinki elites. During the Kofun period, the Korean Peninsula and the mainland seem to have become endless reservoirs of resources and precious goods for the populations of the archipelago. In addition, regular population movements, especially in relation to the context of wars between the Korean kingdoms (Matsugi 2007; Nespoulous 2020), placed the occupants of the Kinki princely tombs in the position of main beneficiaries and managers of the technologies that these populations carried with them to archipelago.

Due to the intensity with which the societies of the archipelago engaged in the construction of these monumental tombs, we cannot reduce *kofun* solely to the funerary domain, although the period is still largely known through the study of its tombs. Each region of the archipelago built its *kofun*, reproducing the hierarchical order implied by their typology. Thousands of *kofun* were built in this way, to the point that they became a vital element in shaping the landscape, just as omnipresent and palpable as the rice fields and their irrigation systems.

3.2 Megalithism in all this?

In our opinion, megalithism is fundamental here. In fact, it is synonymous with *kofun*. Although the three phases of the period are relatively brief, they encompass a certain diversity of temporalities in the development of these funerary practices. During the 3rd, 4th and 5th centuries or our era, very large quantities of stones – usually millions of large pebbles – were used by the societies of the archipelago. Tumuli were initially built on natural elevations so they could be seen. From the 5th century onwards they were built at lower positions on the plain. The Hashihaka tumulus, a well-known tomb in the Nara district and considered since the end of the 1960s to be the oldest of the *kofun*, measures 280 m in total length. The circular part of its tumulus reaches 150 m in diameter and 30 m in height, while its quadrangular plectrum-shaped part is 120 m long and 16 m high. The tomb has been classified as an imperial mausoleum since the end of the Edo period and no excavations have been carried out. Another well-known *kofun*, also beyond the reach of archaeology for the same reasons, is that of Daisenryō, located in the city of Sakai, in the burial mound necropolis of Mōzu Furuichi (Chikatsu Asuka Hakubutsukan 2011), not far from Ōsaka and recently classified as a World Heritage Site. Daisenryō dates to the 5th century and is the largest *kofun* ever built, measuring 840 m long and 654 m wide, including ditches, with a three-tiered tumulus. The circular part of the tumulus exceeds 250 m in diameter and approaches 40 m in height, and the quadrangular part measures nearly 250 m by 350 m with a similar height. Monuments such as Hashihaka or Daisenryō would have required years of work to build. In this type of *kofun*, the burial chambers, built in the highest part of the mound, are made of dry stone (**Fig. 12**). After the end of the 5th century, these chambers were replaced by areas made of blocks, this time literally megalithic and which, with the addition of a corridor, allowed easier access to the sepulchral chamber (**Fig. 13**). This change in the structure of the burial chamber also changed the process of building the tumulus, in that the chamber was no longer built directly in the top part of the *kofun*, but instead intersected it laterally. These transformations gave rise to new acts, such as the closing and reopening of the burial chamber, and the deposit of new graves. The latter was not systematic, but is attested in a significant number of *kofun*, including, among the most recent, that of Emperor Tenmu (deceased in 686 CE), which also housed the burial of his wife, Jitō (deceased in 702 CE). These chambers and corridors, and especially the apse and the roof, are built with massive blocks, even in the case of the smallest burial mounds. The most extreme cases, such as the Ishibutai *kofun* at Askuka, Nara Prefecture, can present, in a 'modest' quadrangular tumulus of 55 m on each side, a particularly imposing chamber made of some 30 blocks, the heaviest of which weighs 77 tons (cf. above Kikuchi, this volume, p. 742: Fig. 10). The interior space is 7.7 m long, 3.5 m wide and 4.7 m high. This change in the type of burial chamber echoes similar

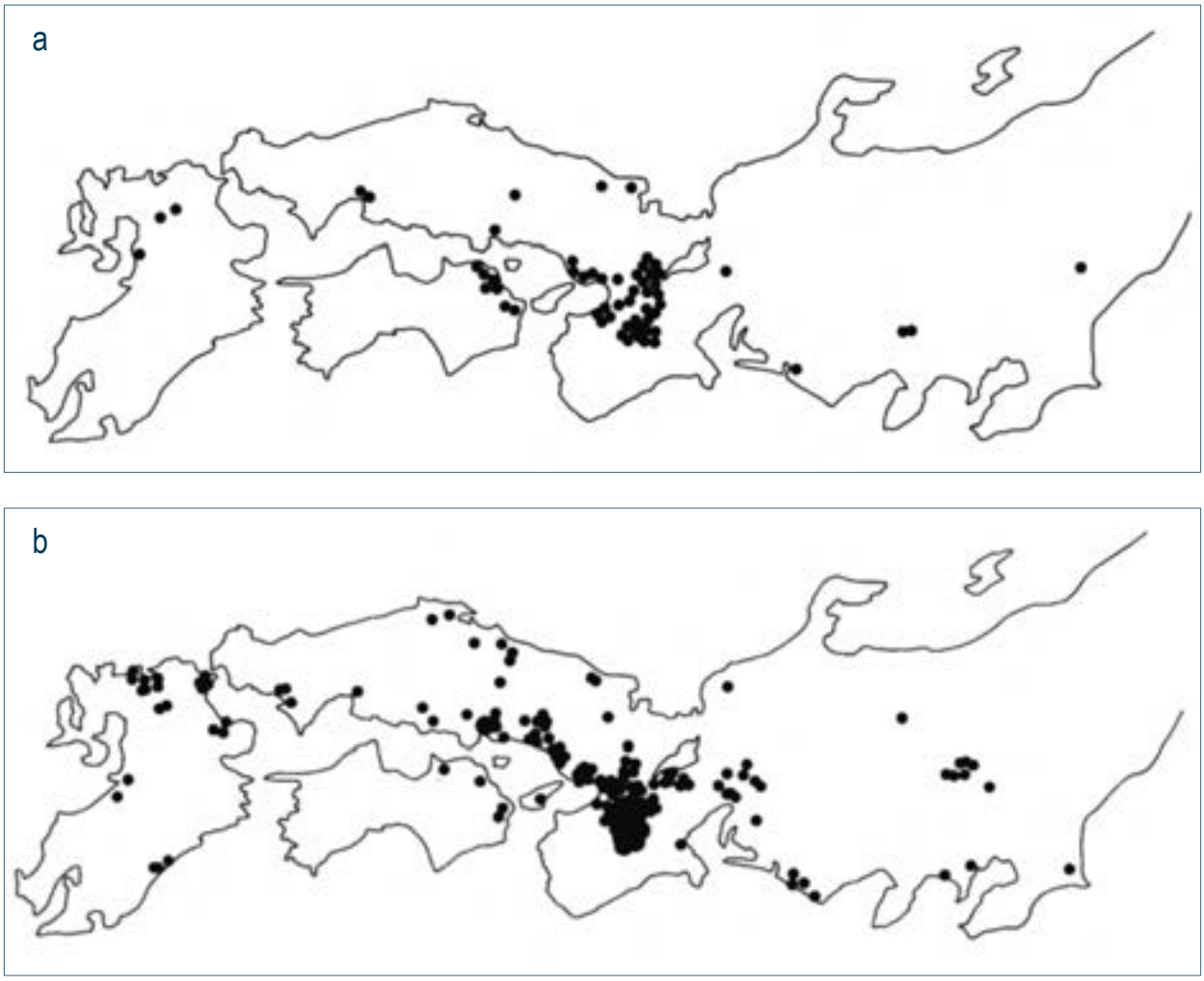


Fig. 11 – The economy of 'Chinese' mirrors in funerary contexts at the beginning of the Kofun period: a. Distribution of mirrors with animal motifs (*gamontai shinjū-kyō*) from the very end of the Yayoi period; b. Mirror with animal motifs and divinities with triangular edges (*sankakubuchi shinjū-kyō*); c. Distribution of mirrors with animal motifs and divinities with triangular edges (After Fukunaga 2001).

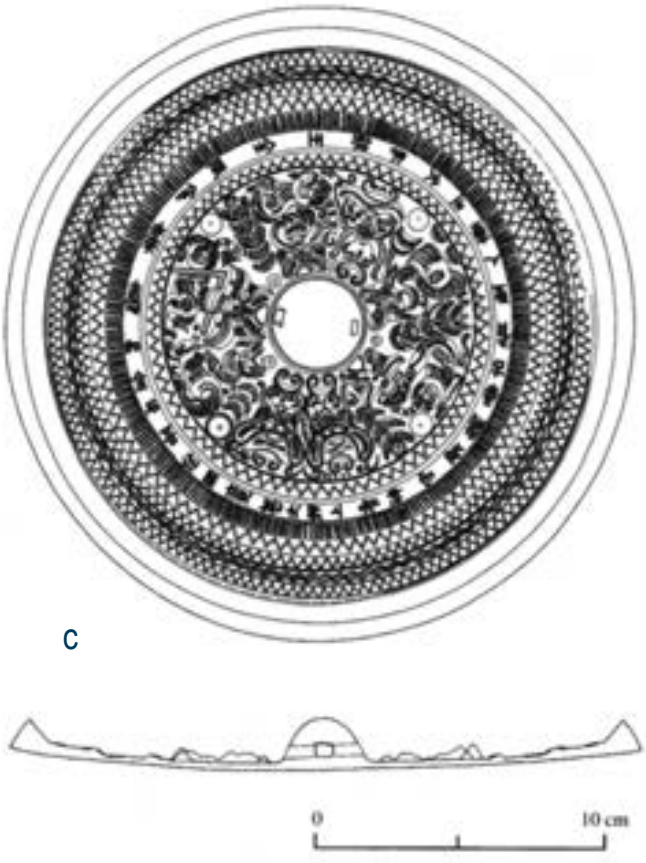


Fig. 12 – *Kofun* in Yukinoyama (prefecture of Shiga), dated to the first half of the 4th century. The 70 m-long tumulus is built at the top of a hill at an altitude of 300 m. Two graves are placed in the upper part of the tumulus, one within a funerary chamber that is 6.10 m long and 1.60 m deep (After Fukunaga & Sugii 1996).

Fig. 13 – *Kofun* in Ezoana (prefecture of Fukushima) dated to the first half of the 7th century, comprising a circular tumulus of 35 m diameter. In its original state, a distance of about 10 m separated the entrance from the apse stone (Photos: L. Nespoulous).

practices in the Korean Peninsula. It was during this last phase of the Kofun period that the vast majority of all the tumulus tombs in the archipelago were built, and when we can see how widely the system invented by the Kinki elites in the middle of the 3rd century had ultimately spread.

The 6th and 7th centuries saw a radical reduction in the size of tumuli, and almost no keyhole mounds reached the level of gigantism of previous phases. It is not that society devoted less energy to the construction of these tombs, but the multiplication of sites and the strong diffusion of these practices to social levels lower than those of the early and middle phases inevitably reduced the available resources in terms of mobilization (Nespoulous 2007: 405-420).

The highest elites still had tumuli built, but they became increasingly 'modest'. A good example of this, much better preserved than the Ishibutai *kofun*, is the Bakuya *kofun* (Bakuya-*kofun* 牧野古墳), a circular mound measuring 55 m in diameter and 13 m in height, which has a very imposing burial chamber with a total length, including the corridor, of 17 m. The chamber is 6.7 m long by 3.3 m wide by 4.5 m high and the corridor is 10.2 m long by 1.8 m wide by 2 m high (**Fig. 14**). One large sarcophagus fashioned from volcanic tuff was placed at the end, and a second, destroyed by looters, was placed in front of it. What makes this burial chamber particularly interesting in our opinion, is precisely the placement and status of stone. Not only is the

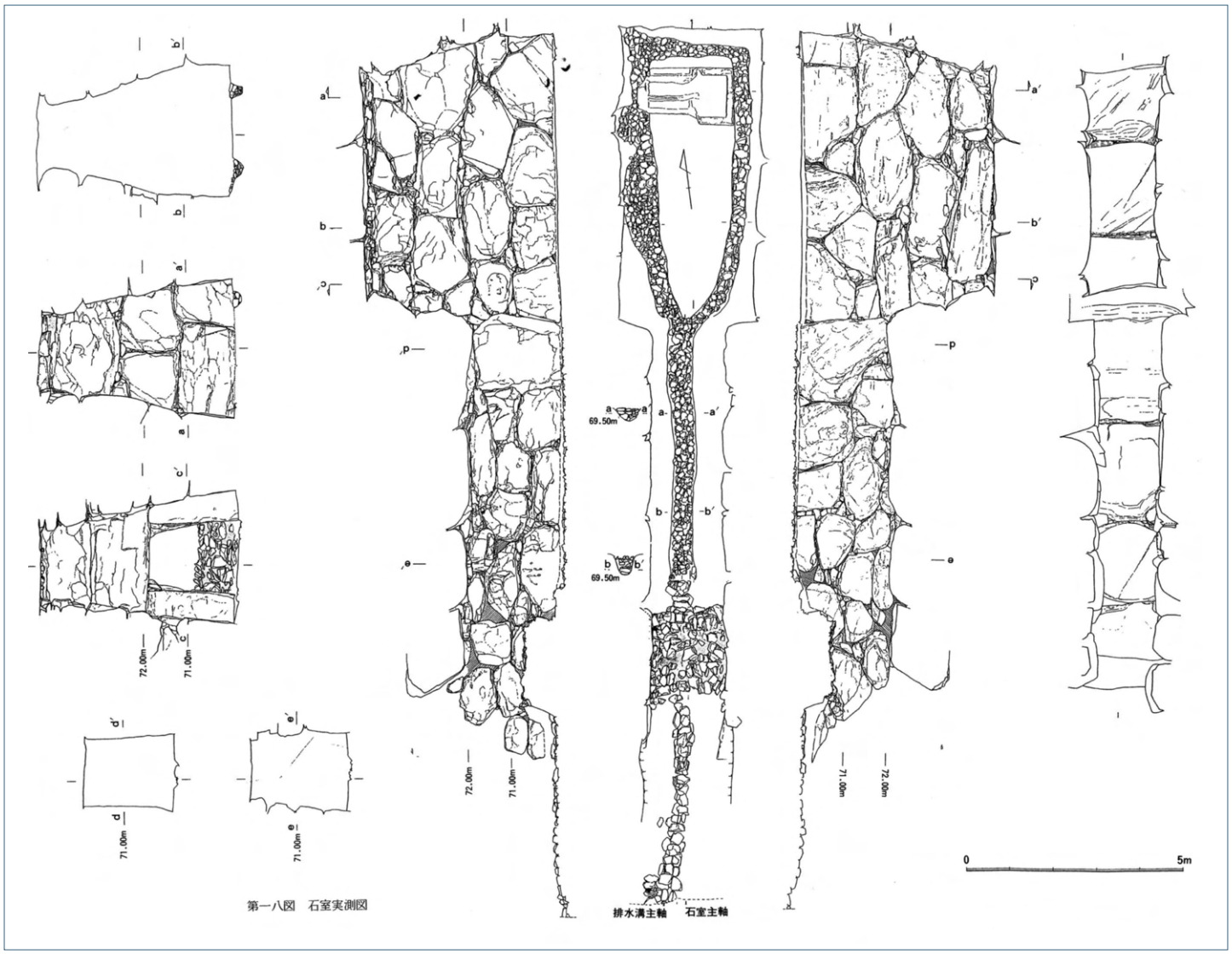


Fig. 14 – Funerary chamber with a corridor in the Bakuya *kofun* (Nara) (After Nara-kenritsu Kashiwara kōkogaku kenkyūjo 2005).

chamber large, but the blocks used, as in the case of the Ishibutai, are very imposing: the majority of the 90 ovoid blocks chosen are between 1 and 1.5 m long, and one of the largest reaches 3.5 m. Particular care seems to have been taken in the choice of the type of rock: between the floor covering, the wall blocks and the wedging elements, no less than six different types of stone (several types of granite and andesite) were used, which must have produced a visual effect of different colours, ranging from whitish to yellow to black. In terms of the 'richness' of the funerary deposits, there seems to be a decline in intensity during the 6th century. Deposits did not become rare, but there are no excessive examples as in some admittedly rather rare tombs in Kinki in the 5th century, which contain hundreds of metal objects. Bakuya is a late 6th century mound. It is classified as an 'historic site' by the Agency for Culture, and contained a large quantity of pottery, as well as light-weight metallic material (remains of belts, clothing ornaments, pieces of a harness, arrowheads) but the mound was prey to looters at an early date, so it is difficult to assess the extent of the pomp of the original burial deposit (Nara-kenritsu Kashiwara kōkogaku kenkyūjo 2005).

In parallel with the decrease in the size of tumuli, the 6th century saw an increase in the construction of these smaller mounds, often organized in the same way as the mound necropolis, *gunshūfun* in Japanese, in the Kofun period (Shiraishi 2000). This phenomenon is difficult to interpret, but mounds were clearly no longer the only symbols of the ruling elite. These small circular mound tombs, sometimes no more than 2 m in diameter, therefore raise the possibility of the formation of new population layers with access to these burial practices.

The cultural and political success of the system put in place by the elites of the archipelago produced a context synonymous with *kofun*, whereby the latter made systematic use of natural stone, indicating its special status (Chapter 3, Macé & Nespoulous, this volume 1, p. 63). Not all regions applied this model in the same way, sometimes it was for technical reasons, sometimes for reasons much more difficult to define. On the other hand, the diffusion of the model of the princely tomb from Kinki outwards still exerted an influence on societies to conform as much as possible to the 'model'. This was, for example, the case for the *kofun* on the heights above the town of Takamatsu, in Shikoku, such as that of Ishifunezuka (**Fig. 15a**). Dated to the second half of the 4th century and located in an area devoid of earth, this 57 m-long keyhole mound is made entirely of stone. The same is true of Himezuka (**Fig. 15b**), dating from the first half of the 4th century, with a 43 m-long mound. Closer to the epicentre of Kinki, the *kofun* of Nagaoyama, with its 41 m mound, meets all the criteria of a keyhole mound, with its stone facing and *haniwa* (**Fig. 16**), but the coffin of the deceased was deposited not in a dry-stone burial chamber but in a clay case (Fukunaga 2010). Much further afield, at the end of the 4th century, in present-day Fukushima Prefecture, near the town of Aizu-Wakamatsu, the *kofun* of Ōtsukayama (**Fig. 17**) and its more than 110 m-long keyhole mound does not appear to have had a stone facing even though the funerary goods included a Wei Dynasty mirror, connecting it directly to a network oriented towards the Kinki. Here, the total absence of stones in the construction of the monument would seem to exclude it from a reflection on megalithism, and yet we cannot deny that this tomb is fully part of the *kofun* context and thus of megalithism in the Kofun period, in the same way as the variants made entirely of stones from Shikoku. It is a product of this megalithism, even though no stones are used. The strength of integration of the princely tomb model in Kofun period Japan, and the type of society that went with it, were certainly due to the centrality of the influence of power installed in the Kinki region, but also undoubtedly to a certain adaptive flexibility.

4. Conclusion: megalithism or not?

Before reviewing the societies that practised megalithism in Japan, we must address the thorny question of what we accept as the expression of this phenomenon. At the risk of sounding minimalist, it does not seem satisfactory to us, as is generally the case when we approach the question in Japan, to settle for a 'literal' perception: megalithic = large blocks of natural stone used and therefore also, often, monumentalism. If we make this choice, then only the slab tombs of northern Kyūshū from the first half of the Yayoi period, and the corridor burial chambers from the last third of the Kofun period

Fig. 15 – *Kofun*: a. Ishifunezuka; and below: Himezuka, 4th century tumulus, department of Kagawa, Shikoku (Photos: L. Nespoulous).

Fig. 16 – Nagaoyama *kofun*: a. Northeastern side of the tumulus, with facing elements in position and terracotta cylinders (*haniwa*); and below: a clay case enveloping the grave, in the upper part of the tumulus (Photos: L. Nespoulous).

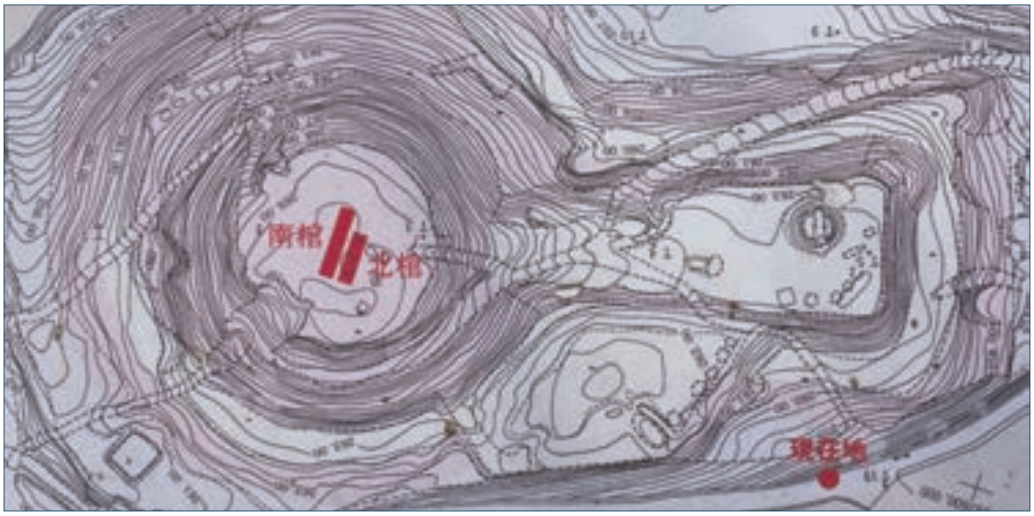


Fig. 17 – Aizu Ōtsukayama *kofun*, measuring more than 110 m in length with two graves in the upper part. This is one of the largest tumuli in the department of Fukushima, but there is no stone facing and no funerary chamber (Photo: L. Nespoulous).

would be included, as was the case at the end of the 19th century. Therefore, we accept the broader sense of a trend involving natural stone and strong social mobilization to broaden the angle of attack on the question, which explains the wide variety of phenomena listed above and in Yoshio Kikuchi's contribution.

In the context of the Late Jōmon period, the stone circles of the northern archipelago are not the first indicator of the extended capacity of the sedentary hunter-gatherer societies of the archipelago for collective organization. These societies practised storage, had a particularly sophisticated processing economy (food, but also non-food, such as lacquer) but still largely escaped the model of agrarian societies in which surplus and hierarchy emerge. The Jōmon period thus raises the unresolved question of the megalithism of hunter-gatherer societies.

The Yayoi period, on the other hand, is part of a more 'classic' scheme of agrarian societies, although it offers two distinct temporalities with regard to this phenomenon. Initially, megalithism was exclusively expressed here in the funerary domain and in a specific geographical area – that of northwestern Kūshū – that can be considered an extension of the phenomena specific to the Korean Peninsula and its *shisekibo*. Socially, it does not present a very extreme strategy of distinguishing individuals and chronologically, it disappears in the Early Yayoi without having spread to the other islands of the archipelago. It was in the context of the second half of the Middle Yayoi period that a new practice appeared: burial in earthen tumuli. This practice was widely shared by the different societies of the archipelago in the Late Yayoi, from west to east. Only certain regions, however, adopted the use of these structures, which could be described as elite and it is in this movement that the use of stone made its great return, essentially as facing for the tumuli in the regions bordering the Sea of Japan and the Inland Sea. These burial mounds, sometimes of clearly monumental dimensions, mark the belonging of regional elites to the same class as much as they allow them to distinguish themselves from one region to another. This elite phenomenon took off significantly in the west of the archipelago after the first Chinese colonies of the Han Empire were established in the Korean Peninsula at the end of the 2nd century BCE (the colony of Lelang in the region of present-day Pyongyang was founded in 108 BCE). Exchange networks were then permanently modified by access to new resources (notably iron).

The genesis of the trans-insular *kofun* phenomenon, from the middle of the 3rd century onwards, is still a difficult aspect to elucidate in detail. The *kofun* could be seen at first sight as 'intensifications' of the funerary culture of the Late Yayoi period. Indeed, it presents many of its features in a summarized manner. Yet, in our opinion this interpretation would miss the historical significance of the phenomenon. The complexity and novelty of the *kofun* practice, as well as the fact that within barely a century these mounds were common to all the elites from the west to the northeast of the archipelago, placed the Kinai region in a central position for centuries (well beyond the Kofun period itself) both culturally and politically. Their gigantism, moreover, indicates an unprecedented mobilization of society. There is thus an unparalleled incorporating dimension in their construction over such a vast territory, which is why the Kofun period is understood by many archaeologists in Japan as a decisive moment in the formation of the first State societies of the archipelago (Tsude 1998, 2005; Fukunaga 2001). Taken separately, *kofun* may or may not demonstrate megalithism, depending on the presence or absence of a stone burial chamber or facing but taken as a coherent whole, it is noticeable that the tumuli most lacking in these features explicitly reference the most heavily 'lithified' models found at the top of the elite social pyramid. While speaking of megalithism here we have evoked the question of tumuli at length (another comparative example: Knopf *et al.* 2018), but in terms of the activities accompanying the deceased to their final resting place, particularly in terms of funerary goods, the connection and imitation of the customs of the powerful in Kinki have long been emphasized by Japanese archaeology. It would therefore seem to make no sense to separate the *kofun* that belong to megalithism from those that do not, insofar as they are part of and products of the same system of thought.

Translated from French
by Louise Byrne

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Yoshio KIKUCHI

Prehistoric and protohistoric megaliths of the Japanese archipelago

Abstract: Japan is characterized by the presence of a varied megalithism, belonging to chronological horizons that can be described as prehistoric for the Jōmon period (from the 14th millennium to the beginning of the 1st millennium BCE) to the Yayoi period (from the beginning of the 1st millennium BCE to the middle of the 3rd century CE) periods, and protohistoric for the Yayoi and Kofun periods (from the middle of the 3rd century to the beginning of the 7th century CE). This chapter aims to identify a number of types of structures in order to illustrate this diversity, and to explain their specificities through time and successive archaeological cultures.

Keywords: *Jōmon period, Yayoi period, Kofun period, megalith, monumentality, stone, relief, rock, tumulus, religion*

1. General information on the 'megaliths'

The Japanese archipelago on the easternmost margins of East Asia consists, from north to south, of the four main islands of Hokkaidō, Honshū, Shikoku and Kyūshū and several thousand surrounding islands, extending over about 2000 km (**Fig. 1**). Historically, past societies of the archipelago are not particularly characterized by the construction of large stone structures, whether for funerary or other purposes. This phenomenon may have existed at various times but does not seem to have lasted for long. The very marked and relatively frequent gigantism of certain constructions at the beginning of antiquity, such as the temple of Hōryūji (Nara Prefecture, Ikaruga) in the 7th century, or the temple housing the great

Fig. 1 – The Japanese archipelago and the most important cities.

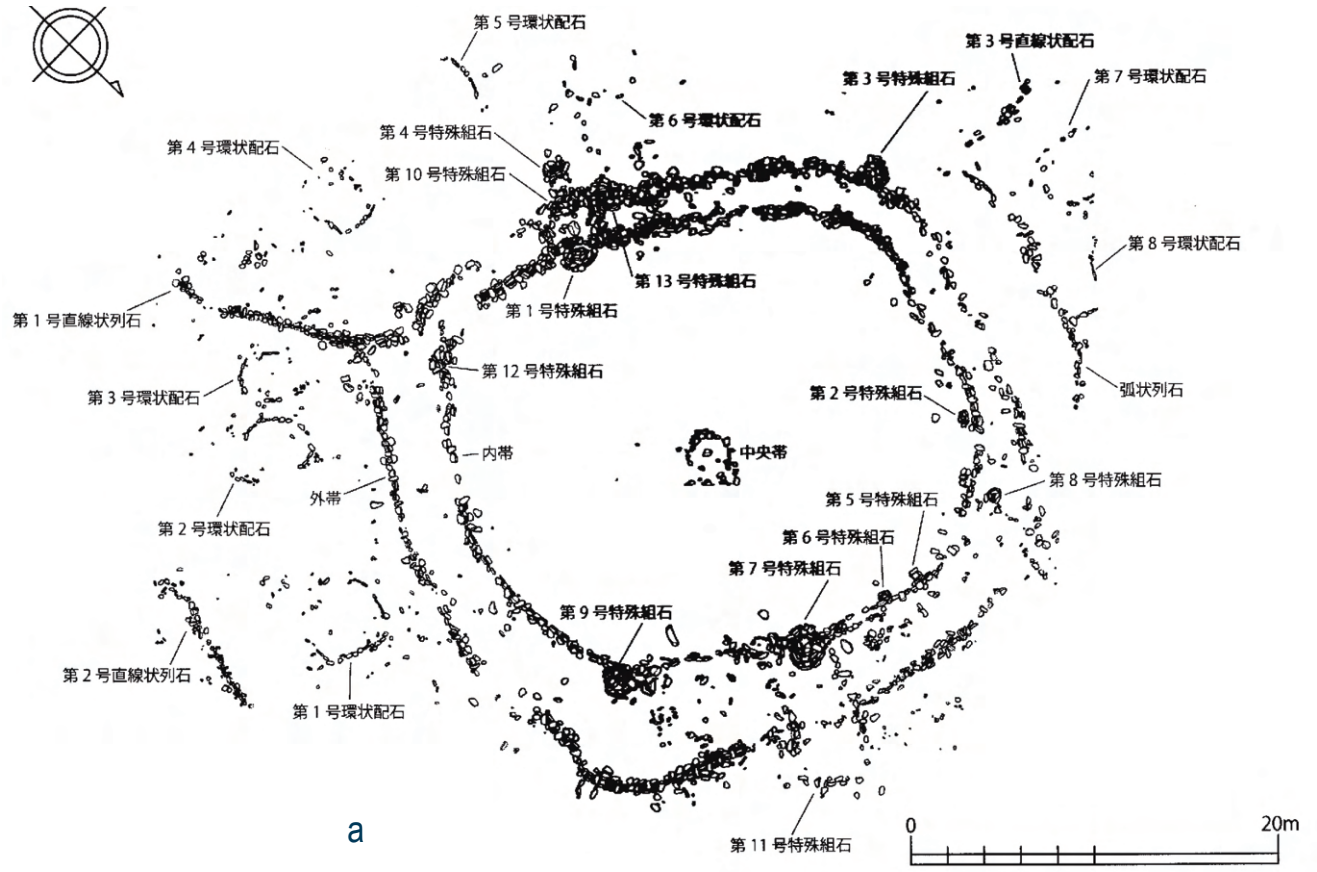


Fig. 2 – a. Plan of Komakino stone circle, Aomori City, Aomori Prefecture (After Kodama Daisei 2006); b. Central part of Komakino circle (Photo: Y. Kikuchi).

Buddha of Tōdaiji (Nara Prefecture, Nara) in the 8th century, is in fact expressed primarily through wooden construction techniques. Compared to their Chinese neighbours or the Korean Peninsula, where the use of very large stone blocks in the construction of buildings and tombs is common, the societies of the archipelago are characterized more by their inclination towards wood. The natural environment of the archipelago, where the temperature and humidity are conducive to the growth of very large trees, and which is also marked by a particularly active seismic context is, no doubt, not unrelated to these construction choices. This has not, however, prevented – at specific times and in specific regions – the construction of structures and funerary monuments that are astonishingly imposing in terms of their dimensions and/or the size of the blocks of stone used, without any functional explanation other than those in the political or religious domain.

2. Prehistoric megalithic structures

No megalithic-type structures are documented in Japan for the Palaeolithic period, from the arrival of the first *Homo sapiens* 40000 years ago until the advent of the Jōmon period in *c.* 14000 BC. This is probably due to the absence of any sedentary settlement or land use patterns during the last ice age.

The start of the Jōmon period (14000-800 BC) coincided with climatic warming. The second half of this period occurred at the same time as the Neolithic period in Europe, although the societies of the archipelago did not engage in a food production economy. These societies were sedentary with a diet based on hunting and gathering. The lengthy Jōmon period is divided into six phases: Incipient, Initial, Early, Middle, Late and Final.

During the Late and Final Jōmon period (between 2000 and 1000 BC), stone circles appeared in the central and northern regions of Honshū, the main island of the archipelago. These include the Komakino stone circle (Aomori Prefecture, Aomori), with a diameter of 50 m, consisting of two concentric circles made up of about 3000 stones (Kodama Daisei 2006). These stones are large pebbles (rarely exceeding the size of a human head) that are sometimes set upright although this is not common (**Fig. 2**). About 30 circles are listed for the whole archipelago. They are of various sizes and formed of single or multiple circles. Burials in urns or directly in the ground have been found in them but their function does not seem to have been exclusively funerary; their structures also correspond to a system of thought in which the trajectories of the sun and the moon were extremely important.

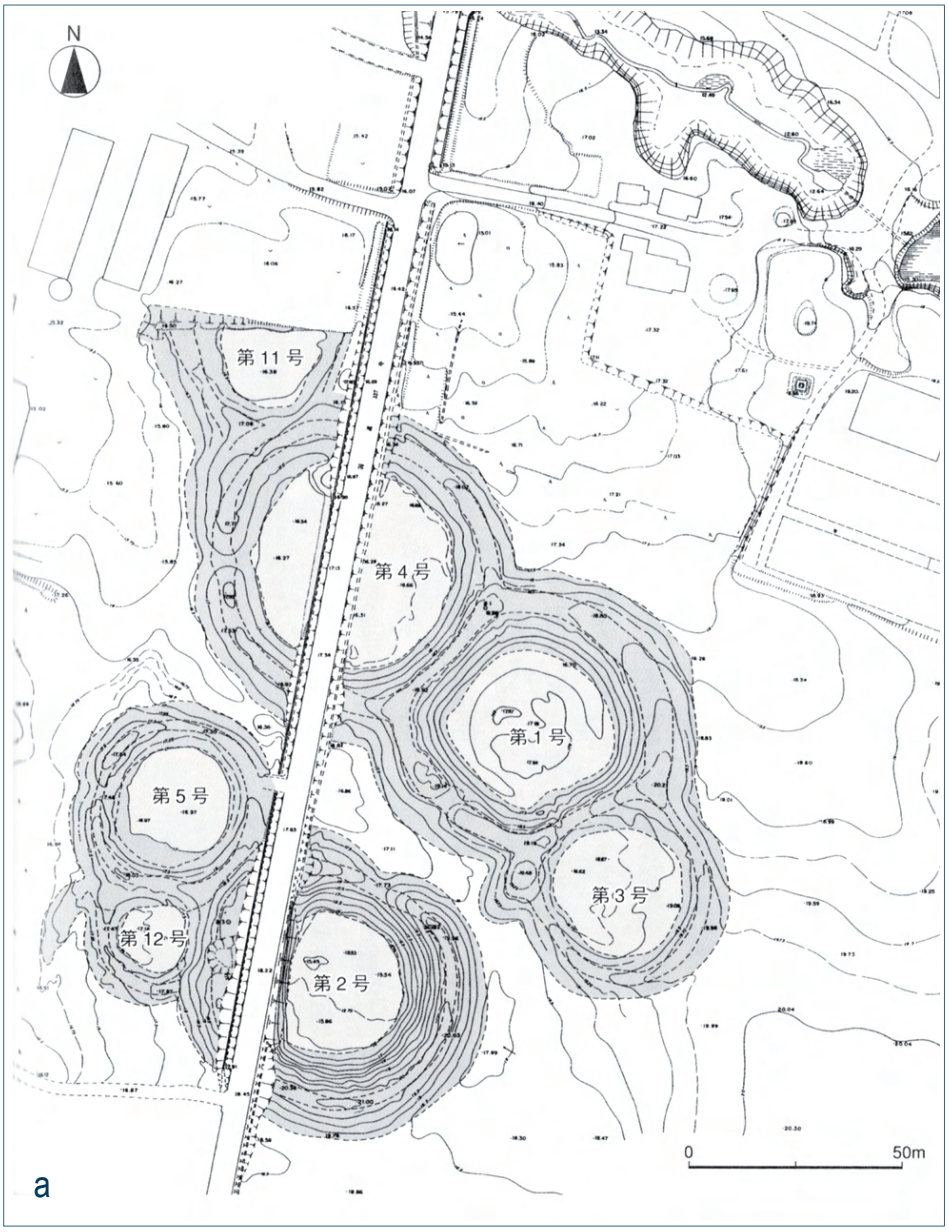
Another form of monument with imposing dimensions but not made of stone, and of a unquestionably funerary nature, were also built in the Early to Late Jōmon period of eastern Japan. These are the *shūteibo* 周堤墓, earthen ring-shaped tumulus tombs. The Kiusu necropolis (Comité de publication de la ville de Chitose 2010) in Hokkaidō (Hokkaidō Prefecture, Chitose) is composed of 13 of these tumuli, one of which is 75 m in diameter and 5 m high (**Fig. 3**). For the Final Jōmon period, we can also note the circle of posts driven into the ground at the site of Mawaki in the region of Hokuriku (Ishikawa prefecture, Noto), although neither their meaning nor function have yet to been elucidated.

We can deduce from the monuments mentioned above that, particularly in the north of the archipelago and during the 3rd and 2nd millennia, large-scale earthworks and construction were possible, and that individuals or groups capable of directing them must have existed. This type of site, which was limited to the east and north, especially at the end of the period, would therefore suggest that some societies in the archipelago demonstrated a degree of social stratification.

3. Protohistoric megalithic structures

3.1 Yayoi period (800 BCE to 200 CE)

During the Yayoi period, the first agrarian societies of the archipelago appeared in the north of Kyūshū, under the impetus of societies from the Korean Peninsula and China. Rice growing, agriculture, animal husbandry, the first use of metals and writing took hold and spread towards the east of the archipelago. The Yayoi period is generally divided into four phases: Incipient, Early, Middle and Late. From the beginning of the Yayoi, bronze was used for ritual purposes, while iron was reserved for tools. Hokkaidō and the islands of the southwest of the archipelago were excluded from these transfor-



b

Fig. 3 – a. Ring mound tomb (*shūteibo*) of Kiusu, Chitose City, Hokkaidō Prefecture (After Chitose City History Editing Committee 2010); b. Tumulus 1 of Kiusu site (Photo: Y. Kikuchi).

mations and societies there remained hunter-gatherers, referred to by the term 'epi-Jōmon' in Japanese archaeology.

As a corollary of the diffusion of cultural elements that were widespread in the societies of northeastern China and the Korean Peninsula, the northwestern region of Kyūshū saw the appearance of a new type of funerary structure: the *shisekibo* 支石墓, or dolmen. Representative of the Incipient to Early Yayoi periods (800-400 BCE) is the necropolis of Maruyama (Saga Prefecture, Tosu) and its 118 *shisekibo*. The cover slabs of these tombs are generally around 1 m in diameter and the burial is most often placed directly in the ground or, more rarely, in an urn or a cist (**Fig. 4**). The necropolis of Ōnodai (Nagasaki Prefecture, Sasebo), consists of 50 such dolmens with cover slabs of the same dimensions, placed above cist burials (**Fig. 5**) (Shōbayashi & Matsuo 1983).

This type of grave has proved to be one of the most prevalent burial structures in northeast Asia from the Neolithic to the Bronze Age (Nishitani Tadashi 1997) but in of Japan it was built only during the first half of the Yayoi period and in the northwestern Kyūshū region. Moreover, in this context, limited to the archipelago, these tombs with covers of less than 2 m in diameter never reach the monumentality of their peninsular neighbours, which is why these dolmens are not generally associated with an elite phenomenon in the scientific literature of the archipelago. On the contrary, they are widely thought to belong to societies that were still relatively

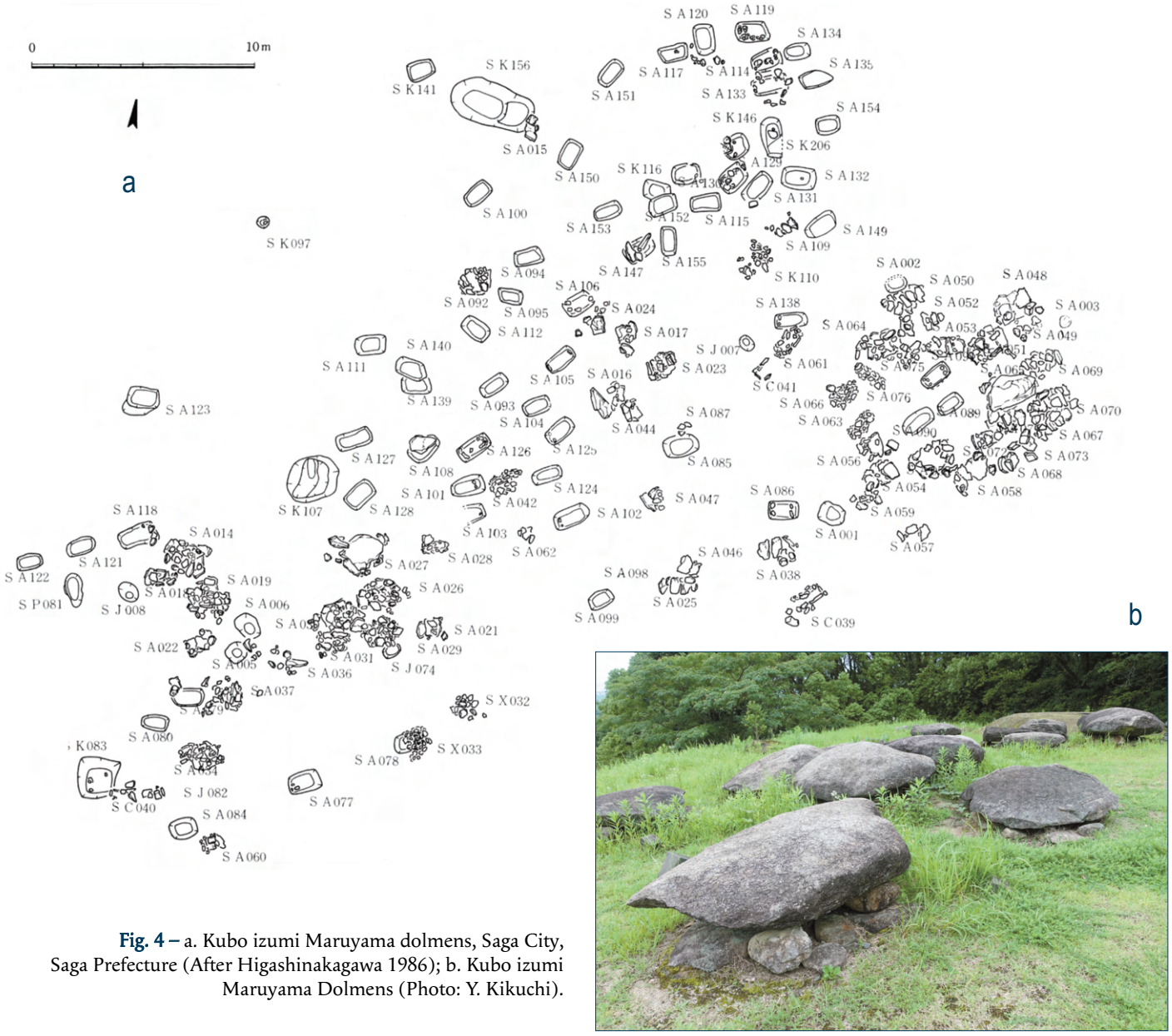


Fig. 4 – a. Kubo izumi Maruyama dolmens, Saga City, Saga Prefecture (After Higashinakagawa 1986); b. Kubo izumi Maruyama Dolmens (Photo: Y. Kikuchi).

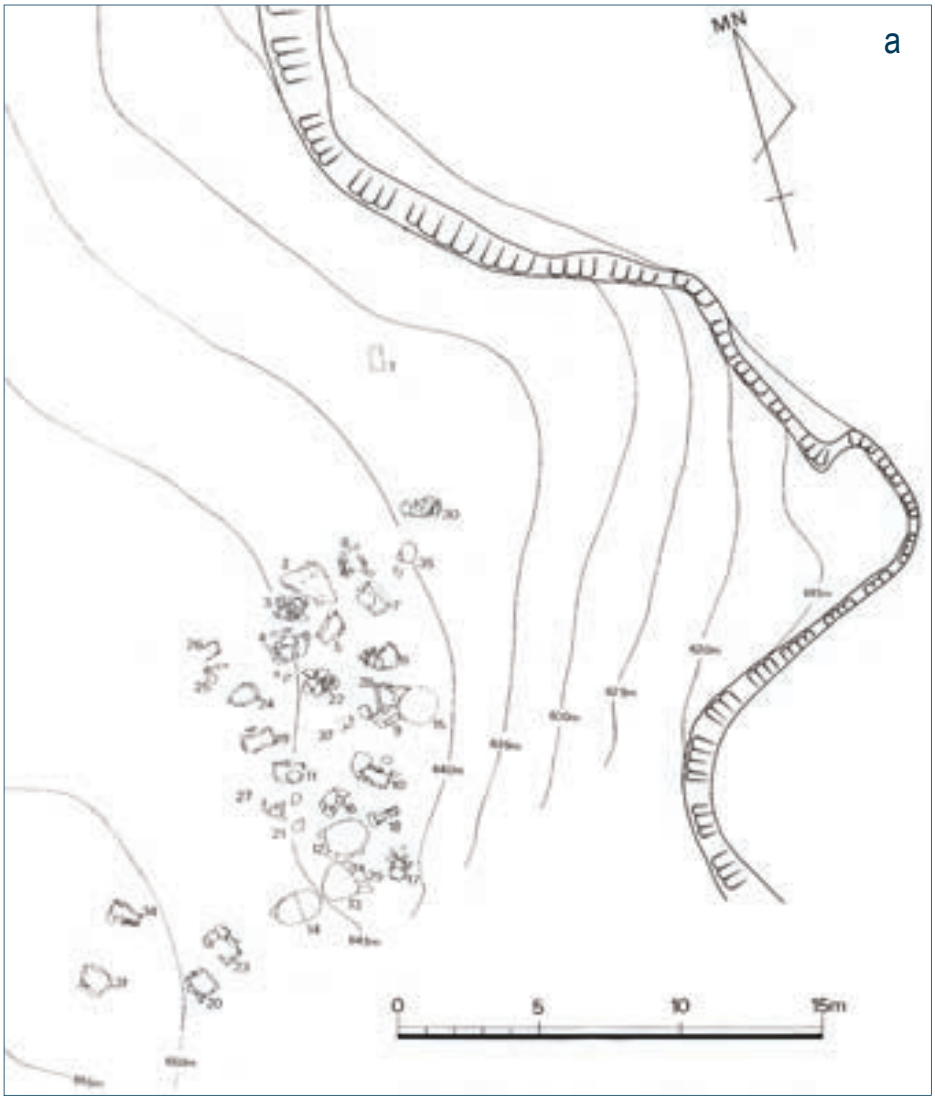


Fig. 5 – a. Dolmens of Ōnodai Necropolis, Sasebo City, Nagasaki Prefecture (After Shōbayashi & Matsuo 1983); b. Dolmens of Ōnodai (Photo: Y. Kikuchi).

egalitarian. The soils of Japan yield few human remains but most of those analysed appear to have belonged to descendants of local populations from the Jōmon period. The funerary goods also contain elements related to the Jōmon material culture.

The use of megalithic blocks in other Yayoi archaeological contexts is extremely rare. The almost sole exception is the Tatetsuki tumulus (second half of the 2nd century CE, Okayama Prefecture, Kurashiki), with a sepulchral recess in the top part of the 83 m-diameter tumulus crowned with very large standing stones (Kondō 1992). The mound itself is also surrounded by standing stones (**Fig. 6**). Archaeologists agree that this monumental tomb is that of an extremely powerful person who is thought to have dominated the Kibi region, a key area for circulation along the Inland Sea. It is a unique example of its kind in the Yayoi period and its origin remains elusive.

In the second half of the Yayoi period, at the same time as evidence of increasing attention to certain burials and burial tumuli, the importance of bronze ritual objects and sites including them is notable. These elements indicate that Yayoi societies were undergoing a complexification that would lead to the emergence of figures with aristocratic status in complex chiefdoms. At the end of the Late Yayoi period, the burial mounds of the elite tombs of the

Fig. 6 – a. Representation of the Tatetsuki tumulus, Kurashiki City, Okayama Prefecture (After Ugaki Tadamasa); b. Standing stones of the Tatetsuki Tumulus (Photo: Y. Kikuchi).

Fig. 7 – Facing of Tumulus 3 at the Nishitani site, Izumo City, Shimane prefecture (Photo: Y. Kikuchi).

Nishitani necropolis (San.in region, along the Sea of Japan, Shimane Prefecture, Izumo) were faced with pebbles, but cannot be described as megaliths (**Fig. 7**) (Tanaka Yoshiaki & Watanabe Sadayuki 1992). It is clearly impossible, therefore, to systematically associate the complexification of societies of the archipelago during the Yayoi period with the construction of megaliths.

3.2 Kofun period (200-700 CE)

The Kofun period, literally the 'period of ancient mounds', is represented archaeologically by nearly 200000 tumulus tombs built across almost the entire archipelago from Honshū to Kyūshū. *Kofun* with circular tumuli (*enpun* 円墳) are the most common, but the largest form – about 6000 examples – have a 'keyhole'-shaped tumulus, i.e., with a quadrangular (often trapezoidal) front and circular rear (*zenpōkōenfun* 前方後円墳). Of these, nearly 40 are concentrated in the Kinki region (present-day Kyōto, Ōsaka and Nara). These exceed 200 m in length, with spectacular examples such as the 500 m-long *kofun* at Daisenyama (National Museum of Japanese History *et al.* 2020). There is some variation in the shape of the *kofun* tumuli: some are square, or a variant of the 'keyhole' shape with a quadrangular front and back mound (trapezoid or rectangle combined with a square, *zenpōkōhōfun* 前方後方墳). Built at a time when metallization had been achieved and the use of writing was spreading among the elites, *kofun* are considered to be the expression of a new elite culture, although since written documents remain extremely rare and patchy for this period, it is impossible to identify most of the occupants of these tombs. This period can be divided into five phases: Incipient, Early, Middle, Late and Final.

During the Early and Middle Kofun (from 250-500 CE), earthen mounds were faced with pebbles, burial chambers were built in dry stone (at the top of the tumulus, with vertical access *tateanashiki* 縦穴式), where a long sarcophagus, also of stone, could be deposited (*nagamochi sekkan* 長持石棺). Stone was widely used, especially for facing the largest *kofun*. The restoration of the Goshikizuka *kofun* (Hyōgo Prefecture, Kōbe), a 194 m-long 'keyhole' mound, has shown that nearly two million pebbles were needed to cover such a tumulus (Maruyama Kiyoshi & Hirata Akiko 2006). By using this type of facing, *kofun* take on the appearance of rocky hills, but apart from the pebbles and stones used for the burial chamber, the mound is made of earth (**Fig. 8**). This stone facing principle is known for a few tumuli from the Yayoi period and seems

Fig. 8 – Goshikizuka *Kofun* and its pebble facing, Kōbe City, Hyōgo Prefecture (Photo: Y. Kikuchi).

to have spread to the whole archipelago during the Kofun period, although we cannot yet fully explain the phenomenon.

At the same time, in the central part of the island of Shikoku, tumuli were also made exclusively of dry stone (*tsumiishi-zuka* 積石塚). This type of tomb model, which presents some similarities to the stone constructions known in the Koguryo Kingdom and the northern parts of the Korean Peninsula, is considered to be of allogeneic origin, yet none of the tombs in Shikoku suggest that the occupants came from far away. The overall number of such tombs in the archipelago remains very low and it is not yet clear how they should be interpreted (Habuta Yoshiyuki 2017).

Also at this time, some *kofun* began to house very large sarcophagi (*kurinukishiki* 刳抜式) made from tuff from Tatsuyama (Hyōgo Prefecture) or Makado (Kumamoto Prefecture) and sandstone from Ishibuseyama (Gunma Prefecture). The stone was specifically selected and transported over long distances, implying that the most highly ranking members of the elite had a predilection for particular types of rock (**Fig. 9**). The large Makado tuff sarcophagus found in the Imashirozuka *kofun* (Ōsaka Prefecture, Takatsuki) probably travelled nearly 1000 km by sea and land before being placed in the tomb of an individual who is thought to have been the Keitai sovereign in the first half of the 6th century (Comité éducatif de la ville de Takatsuki 2008).

In the Late and Final Kofun periods, a new type of burial chamber, which developed under the influence of the Korean Peninsula, became widespread and, in some cases, displayed gigantism as in the case of the gallery chamber (*yokoanashiki* 横穴式) of the Ishibutai *kofun* (Nara Prefecture, Asuka), within a square tumulus measuring 55 m on each side (Hamada *et al.* 1937). This chamber is perhaps the best-known expression of megalithism in Japan, composed of 30 blocks of quartz diorite, the heaviest of which weighs 77 tonnes. The interior space is 8 m long, 3.5 m wide and 5 m high. The total mass of blocks is estimated at 2300 tonnes (**Fig. 10**). The enormity of this type of chamber, built inside the tumulus, is not visible from the outside, thereby reducing its monumental dimension, which may have been the intention.

It has become common to consider the Kofun period as that of the birth of the first state societies in the archipelago, during which the well distributed *kofun* in the southern regions of northeastern Honshū to Kyùshū, would materialize power relations through their different shapes and sizes, at the centre of which were the Kinki elites (Tsude 2005). The individuals buried in the largest *kofun* of Kinki

Fig. 9 – Ushibuseyama sandstone sarcophagus, Ofujiyama *kofun*, Isesaki City, Gunma prefecture (Photo: Y. Kikuchi).

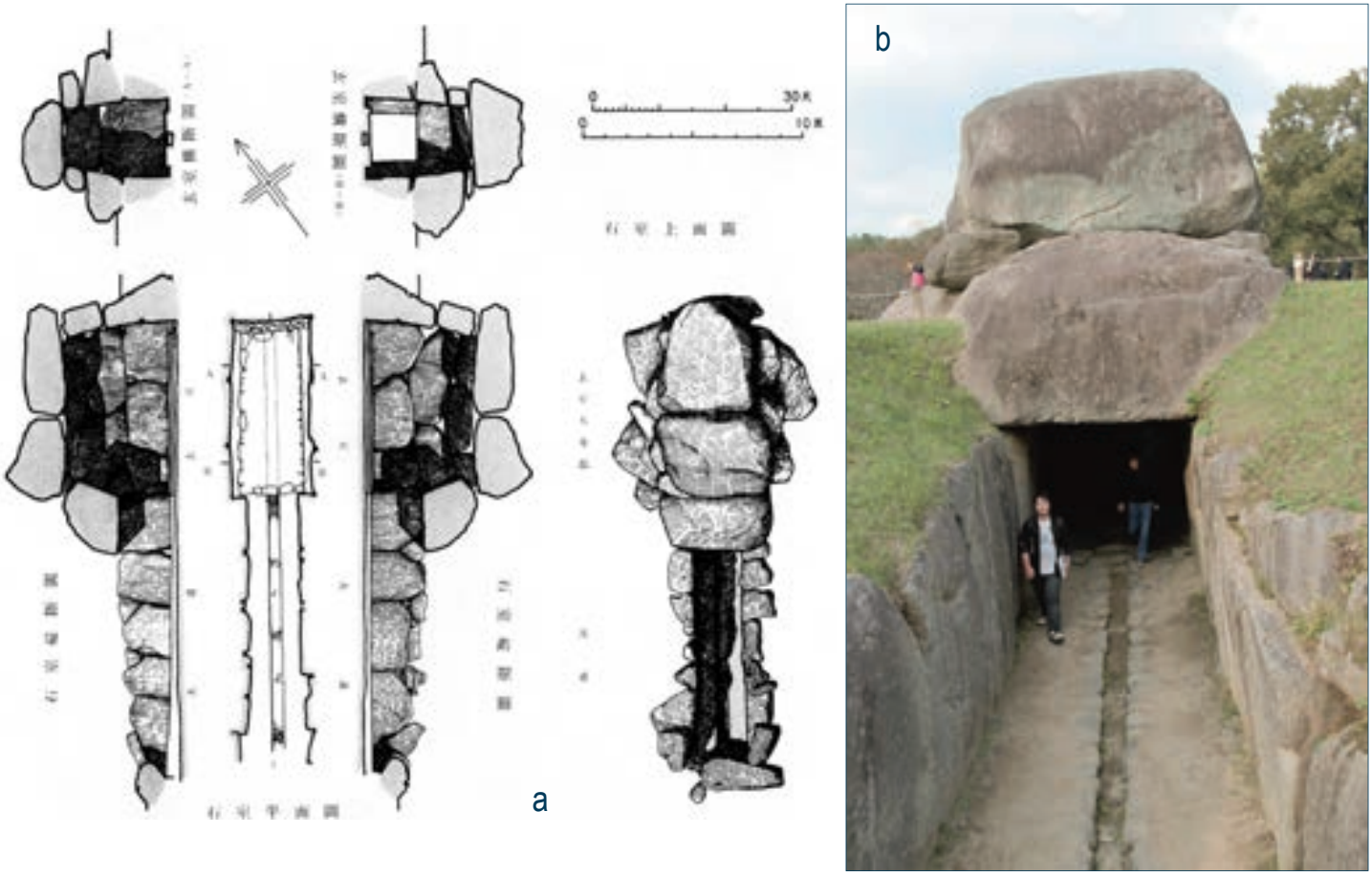


Fig. 10 – a. Gallery chamber of the Ishibutai *kofun*, Asuka, Nara Prefecture (After Hamada *et al.* 1937); b. Gallery chamber of Ishibutai *kofun* (Photo: Y. Kikuchi).

would thus be sovereigns of sorts. In this context, although the stones of the tumulus facings played an important role, there are relatively few 'megaliths' in the literal sense of the term.

3.3 After the birth of the ancient state

During the following Nara period (810-794 CE) a state emerged with a written legislative system, with its capital at Heijō (present-day Nara), in Kinki. The territory of this state corresponds to the former distribution area of *kofun* at a time when the building of the latter, as well as the use of megaliths, declined rapidly, although the use of very large blocks of stone in some constructions resurfaced temporarily and locally. This is the case for the walls of certain sites from the beginning of the 16th century, such as those of Ōsaka Castle, where a 100-tonne block measuring 6 m in height and 12 m in width is found (**Fig. 11**). The reconstruction of this castle was ordered to be undertaken by all the lords of the country by the shōgun Tokugawa Ieyasu, and vassals competed to prove their loyalty to their suzerain, measured by the size of the blocks employed in the wall. Each of these blocks was thus a sign of prestige and power.

4. 'Natural' megalithism and religion

On a completely different note, there has been a long-standing practice of worship at large natural rock formations in Japan. This phenomenon seems to have left many traces from the Kofun period onwards, such as the site of Iwakura (Shizuoka Prefecture, Hamamatsu), on a high location, or at Miwayama (Nara Prefecture, Sakurai). In Fukushima, the site of Tatehokoyama (Fukushima Prefecture, Shirakawa), although not very high, has a distinctive cone of rock, at the top of which a great deal of ritual activity seems to have taken place in the 5th century (Middle Kofun) around a gigantic natural block, involving offerings in the form of stone objects (**Fig. 12**). The proximity of the Mimori settlement with its princely residence at the foot of this hill may have been the source of these devotions and have been the community to which this sacred place 'belonged'. The rituals were perhaps intended to ensure abundant harvests (Kamei Masamichi 1966).

From the 4th to the 9th centuries, at the special site of Oki no shima (Fukuoka Prefecture, World Heritage Site), an island in the Genkai Sea between Kyūshū and the Korean Peninsula, offerings were made to natural formations of large boulders. These offerings were arranged at the foot of and on top of the rocks and bear many similarities to the richest funerary offerings found in the *kofun* chambers (**Fig. 13**) (Munakata Comité de reconstruction du sanctuaire 1958, 1961; Okinoshima équipe de la troisième campagne de fouilles 1979). This place is thought to have been a sea outpost, where the State ensured, through its offerings, safe crossings between the waters of Kyūshū and the peninsula.

For a long time, the archipelago was thus the setting for a variety of offerings to mountains or large natural stone blocks. These practices are clearly identified from the Kofun period onwards and seem to have been of particular importance in the context of the formation of the State. It is interesting to note that a significant amount of worship activity still takes place at many such sites today, and they thus have a very long lifespan.

Fig. 11 – 'Takoishi', the largest wall block in Ōsaka Castle (https://gurutabi.gnavi.co.jp/a/a_1518/).

5. By way of conclusion

In the Japanese archipelago, structures made of large stone blocks appear along with the sedentarization of societies. One of the most notable characteristics of these structures, their circularity, is shared with structures in other regions, whether they are wooden post circles or tumulus ring tombs. Stone circles are thus not the only, nor the largest, types of prehistoric monuments, but only one variation of the more general theme of the circular monument.

Fig. 12 – Large rock of Tatehoko, Shirakawa City, Fukushima Prefecture (Photo: Y. Kikuchi).

Fig. 13 – a. Okinoshima, Munakata City, Fukuoka Prefecture; b. Structure 21 of Okinoshima: worship remains on a rock (After Okinoshima Third Excavation Campaign Team 1979).

In order to understand the meaning and nature of these stone structures, it is therefore necessary to consider them to have the religious dimension of other very large structures such as post circles and ring mounds. It would also be necessary to determine, through comparative study (Knopf *et al.* 2018), whether the use a variety of materials in these structures is specific to the prehistoric societies of the archipelago.

The dolmens of the Korean Peninsula and China emerge with the formation of agrarian societies during the Yayoi period while at the same time, the notion of monument circularity prevalent in the previous period is abandoned. In a sense, this underlines the profound transformations that human societies underwent, particularly in terms of their relationships with nature and the environment. The genesis of societies during the Yayoi period is not, however, a matter of direct, identical transplantation from continental societies, and these first societies of peasants in the archipelago in turn developed their own symbolic universe and modes of thought. At the end of the Yayoi period, a new funerary monumentality of unknown origin appeared in the form of elite tombs faced with pebbles or lined with standing stones. It is in this context of accelerated political integration of the societies of the archipelago that a new relationship with stone and its use seems to have emerged.

At the very beginning of the Kofun period, which can be thought of as the formation period of the first state societies in the archipelago, a great many tombs of gigantic dimensions were built using a large quantity of stones, although these stones, taken individually, were not necessarily imposing. These tombs, the *kofun*, constituted one of the central mechanisms for the integration of the societies of the archipelago, and stone played a part in this. The use of stone seems, however, to have been limited to the funerary domain. It should also be noted that there is no trace of other forms of monumentalism (statuary, sanctuary, stele), even in wood. The considerable energy required to build these large mounds, may have rendered any other form of monumentalism out of the question or meaningless. Given the important role of certain natural reliefs and rocks in religious practice, these could well have replaced non-funerary monumentalities. This is one of the specific features of the Kofun period.

With the advent of antiquity, the establishment of the first capitals, and a regime based on written laws and a powerful administration, stone almost completely disappeared from monumental architecture, further underlining the importance it played in the previous context and the progressive loss of meaning that followed.

Translated from French
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Bronze Age and Iron Age decorated megaliths and funerary complexes in Mongolia and Southern Siberia

Abstract: Mongolia and southern Siberia are rich in funerary, ceremonial and iconographic remains of Bronze Age and Iron Age nomadic civilizations. Part of this archaeological heritage, in a cultural and funerary context, could be classified as megaliths. Among the oldest menhirs (2500-1800 BC), the stelae of the Okuniev culture are found across most of the territory of the Republic of Khakassia. Russian archaeologists have catalogued nearly 600 monuments, the largest of which was reused in the Iron Age in the large Tagar tomb at the site of Salbik. Other more recent megaliths appear in the Bronze Age, mainly in Mongolian territory, where about 1240 decorated stelae have been recorded by the Archaeological Institute of Ulaanbaatar. One of the stelae from the Ulan Tolgoi site is almost 5 m high. During the Final Bronze Age, High Asian populations erected granite menhirs, called 'deer stones' on account of their deer carvings. This megalithism is associated with highly codified funerary complexes, consisting of individual aristocratic tombs in the form of large tumuli surrounded by hundreds of mounds, each of which contains the deposit of a horse's head. The joint Monaco-Mongolian archaeological mission is carrying out research in the Upper Tamir Valley, where abundant remains of this culture are found. This valley lies in the centre of the country and has more than 800 tombs, 115 deer stone stelae and a rock art site with more than a thousand petroglyphs. At the beginning of the Iron Age, a new type of megalithic structure emerged in Southern Siberia: aristocratic burial mounds delimited by large standing stones and enormous retaining slabs. Tomb no. 1 of the Royal Necropolis of Salbik contains a 50-ton retaining slab.

Keywords: *adorned stelae, petroglyphs, menhir, Bronze Age, Iron Age, deer stone, Tagar, Okuniev, Mongolia, Siberia*

Fig. 1 – Distribution map of the Okuniev stelae and the deer stones (J. Magail).

1. Introduction

Since 2006, the Museum of Prehistoric Anthropology of Monaco has conducted archaeological missions to investigate the Bronze Age and Early Iron Age nomadic populations of High Asia. Agreements have been signed with the Mongolian Academy of Sciences, Research Institute for Language, Literature, and History of the Republic of Khakassia, the Institute of Social Sciences of the Republic of Tuva and the Museum of Minusinsk. Some of the studied remains can be classified as megaliths and menhir statues. These are essentially stelae which are either constituent elements of tombs or elements implanted in sacred and/or funerary sites. Thanks to a partnership with the ARTEHIS laboratory of the University of Burgundy, a corpus of about 100 3D models of menhirs and a substantial number of digital terrain models and orthophotographs have been produced (Magail *et al.* 2017; Monna *et al.* 2018, 2020; Rolland *et al.* 2019). This article, which does not claim to be exhaustive, deals with objects from a period that begins with the Okuniev culture in the 3rd millennium BC, continues into the Bronze Age with the deer stone' stelae culture and ends in the 5th century BC with the Tagar culture. The majority of these menhirs bear engraved or even sculpted – sometimes painted – iconography (**Fig. 1**).

2. The Okuniev stelae

Between 2500 and 1800 BC, a society of sheep, cattle and horse breeders erected the oldest menhirs in High Asia. The Okuniev archaeological sites are mainly funerary and religious places, so the documentation of daily life is still very partial. Copper and bronze objects, ceramics and representations of chariots attest to the inclusion of these items in the cultural assemblage following the earlier Afanasyev culture. The singularity of the Okuniev stelae is to be found in the carved and engraved art on surfaces that were often pre-prepared (Leontiev 1976; Leontiev *et al.* 2006). These monoliths are mainly located in the Khakassia Republic; very few

are found in a primary context (Kyzlasov 1986; Esin 2010). They were often reused and eventually moved during the development of agricultural land during the 20th century. During the long Okuniev period, communities sometimes reused their own stelae and subsequent cultures continued this practice (Lazaretov & Poliakov 2018). The Tagar culture took Okuniev menhirs from sites of worship to integrate them into the construction of their princely tombs in the 5th century BC. One monolith, for example, was embedded in the passageway of aristocratic Tomb no. 1 at Salbik. The most exceptional of the 600 listed Okuniev stelae, in terms of size and iconography, are displayed in museums in the towns of the region, in Abakan, Minusinsk and Poltakov. Some are also curated at the State Historical Museum in Moscow and the Hermitage Museum in St. Petersburg. The iconographies observed on the menhirs are also recorded on more than 40 engraved and painted rocks. Not only is there an 'Okuniev style', but a codification of the figures and their combinations is also found on each monument. The aim here is to present an overview of the different types of Okuniev monoliths through a very succinct selection.

Some monoliths, such as that from the commune of Shira village, display rich iconographic groups of sculptures and engravings. On the narrowest side, the Shira menhir bears a representation of a chimeric half-animal, half-human creature with an anthropomorphic face (**Fig. 2a, b**). The engraved head of the animal at the base of the wider sides illustrates the chimeric composition of the represented being. Its eyes and muzzle correspond to the chest and belly of the anthropomorph. The legs of the beast are also

Fig. 2 – Stele of Shira: a. Photo Y. Esin; b-c. Survey of the stele with details of the iconography of the upper section, drawing by N. Leontiev and Y. Esin. Preserved in the Khakassia National Museum of Regional Research (Abakan). Reddish-brown sandstone, size: 290 x 80 x 25 cm.

the arms of the anthropomorph. Its open mouth, with sharp teeth and a pointed tongue, reinforces the mythological character of this wild beast, overhanging a circular Okuniev symbol with four triangular rays. The iconographic themes of the main side unfold in three parts, one above the other. In the central section, the large, ovoid, sculpted anthropomorphic face is divided into three parts by horizontal lines. Above this, in the top part of the stele, the vertical headdress of the creature is engraved, enhanced by the sculpture of a small, very realistic human face. All the images of this monument can be interpreted as the body and clothing of a single deity whose face is located in the centre of the stele. The vertical headdress schematically repeats the tripartite iconographic structure of the stele (**Fig. 2c**).

Another type of stele, often a thin slab, depicts an anthropomorphic figure evoking a solar deity together with animals. One of the broad sides of the stele in the village of Ankhakov (2.5 m high) depicts a being whose head is encircled by a halo of rays and whose body is surrounded by snakes (**Fig. 3a, b**). It was found in two pieces, reused in the structure of a Tagar culture tomb. The pieces were subsequently reassembled and the stele is currently displayed in the Abakan Museum. Traces of red paint are preserved on the engraved side. The entire surface of the stele seems to have been painted with ochre in the Okuniev period. A reconstruction of the monument in its context has been proposed (**Fig. 3a**) (Esin *et al.* 2014). A radiant face associated with snakes, but also with the head of a wild animal, is a theme also developed on a stele fragment discovered near the Tibik River (**Fig. 3c**). The open mouth with sharp teeth of the Okuniev mythological beast is placed under the anthropomorph's rounded head, echoing the themes engraved on the Shira menhir described above (**Fig. 2a, b**). Note that its bestial tongue touches the chin of the solar being, either to suggest its engulfment or regurgitation. On this stele, schematic representations of snakes contribute to forming the mouth of the beast. The reptiles seem to transmit their strength to the animal by suggesting a fatal bite. The number of five snakes appears

Fig. 3 – Stele from the village of Ankhakov: a. Reconstruction in its context; b. Drawing of the stele by Y. Esin. Preserved in the National Museum of Regional Research in Khakassia (Abakan). Reddish-brown sandstone size: 250 x 130 x 25 cm; c. Drawing of the Tibik stele by Y. Esin. Grey-green aleurolite, size: 55 x 38 x 12 cm.

to be significant as the same number of snakes are observed on the Ankhakov stele.

The record of representations of chimeric creatures is considerably enriched by a stele from the Askiz River, on which two animal figures are endowed with a bear's head, a snake's tongue, an ox's torso and horns, and finally with hawk's talons (**Fig. 4**). Is this the same Okuniev beast observed on the monuments of Shira and Tilbik? In **Fig. 4b** the chimeras are shown in black and overlie a representation of a typical Okuniev three-eyed anthropomorphic face (in blue), also with a large mouth and nostrils. A similar superimposition is found on the Kurgan stele of Chernovaya VIII, where the chimera has an elk torso and legs associated with a long feline tail, different from that of the stele of Askiz. The overlapping of iconographies from the same culture seems to be part of the syntactic code.

The iconographies of mythological predators in Okuniev art are distinguished from other themes by their wide variety of representations (Lazaretov 1997). In one category, the animal has the silhouette of an elk, bull, bear, wolf or dog. In another category, the beings are standing on their hind limbs and have a human figure. Despite the large number of variations, the images retain a coherence around a set of symbols. The oral tradition that transmits mythological stories from generation to generation

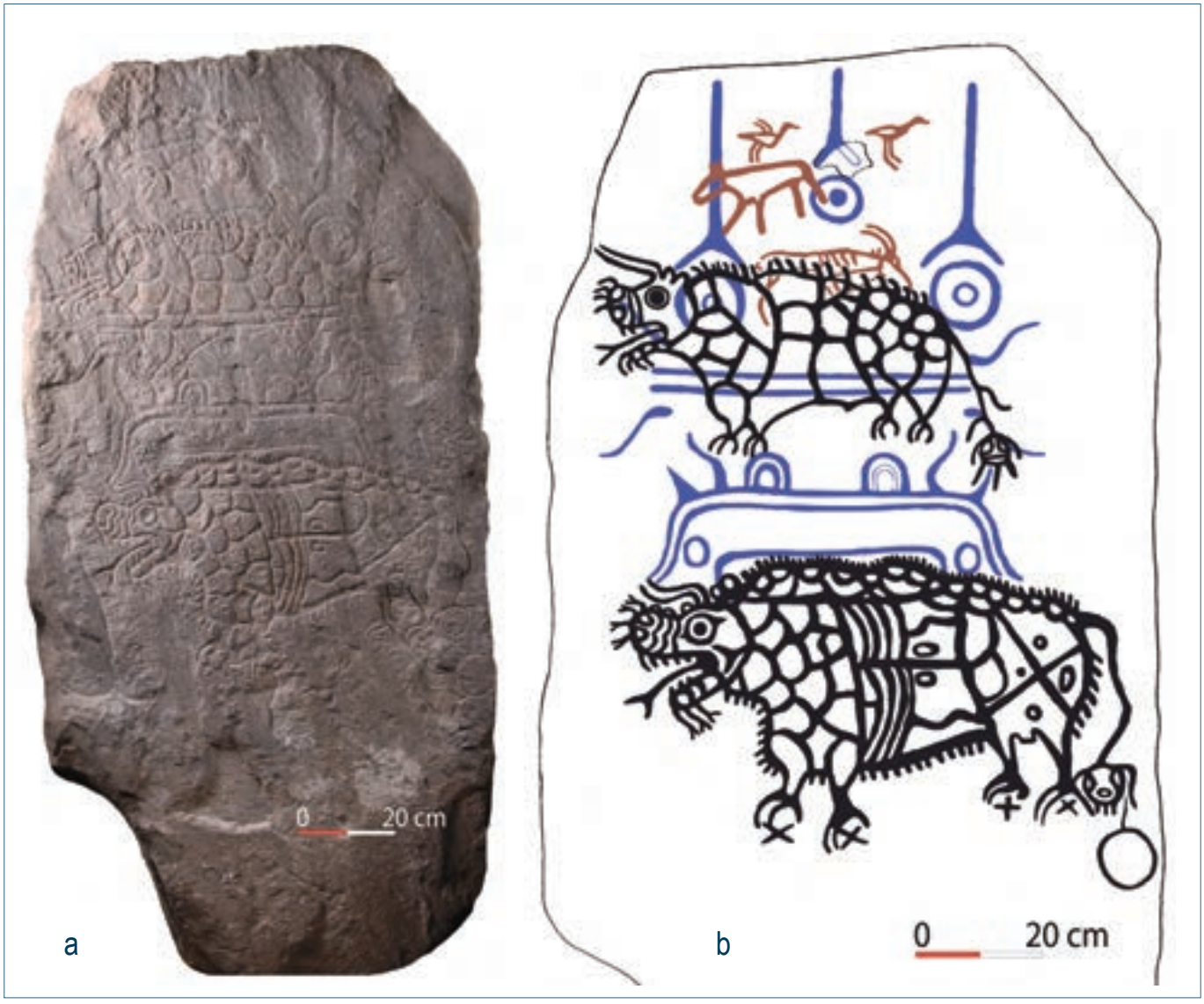

Fig. 4 – Askiz stele: a. Photo by B. Dolinin; b. Drawing by Y. Esin. Preserved in the National Museum of Regional Research in Khakassia (Abakan). Reddish brown sandstone, Size: 210 x 105 cm.

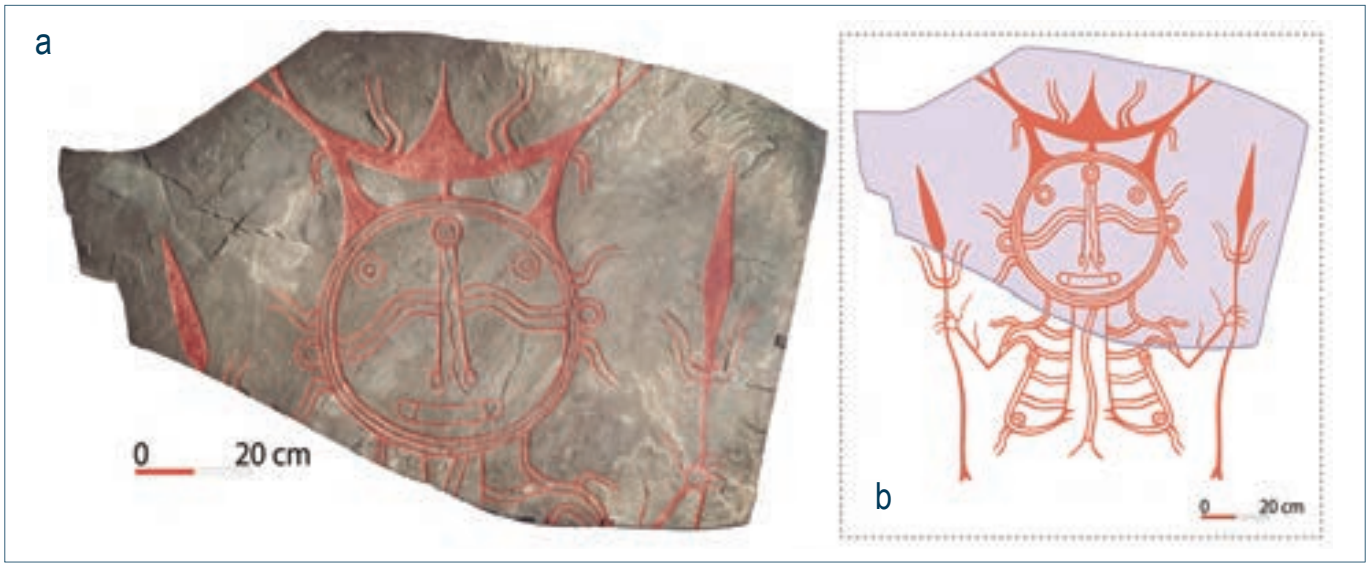

Fig. 5 – Stele from Chernovaya VIII (fragment) preserved in the Hermitage Museum in St. Petersburg: a. Photo with reconstruction of the pigments by Y. Esin; b. Drawing and proposed reconstruction by Y. Esin. Reddish brown sandstone, size: 130 x 85 cm.

could explain all these nuances around the same theme.

A whole image has been reconstructed from a fragment of stele found in the tomb of Chernovaya VIII (**Fig. 5**). On the preserved upper part, the representation of a deity holds, in each hand, an unknown type of weapon consisting of a spear point, curved bull horns and a serpentine handle. The details of the deity's face correspond to symbols that represent the different domains of the universe (Esin 2010). The three eyes could, for example, correspond to the positions of the sun during the day. Red ochre was found inside the hollowed and polished parts (Esin *et al.* 2014). The deity was therefore painted after being engraved onto the block of sandstone.

In the commune of Erbinskiy village, an archaeological excavation of an Okuniev sanctuary carried out in 1971 by L.R. Kyzlasov provided a better understanding of the religious context of the stelae (Kyzlasov 1986). Two stelae and two pits, intended to hold the blood of sacrificed animals, were discovered on the site, which extends along a north-south axis (**Fig. 6a, b**). Stele no. 1, of grey granite and 1.30 m high, was unearthed with its front side facing the rising sun. Stele no. 2, of pink granite, was found broken into two pieces, one overturned to the north of the site, the other covering the sacrificial pit to the south. The lower part of this stele has an ovoid carved shape without facial details (i.e., eyes and mouth), and relief evoking the shape of breasts. The two pieces together show that its original height was 3.16 m. The two sacrificial pits, elliptical in shape and 1.20 m and 1.48 m deep respectively, were filled with white limestone stones. Animal bones were found in the upper part of these pits and in the vicinity of the stele. These consisted mainly of horse bones, but also the remains of horned cattle and birds. This sanctuary was completely excavated; the stelae are kept in the Museum of History and Cultures of Siberian and Far Eastern Peoples in Novosibirsk.

A stele curated in the Poltakov open-air Museum is a sandstone slab 2.5 m high and 1.2 m wide, decorated with the largest known radiating Okuniev face (**Fig. 7**). In the middle of this face, a large triangle corresponds to the nose of the deity. The eyes and mouth are deeply carved into the rock. Different types of small faces and cup marks are engraved behind the large face. This monument was found in a Tagar culture tomb in a context of reuse. Traces of ochre were found on its surface, as on the Ankhakov stele. Archaeologists took a moulding of the entire surface of the stele and made two resin casts to show the public its present appearance and how it looked 4500 years ago when it was painted with red ochre (**Fig. 7a**) (Esin *et al.* 2014).

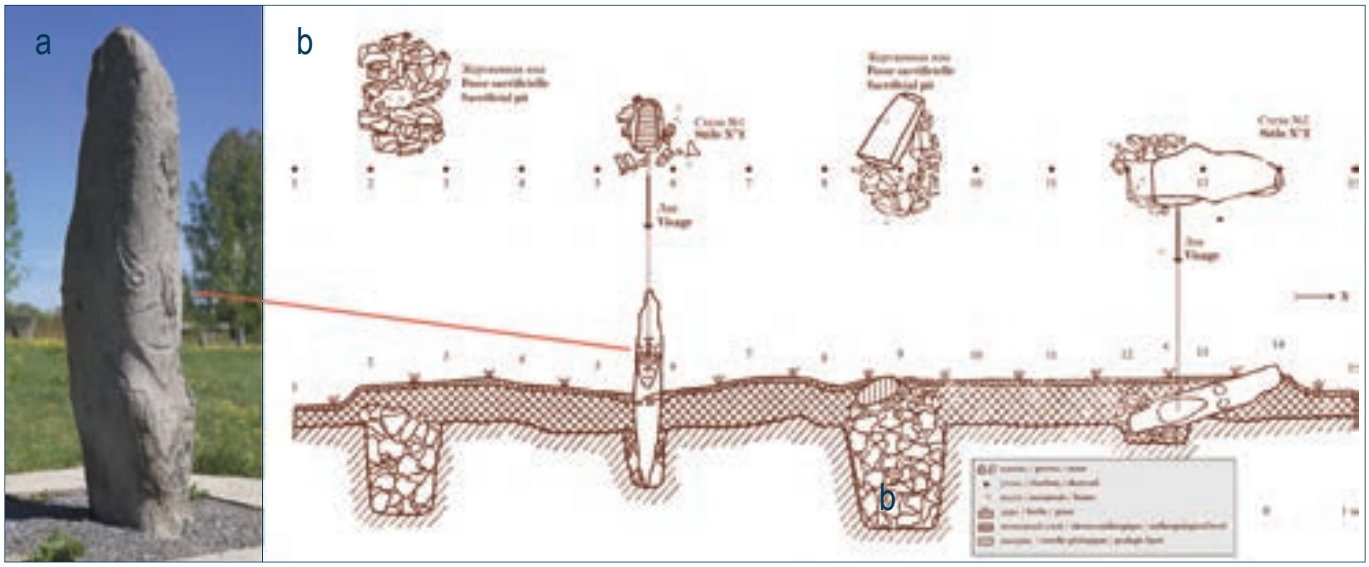

Fig. 6 – a. Stele no. 1 from the Erbinskiy sanctuary preserved in the Museum of History and Cultures of the Peoples of Siberia and the Far East in Novosibirsk. Grey granite, size: 130 x 55 x 27 cm (Photo: Y. Esin); b. Plan and cross-section of the Erbinskiy sanctuary (From the drawing by L.R. Kyzlasov).

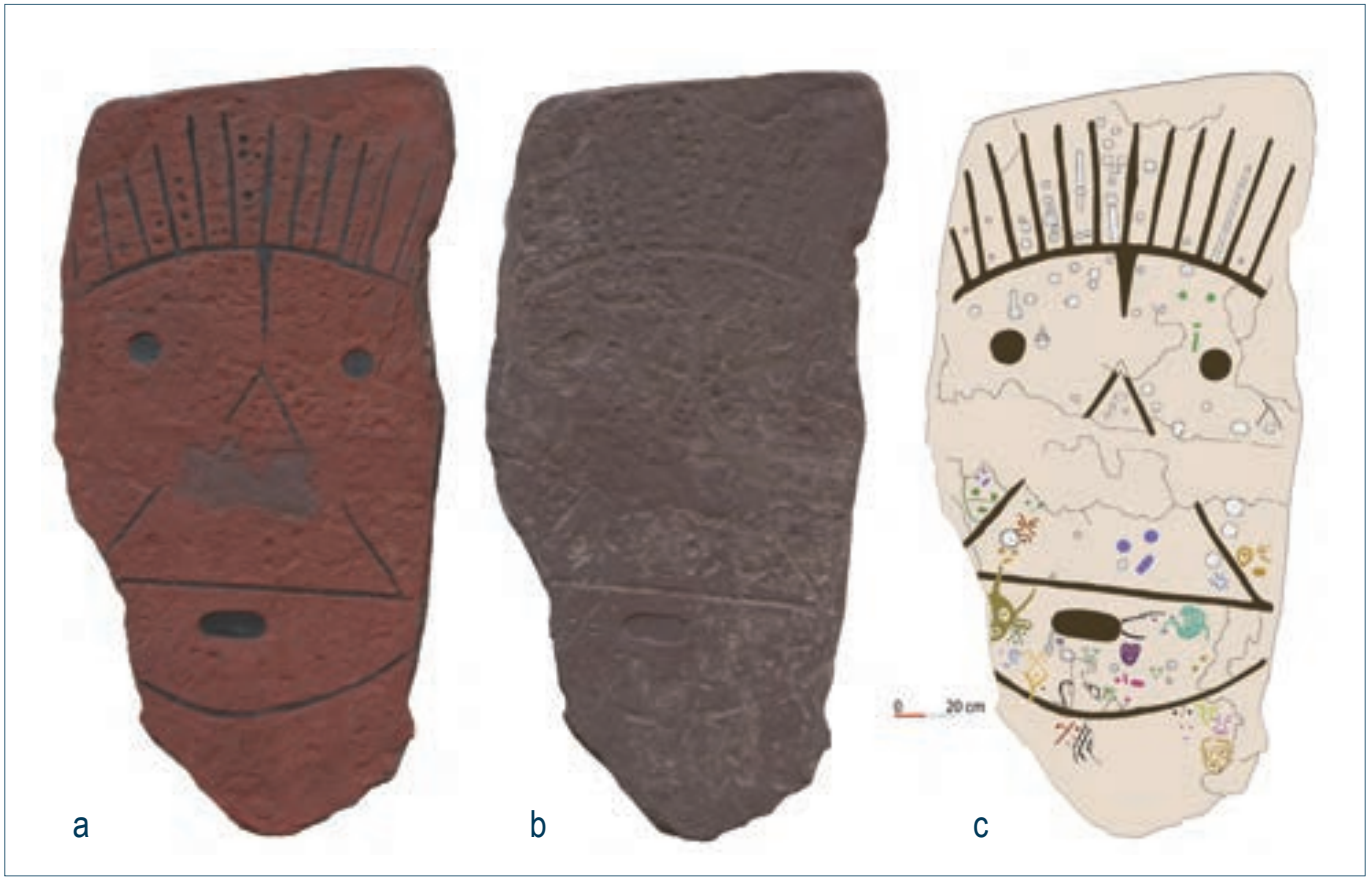

Fig. 7 – Stele from the Poltakov Museum. Reddish brown sandstone, size: 250 x 120 cm: a. Photo of the cast of the stele, painted with the original colours; b. Photograph of the painted stele by J. Magail; c. Drawing by Y. Esin.

The surfaces of the most sophisticated Okuniev stelae were generally worked before the sculpture and engraving of the iconography. The 'sabre-shaped' stele in the village of Tazmin shows evidence of such surfaceworking (**Fig. 8**). The sculpted face at the base of the monument is fine and elongated and is of exceptional finesse. The Khakas called it *Apsakh oba*, 'the Old Stone Man'.

Fig. 8 – Anisim Kyrzanovich Tazmin, a villager, is standing next to the stele now kept in the Ethnographic Museum in St. Petersburg. The photograph, kept in the archives of the Minusinsk Regional History Museum, was taken in 1910 by N. Fyodorov. Reddish brown sandstone, size: 360 x 70 x 15 cm.

Sculpted faces are a recurring theme on Okuniev menhirs. In the region of the village of Beltyry, a menhir reused in the construction of the enclosure of a kurgan (tomb) of the Tagar culture bears three realistic faces carved one above the other on an angle of the stele. On the widest side of the monument, schematic human figures were added by Tagar artists.

3. Deer stone stelae

The decorated stelae known as deer stones have a distribution centred on Mongolia and extending over China, Kazakhstan and Russia (**Fig. 1**). The earliest studies of their engravings of leaping deer and weapons compared them to images from the Karasuk culture of the South Siberian Bronze Age (Okladnikov 1954; Novgorodova 1989). Numerous ^{14}C datings of animal deposits directly related to the erection of these menhirs confirm that they were made by a pre-Scythian culture existing between the 2nd and 1st millennia BC (Fitzhugh 2009). Indeed, the Saka, the Eastern Scythians of Siberia and Altai, inherited some of the weapons and art of these populations. The typology of the leaping deer, engraved in around 1200 BC on the Mongolian stelae, is known in the form of gold appliques among the West Scythians in the 4th century BC in Ukraine and Hungary. Approximately 85% of the 1500 deer stone monuments are in Mongolia. The Institute of Archaeology of the Mongolian Academy of Sciences lists 1240 examples (Turbat 2018), about 100 in southern Siberia in the republics of Altai, Tuva and Buryatia, and a few dozen in the north of the Chinese province of Xinjiang and in eastern Kazakhstan. The stones have been known since the end of the 19th century thanks to Grigory and Alexandra Potanin who took part in the expeditions of the Russian Geographical Society to Siberia, Mongolia, China and Tibet. During their visits to Mongolia in 1876 and 1877, they surveyed stelae and structures from the Bronze Age (Potanin 1881, vol. 2). Ten years later, Vassily Radlov, a famous Turkologist, included deer stones in his *Atlas of Mongolian Antiquities* (Radlov 1892). It should be noted that Bronze Age stelae were sometimes used as a support for Turkish runic writings in the 7th and 8th centuries of our era. The same phenomenon occurred with the Okuniev stelae discussed in the previous section. By documenting the runes inscribed

on the menhirs, Turkish scholars made the first surveys of the decorated stelae. After the Second World War, authors such as Alexei Okladnikov and Natalia Chlenova drew attention to deer stones by analysing the typology of their iconography as objects of Scythian culture (Okladnikov 1954; Chlenova 1962, 1984). Over the last 40 years, study of the stones has developed thanks to increasingly easy access to archaeological sites. Due to the vast steppe areas to be prospected, with no roads, and accessible only during the summer season, isolated sites remained hidden for a long time. The fall of the Soviet Union then contributed to the arrival of foreign archaeological missions which enriched discoveries, including the corpus of deer stones. In 1994, the number of stones was estimated at 700 (Savinov 1994). When a joint Monaco-Mongolian mission arrived in 2006 in the sector of the Upper Tamir Valley (province of Arkhangai), only about 40 stelae were listed. Today, 115 deer stones have been found and almost every survey leads to the discovery of new examples. In 2019, for example, the team uncovered three new menhirs. Some sites are particularly spectacular due to their concentrations of standing (and often aligned) monoliths. In Mongolia, the best-known sites are Ulaan Uushig (Takahama *et al.* 2003, 2006; Kovalev *et al.* 2016), Jargalant (**Fig. 9**) (Turbat *et al.* 2011) and Ulan Tolgoi (Fitzhugh 2003, 2004), which had already attracted the attention of the pioneers of steppe archaeology and led to the first scientific publications (Volkov & Novgorodova 1975; Volkov 1981; Novgorodova 1989; Savinov 1994). The site of Ulaan Uushig is also known for its deer stone with a carved face at the top, a feature of only about ten stelae out of 1500. In the heart of the immense steppe expanses, remote valleys still contain funerary complexes where engraved stelae remain buried in the sand. In 2019, at the source of the Khunnuin Gol valley, the joint Monaco-Mongolia mission used a drone to document a previously unknown necropolis containing more than 30 funerary complexes. On the western confines of the Mongolian plateau, the Altai is also a cross-border region very rich in archaeological remains, and is still being surveyed (Bayarsaikhan 2015; Tishkin 2020).

Fig. 9 – Deer stone stele from the Jargalant site, Arkhangai province, Mongolia. Quartzite, size: 386 x 56 x 35 cm (Photo: J. Magail).

Deer stones are part of a vast group of menhirs left by a mosaic of nomadic tribes from Mongolia to the Ukraine from the 2nd to the 1st millennia BC (Olkhovsky 2005; Tishkin 2013). The stelae in the eastern steppe have been classified into three categories based on the style of their iconography and their geographical distribution (east-west): Mongolian-Transbaikal, Sayan-Altai and Eurasian (**Fig. 10**). The Mongol-Transbaikal type is the most common and warrants the term 'deer stone', as it is distinguished by engravings of hordes of leaping deer (*Cervus elaphus*) (**Figs. 9**, **10a** and **11**). The legs of the deer are folded under their bellies, and their bodies and muzzles are outstretched like a bird in flight. The large antlers of the animals extend along their backs to convey additional movement. The fact that all the deer bear large antlers suggests that they are fully mature males depicted as they appear during the rutting season in early autumn.

When in primary contexts, the Mongolian-Transbaikal type stelae are always embedded in mounds of earth, a few dozen centimetres high, and associated with sites comprising dry-stone structures, with ritual deposits (Magail 2015). The height of these menhirs varies from 1 m to more than 5 m (Ulan Tolgoi site). They stand in the middle of mounds and stone circles that contain, respectively, deposits of horse heads and burnt bone splinters, and they

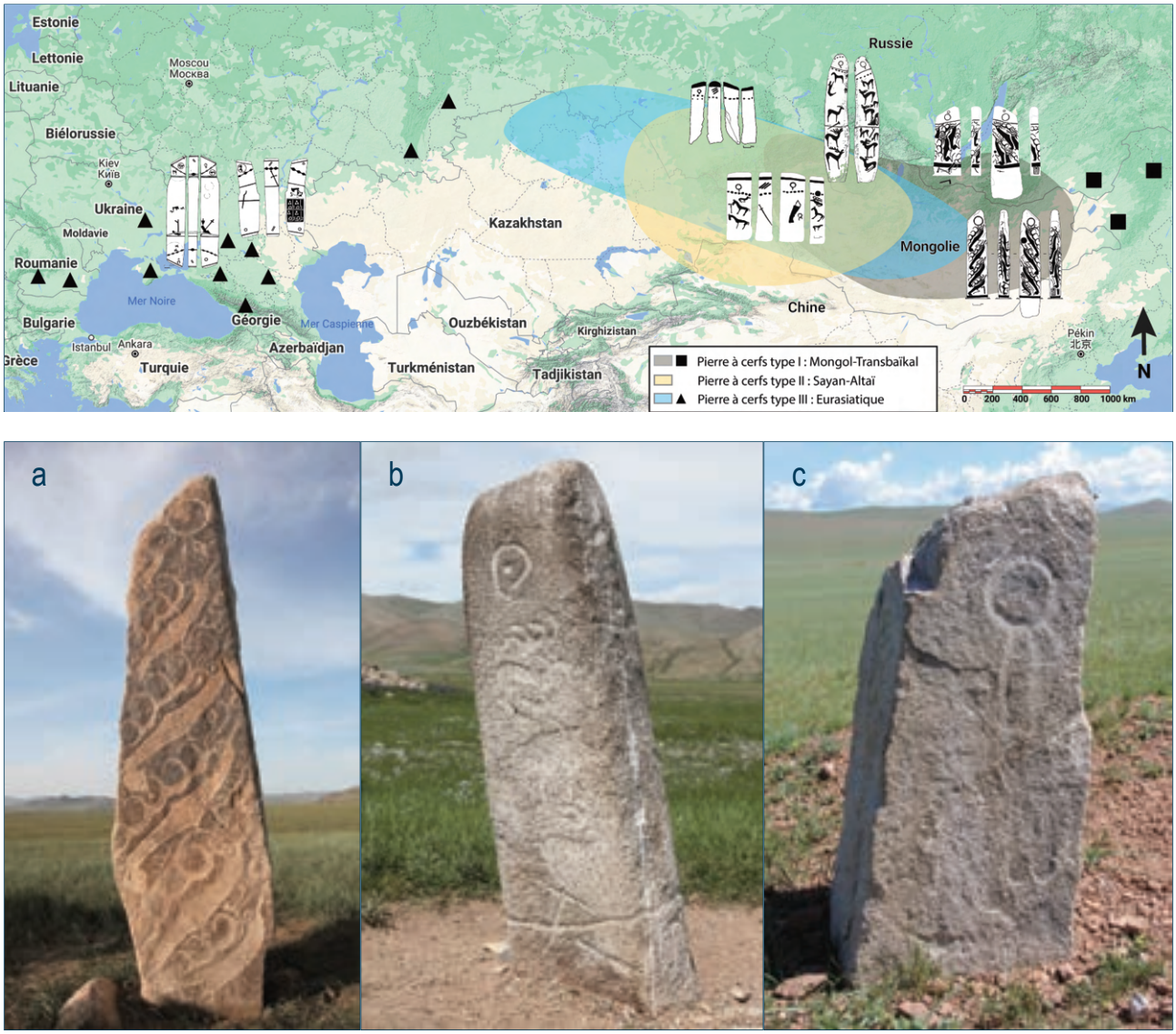

Fig. 10 – Map of distribution types of stelae (After Novgorodova 1989). Examples of the three types of stelae known as 'deer stone': a. Mongolian-Transbaikal type Shivertiin am stele, size: 252 x 28 x 50 cm; b. Sayan-Altai type Doroljiin am stele, size: 121 x 30 x 31 cm; c. Eurasian-type Khavtsalyn am stele, size: 86 x 34 x 35 cm (CAD & photos: J. Magail).

Fig. 11 – Stele from the Khunnu Gol valley: a. Survey of the four faces; b. Reconstruction (Survey and reconstruction by Y. Esin).

often belong to larger funerary complexes called *khirigsuur* (*хиригсуур*) in the Mongolian language (Allard & Erdenebaatar 2005; Broderick *et al.* 2014; Monna *et al.* 2020). The artificial mound, which may cover an area of a few dozen square metres, may be located on the periphery of an individual grave placed under a stone mound, itself surrounded by hundreds of small mounds. The size of the *khirigsuur* vary greatly, from 100 m² to several hectares. The two largest examples in Mongolia, measuring 12 and 14 ha respectively, are located in Urt Bulag in the province of Arkhangai (Houle 2010). By identifying the types of structures associated with the stelae, members of the joint Monaco-Mongolia mission uncovered many of the hundred or so stelae in the Upper Tamir Valley (Magail *et al.* 2010; Gantulga *et al.* 2013). Over time, some of the stones have fallen and have been covered by granitic sands.

The Sayan-Altai type stelae in primary context are also found in funerary complexes, but closer to the central burial mound than the Mongol-Transbaikal type stelae installed on their artificial mounds (Tishkin 2020).

About 90% of reused deer stones are found in Early Iron Age (700 BC) slab tombs. They were erected at the four corners of these structures or used in the construction of the sides of the grave along with other slabs set on their sides. Six deer stones were discovered during the excavation of the Tsatsyn Ereg A92 slab tomb (Gantulga *et al.* 2009). Four of these were erected in corners, one had been buried flat above the deceased, and the sixth formed part of the side wall. In 2014, in the same area, the team discovered a further six decorated stelae that had been moved several dozen metres from their primary location in a funerary complex to a set of four slab tombs (Magail 2015). Eight of the 115 menhirs found in Upper Tamir were reused in places of worship built by Turkish populations in the 7th century AD (Magail *et al.* 2010). This reuse has continued until the present day with some 20th century tombstones created from fragments of deer stones. Five such examples have been identified by the joint Monaco-Mongolia mission in modern Upper Tamir cemeteries (Gantulga *et al.* 2015).

In the Republic of Tuva (Russia), the archaeological excavation of the Arjan 2 tumulus uncovered deer stones of the Mongolian-Transbaikal type in Early Iron Age tomb architecture (650 BC) (Chugunov *et al.* 2010). Sayan-Altai type stelae were also sometimes reused; several were found in a Turkish Altai religious enclosure (Tishkin & Shelepova 2014). Engravings of leaping deer are also found on hillside rocks in the same geographical area as stelae and khirigsuur (Novgorodova 1984; Jacobson-Tepfer 2001; Jacobson *et al.* 2001). For example, a rock art site 5 km from Tsatsyn Ereg includes engravings of leaping deer associated with other animal themes, including the ibex (Gantulga *et al.* 2018). Interpretations of the significance of the decorated stelae must take into consideration the use of the image of the deer in all the iconographies of the steppe civilizations. Is this wild animal, which seasonally loses its antlers, a ferryman of souls to the beyond (Magail 2005, 2015)? Understanding the place of the stag in the bestiary and in the founding myths of nomads, hunters, shepherds and warriors will undoubtedly shed light on its megalithic context (Jacobson-Tepfer 2015).

The only anthropological certainty is the strong social coherence that gave rise to the constuction of hundreds of funerary complexes and deer stones using the same technical and religious protocols. Their standardized typology attests to the observance of rigorous rules reproduced over an area of more than a million km^2. The quality of the motifs engraved on materials as hard as granite and quartzite (**Fig. 9**) suggests that engraving techniques were transmitted from one generation to the next, perhaps even taught in workshops. While the decoration and layout of menhirs follow rules, the dry-stone *khirigsuur* structures, some of which extend over several hectares, also exhibit identical layouts despite being hundreds of kilometres apart (Wright 2007, 2014). The distribution of mounds and stone circles around a tumulus suggests a strict ritual, codified by oral tradition, perhaps dedicated to the deceased buried in the centre, who became a supporting spirit of the tribe. Analysis of the archaeological traces of the repetition of rites allows new hypotheses to be formulated regarding the chronology of various cults (Lepetz *et al.* 2019). The systematic deposition of a horse's head under each mound, from Khenti province to 1000 km further west in the Altai, evokes the same sacred gesture (Fitzhugh & Bayarsaikhan 2008, 2009; Makarewicz *et al.* 2018). The practice of uninterrupted nomadism for more than 3000 years explains the astonishing preservation of the remains. This greatly facilitates research on structures and monoliths using the latest methods. A programme of dating the many elements within the Tsatsyn Ereg burial complex, comprising 1023 mounds around the central burial mound, has been started to establish the construction period of the complex (Zazzo *et al.* 2019). Major photo-grammetry campaigns have also been carried out to record the complexes, stelae and iconography (Magail *et al.* 2017; Monna *et al.* 2018, 2020; Rolland *et al.* 2019). Observation of the stele surfaces revealed traces of ochre on deer stones from Arkhangai province (**Fig. 11**) (Esin *et al.* 2018). Research is also in progress to establish chronological relationships between all the successive cultures in the geographical area of deer stones and *khirigsuur* (Taylor *et al.* 2019).

4. The megalithic structures of Tagar aristocratic tombs

During the Iron Age, an aristocracy emerged in southern Siberia (Russia), with some tombs that can be described as megalithic. The valleys of the kings of Arjan and Salbik, located in the republic of Tuva and the republic of Khakassia respectively, are the necropolises with the most impressive kurgans in terms of size. Deer stones were discovered in the Arjan 2 burial mound (Chugunov 2010), but the most gigantic elements can be found in the funerary architecture of the Salbik necropolis. Tomb no. 1, excavated entirely between 1954 and 1956 by a team led by Sergei Kiselev, is one of the largest tombs of the Tagar culture (Marsadolov 2010, 2015). Its megalithic construction is still perfectly visible today thanks to the excavation that removed the whole mound of earth. The peculiarity of the Tagar tombs is their pyramidal shape, originally more than 12 m high, which gradually subsided over 2400 years of natural erosion. The mound is made of sediment but its quadrangular base is bordered by an alignment of slabs lying on their sides, each weighing several tonnes (**Fig. 12**). The base of tomb no. 1 is a 65-m square with an entrance on the east side opening

Fig. 12 – Aerial views of two large aristocratic tombs of the Salbik necropolis: a. Tomb no. 1 whose tumulus was excavated in 1954, size: 65 x 65 m; b. Tomb no. 7, never excavated with its tumulus, size: 55 x 55 m (Photos: F. Monna).

Fig. 13 – Aristocratic tomb at the Safronov site in the south of the Republic of Khakassia (Photo: J. Magail).

onto a path of about 15 m, marked on either side by two large menhirs.

Tagar necropolises with several dozen burials are very numerous in the vast steppe plains of the Khakassia Republic. As the perimeter of each tomb is made up of slabs lying on their sides and stelae, these cemeteries appear as large fields of standing stones (**Fig. 13**). Half of the stelae bear rock engravings that often belong to several protohistoric periods. The distribution of iconography is therefore much less organized than that of the Okuniev stelae and deer stones.

5. Conclusion

The mosaic of High Asian nomadic cultures developed several forms of megalithism from the middle of the 3rd millennium to the end of the 1st millennium BC. It is astonishing that these herding populations, whose way of life was not favourable for construction, nevertheless chose to spend a great deal of energy building monuments. A deer stone quarry, discovered 6 km from Tsatsyn Ereg (Magail 2015), and a slab extraction zone located 12 km from Salbik are evidence of the important logistics linked to the transport of menhirs. The large and ever-increasing number of recorded funerary and ritual structures shows that the organization of nomadic societies has probably been significantly underestimated. The prospects for research are immense.

The similarities between the megalithisms discussed in this article may shed light on the beliefs of these populations. The first is the funerary and ritual context of sites where the aid of the deceased individual was probably invoked through rituals performed on a recurring basis. The hundreds of deposited horse heads, arranged around the Arkhangai mounds and stelae, support this hypothesis. A second common denominator is the predominance of sculptures, engravings and paintings, which contribute to the symbolic success of the monuments. The iconographies of Okuniev menhirs and deer stones are also present in rock art used to mark sacred places which, although different from tombs, were perhaps permeated by or under the protection of the same divinities (spirits, supernatural beings, genies, etc.). Research into traces of paintings is still in its infancy and continued investigation promises future revelations.

Digital 3D documentation of the Tamchinsky deer stone

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Kair ZHUMADILOV, Lyudmila LBOVA,
Aleksandr SIMUKHIN

1. Subject

'Deer stones' are stone stelae with images in a quasi-realistic ornamental or decorative style. The term is based on the principal figures: 'flying deer', which encircle the stelae, flowing from face to face, turning in an upwards spiral. In addition to stylized deer, the stelae show figures of horses, wild boars, goats, dogs, panthers, other animals, and sometimes birds. The stelae are roughly rectangular stones with beveled tops. There are more than 800 deer stones in the steppe zone of Eurasia, but a large concentration falls in the territory of Mongolia. The Tamchinsky deer stone (**Fig. 1**) was known from archival photographs in the early 20th century (**Fig. 2**) and stood in front of the main temple of Tamchinsky datsan (Sokshin, Tsogchen, Selenginsky district of the Republic of Buryatia) (**Fig. 3**). This stele was the subject of our study.

2. Method

In a pilot attempt to build digital tracings in an automated way for the stele, we applied a combination of graphic and topographic filters to a 3D model and drawings of the microrelief. The method comprised:

- shooting, image processing and photogrammetry (Jebara *et al.* 1999);

- creating a 3D model using Agisoft Photoscan software;

Fig. 1 – Tamchinsky deer stone (Photo: P. Marnuev).

Fig. 2 – Gusinoozerskiy datsa (Photo: R.J. Sonnenburg, beginning of 20th century).

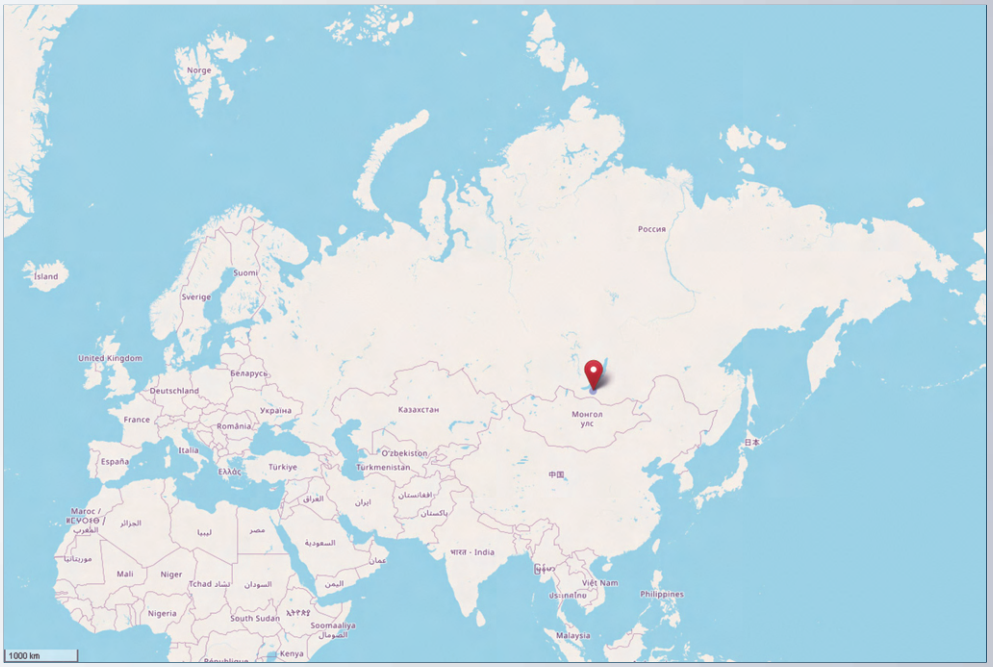


Fig. 3 – Location of Gusinoozerskiy datsan.

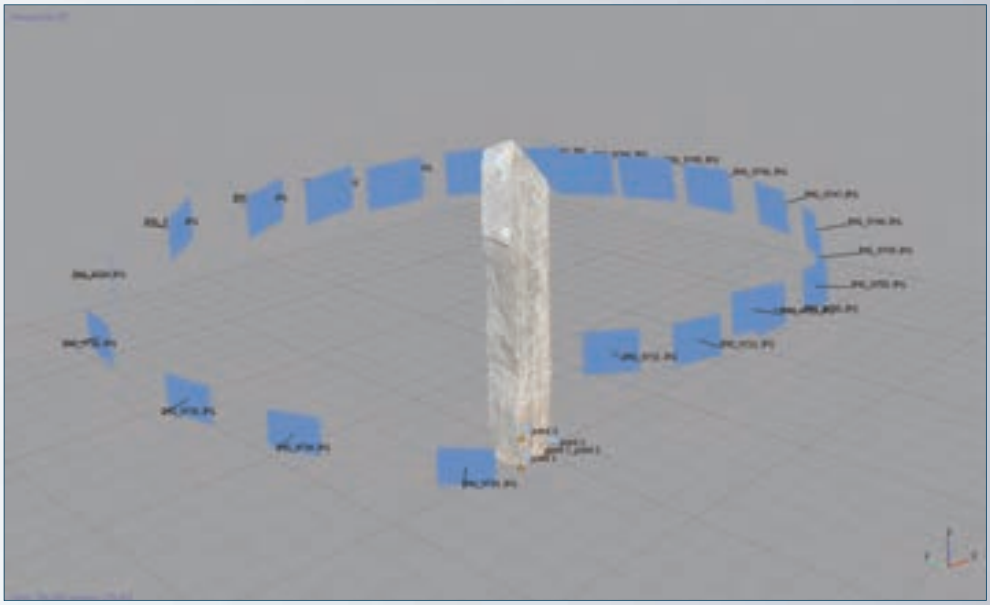


Fig. 4 – 3D model of the deer stone produced using Agisoft Photoscan.

- alignment, scaling, orthophoto acquisition and the creation of a Digital Elevation Model (DEM);

- image processing using Positive Openness and Canny Edge detection algorithms (Monna *et al.* 2018); and

- vectorization and manual drawing (if necessary).

The 3D model was made from 23 photographs taken from different sides of the object, using Agisoft Photoscan software (**Fig. 4**). Image processing produced a dense cloud of 2.8 million points. Photographs were obtained using a Canon 6000 digital SLR camera, with a Canon EF-S 18-135mm f/3.5-5.6 lens.

3. Results

A DEM model (853×2493, 1.6 mm/Pix) and an orthophotograph (835×4461, 0.8 mm/pixel) of a panel was obtained (**Fig. 6: 1**). Software filters, Positive Openness (Yokoyama *et al.* 2002), Simple Local Relief Model (SLRM; Hesse 2010) and Slope Gradient were applied to the DEM model using the Relief Visualization Toolbox software. The most expressive image was obtained using the SLRM filter (**Fig. 6: 2**), but some details were lost. The best preservation of detail was obtained on the original orthophotography and on the image created using the Positive Openness filter. The Canny Edge Detection filter (Canny 1986) was used for the initial automatic border drawing, which gave the best result when using the filter on the SLRM image (**Fig. 6: 3**). Manual drawing was carried out using the Adobe Illustrator graphics package, where the layers of Positive Openness, Canny Edges Detection and SLRM were used as auxiliary layers-substrates. The layers were previously aligned to scale in Adobe Photoshop. On the fourth layer in Adobe Illustrator, a vector image was drawn (with reduced opacity to make it easier to work with concave elements) using the curvature tool: curvature points or corner points were placed along the contour of the image. After the figure was closed, it was automatically filled with the filter (**Fig. 6: 4**). For comparison, hand tracings are shown in **Fig. 6: 5**.

4. Heatmap

For a small section of the panel, we built a heat map of heights based on a 3D model of the panel obtained by photogrammetry. The panel was photographed using a Canon 600D DSLR camera with a Canon EF-S 60mm f/2.8 Macro USM lens. A 3D model with a resolution of around 8 million pixels was created using Agisoft Photoscan. From this model, a section of 40 × 30 cm with a resolution of 3.2 million points was extracted. The resulting heat map, made using Geomagic Studio, shows the elevation changes of the microrelief from 5 mm (red) to -5 mm (blue) (**Fig. 5**). In addition, in processing the contours of rounded lines, regular oblique marks – probably from a metal engraving tool – became well defined.

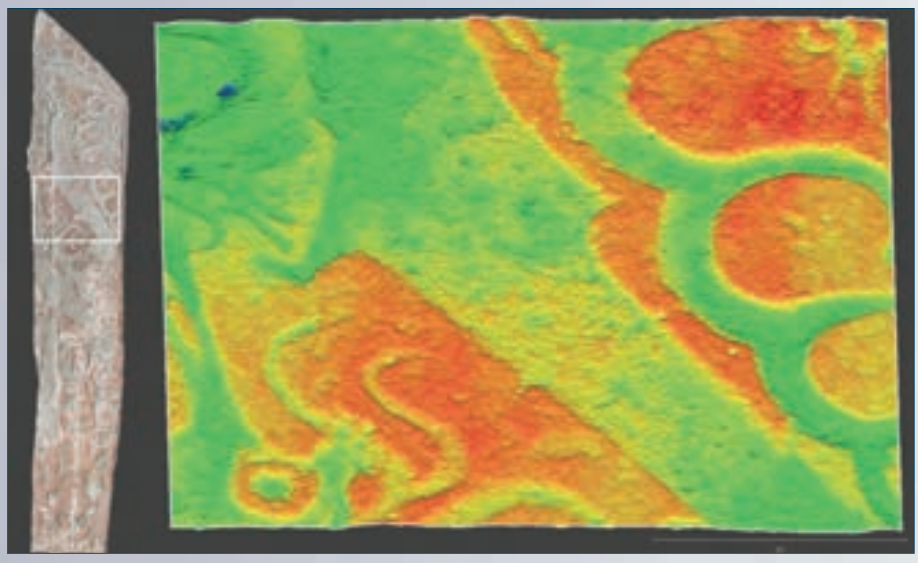
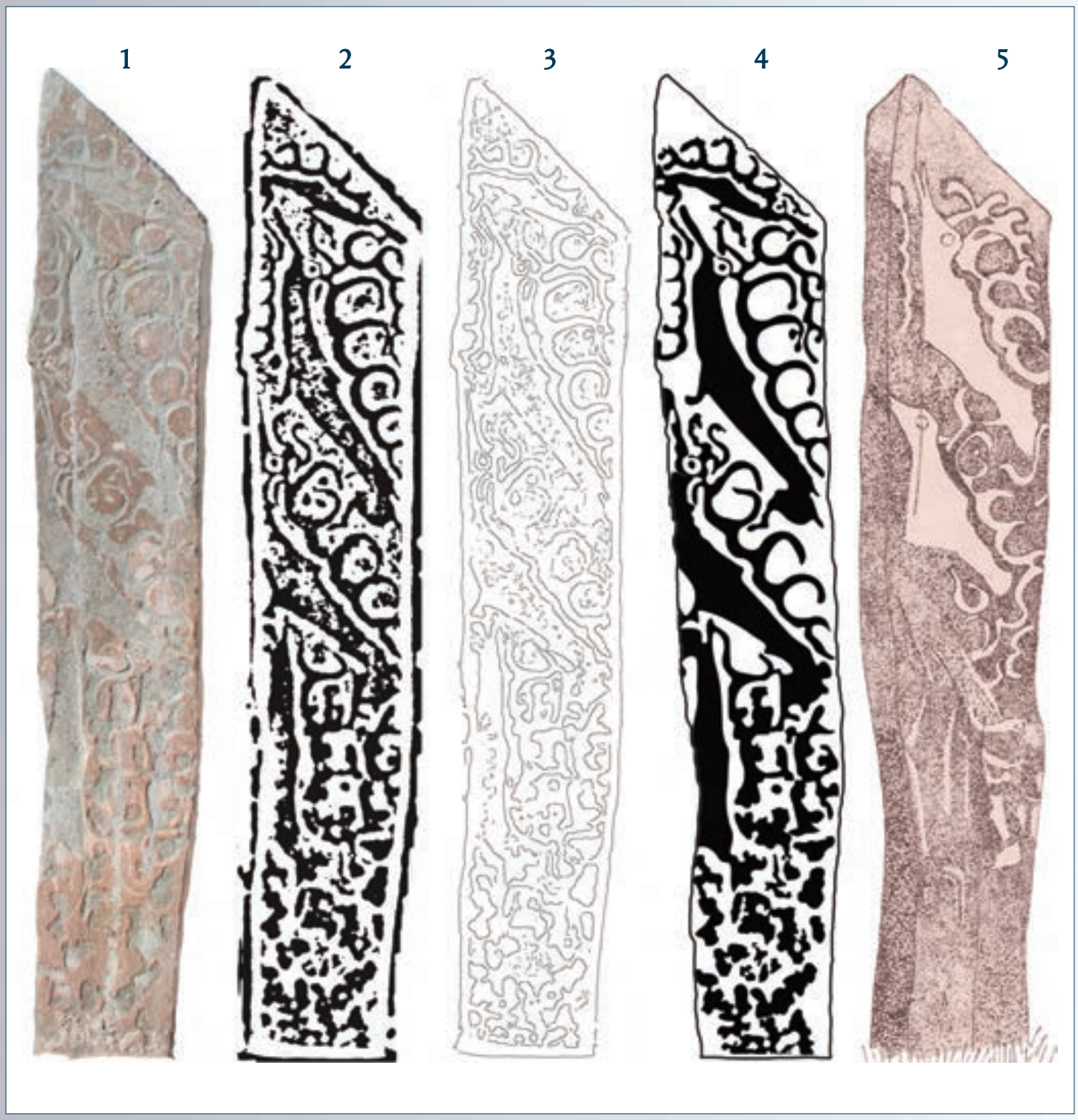


Fig. 5 – A heat depth map of a panel section, based on 3D-models of macro photos.

Fig. 6 – 1. Orthophoto; 2. Processing DEM of the panel by filter SLRM; 3. Processing DEM of the panel by the SLRM filter and then Canny Edges Detection; 4. Drawing performed in the graphical editor; 5. Manual drawing with prints 1988 (L. Lbova).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5. Conclusion

The technology described significantly speeds up workflow compared to traditional copying techniques and provides 3D models that can be shared when working remotely or used to conduct further analysis, for example, with morphometric methods. Specialized software allows analysis of the surfaces of the 3D models. The results can be used in a variety of areas of archaeological research.

A comprehensive file of research materials, including primary photos, 3D model files, and images processed by the graphic and topographic filters, is published with open access in the repository figshare.com with DOI:10.6084/m9.figshare.7807217

The 3D model of the deer stone with tracings is published on the same website and can be viewed online at 3d.nsu.ru/object/view/303

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Translated from French
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Megalithic traditions in the Early Bronze Age of the Mongolian Altai: the Chemurchek (*Qie'muerqieke*) cultural phenomenon

Abstract: Not later than the 2700-2600 years BCE, in the western foothills of the Mongolian Altai (modern Xinjiang, Mongolian, Kazakhstan territories), burial constructions begin to be erected, having no earlier analogies in the Eurasian steppes. These were collective burials committed in huge stone boxes built of vertical stone slabs. Tombs were surrounded by stone and earthen cairns, with multiple façades overlapping each other like 'onion skins'. The same cists with collective burials are also found inside large rectangular stone enclosures. In another type of burial construction, tombs were surrounded by the walls of an easterly-oriented corridor built of dry masonry. On their eastern side, the collective tombs in stone boxes had ritual entrance-portals and anthropomorphic stone statues-menhirs. The statues-menhirs depict a naked figure with a crook and a weapon, wearing a pectoral around the neck, often decorated with a garland of triangles. The face is delineated by a protruding ring, with the eyes shown by protruding rings or discs. On the inside, the walls of the stone boxes were decorated with geometric patterns in red ochre paint, including garlands of triangles, oblique grids, concentric rhombuses, and meanders.

Ritual rectangular stone enclosures with stelae and east-facing portals have been discovered in the highest region of the Mongolian Altai. On the walls of these enclosures are images of 'deities' with parabolic bodies and antennae, but without heads. This territory clearly had a sacred significance. During the excavations of ritual enclosures, engraved anthropomorphic slate plaque-idols were found, similar to finds from the Iberian Peninsula.

In the burial structures, the most frequent finds are stone and earthen vessels. Some of the ceramic vessels represent local traditions but most of the clay and stone examples differ markedly in form and ornamentation from local prototypes, characterized by spheroid, ellipsoid jars and flat bottomed pots, slightly narrowing at the mouth and base. The most common decoration is a horizontal line with a garland of triangles placed under the rim of the vessel. All these features are documented in the context of Western European megalithic cultures (western and southern France, Iberian Peninsula, British Isles, western Alps) from the 4th to the beginning of the 3rd millennium BCE. This applies to the architecture, sculpture and rock art, as well as the form and ornamentation of vessels. For this reason, we

attribute this set of these features, known as the 'Chemurchek cultural phenomenon', to the circle of megalithic traditions that penetrated the centre of Asia as a result of migration from a region encompassing southern France to the Alps.

Keywords: *Chemurchek (Qiemuerqieke) cultural phenomenon, Final Neolithic, Early Bronze Age, China, Mongolia, Kazakhstan, Western Europe, megalithic architecture, megalithic art, statues-menhirs, engraved plaques, parabolic anthropomorphs*

1. History of field research

Numerous burial places of the Chemurchek (Qiemuerqieke) megalithic cultural phenomenon dating to *c.* 2700/2600-1800 BC have been registered on the western and eastern sides of the Mongolian Altai in the present territories of China and Mongolia and the southern part of Eastern Kazakhstan (**Fig. 1**) [(1)].

Field research of Early Bronze Age sites in Dzungaria and the Mongolian Altai started in the first half of 1960s. A Chinese archaeologist, Li Zheng, was the first to study different types of burial constructions in the Ertix basin and to connect them with neighbouring stone statues (Li Zheng 1962). Subsequently, ten rectangular enclosures with stone boxes and statues, and seven stone boxes standing alone were excavated by Yi Manbai in the Keermuqi 克尔木齐 (now *Qiemuerqieke* 切木尔切克, Chemurchek) River basin in Altay County in 1965 (Xinjiang shehui 1981). In the 1990s, Wang Linshan and Wang Bo (Wang Linshan & Wang Bo 1996; Wang Bo 1996b) investigated barrows of this type and also recorded stone statues. Though excavations were carried out on some burial places in China, the results of these are known mainly through superficial descriptions and photographs in both scholarly and popular publications. Photographs, diaries and some artefacts from the excavations of Qiemuerqieke in 1965 were lost, and connections between excavated stone cists and statues remained unclear. The present author managed to introduce some clarity with a survey of this burial place in May 1998 before all enclosures were destroyed by plowing and development. Specifically, an enclosure excavated in 1965 'Kermuqi M2' (named in Chinese literature 'Kayinar 2 no. 2') with an associated statue, and previously excavated enclosures M14, M15 and M16 were explored (Kovalev 1999: 140-141). In the last decade, several burial constructions of Chemurchek types have been excavated in Xinjiang, mainly by Xinjiang Institute of Cultural Relics and Archaeology (for some republications see Xinjiang wenwu 2015): one stone box (M19) in Dongtalede 2 burial ground (Xinjiang wenwu 2013a); three barrows (M2, M3, M4) in Tuoganbai 2 burial ground in Habahe county (Xinjiang

(1) I use both the pinyin system and Mongolian and Kazakh languages to transcribe North Xinjiang geographical names. Many of the names in the territory of Dzungaria are of the Kazakh and Mongolian origin and are distorted in Chinese transcription. For the name of the eponym Chemurchek/*Qiemuerqieke* river and township we follow the traditional transcription of Russian geographers Potanin (1881: 37), Sapozhnikov (1911: 132) and Grumm-Grzhimaylo (1914: 271-273), the first Europeans to conduct a geographical investigation of the region and to record the local name of the river as 'Chemerchek', used in Russian official maps. In the modern standard Chinese pronunciation (Beijing dialect) this foreign word is written as '切木尔切克'. 'Qiemuerqieke' is pronounced in English as 'Chemurchek' (see for example CCTV '丝路发现' documentaries). Grumm-Grzhimaylo recorded that some local people (Mongolian-speaking) used to give the river an additional name, 'Kherem', from the Mongolian 'kherem' or 'fortress' (Grumm-Grzhimaylo 1914: 271), hence the inconsistency in the name of the river which occurs as Keermuqi=Kheremch/Qiemuerqieke=Chemurchek in modern Chinese publications. Varenov (1998) first introduced this toponym in the form of 'Chemurchek' in archaeology. Weiming Jia's and Turbat's attempts to introduce new transcriptions of the toponym cannot be considered constructive or substantiated, having nothing in common with either the linguistic evidence or the present Chinese official name. Wei Ming Jia tries to reproduce the name distorted by current Kazakh population of the region through folk (false) etymology like 'Shamirshak=Шеміршек', i.e., in Kazakh 'cartilage' (Weiming Jia & Betts 2010: 276). Mongolian scholar Turbat, on the contrary, tries to prove that it is originally a Mongolian name referring to the name in Oirat language on an 18th century 'Renat Map' of Dzungaria as 'Kemezek' (an obviously distorted transmission of the original name), from which he constructed the never previously used 'Khemtseg' (Turbat 2014). However, the root 'kem/khem' belongs not to Mongolian, but to a much older lexical layer of the Sayan-Altai toponyms, like the old Turkic Khem (the Yenisei river), the Khemchik river (in Tuva), the Kanas lake etc.; it is possible that these toponyms date to the Bronze Age but the modern context associates them only with the Tuvinian language where the root kem/khem is a substrate remnant (Molchanova 1979: 55-62; Murzayev 1974: 184-188).

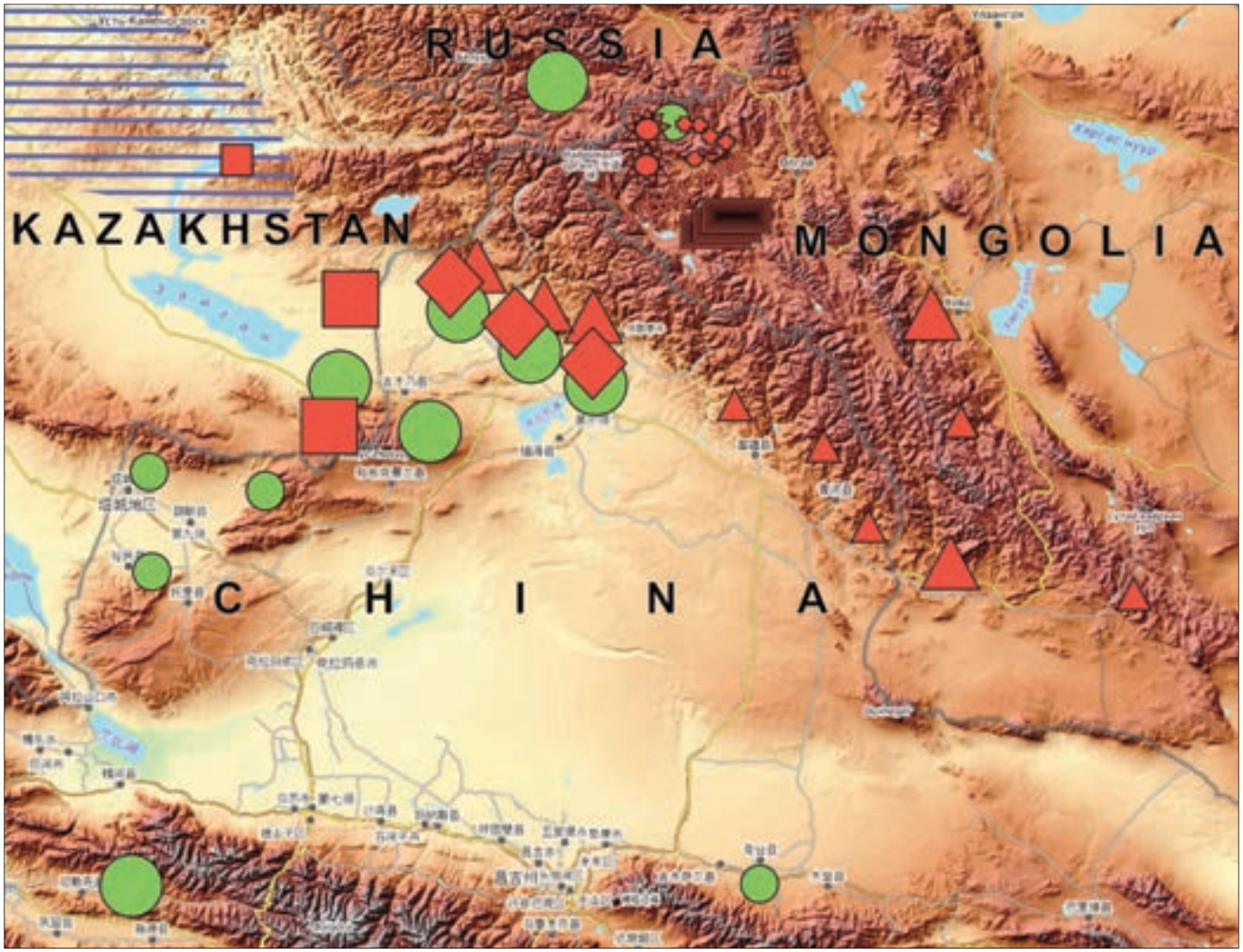

Fig. 1 – Distribution map of different types of Chemurchek burial and ritual structures and neighbouring cultures. Large symbols denote clusters of constructions or finds. Red squares - Alkabek type barrows; red rhombuses - Keermuqi type barrows; red triangles - Bulgan type barrows; green circles - Afanasievo type barrows and finds; blue hutching - Elunino culture area; dark rectangles - giant enclosures; red crosses - small enclosures; red stars - main rock art galleries.

wenwu 2014); one barrow (M18) in Bolati III/2 burial ground in Buerjin county (Xinjiang wenwu 2017); two stone boxes (M12, M15) near highway G217 in the Altai region (Xinjiang wenwu 2013b); and one stone box (M1) in Jiangbutasi 4 burial ground in Qinghe county (Guo Wu 2016). Unfortunately, excavations of burial constructions in China do not reveal the most important elements of the structural design of stone cists and mounds; the quality of drawings is very low. As reported by Yu Jianjun, in the Chinese Altai region, 523 ancient burial grounds were investigated from which 62 have Chemurchek enclosures or stone boxes (Yu Jianjun 2015: 72). These sites (like many excavated structures) are known mainly by superficial descriptions and photographs in both scholarly and popular publications (Buerjin xian 2002; Xinjiang weiwuer 2011a; Zhang Yuzhong 2005, 2007 and others) which do not give a complete picture. Even the most detailed publications of modern excavations do not give information about the structure of the mounds, sections, shapes of the stone coverings and the positions of skeletons in the graves (Xinjiang wenwu 2014, 2017). Comprehensive reviews of all 'Chemurchek' remains in Xinjiang were undertaken by the author in 2012 and 2015 (Kovalev 2012, 2015a). One year later, an overview entitled *Qiemuerqieke culture* was published in Chinese (Qiemuerqieke wenhua 2016). This included, for the first time, diaries of explorations in 1961 and 1963, and photographs of all preserved burial goods from the 1965 excavations, but without scales, drawings or descriptions. Unfortunately, many of the heterogeneous cultural remains in this book

were included as 'Qiemuerqieke culture', particularly of those of the Andronovo and Afanasievo cultures and of the Turkic period. An unsuccessful attempt to create a reconstruction of excavated Kermuqi burial places and to create an overview of the Qiemuerqieke remains in the Altai region was undertaken by Jia Weiming with co-authors (Weiming Jia & Betts 2010; Cong Dexin & Weiming Jia 2014). In these two papers, drawings of statues and vessels prepared by the present author were used, often without references and mixed-up. The authors reconstructed 'Keermuqi' burial grounds based on published records without undertaking field exploration. As evidence of the earliest period they cite two bronze arrowheads of the Scythian period and one pottery vessel of the Turkic culture, both from secondary burials (Weiming Jia & Betts 2010: figs. 7, 4, 14). The coordinates of the sites are also confused, and ^{14}C dates are lumped together.

Between 1998 and 2000, the present author and Z. Samashev carried out fieldwork in the south of Eastern Kazakhstan in the Alkabek River basin near the Chinese border, in the Kurchum district of the Eastern Kazakhstan region. We excavated 12 rectangular stone enclosures of the Early Bronze Age at the burial places of Akhtuma, Aina-Bulak I, II, Kopa, and Bulgartaboty (Kovalev *et al.* 2014). One burial structure of this type (Kanai 9), near the Zaisan lake, had been excavated previously in 1952 (Kovalev & Mertz 2015). In 2002, D. Erdenebaatar discovered a Chemurchek burial place in the Mongolian territory at Yagshiin Khodoo. Between 2003 and 2010 the author and D. Erdenebaatar excavated 11 Chemurchek barrows near the centre of Bulgan sum (district) of Khovd aimag (province) in the south of the Mongolian Altai, including the burial places of Yagshiin Khodoo (barrows 1-3), Kheviin Am (barrows 1-3), Khukh Uzuuriin dugui 1 (barrows 1, 2), Khadatyn ovoo, Eregneg uul, and Buural Kharyn Ar (Kovalev & Erdenebaatar 2009, 2014a).

From 2007 to 2012, joint expeditions were led by A. Tishkin, Ch. Munkhbayar, S. Grushin, and the author, to the centre of the Mongolian Altai, near Khovd city. In total, 12 Chemurchek barrows were excavated: Ulaan khudag 1 (barrows 1, 12), Ulaan khudag 2 (barrow 3), Khalzan uzuur (barrows 1-4), Poligon barrow 1, Sharsum 1, Khuurai salaany am (barrows 1, 2), Belen usny denzh (Grushin *et al.* 2015; Kovalev *et al.* 2015; Tishkin *et al.* 2015a-b). In 2004, and between 2015 and 2019 the author, together with D. Erdenebaatar and C. Munkhbayar. excavated four small (Khuurai gov' 2, Khundii gov', Khar khoshuu, Khul uul) and two large (Khar chuluut, Khulagash) Chemurchek rectangular ritual stone enclosures in the north of the Mongolian Altai (Bayan-Ulgii aimag) (Kovalev & Erdenebaatar 2014b; Kovalev & Munkhbayar 2015). Following a short rewiew article (Kovalev & Erdenebaatar 2009), a full account of burial structures and ritual enclosures in Mongolia and Eastern Kazakhstan excavated before 2015 was published in two volumes enititled *The Earliest Europeans in the Heart of Asia: The Chemurchek (Qiemuerqieke) cultural phenomenon* (Kovalev 2014, 2015). The Mongolian scholar, Ts. Turbat, also excavated two Chemurchek stone boxes and one ritual structure (Takhilgat uzuur 31) in Mongolian Altai; the results of these excavations currently remain unpublished although selected photographs were included in two albums (Turbat 2016a-d). To summarize, 25 burial constructions have now been excavated in the Chinese territory, mainly in an unprofessional manner and with no recording of their architecture and burial goods. In Kazakhstan and the Mongolian territory however, our own expeditions undertook scientific excavations of 35 burial and 6 ritual constructions. Practical methods used during these excavations included detailed and successive cleaning of stone structures, drawing of plans and sections on a scale of 1:10, with separate recording of plans of different architectural horizons. This excavation methodology is compliant with Russian standards specially developed for the investigation of stone burial constructions, as architectural monuments contain important information about ancient culture. In this study of architectural features and funeral rites we will therefore rely on the results of the Russian-Mongolian-Kazakh joint excavations.

2. Typology and dating of burial and ritual constructions

It is possible to distinguish three types of burial structures and two groups of ritual constructions:

a) Alkabek type barrows – burial pits with dry-stone corridors inside stone enclosures;

b) Bulgan type barrows – collective burial chambers constructed from standing stones surrounded by multiple façades;

c) Kermuqi type barrows – collective burial chambers constructed from standing stones inside rectangular stone enclosures; and

d) 'giant' and 'small' rectangular stone enclosures with ritual purposes.

Burial constructions of the Alkabek type (**Figs. 1** and **3**) were excavated north of the Kazakhstan border. These are rectangular enclosures made of stone slabs; an 'entrance' formed with huge slabs is set in the middle of the eastern side. A dry-stone corridor (passage) made of small flat slabs leads to the burial pit and surrounds it. In all barrows – without exception – burial pits were set 2-5 m east of the centre, i.e., towards to the 'entrance'. One or two individuals were buried in each enclosure. At the burial place of Kopa 1, a stone stele carved to resemble a human figure was erected by the eastern side of the enclosure. My investigations in Eastern Kazakhstan in recent years show that, in addition to those on the slopes of the Altai, structures of this kind are also distributed across Tarbagatai Mountain region (300 km west). ^{14}C analysis and analogies with respect to burial goods show that the Alkabek type burial structures belong to a period between the 22nd and 18th centuries BCE (Kovalev 2011: 4-6).

South of the Kazakstan and Russian border, both in Xinjiang and Mongolian territories, there are two other types of burial constructions: the Bulgan type (**Figs. 1** and **4**) and the Kermuqi type. The Bulgan type is widespread throughout the entire territory of the Mongolian Altai in Xinjiang and Mongolia. These are huge stone boxes made of vertical slabs, standing on the horizon or slightly embedded, surrounded by elliptical or rectangular layers of earth with stone façades covering one another like onion skins. All the excavated and investigated Chemurchek barrows in the modern Mongolian territory are of this type. Eleven such barrows were also excavated in the Chinese Altai: seven near the Chemurchek in 1965, one in Dongtalede 2, two on 'highway G217', and one in Jiangbutasi. My own investigations and photographs in Chinese publications show that a minimum of 30 additional barrows of this kind are known in the Chinese Altai region (Kovalev 2015a). It is the most common type of Chemurchek burial structure.

The Kermuqi type structures are found only in Habahe, Buerjin, and Altai counties (**Fig. 1**). These have the same stone box as the Bulgan type, built in the centre of wide rectangular enclosure, usually with an east-west long axis. Ten kurgans of this type were excavated near the Chemurchek in 1965, together with three structures in Tuoganbai 2, and one enclosure in Bolati 3; others were also investigated in this area (Kovalev 2015a). The Kermuqi type structures have a very limited distribution area and analogies in construction indicate that this type derived from the Bulgan type barrows.

Archaeological excavations show that most of Chemurchek Bulgan and Kermuqi type stone boxes served as crypts for multiple burials. Up to 12 skeletons could be buried sequentially in each box. The stone boxes were built from huge slabs set vertically. Some burial chambers are decorated on the inside with ochre paintings in the form of geometric patterns, including concentric rhombuses, chevrons, garlands of triangles, grids, meanders and points. Burial goods include pottery and stone vessels, stone discs, primitive stone rods made of elongated boulders, lead and bronze earrings and stone arrowheads.

Stone statues are erected on the eastern side of both types of burial structures. Today we know of more than 80 such statues (for the most complete collection with good photos see Kovalev 2012 and also Wang Bo & Qi Xiaoshan 1996, 2010 and Xinjiang weiwuer 2011b), both in the Mongolian Altai and on the northern side of the eastern Tien Shan, which suggests that Chemurchek burial constructions might also be found in that area.

More than 30 ^{14}C dates (Liquid Scintillation Counting) obtained in Russian laboratories from samples of bones, wood and charcoal found in Bulgan type burial structures belong to a wide period from 2600-1800 BCE to 2400-2100 BCE (see Kovalev & Erdenebaatar 2009; Kovalev 2011: 4-9; *Earliest Europeans* 2014, 2015). A few ^{14}C dates

from the Kermuqi type structures date to 2900-2200 BCE [2].

Four newly obtained ^{14}C AMS dates from the bones of three individuals from Yagshiin khodoo barrows of the Bulgan type show that previously obtained LSC dates seem to be too late [3]. The sum of these AMS dates points to a date range of 2580-2470 cal BC rather than the 2290-1980 or 2470-2150 cal BC ranges of LSC dates produced using the R_Combine function for Yagshiin khodoo 1 and 3 previously published (*Earliest Europeans* 2014: 395). Moreover, it must be noted that in the Chemurchek stone boxes situated on the western slopes of the Mongolian Altai were found some Afanasievo culture vessels: egg-shaped pots and censers (incense burners) (Kovalev 1999, 2015; Lin Yun 2008; Kovalev & Erdenebaatar 2009) (**Fig. 1**). Afanasievo culture burial mounds in the Russian Mountain Altai have been dated by AMS to the 31st to the 29th centuries BCE, however in the Minisinsk basin, in the Steppe Altai and in Xinjiang they continued into the 27th and 26th centuries BCE (see Kovalev 2019; Poliakov 2019). Thus, the appearance of Chemurchek stone megalithic boxes with collective burials must date to the 27th-26th centuries BCE at the latest.

The ritual structures of Chemurchek are rectangular stone enclosures oriented mainly west-east with stelae on the eastern side (**Fig. 2**). Inside the Khar khoshuu enclosure was a trapezoidal flat stele with ochre painting (see Kovalev 2012: fig. 5) (**Fig. 2c, d**). The structures are very similar to the Kermuqi type burial structures but without stone boxes inside. All these enclosures are situated within an elevated area of the North Mongolian Altai where no Chemurchek burial structures were found. Five 'small' enclosures (6-10 m long) have now been excavated and three 'giant' constructions (18 x 28 m, 25 x 35 m, 40 x 60 m) were investigated and two of them have now been excavated (Kovalev & Erdenebaatar 2014b; Kovalev & Munkhbayar 2015). Inside the 'small' enclosures were ritual pits with charcoal and animal bones inside which secondary human burials were arranged. All the stone slabs consisted fences of the 'giant' enclosures were covered on the outside with petroglyphs of deities (**Fig. 10**), anthropomorphic figures, animals and signs. On the eastern side of each of the 'giant' enclosures, a ritual 'entrance' with two portals was constructed (**Fig. 2e**); similar portals were also excavated on the eastern side of Bulgan type burial structures. ^{14}C dates from charcoal (Kovalev & Erdenebaatar 2009, 2014b: 227-231), newly obtained AMS dates from bones from 'small' enclosures and ^{14}C dates for the 'giant' enclosures (Hollard *et al.* 2014: 201 [4]) show that all the ritual enclosures were built in the early period of the Chemurchek phenomenon, not later than the middle of the 3rd millennium BCE. I would suggest that the high-level Mongolian Altai Mountains served as a ritual zone for the Chemurchek people (Kovalev 2015b).

3. Interpretations of Qiemuerqieke remains

Mu Shunying and Wang Mingzhe date the most ancient burials of the Keermuqi burial places to 1200-700 years BC based on their opinion that this material possesses similar features to that of the Karasuk culture (Xinjiang shehui 1985). Wang Bo was the first to distinguish a new 'Qiemuerqieke' culture (Wang Bo 1996a), using this term for all monuments and casual findings dating to the Bronze Age in North Dzungaria, with no consideration of the obvious multinational origin of this material.

(2) Kayinarl III M6 (main burial) - Ua-7019: 4020±55 BP, i.e., 2900 (95.4%) 2300 cal BCE (Kovalev 2011: 4); Tuoganbai 2 M2A – BA-132208: 3895±30 BP, i.e., 2470 (95.4%) 2290 cal BCE; Tuoganbai 2 M2B – BA-132209: 3830±30 BP, i.e., 2460 (93.8%) 2190 cal BCE; Tuoganbai 2 M3 – BA-132210: 3995±25 BP, i.e., 2580 (95.4%) 2460 cal BCE; Bolati 3-2 M18A (main burial) - 4160±35 BP, i.e., 2880 (93.8%) 2620 cal BCE (Xinjiang wenwu 2015: 225, 2017: 28).
(3) GrM-12984: 3983±17 BP, i.e., 2567 (52.3%) 2522; 2499 (41.1%) 2468 cal BCE (Taylor *et al.* 2019); UCIAMS-226530-PSUG-5433: 4050±25 BP, i.e., 2634 (91.1%) 2487 cal BCE; UCIAMS-226526-PSUG-5429: 3980±25 BP, i.e., 2571 (53.3%) 2513; 2504 (42.1%) 2464 cal BCE (Wang *et al.* 2020).
(4) AMS dates obtained for 'small enclosures' Khuurai gov' 2 (GrM-12938 4034±16 (2618-2487 cal BC) (Taylor *et al.* 2019), Khul uul 1 (UCIAMS-226551,PSUG-5466 4250±25 (2913-2777 cal BC) (Wang *et al.* 2020), Khundii gov' (PSUAMS-6944 4290±35 (3013-2876 cal BC (Wang *et al.* 2020); OxA-36230 4114±29 (2763-2577 cal BC) (Taylor *et al.* 2019), also see Hollard *et al.* 2014: 201; ^{14}C dates of 'giant' enclosure Khulagash are: Le-11822: 3990±105 BC, i.e., 2900 (95.4%) 2200 cal BCE (human bones), Le-11821: 3990±25 BP, i.e., 2580 (95.4%) 2460 cal BCE (wood); of 'giant' enclosure Khar chuluut are: Le-11698: 4350±40 BP, i.e., 3040 (86.6%) 2890 cal BCE (charcoal), Le-11700: 3970±95 BP, i.e., 2900 (95.4%) 2200 cal BCE (wood).

Fig. 2 – Chemurchek ritual enclosures from ritual territory in Ulaankhus sum of Bayan-Ulgii aimag. Stelae on eastern side are indicated: a. Khul uul; b. Khundii gov'; c. Khar khoshuu; d. Trapezoidal flat stele with ochre painting in Khar khoshuu enclosure; e. 'Giant' enclosure Khar chuluut (not fully cleaned in 2015, showing the eastern wall with ritual entrance with two portals modelled from construction lines) (After Kovalev & Erdenebaatar 2014b; Kovalev & Munkhbayar 2015).

Following investigations, Wang Bo attempted to classify and to date the burial constructions and different kinds of stone sculptures (Wang Bo & Qi Xiaoshan 1996, 2010). Wang Bo believed most sculptures to be contemporary with burials in stone boxes and dated them to the Bronze Age. Many scholars, however, considered the main part of the structures excavated in 1965, and all the statues in southwest foothills of the Altai to date to the Late Bronze, Early Iron or Turkic period (e.g., Debaine-Francfort 1989; Chen Ge 1995; Varenov 1998, 1999). In 1998, during explorations in the Chemurchek River basin, I found the remains of stone burial constructions formerly excavated by Yi Manbai, and established an association between a stone enclosure, Keermuqi M2, (excavated by Yi Manbai) with a stone statue, Kaynarl (喀依纳尔) 2:2, which was published by Wang Linshan and Wang Bo in 1996 (Kovalev 1999: 140-141). This confirmed my conclusion about the synchronism of most of the stone sculptures from the Ertix region with the main burials in stone boxes of the Chemurchek ('Keermuqi') burial place, dated from the second half of the 3rd millennium to the first half of the 2nd millennium BC, in accordance with the analogies in burial goods. In an article published in Germany (Kovalev 1999), I proposed that, in Dzungaria, a separate culture existed in the Early Bronze Age having its origin in Western Europe. I also attributed the petroglyphs and other images of bulls with 'two legs' and S-shaped horns in Eastern Kazakhstan and the Altai to the Chemurchek culture, providing an opportunity to define the area of the Chemurchek population spread.

In 2002, Lin Meicun also proclaimed the earliest burials from 'Keermuqi' to be contemporaneus with the Afanasievo culture, based on analogies with Russian material (Lin Meicun 2002). He suggested that the Chemurchek people were Tokharians coming from Eastern Europe. Shui Tao, however, based on very poor quality, old pictures by S.V. Kiselev of Karasuk and Okunevo cultures vessels, dated the 'Keermuqi' stone boxes to the second half of the 2nd millenium BC (Shui Tao 2001: 29-32). Subsequently, a paper was published by Lin Yun (2008) that included a detailed review of the opinions of Chinese scholars concerning the dating of 'Keermuqi' sites. Lin Yun also came to a well-founded conclusion that the Chemurchek culture was contemporary with the Afanasievo culture but dated both to 2200-1900 BC based on old pre-calibration dating of Afanasievo. Broader dating of Chemurchek (mid 3th millennium to mid 2nd millenium BCE) is now accepted by Chinese archaeologists (Qiemuerqieke wenhua 2016: 43-47; Shao Huiqiu 2018: 31).

The idea that the Chemurchek culture appeared in the Altai region not later than the middle of the 3rd millennium BCE – on the basis of Afanasievo analogies and ^{14}C dating – was expressed by Yu Jianjun (2015), a principal investigator of Early Bronze Age sites in northern Xinjiang, in a review of former ideas about the origin and dating of Chemurchek sites in comparison to the results of modern excavation. After publications of new Mongolian and Xinjang excavation reports, some Chinese and Western scholars adhere to the idea that Chemurchek was connected with Afanasievo (3200/2600-2500) BCE) and Okunevo (2600-2500/1800 BCE) contexts. Guo Wu compared Chemurchek sites with those of the Afanasievo and Okunevo cultures, but instead found in them something similar to Eastern European Eneolithic and Early Bronze Age cultures (Guo Wu 2011: 254-263).

P. Jia and co-authors declared the Chemurchek culture to originate from the Afanasievo and Okunevo cultures (Weiming Jia & Betts 2010; Betts *et al.* 2018: 2-3), but do not compare the major Chemurchek features but rather findings of heterogeneous artefacts buried on rare occasions in Xinjiang barrows, for example, vessels originating from neighbouring territories. They argue that Afanasievo and Okunevo cultures, like Chemurchek, have cist burials, ceramics with incised patterns, some of which were round-bottomed, stone arrowheads and anthropomorphic stelae. This is very superficial. Firstly, the 'cist burials' of the Okunevo culture are small boxes usually built from four thin slabs, that are used for burial of one to two people; in the Afanasievo culture, there are large burial pits with timber chambers for one to two people. Both are very different from the huge stone Chemurchek constructions used for consecutive collective people. Secondly, ceramic vessels of the Okunevo culture are flat-bottomed and, like the pottery of other Neolithic-Bronze Age cultures of Siberia, covered with numerous impressions of different stamps; vessels of the Afanasievo culture are egg-shaped or

globular and also completely covered by stamp impressions. Original types of Chemurchek vessels are not egg-shaped but have an ellipsoid form with a round or slightly flattened bottom, and they do not have stamp impressions but rather incised lines or triangles on the upper part. Additionally, it should be noted that some of the vessels with stamps found in Chemurchek boxes belong to the neighbouring Elunino culture – not currently considered – which occupied a vast territory west of the Altai. Thirdly, in Afanasievo there are no sculptures and Okunevo sculptures show mainly syncretic anthropo-zoomorphic, not anthropomorphic creatures. The Okunevo stelae have a completely different design to the Chemurchek statues-menhirs: there are no protruding contours for the faces, arms, weapons etc.

At the beginning of 2000s, when I did not find any similar examples nearby to Altai, I noticed that for cultures dating from before 2700 BCE, all comparisons concentrated on a limited area of Western Europe. My articles proposing an origin for Chemurchek from the West European megalithic cultures of the Late and Final Neolithic periods were published in 2005-2011 in Russian, English and Chinese (Kovalev 2005, 2007, 2011; Kewaliefu & Eerdenebaatar 2009; Kovalev & Erdenebaatar 2009). We now have further evidence of this. I therefore start from the fact that the Chemurchek culture is a megalithic phenomenon not because of the veneration of giant structures but because Chemurchek was part of the great world of Atlantic megalithism of the 5th to the beginning of the 3rd millennium BCE; our aim is now to explain the transmission of an entire set of traditions over a distance of more than 6000 km during the first quarter of the 3rd millennium BCE.

4. Determinative features of the Chemurchek cultural phenomenon

By 'The Chemurchek Cultural Phenomenon' we understand a complex of specific features, described below, that suddenly appeared on western slopes of the Altai and which distinguish them from all other known cultural evidence of the Early Bronze Age in Asia and Eastern Europe. Not all these features are represented in every mound, but rather are spread over separate regions, resulting in the development of particular types of burial constructions. The independent but simultaneous appearance of several original innovations for burial construction in the same region seems quite impossible. We can suppose that initially there was a single source for all these innovations but later, people of a single culture spread over the Altai region and preserved separate and different combinations of the burial rite traditions. Below, I briefly describe the features that, in my opinion, make it possible to consider the Chemurchek culture a megalithic phenomenon. In addition, there are of course features that are explained by Near East and Eurasian Steppe influences and by contacts with neighbouring cultures, including the use of tools and ornaments made of bronze and lead, figurative art (images of animals, four-wheeled wagons, anthropomorphic one-legged and bi-triangular figures), and the presence, in rare cases, of vessels decorated with stamp prints. For more information about these please refer to the publications mentioned above.

4.1 Masonry passages of Alkabek type burial enclosures (Fig. 2)

Barrows excavated in the Alkabek River basin, as well as the previously excavated Kanai 9, consist of rectangular enclosures made of stone slabs with an 'entrance' marked with huge slabs placed in the middle of the eastern side. A dry-stone corridor of small flat stones (up to 7 layers in a wall) leads to the burial pit in which is set a wooden chamber. The dry masonry walls of the corridor extend around the burial pit. In all enclosures – without exception – the burial pits are not centrally placed but are set 2-5 m eastwards from the centre towards the 'entrance'. This indicates that the passage was the main structural element and the chamber was conceived as a part of this passage. Huge stones were used to close the corridor at the edge of the enclosure.

There is one unique region where the dry masonry is a specific feature of megalithic monuments of the Later Neolithic period. Prehistoric chamber tombs with dry-stone side walls dated to late 4th to the early 3rd millennium BCE occur in the departments of Hérault, Gard, Ardèche, Bouches-du-Rhône, Vaucluse, Alpes-Maritimes and Lot (dolmen de Souillac) in southern France (Bodreuil *et al.* 2006;

Girault 1986). A distinctive feature of these monuments is the use of dry masonry in passages which continue towards a dolmen, and sometimes in the construction of the chamber itself. There are examples where the chamber is almost united with a passage into a single whole, which appears to be a close analogy of the 'Alkabek' type barrows.

4.2 Multiple coverings with façades of Bulgan type barrows (Fig. 4) (5)

The huge stone boxes of Bulgan type barrows were reinforced from the outside (not on the top) by surrounding layers of stone or soil covering one another and faced with slabs or small boulders.

(5) Multiple decorative layers that make up the external mound is one of the most unique features of the Chemurchek culture. The Russian language has an appropriate noun: 'НАСЫПЬ'. They can also be defined as a simple structure like a platform or heap with every layer enlarging the mound. The word 'НАСЫПЬ' originates from the verb 'НАСЫПАТЬ', i.e., to put a loose substance like soil, sand or rubble onto a surface ('СЫПАТЬ'='pour', 'НА'='on'). Kurgans of the 4th-3rd millennium BC in the East European steppes were built in many stages: first the tomb was covered by a soil platform or mound (НАСЫПЬ #1), then the next tomb was inserted into this mound and the mound was covered by the next layer of soil or stones (НАСЫПЬ #2), etc. There were also layers that did not cover the entire mound, but only a part of it. If the artificial layer occupies a relative small area, then it is called, in Russian, 'ДОСЫПКА', that is, 'poured in addition'. In such mounds there may be up to 10-12 layers associated with graves built over a millennium. Tracing these structures allowed us to create a detailed sequence of the Eneolithic-Bronze Age with multiple periods. Different soil layers in the shape of a circle, ring or crescent were also built for ritual purposes. For example, Maikop culture mounds usually consist several 'sculpted' soil structures of red, black and white colours connected with one main burial. Thus in Russian the noun 'НАСЫПЬ' can be used for every soil or stone (rubble) surrounding layer, faced by stone façade, like those of the external mounds of Chemurchek as well as those of passage graves like that of Barnenez in Brittany, or those of dolmens in the South of France like Saint-Eugène or L'Ubac. To call each of these external structures simply a 'façade', as suggested by L'Helgouach, seems to me incorrect, since they represent a massive thickness, only lined with a 'façade'. In English I have to use the word 'covering' but it is not very accurate.

Fig. 3 – Alkabek type barrows with dry masonry passages (after removal of interior cairn): a. Aina-Bulak 1-3; b. Aina-Bulak 1-2. Kurchum district, East-Kazakhstan region, Kazakhstan (After Kovalev *et al.* 2014).

Fig. 4 – Bulgan type huge stone boxes for collective burials with surrounding multiple coverings with ovelapping façades (Bulgan sum, Khovd aimag). Different façades indicated by numbers. a-c. Khukh uzuuriin dugui 1-1; d. Kheviin am 1 (After Kovalev & Erdenebaatar 2014a).

Façades of bright white quartzite are also recorded. In 15 of the 23 barrows that we excavated in Mongolia at least two overlapping layers with façades were identified. Unfortunately, two monuments were excavated by a joint German-Mongolian project led by T. Turbat, without cleaning of the different layers and façades, but from their photographs it is clear that each monument had two façades (Turbat 2016b: Fig. 31, 33, 34). In Khukh uzuuriin dugui 1-1 barrow (**Fig. 4a-c**) we recorded one stone cairn inside and three successive soil coverings with stone façades; in Yagshiin khodoo 1, 3, Kheviin am 1, 3, Khurkh uzuuriin dugui 1-2 there were three layers in each (**Fig. 4d**). Photographs of burial enclosures of the Keermuqi type, excavated by Chinese archaeologists, show that such soil coverings with stone façades were constructed around stone boxes situated within the enclosure (Kovalev 2012: 54-55; Xinjiang wenwu 2014: Fig. 5, 2017: Fig. 59).

We can search for the origin of this tradition within the region of the Atlantic coast of France: Basse-Normandie, Bretagne, Pays de la Loire, Poitou-Charentes. Jean L'Helgouach compared this system of 'façades' with 'onion skin' (L'Helgouach 1999). Such dry masonry façades, overlapping each other, were used in the construction of the majority of mid 5th to mid 4th millennium BCE passage graves ('les tombes à couloir') of Western France, where cairns remained undamaged (Bouin & Joussaume 1998; Chancerel & Kinnes 1998; Dron & San Juan 1992: 36, Fig. 8; Germond *et al.* 1978; Giot 1987; Gomez de Soto 1998; Joussaume 1978, 1999, 2006; L'Helgouach 1976, 1998: 242-269, 311-330; L'Helgouach & Le Roux 1986; L'Helgouach *et al.* 1989; L'Helgouach & Lecornec 1976; L'Helgouach & Poulain 1984; Laporte 2013; Lecornec 1994; Le Roux 1995: 38-47; Le Roux *et al.* 2006; Le Roux & L'Helgouach 1967; Le Roux & Lecerf 1977, 1980; Mohen & Scarre 2002, etc., see figures in Kovalev 2011). In most cases, the burial structures of later periods – the so-called 'gallery graves' ('*Allées couvertes*') and the 'dolmens' which belonged to even later times had lost the multiplicity of façades, which were reduced to a single cairn along the perimeter of a 'gallery' or burial chamber.

Among these, however, there are monuments with overlapping soil and rubble coverings which were finished by 'façades', including some 'gallery graves' in Brittany (Liscuis I, II; Ti-ar-Boudiged) (Le Roux 1975: 514-518; 1977: 411-415; Le Goffic 1994: 138-147, Fig. 4-7) and also some megalithic graves of the South of France, dated between the end of the 4th millennium BC and the first third of the 3rd millennium BC (Laporte *et al.* 2011: 312-314). The most representative 'pseudo' gallery grave with multiple soil coverings (having traditional dry-stone façades) is the dolmen de Saint-Eugène in the Aude (Roussillon), which dates from the period slightly before 3000 BCE (for photographs before reconstruction see Guilaine *et al.* 1993; Bec Drelon 2015: Fig. 92; for inages after reconstruction see Guilaine 2006: Fig. 1; attribution and dating in Guilaine 1998: 52-53, 57, 142; Sauzade 2008: 345-346; Laporte *et al.* 2011: Fig. 15; etc.).

Some dolmens in the South of France possess an outer cairn with a 'façade' of dry masonry which is surrounded by another cairn. These cairns didn't cover the burial chamber but rather they surrounded it (Lagasquie *et al.* 1999). Such are *dolmens à vestibule, dolmens du Quercy* and others (Clottes 1977; Beyneix 2003: 116-117; Sauzade 2008: 342-343), for example, dolmen du Pech in Saint-Antonin-Noble-Val (Tarn-et-Garonne) (Guilaine 1998: 46-47), dolmen 2 de Foumarène-Nord at Montricoux, dolmen 3 de la Ferme du Frau at Cazals (Tarn-et-Garonne), dolmen du Rouzet at Larroque (Tarn), dolmen du Verdier at Carjac (Lot) (Joussaume 1990: 113-124), dolmen des Aguals (Gréralou-Montbrun, Lot) (Lagasquie *et al.* 2011), dolmen de Peyrecor 2 (Escout, Pyrénées-Atlantiques) (Dumontier *et al.* 1997), dolmen de l'Ubac near Goult (Vaucluse) (Bizot & Sauzade 2015), etc. Lecornec has traced the origin of this architectural peculiarity in the traditions of building passage graves (Lecornec 1990: 113-124). In the last decade, Bec Drelon undertook detailed research into the construction of the megaliths of the South of France and recorded overlapping multi-cairns with façades in the dolmen de la Caumette and dolmen de Laroque 17 (Bec Drelon *et al.* 2014; Bec Drelon 2015).

4.3 Statues-menhirs (Figs. 5 and 6: 1-5)

The stone statues chiseled by the Chemurchek people (Wang Bo & Qi Xiaoshan 1998, 2010; Kovalev 2012) represent a phenomenon that is unique in the

Fig. 5 – Chemurchek statues-menhirs. 1. Kaynar 2 no. 2 (Keermuqi M2 excavated in 1965); 2. Kuertix-dairy farm, Fuyun county, Xinjiang; 3. Nanzha, Mulei county, Xinjiang; 4. Samute stone box barrow, Qinghe county, Xinjiang; 5. Kaynar 1 no. 4, Altay county, Xinjiang; 6. Karatas (Kalatasi) 3 no. 1; 7-8. Karatas 1 barrow, no. 1, 2, Altay county, Xinjiang (After Kovalev 2012).

Fig. 6 – Pectorals with triangle garlands and rows of triangles in Chemurchek and Western European Neolithic. 1-5. Chemurchek statues-menhirs (1 & 3 - Kaynar 1 no. 4, no. 2, Altay county, Xinjiang; 2 - Kaynar 2 no. 2 (Keermuqi M2 1965 excavated barrow), Altay county, Xinjiang; 4 - Chokpartas (Qiakepatasi), Buerqin county, Xinjiang; 5 - Akzhar (Wuqiubulake), Buerqin county, Xinjiang (After Kovalev 2012); 6. Mural ochre painting in Khukh uzuuriin dugui 1-1, Bulgan sum, Khovd (After Kovalev & Erdenebaatar, 2015); 7. Picture on wall of 'giant' ritual enclosure Khar chuluut 1, Ulaankhus sum, Bayan-Ulgii (Tracing: A. Mukhareva); 8 & 9. Stelae 30, 3 Sud, Saint-Martin-de-Corléans, Aosta (Photos: Belley *et al.* 1998); 10. Copper treasure from Lüstringen, Osnabrück, Niedersachsen (After Haßmann 2019); 11. Burial goods from Proto-Řivnáč culture burial Velvarský hrob, Velvary, Středočeský kraj (After Vélová 2014).

territory of the Asian steppes in the 3rd millennium BCE. No local sources of this tradition have been found. The style of the statues of the Black Sea region, which date from the nearest period previous to the existence of the Chemurchek culture, differs greatly from the Chemurchek style, while the most similar statues can be found far to the west in France.

As mentioned, the specific features of Chemurchek statues include a flat face delineated by a protruding ring, usually with a flat nose in relief. The eyes are marked by protruding rings or discs. A pectoral or a necklace, sometimes decorated with a row of triangles is shown around the neck. Judging from the indicated pectoral muscles, the figures are portrayed nude. In one example, shoulder-blades are depicted as two protruding contours which nearly meet in the centre of the back. By contrast, statues-menhirs of the Black Sea region are distinguished by shoulder-blades modelled as triangles; they do not show a protruding ring around the face, and the eyes are indicated by grooves (Telegin & Mallory 1994). They also possess other peculiarities not typical of the Chemurchek statues.

Different types of statues-menhirs from the South of France are characterized by a protruding contour around the face, connected with a straight nose; the eyes are shown by protruding rings or disks; the shoulder-blades are marked by two curved lines; and a pectoral decorates the neck (D'Anna *et al.* 1996; D'Anna 2002: 150-177; Jallot & D'Anna 1990; Jallot 1998, 2011: 105). Statues-menhirs of the 'Montagnac' sub-group of group B (as defined by L. Jallot) with a protruding contour around the face, protruding eyes and a pectoral appear to be the most similar to Chemurchek statues. L. Jallot assigns a broad date to this sub-group of 2800-2200 BCE. A protruding line around the face and protruding disc-eyes also characterize some statues-menhirs belonging to more ancient subgroups defined by L. Jallot, such as 'Durance-Maurez', 'l'Agout' and 'Gardonenque-Uzege' (Jallot 2011: 102-105; Laporte *et al.* 2011: 317-318; Masson Mourey *et al.* 2020: 293-296). Statues of the Languedoc groups B and C found in context indicate that they began use in the Final Neolithic period 2 at the latest (Gutherz & Jallot 1987; Jallot *et al.* 2019). Two carved menhirs were found in a classical 'Ferrières' cultural context in the Baumelle à Blandaz cave (Grands Causses, France), which "had remained closed during last 5000 years" (Galant *et al.* 2012). We can see the evolution of group B statues-menhirs in Lunigiana (Tuscany, Italy) in the Chalcolithic period: on these statues is carved the protruding ring around the face (or the convex rounded contours of the face), with connected nose and convex eyes as on Chemurchek sculptures (Ambrosi 1992). The Lunigiana statues can be dated to no later than the first third of the 3rd millennium BC because daggers of the Remedello type are also depicted (Morin *et al.* 2005: 349-351; Casini & De Marinis 2009: 66-68; Dolfini 2010; Huet 2017: 137-141, fig. 109).

A unique, flat trapezoidal stele with ochre painting was found inside the Khar khoshuu enclosure (**Fig. 2c, d**). Six analogous stelae were erected near to the earliest burial chambers of the Château Blanc cemetery (Ventabren) in southern France, dated to the late 4th millennium BCE. These stelae, like other decorated trapezoidal statues-menhirs in Provence (Durance-Maurez group), were also covered by ochre (D'Anna & Renault 2004: 33-34, 80).

4.4 Pectorals with rows of triangles and rows of triangles as a motif (Fig. 6)

Some Chemurchek statues-menhirs are depicted with pectorals decorated with a row of triangles (**Figs. 5: 1, 5** and **6: 1-5**). Copper pectorals with rows of triangles have been found in the context of the second half of the 4th millennium BCE in the Czech Republic in the Velvarský hrob burial (Vélová 2014) and in Germany in a buried hoard known as the 'Kupferhort von Osnabrück' ('Copper Treasure of Osnabrück') (Haßmann 2019) (**Fig. 6: 10, 11**). These pectorals have been found together with a copper axe and ornaments belong to well-dated Balkan-Carpathian Eneolithic cultures. Depictions of pectorals with multiple garlands, several pectorals on one statue, and horizontal rows of triangles can be seen on statues from Petit-Chasseur (Sion, Valais) (Favre *et al.* 1986; Corboud 2009) and Saint-Martin-de-Corléans (Aosta, Valle d'Aosta) (Belley *et al.* 1998; Pedrotti 1998) (**Fig. 6: 8, 9**). In the neighbouring region, further down the River Rhône, in the Dumas grotto (Var, France) an anthropomorphic figure was found with a unique depiction of a pectoral decorated with garlands of triangles (Hameau 2002:

163). Several anthropomorphic depictions with necklaces of triangles were found in Valcamonica (Casini & De Fossati 2013: 185). Several Spanish Early Chalcolithic anthropomorphs bear a depiction of an arched shape with horizontal rows of garlands carved within it. Examples include the stele Tabuyo del Monte (León), a stele in Sejos cromlech (Cantabria) and stele de San Sebastian de Garabandal (Cantabria). A stele from Passanant megalithic cist (Lérida, Catalonia) represents an anthropomorphic figure with a pectoral decorated with triangles, and triangles were also be found on the inner edge of the face outline (Bueno Ramírez 1995: fig. 17, 20, 23; Bueno Ramírez *et al.* 2005). All these anthropomorphic figures can be dated to not later than the first half of the 3rd millennium BC, as short triangular halberds pictured alongside some of the figures (Bueno Ramírez *et al.* 2005: fig. 23, 25) can be attributed to the Remedello 2 culture which dates to this period (Huet 2017: 144, fig. 113). The faces of the earliest statues-menhirs in Provence (second half of the 4th millennium BC by context) are also framed with rows of chevrons (D'Anna & Renault 2004; Masson Mourey *et al.* 2020).

Horizontal garlands of triangles are one of the main motifs in the decoration of the Chemurchek tombs. We found such designs on four stone slabs; one slab had up to eight rows of triangles (**Fig. 6: 6**). Rows of triangles were also depicted on 'parabolic deities' and on slate plaques from ritual structures (see below) (**Fig. 6: 7, 11**). In addition, rows of triangles are the main graphic motif used to decorate Chemurchek ceramic and stone vessels (**Fig. 8: 1, 2, 4, 8, 9, 12**). One, or sometimes two, rows of triangles, often beneath a horizontal line, are depicted under the mouth of the vessel. In the caves and rocky shelters of the Rhone basin, paintings can be found in the form of rows of triangles (Hameau 2002: fig. 34, 36). The main distinguishing feature of the Ferrières culture is the decoration of vessels with a row of triangles from a line carved under the mouth of the vessel (Gutherz 1984). This decoration was widespread in Eastern Languedoc in the last third of the 4th to the early 3rd millennium BC (Jallot 2011) and was used on other vessels from Final Neolithic sites in France and Early Chalcolithic sites in Iberia, mentioned below (see Laporte 2009).

4.5 Geometrical patterns in ochre mural paintings (Fig. 7)

Geometric paintings were discovered in the burial chambers of the barrows of Yagshiin khodoo 1 and 3, Khukh uzuuriin dugui, Belen Usny Denj, and Khuurai Salaany Am 1 in Mongolia, and of Toganbay 2 M2, Bolati 3-2 M18 and Kopar in Xinjang. The repertoire of these images is limited to nested rhombuses and chevrons inscribed into each other, parallel multi-triangle garlands, an oblique grid, a grid with cells filled with roundish spots, meanders and spirals, and flat areas chaotically covered with broken lines. Painted examples of these patterns were found in the caves and grottoes of the middle Rhone basin (Hameau 2002: fig. 34, 36). The general set of compositions of Chemurchek paintings is a peculiar reproduction of the primary motifs of the decorative art of the 'megalithic' cultures of France, Spain, Portugal, Ireland and Switzerland, and are distinguishing characteristics of the art of 'Atlantic Megalithism' (Shee Twohig 1981; Jesus Sanches 2009; Robin 2009; Carrera Ramírez 2011; Bueno Ramírez *et al.* 2019).

4.6 Forms and ornamentation of vessels (Figs. 8 and 9)

The ceramic and stone vessels found in Chemurchek tombs (except for cases of potteries belong to neigbouring cultures) for the most part differ markedly in their shape and decoration from contemporary Asian vessels and those of earlier traditions. These same shapes and decorations are characteristic of both ceramic and stone vessels (**Fig. 8** and **9: 13-20**). The vessels may have spheroid, bag-like, ellipsoid, or bomb-like shapes, or may be cylindrical with slightly convex, smoothly curving walls. They do not have a pronounced neck and their walls are, as a rule, drawn upwards. Moreover, their widest part is always located lower than the mid point. The most common ornamentation motif is a horizontal line incised under the neck, with triangles pointing downwards. The closest analogies to the shapes of these vessels, as well as the compositions decorating them are found in the South of France in the Final Neolithic sites of the Ferrières culture (Beeching 1980: pl. 15, 27-29, 72, 79; Gutherz 1984; Jallot & Gutherz 2014), in the

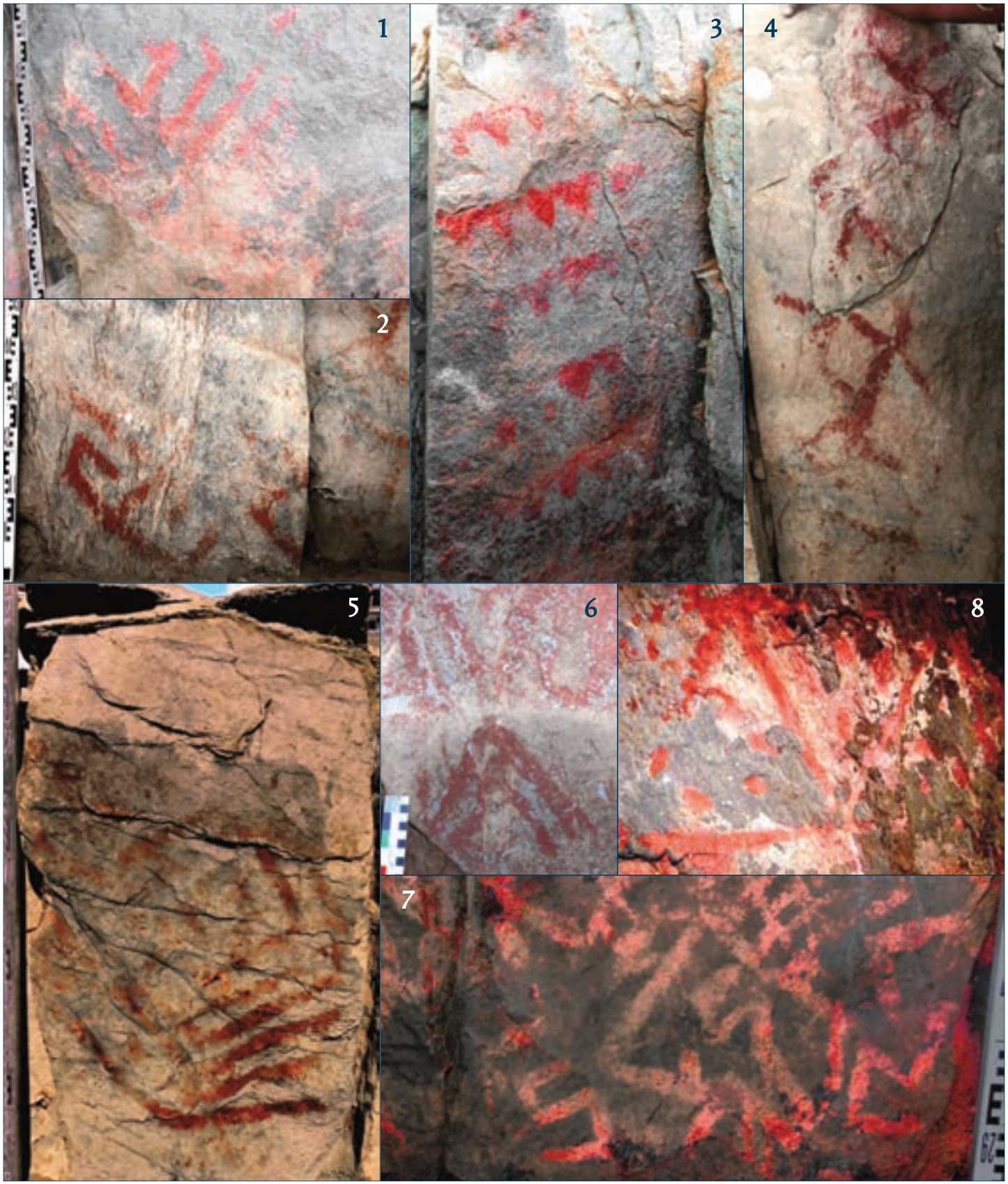

Fig. 7 – Patterns of Chemurchek ochre mural paintings. 1-4. Khukh uzuuriin dugui 1-1, Bulgan sum, Khovd (After Kovalev & Erdenebaatar 2014); 5-7. Belen usny denzh, 1-3, Khovd sum, Khovd (After Grushin *et al.* 2015); 8. Bolate 3-2 M18, Buerjin county, Xinjiang (After Xinjiang wenwu 2017).

Fig. 8 – Chemurchek vessels (1-4, 9, 10 - clay; others - stone). 1. Buerqin county, Xinjiang; 2. Bolate 3-2 M18 barrow, Buerqin county, Xinjiang; 3, 7. Khadat ovoo, Bulgan sum, Khovd; 4. Ulaan khudag I-12, Khovd sum, Khovd; 5, 6. 1965 Keermuqi (Qiemuerqieke) M7, M16, Altai county, Xinjiang; 8. Sharsum 1, Khovd sum, Khovd; 9. Qiemuerqieke township, Altai county, Xinjiang; 10. Ulaan khudag II-3, Khovd sum, Khovd; 11, 12. Khukh uzuuriin dugui 2-1; Bulgan sum, Khovd (After Kovalev & Erdenebaatar 2014; Kovalev 2015; Tishkin *et al.* 2015).

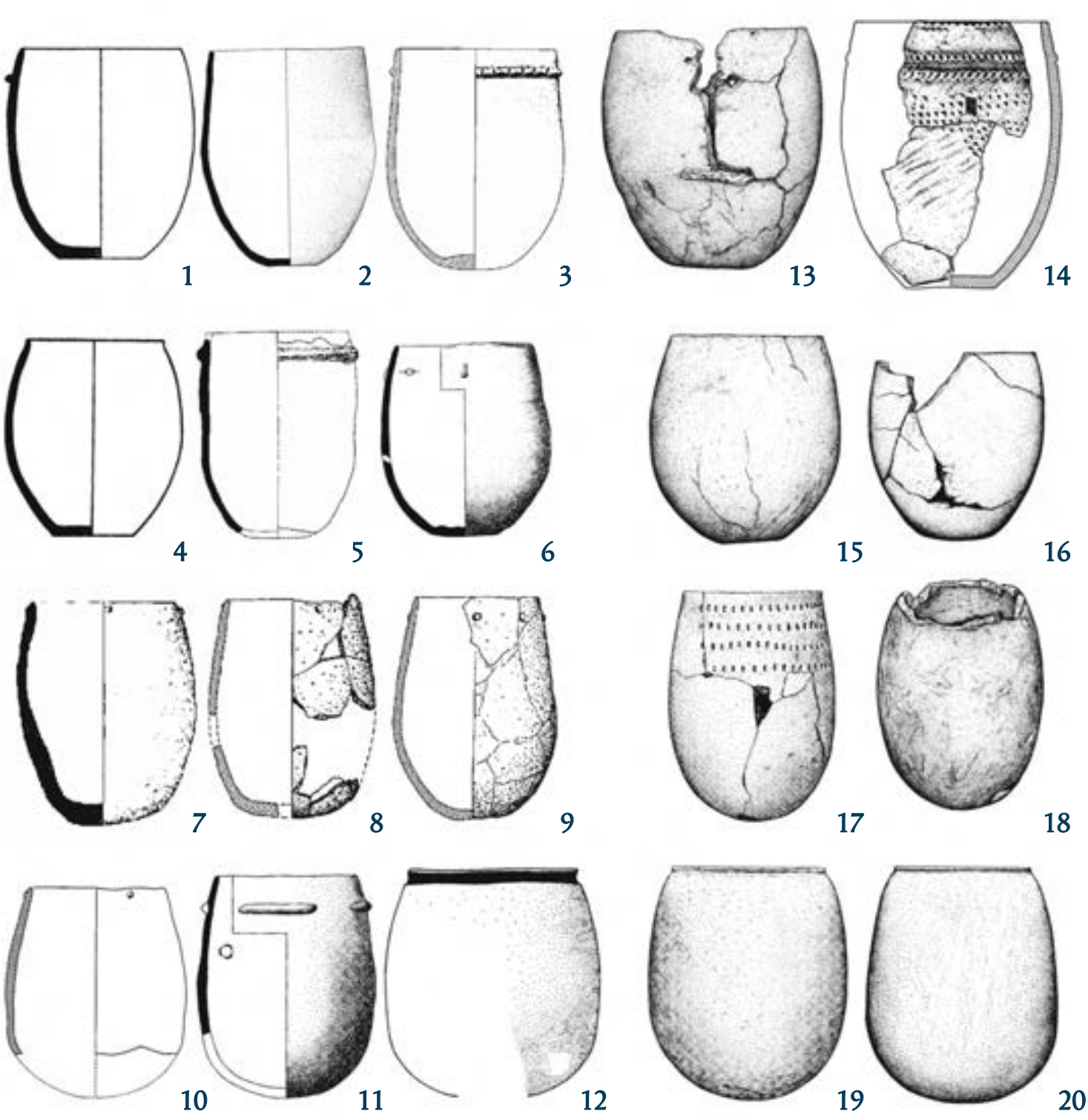

Fig. 9 – Some analogies to Chemurchek vessels in Lot and Alpine regions. Examples 1-12 are ceramic vessels of the Final Neolithic of eastern France and western Switzerland: 1 & 4. La Perte-du-Cros, Saillac, Lot; 2 & 10. Portalban II, Fribourg; 3. Saint-Blaize, Bains-des-Dames, Neuchatel; 5. Yverdon-Avenue des Sports, Vaud; 6. Chalain, Jura; 7. Thielle-Wavre, Neufchatel; 8 & 9. Vinelz-Hafen, Bern; 11 & 12. Clairvaux, Jura (After Galan 1967; Giligny 1995; Pétrequin *et al.* 2003; Stöckli 2009). Examples 13-20 are Chemurchek vessels; 14-17 are clay, others stone: 13 & 15. Khadat ovoo 1, Bulgan sum, Khovd; 14. Yagshiin khodoo 3, Bulgan sum, Khovd; 16. Ulaan khudag I-12, Khovd sum, Khovd; 17, 19 & 20. Keermuqi (Qiemuerqieke) 1965, M16, M7, Altai county, Xinjiang; 18. Manasi county, Xinjiang. (After Kovalev 2014, 2015).

Middle Rhône valley (Chastel & Voruz 1988: 101; Ferrer-Joly 1988: pl. 94, 102, 103, 112; Galan 1967; Perrin & Voruz 2013: fig. 206, 207), in the Final Neolithic sites of the Saône valley (Bourgogne) (Thévenot 2005: fig. 126, 127), in Britanny (Conguel type) (Pollès 1983; Tinévez 2004: 117-121) and Grand-Pressigny (Villes 2006: fig. 4, 8-11). All these examples date to a period before 2600 BC and their spread is explained by cultural connections between regions (Laporte 2009: 711-715, 718-724). The ellipsoid shape of vessels, sometimes decorated with chevrons, spread to the Iberian Peninsula in first half of the 3rd millennium BC, in the so-called 'pre-campaniformes' (pre Bell Beaker) Chalcolithic period (Soler-Díaz 2002: vol. 2, fig. 162; Prieto Martínez 2005; Cardoso 2007) (see analogous Chemurchek vessels in **Fig. 8: 9-12**). Ellipsoid vessels with a flattened bottom are especially similar to types of ceramics from the Saône basin, the Jura mountains and neighbouring western Switzerland (Clairvaux, Chalain, Lüscherz type) which are thought to have developed under the influence of the people of the Ferrières culture who migrated to the Alpine region in several stages between 3200 and 2800 BC (Giligny 1995; Pétrequin *et al.* 2003; Stöckli 2009; Burr-Wyser 2014: fig. 7, pl. E8-E9) (**Fig. 9: 1-12**). Thus, there is a vast territory encompassing the Rhône and Saône basin where finds most similar to Chemurchek vessels from the Final Neolithic are concentrated. The earliest are those of the Ferrières culture of the Final Neolithic 2A period (Jallot & Gutherz 2014) in the south. Evidence shows that during the Final Neolithic 2B period, the last migration of the Ferrières population to the Jura mountains spread similar ceramic forms along their route. This dispersal upstream of the rivers and into the mountains dates to 2900-2600 BCE, very close to when the Chemurchek sites first appeared in the Altai region.

4.7 Parabolic and rectangular figures with antennae (Fig. 10)

Depictions of anthropomorphic creatures with parabolic or rectangular 'bodies' frequently serve as the central design on the slabs of excavated Khar chuluut and Khulagash 'giant' ritual enclosures (**Fig. 6: 7** and **10: 1-5**). The lower edge of the figure is always horizontal; the upper part of the figure is formed by two overlapping parabolas ('a double parabola') with a subtriangular hollow in the central upper part. There are examples where the lower edge is absent and parabola sections are not connected at the top, but these have additional decorations. Often there are 'bands' across the 'body' or L-shaped legs may extend downwards from the lower edge. 'Antennae' often extend upwards from the top of the figue, either curving upwards, downwards, or straight, with various types of terminal. Figures are usually in groups of two, however all the pairs of figures we recorded were different. Many figures of this type are recorded in Mongolian Altai rock art compositions. Parabolic anthropomorphs with antennae are also depicted on Chemurchek statues, for example Alepabulake III No. 2 and Alepabulake I, and on a slab from Bolati 3-2 M18 stone box 'E' (Buerjin county, Xinjiang) (Kovalev 2012: no. 34, 36; Xinjiang wenwu 2017: colour plate) (**Fig. 10: 6-10**). These parabolic and rectangular figures with antennae are analogous to those depicted on the earliest megaliths from Brittany, for example on the Berseau dolmen, Burgundy menhirs, and in Piedmont (Aosta) petroglyphs (Shee Twohig 1981; Arca 2016; Cassen *et al.* 2018) (**Fig. 10: 11-15**). The latest dated variants of this development can be seen at Mont Bego (Lumley & Echassoux 2012: 234-249; Huet 2017: 108-111). One of earliest representations of this type of figure is a wall painting in one of the houses of the Sipplingen B site at Ludwigshafen on Lake Überlinger in Germany (3857-3817 BCE) (Schlichtherle 2016).

4.8 Slate plaques (idols) (Fig. 11)

Near the northern wall of the Khar chuluut ritual enclosure on the ancient horizon level we found a 'hoard' of 79 slate plaques (both fragmented and intact), some with engraved pictures. They were placed horizontally, densely packed in five or six layers. The plaques are 1-3 mm thick and not more than 50 mm in length. The edges of all the plates had been finished to make them symmetrical, to round off the upper contour, or to reach a generally trapeziform outline. A line or a band divides the figures into an upper and a lower part. A grid design is often formed from lines or leaf shapes. Lines with garlands of triangles hanging

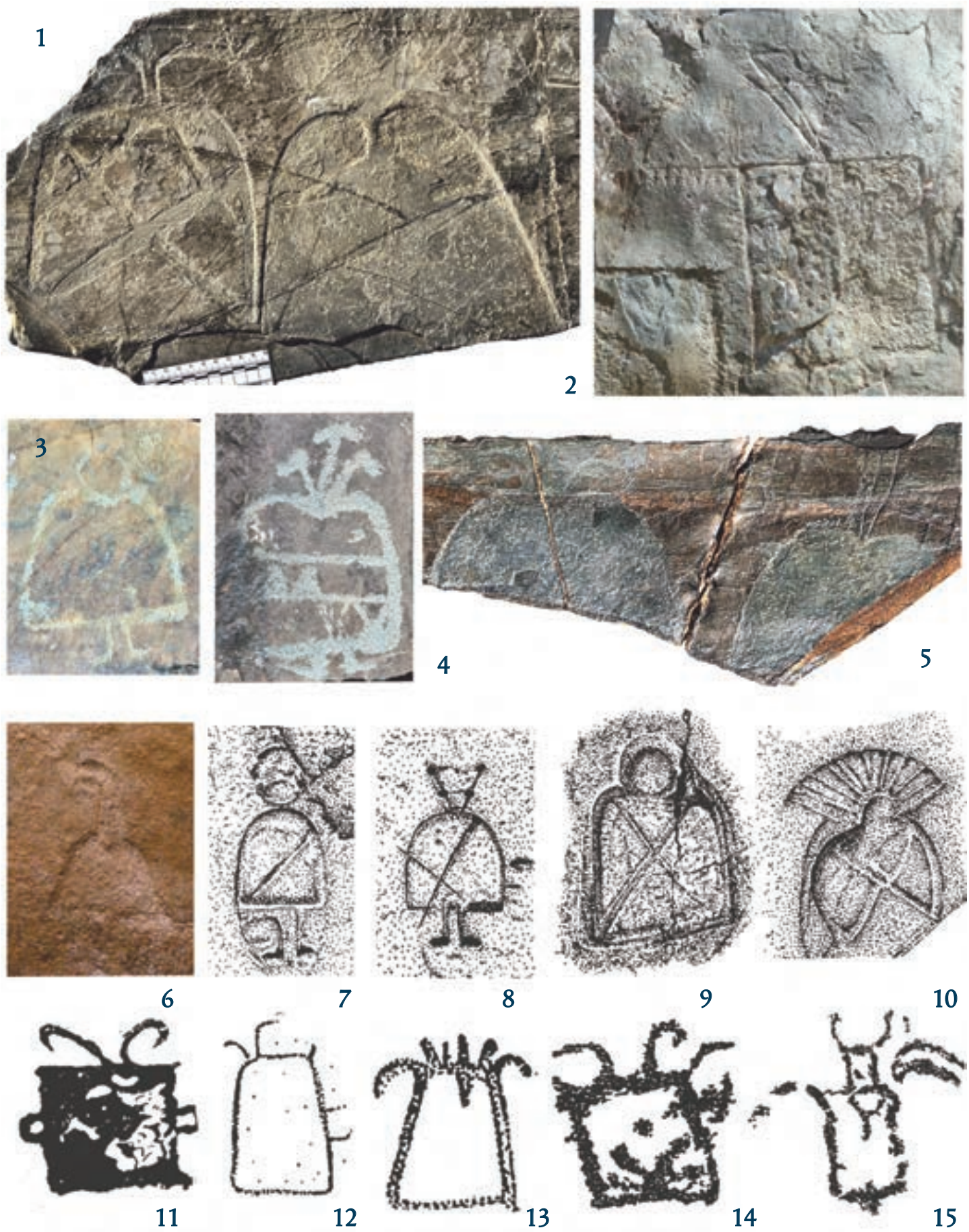

Fig. 10 – Parabolic and rectangular creatures with antenae. Examples 1-10 are Chemurchek phenomenon. 1, 3-5. 'Giant' ritual enclosure Khar chuluut 1, Ulaankhus sum, Bayan-Ulgii; 2. 'Giant' ritual enclosure Khulagash, Sagsai sum, Bayan-Ulgii; 6. Bolate 3-2 M18 barrow, Buerqin county, Xinjiang; 7 & 8. Alepabulake III no. 2 statue-menhir; 9 & 10. Alepabulake I statue-menhir (After Kovalev 2012, 2015 and unpublished photos). Examples 11-15 are from the Late and Final Neolithic periods of France and Italy. 11. Dolmen du Berceau, Eure-et-Loir; 12 & 13. La Pierre aux Fées and les Ublaies menhirs, Saône-et-Loire; 14. Chenal, Aosta; 15. La Barma, Valtournenche (After Shee Twohig 1986; Arca *et al.* 2016).

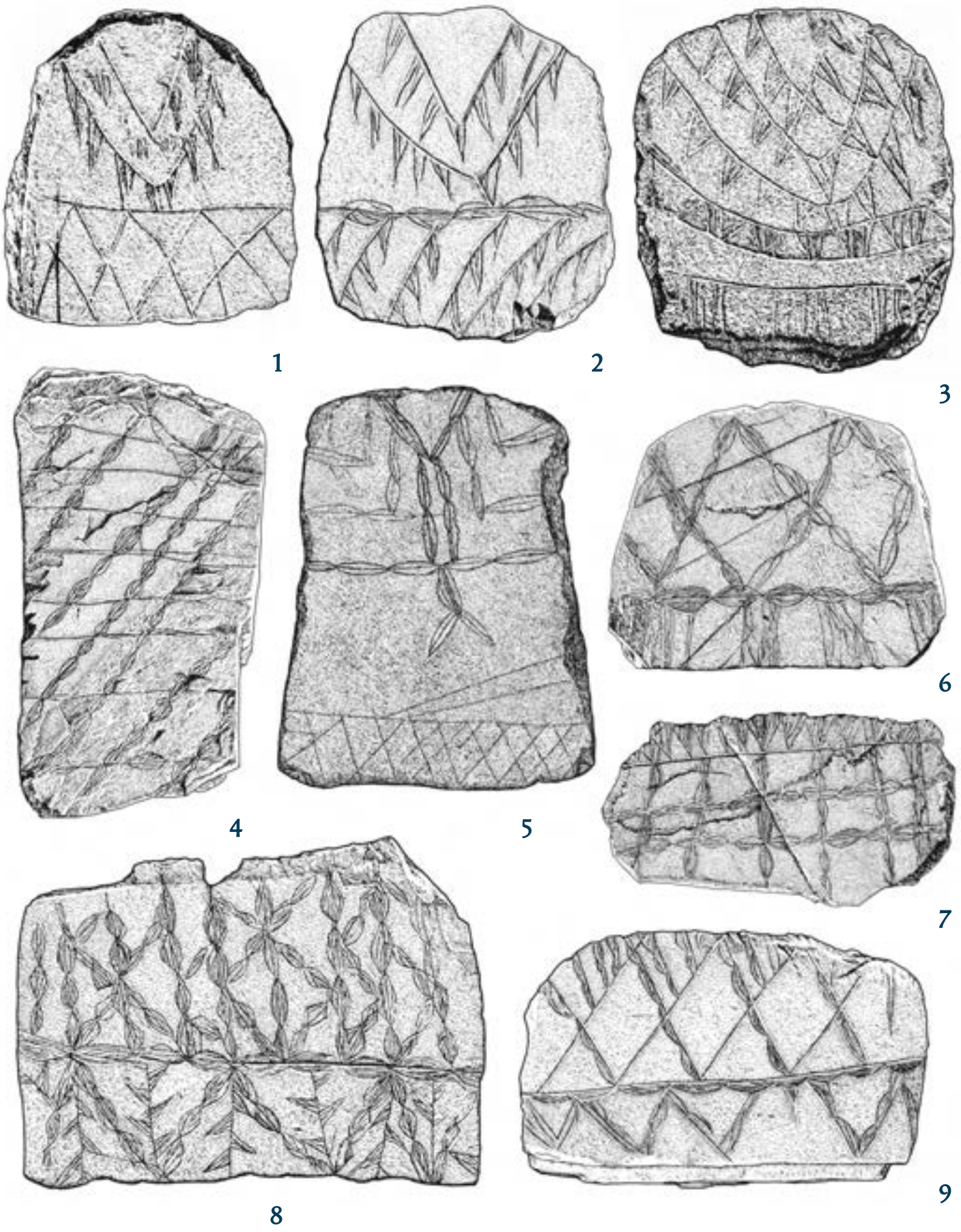

Fig. 11 – Chemurchek slate plaques. 5. 'Giant' enclosure Khulagash, Sagsai sum, Bayan-Ulgii aimag; others - 'giant' enclosure Khar chuluut, Ulaankhus sum, Bayan-Ulgii aimag (After Kovalev & Munkhbayar 2015).

from them form two to four rows of 'necklaces' in the upper part of the figure. In the lower part, the decoration comprises either vertical lines forming bands or slanted lines forming a zigzag or grid. Despite the general anthropomorphism of the figures, the face is not depicted. Similar rows of triangle garlands and strings of leaf-shaped figures decorate a stone slab standing in a fence. We also discovered similar plaques inside a 'giant' ritual platform at Khulagash (**Fig. 11: 5**).

Pieces of megalithic art in Western Europe, dated to the first half of the 3rd millennium BC, can serve as analogues: engraved plaques from the southwest of the Iberian Peninsula and the statues-menhirs of the Sion-Aosta type mentioned above. The plaques from southern Iberia date to between the 31st and 27th centuries BCE (Buonaventura 2011: 167-169). They are usually of subtrapeziform shape (plates with a separate head outline appear in a later period); in the upper part (where the face would be) there is a subtriangular section without any pictures, outlined with slotted lines or 'belts'; the lower part of the plate is separated with a 'belt' or a horizontal line (Bueno Ramírez 1992, 2020; Lilios 2008; Huelva – García Sanjuán *et al.* 2010: 20-21, etc.). The main compositional elements are rows of hatched triangles and parallel superimposed zigzags inscribed into each other, and hatched checkerboard squares. As mentioned above, some Spanish anthropomorphs are decorated with similar rows of triangles. Some plaques have oblique lines forming asymmetrical necklines (Gonçalves 2003). Garlands of foliate-shaped figures are also carved on some menhirs in southern Portugal (Varela Gomes 1983: fig. 148, 150; Pinho Monteiro & Varelo Gomes 1981: fig. 34, 35). On statues-menhirs of the Sion-Aosta type we see not just multiple necklace-like rows of 'hanging' triangles, but also vertical lines of triangles extending downwards from the waist, parallel nested zigzags inscribed into each other, and an oblique grid (Favre *et al.* 1986; Bellay *et al.* 1998; Corboud & Curdy 2009: 47-105) (**Fig. 6: 8, 9**).

5. Conclusions

Taken together, the architecture of burial constructions, the tradition of collective burials in crypts, the form and ornamentation of vessels, the style of stone statues, the paintings on walls of burial chambers, the slate plaques and images of important deities reveal a strong analogy with materials of the Middle-Final Neolithic period of Western Europe. The complex of specific attributes that appeared in Dzhungaria from *c.* 2700-2600 BCE is very close to those found at Final Neolithic sites in southern France, the Jura Mountains, and western Switzerland *c.* 3200-2600 BCE (Kovalev 2011). The transfer of such a complex set of cultural traditions such a great distance seems impossible without the migration of ancient people. Some Eastern Europeans must have been involved in this migration flow, as indicated by appearance of Kemi-Oba culture patterns (grid with points) in ochre mural paintings and findings of Repino type ceramic vessels with cord stamps in Chemurchek Keermuqi type barrows (Kovalev 1999: 165-166, 2015a). The figurative art of Chemurchek petroglyphs and ritual enclosures (images of animals, 'one-leg' and 'bi-triangle' anthropomophs etc.) had their origin in Central Eurasian and Middle Eastern traditions (Kovalev & Munkhbayar 2015). The appearance of ochre mural painting (mainly oblique grid patterns) and 'entrances' on the eastern side of monuments in the Okunevo culture show the impact of Chemurchek ritual practices brought from the west; finds of foreign ceramic vessels, tools and ornaments in Chemurchek burials confirm the broad connections of the Chemurchek people with contemporary Late Afanasievo, Elunino, Okunevo and Karakol cultures in the north and the Saensayi culture in the south (Kovalev 2017).

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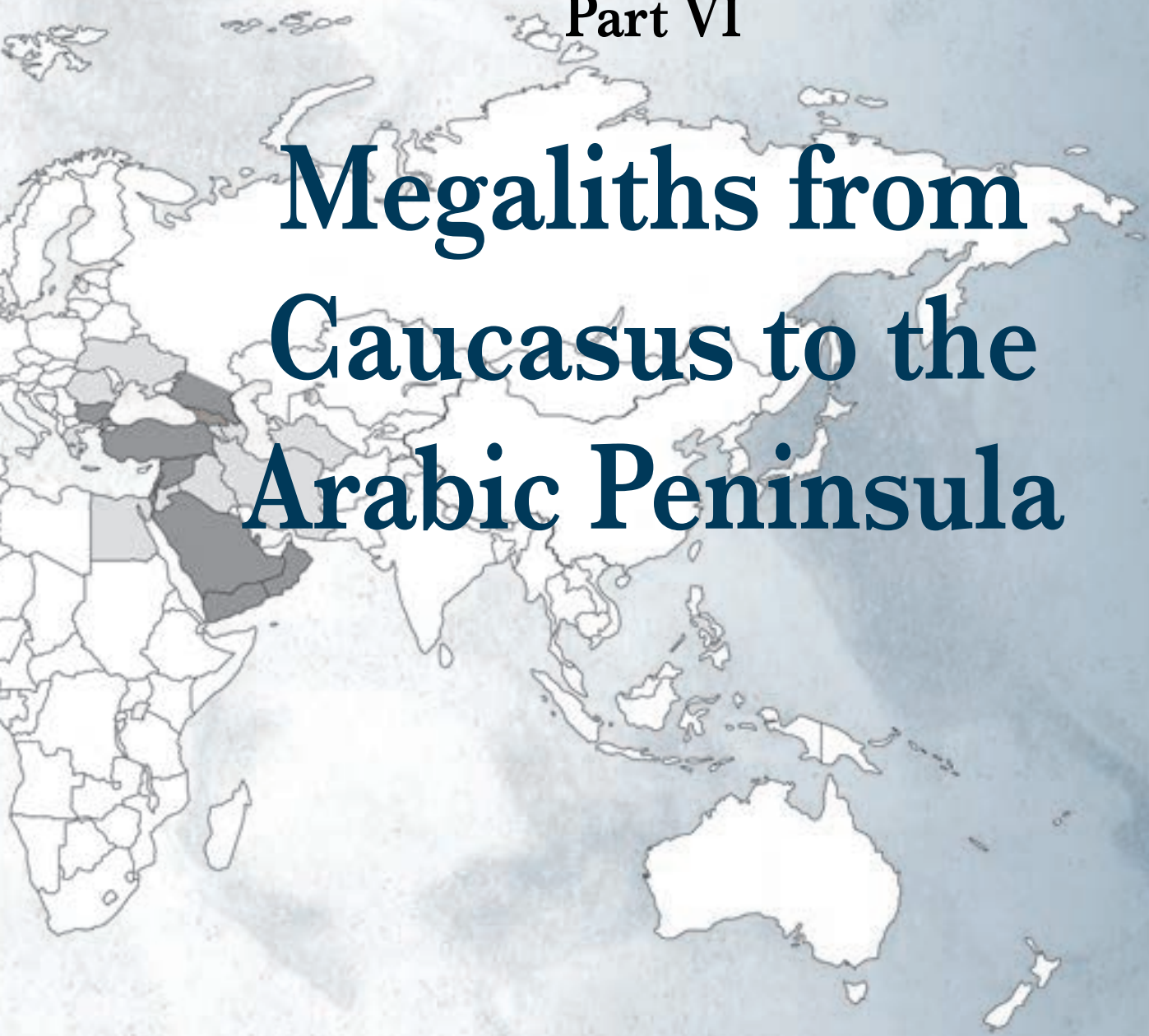

Part VI

Megaliths from Caucasus to the Arabic Peninsula

Tara STEIMER-HERBET, Viktor TRIFONOV

Introduction

The problems of the chronology of megalithic monuments are recurrent and were widely discussed during the meetings in France in 2019. The regions covered in Part VI, the Caucasus, the Middle East and the Arabian Peninsula, present similar challenges. The term 'arrhythmic' is probably the most appropriate to describe the appearance of megaliths in this vast geographical area. With the established precedence of the pillars of the Göbekli Tepe enclosures in Turkey, we now know that prehistoric communities have been driven by megalithic impulses for over 11 000 years. The earliest sanctuary and funerary cairns, dated to the end of the 7th millennium BCE, are located in the north of the Arabian Peninsula in the Jordan desert Jibal al-Khashabiyeh (Badia project - SEBAP - by W. Abu-Azizeh and M. B. Tarawneh, personal communication); platforms and dolmens are then developed towards the end of the 5th millennium BCE in Yemen. These punctuated appearances of monuments are followed by a massive generalized building of several thousand dolmens in the Caucasus, Turkey and the Levant in the 4th and 3rd millennium BCE. In the same period, thousands of tower-tombs were built, covering an equally vast territory in the south of the Levant, in the Sinai Peninsula and in Arabia. At the margins of these two geographical areas, the Balkans and Iran also have monuments (now excavated) but these are of a later date.

During the meetings in France, the megalithic monuments of the Balkans were the subject of a presentation by Georgi Nekhrizov but the monuments of the Armenian and Iranian plateaux were not addressed. Most of these owe the name 'dolmen' to the work of Jacques de Morgan at the end of the 19th century. In reality, they are trenches dug into the ground, lined with stones, with a side entrance and covered with slabs (Morgan 1889). These underground megalithic tombs were used from the Late Bronze Age to the Iron Age (Overlaet 2005; Haerinck & Overlaet 2006; Begemann *et al.* 2008; Piller 2010).

These megalithic monuments exhibit a polymorphous and innovative character. In the Caucasus, for example, plaster and red pigments were used to decorate the burial chambers. This use of pigments in megalithic cultures is currently only attested in Yemen, on statue-menhirs and small anthropomorphic statuettes (Wadi 'Idim). In the Caucasus, on the fringe of these stone architectures, some communities chose a mixed funerary architecture including stone, wood, and a clay roof. Local specificities such as slabs with windows can be found in the southern Levant and the Caucasus. It is difficult at this stage of research to determine the contemporaneity of the communities that produced them. Commonalities could be evidence of connections between these regions, which are 1000 km apart but it is still too early for a comparative approach between the cultural spheres of the Caucasus and the Levant.

Most of the chapters in this section are dedicated to funerary monuments; little is said about standing stones, which are present everywhere and in all the periods concerned. Their forms are many, from rough stone to high quality worked objects. Those from Arabia are briefly mentioned, but not those discovered in Iran (Dan & Ceseratti 2020). At the Shahr Yeri site, 500 stelae arranged in rows or groups have been recorded in the middle of a protohistoric cemetery of more than 450 tombs, the oldest of which date from the 3rd millennium BCE (Ingraham & Summers 1979; Hejebri Nobari *et al.* 2018). Other examples include the Hakkâri stelae in eastern Turkey (Sevin & Özfirat 2001), the Apsheron stelae in southeastern Azerbaijan (Akhundov & Narimanov 1996; Schachner 2001), and the Artashen, Zorats-Kar (or Karahunge) stelae in Armenia (**Fig. 1**) (Lisitsian 1935; González-García 2015). It is very rare to be able to distinguish whether these alignments of standing stones functioned at the same time as the megalithic tombs. This

Fig. 1 – The Artashen alignments in Armenia (Photos: F. Fichet de Clairfontaine).

is not the case with the zoomorphic stelae, known as vishap or 'dragon' stelae, located in the pastures of the Armenian highlands. Excavations have shown that these are associated with Middle Bronze Age tumuli (Marr & Smirnov 1931; Gilibert *et al.* 2012). Another example of anthropomorphic funerary stelae are the 600 specimens from the Khaled Nabi site in the Golestan province of Iran (Stronach & Royce 1981).

The description of the megalithic ensembles would not be complete without mentioning the 2844 alignments of triliths on the 692 sites inventoried in Dhofar and Mahra (Oman and Yemen). The work of R. Garba (Garba *et al.* 2020) has clarified their chronology with a series of 30 radiocarbon dates that attribute them to the Iron Age (600-300 BCE), their function, probably ritual, remains unexplained to this day.

The presentations in Part IV make it possible to establish regional parallels at a much broader level than is usually taken into account, based on morphological descriptions,

Fig. 2 – Trilith alignments in Yemen - Mahra governorate (Photos: T. Steimer-Herbet).

artefacts and chronology, as well as societal observations on groupings, the relationship of tombs to each other, exchanges of architectural techniques and the circulation of resources. This makes it possible to better understand certain global convergences in the evolution of megalithism in this vast part of the world that stretches from Arabia to the Caucasus. Eleven thousand years of existence on a huge territory: the environmental, economic and political adaptability of the megalithic societies of the Caucasus, the Near East and the Arabian Peninsula have not finished surprising us.

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Rémi HADAD

In the shadow of monoliths. Göbekli Tepe and the monumental tradition of the Pre-Pottery Levant

Abstract: The recent excavation of Göbekli Tepe (dated to the late 10th to the late 9th millennium BC) in southeast Turkey was a major event, not only for research on the Levantine Neolithic, but also for prehistoric archaeology worldwide. Over a few years, and thanks to an extensive promotional campaign directed at tourists and the echoes it found on the internet and social networks, the site became remarkably well known. At the same time, among archaeologists, Göbekli Tepe became a symbol of a reversal of perspective that had already been initiated by several theorists of social evolution. Dated to a period prior to domestication, its monolithic pillared rotundas would indeed confirm that the uptake of agriculture, rather than being the opening scene of increasing socio-political 'complexity', was a consequence of this development. In fact, however, both these popular and scholarly discourses allow only a very superficial understanding of the site. The visual effect of the megalithic circles, as surprising as it may be, mainly serves today to illustrate the revival of the least inventive and most conformist versions of the great evolutionist narratives. Not only is this representation misleading, but it fails to provide information on the concrete modes of the 'complexity' in question or on the process of 'neolithization'. It opts rather for updating old civilizing myths or a simple rocking effect on a linear evolutionary axis. Faced with such self-sufficient discourses on Göbekli Tepe, this text lays the contextual foundations for a re-problematization more in line with the experience of its inhabitants. In contrast to the contemporary monumentalization of the ruins, which reduces them to an iconographic foil for dissociated narratives, the key to their interpretation lies in our ability to grasp the counter-intuitive character of the monument in its relationship to power and time.

Keywords: *Near East, neolithization, hunters-gatherers, social organization, temporality*

1. A monument for the present time?

The 2016 World Economic Forum in Davos was framed – so it seemed – within the 'fourth industrial revolution', that of artificial intelligence, generalized connectivity and Big Data. Following the usual patterns, the heads of very large companies, politicians and journalists met to play at scaring each other with the pace of 'crises' and to reassure themselves of the durability of their major guiding principles 'to face tomorrow's challenges'. That year, however, the prophetic rhetoric of the 'revolution' was strangely echoed by an advertizing campaign displayed everywhere in the streets of the Alpine resort. On the sides of buses, on large hotel façades, even in the form of ice sculptures, the T-shaped profile of the now-famous monolithic pillars of Göbekli Tepe were in full view to all, accompanied by the invitation: '*Join us on this journey of discovery*'.

Surely, a reference to such a major founding event as the 'Neolithic Revolution' could only flatter the privileged relationship to 'History' that this small megalomaniac theatre prides itself on maintaining. Especially since discourses on the origin of agriculture have never ceased to serve as the archetype for modernity's self-representation in the long term, torn between the presentiment of a fall and promises of emancipation (Stépanoff 2018; Labrusse 2019; Hadad 2020). There were, however, more prosaic reasons for giving such promotional treatment to an archaeological site. It was in Davos, in keeping with the spirit of the Forum, that a 'partnership' was announced between the Turkish Ministry of Culture and Tourism and the Doğuş Group. The latter is one of the country's most influential conglomerates, initially active in construction and very present today in the hotel and media industries. During a surreal gala, a 20-year investment plan for Göbekli Tepe was unveiled. This would make it possible to finance a global marketing campaign and infrastructures intended to exploit the full potential of a site that was difficult to access despite its proximity to the city of Urfa. It must be said that interests are currently converging towards this peripheral region, which is now on the border of war-torn Syria, and a major object of economic development and political control for the Turkish government. The site has since been inscribed on UNESCO's World Heritage List. In 2019, proclaimed the 'year of Göbeklitepe' by President Erdoğan himself at the inauguration of the interpretation centre, the site received nearly half a million visitors. The initiative's stated aim is "*to turn these very ancient ruins from the beginning of the Neolithic period into a 'global icon'*".

The term 'icon' is truly accurate, as only images are actually involved. Today, Göbekli Tepe is exported in the form of successful films and television series, tourist brochures and countless New Age or pseudo-archaeological publications. What all these have in common is that, in a few shots, they have managed to capture and amplify a kind of mystical aura, and to surround the still-standing circle of stone pillars with this aura (**Fig. 1**), to the extent that the whole site ends up merged with it. This is demonstrated by systematic references to Stonehenge, with Göbekli Tepe rapidly emerging as an oriental counterpart, if not a prefiguration. The visual grounds for this fascination are, as we shall see, very misleading. There is, however, no reason to be offended by this, for there is nothing less scandalous in the history of archaeology than to give in to a form of contemplation that in many ways constitutes the founding experience of our attraction for the distant past. Göbekli Tepe is particularly well suited to this, with its monoliths engraved with enigmatic symbols and a forbidding bestiary of snakes, vultures, arachnids and wild boars. In the public mind, it combines the picturesque qualities of Egyptian antiquities with the intoxicating vertigo of prehistory.

But this transition from excavation site to globalized icon also says much about the evolution of the relationship between scientific statements and collective imagination. In this case, the strong grasp of representation is clearly visible behind the entry of Göbekli Tepe into the spectacle-driven market economy. Media coverage overtook the publication and analysis of the data, which had already been undermined by the unexpected scale of the task at the time of its discovery in the late 1990s and by the untimely death of the site excavator, Klaus Schmidt, in 2014. Yet, far from hindering public reception, this discrepancy may well have stimulated it. The reports relied heavily on the first archaeological accounts describing the site, for lack of anything better, as a 'sanctuary' or a 'temple' to define the

Fig. 1 – A view of the main excavation zone at Göbekli Tepe, in 2010, before the construction of tourist infrastructures. Two monolithic structures are clearly visible in the centre, two others can be distinguished on the righthand side. In the background, the southeast edge of the limestone plateau on which the site is settled can be seen, as well as the northeast extremity of the Harran plain (GT10_5869; photo: N. Becker, Deutsches Archäologisches Institut).

contrast with the supposedly domestic universe of the Neolithic period in its formative stage (Schmidt 2006, 2010a). The reuse of this vocabulary helped to present the site as an enigma, while dressing it in familiar clothing. The religious impulse that led hunter-gatherers to build these mysterious monuments, it is often repeated, would have crystallized the modern values of collaboration, risk-taking and innovation necessary for the great leap towards agriculture and civilization.

The megalithism of Göbekli Tepe may break with the old progressive idea of the necessarily modest origins of the Neolithic, but in the same movement it thus gratifies other, no less naive conceptions of the evolution of human societies. These sometimes border on the most unfortunate commonplaces of today's managerialism, such as a tendency to see the decorated monoliths only as another expression of those fictions that humans supposedly tell themselves for the sole purpose of surpassing themselves. This type of interpretation, one of the champions of which, Yuval Noah Harari (2014), will soon be invited to the table of the powerful in Davos, is remarkably effective: functioning as a floating signifier, the site makes it possible to utter political principles that claim the truly mythical authority of origins. The 'spectacle', already underlined by Debord, is not only '*the product of the massive dissemination of images* [...] *it is a worldview that has become objectified*' (1967, §5). With Göbekli Tepe, this objectification provides the opportunity for a formidable *mise en abyme*: the archaeological spectacle of the spectacularly primal.

The opposite, by the way, works just as well, and sometimes simultaneously, so great is the temptation to see the early monumentality of the site as a witness to the tragic episode from which all known forms of socio-economic inequalities would emerge (Acemoğlu & Robinson 2009). Hence a paradox: the singularity of the site, the very thing that distinguishes it, serves to naturalize a discourse that, in turn, transforms it into a simple, generic and timeless illustration. The success of its representation is not so much explained by its amazing visual qualities, as by its capacity to reveal how the Present looks at itself.

So be it – we might be tempted to object – but how does this differ from the passion for ruins and pharaonic mummies that gripped Europe on the eve of the revolutions (Wengrow 2010; Schnapp 2020)? After all, does archaeology not owe part of its success to its ability to provide modernity with some of its most inspiring images? The main difference lies in the current self-substantiating capacity of the spectacle to separate itself from the archaeological experience. The speeches repeated again and again no longer have much to do with the reality of what remains. The aura that we think we recognize in the photographs is pure artifice stripped of *hic* and *nunc*, of that '*unique appearance of a distance, however near it may be*', the loss of which Benjamin (2000) already pointed out in the profusion of images. Here, the icon analogy fails, if understood in the strict sense of an object whose effectiveness lies precisely in the fact that it is not just an image. In the end, the view of Göbekli Tepe becomes moulded into the well-trodden path of prehistoric monuments, without contributing anything of its own. The domestication of the past has replaced the subversive melancholy of the ruins and the questioning impulse they arouse (Le Brun 1986). Mystery is no longer an invitation; it is sufficient in itself. It is a prelude to no encounter, and there is nothing destabilizing about the experience. Behind the exotic façade that attracts the crowds, there is nothing that is not already projected there – nothing, that is, except a comfortable aestheticization of politics.

These developments undoubtedly go beyond the framework of archaeological work. There is no question here of overwhelming the excavators who are faced with an impossible choice between connivance and impotence. The challenge is rather to consider with them how description and scientific imagination can restore depth to such a site. But this implies that we also question what, in archaeological inferences, authorizes such impovereshing conjectures. It is surprising, for example, how the hypothesis of a specialized religious function, which was quickly abandoned, has nevertheless survived in the secular version of interpretations linking monumental building effort and 'social integration' (Schmidt 2005; Dietrich *et al.* 2012; Notroff *et al.* 2014). This kind of statement could be applied indifferently to a multitude of sites with very different characteristics and backgrounds. It is difficult to see this as anything other than an exploratory framework, in which the lack of any real analytical scope attests above all to the very confusing nature of the remains on a site that is still poorly known. But the perplexity of the excavation is quickly converted into a certainty in the abstract order of origins: the historiographical and anthropological implications of such ancient monumentalism, in such an unexpected context, give way to the timeless and placeless depiction of small nomadic groups suddenly gathering in a founding act – in which we unfailingly see ourselves.

The recursivity of representation feeds on the lack of substance that characterizes this type of generalization. The 'social integration' one would betrays a sort of Durkheimian unconscious of archaeology, so much so that it is a matter of automatism. But many of the evolutionary models used to understand Göbekli Tepe do not function any differently. They do not allow the site to generate its own framework of problematization and comparison, nor even to inflect the discourses in which it is caught up. Answers tend to overtake questions, to the point that they end up blocking any real progress in our knowledge of the site and obstructing emerging comparative trails, including with the present. For these remains do indeed say something about the architectural history of power and the conditions in which the first agricultural practices of the Neolithic emerged. They even say something about the role that images played. But the current hegemony of the latter forces us to take a radical step backwards. In order to rediscover the ruin beyond its representation, a few clarifications

are first necessary regarding the chrono-geographical particulars of Göbekli Tepe, and above all its place in the neolithization process, which is the main angle of site analysis in scholarly approaches as well as in its public reception. This contextualisation will allow us to assess the limits of the contemporary spectacularization of the site, in order to better understand the implications of its past monumentality.

2. Göbekli Tepe in its Levantine context

In scientific literature as well as presentations for the public, it is customary to locate Göbekli Tepe somewhere in the far reaches of Anatolia or Mesopotamia (Fig. 2). Both locations are technically correct, yet very confusing. The site is indeed today in 'Southeastern Anatolia', but this way of designating this region of foothills opening towards the south makes little sense for ancient times. The reference to Anatolia in this context only appeared in 1941, at the First Geographical Congress in Ankara, in the context of the unification and Turkification of the young Republic. Paradoxically, the very definition of this non-administrative region focuses on describing the geographical reality that clearly distinguishes it from the rest of the national territory and, in particular, from the Anatolian plateau from which it is separated by the Taurus mountain ranges. In the same way, Göbekli Tepe is indeed located in 'Upper Mesopotamia', if we adhere to a broad definition which includes everything between the Tigris and the Euphrates. But this perpetuates unfortunate confusion, not only with much later periods, but more prosaically with the country of great plains associated with it (*al-Jazīra* in Arabic). The much more immediate interfaces between Göbekli Tepe and the Euphrates or Balikh valleys disappear through this prism. The use of these two geographical references can, in fact, be largely explained by the effects they produce in contem-porary discourse, depending on whether we insist on the post-Ottoman Turkish identification with Anatolian roots, or on the Mesopotamian integration into a universal 'cradle of civilization' (cf. Bahrani 1998; Atakuman 2008).

This imprecision is even more astonishing considering that the discovery of Göbekli Tepe occurred at a time when the geography of the Near East at the beginning of the Holocene was being defined. Research on neolithization initially concentrated on the south of the Levant, and completed its shift northwards in the 1990s, in the wake of rescue archaeology triggered by the construction of dams on the Syrian and Turkish Euphrates. This shift had important theoretical repercussions, since the Northern Levant sequence marginalized functionalist models that sought the beginnings of a Neolithic

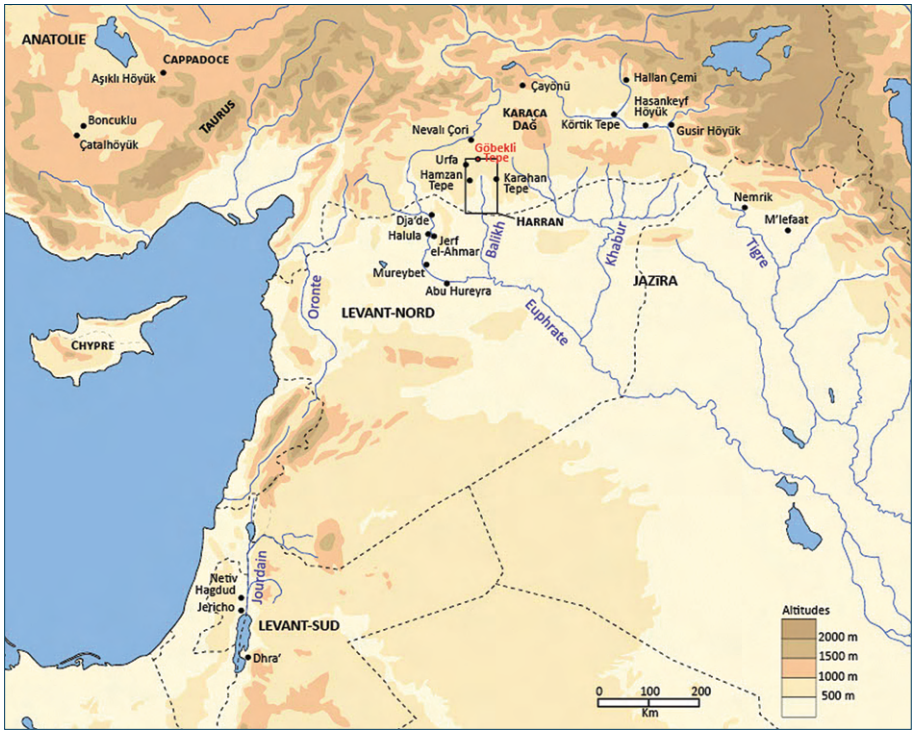


Fig. 2 – Map of the contemporary Near East showing the location of sites and toponyms quoted in the text (the reservoir lakes for the dams the building of which led to the excavation and subsequent submersion of several sites are not shown).

sedentary life, already fully contained, in Natufian adaptations to the new environmental conditions of the Mediterranean Epipaleolithic (Cauvin 1997). The Syrian sites of the middle Euphrates valley, on the contrary, emphasized the socio-cultural transformations that accompanied the emergence of the Pre-Pottery Neolithic *after* the end of the last episode of climatic deterioration – the so-called Younger Dryas. From the end of the 10th millennium onwards, the period known as Pre-Pottery Neolithic A (PPNA) thus proved to be particularly important in reconfiguring the way we view the process. It combined unprecedented symbolic and architectural investment in large perennial settlements (at Mureybet, Jerf el-Ahmar or Dja'de el-Mughara), the structuring importance of hunting large, gregarious herbivores (e.g., equids, gazelles, aurochs) and practices of cultivating cereals and legumes *before* the first traces of phenotypic domestication of plants and animals (Ibáñez 2008; ; Willcox *et al.* 2008; Coqueugniot 2014; Stordeur 2015). These would only begin to appear in the middle of the 9th millennium, with the beginning of Pre-Pottery Neolithic B (PPNB) and would only form the first stage in the very slow establishment of agropastoral systems stretching well into the 7th millennium.

This sequence is not unique to the Syrian Middle Euphrates, although it is particularly well-documented there. Its main features can now be found in the Southern Levant (Asouti & Fuller 2012) and even in Cyprus (Vigne *et al.* 2017). On the other hand, this pan-Levantine situation contrasts sharply with the upper valleys of the Tigris, where the intensification of excavations in recent years has not only confirmed the antiquity of sedentary living (contemporary with the end of the Younger Dryas at Kortik Tepe or Hallan Çemi), but also the strong cultural particularism of the region (Karul 2020). Throughout the PPNA, the relatively modest settlements of the Upper Tigris seem to have relied more on a very broad-spectrum subsistence economy – excluding cereals, although they were probably present in the environment (Benz *et al.* 2015; Itahashi *et al.* 2017; Kabukcu *et al.* 2021). The occasionally massive stone architecture of sites such as Cayönü, Gusir Höyük or Hasankeyf Höyük has prompted comparisons with Göbekli Tepe, notably on account of small stelae, of dubious architectural function, erected in the middle of certain buildings, but these similarities remain superficial. Although exchanges and contacts certainly took place the Levant, technical traditions link these enclosed valleys to the Nemrikian (with arrowheads) and M'lefaatian (with persistent microliths) sites of Northern Iraq (Coqueugniot 2004; Carter *et al.* 2020). This confirms the pre-eminence of river corridors over smooth steppe areas in the structuring of 'Upper Mesopotamia' at that time, which is perfectly logical before the domestication of pack animals. Despite prospecting surveys, no early Pre-Pottery Neolithic sites have been identified in the Khabur Triangle, which later became the centre of gravity of this region (Nishiaki *et al.* 2013). As for the Anatolian Plateau, despite the constant flow of Cappadocian obsidian towards the Levant and the continuation of certain major symbolic PPNA themes in the architecture of Boncuklu and then of Çatalhöyük (Hodder & Meskell 2011; Baird *et al.* 2016), the relationship was only asserted during the PPNB (as in the case of the Tigris basin). It, too, is part of a local socio-ecological dynamic, with a role that was undoubtedly a driving force in the domestication of ovicaprids, as shown by the early levels of Aşıklı (Baird *et al.* 2018; Özbaşaran *et al.* 2018).

This polycentric character of the Early Neolithic period is an invitation to stop reasoning in terms of stages and trajectories and to consider these contexts as coherent entities, with secular stability. In this case, Göbekli Tepe is part of the PPNA cultural complex of hunters and cultivators who flourished in the Northern Levant during the last centuries of the 10th millennium and the first half of the 9th millennium (I include in this definition part of what has sometimes been designated, for typological reasons specific to the Syrian Middle Euphrates, as an 'early' PPNB). The site is still poorly dated, and its complex stratigraphy needs to be clarified and revised, but the impressive monuments for which it is famous undoubtedly date from this period (Dietrich *et al.* 2013; Kinzel & Clare 2020). It is perched on a limestone plateau and dominates the northern part of the Harran plain, where a multitude of small streams converged to form the Balikh which descends to the Euphrates. This position must have ensured privileged access to various seasonal resources. The demographic and isotopic profile of the remains of goitered gazelles, the most hunted species at Göbekli Tepe, suggests

that the inhabitants took advantage of autumnal gazelle migrations to the lowlands (Lang *et al.* 2013; Peters *et al.* 2013), or at least of the annual aggregation cycle linked to their reproduction. A similar situation probably prevailed in the relationship with equids (hemiones, donkeys or even wild horses; cf. Gourichon & Helmer 2008). Aurochs, which are strongly represented in the faunal remains (Pöllath *et al.* 2018), must certainly have found a favourable habitat in this vast wet basin, which has now been drained by millennia of agricultural activity, but which at the time had more extensive plant cover.

Archaeobotanical data are much more fragmentary but tend to confirm the presence and *in situ* processing of wild cereals (Neef 2003; Dietrich *et al.* 2019, 2020). Much emphasis has been placed on the proximity of Göbekli Tepe to areas of spontaneous einkorn growth (barley is also present in the immediate vicinity of the site, but its distribution across the Levant is more ubiquitous). There was even an attempt to see the direct ancestors of present cultivars in the endemic population of the volcanic soils of Karaca Dağ, in the northeast, although these results interpret genetic markers only at the cost of extreme simplification (Fuller *et al.* 2011), and this massif, culminating some 100 km from Göbekli Tepe, marks the border with the Tigris Basin which was then indifferent to this resource. This kind of approximation satisfies the needs of a popularization that focuses on portraying the site as the original scene of domestication. In reality, on the Levantine scale, the practice of cultivating morphologically wild plants was widespread at that time. As far as einkorn is concerned, the decisive event was probably its acclimatization by humans outside its natural habitat, on the Syrian banks of the Euphrates, for example (in the same way as rye, which was also allochthonous); while the same process happened with emmer (the origin of most modern wheat) in the Southern Levant and in Cyprus. Such evidence does not exist at Göbekli Tepe, but it is likely that, here again, the Harran Plain played a key and underestimated role. Marked seasonal variations in the water supply produce silty zones very propitious to flood recession cropping (Sherrat 1980; Geyer & Besançon 1996). We thus find a similar configuration to other large PPNA sites in the Levant: those of the Middle Euphrates, established near the still shallow streambeds of a river subject to floods, but also those of the Jordan Valley in the south (Jericho, Netiv Hagdud), installed on the edge of the alluvial cones of wadis.

Such crops, although intensive, require relatively little direct investment, but good knowledge of the environment. They could also enable cereal harvesting to be shifted to the summer, thus extending availability. Nevertheless, we must be careful not to see this as the beginnings of the agriculture we know, and even more so as the dawn of a 'peasant' way of life. Rather than as 'proto-agriculture', or even 'pre-domestic agriculture', these practices should be seen as part of an integrated whole where other wild resources, such as almond and pistachio trees, with complementary seasonality to that of cereals, were also very abundant in a more wooded steppe than today (Knitter *et al.* 2019). Indeed, the history of the site seems to depend to a large extent on this distinctive and diversified mode of mode of exploitation, given that Göbekli Tepe was abandoned at the end of the 9th millennium, while domestic ungulates and cereals appeared together at other sites.

Slightly further north, the site of Nevalı Çori is indicative of these changes that accompany the beginning of the PPNB period (Grupe & Peters 2008). Its position on the banks of a small tributary of the Euphrates, not far from the confluence point, reveals the increased importance of agricultural and pastoral practices (in an economy that nevertheless remains basically mixed). The site is probably partly contemporaneous with the final levels of Göbekli Tepe but is clearly distinguished by its more modest size and the stone foundations of a new kind of large rectangular house ('channelled plan', according to Çayönü's nomenclature). It was on this site, which was discovered and then submerged during the construction of the gigantic Atatürk Dam in the early 1990s, that monolithic T-pillars were discovered for the first time, in a large quadrangular building. These put the same Turkish-German team on the trail of Göbekli Tepe, where comparable fragments were found on levels previously identified as Neolithic (Schmidt 2006). But the presence of such a structure at Nevalı Çori, on its own beside a completely different type of settlement, attests as much to cultural links as to a clear inflection in the ways of inhabiting the territory. The same lack of

direct continuity can be found in the Syrian Middle Euphrates, where the PPNA sites, sometimes still occupied in the second half of the 9th millennium (Dja'de & Mureybet), differed from the main settlement centres of the PPNB (Abu Hureyra & Halula; Molist 2013; Moore 2000), where the new socio-ecological regime would be asserted.

3. Monumentality among hunter-gatherers

Placed in its Levantine context, the discovery of Göbekli Tepe appears less as a real rupture in the process of research than as the sudden manifestation of profound tendencies that already fashioned the field of study. This does not in any way detract from the visual shock triggered by the excavation of the large megalithic enclosures in the 2000s. The site itself commands respect: Göbekli Tepe is estimated to extend over 9 ha, which is less extensive than the great settlements of the late Pre-Pottery period, but more so than any other known contemporaneous site. Yet even the staggering effect that this early monumentality consistently provokes, including among specialists, needs to be nuanced. In itself, it is not so surprising. The Pre-Pottery Neolithic A was first recognized in the 1950s when Kathleen Kenyon (1957) described the reference stratigraphy for the Levantine Neolithic at Jericho. Even then, the stratigraphy caused much controversy on account of its initial phase, characterized by a massive circular stone structure, a 'tower' (or more precisely the platform of a building that has since been lost) of about 9 m in height and an equivalent diameter, accompanied by an impressive wall complex. From then on the size of PPNA settlements, which often extend over several hectares, has often thwarted the quest for a gradual transition between Natufian 'hamlets' and the supposed Pre-Pottery B 'villages' (Cauvin 1978; Aurenche 1981). But these precedents were hardly considered at the time of the discovery of Göbekli Tepe. Present-day astonishment implicitly tells the story of this oversight in favour of an evolutionary, linear and very forced vision of neolithization [(1)].

As a result, the interpretation of the site is often positioned in relation to abstract theoretical models constructed at odds with the archaeological reality of the Levant. The reference to 'complex hunter-gatherers' to explain the monumentality of Göbekli Tepe (in the same way that Natufian sedentism had previously been explained, cf. Testart 1982) is representative of the pitfalls of such detachment. The notion has indeed played a crucial role in overcoming a certain evolutionary gradualism that construed agriculture as a preliminary stage of the emergence of 'complexity', insisting instead on the socio-economic dynamics specific to hunter-gatherer societies. It has since, however, become a convenient way to account for any context that combines an economy based mainly on the exploitation of wild resources with a Neolithic 'look', especially if it directly precedes the appearance of agropastoralism. The success of this terminology may have something to do with the fact that 'complex hunter-gatherers' are easily idealized as a kind of 'missing link' in social evolution. The persistence of this teleological framework rapidly gave 'complexity' a predicative rather than a descriptive value. It had to be defined breforehand and its role explained by a series of successive innovations (agriculture, inequalities…), the order of which were often simply reversed. The result is a substitution model that anticipates any divergences in a schema with already well-proven limits.

Yet, archaeology was very quickly confronted with the great diversity of this non-agricultural complexity (Price & Brown 1985), which had previously been rendered invisible by a postulate of simplicity (whether endured or intended, it doesn't matter), and which is now reduced to a single transitional type. It is doubtful whether ethnographic cases of 'sedentary-storer' hunter-gatherers, considered to be typical because of a cursory similarity with agricultural societies, can be representative of the contexts in which agropastoral practices emerged, especially since their specialized economies historically resisted the diffusion of such practices. Certainly, there is little doubt that food storage was known at Göbekli Tepe. Some resources were suited to storage

(1) The details of this story triggered a forthcoming book which explores the implications of this monumentality for research on the 'Neolithic Revolution' and its underlying epistemology (*Les bâtisseurs de ruines*. Bruxelles: Zones Sensibles).

(cereals, nuts) and some unambiguous examples of granaries are known from contemporaneous sites suh as Drah' (Kuijt & Finlayson 2009). Compared to the seasonal complementarity of resources, however, the technique seems to have been relatively unimportant in the establishment of larger PPNA settlements that, like Göbekli Tepe, were abandoned precisely as dependence on agropastoral practices increased. This is not to deny that cereals played an important role in the process of economic intensification in the PPNA, and that this contributed to their domestication. But the modes of socialization of grain, namely the ways in which people chose to use its seasonal abundance, cannot be taken for granted as mechanically as they are in the model by establishing an equivalence with more recent forms.

Indeed, the extent to which the Göbekli Tepe discovery contributed to challenging the very framework of thinking about the emergence of complexity in hunter-gatherer societies, rather than confirming the previous predictions, has been underestimated. The site contradicts both the presumed essential role of aquatic resources (very present on the Tigris, but remarkably absent in the Levant) and the marginalization of big game hunting deemed necessary in the process of economic intensification (cf. Binford 2001). Above all, it is diametrically opposed to the 'plutocratic' model, and to the role of 'entrepreneurial' individuals succeeding in converting food reserves into wealth or positions of power, assumed to be at the very root of the phenomenon (Testart 2012; Hayden 2014). To date, nothing in the Levantine Pre-Pottery Neolithic period has corroborated this socio-political usage of seasonal storage, considered to be canonical on the model of the societies of the northwest coast of North America (Kuijt 2015; Hadad 2020). It therefore seems hazardous to look for a driving force for neolithization in these processes. On the contrary, Göbekli Tepe reinforces the perception of an Early Neolithic period that is reticent of any expression of social differentiation either in the mortuary sphere, which was otherwise highly elaborated, or in the domestic world. As at Jericho or the Syrian sites of the Euphrates, investment in architecture does not designate any patron. It is concentrated on non-funerary and non-residential structures – in a relationship with monumentality that finds echoes in other hunter-gatherer societies (cf. Chapter 9, Perlès & Núñez, volume I, p. 205). Faced with this cultural landscape, the insistence on storage and its assimilation to wealth seem to derive ultimately from the universalization of our own political horizon, which is in fact very recent. From this restricted perspective, we are incapable of imagining social complexity in any way other than through the simultaneous rise of inequalities, and we envisage these inequalities only as arising through capitalist accumulation and the individual appropriation of goods.

The fact remains that the megalithism of Göbekli Tepe raises questions about the architectural modes of the exercise and inscription of power in these non-agricultural contexts. The main excavation zone, where four of the seven structures identified on the site are clustered (A to D), each comprising roughly between ten and twenty monoliths with an average height of 3 m (and up to more than 5 m for those standing in the centre of the largest enclosure, D), undeniably provides the spectacle of a vast collective effort (**Fig. 1**). It is difficult to ignore the question in the background of this image, concerning the type of authority capable of deciding, organizing and obtaining consent for the implementation of such ambitious works. Given the economic context outlined above, it is possible to identify a type of organization that was accustomed to bringing together large workforces, as was periodically required for harvests or great collective hunts. It would thus seem reasonable to postulate that the existence of seasonal food resources – that were not systematically stored – in the form of grain to be fermented (Dietrich *et al.* 2012) or meat to be roasted (Wengrow & Graeber 2015), regularly provided opportunities for festive and ritual gatherings that allowed this type of unproductive expenditure. It would even be tempting to see these events as a means of consuming all capital before it could be invested in hypothetical individual enterprises of social distinction. A few clarifications are nevertheless necessary in order to avoid falling into the opposite trap of recycling the old trope of 'oriental despotism' with its crowds compelled or alienated by a transcendent power.

Fig. 3 – Surface condition of the limestone plateau in the immediate vicinity of Göbekli Tepe. The way in which it splits naturally into slabs may have been exploited by the inhabitants to extract and shape the monoliths on the very location of the rotundas (Photo: the author).

4. A counter-intuitive megalithism

First, it is important to keep in mind that the concentrated effect of the main excavation zone does not necessarily prefigure the rest of the site. It is true that other buildings with monoliths have since been identified at Göbekli Tepe (Dietrich *et al.* 2016), but they are part of an inhabited environment that also bears witness to the intensity of a more mundane economic life. It is now clear that some of the more modestly built and higher levels are at least partly contemporaneous with the megalithic structures (Dietrich *et al.* 2019; Kinzel & Clare 2020). The interpretative enthusiasm that sought to see Göbekli Tepe as a regional ceremonial centre where nomadic populations would periodically converge is giving way to a vision that is more in line with what is known about other large Pre-Pottery Neolithic sites, where ritual and profane functions coexist in a more intertwined manner than certain typological reflexes of archaeological reasoning would allow (cf. Banning 2011).

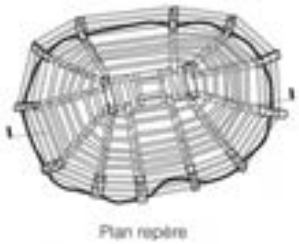
T-shaped monoliths have now been identified on almost a dozen sites around the Harran Plain, and even in the town centre of Urfa (Moetz & Çelik 2012; Çelik 2016). Some are probably contemporaneous with Nevalı Çori and may result from the same dispersion into smaller sites in the early PPNB period. Others (Karahan and Hamzan Tepe) occupy elevated positions in relation to the plain, comparable to that of Göbekli Tepe, and would therefore tend to point to less polarized forms of regional integration than has been claimed up to now. However, it remains difficult to draw definitive conclusions: territorial settlement patterns outside the large sites have been rendered invisible by the accumulation of Holocene sediments in the plain and so remain the great unknown of the PPNA period. The existence of vast sedentary settlements does not exclude the regular movement of part of the population. Its ability to disperse and aggregate may well constitute an integral part of the non-peasant economy described above and of episodes of architectural construction. But there is no reason to rely on the existence of a kind of political-religious pilgrimage as the primordial pulse of socio-political complexity.

What is known about the construction of the monoliths also deviates from the image of huge, almost-pharaonic works. The raw material was extracted locally: the limestone plateau on which the site is located breaks naturally into slabs in which the characteristic flat shape of the pillars can be perceived (**Fig. 3**). Although roughed out blocks are scattered throughout the landscape (of sizes that sometimes cast doubt on the intention to finish them), the elements required for the construction of each building could have been taken from the site itself, especially as this sometimes required digging into the underlying limestone to carve out a floor. The shaping and erection of the pillars, and the creation of their relief decorations, as well as the construction of a floor in the rock, certainly represent a considerable amount of work; Bar-Yosef (2014) estimated this at between 15 and 60 h per sculpted motif, which is consistent with ethnoarchaeological references in other cultural contexts (cf. Abrams 1984). Unlike the displacement of the monoliths, which is often considered as the main marker of the monumentality of the site (Banning 2011; Notroff *et al.* 2014), the task of carving could, however, be spread out over time and left in the hands of a limited number of people with a degree of expertise. In this light, the exceptionality of Göbekli Tepe must be reconsidered, compared to the tower of Jericho, for example, whose massive stone structure required the transportation of limestone blocks over at least a kilometre – and in particular, the 30 or so monolithic elements, thick, shaped slabs of about 1 m in length and almost as wide, which constitute the steps and lintels of the single staircase that crosses the complex (Kenyon 1981: 6). The structures of Göbekli Tepe are undoubtedly impressive, but they need to be considered as the variant, that is specific to the limestone piedmont of the northern Levant, of a wider architectural phenomenon.

This is well supported by the formal characteristics of the structures. The interior space is sometimes dug into the limestone plateau, and generally surrounded by a wall with no opening on the ground floor (with the exception, maybe, of building A), and with a non-systematically faced outer side, which suggests a building at least partly enclosed by an embankment. This configuration evokes the large subterranean circular buildings of contemporaneous sites in the Euphrates valley, which pose similar problems with regard to the mode of access (which is necessarily vertical) and in terms of the covering of the structure. Contrary to the image often reproduced in media coverage of the site, we know that the 'enclosures' of Göbekli Tepe had roofs, and should therefore more correctly be termed 'rotundas'. Indeed, the absence of a water drainage system and of any trace of erosion on the limestone surfaces, as well as the incapacity of certain large central pillars to remain upright unsupported due to insufficiently deep embedding, all point to the existence of wooden superstructures. The exact form of the roofs has so far been reconstructed only on the basis of a classical carpentry design, where beams connect the peripheral and central pillars in a radial pattern (Banning 2011; Kurapkat 2012; **Fig. 4**). Given the difference in size between these two points of support, however, this solution seems implausible. Considerable oblique forces would be concentrated on very unstable central elements, whose shape, size and orientation make them particularly vulnerable to such loads, and whose material is particularly poorly resistant to torsional and shear stresses. Unless the converging forces were perfectly balanced, which is complicated by the very irregular arrangement of the pillars, solving this problem requires us to imagine a roof without central support.

This, as it turns out, is precisely the configuration found in some of the large circular buildings of the Euphrates valley, which have only peripheral posts. At Jerf el-Ahmar, the excavators felt they had no choice but to propose a partial roof, leaving the central space uncovered (Stordeur 2015: 90, pl. 109). The result is technically plausible and elegant, but not totally satisfactory for the same reasons relating to water run-off as at Göbekli Tepe. In both cases, however, there is a solution that has not been considered. It requires abandoning the usual notion of a frame structure in order to consider a corbelled roof (**Fig. 5**). In the case of monolithic rotundas, this would take the approximate shape of a dome, the top of which would enclose and stabilize the central pillars, compensating for the difference in levels between supports. The main disadvantage of this method is the number of beams required to link the self-supporting rows concentrically, and consequently the weight of the structure. But it would take advantage of the compressive resistance of limestone

Fig. 4 – Reconstruction of the roof, showing the framework option (see Banning 2011; Kurapkat 2012). The stability of the whole structure is dubious because of the irregular disposition of pillars and the difference in level between the periphery and the centre. In this layout, the radial beams exceed the critical span of 6 m (Drawn and co-designed by Michael Chomette. The rotunda depicted is inspired by building D, but the distribution of the decoration is not accurate. The interior is illuminated by a source of light at the centre of the section. The roofing of the peripherical walls was left undetermined, but its technical modalities do not cause problems).



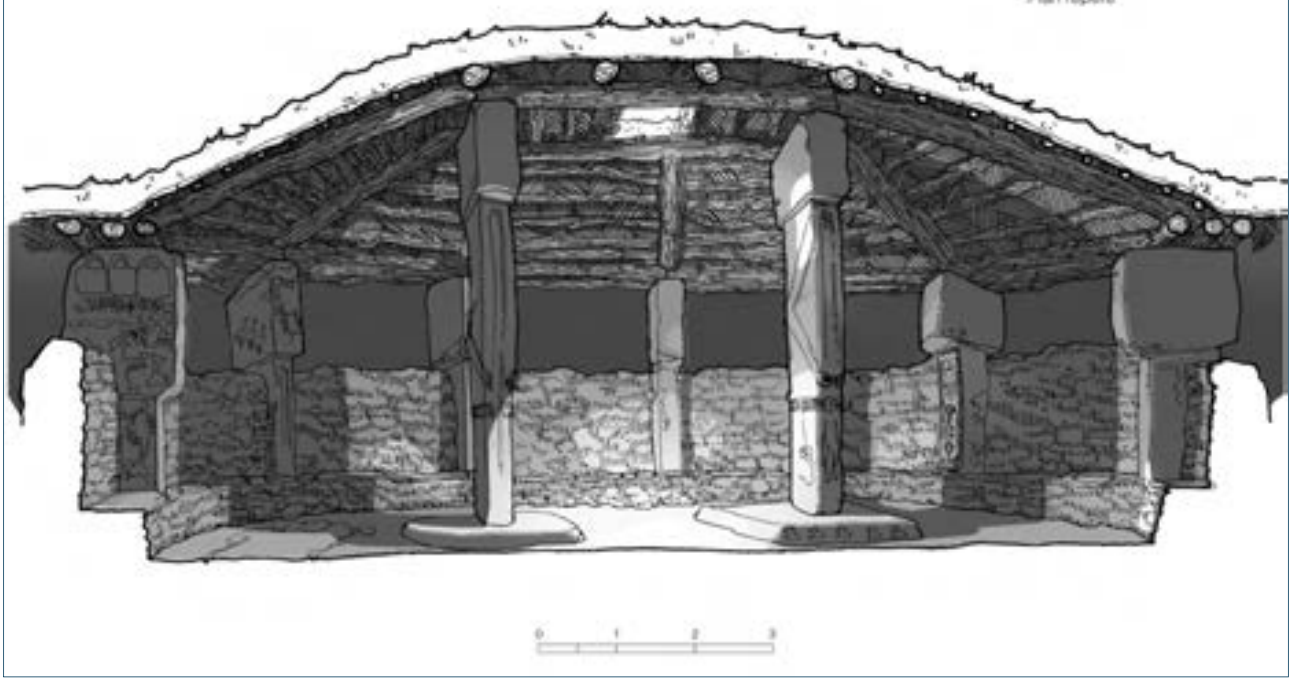
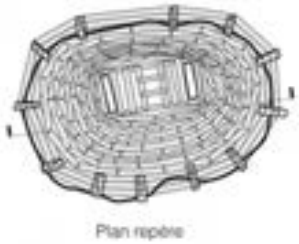
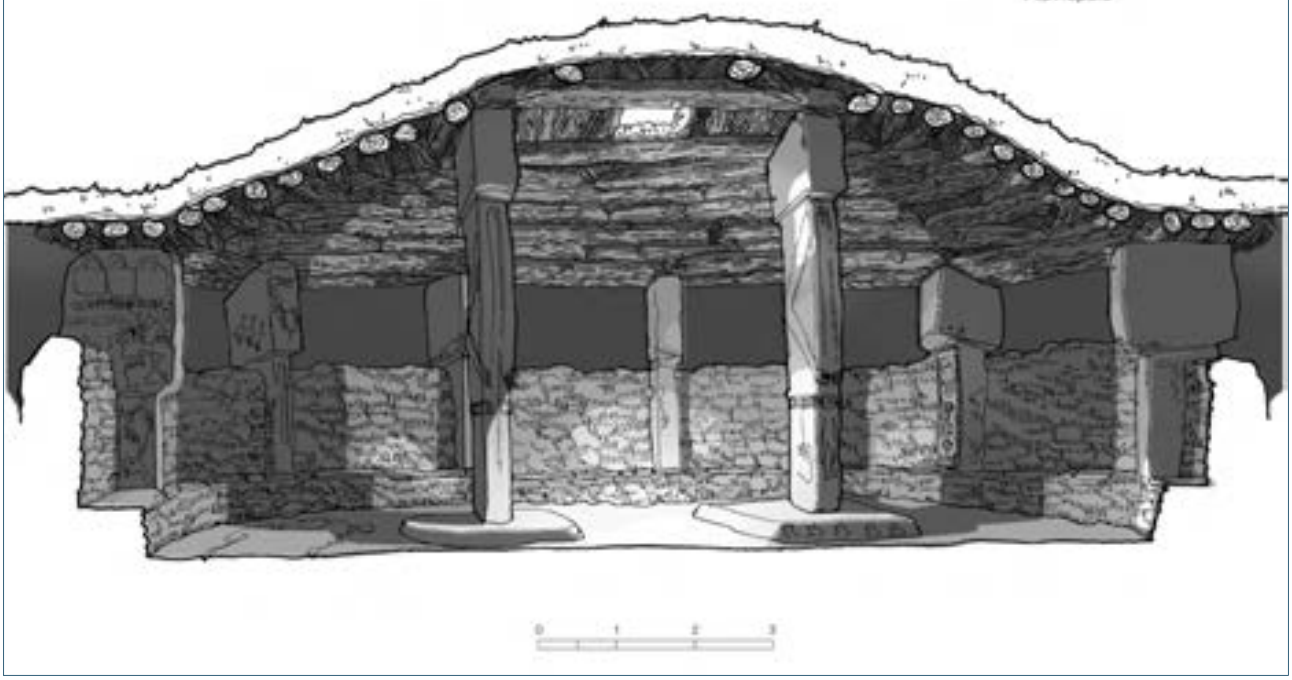


Fig. 5 – Reconstruction of the roof showing the corbelled option. This solution is more heavy and requires a great deal of lumber, but the result is stable. It does not necessitate very long spans and can be adjusted to the irregular plan of the pillars. (Drawn and co-designed by Michael Chomette. The rotunda depicted is inspired by building D, but the distribution of the decoration is not accurate. The interior is illuminated by a source of light at the centre of the section. The roofing of the peripherical walls was left undetermined, but its technical modalities do not cause problems).





(or the well-known mechanical qualities of the cedarwood that seems to have been favoured for these load-bearing posts at Jerf el-Ahmar; Stordeur 2015: 51). In contrast to the 'Stonehenge effect' that prevails in the visual appreciation of the site today, this technique would imply that timber, its acquisition and scarcity, was one of the main components of architectural monumentality – a recurrent motif in the early literature of this region. We saw above that the economy and occupation of the territory would lend credit to a rhythm of construction dictated by the ability to organize expeditions to acquire a material that is also easy to store, exchange or reuse.

This very compact roof, probably covered with a layer of clay and organic materials, suggests particularly dark and enclosed spaces – even if an oculus were constructed between the two central pillars. Far from being a problem, this is probably an important element in understanding the social significance of these seclusive places, whose openness to public eyes and knowledge could be controlled, and access to which was perhaps subject to initiation or affiliation (Finlayson 2014; Hadad 2014); indeed, Hayden (2019) includes the rotundas in his transcultural study of secret societies but, unsurprisingly, sees them as just another tool in the hands of ambitious opportunists. The carved decorations that are now in full light were probably only discernible in the flickering light of a lamp or a very thin ray of sunlight. If we had to choose a point of comparison, we would readily turn to the societies of great hunters who painted the caves of the European Palaeolithic period (as has already been suggested in regard to animal symbolism, which in both cases is not representative of hunting practices, cf. Peters & Schmidt 2004; Perlès 2011), rather than to the builders of tombs and megaliths of the later Neolithic. To specify here the form of this social organization, and the practices and symbols that constitute it, would require an entirely different contextualization. For the moment, it suffices to insist on the apparently paradoxical character of this monumentality. In regard to ostentation, rotundas are based on a centripetal logic: they show nothing of their interior, or rather, they only show what they hide. The sculpted monoliths, although concentrated on a site that marks the landscape, are elements of an architectural structure that guarantees their concealment.

Göbekli Tepe also thwarts expectations of what constitutes a monument – to our modern eyes – in its relationship to duration. Such use of stone inevitably conjures up the idea of a will to overcome the passage of time. It confirms our impression of builders inhabited by excessive pride and vanity. But we have seen how the idea of a single and imposing architectural act is misleading in terms of the implementation of the construction. One of the main challenges in understanding the site lies in the study, so far not fully conclusive, of the biography of buildings, that are known to have undergone innumerable transformations and reconstructions over very long periods (Piesker 2014; Kinzel & Clare 2020). In contrast to a quest for an overall plan dictated once and for all by the stars, or the birth of mathematical thinking – as was recently suggested by Haklay & Gopher (2020) – the picture offered by the central excavation area must be understood as the cumulative result of a series of building episodes. These logically begin with the rotundas D and C, which are closest to the original edge of the rocky plateau and also the largest, with each structure evolving at its own pace depending on its immediate environment (the anteriority and role of the outer walls still raise questions), and where the architectural elements may have been moved or reused many times. It is probably here, in the awareness of a fluidity that does not spare even the most enduring objects, rather than in the ostentation of the monoliths, that we can find material for comparison with other ancient megalith traditions (cf. Laporte 2010).

This slow sequence of accretion ended with the probably independent backfilling of each of the rotundas, which explains their excellent conservation but which could also give credence to the misleading idea of a site frozen in time (cf. Hadad 2018). The stratigraphic section of one of these fillings (in structure D) confirms the contribution of sediment from the inhabited areas that developed high up around the rotundas, even after they were backfilled (Schmidt 2010b; Dietrich *et al.* 2019). Keen to promote a less spectacular image of the site, the new team in charge of the study now favours the thesis of a landslide occurring due to the growing difference in levels (Kinzel & Clare 2020). It is true that the inhabitants built retaining walls to respond to this issue, but this does not explain the position

of the central pillars, which had to be kept upright during filling, nor the intentional fracturing and deposition of some of the carved elements, nor the absence of recycling of limestone materials or rebuilding over the buried remains, as was common practice. Here again, there are direct parallels with other large PPNA buildings. Not only do these undergo a succession of construction episodes (cf. Kenyon 1981: 19-30; Stordeur 2015), but they were also destroyed in the course of ritualized sealing procedures that aimed to preserve their remains within inhabited sites (Hadad 2019).

The ostentation of ruins thus prolongs the concealment of monuments. The rotundas of Göbekli Tepe are the direct result of this taphonomic and cultural dynamic of accumulation, to the extent that their infilling could be interpreted as a final paradoxical act of occultation. Their monumentality is in any case impossible to dissociate from this ancient memorial dimension. This is not secondary; it is constitutive of the archaeological site as we see it today, but also as it was formed under the gaze of Neolithic inhabitants. The mastery they showed throughout this process forces us to think of traces with modes of temporality that contradict the very spirit of the timeless pageant that we like to contemplate there – that of presentist fables told in Davos, as well as of more substantial models of linear evolution.

Translated from French
by Louise Byrne

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Viktor TRIFONOV

The Bronze Age megaliths in the Caucasus: development trajectory of the architecture and the funeral practice

Abstract: This paper presents the megalithic phenomenon in the Caucasus in the light of recent field studies that provide new insights into the already well-known diversity of these monuments. Within the broader updated cultural and chronological context, the data suggest that most Caucasian megaliths represent a single line of local architectural development extending from at least the last quarter of the 4th millennium BC. The construction of dolmens continued until the second half of the 2nd millennium BC, and their use probably persisted until the end of it. 'Dolmen' is an umbrella term that encompasses different types of megalithic burial chambers with a porthole slab. Generally, the burial chamber, antechamber and cairn are integral parts of the whole construction. Depending on the social status of the deceased, they vary considerably in terms of architectural style, building technology and quality within the same period and geographical area. The megalith builders had an impressive set of construction and decorative techniques at their disposal, including ashlar masonry, false domes, flat and gable roofing, tongue and groove joint technology, drainage, developed forms of columns, relief decorations, and monumental zoomorphic circular sculptures. The distinctive features of the Caucasian dolmens, such as slab foundations, inclined walls and buttresses, portals, and slanted roofs, were local developments. The Caucasian megalithic funeral practice is probably rooted in the local tradition of building crypts for collective burials on the ground surface using various materials including stone, timber and clay. The megalithic phenomenon is, therefore, rather domestic and there is no strong reason to look for their origin beyond the Caucasus.

Keywords: *megaliths, dolmens, Caucasus, Bronze Age*

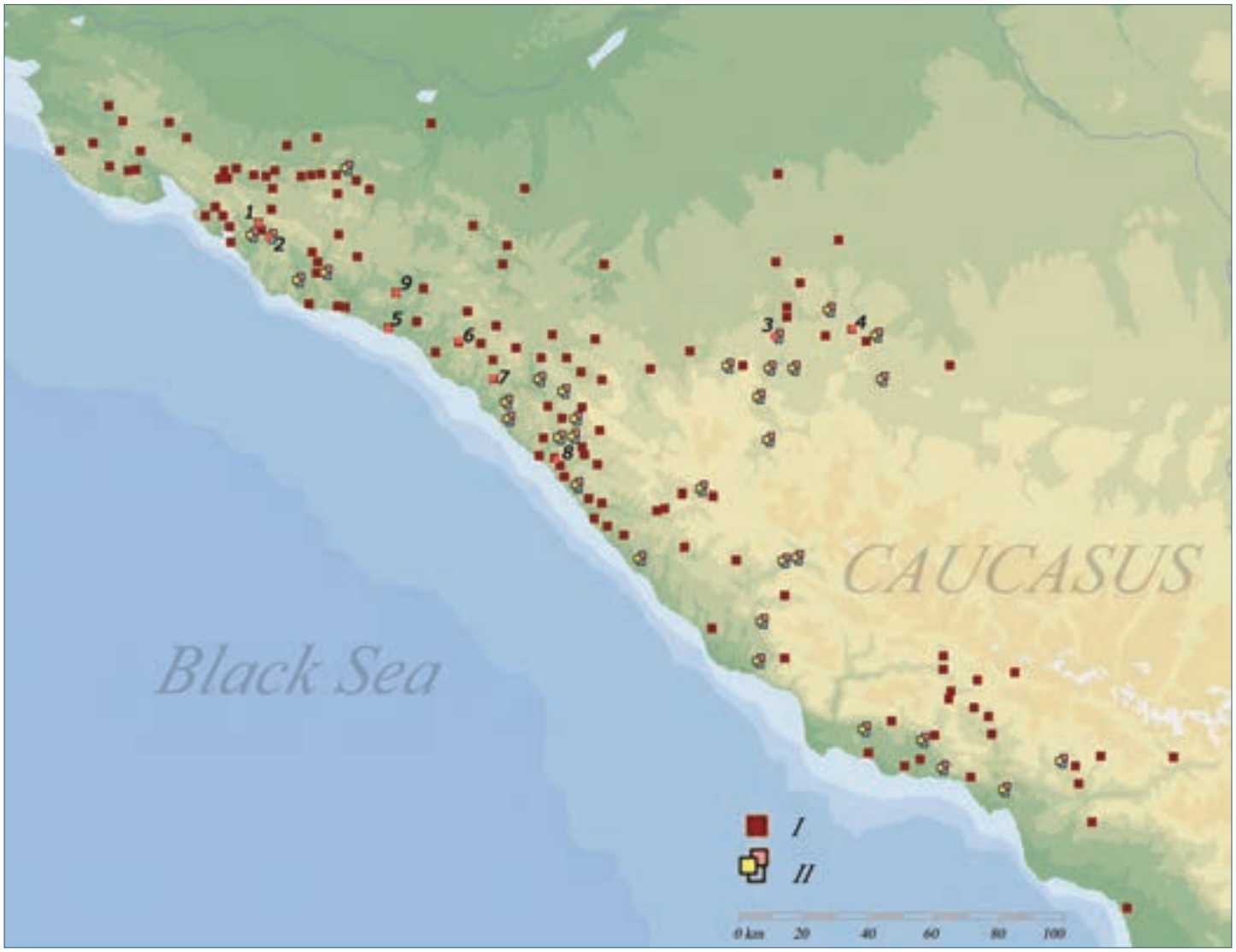

Fig. 1 – The Bronze Age dolmens in the northwest Caucasus: I. Group of dolmens; II. Clusters of dolmen groups. Sites mentioned in the text: 1. Rastegaev; 2. Zhane; 3. Khadzhokh; 4. Novosvobodnaya (Tsarskaya); 5. Dzhubga; 6. Psebe; 7. Kolikho; 8. Shepsi; 9. Polkovnichy.

1. Introduction

From the end of the 4th millennium BC through the last quarter of the 2nd millennium BC, the western part of the Greater Caucasus was occupied by the Dolmen culture, named for its massive megalithic mortuary constructions – dolmens. Such megaliths are distributed on both slopes of the main range from the Taman Peninsula, which borders the Sea of Azov to the north and the Black Sea to the south, to Kolkhida, the coastal lowland plain of the eastern Black Sea.

The archaeological catalogue lists over 3000 dolmens, usually clustered in groups of from two to three to several dozen, scattered across an area of approximately 12 000 km^2 covering both modern Russia and Abkhazia (**Fig. 1**). The largest clusters consist of roughly 500 dolmens. The original total number must have been truly enormous.

The dolmens of the western Caucasus were introduced into European archaeology in the first half of the 19th century through the publications of amateur archaeological enthusiasts: Taitbout de Marigny, a French merchant in the service of the

Russian Empire, and James Bell, a political officer of the British Embassy in Istanbul who illegally visited the Caucasus (Marigny 1821; Bell 1840).

In 1833, Dubois de Montpereux, a Swiss scholar with French ancestry, examined dolmens in the environs of the modern town of Gelenjik on a visit to the Caucasus organized by Czar Nikolas I. De Montpereux was the first to recognize parallels between the dolmens in the Caucasus and megalithic constructions of Western Europe (e.g., in Brittany), and undertook a comparative analysis (Montpereux 1843). Such comparative investigations were supported in Russia by Count Uvarov (1876, 1878), one of the founders of Russian archaeology, and in Europe by Chantre (1885). Since then, the search for parallels remains a popular undertaking (Lyonnet 2000; Hansen 2010; Rezepkin 2012), although the origin of Caucasian dolmens is still uncertain.

The basic grounds for structural and architectural classification of the dolmens were established by an historian of the Kuban area, Felitsyn (1904) and developed further in the archaeological studies of Lavrov (1960) and Markovin (1978). Some definitions related to the classification of European megalithic tombs (e.g., gallery graves, passage graves) were introduced into Soviet archaeology (Nikolaeva & Safronov 1974; Nikolaeva 1981; Rezepkin 1988) a quarter of a century after it was developed (Daniel 1958).

Owing to a lack of securely dated dolmens, models of their evolutionary development have been revised several times in response to new hypotheses on their origin. Almost all such models are based on external migrations. The similarity of the Caucasian dolmens to the megaliths of Europe and Western Asia led to the elaboration of several hypotheses that replaced older, unsubstantiated connections with Indian or South Asian dolmens (Bonstetten 1865); North European and Mediterranean hypotheses were advanced and, at the beginning of the 20th century, the Russian archaeologist Spitsyn (1903) proposed that the ceramics found in 1898 in the megalithic burial at Tsarskaya (modern Novosvobodnaya) were linked in their origin to the so-called 'Globular Amphora culture' of Western Europe. Later, Tallgren developed a distinctive interpretation of this theory, in which he argued that the pottery component of the dolmen culture originated in Europe, while the dolmen concept itself was an Asiatic contribution (Tallgren 1933). In Germany, this theory was further advanced by Struve, who proposed a link between the 'Globular Amphora' and 'Funnel Beaker' cultures and the origin of the burials at Novosvobodnaya (Struve 1955).

The distribution of megalithic tombs along the Atlantic, Mediterranean and Black Sea coastlines led to theories that maritime activity may have played a part in the dissemination of the megalithic concept (Childe 1948). Lavrov was the first in Russia to propose a possible borrowing of the megalithic idea from somewhere in the Mediterranean as a result of 'marine expeditions of Caucasian Peoples' and Markovin explicitly pointed to the Pyrenees as the source of this borrowing (Lavrov 1960; Markovin 1978). Finally, Rezepkin proposed the dual penetration of megalith building into the Caucasus from both Northern Europe and the Mediterranean. In his opinion, the appearance in the Caucasus of Novosvobodnaya burials (early megaliths) was linked with migrations of the Funnel Beaker culture. In contrast, he proposed that the appearance of 'true dolmens' (late megaliths) in the Caucasus was the result of migrations from the Iberian Peninsula (Rezepkin 1988, 2000). Exactly the same list of similarities between West European and Caucasian megaliths was also exploited by an alternative, opposite hypothesis. Childe, Tallgren and Forssander each believed that the Western European Globular Amphora culture and megaliths with a porthole slab (German: *Steinkisten mit Seelenloch*) or the so-called 'window cists' from Saxony and Hesse were derived from tombs in Novosvobodnaya and dolmens in the northwestern Caucasus (Forssander 1933; Tallgren 1933; Childe 1939).

In 1994, Häusler demonstrated that the model for an external (West European) origin for the Novosvobodnaya megalithic tombs in the northwestern Caucasus was unnecessary, unsupported by archaeological evidence and inherently unlikely (Häusler 1994). However, the provocative similarity between some decorative elements of the tombs in the Caucasus (e.g., Novosvobodnaya, Klady, gr. 28) and in Germany (the cist from Göhlitzsch near Leuna) causes researchers to repeatedly revisit ideas of long-distance contacts (Sherratt 1994; Hansen 2010, 2018).

Today, the reasons for such comparisons today seem far less compelling. Firstly, the increasingly high standards of recent excavations are showing that the diversity of megalithic monuments in the north-western Caucasus is much more extensive than was presented in the iconic classification by Markovin, which is referenced repeatedly in western 'megalithic' literature (Markovin 1978; Joussaume 1988; Mohen 1990). This means that the comparisons between the construction, architecture and design of poorly excavated megalithic sites, both European and Caucasian, are dangerously misleading. Secondly, the stratigraphic and radiocarbon evidence demonstrates that the widely accepted abrupt emergence of Caucasian dolmens in sophisticated shapes is far from the truth. Finally, the archaeological context indicates that Caucasian megaliths represent branches of a single line of domestic development rooted in the local funeral practice.

2. The diversity of megalithic monuments in the north-western Caucasus

Caucasian dolmens are collective tombs built using precisely dressed stone slabs and blocks. Architecturally, they include varieties of chambered cairns, having a megalithic burial chamber surrounded by a stone cairn with a corridor or courtyard (**Fig. 2**). Construction techniques include regular ashlar

Fig. 2 – Dolmens with a cairn and corridor or courtyard: a. The Rastegaev group, dolmen 1; b. The Khadzhokh group, dolmen 3 (Photos: V. Trifonov).

masonry, which allows for considerable architectural diversity.

The most common feature of the Caucasian dolmens is a relatively small (averaging about 0.25-0.45 m across) aperture or 'porthole' in the façade. The hole can be circular, semicircular, oval, or, the rarest form, square. The size of this hole is never less than 0.20 m in diameter – the size of the average human skull. The porthole ensured access to the burial chamber for periodic interments and was always closed by a stone plug of varying design (**Fig. 3**). This feature places the Caucasian megaliths within a class of dolmen with a porthole slab that is widely distributed across Europe and Asia.

Today in Russian archaeology, the Caucasian megaliths are subdivided into two primary groups, which I will call 'classic' or 'true' dolmens, and tombs of the 'Novosvobodnaya' type. These groups occupy the same territory but belong to different cultural contexts and date to successive periods. The question remains of whether they are independent of each other, or interrelated.

Fig. 3 – Stone plug from a dolmen (Rastegaev group) (Photo: V. Trifonov).

3. 'Classic' dolmens

'Classic' dolmens make up about 99.5% of the total number of Caucasian megalithic tombs. They are distributed throughout the mountainous areas of the northwestern Caucasus.

It is noteworthy that, for a long time (from the early 19th century until recently), Russian archaeologists practised an oversimplified, rather primitive – and often quite destructive – method of dolmen excavation. Being focused on the burial chamber and on collecting grave goods and offerings, they paid little attention to the dolmen construction. This resulted in the common impression that the Caucasian dolmens were freestanding megalithic burial chambers without any additional external buildings or architectural structures. Recent fieldwork suggests that this is far from the truth. Western European archaeology experienced the same problem until more critical and sophisticated methods of excavation '*…revealed that the allegedly simple dolmens are just the most stubborn remnants of more complex structures*' (Childe 1948).

The following two examples demonstrate the difference between old and new images of the same dolmens.

3.1 The Zhane dolmens

Three dolmens stand in a row on a hill overlooking the Zhane River near the coastal resort town of Gelendjik. The site was documented at the very beginning of the 20th century. Since then, the image of the most impressive dolmen has been reproduced in different publications in Russia and abroad (Letchenko 1931; Tallgren 1933, 1934; Markovin 1978; Voronov 1979) presented as a free-standing rectangular chamber decorated with carved designs both inside and out.

Recent excavations have unearthed a number of additional striking structures (**Fig. 4**) including a paved courtyard (300 m^2) laid in front of the central dolmen, surrounded by the horseshoe-shaped cairn of about 25 m in diameter and 2 m in height. The structure is built of carefully laid river boulders, selected by shape and size. The courtyard is separated from the cairn by a 2.5 m-high dry-stone wall stretching for over 24 m. The wall is made with

Fig. 4 – Group of dolmens in the Zhane river valley (Photo: V. Trifonov).

massive, well-dressed regular-shaped sandstone blocks. The excavation revealed more of the extensive dry walling which formed a high kerb around both the cairn and the courtyard. All the construction elements fit to each other with tongue and groove joints, and rest on levelled virgin soil so that there is no doubt that these structures were part of the original architectural concept.

The front surfaces of the side slabs shaping the portal of the dolmen are decorated with vertical zigzag chevrons. Another decorative relief is present on the porthole slab, depicting a lintel held up by two columns, either side of the central porthole (**Fig. 5**). The inside walls of the central dolmen are decorated with carved zigzags and triangles running in a band around the chamber.

Fig. 5 – The central dolmen of the Zhane group (Photo: V. Trifonov).

The two round chambers flanking the central dolmen are equally advanced in their technology of construction, with accurately shaped stone blocks cut to fit both the curvature and the batter (receding slope) of the wall. The blocks are shaped with great precision as though a template was used (**Fig. 6**).

3.2 The Dzhubga dolmen

Another example is the Dzhubga dolmen located on the Black Sea coast in the Dzhubga River valley. Due to its size and sophisticated architecture, the dolmen stands out even against the rich background of the prehistoric megalithic monuments of the Western Caucasus. The first description of the dolmen dates

Fig. 6 – The circular in plan dolmen of the Zhane group (Photo: V. Trifonov).

Fig. 7 – The dolmen in Dzhubga (Photo: V. Trifonov).

to 1871. In the early 2000s, the Institute for the History of Material Culture (Saint Petersburg) undertook an excavation of the site, which revealed the remains of this megalithic masterpiece. Its construction differed markedly from images of the monument in drawings of 19th and 20th centuries.

The site occupies an area of about 700 m^2. It comprises a spacious burial chamber with a circular courtyard in front of the façade, and a cairn around both the chamber and courtyard (**Fig. 7**). In addition to its size, the quality of the building is imposing. The drywalling is made with massive, well-dressed sandstone blocks that are carefully fitted to each other by shape and size. The outer side of each block is slightly curved to maintain the rounded line of the wall, which is made of four layers of stone blocks placed one above the other in an ashlar masonry style. The wall is about 2.5 m in height with no signs of any entrance structure. But what makes this dolmen unique are the anthropomorphic and zoomorphic petroglyphs discovered on the courtyard walls.

The Zhane and Dzhubga dolmens were most likely built for a social elite, and from a typological perspective they represent only a 'premium' class of conventional dolmens. More generally, the 'classic' dolmens can be described as portal megaliths with a trapezoidal, rectangular or circular burial chamber constructed of slabs or blocks. A pair of tall portal slabs set inside the line of the sidewalls marks the entrance or the portal is formed by the extended ends of sidewalls, with a capstone and floor slab. A single enormous capstone covers the chamber, usually sloping down towards the rear. The capstones for the burial chamber and the portal partly overlap each other, the larger one above the chamber always set beneath the smaller slab for the portal. The floor slab serves as a flat foundation for the sidewalls. The side stones are usually held in place by buttresses leaning against them from outside and concealed by a stone cairn and drystone walling. The shaping and assembly of the stones is quite elaborate: the edges of the slabs are carefully carved with tongues and grooves so that the burial chamber could be put

Fig. 8 – 'The fighting twins': a. The dolmen in Dzhubga; b-c. The stele from Verkhorechie and its fragment; d. Tsarskaya/Novosvobodnaya, dolmen in kurgan 2, the fragment of the bronze socketed hook with pair of almost naked male figures standing in an upright boxing stance.

together like a wooden box. The size range of burial chambers is quite substantial, from 1.5-25 m^2. A massive stone cairn usually surrounds the burial chamber on three sides and the paved courtyard, portal, roofed corridor or any other kind of ante-chamber are always set in front of the façade, ensuring access to the burial chamber for periodic interments.

The form, construction, and dimensions of all three integral components of the dolmens (chamber, antechamber, and cairn) significantly vary in layout and size. Their numerous combinations form different patterns for the dolmen architecture, from the elaborate to the minimalist, for example the monolithic dolmens constructed of a single block of stone detached from monolithic rocky outcrops or cut directly out of the rock face to create three components – the chamber, the cairn and the courtyard – all from the same piece of rock.

4. The 'true' dolmens: funeral practice

The human remains found in the dolmens show their continued utilization as collective vaults for successive burials (Markovin 1978), as exemplified by the Kolikho dolmen, located near Tuapse on the Black Sea coast (Trifonov *et al.* 2012). The dolmen was buried beneath a 3 m-thick alluvial deposit which had preserved it untouched since the Late Bronze Age (**Fig. 9a**). The favourable circumstances surrounding the discovery suggest exceptional opportunities to answer the most frequently asked questions related to collective burials in megalithic tombs: How were they buried? Who was buried in the dolmen? When were the remains buried, and over what duration of time? And finally, where did the individuals come from and where did they live permanently before they died?

The burial chamber at Kolikho is very small (1.3 x 1.4 x 1.5 m) and was full of partly disarticulated human remains from about 70 individuals of different age and sex. All the remains were placed in the chamber through the hole in the façade slab, which is large enough to take a body or set of bones including the skull. There are direct anthropological signs that human remains were 'dry-cured' and partly de-fleshed somehow before being placed in the chamber.

Previous inhumations of human remains, primarily bulky skulls, were moved aside to create free space on the stone floor for each successive interment (**Fig. 9b**). The location of the skulls along the walls has given rise to misconceptions about the placement of bodies with their backs against the wall (Felitsyn 1904). They were probably wrapped and bandaged in a crouched position. There is not enough space in the chamber for them to have been placed in a supine position.

Radiocarbon dates for the human remains from the Kolikho dolmen cover the period between *ca.* 1800 and 1300 cal BC with no signs of chronological gaps. In other words, the dolmen was in use for about 450-500 years, almost until the period when the alluvial deposit buried it.

Identifying local and non-local individuals buried in the Kolikho dolmen has become possible through the application of strontium isotope analysis of the human skeletal remains. The substantial number of non-locals (53%) and significant distance between their burial place and last residence needs to be explained. An anthropological examination of the human remains indicates that all non-local bone samples were from adults under the age of 45-50 years. Male remains are more numerous than those of females. This gives us reason to assume that samples with non-local values of $^{87}Sr/^{86}Sr$ could represent either migrants or individuals who lived and died far away from the Kolikho valley but whose remains were transported a long distance to be buried in the Kolikho dolmen (Trifonov *et al.* 2012).

5. The Novosvobodnaya type megalithic tombs

The affiliation of this small group of two megalithic tombs, sometimes referred to as two-chambered megalithic tombs (Rezepkin 2000), with the class of 'true' dolmens was disputed until recently. They were originally discovered and designated as dolmens by Veselovsky, working in the vicinity of Cossack village, Tsarskaya (today's Novosvobodnaya) in 1898 (Veselovsky 1901). Records of the 'Tsarskaya tombs' (as described in the publication of 1901) have been reproduced and are still repeatedly quoted by many authors (Tallgren 1911, 1933;

Fig. 9 – The dolmen in the Kolikho river valley: a. General view; b. Human remains in the burial chamber (Photos: V. Trifonov).

Minns 1913; Childe 1925; Joussaume 1988; Mohen 1990; Rezepkin 2000; Anthony 2007). All these authors believed that these original descriptions and cursory drawings did indeed reflect the actual design of the tombs but this is far from the case.

The more megaliths in the West Caucasus that were excavated, the more frequently the reliability of the Tsarskaya tombs drawings was questioned. As opposed to the 'classic' dolmens with a façade porthole slab, in the drawings of the Tsarskaya tombs the slab with an aperture divides the stone cist into two tightly shut chambers. Over time, these questionable design elements resulted in theories proposing two different independent origins for megalithic traditions in the Caucasus.

The results of our own re-examination of the Tsarskaya tombs from 2014 to 2018 portray it in a very different light. We established that neither dolmen comprised two-chambered cists as Veselovsky had thought. The part of the dolmen that he had mistakenly described as the second chamber was in fact the entrance or antechamber, providing excess to the burial chamber from the courtyard (Fig. 10a-b). One of the transverse slabs depicted so confidently by Veselovsky in drawings of the two tombs did not exist at all. External surfaces of the tomb façade were covered with white gypsum plaster and painted bright red. After the funeral ceremonies ended, the courtyard was filled with a 3 m layer of river boulders and the whole construction was covered with a 10 m-high mound.

Another distinctive feature of this type of tomb is the roofing. The burial chamber and antechamber have separate roofs (either flat or double-pitch) formed of massive slabs, overlapping each other. The antechamber roofing usually overlaps the ceiling of the burial chamber and both are covered with a thick layer of clay.

A significant common feature of the Novosvobodnaya type of dolmen is the setting of the side slabs of the tomb into the soil, while the floor slab was laid flat on the ground between the sidewalls. The front and back slabs were embedded into the ground first. These were slightly trapezoidal to provide support for the side slabs. The construction was quite substantial with both walls and roofing, but it had a critical design fault: almost no foundations.

The force of gravity caused the shifting and displacement of the slabs relative to each other. Compression subsidence led to the gradual unequal sinking of the sidewalls and the floor slab and quite often resulted in the complete blocking of the entrance hole (Fig. 10a). It became practically impossible to use this entrance for recurrent burials. But this did not worry the people of Novosvobodnaya as they used megalithic tombs just once for people with high social rank. Meanwhile, subsidence damage was a problem for those who used dolmens on a continuing basis The first and most straightforward solution was to place the foundation stones directly under the porthole slab, as was done in the dolmen of Shepsi on the Black Sea coast near Tuapse (Fig. 10d). This dolmen dates to the same period as tombs near Novosvobodnaya – the last quarter of the 4th millennium BC (Trifonov *et al.* 2014). This technique continued to be used but a more effective solution was found over time.

The invention of the slab foundation – a breakthrough in building technology – solved the problem of the stability of the entire megalithic structure. It provided an even load distribution and reduced the risk of unequal subsidence from compression. This new approach led to a chain of inventions, including trapezoidal façade slabs and inclined buttresses to secure sidewalls. These made it possible to build extremely sturdy dolmens of different sizes suitable for very long periods of use.

6. The early megalithic funeral practice and cultural affiliation

A diversity of funeral practice at an early stage of the megalithic phenomenon in the Caucasus provides some clues to its origin. Despite their design, the Novosvobodnaya type dolmens, located on the northern slopes of the Western Caucasus, do not show continuous use for collective burial. Single inhumations were placed in the burial chamber, mainly in a crouched position on the right side. Rich grave goods were placed in both compartments, in the burial chamber, and the antechamber (Rezepkin 2000).

A significant part of the material has a great deal in common with the Maykop culture, oriental in origin and representing the remote far periphery of the Near Eastern cultural world (Kohl & Trifonov 2014).

Fig. 10 – The earliest known dolmens in the northwest Caucasus: a-b. Novosvobodnaya (former Tsarskaya), kurgan 1 and 2 respectively; c-d. The dolmen in the Shepsi river valley (Photos: V. Trifonov).

In addition, there is a distinctive group of pottery that stands apart from the Maykop ceramic tradition. The distinct funeral rite and the different types of pottery mean that the Novosvobodnaya group of tombs can be defined as a separate variant of the Maykop culture, or even as an entirely different archaeological culture (Safronov 1989; Rezepkin 2012).

Outside the bounds of the Maykop culture, on the southern slopes of the Western Caucasus and Black Sea coast, only two dolmens dated to the Novosvobodnaya tombs period are currently known, the Psebe tomb and the Shepsi dolmen. These represent roughly one of the fifth of all known dolmens from the end of 4th millennium BC; both were used for collective burial.

The Psebe tomb is almost identical to the Novosvobodnaya type by construction and layout (Teshev 1986). It is rectangular in plan with a burial chamber and antechamber separated by the porthole slab. The skeleton of one individual was laid in a crouched position on his right side, while the remains of six others were pushed aside.

The remains of about 20 bodies of different age and sex, including infants, were found in the Shepsi dolmen chamber (Trifonov *et al.* 2014). The individuals from the first interment preserved the original position of the legs – crouched on their right side, while the rest of remains were partly disarticulated (**Fig. 10c**). The sidewalls of the Shepsi dolmen were set into the soil, following the tradition of the period, however, the burial chamber was trapezoidal, which brings it closer to the category of 'classic' dolmens.

The grave goods in both tombs comprised a mixture of high-quality Maykop culture pottery and low quality black polished ceramics of unknown origin.

The geographic distribution pattern of the Maykop and the Dolmen cultures can partly explain this mixture. All Novosvobodnaya type dolmens with rich grave goods are located in the small area were the Maykop and the Dolmen cultures overlap, in the region of Adygea today, while the modest southern group is beyond this range, on the Black Sea coast beyond the Maykop culture limits. There is a great deal to suggest that the Novosvobodnaya aspect resulted from contact between the Earlier Dolmen and the Late Maykop cultures in the foothills of the northwestern Caucasus.

Recent excavations of the Klady cemetery near Novosvobodnaya revealed that before the emergence of megalithic tombs, the local population practised burials in non-megalithic tombs with thick clay roofs (*ca.* 3300-3200 BC) (Trifonov *et al.* 2019). These were built on the surface of the ground. One of the tombs is a rectangular drystone wall structure (approx. 3.7 x 3.5 x 1.5 m) divided into a burial chamber and antechamber (**Fig. 11**). It has much in common with megalithic tombs in the same cemetery including its layout and funeral ritual. In this context, the thick layer of clay on the stone roofs of later megalithic tombs becomes clear.

The substantial degree of continuity between non-megalithic and megalithic funeral practice on the northern slopes of the Caucasian ridge does not explain the appearance of megaliths with a porthole on the southern slopes and on the Black Sea coast. The Novosvobodnaya variant of the Maykop culture cannot be the source of the megalithic tradition for the rest of the Western Caucasus due to the complete absence of the Maykop heritage in the developed Dolmen culture. On the other hand, there are no signs of cultural inheritance between the earlier Eneolithic Darkveti-Meshoko culture and its replacement, the Dolmen culture, across the Western Caucasus.

I cannot help but hypothesize that the earliest context of the Dolmen culture, in which the Caucasian megalithic phenomenon originated, remains unknown and lies in the dark period in the second half of the 4th millennium BC, which we still perceive as a cultural and chronological gap between the end of the Eneolithic and the Bronze Age on the Black Sea coast of the Western Caucasus (**Fig. 11**).

7. Conclusion

The primary aim of this brief review was to present the megalithic phenomenon in the Caucasus in the light of recent field studies that provide new insights into the already well-known diversity of these monuments (**Fig. 11**). Within the broader updated cultural and chronological context, the data suggest that most Caucasian megaliths represent a single line of local architectural development extending from at least the last quarter of the 4th millennium BC. The construction of dolmens continued until the second half of the 2nd millennium BC, and their use is likely to have persisted until the end of it.

'Dolmen' is an umbrella term that encompasses different types of megalithic burial chambers with a porthole slab; a burial chamber, antechamber and cairn are integral parts of the whole construction. Depending on the social status of the deceased, they vary considerably in terms of architectural style, building technology and quality within the same period and geographical area.

The megalith builders had an impressive set of construction and decorative techniques at their disposal, including ashlar masonry, false domes, flat and gable roofing, tongue and groove joint technology, drainage, developed forms of columns, relief decorations, and monumental zoomorphic circular sculptures. The distinctive features of the Caucasian dolmens, such as slab foundation, inclined walls and buttresses, a portal and slanted roof, were a local invention.

The Caucasian megalithic funeral practice is probably rooted in a local tradition of building crypts on the ground surface for collective burials using various materials including stone, timber and clay. The megalithic phenomenon is therefore rather domestic and there is no strong reason to look for their origin beyond the Caucasus.

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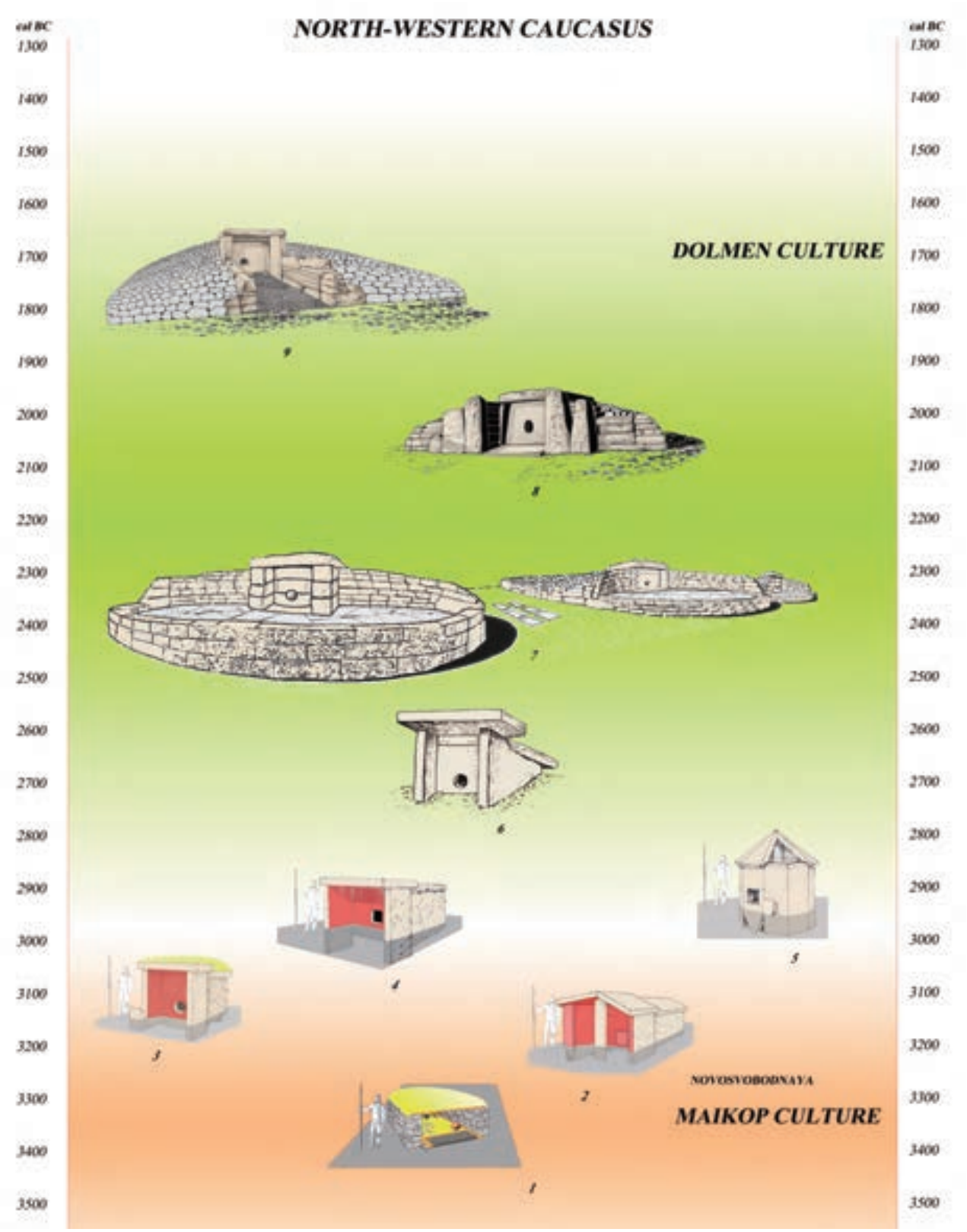

Fig. 11 – The primary architectural patterns of the megaliths in the northwest Caucasus in the Bronze Age: 1-5. Novosvobodnaya (former Tsarskaya), the Klady cemetery; 6. Novoaleksandrovski; 7. Zhane; 8. Polkovnichy; 9. Khadjokh.

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Georgi NEKHRIZOV, Stanislav ILIEV

The dolmens of the Balkans

Abstract: In the eastern part of the Balkan Peninsula, where Europe almost touches Asia, there is a small group of dolmens. Their geographical context places them between the Western European dolmens and those in the Caucasus. Previous studies place their origin and development at the beginning and in the first half of the 1st millennium BC, which makes them the latest known European representatives of this type of monuments. This paper is an attempt to present and partially analyse the available data on the dolmens in the Balkans. Such a review of the information collected after more than a hundred years of research concerning the dolmens in Southeast Europe is overdue. Writing the words that follow, we have a clear awareness that we are speaking on behalf of many authors whose opinions on certain issues often differ. We should also emphasize that the various constructions in several geographical areas have been studied to different degrees.

Keywords: *Southeastern Europe, Balkans, Late Bronze Age, Early Iron Age, dolmen, megalith, burial, tumulus, building techniques, dolmen builders*

1. Historiographical reference

In his study of dolmens at the beginning of the last century, the English scientist Thomas Eric Peet noted three groups of dolmens in Southeastern Europe, namely: 1) part of the Strandzha group of dolmens, 2) dolmens in the Crimean Peninsula, and 3) dolmens in the Caucasus (Peet 1912) (1). He placed the first group in modern Bulgaria, specifying that no less than 60 dolmens are known north of Edirne. These are probably part of the dolmens in the territory of Strandzha Mountain. Peet does not mention the existence of two other large groups of dolmens in Southeastern Europe – the Sakar and Eastern Rhodope dolmens, data on which were published several times before 1912. The Sakar dolmen group was first registered by Václav and Karel Škorpil in 1888, marking the beginning of the scientific

(1) Peet makes an interesting point that these monuments are genetically closer to the Asian dolmens than to those from Western Europe. In our opinion, this remark has not lost its relevance to this day. It should be noted that the origin of the dolmens in the Balkan Peninsula is still unclarified. It is quite possible that these megalithic tombs appeared in the Balkans as the result of an 'independent discovery' (Venedikov 1976: 81). Otherwise we have to look for the prototypes of these structures in 'neighbouring' geographical areas and chronological periods. It is natural that the Caucasian structures, which have similarities, not only in terms of plans and constructions to their Balkan neighbours, are among the 'usual suspects' in the search for possible prototypes (related to this topic, see Markovin 1974: 32-33; Markovin 1976: 300-303; Venedikov 1976: 76-78; Delev 1982: 422 and the literature cited therein). It should be noted that even in the Caucasus, dolmens were discovered with a much later date than that generally accepted for the region. In the Black Sea region of the Caucasus near the town of Gelendzhik, in the early 1950s, Ivan Akhanov studied 27 dolmens in which materials from the 7th-4th century BC were found (Akhanov 1966: 148, 185). Vladimir Markovin notes that, in this case, the materials found inside these earlier structures were of a later date (Markovin 1976: 237, 1994: 235). Long use is also evidenced by the Kolikho dolmen, where ^{14}C dates point to a period from the 19th to the 9th century BC (Trifonov *et al.* 2012: 761, 765). Apparently, as shown by the explorations in Bulgaria, dolmens are often used as burial structures over a longer period of time (Nekhrizov 2015: 130).

Fig. 1 – Map of the distribution of dolmens from Southeastern Europe (Plamen Georgiev, S. Iliev).

research of the megaliths of Southeastern Europe (Škorpil & Škorpil 1888) (**Fig. 1**). A few years later, in 1897, Stefan Bonchev reported the presence of dolmens in the Eastern Rhodopes, and in 1901, the geologist Georgi Bonchev published perhaps the most complete study of dolmens in Sakar (Bontscheff 1897: 35-36; Bonchev 1901: 659-703). The emergence of scientific interest in the megalithic monuments in Southeastern Europe is associated with two Czech archaeologists, the brothers Hermann (Václav) and Karel Škorpil. During their tours of Bulgaria, they came across structures they termed 'covered stones', known by the local people as *kapaktaşlar*, which were similar in shape to the dolmens already known in Western Europe and the Caucasus (Škorpil & Škorpil 1888). It was they who introduced the term 'dolmen' into scientific circulation in Bulgaria. In their work, the brothers emphasize the distribution of dolmens and their typology. Although they did not excavate (in today's sense) the structures, they provide valuable information about the artefacts and contexts found inside the dolmens. They determined that the dolmens were distributed mainly in the Strandzha and Sakar mountains. Initially, the Škorpil brothers attributed the construction of the dolmens to the Celts/Galatians (Škorpil & Škorpil 1888: 86; Škorpil & Škorpil 1896: 15). A few years later, the dolmens became the research topic of the Bulgarian geologists Stefan Bonchev and Georgi Bonchev (the their

similar last names is coincidental). Their contribution, albeit as non-specialists, was no lesser. The value of their work lies in the accurate descriptions and the clearly interdisciplinary approach, given their professional and scientific commitment. In 1897, on the pages of the *Korrespondenz-Blatt,* a publication of the Deutschen Gesellschaft für Anthropologie, Stefan Bonchev published on several dolmens from the Eastern Rhodopes. Paying attention to the specifics of the raw material, Georgi Bonchev located, with a great deal of confidence, the quarries for the construction materials and the slabs of many of the structures described in his work (Bonchev 1901: 659-703). The statistics presented in the same publication (relating to 474 dolmens, divided geographically and typologically), as well as the precisely drafted map showing the locations of the monuments, makes this study relevant to this day. Georgi Bonchev also published a photograph of ceramic shards from handmade vessels found in the chambers of two of the dolmens. From the images, the material appears to be from the Early Iron Age, although the author cautiously leaves the chronology to be established by a '*future researcher of dolmens in Bulgaria*' (Bonchev 1901: 703, Fig. 26). In another paragraph, however, referring to several stone axes given to him by local people and found, according to them, next to the structures, he suggests that the construction of the dolmens can be dated to the Neolithic period (Bonchev 1901: 703, Fig. 27). In a brief note in his extensive study, the archaeologist Joseph Déchelette mentions the dolmens in Southeastern Europe, refering to the Škorpil brothers and to Georgi Bonchev, and makes a very important observation, which we think deserves greater attention and is quoted here verbatim: '*Les dolmens manquent dans l'Europe centrale. On n'en retrouve aucun vestige ni dans les provinces rhénanes, ni dans l'Allemagne du sud, ni en Bohême, ni en Hongrie. Toutefois, en Bulgarie, on a signalé les restes de soixante de ces monuments dans la région située au nord d'Andrinople. Ils abondent au contraire dans l'Europe occidentale et septentrionale. En Grèce, on n'en connaît aucun.*' (Déchelette 1908: 415) (2).

A scientific approach to the study of dolmens was applied by Vasil Mikov. His publication reflects the first serious attempt to study the megalithic monuments of the peninsula through conventional archaeological excavations as well as an interpretation of the material evidence (Mikov 1936). He developed a new approach to the chronology of the dolmens, based on the ceramic material found around them, especially the shapes and decoration of the ceramic vessels found during the exploration of several dolmens in Sakar (Mikov 1936: 100). He established a chronology that is acceptable within the current state of research. The dolmens were placed roughly within the Early Iron Age, i.e., between the 8th and 6th centuries BC (Mikov 1936: 107, Fig. 95, 108). In the concluding part of his article, Mikov connected the dolmens and their use with the Thracian population living in the territory of Strandzha, Sakar and the Eastern Rhodopes. Later, the same author examined in detail another type of megalithic monument in the Balkans, the rock-cut tombs, pointing out that they were possibly the prototypes of the domed tombs built in Thrace during the 4th-3rd centuries BC (Mikov 1955). In an attempt to 'link' the domed tombs with earlier prototypes, Mikov examined the dolmens in detail. He had made earlier attempts to establish such a connection but here he makes a very important remark: '*The dolmens in Thrace in their shape, layout and size, building material, and chronology, form an independently developed and distinct type of burial monuments, which have no connection with the dolmens from other countries*' (Mikov 1955: 30). This paragraph brings together the argument placing the origin of these structures in the Balkans; the alternative, explaining the presence of dolmens in Southeastern Europe through migrations and the diffusion of ideas, was not wide adopted.

Dolmens in Turkey were documented and published by Kılıç Kökten, but his interests were focused more towards the Kars region (Kökten 1945). In the early 1960s, megalithic monuments again became a topic of interest. Şevket Kansu also studied the

(2) '*Dolmens are absent in Central Europe. We do not find any trace, nor in the Rhine provinces, or in southern Germany or Bohemia, and Hungary. However, in Bulgaria, the remains of sixty of these monuments have been reported in the region north of Adrianople. In contrast, they abound in western and northern Europe. In Greece, we don't know of any.*'

dolmens of Turkey. In several successive works he published details of a group of dolmens from the Turkish part of Strandzha, located mainly in the vicinity of Lalapaşa (Kansu 1963: 491-497, 657-705, 1964: 327-329, 1969: 577-581, 1971: 119-127). At the same time, several expeditions were conducting research in Bulgaria. They were directed by the newly established Institute of Thracology, in cooperation with the museums in the cities of Haskovo, Yambol, Burgas, and Kardzhali. These research studies continued for more than 10 years and represent a major endeavour in the study of megalithic monuments of Southeastern Europe. As a result of several exploratory campaigns, including field surveys and excavations (field work continued until 1978, materials were published until the end of the 1980s), conducted on most of the territory of southeastern Bulgaria and the Black Sea coast, a considerable amount of material was accumulated and analysed in the pages of two large volumes. These two volumes, *The megaliths in Thrace*, Vols. 1 (1976) and 2 (1982) have long remained the main source for information about the megalithic monuments in Bulgaria.

In the early 1970s, Diamandis Triandaphylos discovered dolmens on the southern slopes of the Eastern Rhodopes, near the village of Roussa, Northern Greece. In 1974, Triandaphylos discovered two more new distributions of dolmens near the villages of Kotronia and Koila near the modern Bulgarian-Greek border (Τριαντάφυλλος 1980-1981 = Triandaphyllos 1983: 145). According to Triandaphylos, the number of known dolmens in the Greek part of the Eastern Rhodopes was more than 100 (author's note, 1983) and in his opinion that number would soon increase. In 1978, dolmens were discovered in the Bulgarian part of the Eastern Rhodopes. The Bulgarian archaeologist Ivan Balkanski described a group of seven dolmens near the village of Chernichevo (Balkanski 1978: 20-21). Three of these were explored through trench excavations in 1991 by Georgi Kulov (Kulov 1993). According to Kulov, the dolmens of the Eastern Rhodope group in Bulgaria are of the same type as those in Northern Greece. In the 1990s, excavations of dolmens in the European part of Turkey resumed. One of the dolmens near Lalapaşa, published earlier by Kansu, was excavated by Murat Akman (1997). The results of this study, as well as the methodology applied are impressive. At the same time, a review article about the Early Iron Age and the dolmens of the Balkans was published by Mehmed Özdogan (1998). Five years later, the monograph of our Turkish colleague Bakiye Yükmen was published, in which the dolmens of the Balkan Peninsula are also discussed (Yükmen 2003). After the mid-80s and during the 90s, as a result of systematic research, a team led by Georgi Nehrizov found a large number of dolmens in the Bulgarian part of the Eastern Rhodopes, as well as other megalithic monuments – such as the only cromlech explored in Bulgaria and many rock-cut tombs, graves and niches (Nekhrizov 2000, 2010). After excavations of some of the newly discovered dolmens, data on their construction features and chronology were collected and the term 'Eastern Rhodope dolmens' was introduced. Very importantly, the construction of these megalithic structures was definitively connected with the Thracians, who inhabited the Eastern Rhodopes in the 1st millennium BC (Nekhrizov 2010). Between 2004 and 2009, new studies of the dolmens in South Sakar were launched, led by Georgi Nekhrizov and Stanislav Iliev (Popov & Iliev 2005, 2007; Nekhrizov 2005; Nekhrizov & Iliev 2006, 2007; Iliev 2015). Through field surveys, the information concerning a large number of the already known sites was updated and new – but not well-preserved – dolmens were registered (Nekhrizov & Iliev 2008; Iliev & Tzvetkova 2009). The excavations of dolmens continue in the territory of Strandzha where they are directed by Daniela Agre and Dean Dichev (Agre 2005a-b, 2008; Dichev 2008). Today, the dolmens in Southeastern Europe are also studied by many scholars who are neither historians nor archaeologists (e.g., Dafina Vassileva, Malvina Russeva, Ruslan Kostov, Lyubomir Tsonev, Lila Zaharieva, etc.). In spite of, or rather because of their non-professional involvement in this field, their opinions provide valuable perspectives for studying the problems of the dolmens in Southeastern Europe.

2. Geographical characteristics

Before presenting the geographical boundaries of the distribution of dolmens from Southeastern Europe, we should take into account the dynamics of the changes in the archaeological map of the region. The slabs used to build the dolmens were a readily available raw material for the people of later periods, who did not understand the significance of the monuments. For much of their long existence, these megalithic monuments functioned as quarries, and many disappeared. Even today we find examples of this in the field. The covers of many water wells built in the 18th and 19th centuries, are in fact reused entrance slabs of dolmens that have a convenient pre-cut hole (**Fig. 2**) (Aladzhov 1997: 80, note 15). Negative changes during the last century and the beginning of the current century are especially noticeable. When the lands were nationalized and turned into vineyards in the 1960s, a large number of the dolmens and menhirs were 'sacrificed', and even today the slabs of these structures are dragged to the ends of the fields, so that they do not interfere with the cultivation of the land. The fate of many dolmens in the mountainous areas is similar since they were destroyed during reforestation. To illustrate this, of the 474 dolmens known in 1901, in the region of Sakar Mountain (Bonchev 1901: 694), no more than 70 are preserved to some extent today. For these reasons, it is no longer possible to determine exactly how many dolmens were once present in these areas.

In the Balkans, the megalithic monuments are concentrated in an area of less than 5 000 km^2 in the southeastern part of the peninsula, mainly in the mountains of Sakar, Strandzha and the Eastern Rhodopes (Venedikov 1976a: 32, Map 15; Mikov 1933: 144; Delev 1982b: 398-400, 1984: 19; Özdoğan 1998: 37; Nekhrizov 2015). The altitude of this area varies from 200 to 750 m (**Fig. 1**). Although beyond the geographical scope of this paper, we should mention another group of structures (dolmens?) located on the island of Samothrace (Moutsopolus 1989: 246).

Regarding the geological 'base' on which the dolmens are built, we can observe an interesting but explainable phenomenon. The dolmens are located only in areas where one can find the raw material from which the chamber walls were made. To date, we have no example for which the source of the raw

Fig. 2 – Entrance slabs of dolmens reused as covers of water wells: a. Village Oryahovo, Lyubimets Municipality; b. Regional Museum of History – Haskovo, unknown location (Photos: S. Iliev).

material is more than a few kilometers from the monument. This may be why there is a clear geographical distribution of the various types of dolmens in the Balkans with regional groups that differ typologically. It can be assumed that the minor differences in the raw material available determined these typological differences. If we map the individual groups of dolmens on the geology, we see that the largest percentage lie on gneiss, granite gneiss and in general those rocks with a good sectility from which large, regular slabs can be obtained. The rock-cut sites (rock-cut tombs, graves, and niches, which are also common in the area of the Thracian megalithic monuments) are, conversely, found in areas with soft rocks from which no slabs can be extracted, but which allow the creation of voids by carving.

3. The structures

As an architectural type, the dolmens in Southeastern Europe overlap to some extent with those known from Western Europe as 'passage graves' or 'simple dolmens' or those from Caucasus, called 'plate dolmens' or 'usual dolmens' (Lavrov 1960: 102, 103; Markovin 1994: 229). It is important to note that the local dolmens have significant differences from both their western and eastern neighbours, not only in terms of the architectural and technical solutions employed, but also in terms of chronology. We must therefore clarify that the construction of the dolmens in the southeastern parts of the Balkans dates to the 11th to 9th centuries BC for the earlier monuments and to the 4th and 3rd centuries BC for the latest examples.

The dolmens of Southeastern Europe had either simple construction or were more complex with one or more structures and a façade, sometimes enclosed with stone blocks; in many cases they are covered with a mound.

3.1 Building materials

The building materials used in the construction of the chambers were 'local' rocks selected according to their sectility; they needed to split in a single plane to form slabs. For the dolmens in Strandzha and Sakar, the material is mainly granite and granite-gneiss or the so-called 'southern Bulgarian granites' (Kostov 2008: 164). Local gneiss was used for the group in the Eastern Rhodopes. In rare cases, the slabs are formed of marble or marbled limestone (Agre & Dichev 2006). There is also evidence of a dolmen built of strongly fused sandstones (Bonchev 1901: 669). The search for the quarries for the materials used in the construction of these monuments is a promising endeavour that could answer questions related to the social organization of labour at the time of their creation (Iliev 2017).

3.2 Construction techniques

The construction techniques, using large pre-shaped stone slabs are evidence of the significant technical preparation by their builders. The chambers of the simpler dolmens are formed by at least five slabs, four of which are set upright and form the walls, the fifth serving as a roof. The roof slab is always larger than the chamber it covers, thus providing 'eaves' around the structure. The four vertical slabs enclose the space as follows: the transverse, shorter walls, often of trapezoidal shape, are placed between the longer, longitudinal slabs that are parallel to the axis of the chamber. In this way, the longitudinal walls lean against and exert pressure on the transverse ones, and the wide base and the applied pressure guarantee the stability of the whole construction. The trapezoidal sections both improve stability and reduce the area of the roof. This pattern is not strictly observed – sometimes one or more of the side or transverse walls are formed by two slabs placed next to each other. Several Sakar dolmens present an interesting case where the longitudinal walls of the chambers comprise two slabs placed one above the other. The upper slab is placed at an angle set by an appropriate cutting of the upper part of the transverse slabs – the so-called 'composite longitudinal walls' (**Fig. 3a, b**). In most cases, the transverse walls of these structures are also composite. Triangular wedges, specially cut for the purpose, are added to the lower corners of the transverse walls (**Fig. 3a-c**, yellow arrows). Such examples are documented near the villages of Hlyabovo, Sakartsi, Balgarska Polyana and Vaskovo. It should be noted

that dolmens built with this technique have not, to date, been found among the Eastern Rhodope group.

Most dolmens do not have specially designed floors – or such floors have not been preserved; the floors are usually just levelled earth. Some monuments, however, are paved with small slabs, and in some cases the floors are covered with one or two large slabs, which never lie under the walls of the chamber, and which do not have structural details (grooves, etc.), as is the case, for example, with the dolmens in the Caucasus (**Fig. 3c**). More complex constructions include several chambers, sometimes a corridor (*dromos*), and the individual rooms are rectangular in plan (although the volume of the room is not always a parallelepiped). The main chambers of the dolmens, especially those with more complicated architectural solutions, are sometimes large, reaching dimensions of 2.8 x 2.4 m and heights of greater than 2 m. The dimensions of the other rooms (antechamber, *dromos*) are smaller. Joining the large, heavy elements of the constructions is achieved by a system of grooves cut into the slabs (**Fig. 3d**). These are very diverse in their position and mode of operation and have allowed dolmen builders to solve quite complex architectural challenges (Venedikov & Aladzhov 1976: 59-60; Iliev 2008: 175). The fashioning of these elements (grooves, joints, 'entrance' holes) requires not only a level of preparation, but probably also specific stone-cutting tools, as well as the skills to use them. The development of some of the technical solutions for the joints can be followed and the 'upgrading' in the skills of the ancient stonemasons is quite noticeable (Iliev 2008). It is possible to observe a specific 'style of work' in different dolmens, leading to questions about the social status of the ancient stonemason and his place in the society that created and used the dolmens.

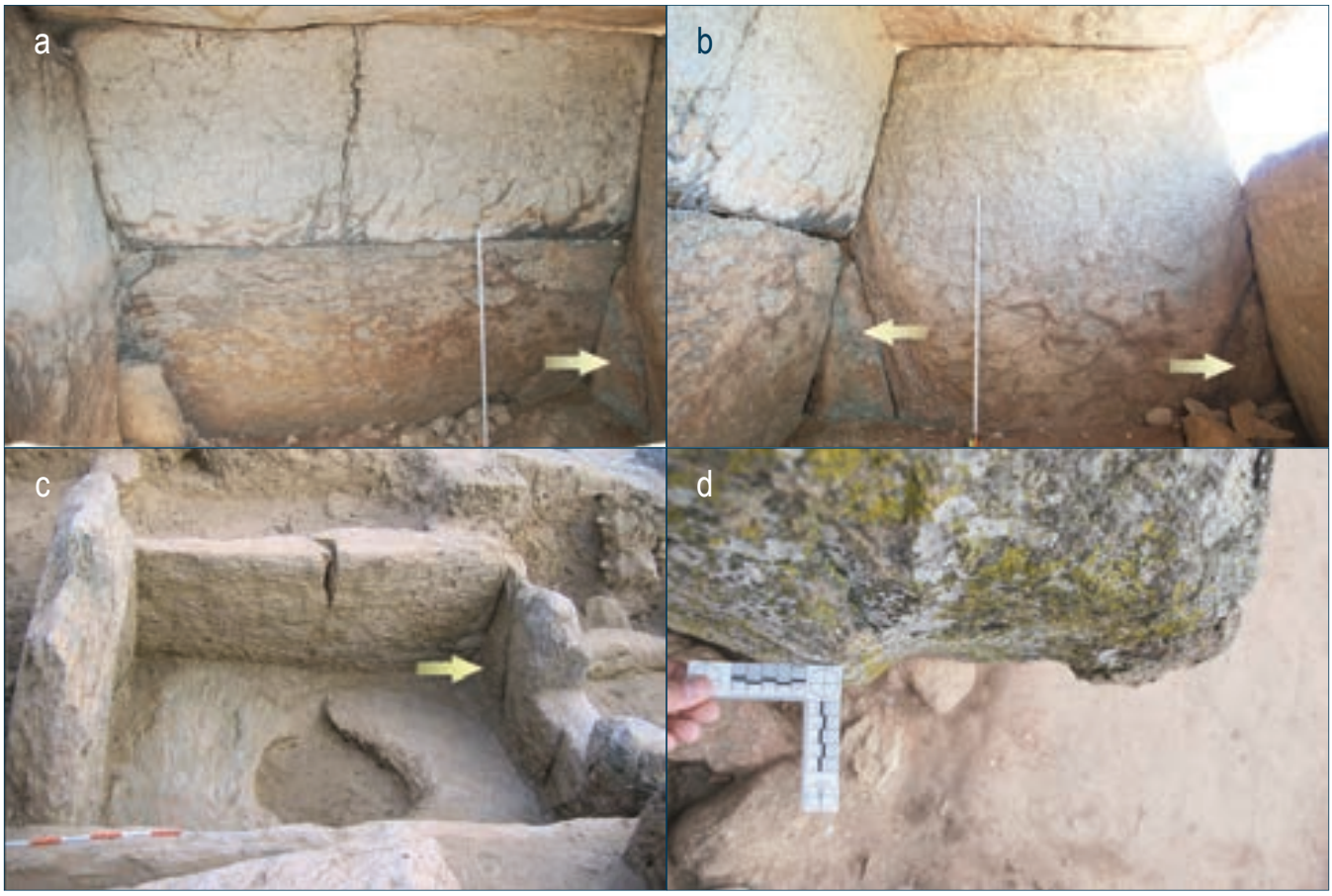

Fig. 3 – Construction solutions observed at dolmens from Southeastern Europe: a-b. Dolmens in Nachevi Chairi locality near Hlyabovo village, Sakar Mountain; c. Dolmen in Byamlyka locality near Vaskovo village, Sakar Mountain; d. Dolmen in Kapakliyka locality near Izvrovo village, Sakar Mountain (Photos: S. Iliev).

3.3 Architectural solutions

The architectural solutions that we observe in some complex structures suggest significant pre-planning of the construction. The layouts of the Balkan dolmens are quite diverse. The main element is the so-called 'grave' chamber, with an opening or 'entrance' in the front short wall. This opening is commonly rectangular but can be trapezoidal and, in rare cases, oval (**Figs. 1** and **4a, b, d**). Around the opening (usually on the outside, but sometimes on the inside) there is a shallow groove or rebate, which suggests that the entrance was closed with a specially shaped slab or block [3] (**Fig. 4b, e**). In some cases, the burial chamber is preceded by an antechamber constructed in a similar way with its own opening. One of the differences between the Eastern Rhodope group of dolmens and those in Sakar and Strandzha is the entrance opening. In the former monuments, the opening is cut not in the centre but on the side of the front slab – for example in the village of Chernichevo in Bulgaria and the villages of Kotronia, Koila, and Roussa in Greece (**Fig. 4c**). In the dolmens of Sakar and Strandzha the entrances are always cut in the centre of the slab. The only exception is a dolmen in Nachevi Chairi locality, Hlyabovo village, Sakar, in which one of the façade slabs is cut at the side, following the Eastern Rhodope pattern, to provide access to a small side chamber attached to the antechamber of the dolmen (**Fig. 4f**). The antechamber is rectangular or trapezoidal but is always lower in height than the burial chamber. The rear end of the roof plate of the antechamber is placed under the roof plate of the main chamber, unlike the dolmens in the Caucasus (Venedikov 1976b). Both single-chamber and double-chamber dolmens can have a short *dromos* built of shorter slabs, which is usually uncovered and leads to the space in front of the dolmen. The entrance to the dolmens is from the south or east, probably because of the direction of the sunrise, although the currently prevailing opinion is that the dolmens are oriented not on astronomical bodies but on the peculiarities of the local topography (Kolev *et al.* 2008).

In some of the most representative dolmens from Sakar and Strandzha, several large slabs are placed on both sides of the entrance, perpendicular to the longitudinal axis of the dolmen [4]. These slabs form façade walls, which both strengthen the embankments in front of the dolmen entrances and facilitate access and delimit a space in front of the dolmen. Excavations of this area have revealed a very high concentration of archaeological material with a chronology that usually spans several centuries. It is believed that these materials are evidence for the funeral and later commemorative rituals performed in front of the dolmen (Nekhrizov 2015: 128). A high concentration of archaeological materials is also documented during the excavations of several constructions that lack a façade. It is likely that at some point there was a deliberate demarcation of the space in front of the dolmen. In our opinion, the façade of the dolmen is an architectural expression of an already existing ritual or rituals, the nature of which we can only guess (Rousseva 2000: 28).

Excavations in the Eastern Rhodopes have revealed a two-chambered dolmen with a *dromos*, whose structural features are currently unique to the region. The most remarkable of these features is the architectural plan of the monument, consisting of a façade entrance, a *dromos* built of short vertical slabs, a chamber with an almost square plan, and a large burial chamber with one floor slab. Unparalleled (to date) is a short corridor connecting the two chambers. The chambers of all known two-chamber dolmens from Thrace share a common transverse wall with a common entrance cut out. This dolmen also lacks entrances cut into the walls. Each transverse wall consists of two narrow slabs placed to mark the corners while leaving a central gap for access. A deviation from the purely 'megalithic' approach to the construction is the superstructure of three horizontal rows of slabs on the north wall of the *dromos* (Nekhrizov 2010: 89, Fig. 4, 5). This dolmen, dated to the end of the 4th or the beginning of the 3rd century BC, is the latest dated monument of this type to be studied in Thrace. In many cases, the architectural and construction decisions made

(3) Similar 'stoppers' were found during the excavations of the dolmens in the Caucasus (Solovyov 1960: 96, Table 1, 12–13; Markovin 1994: 244, Table 68, 7).
(4) In Strandzha (Belevren, Evrenozovo, Lalapaşa) there are several examples of façades built of horizontally laid slabs (Akman 1997: table 12, 3; Agre 2005b: 104).

Fig. 4 – 'Entrances' at dolmens from Southeastern Europe: a. Dolmen in Byalata locality treva near Hlyabovo village, Sakar Mountain (Photo: G. Nekhrizov); b. Dolmen in Kapakliyka locality near Sakartsi village, Sakar Mountain (Photo: S. Iliev); c. Dolmen in Hambar dere locality near Chernichevo village, East Rhodope Mountain (Photo: S. Iliev); d. Dolmen in Slavova koria locality near Hlyabovo village, Sakar Mountain (Photo: G. Nekhrizov); e. Dolmen in Mangyra locality near Hlyabovo village, Sakar Mountain (Photo: G. Nekhrizov); f. Dolmen in Nachevi Chairi locality near Hlyabovo village, Sakar Mountain (Photo: S. Iliev).

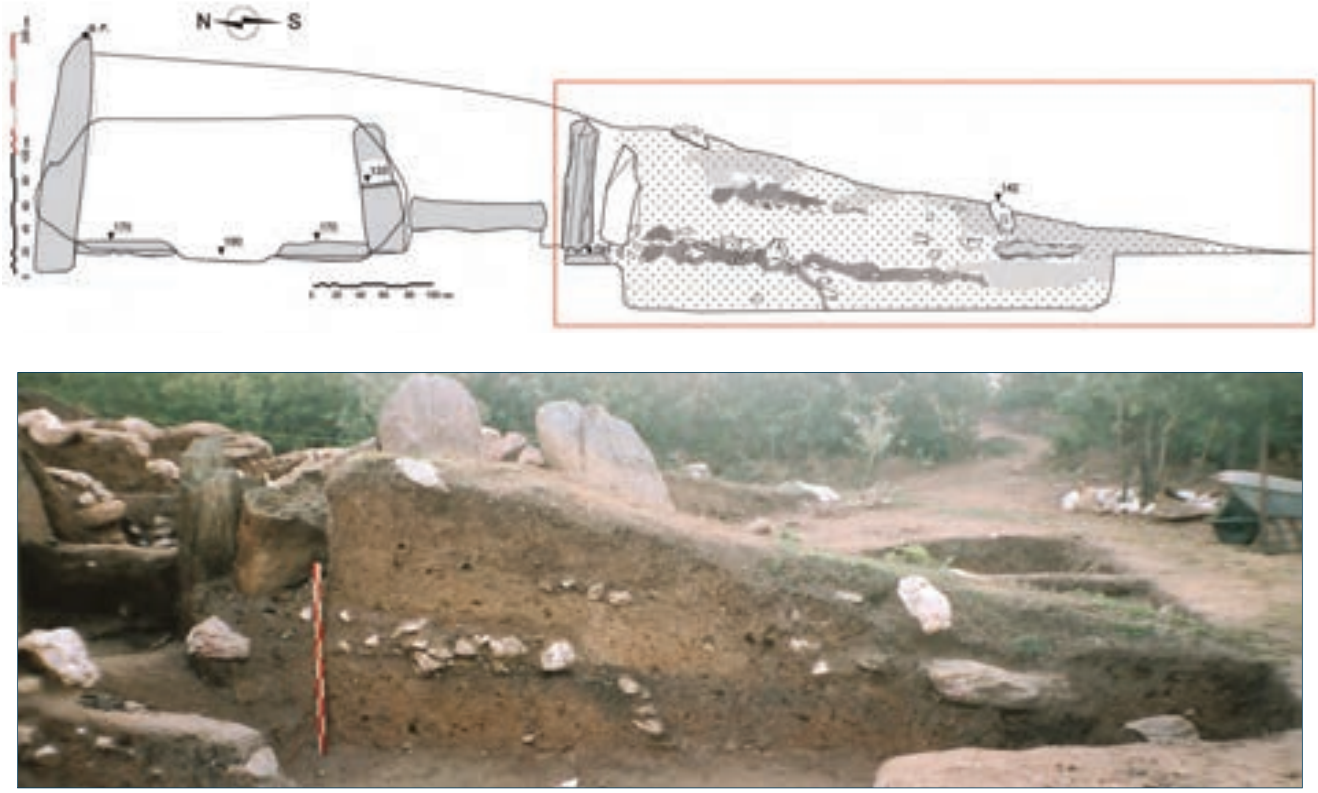

Fig. 5 – Cross-section of the space in front of the façade of Dolmen 1, Byamlyka locality near Vaskovo village, Sakar Mountain (S. Iliev).

during the building of the dolmens suggest they were the basis of the later domed tombs, built with a false vault, typical of the architecture of the Late Iron Age in Thrace (Mikov 1955). Similar conclusions are reached by some scholars who see the technique of construction of the composite sides of the chamber of the dolmen as a precursor to the false vault (Venedikov & Aladzhov 1976: 60; Delev 1982a: 402). We are unsure whether such a connection really exists, but if it does, it must be supported by additional and more diverse evidence.

3.4 Decoration

The walls of some of the known Thracian dolmens are 'decorated', most commonly with groups of shallow depressions or 'cup-marks' of up to 4 cm in diameter and up to 1.5-2 cm in depth. Although they do not form shapes, the cup-marks are considered decorative, as they are incised mainly on the visible elements of the dolmens. Most of the examples come from the Sakar group of dolmens (e.g., from Oryahovo, Sakartsi, Hlyabovo, and Izvorovo). In certain cases, this type of decoration is also observed on the inner walls of dolmens and on the roof slabs. It is curious to note that the walls of the only rock tomb registered in Sakar are also checkered with numerous 'cuts'. It should be noted that depressions similar to the cup-marks are also found on separate rock formations, in most cases located close to the monuments. We can say nothing, currently, about the function or chronology of these undoubtedly anthropogenic features. Similar marks have been found throughout the entire distribution area of dolmens in Europe. Cup-marks are a phenomenon associated with megaliths both in Western Europe and in the Caucasus. There are many distant (both from a geographical and chronological point of view) parallels, so we will point out only a few that we think are closest. Thirty cup-marks with shapes and sizes identical to those found in Bulgaria were documented on the roof slab of the Dolmen de la Court du Breuil, in the region of Le Bernard in France, in 1916 (Baudouin 1916: 9-15). More than 50 cup-marks were added to the roof slab of the Dolmen de la Font de l'Arca, also in France. Looking east to the Caucasus, we can point to many more parallels, including the roof slab of one of the dolmens near the village of Shapsugskaya on the Adegoy River (Bgazhnokov 2013: 11, Fig. 3; Markovin 1994: 241). Although the cup-marks, which are clearly related to the megalithic monuments, may be posterior (or prior) to the dolmens, both in the Balkans and around the world, our opinion is that they should be mentioned without additional speculation.

Traces of rich figural decoration were found for the first time during the recent study of two dolmens near the village of Golyam Dervent in Western Strandzha. The ornaments are applied mainly by incision; spirals and meanders are depicted in low relief on the entrance slabs. During the excavations, a fragment of a slab was found with the image of a double axe (*labris*), inscribed in a circle, which is interpreted as a symbol of royal power in Thrace in a later period (Dichev 2008: 156). Unfortunately, most of the decorated slabs were found fragmented and information about what is depicted on them is incomplete. The plastic style of ornamentation of the two dolmens at Golyam Dervent is very reminiscent of similar images on Caucasian and Western European monuments (see Joussaume 1988; Jockenhövel 1990: 373-377; Markovin 1994: 239, Table 66, 241; Trifonov 2009a-b). It is interesting to note that we still cannot answer questions related to the origin and function of these 'ornaments'. Without going into semiotic analysis, we should ask ourselves whether they satisfied the aesthetic needs of the observer or were closely related to the ritual.

3.5 Tumuli

According to Škorpil, '*All dolmens were originally covered with a mound*' (Škorpil 1888: 55). Today, some researchers of the megalithic burial structures in Thrace also believe that all dolmens and dolmen-like graves were covered by a mound (Dichev 2005). According to them, the lack of piled earth and the partial or complete exposure of some dolmens is due to erosion and/or human intervention. Research in the Eastern Rhodopes has ascertained that, in this region, only some of the megalithic burial structures had a mound. Observations show that erosion and grave robbery do not completely obliterate the tumuli (Iliev 2007; Nekhrizov 2010: 88-89). Studies

of dolmens in Sakar have shown that, in most cases, at one stage of their existence the base of the slab structure was encapsulated by a low stone mound of oval or round shape, most often constructed using quartzite, therefore most of the dolmens were surrounded by a mound of white quartzite stones that was visible on the surface. This primary (?) tumulus was covered with a pile of earth, in which later materials are often found. With few exceptions, the tumulus covers the walls but not the roof slab of the dolmen chamber. We still cannot reconstruct the stages of accumulation of the tumulus and its relation to the funeral or memorial rite. Discussions regarding these issues continue in relation to monuments beyond those in Bulgaria (compare Scarre 2016: 69-78). The quartzite surrounding the Sakar dolmens was probably visible for a long period, confirmed by later materials found in the mound of earth piled above the quartzite. Despite the limited extent of study of many of the tumuli, we believe they would provide answers to a number of questions related to the practice of rituals in front of and around the dolmens.

The periphery of some of the tumuli containing dolmens in Sakar and Strandzha is often surrounded by vertically placed gneiss slabs. They usually enclose a circular – in rare cases rectangular – space around the dolmen, in which the low stone mound of quartzite stones is situated. One of the functions of this fence is probably to protect the stone mound from destruction (Škorpil 1925: 54; Venedikov & Aladzhov 1976: 54; Delev 1982a: 399). An interesting case is the dolmen complex near the village of Vaskovo, explored in 2004 and 2005. Two dolmens shared a common, low mound of quartzite stones on top of which we documented a circle of horizontally placed gneiss slabs, enclosing both structures (**Figs. 6** and **7**). In our opinion, this ethereal wall (peribolos?) encloses a space with sacred functions (Nehrizov & Iliev 2006).

The archaeological material recovered from the dolmens in Southeastern Europe places them in the chronological framework of the Early Iron Age (11th-6th century BC) [5]. The large amount of material originates mainly from the space in front of the monument or in front of the façade, if present. The material comprises largely pottery shards and records from excavations of dolmens in Sakar indicate that bowls and dishes outnumber cups and jugs. We associate the pottery primarily with the rituals (funeral and memorial) performed in front of the structure at different stages of its existence. In the interior of the dolmens, metal items and human bones are most common; ceramic vessels are found less often. The only adornments that have been found are most likely the personal accessories of the buried individuals rather than funeral gifts. Among the metal finds are brooches (*fibulae*), bracelets, earrings, rings and belt appliqués. It is notable that no weapons have been found in the chambers of the excavated dolmens.

4. The burial rite

Data on the burial rites practiced in the dolmens come from several excavated dolmens from the Sakar group and from two from the Strandzha group. Škorpil (1925) provides interesting information, noting multiple individuals buried in the chamber of a dolmen in Sakar. This observation marked the beginning of a discussion related to the problem of identifying the collective or successive burials present in a single structure, a question that is still relevant today. The remains of three individuals and two fragmented vessels were found in the chamber of a dolmen of the Sakar group near the village of Mladinovo (Mikov 1936: 103, Fig. 91). During the exploration of the dolmen at Nachevi Chairi, near the village of Hlyabovo, a dolmen with a burial chamber, an antechamber, and a small side chamber accessed from the southeast with internal dimensions of 1.2 x 0.80 m was found, all under the same tumulus. Disarticulated human bones were found in the side chamber (Delev 1982b: 197). Precise

(5) The chronology presented has exceptions. During the excavations of tombs built of slabs in the Eastern Rhodopes, earlier materials were also found allowing the constructions to be dated to the Late Bronze Age (16th-12th century BC). Although these are cists with no evidence of an entrance, they are mentioned here due to the technological and typological proximity to the dolmens. The upper chronological limit is even more uncertain because the dolmens are respected as 'holy places', and rituals are performed on them to this day.

Fig. 6 – Research on the mound of a dolmen complex, Byamlyka locality near Vaskovo village, Sakar Mountain (Photo: S. Iliev).

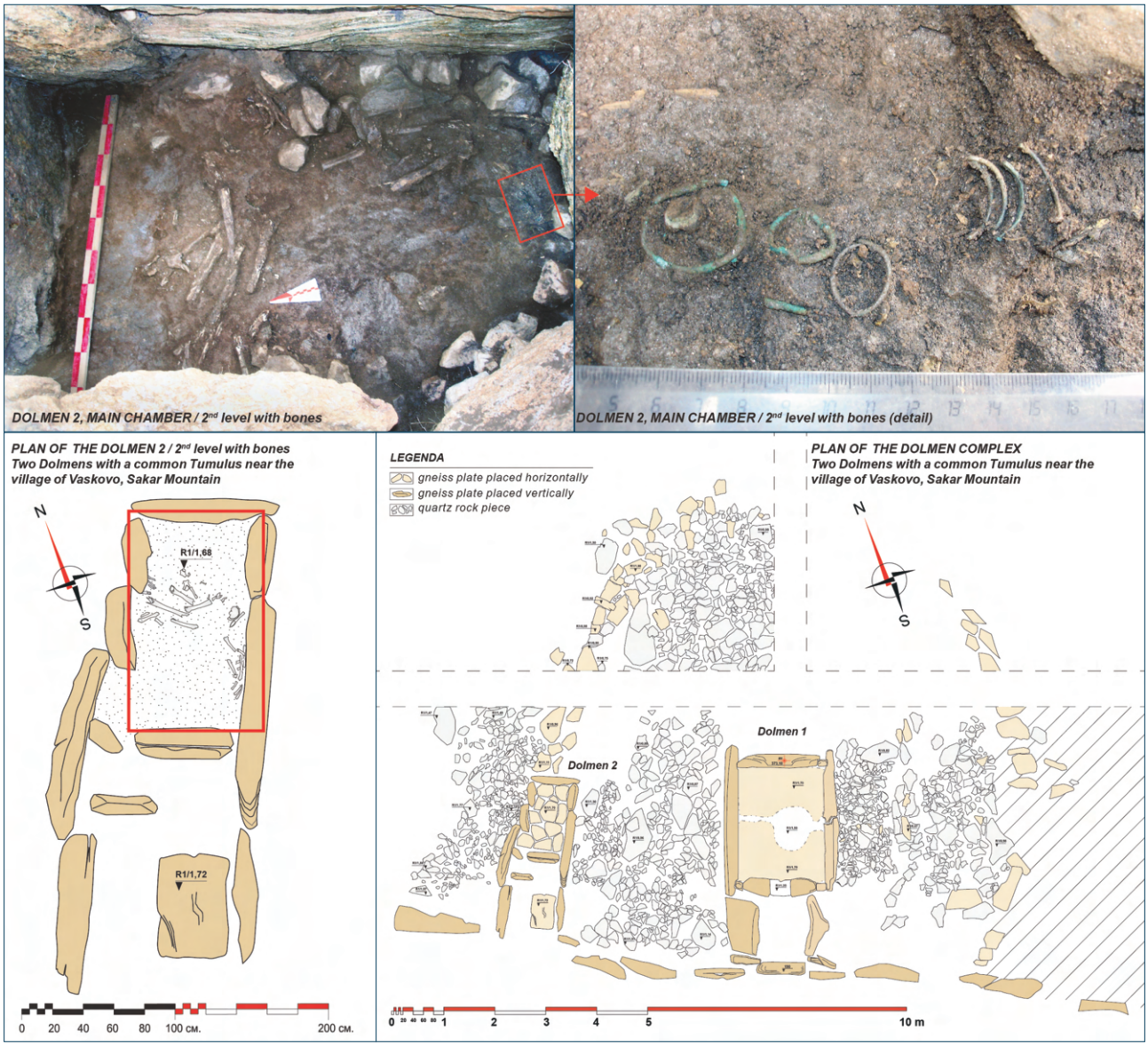

Fig. 7 – Dolmen complex, Byamlyka locality near Vaskovo village, Sakar Mountain. Plan of the complex, human bones and small finds in Dolmen 2 (S. Iliev).

excavations of a dolmen at Lalapaşa, in the Turkish part of Strandzha, revealed interesting results. Despite the poorly preserved bones, the remains of four individuals could be identified in the antechamber. Three of the deceased are considered to be from the same period, and one is attributed to an earlier date on the basis of related pottery. It is interesting to note that some of the bones were found *in situ* in the antechamber next to the entrance, which suggests that the human remains and some of the burial gifts were brought there from the burial chamber (Akman 1997: 161). During archaeological excavations of two dolmens from Zabernovo in Strandzha, the remains of 14 and 4 individuals respectively, were documented in the burial chambers. The bones from the earlier burials had been moved against the long walls to make room for subsequent burials (Agre 2005b: 104).

The excavations of two dolmens (one large and one small) with a common tumulus near the village of Vaskovo, Sakar, give extremely interesting information. Skulls and bones from several individuals were found in the chamber of the small dolmen, the internal dimensions of which, at 1.4 x 1 m, would not accommodate an adult person. Anthropological analysis of the bone material points to at least three adults: two men (aged 40-50 years and 20-30 years) and one woman (aged 20-40 years). Three individuals aged 6-10 years have also been identified. The small dolmen probably served as an ossuary in which the remains of those buried in the reusable large dolmen were stored.

These data confirm the assumption that the dolmens functioned as family or ancestral tombs, receiving several generations of members of the local Thracian tribal aristocracy (Delev 1984: 31; Nekhrizov 2010: 92). On the other hand, the results of the anthropological analysis raise very serious questions, including those regarding the social status of the buried individuals and whether they were really members of an 'aristocratic' family. The assumption of the successive burial of members of the society leaves open questions about the physical act of exhumation and the preservation of the mortal remains of the deceased.

The current state of knowledge concerning the functions of the dolmens is far from satisfactory. Although we know that they were used as burial sites, it is very clear that they had, and over time have acquired, other functions. In front of the façades of most of the excavated structures we find pottery and materials from later periods (Late Iron and Roman Ages), which were deliberately deposited there (Nekhrizov & Iliev 2006). Apparently, the veneration or the secondary use of these monuments lasted for a considerable time. During the excavations of a dolmen located in the middle of a 18th-19th century cemetery near the village of Zhelezino, Eastern Rhodopes, many coins and small metal finds from this period were found, probably placed there in honour of the oldest grave in the necropolis. The roof slab of one of the dolmens near the village of Izvorovo, Sakar, is still used as Mensa Sacra (communion table) by Orthodox believers, who cover it with a white cloth and place on it the wine and bread for the communion.

Nowadays, dolmens are assigned another function as sites for cultural tourism. More and more attention is paid to the preservation of this type of monument (compare Kulikova & Trifonov 2001; Carrera Ramírez & Fábregas Valcarce 2003; Tzonev & Kolev 2011, etc.). Our hope is to make it possible for these remains to be both studied and preserved for future generations.

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Bakiye YÜKMEN EDENS

At the intersection of continents: Megalithism in Turkey

Abstract: The idea of megalithism was introduced to Turkish archaeology from France in the 1930s but application of the concept remains ill-defined, and different researchers might identify the same monument as a dolmen, a tumulus or a kurgan. The choice of term often reflects a difference of research agenda rather than of physical structure. Turkey is commonly described as a geographical and cultural bridge between Europe and Asia; it is also at a crossroads of three intellectual traditions: western European prehistory, the Classical world, and the (Turkic) steppes prehistory. The concept of megalithism is linked only to the first of these. This review of the structures identified as 'megalithic' in Turkey may help to clarify terminological confusion. Structures called 'dolmens' are known primarily from three distinct zones around the edges of Turkey, in the northeast (Kars), the south (Euphrates-Cilicia) and the northwest (Thrace). Dolmens in the latter zone date to Iron Age; those in the other two zones are not well dated. Standing stones ('menhirs') in Turkey are most common in Thrace, but they do occasionally exist in other parts of the country. Stone circles ('cromlechs') also figure in the archaeological literature of Turkey, but the nature of these structures remains uncertain.

Keywords: *megalithism, Turkey, Anatolia, dolmen, standing stones*

In Turkish archaeology the terms 'megalith', 'megalithic' and 'megalithism' are used in several different ways. In one usage, these words simply refer to construction with 'large stones', and even a brief internet search shows these terms applied to places as diverse as Neolithic Göbekli Tepe and Roman Baalbek. At least in the latter context, 'megalithic' is basically equivalent to 'cyclopean'.

A more restricted usage refers to various structures of large, undressed stones, with explicit reference to dolmens and menhirs. This meaning reflects the French-inspired tradition of prehistoric archaeology which Şevket Aziz Kansu initiated in Turkey during the 1930s. Kansu had earned a medical degree in Istanbul, but then studied physical anthropology in Paris (1927-1929). On his return to Turkey, he taught anthropology and, in 1935, helped to establish the Faculty of Language, History and Geography (Dil ve Tarih-Coğrafya Fakültesi) in Ankara, where he developed prehistoric archaeology. As part of this programme, Kansu published *Prehistorya Araştırmalarında Metodlar* as a textbook for Turkish students (Kansu 1938). This short book was in fact an abridgement of the second edition of *Manuel de recherche préhistorique* (Société Préhistorique Française 1929), which had appeared shortly before Kansu returned to Turkey in 1929. In his book, Kansu used the terms 'menhir' (and also the Turkish equivalent *dikilitaş*), 'stone alignment' (*sıra taşları*), 'cromlech', 'dolmen' and 'tumulus'.

He grouped these kinds of structures as 'megalithic' (Kansu 1938: 94-98).

For the most part, Turkish researchers use these terms in a consistent way today. However terminological problems emerge with 'dolmen' and 'tumulus'. Turkey is at the geographical intersection of continents; the country is also at the intersection of at least three different intellectual traditions of archaeology. Many researchers follow the western European tradition of prehistoric archaeology that Kansu introduced to Turkey, and these researchers speak of dolmens, menhirs and so forth. This intellectual tradition makes an explicit allusion to megalithism. Other researchers follow a tradition of Classical archaeology and use the term 'tumulus' as a catch-all for any kind of mounded covering over a burial of any structural type (1). Finally, some researchers, notably among those working in north-eastern Anatolia (e.g., Köroğlu 2000; Özfırat 2009), have adopted the term 'kurgan', again in reference to any burial below a mound of earth or stone rubble. This usage follows the tradition inherited from Russian/Soviet archaeology in the neighbouring Transcaucasian states and the (Turkic) steppes and, indeed, the archaeological cultures involved span the modern borders.

A tumulus or kurgan does not necessary, in itself, have any relationship to megalithism. Use of the term 'dolmen' draws attention to the nature of the chamber itself, whereas tumulus, kurgan and cairn refer primarily to the earth or rubble covering that encloses it. Although sometimes the mounded covering does conceal a burial chamber that uses very large stones (2), in most cases the burial is a simple pit, a timber chamber, a stone cist, or a chamber of dressed stone blocks. Even when the structural character of the burial is evident, different researchers might identify the same monument as a dolmen, tumulus or kurgan. For example, Kökten (1944) called a large structure at Akçakale a 'dolmen', while Köroğlu (2000) termed the same structure a 'kurgan'. In my opinion, the structure is not, in fact, prehistoric, but rather is a Urartian (Iron Age) burial monument (Yükmen 2003: 30).

The following review follows the French-inspired vocabulary introduced by Kansu. Therefore I am more concerned with the character of tomb chambers than with the covering around them. I will focus on structures that fit the general category of 'dolmen', and I will omit structures constructed from smaller stones or of uncertain character. Dolmens are known primarily from three distinct zones around the edges of Turkey: in the northeast (Kars), the south (Euphrates-Cilicia) and the northwest (Thrace) (**Fig. 2a**). I will also address standing stones, alignments of standing stones, and circles of large stones. Standing stones in Turkey are most common in Thrace, but they do occasionally exist in other parts of the country. I will not address features such as rock-cut tombs and rock-cut niches, which are often included with megalithism in Thrace (reviewed by Nekhrizov 2015: 134-141), as these do not involve construction that combines large blocks of stone.

1. History of research

Megalithic monuments in Anatolia were first mentioned when Ernest Chantre reported rumours of dolmens between Muş and Erzurum (Chantre 1882). At this time, tombs identified as dolmens were well-known in Caucasia, and Jacques de Morgan (1890) excavated a number of these megalithic monuments near Lenkoran in the Talysh region of Azerbaijan. Megalithic research began in Bulgaria with the work of the Şkorpil brothers during the late 19th century, and in 1933 Mikov referred to dolmens in Turkish Thrace (Özdoğan & Akman 1992: 407). Neither the French nor the Slavic research had any direct effect on Turkish archaeology. Indeed, megalithic structures were only rarely reported in Turkey before the Second World War, examples being a standing stone in Elbistan (von der Osten 1930) and megalithic circles in Malatya (Przyluski 1937).

(1) In this regard, a relatively small tumulus of stone rubble is equivalent to a 'cairn', but the usage leaves open possible confusion with tumuli of the Classical tradition. This ambiguity is not unique to Turkey, of course. In the southern Levant, some researchers subsume 'dolmen' within the category of 'cairn' (e.g., Haiman 1992: 42), and others prefer the term 'tumulus' to 'cairn' (e.g., Greenberg 1992).
(2) For example the Kurtkale 'kurgans' (on the left bank of the Kura River near the Georgian border) cover chambers roofed by slabs that may exceed 2 x 1 m in size (Köroğlu 2000); the Talin kurgan no. 10 (Armenia) covers a dolmen-like structure set upon the original ground surface (Kalantarian 2011).

Following Kansu's creation of the prehistory programme in Ankara, İ. Kılıç Kökten and others began regional surveys in many parts of Turkey during the 1940s and the following decades. These surveys encountered megalithic monuments of different kinds, as listed in Fig 1. Typically, the structures were reported with minimal detail and often with unfounded speculation as regards their date. This kind of anecdotal reporting of dolmens continued during the 1980s and later, for example in relation to the three dolmens from the Classical period town of Limyra in Antalya (Borchhardt & Wurster 1989) but more systematic research programmes oriented toward megalithic structures also began during the 1980s. Mehmet Özdoğan's research in Turkish Thrace included an explicit focus on dolmens (Özdoğan 1982, 1983; Özdoğan & Akman 1992; Akman 1997). This led to spin-off projects that addressed standing stones (Erdoğu 2003, 2005). My own doctoral research in the 1990s focused on dolmens in Kars, Adıyaman, Gaziantep, and Kahramanmaraş (see Yükmen 2003), and continued with a focus on Hatay (see Yükmen 2000, 2001; Yükmen Edens 2003, 2004, 2012, 2018); more recently dolmens have been found in a prehistoric survey in Adana (Yükmen Edens 2018, 2019).

As this historical review suggests, Turkish archaeology has given relatively little attention to megalithic structures but enough is known to identify a number of patterns. I will first consider 'dolmens' in each of the three areas where they are found, and then review 'menhirs' and 'cromlechs'.

2. Dolmens in Turkey

Around 1 100 dolmens have been reported in Turkey to date. The great majority of these structures – over 90% – appear in southeastern Anatolia. Most of the remainder are in Turkish Thrace and only a small number are in northeastern Anatolia. In addition, a few dolmen-like structures are reported from Antalya in southwestern Anatolia. These include three structures reported from Limyra (Borchhardt & Wurster 1989), and four structures at Gökçeören (Yükmen 2003: 26-27). These structures incorporate large shaped stones that are better characterized as 'cyclopean' rather than 'megalithic', and the structures very likely date to the Hellenistic period. I will not consider them further.

3. Dolmens in southeastern Anatolia

Dolmens are documented in three geographically distinct sections of southeastern Anatolia (Fig. 2b): the east-west ridges which frame the right bank tributaries of the Euphrates River in Adıyaman, Gaziantep and Kahramanmaraş; locations within the catchment of the Orontes River in Hatay; and a

	Province	Locality	References
'Menhir'	Kahramanmaraş	Elbistan	von der Osten 1930 ; Kökten 1960
	Ankara	Ilıcaköy	Kökten 1947
	Kastamonu	Eksen	Kökten 1951 ; Bostancı 1952
	Thrace	various	Kansu 1969
'Cromlech'	Malatya	Gelinciktepe	Przyluski 1937
	Kars	Akçakale	Kökten 1944
	Kahramanmaraş	various	Kökten 1960
'Dolmen'	Kars	Akçakale	Kökten 1945
	Kahramanmaraş	Taşoluk	Kökten 1960
	Thrace	various	Kansu 1963, 1969, 1971
	Kars	Çaycı Köyü	Kansu 1964
	Antalya	near Karain	Kökten 1967

Fig. 1 – Megaliths reported before 1980.

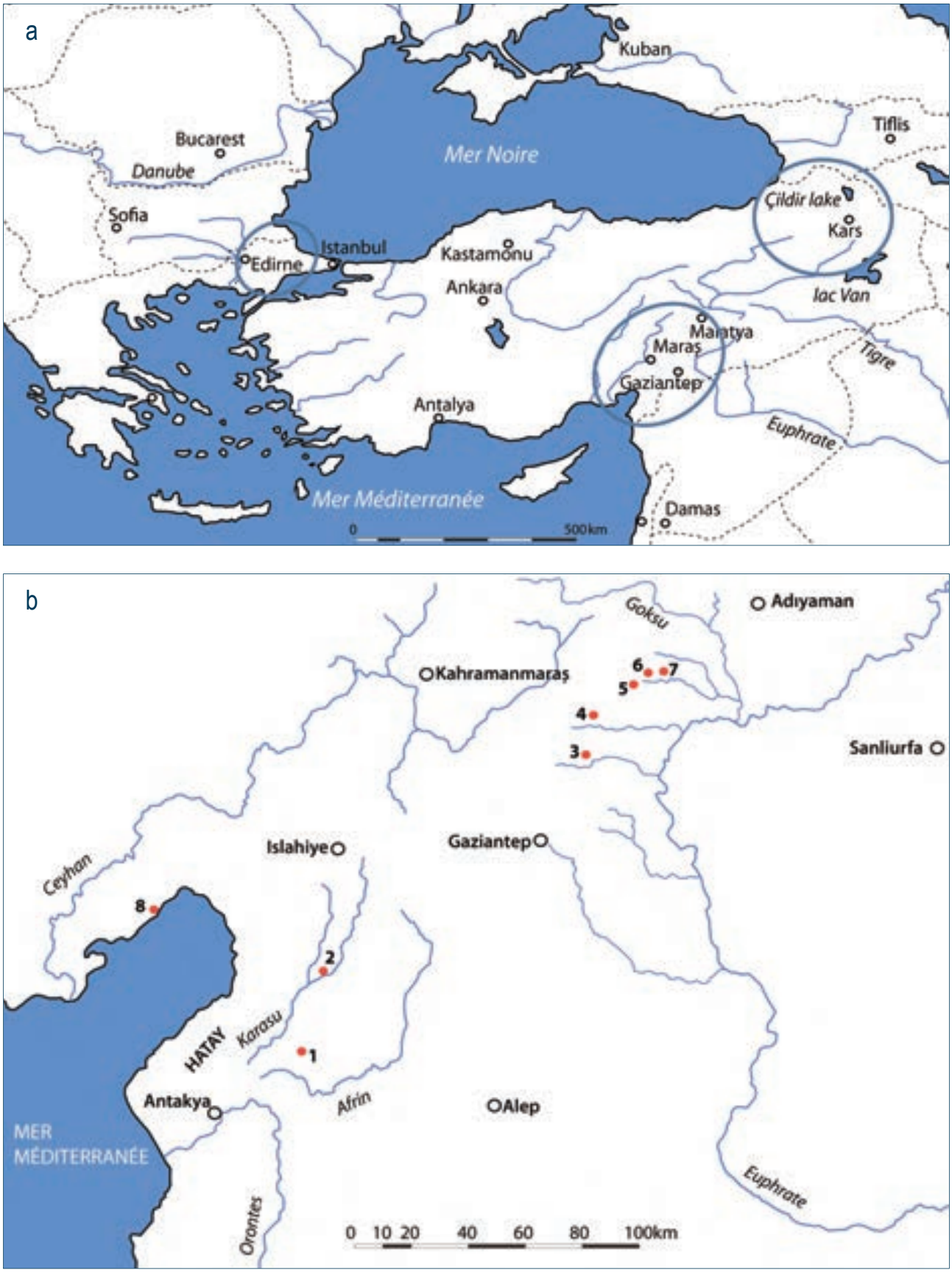


Fig. 2 – Location maps of megalithic structures in Turkey: a. General location map, with ovals indicating areas where megalithic structures are concentrated; b. Locations of dolmen groups in southeastern Anatolia: 1. Kızılkaya (Hatay); 2. Çatalyurt (Hatay); 3. Küçük Karakuyu (Gaziantep); 4. Sarıköy (Kahramannaraş); 5. Tetirli (Adıyaman); 6. Kargalı (Adıyaman); 7. Yoldüzü (Adıyaman); 8. Botaş (Adana).

coastal setting west of the Amanos Mountains in Adana. Most of the dolmens in all three settings are box-like structures (trilithons), but in specific locations in Hatay, passage graves and other structural types are common. As Fraser (2018) points out for the southern Levant, we now have solid evidence that places those trilithons in the 4th millennium BC (Early Bronze I) and assigns other forms of megalithic graves to multiple periods of the Bronze Age. We do not know whether the same chronological distinctions apply also to southeastern Anatolia, but it is prudent to consider these structural types separately. I will first consider the trilithons of southeastern Anatolia, and then the other types of dolmens.

3.1 Trilithons

Trilithons are the most common dolmen form in southeastern Anatolia. All the dolmens found in the Euphrates drainage basin, at Kızılkaya in Hatay, and in Adana are trilithons.

Mid-Euphrates drainage basin

Five groups of dolmens appear on limestone ridges that frame the right bank tributaries of the Euphrates River. These dolmens are set on the south-facing slopes, but not on the crests, of these ridges (see **Fig. 3a**), 20-30 km west of the river. These locations are:

1. On the Heyikdağı ridge overlooking the Çakırhöyük plain in the Göksuyu drainage basin of Adıyaman: Tetirli – 23 dolmens; Kargalı – 67 dolmens arranged in two clusters that are 300 m apart; and Yoldüzü – 2 dolmens.

2. On the Bozdağ ridge overlooking the Araban plain in the Karasu drainage of Kahramanmaraş and Gaziantep: Sarıköy – 69 dolmens forming two clusters above the villages of Köklücu and Sarıköy in Kahramanmaraş.

3. On the Karadağ ridge overlooking the Yavuzeli plain in the Merzimen Çayı of Gaziantep: Küçük Karakuyu – at least 26 dolmens forming several small clusters over a 1x3 km area.

The structures at these five places share many basic features in addition to location (for more detailed presentations, see Yükmen 2003; Yükmen Edens 2012). All are trilithons constructed of limestone slabs set on edge and covered with a capstone. In most cases the side walls are formed of a single slab. Most chambers have no end wall, or only one; fewer than 10% are closed at both ends. The average chamber at Kargalı and Küçük Karakuyu is 1.6-1.7 m long, 0.9-1.0 m wide, and 0.9-1.3 m high; those at Tetirli tend to be a little smaller.

The great majority of chambers are box-like in shape, i.e., with vertical side walls (**Fig. 3d, f**), but some chambers in all the groups (except Sarıköy) are formed by two slabs leaning toward each other to form a triangular space with the capstone balanced over the central ridgeline (**Fig. 3b, c**). When these chambers have end walls, these stones are also triangular. Regardless of shape, chambers at Kargalı and Küçük Karakuyu are preferentially oriented northeast-southwest or northwest-southeast.

Some chambers are built on a rectilinear platform formed by one or more courses of stone blocks (**Figs. 3c** and **4a, b**). Coverings of rubble and/or earth are evident at many dolmens, including a few of the chambers that are set on platforms (**Fig. 3d**). At Sarıköy, pairs of dolmens may share a rubble covering. Some of these double chambers also share a party wall (**Fig. 4c**); others are separate structures.

The dolmen chambers in the Euphrates drainage basin generally lack decorative elaboration, however, cup-marks (small, shallow 'cupules' up to 8 cm across and 5 cm deep) appear on the upper face of the capstone of several chambers in Gaziantep, and similar cup-marks appear in a nearby exposure of bedrock (**Fig. 4d**). Their purpose remains a matter of speculation.

Orontes drainage basin (Kızılkaya - Hatay)

Box-like dolmens appear at two locations on limestone ridges on the east side of the Amuq plain. A total of 292 dolmens plus a stone circle have been recorded across a 63 ha area on the Kızılkaya ridge, and another six chambers appear on the nearby Sarmaşık hill. Box-like dolmens also occur at Çatalyurt near the Karasu, but these form a continuum with the more complex structures considered below.

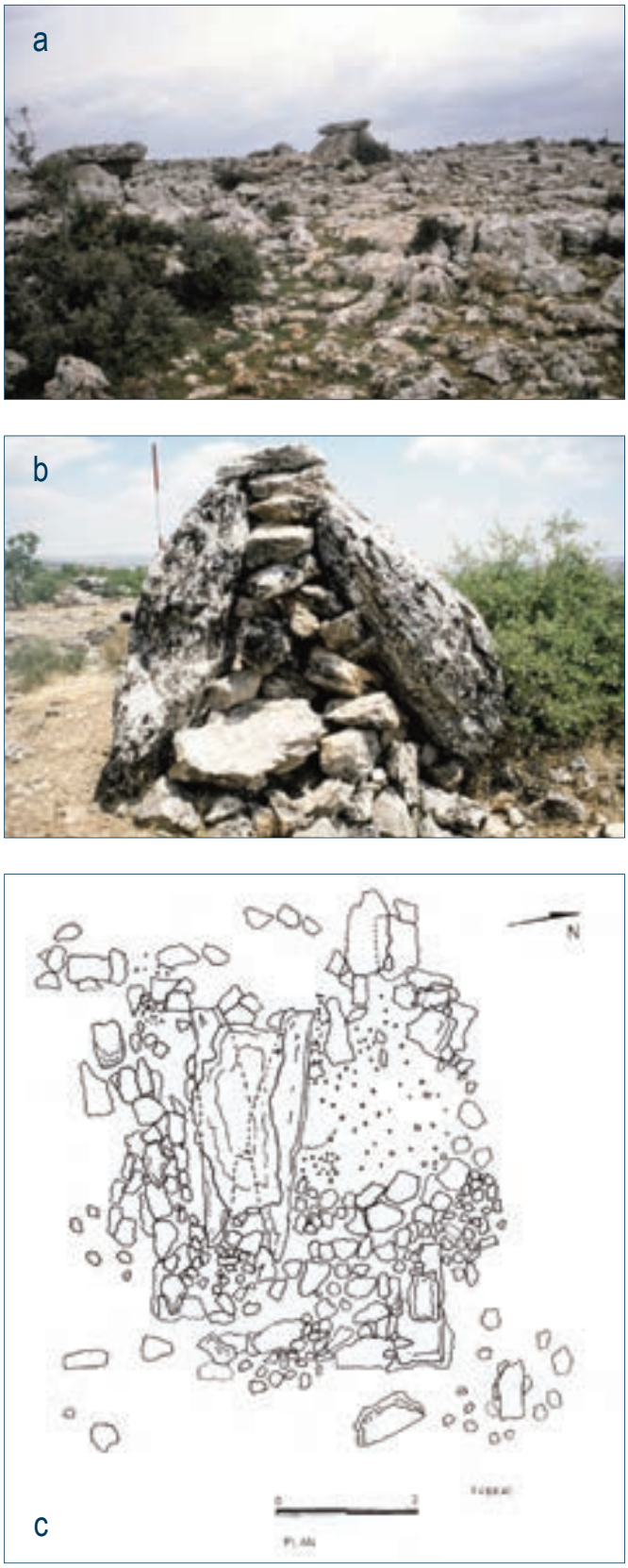


Fig. 3 – Dolmens in the mid-Euphrates area of southeastern Anatolia: a. General view of a dolmen group in Adıyaman; b. Dolmen with sides leaning into each other (Tetirli group, Adıyaman); c. Plan of a dolmen with sides leaning into each other and set on a dilapidated platform (Tetirli group, Adıyaman); d. Elevation and cross-section drawing of a dolmen within a rubble covering (Küçük Karakuyu group, Gaziantep); e-f. Trilithons at Küçük Karakuyu (Gaziantep) (Photos: B. Yükmen Edens).

Fig. 4 – Dolmens in the mid-Euphrates area of southeastern Anatolia: a-b. Trilithons on platforms at Kargalı (Adıyaman); c. A double chambered dolmen at Sarıköy (Kahramannaraş); d. Cupmarks in bedrock adjacent to a dolmen at Küçük Karakuyu (Gaziantep) (Photos: B. Yükmen Edens).

At Kızılkaya and Sarmaşık, 278 of the 298 chambers are composed of two slabs set on edge to form side walls (only 16 of 219 well-preserved chambers have one or both side walls formed by two slabs) and covered by a capstone (**Fig. 5a, d**). These stones form a box that averages 1.4 x 0.85 m in floor area and 0.65 m in height. About 60% of the well-preserved chambers have a single end wall; 20% have two. Wall slabs are generally even in height, but in three cases the side wall stones are much higher at one end than the other, so that the capstone forms a sloping roof which is higher at the front and lower at back of the chamber (**Fig. 6a, b, e**). A few chambers (n=20) incorporate a bedrock shelf as one or both sides of a chamber. In these cases, the capstone sits partially on the bedrock shelf and on one or more wall slabs (**Fig. 6c, d, e**).

The dolmens are constructed of rough limestone slabs that are available from outcrops of the bedded limestone that forms the ridges (see **Fig. 5e**). The slabs used for walls measure 0.40-1.85 m in length and 0.50-1.75 m in width while the capstones are 0.85-3.00 m long and 0.55-2.00 m wide. All the slabs are 0.15-0.60 m thick.

Most of the dolmens lack preserved elaborations. Rectangular platforms of stone blocks or of rubble and earth retained by a low wall (the latter occurring on hill slopes) were found in only 14 cases. Covering mounds of rubble and earth, typically surviving to 0.20 m or less in height, appear at only 18 dolmens, a few of which also have a platform.

The Kızılkaya ridge runs north-south. Dolmens appear both on the west slope (overlooking the

Amuq plain; **Fig. 5a**) and on the east slope (facing the rising slope of the Kurtdağı), as well as the top of the ridge. Only dolmens in the latter location are readily visible from below; in other places the dolmens blend into the jumble of limestone blocks that cover the slopes. Of the 219 dolmens with identifiable orientation, the long axis of 80% of the chambers runs east-west, 10% north-south, and 10% northeast-southwest or northwest-southeast. When identifiable, the east-west oriented chambers open to the east and chambers in other orientations all open to the south.

Few surface artefacts appear in the dolmen fields of Kızılkaya and Sarmaşık, and these are either Roman pottery or roof tiles, or they are not chronologically diagnostic. The dolmens therefore remain without

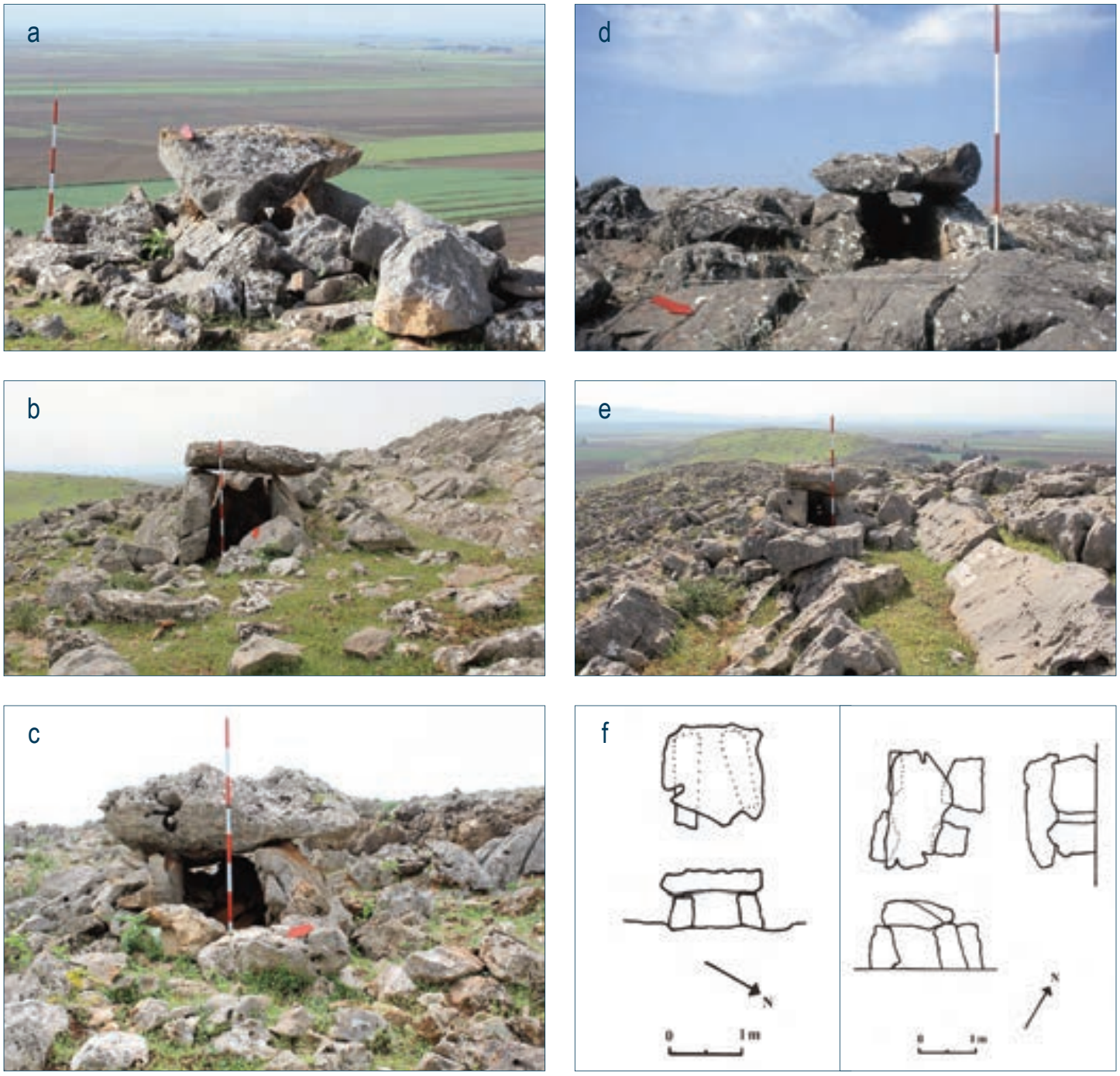
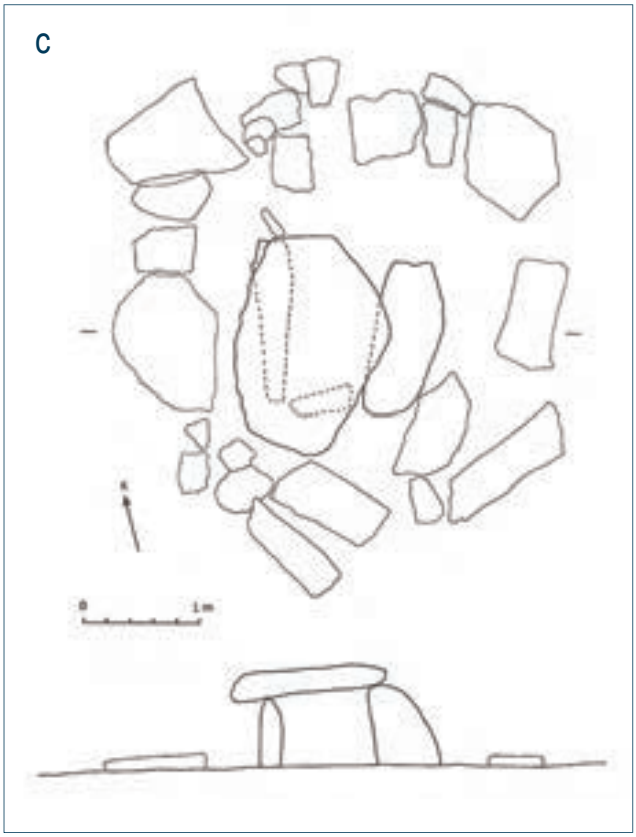


Fig. 5 – Trilithons at Kızılkaya (Hatay): a. Trilithon on the Kızılkaya ridge, overlooking the Amuq plain; b-d. Examples of trilithons at Kızılkaya; e. Outcropping bedded limestone on the Kızılkaya ridge, with a trilithon on the ridge; f. Plan of a typical trilithon (left) and a variant form with two slabs forming each side wall (right) (Photos: B. Yükmen Edens).

Fig. 6 – Variant dolmen forms at Kızılkaya (Hatay): a-b. Trilithons with sloping roof; c-d. Dolmen chambers using an outcropping ledge of limestone as a wall; e. plans of a sloping roof trilithon (left), and ledge-wall chamber (right) (Photos: B. Yükmen Edens).



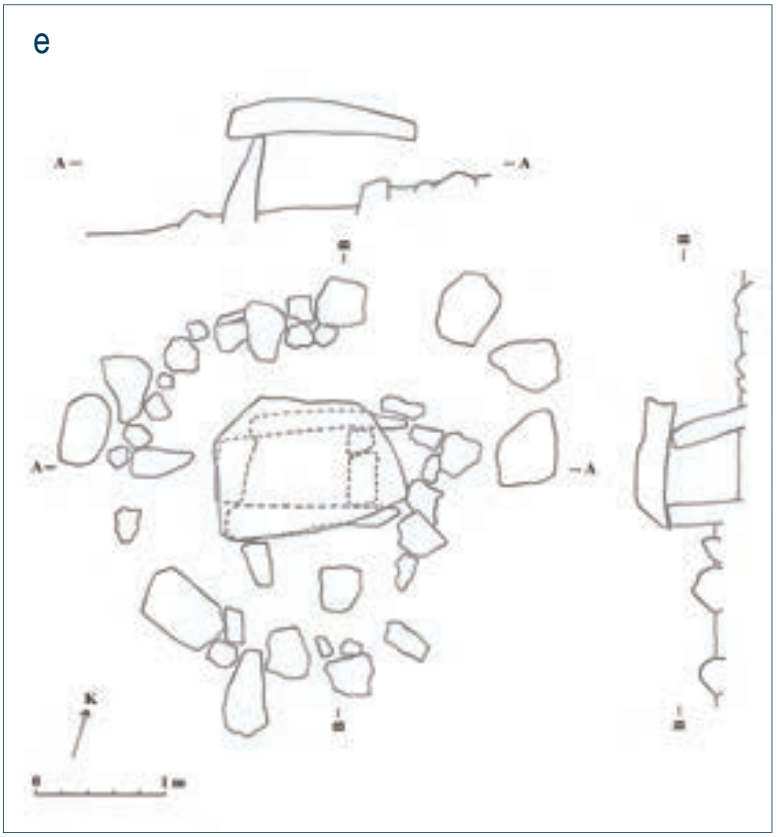


Fig. 7 – Trilithons at Botaş (Adana): a. General view across the northern cluster at Botaş, overlooking the Boyalı Dere valley; b-c. A trilithon within a circular kerb, the southern cluster at Botaş; d-e. A trilithon within a circular kerb, the northern cluster at Botaş (Photos: B. Yükmen Edens).

even the suggestion of a date. Recent illicit digging into one dolmen did expose human bone and teeth, confirming that the structures were used for burial although in the absence of radiocarbon analysis the date of these burials remains unclear.

Adana

In 2016 and 2017, my own ongoing prehistoric survey in eastern Cilicia found dolmens on a basalt hill next to the Gulf of Iskenderun, where the Botaş port (terminus of the petroleum pipeline from Azerbaijan) is located. The dolmens have been published only in preliminary form (Yükmen Edens 2018, 2019).

Two clusters of dolmens are about 1 km apart on the west side of the hill. The southern cluster contains at least a dozen structures. A few of these are well preserved but most are collapsed. The northern cluster consists of 28 dolmens across a 300 x 100 m area (**Fig. 7a**), plus a further three about 300 m further north (**Fig. 8a**).

All the determinable dolmens are trilithons composed of single slab side walls and a capstone, and one (occasionally two) end wall (**Fig. 7b-e**). The slabs are basalt, and the dolmens are concentrated on or near outcropping shelves of basalt that can be prised up as slabs. Capstones are up to 2.1 x 1.6 m and 0.50 m thick, but other examples are little more than half that size. The dolmen chambers measure 1.2-1.7 m x 0.5-0.7 m, and they stand to around 0.60 m high. In some examples in both clusters, a circle of stone blocks surrounds the chamber, but otherwise the dolmens lack elaborations such an entry passage, a platform or a preserved covering mound.

Both clusters are built on the mid-slopes of the basalt hill, where the slope is gentle. The dolmens are not readily visible from the bottom of the hill. The dolmens of both clusters are oriented between southwest-northeast and northwest-southeast, facing down the slope of the hill and out over a valley through which flows the Boyalı Dere stream towards the sea (**Fig. 7a, b**).

Although an extensive artefact scatter covers the western slope of the hill, these artefacts represent periods from the Palaeolithic through to the medieval period, and none occurs within or very near a dolmen. Between the two parts of the north cluster of dolmens, the faint remains of agricultural terracing can be observed (**Fig. 8**). This terracing is much more eroded than nearby terraces of evidently Roman date, and surface artefacts suggest a Late Chalcolithic-Early Bronze date. Boyalı Höyük, the only known prehistoric settlement in the Boyalı Dere valley, is located on the western edge of the basalt hill, about 1.7 km from the agricultural terracing and 1.5 km from the southern cluster

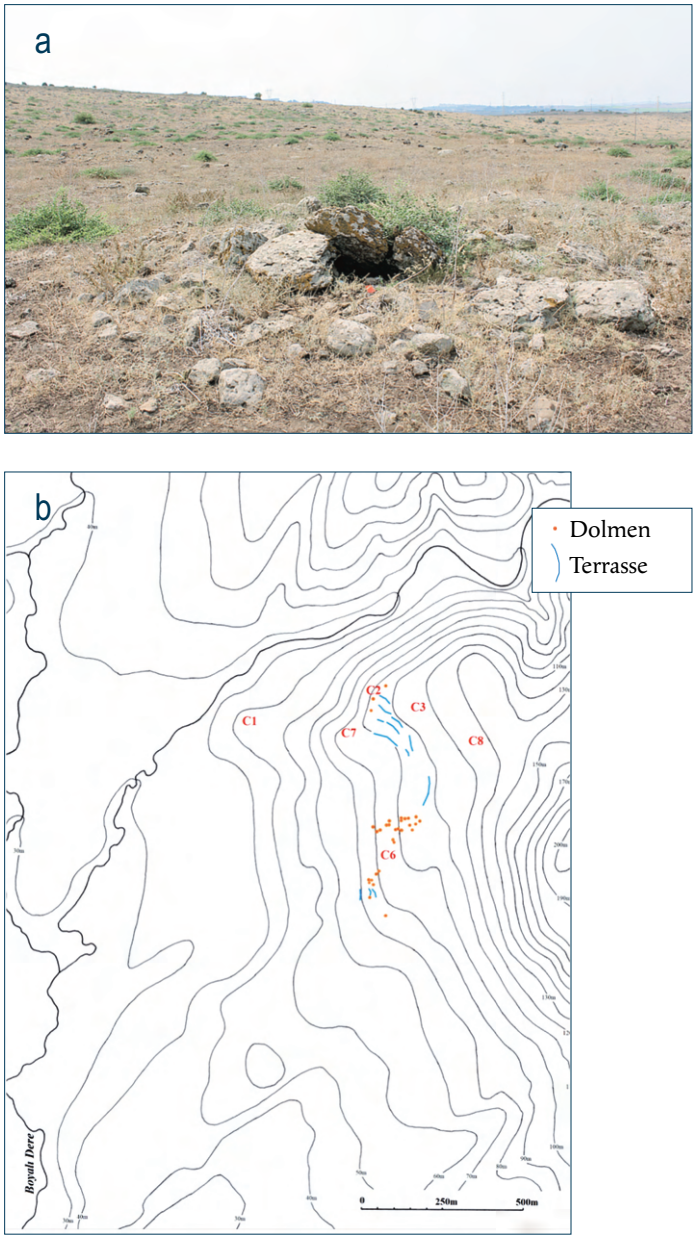


Fig. 8 – Trilithons at Botaş (Adana): a. A trilithon at the north end of heavily eroded agricultural terraces (Photo: B. Yükmen Edens) ; b. Topographic map with the locations of dolmens and eroded agricultural terraces.

of dolmens. Surface pottery from the settlement mound indicates Late Chalcolithic and Early Bronze Age (and later) occupation (Steadman 1994). A hypothesis to be tested by future research is that these three elements – village, agricultural terraces and dolmens – are contemporaneous, the dolmens serving to mark territory and ownership.

3.2 Passage graves and other forms at Çatalyurt (Hatay)

The Karasu river, in the northern end of the Orontes drainage basin, flows into the Amuq plain through a landscape of Pleistocene basalt flows. My survey in the late 1990s recorded 456 structures along a 5 km length of the southern end of the Köroğlu basalt (Yükmen 2000, 2001; Yükmen Edens 2012). More recent survey has added another dozen structures to this total (Yükmen Edens 2018). This section of the basalt hosts numerous springs and the Karasu runs nearby. The recorded structures are typologically diverse: some are trilithons, but most are passage graves, masonry chambers or other forms of megalithic tombs.

The structures recorded in the original survey form four unequal clusters along the southern edge of the Köroğlu basalt. From west to east these clusters are: Çatalyurt-1 - 83 structures near Mazmanlı; Çatalyurt-2 - 39 structures; Çatalyurt-3 - 318 structures; and Çatalyurt-4 - 14 structures. The more recently recorded structures are a little west of Çatalyurt-1 in Mazmanlı and seem to belong to the same group. While many of the structures present relatively inchoate heaps of stone, architectural details are evident in about two-thirds of them. These structures fall into three basic formal types: orthostat chambers, coursed masonry chambers, and corbelled chambers.

Orthostat chambers

Basalt slabs set on edge form chambers that are covered by basalt capstones (**Fig. 9**). The chambers are normally rectangular in plan but occasionally trapezoidal and, in one case, oval. The chambers are usually 0.80-1.50 m long and 0.60-1.00 m wide but can be up to 3 m long and almost 2 m wide. The larger chambers are formed by multiple slabs at each side. About 30% of chambers are formed by a single slab for each wall, the rest having two to four slabs for side walls and/or end walls; the above-mentioned oval chamber has a wall composed of eight slabs. A typical orthostat is 0.50-1.00 m wide, 0.50-0.90 m high, and 0.20-0.30 m thick, while the capstones are somewhat larger, usually being around 0.80-1.50 m long, 0.50-1.00 m wide and 0.30-0.35 m thick, but can be up to 2.50 x 1.50 m in area. An interior pavement was noted in only one example.

About one third of the well-preserved orthostat chambers are closed at both ends; these chambers are all trilithons, i.e., they use a single stone for each side wall. The remaining chambers are open at one end, and most of these structures involve side walls of two or more stones. The entrances to the latter chambers are often elaborated with a frame (narrow orthostats set at right angles to the side walls) or an entry passage (**Fig. 9c, g**). Chambers with passages account for over one fifth of the well-preserved sample.

Around three fifths of the chambers are enclosed by an exterior structure, which can be of several types. Often, a mound of rubble surrounds the chamber; a low (single course) ring wall sometimes retains the rubble (**Fig. 9b, d**). In some cases, a coursed retaining wall, composed of up to 7-8 courses of basalt blocks, up to 1.5 m high, surrounds the chamber, with rubble filling the space between these two architectural elements (**Fig. 9e, g**).

Chamber orientation is variable with three quarters arranged east-west and most of the remaining chambers being oriented northwest-southeast or north-south. The chambers with passage entrances all open to the northeast, east or southeast.

Coursed masonry chambers

These rectilinear or curvilinear chambers are formed of basalt blocks laid in rough courses and covered by capstones. The rectilinear chambers are 1-1.5 m long or smaller, while the curvilinear chambers are 2-3 m across. Some of the chambers survive up to 1.5 m high but most heavily collapsed.

The masonry chambers are surrounded by high ring walls that are similar in construction to those described above for orthostat chambers (**Fig. 10a, b**).

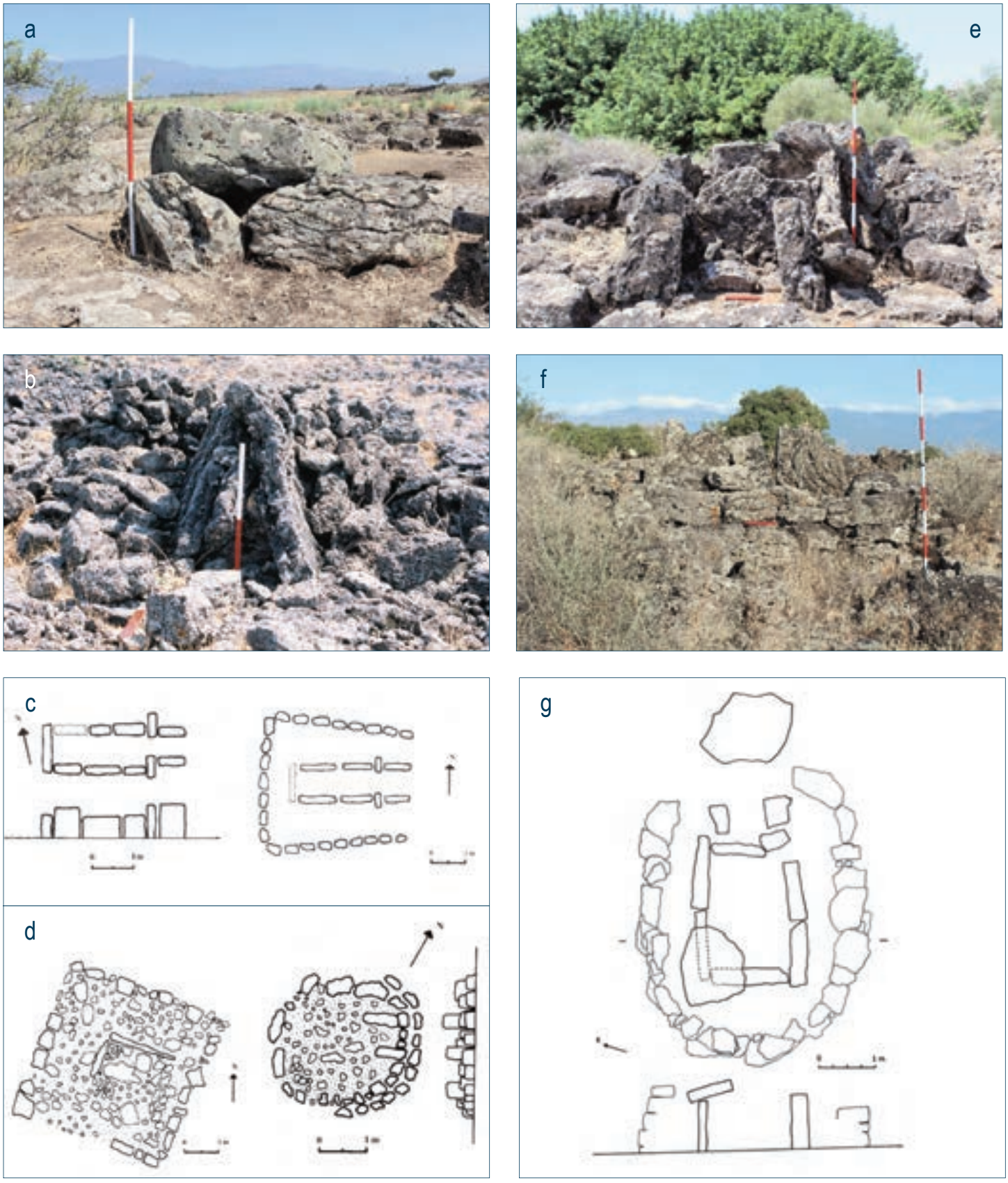


Fig. 9 – Orthostat chambers at Çatalyurt (Hatay): a. Rare example of a trilithon at Çatalyurt; b. A collapsed orthostat chamber within a mound of blocky rubble or collapsed retaining wall; c. Chambers with two or three orthostat side walls and short passaged entrances; d. Collapsed orthostat chambers within square (left) or circular (right) retaining walls; e-g. A chamber with double orthostat side walls and a 'closed' short passage, within a coursed retaining wall (Photos: B. Yükmen Edens).

The ring walls normally enclose a rubble fill against the masonry chamber but occasionally the two elements abut. Ring walls may be square (4-5 m on each side) or rectangular (3.5-5.5 x 2.5-4.5 m), but many are curvilinear (**Fig. 10c**), with an oval shape; some incorporate straight sections that turn a right angle to make a quadrant shape. Most of the curvilinear ring walls enclose an area similar to the rectilinear walls (mostly 3.5-4.5 m across) but some are up to 10 m across.

The generally collapsed state of the upper coursing obscures details of the interior of the chambers (e.g., the presence of paved floors, the possibility of corbelling). Built entrances seem to be absent from these structures.

Corbelled chambers

Only two chambers are constructed of basalt blocks using a corbelling technique to form the side walls of a rectilinear chamber that is open at one end and covered by larger slabs (capstone; **Fig. 10d**). These chambers are 1.50 m long and 0.80 m wide at the entrance, narrowing toward the closed rear wall; the chambers are about 1 m high. A mantle of rubble covers both chambers.

The four clusters of structures at Çatalyurt each comprise different proportions of these three structural types. At Çatalyurt-1, all the identifiable structures are orthostat chambers, three of which have a ring wall; at Çatalyurt-2, all but one of the identifiable structures are orthostat chambers, the exception being a masonry chamber; at Çatalyurt-3, only 12% (29 of 233) of identifiable structures are orthostat chambers (five of these have a coursed ring wall), 203 are coursed masonry chambers, and one is corbelled; and at Çatalyurt-4, only four of the structures are identifiable: two orthostat chambers and two masonry chambers. This variation suggests a significant degree of cultural, social and/or chronological difference at Çatalyurt, however the only cultural material seen around the megalithic structures was Roman period pottery. Several mounds with Chalcolithic, Early Bronze Age and later occupation are present near to Çatalyurt-3 and 4.

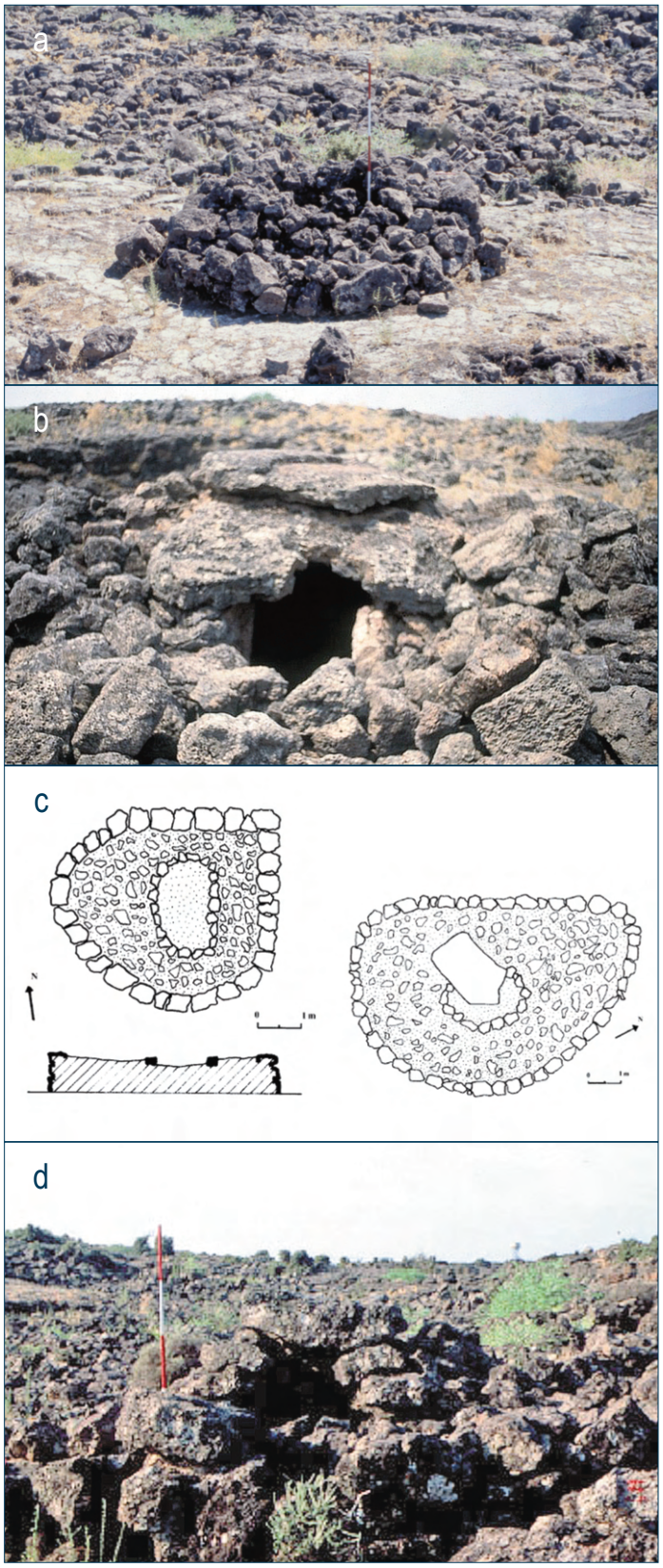


Fig. 10 – Coursed masonry chambers at Çatalyurt (Hatay): a. A coursed masonry chamber with the surrounding wall partially intact; b. Detail of a masonry chamber with displaced capstone still partially covering the chamber; c. Variations in the shape of the surrounding wall of masonry chambers; d. A corbelled chamber (Photos: B. Yükmen Edens).

4. Dolmens in northeastern Anatolia

Leaving aside the issue of the debatable structures at Akçakale, dolmens appear at Carcı in the valley of the Küçük Dere (**Fig. 11a**), a stream which issues from the Çıldır lake in Kars. This is an area of high mountains; the valley has very steep sides formed of basalt, and the dolmens are found at an elevation of around 1850 m above sea level. Fifteen dolmens have been recorded here, on both sides of the stream (Yükmen 2003: 30-32; see also Kansu 1964). Seven of the structures are preserved well enough to show architectural details; in their original condition, the other eight structures probably resembled these seven.

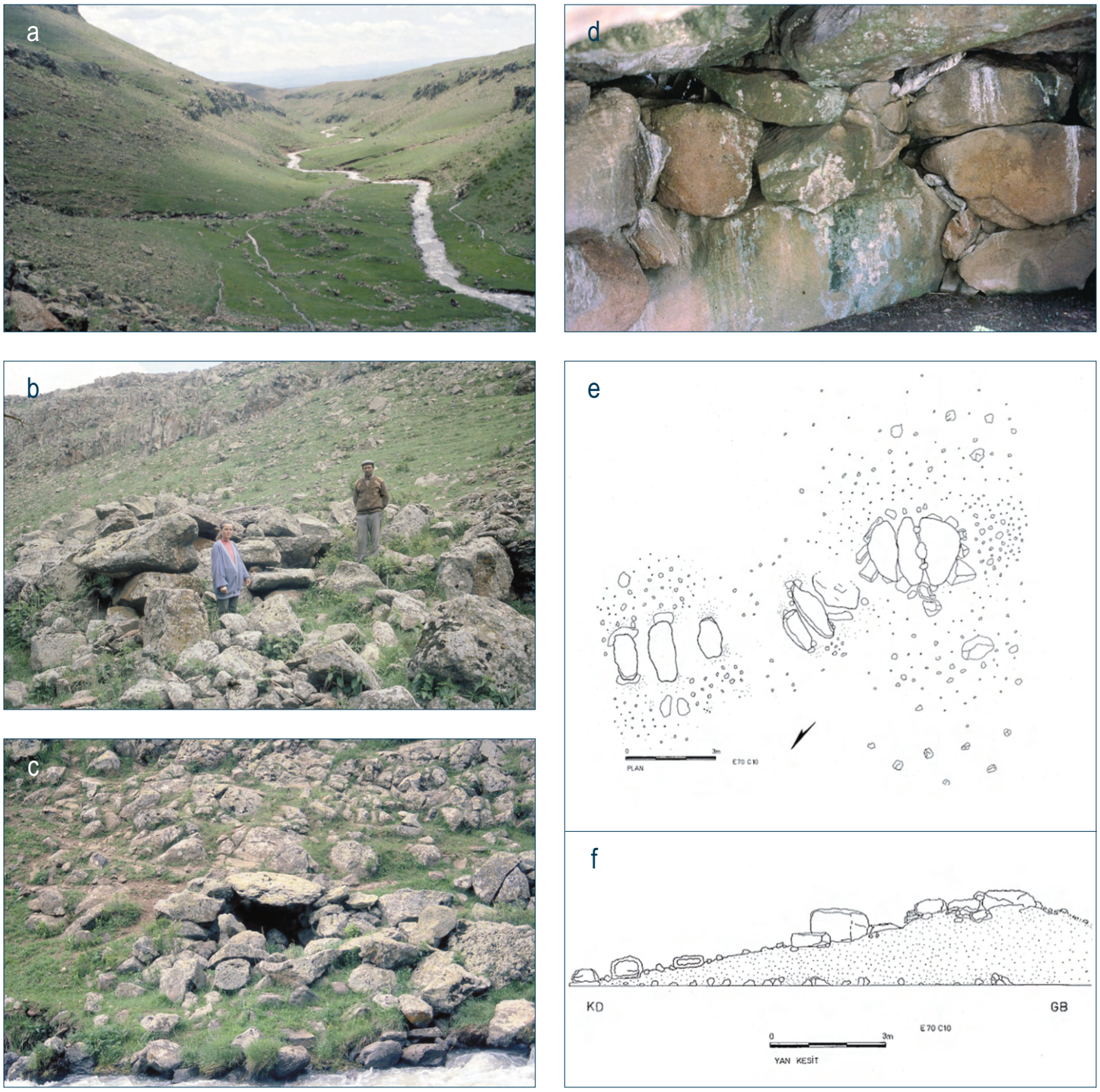


Fig. 11 – Dolmens at Carcı (Kars) in northeastern Turkey: a. General view of the dolmen group at Carcı in the Küçük Dere valley; b. Exterior view of a dolmen chamber; c. Entrance to a dolmen passage; d. Interior wall of a dolmen chamber; e-f. Plan and elevation of a Carcı dolmen (Photos: B. Yükmen Edens).

The structures present two basic elements: a chamber plus an entry corridor. Chambers are polygonal in plan, and measure 2-3 x 1-3 m in area and 0.7-1.7 m in height. The chamber walls are composed of blocks of basalt laid in rough courses (**Fig. 11d**). Surrounding the chamber walls are large blocks that form a revetment around the chamber (**Fig. 11b**). Together with the chamber walls, the result is a combined thickness of 2-3 m. The corridors are 4-10 m long, a little more than 1 m wide, and about 0.5 m high (**Fig. 11c, e, f**). Both the chambers and the corridors are covered by large basalt slabs that are 1.8-2.2 m long, 0.7-1.2 m wide and 0.3-0.5 m thick. Each structure has three to five capstones. In no case was a covering of earth and/or rubble preserved.

The chambers are set within the valley, most within 20 m of the stream and not more than 10 m higher. This setting suggests that visibility was not a factor in dolmen location. The corridors and chamber entrances show no preferential orientation. Rather, the corridors point downslope toward the stream, suggesting a relationship with the water. No pottery or other datable material was found at or near these structures, leaving their date unclear.

5. Dolmens in Turkish Thrace

Thrace is home to more than 900 surviving dolmens, most of them in the Sakar Mountains of Bulgaria, with smaller numbers in the Rhodopes Mountains of Bulgara and Greece. In addition, around 200 dolmens have been recorded in the Strandja/Istranca Mountains along the Turkish-Bulgarian border. About half of these – around 100 – are in Turkish Thrace. These monuments typically occur as isolated structures or in small clusters, but do not generally form extensive 'dolmen fields'. They are sometimes placed on ridgelines, but are commonly found in less visible locations, on slopes or flat terrain. Although most dolmens are only partially preserved, surviving details afford the following description (which is based on Özdoğan & Akman 1992; Akman 1997; for descriptions of similar dolmens in Bulgaria see Delev 1984; Nekhrizov 2015; Nehrizov & Agre 2015).

Two basic chamber types can be distinguished (Delev 1984; Akman 1997): a) a single chamber plus a narrow entry passage; and b) a main chamber and a smaller antechamber plus a narrow entry passage. The main chamber can measure up to 2.8 x 2.4 m in area and is often over 2 m high. Antechambers are lower and often narrower than the main chambers, and the entry passage is lower still. Dolmen entrances most often face in a southerly direction and occasionally to the east or west, but never to the north. The chamber is normally enclosed by a rubble and earth mound (typically 8-16 m in diameter), around which a kerb wall is sometimes evident. Variants of the two chamber types include a pair of dolmens within the same mound, and a dolmen and cist grave within same mound.

An oval porthole appears in the centre of the front wall of some (not all) dolmens. In three-section dolmens with portholes, this aperture appears in the front wall of both the antechamber and the main chamber. These portholes are only 0.40-0.50 m wide and 0.60-0.70 m high, and some archaeologists identify them as a 'soul hole' (Turkish *ruh deliği*, from the German *Seelenloch*; e.g., Özdoğan & Akman 1992: 410). Small cupmarks appear on the upper surface of capstones over the main chamber of some dolmens. These are sometimes suggested to be places for libation offerings to the dead (e.g., Özdoğan & Akman 1992: 411).

The excavated dolmen at Arpalık (Lalapaşa) in Edirne provides a well-documented example of a large three-section dolmen within a mound (Akman 1997). Although the dolmen content had been heavily disturbed, the excavation recovered human bone from four individuals in the antechamber and grave goods that included numerous handled cups of a dark hand-made pottery (*Buckelkeramik*) that date to the Bronze Age-Iron Age transition, examples of a light grey wheel-made pottery that is Late Iron Age, and a fibula that typologically belongs to the 8th-6th centuries BC. Some Hellenistic sherds were found in the main chamber. This range of finds suggests that the Arpalık dolmen was constructed shortly after 1200 BC and continued in use until the middle of the 1st millennium BC if not later. These conclusions match evidence from Bulgarian research on the other side of the border (Delev 1984; Nekhrizov 2015: 132).

6. Standing stones and circles ('menhirs' and 'cromlechs') in Turkey

Although these monuments are more widely distributed across Turkey than dolmens, they have received less attention and so remain much less understood. The densest concentration is in Turkish Thrace, but they are also reported in the Black Sea mountains (Kastamonu, Kars), central Anatolia (Ankara), and southeast Anatolia (Kahramanmaraş, Malatya).

6.1 Standing stones in Turkish Thrace

In addition to dolmens, Turkish Thrace has at least 29 locations with standing stones [3]. These places have attracted much less attention than the dolmens, and the source for information about them is still an MPhil thesis completed nearly two decades ago (Erdoğu 2005, see also Erdoğu *et al.* 2002; Özdoğan 1999; Kansu 1969).

The standing stones are sometimes located on ridgelines, but more often they are on slopes or flat terrain. The surviving locations include as many as 500 stones. Most are broken and/or fallen, but others still stand up to 3.1 m high. The stones are variably gneiss, schist, quartzite, diorite or granite, and usually (but not always) these materials are geologically available at the location. The stones often appear to be placed to form alignments, typically oriented northeast-southwest (220-240º). At some locations the remains of ditches and/or banks of earth seem to enclose the stone alignments. In addition, cairns or tumuli appear within or near the standing stones.

None of these locations have been investigated by excavation, and Erdoğu reports that intensive survey failed to identify surface artefacts. Early Iron Age pottery is associated with circles ('cromlechs') near Dolni Glavarak in Bulgaria (Nekhrizov 2015: 132) and many commentators, arguing for a direct relationship between the standing stone monuments and the dolmens, assign an Iron Age date to both, but the persistent association of Muslim graves with the standing stone monuments [4], plus the Turkic tradition of *balbal* (anthropomorphic stelae), leaves room for uncertainty.

6.2 Other standing stone sites

Kökten (1947) reported large standing stones, many of them arranged in a rough line around 200 m long (see Orthmann 1967: Plan 1), at Ilıca in the Ankara province. As recently as 20 years ago, when I did my doctoral research, 24 of these basalt blocks still survived. The largest is 2.70 m tall and 0.60 x 0.65 m in footprint; the smallest is less than 1.0 m high. In the 1960s, Orthmann excavated a cemetery in the same area and concluded that the stones are related to the Middle Bronze Age cremation burials of this cemetery (Orthmann 1967: 60).

Kökten (1951) and others also reported menhirs in Eksen and elsewhere in the Black Sea mountain province of Kastamonu. At Eksen, 104 stones are 0.90-2.20 m long, and very block-like in shape. Close inspection strongly suggests that at least some of these stones are probably the footing stones of wooden buildings elevated above ground level, and perhaps Hittite in date (Kökten 1951: 203; Yükmen 2003: 25). Similarly, the standing stones which Kökten (1960) reported as menhirs at several places in Kahramanmaraş probably originate from residential architectural. At Köpeören in Kahramanmaraş, tomb stones of a Turkic cemetery are very like menhirs (Yükmen 2003: 27; **see Fig. 12d**), but other standing stones at Eksen and at nearby Kınık in Kastamonu (Yükmen 2003: 25-26) form long rows or are too tall and widely spaced to be house foundations (**Fig. 12a, c**). Such stones better fit the formal definition of 'menhir', but their purpose and date remain uncertain. These various examples illustrate the difficulty of using a formal classification to identify 'menhirs', and the potential confusion of prehistoric with historic monuments.

(3) Özdoğan (1998: 37) mentions that his survey inventoried 24 standing stone locations, while Erdoğu (2005: 26) states that her survey found five previously unknown standing stone sites. Only one standing stone site is extant in Bulgarian Thrace (Nekhrizov 2015: 132).
(4) Muslim cemeteries often coincide with standing stone locations, which leads some to suggest that the latter are Turkish in origin (see the discussion in Özbek 2008). Erdoğu (2005) suggests a continuing or reinvented ideological connection (the Bektaşı religious order) and accepts a relationship between (probably) Iron Age standing stones and commemoration of dead ancestors.

Fig. 12 – Other types of megalithic structures in Turkey: a-c. Standing stones ('menhirs') at Kınık (Kastamonu); d. Standing stones of a Turkic cemetery at Köpeören (Kahramanmaraş); e-f. Stone circles on Akçakale Island in Çıldır Lake (Kars) (Photos: B. Yükmen Edens).

7. Stone circles

Similar ambiguities exist for circles and ovals of large stones. Some examples appear to be prehistoric. For example, the site of Gelinciktepe, near Arslantepe in Malatya, contains stone circles and gives its name to a style of Early Bronze Age painted pottery. The stone circles, originally described by Przyluski (1937), have recently been suggested to be ceremonial centres within a social landscape re-orientated toward pastoralism early in the 3rd millennium BC (Alvaro & Palumbi 2014).

Other stone circles are not dated. Numerous examples still exist on the island of Akçakale in Kars (**Fig. 12e, f**). Four complete circles have diameters of 8, 24, 26, and 45 m respectively (Yükmen 2003: 29; see also Köroğlu 2000: 8); others exist but are not measurable. Although these are originally described as cromlechs (Kökten 1944) there is no dating evidence. The common presence of Urartian architecture on the islands opens the possibility of an Iron Age or later presence, and the circles may well be substantial animal pens rather than ceremonial structures. Similarly, the ring reported as a cromlech at Harap Tarla in Kahramanmaraş (Kökten 1960) uses relatively small stones (on the order of 0.12 x 0.40 x 0.30 m), and may be a rearrangement of stones from a collapsed house (Yükmen 2003: 27).

These uncertainties underscore the difficulty of identifying prehistoric megalithic monuments in Turkey.

8. Discussion

Prehistoric and protohistoric megalithic monuments in Turkey are numerous, but still under-researched despite various research programmes over the past 30 years. This can probably be attributed to a generally low interest in prehistory and the frequent connection of fieldwork with dam salvage projects. As a result, the picture we have today may be hugely incomplete.

Dolmens are by far the best known of the megalithic structures. They appear in many parts of Turkey but are concentrated in three areas at the periphery of the country. The dolmens in these three areas differ in structural concept, and in two cases they have evident connection to megalithic traditions in neighbouring regions. Dating remains problematic, but very likely the dolmens in these three regions were built and used at different times.

The dolmens of Thrace are convincingly dated to the Iron Age and belong to a wider cultural area that includes Bulgaria and northeastern Greece. Turkish Thrace is also rich in standing stones ('menhirs') which are plausibly but still speculatively dated to the same period. This manifestation of monumentality is often linked to migrant groups from southeastern Europe, and the resulting development of a new social order.

In southeastern Anatolia, the trilithon dolmens are identical in concept to the trilithons of the southern and central Levant, which are now firmly placed in the Early Bronze I period, i.e., roughly corresponding to the Late Chalcolithic of the Anatolian chronology. Although the formal analogy is clear, the structural concept is relatively simple, and until dating evidence is found in Turkey this remains a weak chronological argument (thus Fraser 2018: 89) –but it remains the only evidence we have. The passage tombs and masonry chambers probably have a later date, although this remains without local evidence. Once again, we can only look to formal parallels with burial structures in the Levant, and perhaps also the underground tombs of the Early Bronze III period in northern Mesopotamia.

The Kars dolmens are even more problematic. They evidently differ from the dolmens of Abkhazia, and they show little similarity to kurgan traditions of Transcaucasia, or to de Morgan's dolmens of coastal Azerbaijan. For the moment we have no basis for suggesting a date for the Kars structures.

New research programmes are needed to study further the known megalithic structures in Turkey, and to find and record undocumented structures but time is running out. Commercial quarrying, expansion of farming fields, creation of large industrial complexes and expansion of existing villages are all proceeding apace. I recently experienced this problem. In 2016, I found new examples of well-preserved dolmens near Çatalyurt in Hatay but when I returned in 2017, I found the entire basalt surface bulldozed to prepare for olive tree

plantings. In the absence of multiple urgent research efforts, the future of megalithic studies in Turkey is therefore somewhat gloomy.

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James FRASER

Untangling megalith typologies and chronologies in the Levant

Abstract: The Levant comprises southern Turkey, Syria, Lebanon, Jordan, Israel and the Occupied Palestinian Territories. These well-surveyed archaeological landscapes contain a miscellany of features that incorporate megalithic blocks in various ways. To 19th century explorers, these features recalled megalithic monuments in Europe, and they used European terms such as *cromlech* and *dolmen* to classify them. In so doing, early scholars embedded within the very lexicon they used the assumption that the megalithic monuments in Europe and in the Levant derived from the same cultural origins. This has cast a long shadow over the development of megalithic studies in the Levant, and its principal tenets still underlie models that envisage a 'megalithic phenomenon' that spanned the region from the Taurus mountains to the Yemeni coast in the 4th and 3rd millennia BCE. In contrast, recent approaches have attempted to contextualize megaliths within local cultural and topographic landscapes. Such studies have met with limited success, becoming mired in poorly defined megalith typologies that have obscured rather than clarified the boundaries between different megalithic traditions. By reviewing different approaches to stone-built dolmen tombs in particular, this paper unpacks the assumptions that form the scaffold of the so-called 'megalithic phenomenon' and suggests alternate taxonomic and contextual approaches that could lead us into new theoretical ground.

Keywords: *dolmens, Bronze Age, Levant, burial practices, geology*

1. Introduction

Cross-cultural perspectives afforded by volumes such as this can help identify multiple regional approaches to shared theoretical problems. As the study of megaliths in the Levant has enjoyed over 200 years of scholarship, the discipline is well placed to offer insights into the development of megalith studies globally, and it provides a rare counterpoint to the long and dominant research traditions in Europe. The Levant comprises the area of the east Mediterranean between southern Turkey and the Sinai Peninsula, including Syria, Lebanon, Jordan, Israel and the Occupied Palestinian Territories (**Fig. 1**). This zone comprises diverse sub-regions that each contain a miscellany of stone-built megalithic features, such as dolmens, cairns, tower-tombs and standing stones. These features often resist traditional morphological classification, and researchers have long struggled to bring discrete megalithic traditions into sharp chronological focus. This key issue resonates as a *leitmotif* throughout this volume and gives rise to two particular problems confronting megalith studies generally:

1) How should we address issues of morphological variability?

2) How can we approach different megalith traditions contextually?

Fig. 1 – Topographic map of the Levant.

Although these issues have long bedeviled megalith studies in the Levant, they have received little theoretical scrutiny. Rather, a lack of chrono-cultural precision has given rise to a dominant paradigm that considers megalithic features as part of an ill-defined 'megalithic phenomenon' that spanned the region from the foothills of the Taurus mountains to the Yemeni coast, historically attributed to nomadic pastoralists of the 4th and 3rd millennia BCE (Polcaro 2013; Steimer-Herbet 2004; Zohar 1992). This is a timely opportunity to review the development and current status of these issues in order to identify ways in which the discipline can move into new theoretical ground.

1.1 Issues of typology: How should we approach morphological variability?

Megalithic monuments in the Levant – as elsewhere – are numerous, varied and diachronic. The long history of scholarship in this region has served to confuse rather than clarify the morphological boundaries between different megalith types. From the early 19th century, travellers, diplomats, scholars and spies were fascinated by the megalithic monuments that they encountered as they explored what would become one of the best-articulated archaeological landscapes in Asia. The resulting scholarly threads have twisted into a Gordian knot of contrasting terminologies, taxonomies, unfounded assumptions and false equivalences, and must be untangled (or severed) before the discipline can progress. Simply put, by using 'megalith' as an umbrella term, Levantine studies have historically failed to discern the lines between different types of monuments, thereby creating a megalithic phenomenon that is, perhaps, devoid of meaning, as Guilaine (Chapter 59, this volume, p. 1281) has emphasized more broadly.

Opposing stances towards this issue reflect conflicting theoretical positions regarding the very concept of megalithism. The rocky landscape of the Levant has seen different peoples at different times build similar monuments that may share no cultural equivalence beyond the simple use of stone. While some researchers have attempted to define careful typologies to help resolve the issue (e.g., Epstein 1985; Zohar 1992), others caution that typological approaches can draw lines that are more arbitrary than real, as Laporte *et al.* (2011) argue for traditional approaches to megaliths in France. In this situation, we may find a megalithic architecture so ubiquitous and diverse as to render the very concept of megalithism meaningless, as Bradley (Chapter 57, this volume, p. 1239) posits.

1.2 Issues of chronology: How can we approach megaliths within their cultural contexts?

Most papers in this volume stress the importance of approaching megalithic traditions within their appropriate cultural contexts. But how can we approach megaliths contextually, when confronted by features that resist taxonomic classification? The issue is compounded in the Levant by the fact that many megalithic structures are found robbed of cultural remains, thus making it difficult to anchor them within regional chronologies. Consequently, the archaeological landscapes of the Levant constitute palimpsests that, on the one hand could reflect gradual stylistic change within continuous megalithic traditions, but on the other could represent disparate pulses of megalithic construction. How can we tease these traditions apart?

Cairn-tombs provide a striking illustration of the typological and chronological problems facing megalith studies in the Levant. Descriptors such as 'cairns', 'cairn-tombs', 'cist-tombs' and 'tumuli' refer interchangeably to features that usually consist of a central stone-built burial chamber within a ring of larger stones covered by a rubble tumulus (Philip & Bradbury 2010: 141). These features are often used to illustrate the ubiquity of the apparent pan-Levant megalithic phenomenon of the 4th and 3rd millennia BCE (Polcaro 2013, 2019). Yet while such features are certainly ubiquitous, swelling numbers of excavated examples from various sub-regions attest to disparate traditions rather than a coherent phenomenon. Dated examples include: Late Neolithic cairns in the Negev desert; Chalcolithic cairns on the Dead Sea plain; Early Bronze Age tumuli on the Israeli coast; and similar examples across the region dating to the Middle and Late Bronze Ages, the Iron Age, the Classical and early Islamic periods, and even the ethnographic present (see Fraser 2018: 216-218). In short, different peoples

Fig. 2 – Main trilithon dolmen cemeteries in the southern Levant.

have built morphologically similar cairn structures for millennia, leaving archaeologists to untangle these discrete tomb traditions with imprecise taxonomic tools.

2. The history of dolmen research in the Levant

In order to track the trajectory that brought Levantine megalith studies to this point, it is instructive to focus especially on dolmens, as changing approaches to these monuments have shaped the discipline more than with any other megalithic feature (although for a broader overview of megalithic research see Steimer-Herbet 2004: 6-12).

In 1817, a pair of British naval officers named Charles Irby and James Mangles brought their horses to an abrupt stop when they encountered several dolmens at Damiyeh in the Jordan Valley (**Fig. 2**). Although Irby and Mangles were the first Europeans to describe dolmens in the Levant, their account is striking in that they were familiar with what they saw, comparing the structures to the dolmen-like chamber of an eroded long-barrow known as Kit's Coty House in Kent (Irby & Mangles 1852).

For the large, mounded settlement sites particular to Western Asia, it was necessary for Europeans to adopt the local terms of *tul*, *tepe* or *tell,* however early travellers could readily draw upon Celtic and Breton terms when describing the megalithic monuments that they found. They were intrigued that something so particular to the European experience was also present in the Near East; by using European terms in a Near Eastern context, scholars embedded within their own lexicon the fundamental belief that megalithic structures in Europe and the Levant derived from common cultural origins. Scholars identified an Eastern origin for a European phenomenon, reflecting the supposed trajectory of civilization from east to west (e.g., Conder 1889; Luynes 1874; Glueck 1951; Schumacher 1890).

As archaeology developed into a more scientific discipline, these assumptions were incorporated within theories of diffusionism. The ubiquity of megalithic monuments across Europe and Asia became a central strut supporting the diffusionist edifice, indicating an initial cultural development in the Near East, which then spread west with migrating groups. Australian archaeologist V. Gordon Childe even described these Mediterranean colonists as '*the apostles of the megalithic faith*' (Childe 1939: 325). Although the development of radiocarbon dating demonstrated the antiquity of European megaliths compared to those in the Levant, there are still echoes of diffusionist theory in approaches that continue to envisage a regional megalithic phenomenon, attributing the distribution of megalithic features across the Levant to regional mechanisms such as the movement of mobile pastoral groups (Polcaro 2013; Steimer-Herbet 2004).

Nevertheless, the key problem facing dolmen studies remained chronological, largely due to the paucity of cultural remains from their robbed-out chambers. This 'dolmen problem', as it became known (Gilead 1968), thwarted attempts to anchor dolmens to regional chronologies, allowing dolmen studies to ride the various theoretical currents that swelled and ebbed throughout the 20th century. It is possible to hear the resignation in American archaeologist James Swauger's voice in 1966, when he threw his hands in the air after attempting a detailed chronological review and cried, '*unless we are lucky enough to find a dolmen under an earth or rock cover… I know of no other procedure that can result in solving the mystery of the dolmens'* (Swauger 1966: 144).

The year 1985 was therefore seminal for dolmen studies in the Levant, when two scholars published discoveries of undisturbed chambers within a couple of months of each other. The first was Jordanian archaeologist Khair Yassine, who cleared a sondage through the entrance of a dolmen at Damiyeh, building on work at the site by Stékélis in 1942-43 [1961]. Shortly after this, Israeli archaeologist Claire Epstein published excavations of several dolmen chambers on the basalt Jaulan plateau (Golan Heights). Both scholars claimed to have finally solved the 'dolmen problem' (Epstein 1985; Yassine 1985).

Their assemblages, however, were dated a thousand years apart: to the Early Bronze Age I (EB I) at Damiyeh (*ca.* 3700-3000 BCE) and to the Early Bronze Age IV (EB IV) in the Jaulan (*ca.* 2600-2000

BCE). It is striking that both datasets were accepted at face value given that they 'bookend' a period of tremendous social change. The Early Bronze Age in the southern Levant spans the development of proto-urban townships in the EB I, the florescence of proto-urban centres in the Early Bronze Age II-III (EB II-III) period, and urban collapse and ruralization in the EB IV. Significantly, subterranean cemeteries at Bab edh-Dhra near the Dead Sea attest to substantial changes in mortuary behaviour associated with these major shifts in settlement and society (Chesson 2007). Yet, with dolmens, scholars were ready to accept continuity in funerary architecture outside these larger social processes. Rather, they associated dolmens with nomadic populations that waxed in periods of transition, such as the EB I and EB IV periods, and waned in periods of urban consolidation, such as the EB II-III (e.g., Bahat 1992; Helms 1987).

It is time that we take a closer look at these datasets. The EB I dolmen excavated by Yassine in Jordan is best classified as a trilithon dolmen, consisting of two free-standing vertical slabs supporting a single, horizontal roof stone. Significantly, the EB IV materials that Epstein recovered from dolmens in the Jaulan did not derive from similar freestanding structures, but from much larger monuments with semi-subterranean corridor chambers that were covered with vast tumuli of stone. In fact, as shown in **Fig. 3**, Epstein had defined six types of dolmens in the Jaulan, of which free-standing trilithons were only Type 1. Strikingly, she only recovered EB IV materials from examples of the three largest types (Types 2b, 2c and 6 in **Fig. 3**). By yoking together passage-like tombs with trilithon chambers under the same 'dolmen' descriptor, Epstein may have been comparing apples with oranges. She was not, however, especially concerned with the chronological implications of her typology; rather, she argued that the essential megalithism of all six tomb types was sufficient to ascribe them to common cultural groups, and she suggested that different dolmen types reflected the predilections of various nomadic tribes who visited the plateau in the late 3rd millennium BCE (Epstein 1985).

It is instructive to reflect briefly on the contrasting trajectories of megalithic research in Europe and the Levant at this point. Epstein's inclusion of different tomb types under a single dolmen rubric has never been rigorously examined. This situation is remarkable, considering the robust taxonomic approaches predicated on the Lukis-Montelius system that had been developing in Europe for decades – and which would have provided a ready lexicon for the comparanda of structures that Epstein had so carefully defined. As Glyn Daniel had recognized in Europe in 1958, the word 'dolmen' had been used '*as a general descriptive term for megalithic tombs…and for ruined monuments whose original form might have been anything*' (Daniel 1958: 47-48).

In 1992, Israeli archaeologist Mattanyeh Zohar expanded Epstein's typology of dolmens on the Jaulan plateau to create a typology of dolmens across the entire Levant. He cast a wide taxonomic net, and his dolmen scheme has proven so broad that multiple features from different periods have been variously classified as dolmens. The implication is to link together disparate traditions within a seemingly coherent regional phenomenon. This situation is perhaps best illustrated by Zohar's use of the same map to depict the distribution of 'megalith cemeteries' in 1992 (Zohar 1992: Fig. 4) and 'dolmen cemeteries' a year later (Zohar 1993: Fig. 1). A more considered typology was proposed by Steimer-Herbet (2004), although the sub-classes are defined so specifically that the scheme has not been widely adopted.

3. State of knowledge in dolmen studies in the Levant

Fortunately, an upsurge of surface surveys over the last 30 years has significantly enriched our database of megalithic structures. Maps such as those of Zohar relied heavily on 19th and early 20th century accounts but the discipline is now well positioned to explore the regional nature of dolmen building by drawing on highly precise data sets. Paradoxically, however, this situation has caused dolmen studies to narrow considerably in scope: broad theoretical analyses have given way to descriptive site- and wadi-specific studies, often confined to the boundaries of discrete survey areas.

Dolmen studies in the Levant have generally fractured into three analytical streams, each responding

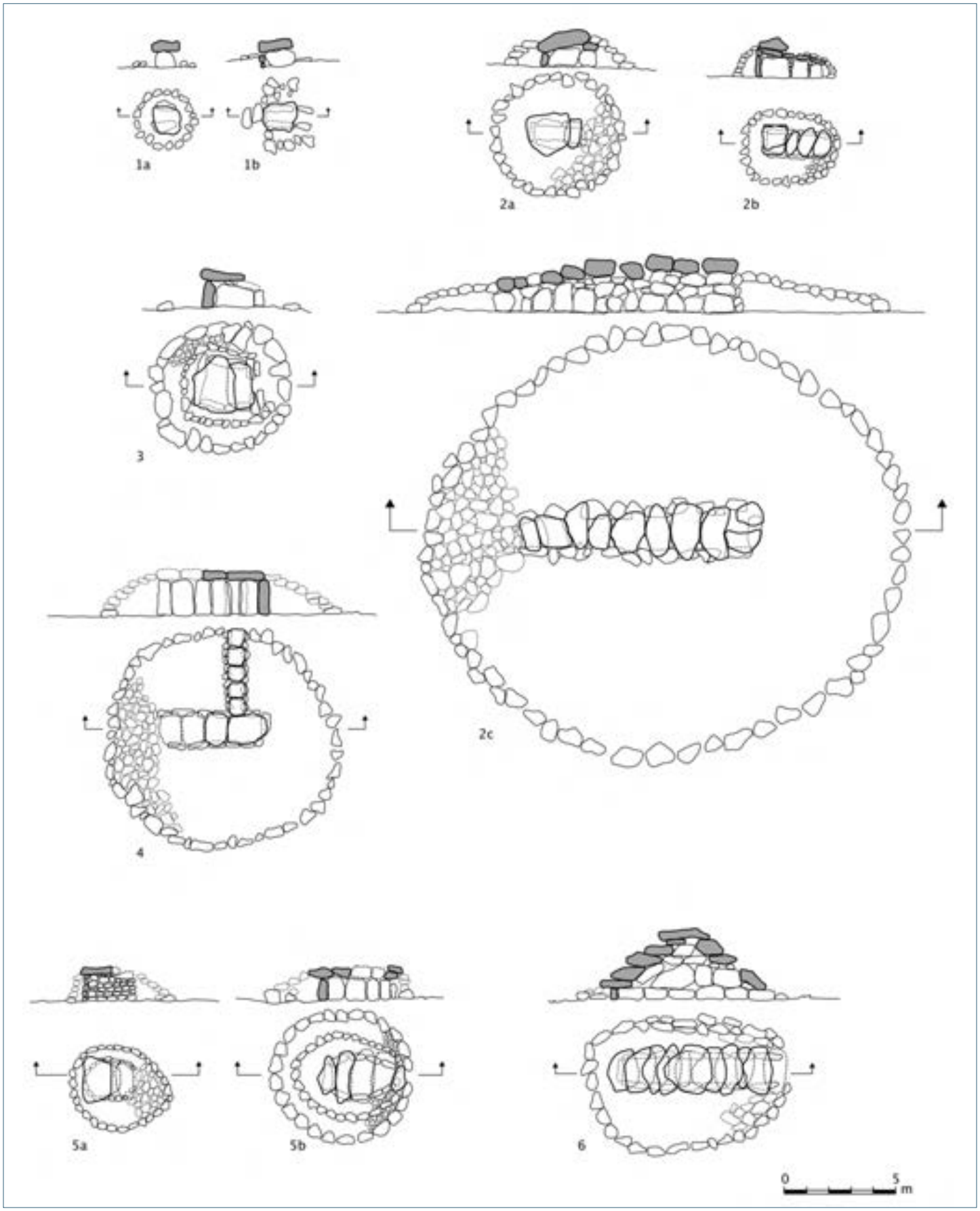

Fig. 3 – Epstein's typology of 'dolmens' on the Jaulan plateau (After Epstein 1985: Fig. 1; courtesy of the Israel Antiquities Authority).

differently to the key questions of who built the dolmens and when: sedentary agricultural communities in the EB I or mobile pastoral groups in the EB IV. These streams have broadly developed along regional and, to a lesser extent, along national lines.

Anglo-American and Danish researchers working in the lateral wadis of the Jordan Rift Valley escarpment above the Dead Sea have surveyed vast fields of simple trilithon dolmens (e.g., Harrison 1997; Ji 1997; Kerner *et al.* 2017; Mortensen & Thuesen 1998; Savage & Metzger 2002; Thuesen 2004). These scholars have documented a close spatial relationship between dolmen fields and EB I village sites. Consequently, they interpret dolmen fields as upland village cemeteries – an idea to which we will return – but see Prag (1995) who attributed dolmens in these area to nomads. Conversely, Israeli archaeologists working in the Jaulan plateau, the Galilean hills and the Huleh basin follow Epstein and Zohar's approach, applying the term 'dolmen' to a variety of megalithic features that they date to the EB IV period and attribute to mobile pastoralists (e.g., Freikman 2012, 145; Greenberg 2002, 75-81; Shaked 1999; Sharon *et al.* 2017; Stepansky 2005). Finally, Spanish, Italian and French teams investigating suboptimal areas in the eastern deserts of Syria and Jordan attribute dolmens to transhumant pastoralists who seasonally exploited niche environmental zones. They generally date dolmens to the EB I period but identify this as the start of a megalithic tradition that endured through the 4th and 3rd millennia BCE (e.g., Braemer 2011; Fernández-Tresguerres Velasco *et al.* 1992; Nicolle & Braemer 2012; Polcaro 2010, 2019; Sapin 1992; Steimer-Herbet 2013; Steimer-Herbet & Besse 2017; Steimer-Herbet & Criaud 2008).

While each stream is internally consistent, these diverging local trajectories resist regional synthesis, and so the discipline remains trapped by the same vague typologies and chronologies that have prevented it moving forward for the last hundred years. These issues must be addressed before we can articulate a contextual, regional approach to dolmens in the Levant.

4. Elements of synthesis

By restricting the term 'dolmen' to comparable trilithon structures, we can start to bring at least one megalithic tradition into sharper focus. For comparative purposes, trilithon dolmens in the Levant can be defined as above-ground monuments with rectangular chambers that are taller than they are wide, and capped by a single roof-stone (**Fig. 4**). These are significantly smaller structures than the celebrated dolmens of western Europe. Moreover, unlike isolated European structures, dolmens in the Levant are usually clustered in groups ranging from

Fig. 4 – Trilithon dolmen at Tell er-Ras overlooking the Wadi Rayyan, Jordan (Photo: B. Tabbah).

a dozen monuments to vast cemeteries containing over a thousand chambers.

This restricted definition immediately allows us to draw two observations concerning the distribution of dolmens in time and space. First, trilithon dolmens are concentrated in a remarkably discrete zone, extending for only 150 km north-south between the Jaulan plateau and the Madaba plains, and only 100 km east-west between the Galilean hills and the Syrian Leja (**Fig. 2**). Although historical accounts report dolmens beyond these zones, including west of the Jordan River, a case-by-case review demonstrates a variety of megalithic features, none of which none can be attributed to dolmens when precisely defined (Fraser 2018: 66-89).

Second, while dolmen chronologies remain coarse, they are more refined than in 1985. EB I materials have now been recovered from dolmens at Damiyeh (de Vreeze 2010; Stékélis 1961; Yassine 1985), Tell el-Hammam (Collins *et al.* 2015; Schath *et al.* 2011), Tell el-Umayri (Dubis & Dabrowski 2002; Herr 2002) and Jebel Mutawwaq (Polcaro *et al.* 2014; Polcaro & Muniz 2018). The absence of evidence for earlier or later construction is not definitive, but it does contrast with the swelling corpus of material that suggests that dolmens were predominantly – or even exclusively – an EB I tradition.

These patterns fundamentally change our perceptions of dolmen building in the Levant. Where we once envisioned something regional, we should instead consider something local; where we once envisioned something enduring, we should instead consider something short-lived. Ultimately, where we once approached dolmens as part of a regional megalithic phenomenon, we would better envisage them as part of local burial traditions. Accordingly, it is not necessary to seek large-scale mechanisms such as the long-range movement of nomadic pastoralists to explain the apparent ubiquity of dolmens. Instead, we can approach dolmens more contextually in relation to the EB I settlement landscape of the southern Levant in the mid-late 4th millennium BCE.

4.1 Dolmens and the EB I settlement landscape

The remainder of this paper focuses on the east rift escarpment of the Jordan Valley, although the patterns seen hold equally for regions further north (see Fraser 2018: 144-176). First, as shown in **Figure 5**, it is noteworthy that trilithon dolmen fields are constrained by the 250 mm isohyet, regarded as a minimum condition for dry cereal farming in the Levant. This relationship suggests an association between dolmens and sedentary agrarian communities. Furthermore, this observation is underscored by the close spatial relationship between dolmen fields and settlement sites that were occupied in the EB I, as all dolmen cemeteries in the southern Levant are found within 2 km of an EB I settlement, and most within a few hundred metres. Indeed, we can take this correlation further and note a correspondence in size, where small dolmen fields are found near small settlement sites, and large dolmen fields are found near large settlement sites or near dense clusters of small and medium settlements.

Yet this correlation is not absolute. As shown in **Figure 5**, while dolmens are always found near EB I settlements, not all EB I settlements are found near dolmens. Discrete concentrations of dolmens are separated by large areas that were also settled in the 4th millennium BCE, but in which no dolmens are found. Such areas include the Madaba plains, the edge of the north Jordan Valley, and particular side wadis such as the Ziqlab, the Arab and the Yarmouk; indeed, dolmens and settlements are found together in some parts of these wadis, but not in others.

4.2 Dolmens and the geological landscape

In order to explain the geological situation of the dolmens, it is necessary to examine the relationship between trilithon dolmens and surface lithology. The map in **Figure 6** depicts different groups of geological formations by age. At the base of the sequence are outcrops of hard sandstones, and the local outcrop of travertine at Damiyeh. These strata are overlain by dense, microcrystalline limestone formations, which are overlain in turn by mostly soft limestones inter-bedded with phosphates, marls and chalks. While dolmens are always found near EB I settlement sites, they were built only in areas dominated by hard, microcrystalline lithologies that were more conducive to the extraction of large stone slabs than the excavation of subterranean chambers.

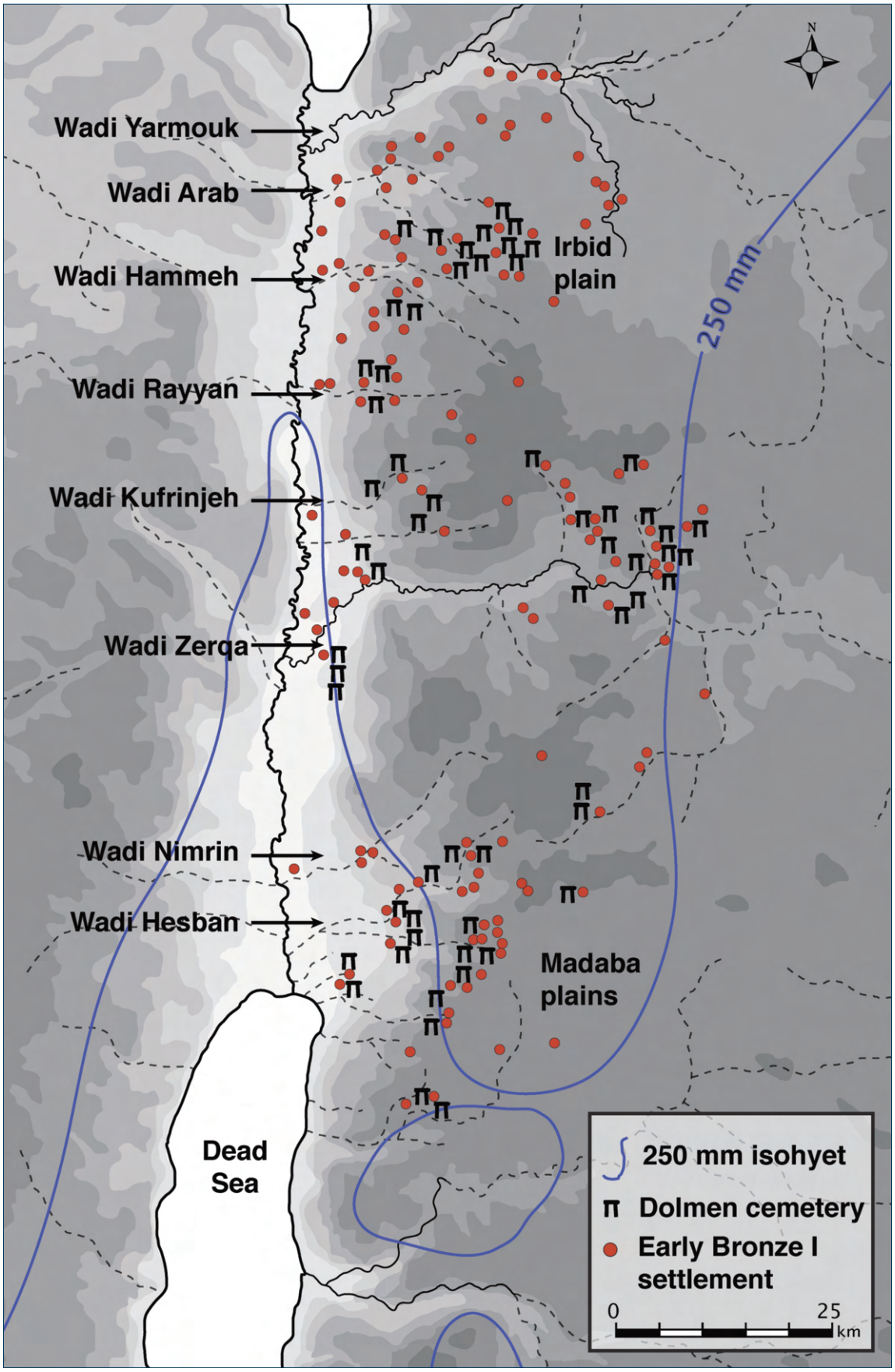

Fig. 5 – Distribution of trilithon dolmen cemeteries and Early Bronze I settlement sites in the southern Levant.

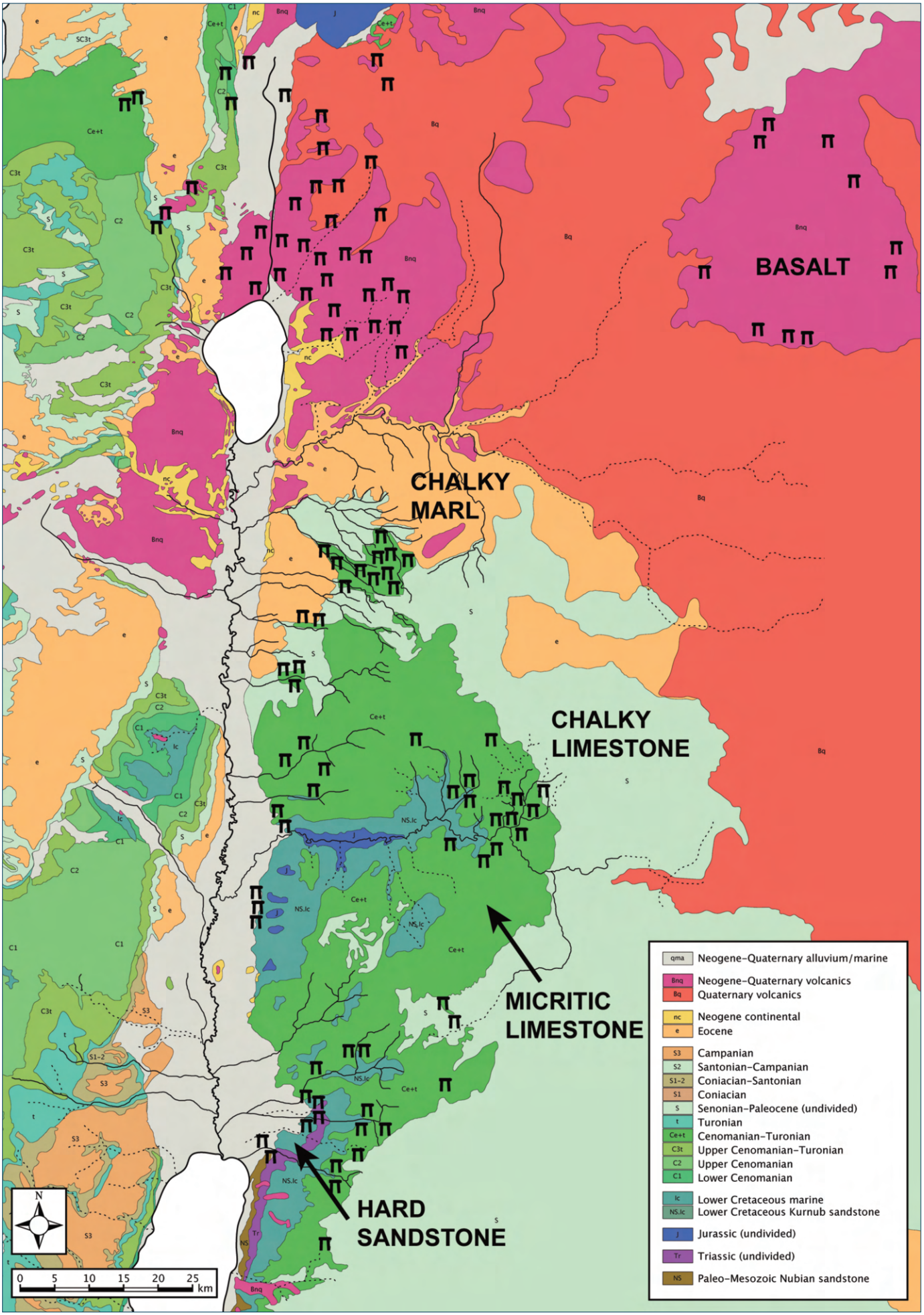

Fig. 6 – Distribution of trilithon dolmen cemeteries and geological strata in the southern Levant.

The Jaulan and Leja plateaux are characterized by hard basalt lava flows. It is striking that dolmens are found in areas dominated by hard, microcrystalline sandstone, limestone and basalt formations, and are absent in areas of softer phosphate, chalk and marl formations, shown in pale green and yellow. The only exceptions are the vast dolmen cemeteries near Irbid and smaller groups in the Wadi Hammeh and Wadi Rayyan in northern Jordan. If, however, we break these chalk and marl formations down into their constituent strata, there is a clear correspondence between these dolmen fields and one particular sub-strata known as the Amman Silicified Limestone formation, which shares the same microcrystalline structure as the hard limestone formations shown in dark green.

We can see these relationships at a finer resolution in north Jordan (**Fig. 7**). Here, dolmens are concentrated on the well-settled Irbid plain, as well as near small settlement clusters in the upper Wadi Hammeh and the Wadi Rayyan. They are not found near settlements further north or west. When overlain onto the geology, it is clear that dolmens are present on outcrops of hard, micritic Amman Silicified Limestone, shown in blue, and are absent in areas dominated by softer chalks (lime green) and marls (red), or those that are covered by deep soils (yellow). Significantly, EB I communities that lived on these green-red-yellow strata buried their dead in subterranean chambers (e.g., Greenberg 2002: 27; Parr 1956) rather than in stone-built chambers above the ground. In short, we can observe a distinct correlation between dolmens and EB I settlements in areas dominated by microcrystalline strata, and a marked absence of dolmens in areas where softer strata are found, even if these areas were also settled in the 4th millennium BCE.

These relationships suggest that trilithon dolmens are best approached as part of local settlement systems. By drawing on this settlement-geology model, we can start to investigate the dolmen tradition diachronically and contextually in relation to changing settlement systems in the Bronze Age southern Levant. In the preceding Chalcolithic period, settlements are concentrated on the alluvial fans of the Jordan Valley floor, where seasonal runoff could be harnessed for flood-water farming. In a shift that probably reflects the onset of drier conditions towards the end of the 5th millennium BCE, settlements in the valley bottom were gradually abandoned, and new sites were founded near the mouths of perennial wadis at the base of the rift escarpment (Bourke 2008). This shift saw populations move off the soft marls and alluviums of the Jordan Valley floor and onto harder formations at the escarpment edge.

These new conditions may have prompted innovation in above-ground tomb architecture. The vast dolmen cemeteries that straddle the sandstone ridges behind the EB I settlements at the north end of the Dead Sea, for example, contrast with the subterranean EB I shaft-and-chamber tomb cemeteries at Jericho, which were cut into the soft alluvium by a community who remained in the Jordan Valley near the strong Jericho spring (Harrison 2001).

Furthermore, EB I settlements continued to expand up the well-watered lateral wadis and onto the Transjordan plateau. This expansion was probably associated with the pull of new economic opportunities afforded by the exploitation of upland horticultural crops such as olive and grape, which grow better in the well-drained rift escarpment than on the flood-prone valley floor. This move saw an intensification of settlement in new geological zones. Simply put, village communities appear to have constructed chambers above the ground in upland areas dominated by hard rock and cut subterranean chambers in lowland areas dominated by soft rock.

5. Perspectives on dolmens and megalithism in the Levant

This settlement-geology model has been challenged for using a taxonomic sleight-of-hand to reduce the chronological range and geographic distribution of a complex and varied megalithic landscape. As Steimer-Herbet argues, the model belies the *'conceptual difficulties inherent in restricting such a complicated archaeological object as the dolmen to a single definition*' and explains that '*the very essence of megalithism is to be found in the builders' intentions – that is to say construction of an above-ground structure that follows certain conventions, such as the use of large slabs and a stone covering, rather than its physical manifestation*' (Steimer-Herbet 2019: 258-259). Ultimately, the debate

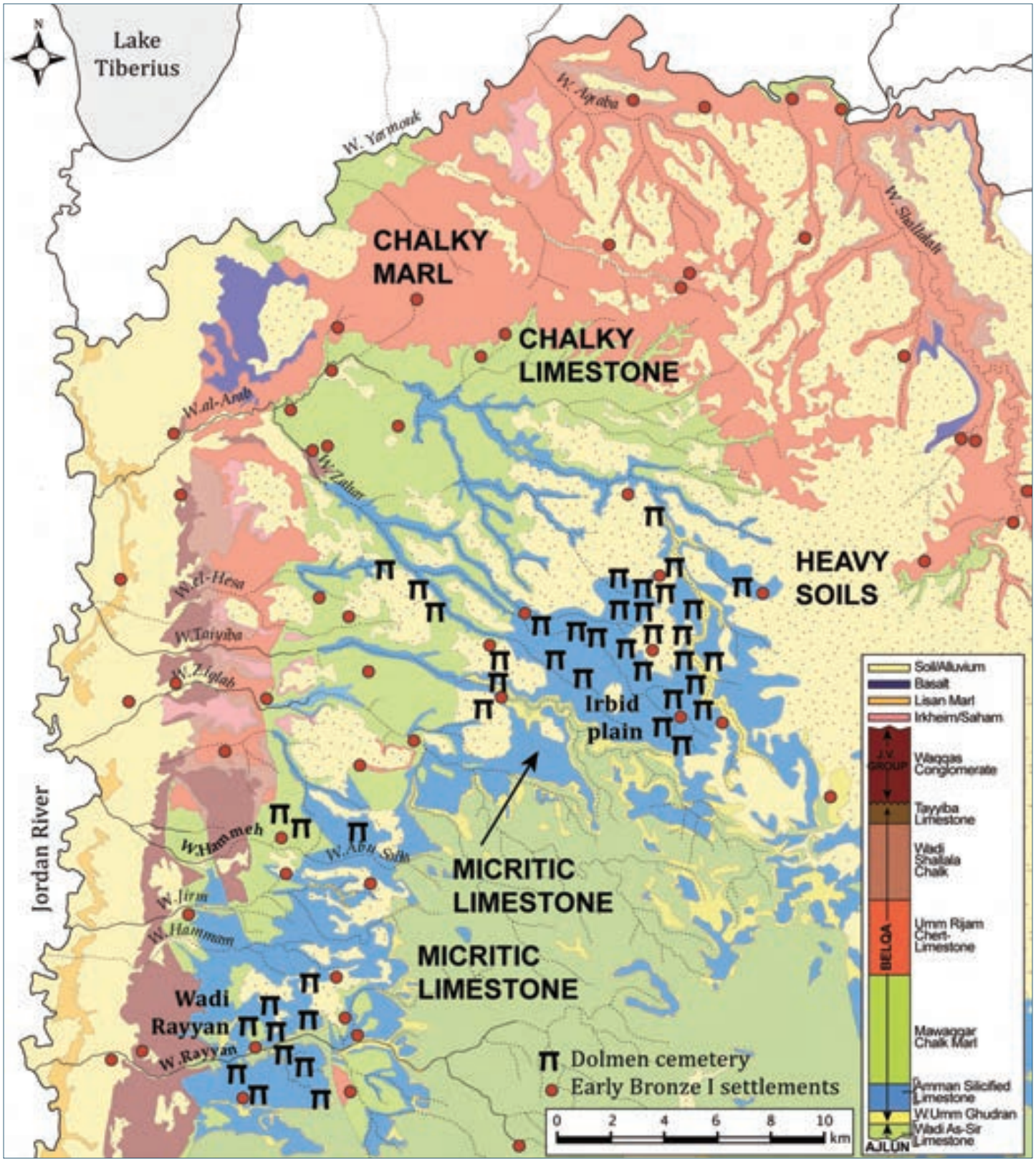

Fig. 7 – Distribution of trilithon dolmen cemeteries, Early Bronze I settlement sites and surface lithologies in north Jordan.

reflects two different theoretical positions concerning the concept of megalithism itself: are contextual approaches best achieved by comparing similar types of megalithic structures (e.g., trilithon-with-trilithon), or by comparing different features within a shared megalithism (e.g., trilithon-with-passage tomb)?

For the last 200 years, scholars working in the Levant have assumed that the inherent monumentality of a dolmen was its *sine qua non* – the driving force behind its construction. In this respect, the settlement-geology model raises an intriguing possibility. The arguments concerning typology, chronology, settlement and geology outlined above coalesce to suggest that trilithon dolmens were constructed as prosaic responses to local conditions rather than as irresistible expressions of megalithism. Unlike many dolmens in northern Europe constructed from carefully selected glacial erratics, dolmens in the Levant are found in areas where it was simply easier to construct a chamber above the ground than to cut one into bedrock. In short, by stressing the monumentality of dolmens in the Levant, are we saying more about ourselves and our traditional European perspectives than we are about the behaviours and perceptions (and intentions) of people in the past?

Indeed, we can push this point further and posit that, when dealing with dolmens in the Levant, we may have significantly overstated the distinction between above-ground and below-ground burial chambers. This observation was initially made by Philip (2008), when he noted similarities in the contents of an EB I dolmen chamber found unrobbed at Umayri in the limestone escarpment of Jordan and the contents of EB I shaft-and-chamber tombs cut into the soft marls and chalks in the Jordan Valley cemeteries around the settlement sites of Jericho and Bab edh-Dhra near the Dead Sea. Although missing its roofstone, the freestanding dolmen chamber at Umayri contained the disarticulated remains of 20 individuals, recalling the 5-25 disarticulated individuals found within each subterranean chamber at Jericho and Bab edh-Dhra. Moreover, the Umayri dolmen yielded a comparable funerary kit, including the same types of ceramic vessels, flint tools, and beaded jewellery. As Philip concluded, '*the shared features of these two burial forms appear at least as strong as the contrast*' (Philip 2008: 195).

The corollary is to consider dolmens as part of a common burial tradition where tomb architecture changes according to geological constraints, but where funerary practices remain constant. This inference suggests that we should envisage dolmen fields as cemeteries, and particularly as upland counterparts to the vast subterranean cemeteries on the Jordan Valley floor. Accordingly, it should be possible to investigate dolmen fields by drawing on theoretical frameworks similar to those with which we interrogate subterranean cemeteries as a matter of course, such as the interplay between social differentiation and mortuary behaviour. Fortunately, the EB I shaft-and-chambers cemeteries at Bab edh-Dhra are some of the most comprehensively excavated, theorized, and published cemeteries in the Middle East (Ortner & Frolich 2008). Chesson and Schaub have examined issues of social differentiation at the cemeteries by comparing the treatment of corporeal remains and analysing the nature of associated grave goods. They failed to document any patterns reflecting the operation of socio-economic hierarchies, and concluded that individual identities were deliberately downplayed at Bab edh-Dhra in order to promote the role of the EB I community (Chesson 2007, 2016; Chesson & Schaub 2007).

As upland above-ground counterparts to lowland below-ground cemeteries, we would expect dolmen cemeteries to reflect similar heterarchical patterns. Yet we find ourselves back at the 'dolmen problem': how can we draw these comparisons if no artefacts remain? Here, the problem becomes an opportunity. While the investigation of a subterranean cemetery such as Bab edh-Dhra demands time and money to expose large numbers of tombs, it is possible to walk an entire dolmen cemetery in an afternoon. While the dolmens may not yield artefacts, above-ground cemeteries present an opportunity to ask similar mortuary questions in different ways, emphasising the configuration of the burial-ground and patterns in the construction, size and shape of the chambers.

6. Case-study: the dolmen cemeteries at Tell Er-Ras, Jordan

To test this theory, the North Jordan Tomb Project surveyed 104 trilithon dolmens in the Wadi Rayyan in 2007 and 2009 (Fraser 2018: 207-248). The well-watered Wadi Rayyan is a steep-sided lateral valley that descends westwards through the east rift escarpment of the Jordan Valley (Figs. 6 and 8). One of its largest dolmen concentrations lies along the prominent ridge-line of Tell er-Ras, within a network of five EB I village sites. As shown in Fig. 8, the ridge is characterized by large surface exposures of micro-crystalline Amman Silicified Limestone (shown in blue). The dolmens are not evenly distributed on the ridge, but rather are clustered in small, discrete groups and sub-groups, reminiscent of the distribution of EB I shaft-and-chamber tombs at Bab edh-Dhra that probably reflect family lineages (Fig. 9). Dolmen morphology at Tell er-Ras was comprehensively documented including: the size of all constituent elements; the proportions of the chambers; the ratio of height with length and width; the nature of auxiliary features such as stone rings and platforms; and the orientation of the chamber. Rather than reflecting a broad response to megalithism, the cemetery demonstrates that dolmen builders conformed to a striking homogeneity in construction, form and size (Fraser 2018: 249-300). This situation mirrors Bab edh-Dhra, where Ortner and Frolich (2008) observe a marked consistency in shaft-tomb morphology, underscoring Chesson's documentation of a standardized burial kit and treatment of corporeal remains (2007).

Indeed, the only significant variation within the corpus of dolmens at Tell er-Ras is the fact that in some cases, between one and five chambers share a single stone platform (Fig. 10). It is tempting to draw parallels between this situation and Bab edh-Dhra, where up to five chambers could be accessed by a single shaft. A study of dental morphology has shown that individuals interred at Bab edh-Dhra in chambers accessed by a shared shaft were more likely to be genetically related than those in chambers accessed by their own individual shafts

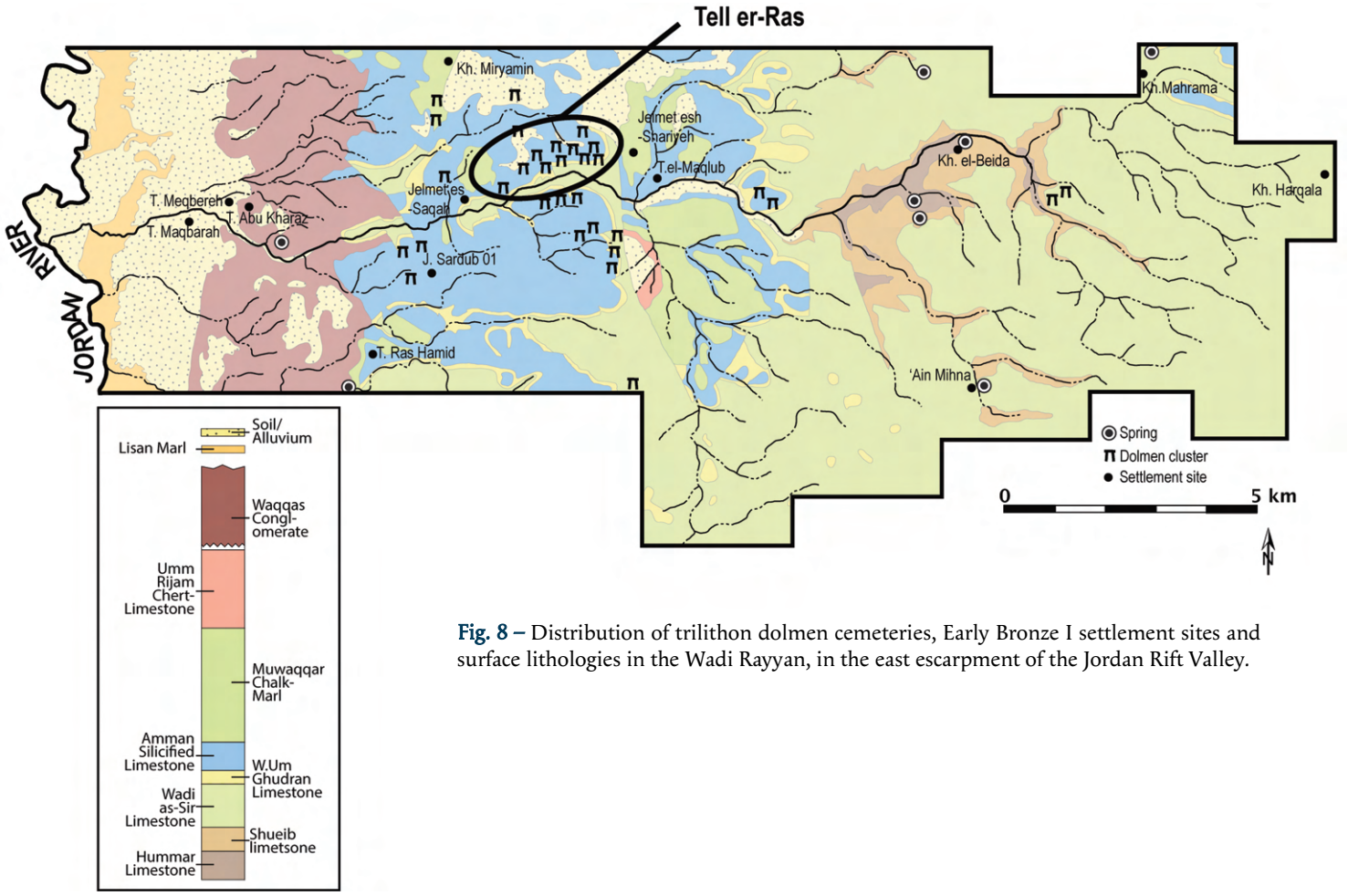

Fig. 8 – Distribution of trilithon dolmen cemeteries, Early Bronze I settlement sites and surface lithologies in the Wadi Rayyan, in the east escarpment of the Jordan Rift Valley.

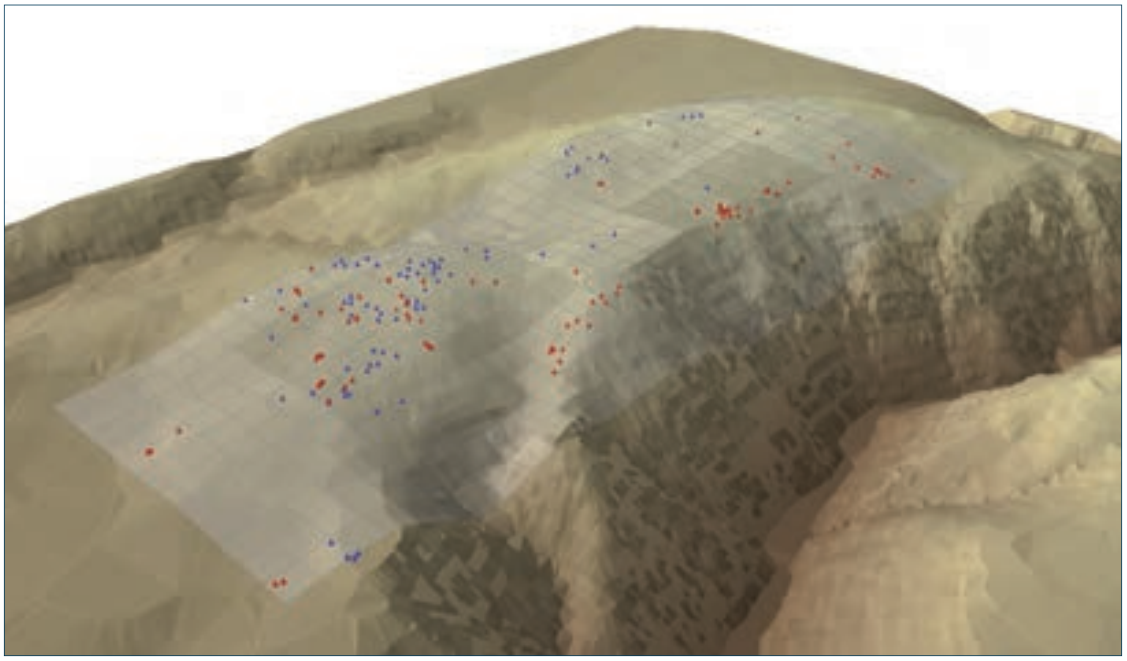

Fig. 9 – Grid surveyed at Tell er-Ras by the North Jordan Tomb Project. Red triangles denote trilithon dolmens. Blue triangles denote rubble cairns, including possible cairn-tombs.

Fig. 10 – Dolmens on a shared platform at Tell er-Ras (plan by Kerrie Grant). Inset: dolmen 140 (Photo: A. Carr).

(Bentley & Perry 2008); it is possible that the dolmens on shared platforms at Tell er-Ras were used to inter kin groups in much the same way, although this suggestion awaits robust excavation.

Approaching dolmens as communal tombs for kin-based, heterarchical communities deviates from enduring concepts of dolmens as tombs for a tribal elite, predicated on the assumption that their construction must have involved a substantial labour force assembled through elite coercion (Al-Shorman 2010: 48; Helms 1987: 53; Zohar 1992: 54). Curiously, few researchers have addressed issues of dolmen construction in the Levant. With the exception of an excellent case-study at Damiyeh (de Vreeze 2010), the enthusiastic musings of Capt. Claude Conder (1889) remain the definitive account, drawing on observations made during his *Survey of Eastern Palestine*. Dolmen studies in the Levant thus trail megalith studies in Europe, India and beyond, which stress the process and social agency of megalith making (e.g., Morrison *et al.* 2016; Scarre 2011).

In this respect, the excavation of a partly hewn slab at Tell er-Ras helps us reconstruct techniques of quarrying, extraction and moving megalithic blocks, and perhaps offers insight into the social processes behind these processes. As shown in **Fig. 11**, the dolmen builders targeted benches of exposed limestone with the inter-bedded seams of flint that give the Amman Silicified Limestone formation its name. Two vertical channels were detected on one raised bench, defining the lateral sides of a block that would probably have served as a roof stone. Excavations discovered that the slab had been entirely undercut by removing a 0.20 m-thick seam of brown flint leaving it attached to the parent rock only along the lateral edges. Substantial amounts of shattered flint debris were collected from beneath

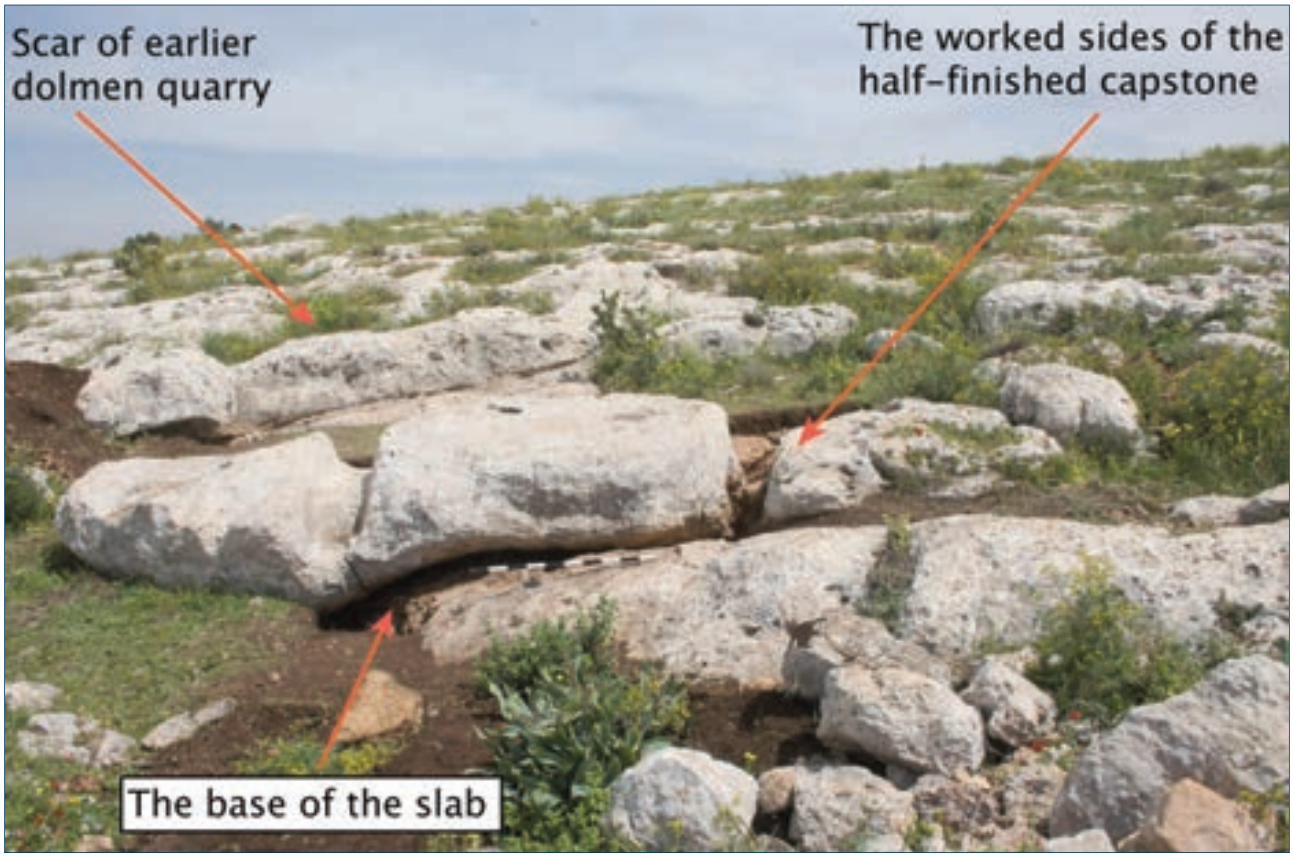

Fig. 11 – Partly hewn dolmen slab with a quarried scar in the background, at Tell er-Ras, Jordan (Photo : A. Carr).

the slab and from immediately upslope where the debitage had been upcast. The brittle flint could have been broken by direct force, or by heating it to high temperatures then rapidly cooling it with water, causing the siliceous stone to shatter. It is unclear why the partly hewn block was abandoned. Perhaps it was found to dip too markedly at one end or, more probably, it was never abandoned at all but simply partly quarried (during a period of light agricultural duties?) in readiness for a time when it would be needed.

The dolmen chambers at Tell er-Ras were constructed only a short distance (around 15 m) down-slope from the quarries that produced their megalithic blocks. Rather than reflecting the operation of a large, elite-controlled labour force, the extraction and movement of these slabs could have been achieved by small groups, especially if donkeys were used to help transport the stones. While calculations regarding the minimum amount of labour have been offered elsewhere (Fraser 2018: 317-334), perhaps these figures miss the point. As Scarre (2011: 17) posits, the cooperative labour involved in building megaliths '*may be considered an act of social construction as much as it is one of monument-building*' (Scarre 2011: 17). In this respect, a more important figure may be the maximum number of people that could take part, whereby the quarrying, extraction and construction event(s) at Tell er-Ras helped promote and maintain the social cohesion of nearby EB I corporate village communities.

7. Conclusion

Despite its long history of research, megalith studies in the Levant remain mired by ill defined terms and confused taxonomies. Traditional typologies have obfuscated the complex palimpsest of the region's megalithic landscapes, with significant implications for our understanding of their temporal properties. Given the conflated megalithic traditions and spurious classes that some typologies have defined, we must question whether typological approaches are at all appropriate in dolmen studies, especially given the paucity of secure dating criteria such as excavated cultural remains or radiometric dates. Yet by dispensing with typologies altogether, we place the burden of taxonomic responsibility back onto the term 'dolmen', and so we find ourselves back in the same *cul-de-sac* of definition in which the discipline got stuck in 1985.

This paper has attempted to pursue a middle way by investigating a particular class of dolmens – trilithon dolmens – that constitute a coherent and recognizable burial tradition. By addressing the issue of morphological variability in this way, we can approach these megaliths contextually with respect to settlement systems, burial practices, and the topographic and geological landscape. Although the 'dolmen problem' remains a recurrent phrase in dolmen studies in the Levant, these research directions suggest that the problem may ultimately lie with our own European-derived perceptions of megalithism. If we interrogate Levantine dolmens with different research agendas, then perhaps we can start to make these stones speak.

Acknowledgements

I am tremendously grateful for the opportunity to participate in the International Meeting: Megaliths of the World, and especially for the kindness and geniality of Luc Laporte, Jean-Marc Large, Sophie Corson and their countless volunteers. This paper is better for the stimulating presentations and convivial discussions with colleagues from across the world. I am indebted to Peta Knott, Nadia Knudsen, Dr Barbara Porter and Dr Peta Seaton for reading drafts of the manuscript, and for the comments of two anonymous reviewers. All errors remain my own.

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Olivia MUNOZ

Protohistoric cairns and tower tombs in South-Eastern Arabia (end of the 4th - beginning of the 3rd millennium BCE)

Abstract: This article presents a synthesis of current knowledge regarding tower-tombs or Hafit-type tombs. Thousands are found within the Oman Peninsula, within the southeastern Arabian Peninsula, and they are usually associated with the beginning of the Bronze Age (the end of the 4th to the beginning of the 3rd millennium BCE). This apparently large-scale funerary phenomenon is contextualized, and the history of discovery and the orientation of current research are discussed. Finally, the chronocultural timeline is presented, before the traits that characterize these funerary monuments are described. Throughout this article, the available data on locations and use-time of the necropolises, tomb architecture, funerary practices, and the biological data of the individuals deposited within them, are accompanied by a reminder of the challenges and perspectives nourishing current research on this topic.

Keywords: *Oman Peninsula, Arabia, Hafit-type tombs, tower-tombs, cairns, Early Bronze Age*

1. Introduction

1.1 A large-scale megalithic phenomenon…

Still visible in their thousands in the modern landscape, the Hafit-type tombs – named after the site where they were first discovered – are emblematic monuments of the Early Bronze Age of southeastern Arabia, and of the Oman Peninsula (currently the territory of the United Arab Emirates and the Sultanate of Oman), and this earned the sites of Al-Ayn and Bat a place on the UNESCO World Heritage list. Also termed 'cairns', 'beehive tombs' or 'tower tombs' according to their morphology, these drystone constructions in the shape of truncated cones or igloos are generally set on elevated areas within the landscape and grouped in necropolises that can include over a hundred tombs (**Fig. 1**). Considered as markers of resources and territories, they bear witness to a true anthropization of the landscape: they punctuate all areas frequented by human groups within an immense territory.

While they present great variations in morphology and architecture, their aspect and funerary function links them to a large-scale megalithic phenomenon that characterized the entire Arabian Peninsula

Fig. 1 – Example of tombs from Eastern Arabia: a. Shir (Oman); b, c. Al-Ayn (Oman); d. Ra's al-Jinz (Oman); e. Shiyā (Oman); f. Shifyah (Saudi Arabia) [Photos: Anonymous (a-d); O. Munoz (e-f)].

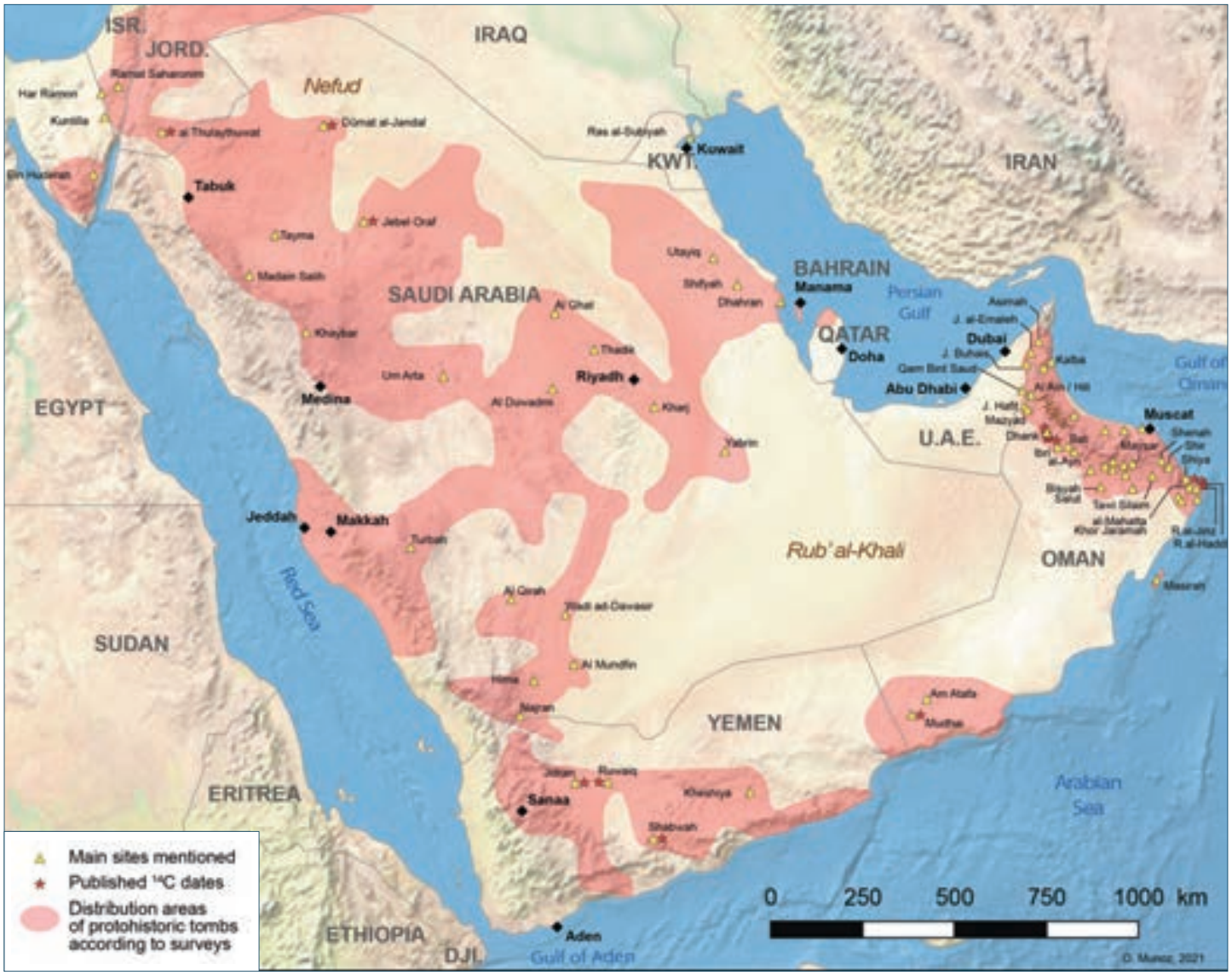

Fig. 2 – Distribution map of tower-tombs and cairns within the Arabian Peninsula and its margins, localization of the principal sites mentioned in the text and tombs dated through radiocarbon analysis (Data compiled from Munoz 2014: fig. 2.3; Chevalier 2017: fig. 2; Deadman 2017: fig. 9.11, A1).

during protohistory (**Fig. 2**). Indeed, hundreds of thousands of similar monuments can be found in the Sinai Peninsula and the Negev (*nawamis*: Bar-Yosef 1977; Haiman 1992; Saidel 2017); southern Jordan (Abu-Azizeh *et al.* 2014); Kuweit (tumuli: Rutkowski *et al.* 2015); Saudi Arabia (cairns: Adams *et al.* 1977; Hashim 1996; Chevalier 2016; Munoz *et al.* 2020); Oman (cairns, beehive tombs, tower-tombs, Hafit tombs, tumuli: al-Jahwari 2013; Böhme 2011; Cleuziou 2002b; de Cardi *et al.* 1976; Williams & Gregorička 2020; Yule & Weisgerber 1998); and all the way to Yemen (*dirm* tombs, turret tombs, cairns: de Maigret 1990; Braemer *et al.* 2001; Steimer-Herbet 2004; Steimer-Herbet *et al.* 2006). They are sometimes associated with raised stone alignments ('trains') or other structures made of piled stones (rock piles).

To the north and south of the Arabian Peninsula, these stone tombs replace or accompany other forms of monumental architecture, all bearing witness to a growing imprint of human groups on their environment, as well as to an intense marking of the territory during the middle Holocene (Neolithic and Bronze Age). Indeed, a great variety of megalithic structures have been inventoried in areas comprising groups of tombs. These include trapezoid

or rectangular platforms (McCorriston *et al.* 2012; 2014; Munoz *et al.* 2020), stelae and raised stone circles, dolmens (Zarins 1979; Steimer-Herbet 2011), and impressive stone alignments reaching hundreds of metres and adopting various forms (gates, mustatils, pendants, bulls-eyes, and tapered structures; for examples see Zarins *et al.* 1979; Kennedy 2011, 2017; Groucutt *et al.* 2020). These arrangements are usually interpreted as sanctuaries, cenotaphs, or ceremonial meeting places associated with funerary or ritual practices.

1.2 … Over the long-term

The chronological amplitude of this funerary phenomenon and its large-scale diffusion (over a territory over three million km^2), the rarity of absolute dating and of standardized excavations, coupled with a regional fragmentation of research, makes it difficult to establish a global evolutive synthesis that accounts for all local variants. Recent research, however, indicates that their appearance is relatively precocious – since some tombs are dated to the end of the 6th millennium BCE – and that their use endures, albeit in an intermittent manner, until at least the 1st millennium BCE (**Figs. 3** and **4**, and see below).

Three cairns explored in southern Jordan, in the Al-Thulaythuwat area, were radiocarbon dated to the end of the 6th through to the beginning of the 5th millennium BCE (Abu-Azizeh *et al.* 2014). To the south of the Nefud desert, near Jebel Oraf, similar tombs have been dated to the middle Neolithic, and linked to the first pastoralist nomads occupying the region (Guagnin *et al.* 2020). In the Dûmat al-Jandal region, in the north of Saudi Arabia, a series of radiocarbon dates for the use of the cairns indicate a timeframe from the 5th to the 1st millennium BCE (Munoz *et al.* 2020).

To the east of the Arabian Peninsula, in the Oman Peninsula, tower tombs are traditionally attributed to the Early Bronze Age (Hafit period, 3200-2700 BCE), marking the end of the humid period of the Holocene and the emergence of copper exploitation, the development of oasis agriculture, and an intensification of intra- and interregional exchanges (Cleuziou & Tosi 2007; Magee 2014; Bortolini & Munoz 2015). Nonetheless, recent

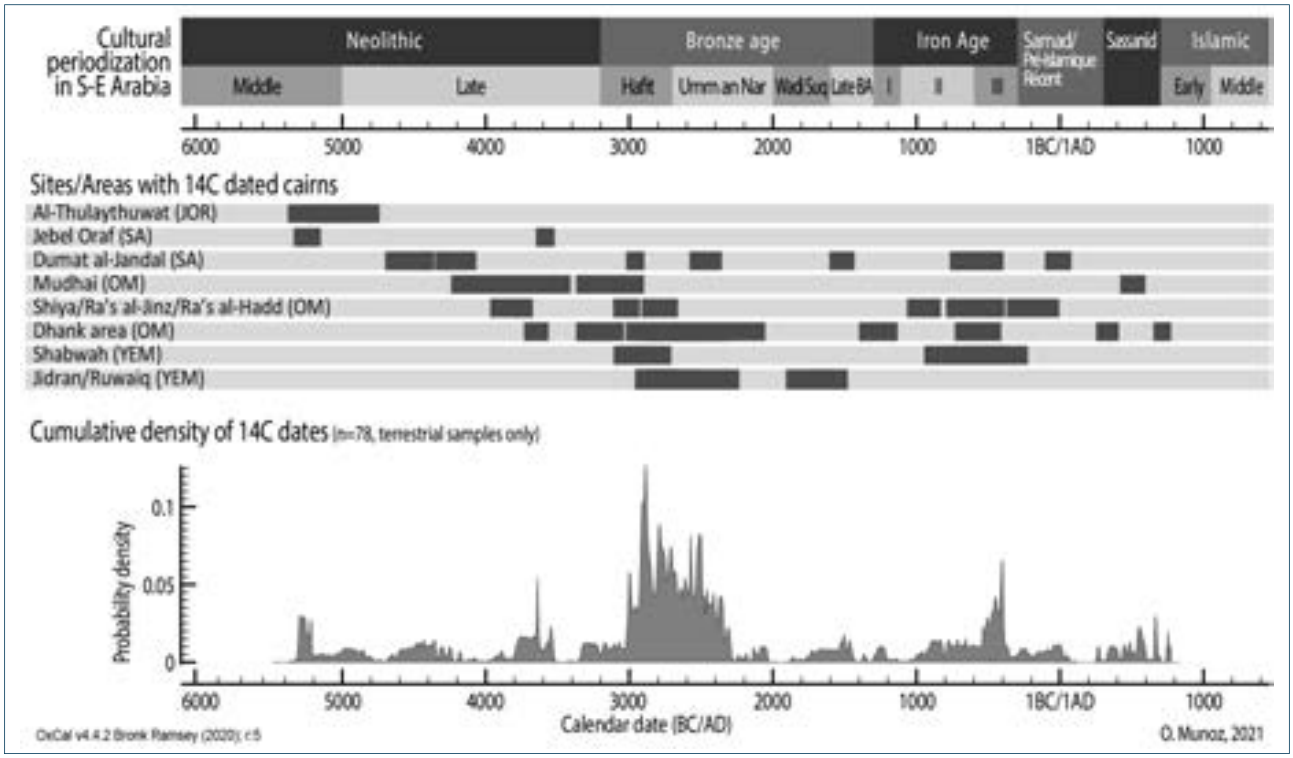

Fig. 3 – Chronological distribution according to regional attribution of tower tombs and cairns dated through radiocarbon analysis and cumulated density of ^{14}C dates (n=78, terrestrial samples only).

research shows that the systematic chronological attribution of these tombs to the Early Bronze Age during prospection must be relativized and nuanced. Compiling the absolute dates obtained from the Dhofar tombs (Mudhai: Williams *et al.* 2014), in the piedmont of the Jebel Hajar (Dhank region: Williams & Gregorička 2020), or the coast of the Sea of Oman (Shiyā, Ra's al-Hadd and Ra's al-Jinz: this article) indicate that monumental stone tombs have been erected since the Late Neolithic and used until the 1st millennium BCE. The use of the funerary structures is particularly intense at the beginning of the 3rd millennium, during the Hafit period, with another increase at the end of the Iron Age (between 600 and 300 BCE) (**Fig. 3**). This late re-use of the tombs during the Iron Age is attested through stratigraphic observations (Munoz *et al.* 2017) or, more frequently, through the presence of Iron Age artefacts in reemployed tombs (Schreiber & Häser 2004; Döpper 2014; al-Jahwari 2016; Madsen 2018: 223).

In Yemen, available absolute dates suggest a construction phase at the beginning of the Bronze Age, continuing through the 2nd millennium BCE, and a re-use phase during the Iron Age (Braemer *et al.* 2001; Crassard *et al.* 2010) (**Fig. 3**).

An overview is now presented, summarizing the research conducted within the Oman Peninsula (i.e., in the United Arab Emirates and the Sultanate of Oman), where these tombs have been a focus for numerous researchers; this will provide an opportunity to discuss the various approaches used. I will then describe in more detail the monuments known in southeastern Arabia as 'Hafit tombs', which supposedly mark the beginning of the Bronze Age (around 3200-2700 BCE). A review of tomb distribution, architectural variability, and associated artefacts, as well as funerary and bio-anthropological data yielded from human remains, all provide axes of reflection through which to analyse this funerary phenomenon. Throughout this synthesis, I will draw out the challenges facing current research and highlight approaches still to be developed.

2. Pioneering research and current orientation

2.1 First explorations in *terra incognita*

In the southeast of the Arabian Peninsula, the first archaeological research was initiated in the 1950s by a Danish team led by Geoffrey Bibby. It focused first on the island of Bahrain, with the exploration of tumulus-like monuments typical of the island (Bibby 1969). Bibby aimed to identify the lands of 'Dilmun' and of 'Magan' mentioned in late 3rd millennium BCE Mesopotamian texts as purveyors of copper and diorite. The publication of *Looking for Dilmun* (Bibby 1969), which synthesizes his discoveries in a romanticized manner, raised the interest of orientalists for a region that had, until then, been ignored. The mention of Mesopotamian potteries and of soft stone vases from Iran meant that the southern coast of the Persian Gulf could be integrated into the Mesopotamian and Iranian complex, providing the first elements of a relative chronology.

Later, several research teams explored particular sites such as Umm an-Nar, Jebel Hafit, Hili, Bat, Maysar and Ra's al-Jinz. These yielded the first construction elements for a chrono-cultural sequence and for the definition of local material cultures (Frifelt 1968, 1970, 1975a-b, 1991, 2002; de Cardi 1975; de Cardi *et al.* 1976, 1977; Tosi 1976; Cleuziou & Costantini 1980; Weisgerber 1980, 1981, 1983, 1984; Cleuziou 1989; Cleuziou & Tosi 2000a; see also Tosi 1989 for a history of early research). This pioneering research focused primarily on the Bronze Age (3rd millennium BCE), which witnessed the appearance of numerous innovations. These first studies described the emergence of the first oases, the establishment of exchange networks at various scales, and the conditions within which copper was exploited.

At the same time, the discovery of the monumental stone tombs that were present across the entire territory, and easily identifiable thanks to the absence of vegetation, drew the interest of many researchers. In 1962, a Danish archaeological team led by K. Thorvildsen undertook the first scientific excavations of this kind of tomb in the Jebel Hafit, near al Aïn (Abu Dhabi), and these were then continued in an intermittent manner until 1971 (Frifelt 1970, 1975a-b; Madsen 2008: 15-22). The

Country	Site/Acronyme/Structure/#individual/Lab#	Sample	Age 14C BP	calBC/AD, 2σ		Reference
Jordan	Al-Thulaythuwat/TH.311#A/P784/AA85549	Human apatite	6250±57	-5360	-5040	Abu-Azizeh *et al.* 2014, p. 167
	Al-Thulaythuwat/TH.309#E/P783/AA85548	Human apatite	6067±54	-5210	-4800	Abu-Azizeh *et al.* 2014, p. 167
	Al-Thulaythuwat/TH.240#E/Pa2488	Human apatite	6010±70	-5205	-4720	Abu-Azizeh *et al.* 2014, p. 167
Saudi Arabia	Dumat al-Jandal/DJ/T_ L2201/SacA-44357	Human apatite	5735±30	-4685	-4495	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_1089/SacA-44370	Human apatite	5645±30	-4545	-4365	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_L2206/SacA-44358	Human apatite	5545±30	-4450	-4340	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_1086/SacA-44367	Human apatite	5385±30	-4335	-4060	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_1091/SacA-44378	Human apatite	4310±30	-3015	-2880	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_1087/SacA-44368	Human apatite	3960±30	-2575	-2345	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_1088/SacA-44369	Human apatite	3235±30	-1605	-1425	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_L2207/SacA-44359	Human apatite	2470±30	-770	-420	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_1090/SacA-44371	Human apatite	2390±30	-725	-390	Munoz *et al.* 2020
	Dumat al-Jandal/DJ/T_L2204_SU2910/UBA-33306	Charcoal	2026±32	-110	80	Munoz *et al.* 2020
	Jebel Oraf/ORF132A/Double cairn/UGAMS 44682	Marine shell	**7900±30	-6185	-5875	Guagnin *et al.* 2020
	Jebel Oraf/ORF125B/Cairn/UGAMS 36030	Human apatite	6270±25	-5320	-5130	Guagnin *et al.* 2020
	Jebel Oraf/ORF108/Cairn A/UGAMS 44684	Human apatite	4780±25	-3640	-3520	Guagnin *et al.* 2020
Oman (Interior)	Abu Silah/S021-001,#C/UGAMS 20175	Human apatite	4330±25	-3015	-2895	Williams, Gregoricka 2019
	Abu Silah/S021-001,#F/UGAMS 20177	Human apatite	4140±25	-2875	-2585	Williams, Gregoricka 2019
	Abu Silah/S021-001,#D/UGAMS 20176	Human apatite	4130±25	-2870	-2580	Williams, Gregoricka 2019
	Abu Silah/S021-001,#B/UGAMS 20174	Human apatite	4070±25	-2850	-2490	Williams, Gregoricka 2019
	Abu Silah/S021-001,#A/UGAMS 14211	Human apatite	1330±20	650	775	Williams, Gregoricka 2019
	Al Aflaj/S020-001,#A/UGAMS 20178	Human apatite	6280±25	-5315	-5210	Williams, Gregoricka 2019
	Al Aflaj/S020-002,#A/UGAMS 20182	Human apatite	3920±20	-2475	-2305	Williams, Gregoricka 2019
	Al Aflaj/S020-002,#B/UGAMS 20183	Human apatite	3910±25	-2470	-2295	Williams, Gregoricka 2019
	Al Khubayb/S002-001,#B/UGAMS 11159	Human apatite	4490±25	-3350	-3090	Williams, Gregoricka 2013
	Al Khubayb/S007-001, locus 003/UGAMS 11161	Charcoal	4230±25	-2910	-2700	Williams, Gregoricka 2013
	Al Khubayb/S007-003,#C/UGAMS 11158	Human apatite	4170±25	-2885	-2635	Williams, Gregoricka 2013
	Al Khubayb/S002-001,#C/UGAMS 11156	Human apatite	4110±30	-2870	-2570	Williams, Gregoricka 2013
	Al Khubayb/S007-167/UGAMS 17150	Charcoal	4130±25	-2870	-2580	Williams, Gregoricka 2019
	Al Khubayb/S007-057,#D/UGAMS 14213	Human apatite	4050±25	-2835	-2470	Williams, Gregoricka 2020
	Al Khubayb/S007-011,#A/UGAMS 17148	Human apatite	4045±25	-2665	-2470	Williams, Gregoricka 2020
	Al Khubayb/S007-167,#A/UGAMS 17151	Human apatite	4040±25	-2630	-2470	Williams, Gregoricka 2020
	Al Khubayb/S007-003, Locus 004/UGAMS 11160	Charcoal	4030±25	-2625	-2470	Williams, Gregoricka 2013
	Al Khubayb/S007-012,#A/UGAMS 17149	Human apatite	4030±25	-2625	-2470	Williams, Gregoricka 2020
	Al Khubayb/S007-057,#A/UGAMS 14212	Charcoal	4030±20	-2620	-2470	Williams, Gregoricka 2019
	Al Khubayb/S007-169,#A/UGAMS 17152	Human apatite	3900±25	-2470	-2295	Williams, Gregoricka 2019
	Al Khubayb/S002-001,#A/UGAMS 11157	Human apatite	1710±25	250	415	Williams, Gregoricka 2013
	Al Khutma/S002-082,#A/UGAMS 20197	Human apatite	4250±25	-2915	-2705	Williams, Gregoricka 2019
	Al Khutma/S002-046,#A/UGAMS 20190	Human apatite	4170±25	-2885	-2635	Williams, Gregoricka 2019
	Al Khutma/S002-049,#A/UGAMS 20191	Human apatite	4160±25	-2880	-2630	Williams, Gregoricka 2019
	Al Khutma/S002-050,#A/UGAMS 20192	Human apatite	4130±25	-2870	-2580	Williams, Gregoricka 2019
	Al Khutma/S002-058,#A/UGAMS 20195	Human apatite	3910±30	-2470	-2295	Williams, Gregoricka 2019
	Al Khutma/S002-052,#A/UGAMS 20193	Human apatite	3870±25	-2465	-2205	Williams, Gregoricka 2019
	Al Khutma/S002-059,#A/UGAMS 20196	Human apatite	3710±20	-2200	-2030	Williams, Gregoricka 2019
	Al Khutma/S002-053,#A/UGAMS 20194	Human apatite	2410±20	-720	-400	Williams, Gregoricka 2019
	Dank region/Necropolis 6/S022-012,#A/UGAMS 20198	Human apatite	4850±25	-3705	-3530	Williams, Gregoricka 2019
	Dank region/Necropolis 6/S022-048,#A/UGAMS 20199	Human apatite	3010±25	-1385	-1125	Williams, Gregoricka 2019

Fig. 4 – ^{14}C dates from cairns and tower tombs within the Arabian Peninsula.

Country	Site/Acronyme/Structure/#individual/Lab#	Sample	Age 14C BP	calBC/AD, 2σ		Reference
Oman (Interior)	Mudhai/D001-001,#A/?	Human apatite	4980±140	-4215	-3375	Williams *et al.* 2014
	Mudhai/D001-001,#C&E/?	Human apatite	4452±42	-3340	-2930	Williams *et al.* 2014
	Mudhai/D001-001,#B/?	Human apatite	4315±43	-3085	-2875	Williams *et al.* 2014
	Mudhai/D001-004,#A/?	Human apatite	1533±36	430	605	Williams *et al.* 2014
	Mudhai/D001-005,#A/?	Human apatite	1533±36	430	605	Williams *et al.* 2014
Oman (coast)	Ra's al-Hadd/HD-7/T6/SacA-11378	Human apatite	*4730±30	-3635	-2390	Munoz, cet article
	Ra's al-Hadd/HD-7/T4/SacA-11381	Human apatite	*4485±30	-3345	-2065	Munoz, cet article
	Ra's al-Hadd/HD-7/T5/SacA-11374	Human apatite	*4100±30	-2865	-1555	Munoz, cet article
	Ra's al-Hadd/HD-7/T5/SacA-11373	Human apatite	*4045±30	-2835	-1500	Munoz, cet article
	Ra's al-Hadd/HD-9/T6, US423/BM-3098	Charcoal	2780±50	-1050	-815	Ambers, Bowman 1999, p. 191
	Ra's al-Hadd/HD-9/T49, US408/BM-3097	Charcoal	2470±45	-770	-415	Ambers, Bowman 1999, p. 191
	Ra's al-Jinz/RJ-6/T2#2789, (M3infG);/AA-90262/P-977	Human enamel	*4487±43	-3360	-2050	Munoz, cet article
	Ra's al-Jinz/RJ-6/T3,molaire/AA-90265/P-980	Human enamel	*4499±42	-3360	-2065	Munoz, cet article
	Ra's al-Jinz/RJ-6/T5#2788, (M3infG);/AA-90263/P-978	Human enamel	*4401±53	-3335	-1915	Munoz, cet article
	Ra's al-Jinz/RJ-6/T6/Beta-526839	Charcoal	4180±30	-2890	-2635	Munoz, cet article
	Shiya/SHI/T5/Beta-470767	Charcoal	4990±30	-3940	-3650	Munoz, cet article
	Shiya/SHI/T4/Beta-526837	Charcoal	4940±30	-3780	-3645	Munoz, cet article
	Shiya/SHI/T3#B/SacA-47069	Human apatite	*4620±30	-3515	-2235	Munoz, cet article
	Shiya/SHI/T6/Beta-470768	Charcoal	4480±30	-3345	-3030	Munoz, cet article
	Shiya/SHI/T1/SacA-47062	Human apatite	*4415±30	-3320	-1965	Munoz, cet article
	Shiya/SHI/T2/SacA-47064	Human apatite	*4355±30	-3085	-1895	Munoz, cet article
	Shiya/SHI/T2/SacA-47063	Charcoal	4350±30	-3080	-2895	Munoz, cet article
	Shiya/SHI/T3/SacA-47065	Charcoal	4350±30	-3080	-2895	Munoz, cet article
	Shiya/SHI/T3#A/SacA-47068	Human apatite	*2295±30	-410	620	Munoz, cet article
Yemen	Jidran/T81-1/Pa-2034	Charcoal	4280±80	-3315	-2580	Braemer *et al.* 2001
	Jidran/T105/Pa-2036	Human apatite	4220±40	-2910	-2665	Braemer *et al.* 2001
	Jidran/T102#3/Pa-2026	Human apatite	4175±40	-2890	-2630	Braemer *et al.* 2001
	Jidran/T106#10/Pa-2037	Human apatite	4045±60	-2870	-2455	Braemer *et al.* 2001
	Jidran/T103#4/Pa-2023	Human apatite	3960±80	-2850	-2200	Braemer *et al.* 2001
	Jidran/T 109#19/Pa-2038	Human apatite	3400±60	-1880	-1530	Braemer *et al.* 2001
	Jidran/T104/Pa-2028	Human apatite	3325±60	-1750	-1450	Braemer *et al.* 2001
	Ruwaiq/T101/Pa-1886	Human apatite	4235±50	-2925	-2630	Braemer *et al.* 2001
	Ruwaiq/T2/Pa-1898	Human apatite	4210±60	-2920	-2580	Braemer *et al.* 2001
	Ruwaiq/T1/Pa-1900	Human apatite	4200±50	-2905	-2630	Braemer *et al.* 2001
	Shabwah gov./YLNG 10/T5#1/?	Human apatite	4310±40	-3075	-2875	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T5#2/?	Human collagene	4225±35	-2910	-2670	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T7#7/?	Human collagene	2710±35	-920	-805	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T7#6/?	Human collagene	2555±35	-805	-545	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T6#5/?	Human collagene	2390±30	-725	-390	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T6#3/?	Human collagene	2370±30	-545	-385	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T6#4/?	Human collagene	2340±30	-520	-360	Crassard *et al.* 2010
	Shabwah gov./YLNG 10/T7#8/?	Human collagene	2250±30	-395	-200	Crassard *et al.* 2010

Fig. 4 (suite) – ^{14}C dates from cairns and tower tombs within the Arabian Peninsula.

^{14}C dates on charcoal sample are calibrated with 2σ age ranges, with Oxcal 4.4, Curve IntCal20 (Reimer *et al.* 2020) ; * Human apatite with possible marine diet: calibrated 2σ age ranges are calculated with Oxcal 4.4, Curve Marine20 (Heaton *et al.* 2020), according to a 0-100% proportion of marine resources in the diet, taking into account the local marine reservoir effect (Δ R= 210 ±15; Saliège *et al.* 2005) ; ** Marine Shell, calibrated with Oxcal 4.4, CurveMarine20 (Heaton *et al.* 2020), Local Marine Delta R= 210 ±15 (Saliège *et al.* 2005).

artefacts they contained and the evolution of their architectural form made them excellent references to establish a chronological sequence (Frifelt 1975a-b; Tosi 1976; Cleuziou 2002a). During the first excavations of these monuments, Frifelt noticed the presence of Mesopotamian pottery of the Jemdet Nasr type (Frifelt 1970: 378), allowing the attribution of the Jebel Hafit tombs to the end of the 4th to the beginning of the 3rd millennium BCE, although an external origin was confirmed by petrochemical analyses in later studies (Méry & Schneider 1996: 93).

These tombs represent a particularly important source of information, since there are few settlement sites for the Early Bronze Age. Indeed, the human groups occupying the peninsula invested only sparsely in domestic architecture, and only at later dates. This is in stark contrast to their funerary monuments, which constitute territorial markers during the Neolithic and *a fortiori* during the Bronze Age. They were built to be visible and to endure (Méry & Charpentier 2009; Bortolini & Munoz 2015).

Ultimately, the history of research on these tombs reflects that of archaeological research in the wider area (see Munoz 2014: 23-32). The fact that these tombs seem to appear at the end of the 4th millennium with no precedent, at a time when contact with other regions can be identified, led archaeologists to search for an external influence to explain the emergence of new funerary practices. The presence in the tombs of imported ceramics from Mesopotamia supported this idea (see for example **Fig. 8: R**). During Caspers (1971) proposed that these were the tombs of merchants or settlers who relocated to the area in order to trade in copper. It did not appear strange, at this stage, that the tombs had no parallels in the regions from which they supposedly originated.

2.2 Paradigms and current challenges

From 2000 onwards, new possibilities offered by satellite imagery and Geographic Information Systems reoriented research towards the spatial distribution of the tombs at a regional scale. Tomb cartography revealed occupied territories and the resources that were potentially exploited, creating new perspectives from which to explore questions relating to the subsistence modes of the human groups and to the emergence of the first oasis systems (Cleuziou 2002b; Giraud & Cleuziou 2009; Giraud 2010; Deadman 2012, 2017; al-Jahwari 2013, 2015; Deadman & al-Jahwari 2016). Computer systems have also been used to statistically analyse tomb morphology and artefacts in order to understand their structural evolution (Bortolini 2012, 2014, 2019), and to detect formal differences within a necropolis that could reveal social hierarchy (Deadman *et al.* 2015). This last work echoes the first classifications designed to identify traces of the social organization of the groups in relation to other data linked to the few known settlements, based on formal characteristics of the tombs and their geographical distribution (Cleuziou 2002a, 2007; Cleuziou & Munoz 2007).

Over 60 years after their discovery, we can estimate that more than 200 tombs have been excavated in the United Arab Emirates and the Sultanate of Oman (**Fig. 5**), however, few of these excavations have been published in detail. As underlined by Benton (2006: 40), until recently, the few existing publications mostly mention the artefacts found within the monuments. Indeed, the first excavations aimed to establish a relative chronology for the region, (until then unclear), and for which material culture was undefined. With the exception of a few rare monographs published over 30 years after excavations (Cleuziou *et al.* 2011; Madsen 2018), only a few articles, Master's theses and unpublished field reports include precise data relating to the excavated tombs (Santini 1992; Salvatori 2001; Williams & Gregorička 2013, 2019, 2020; Munoz 2014; Munoz *et al.* 2017).

3. Hafit tombs in the Oman Peninsula: state of the research

3.1 The chronocultural context: reminder

Archaeological research conducted over the past few decades has brought to light the major steps in the evolution of the populations occupying southeastern Arabia during the Holocene, at a time where climate became more arid and closer to that of the present day (Cleuziou & Tosi 2007). Within this territory, bordered by the desert and the sea, Late Neolithic (*ca.* 4500-3200 BCE) society relied upon animal

husbandry where water was available inland and, to a lesser extent, on the hunting of wild animals (Uerpmann *et al.* 2008). On the coastlines however, where settlements were often built near to wadi openings or mangroves (Biagi 1988, 2004; Biagi & Maggi 1990; Berger *et al.* 2005, 2013, 2020), research indicates an intense exploitation of marine, lagoon, and mangrove resources associated with husbandry (Uerpmann 2003; Uerpmann & Uerpmann 2003; Zazzo *et al.* 2014; Munoz 2017).

The first oasis-based agricultural systems, based on the date palm, supposedly appear during the Hafit period (around 3200-2700 BCE) which marks the beginning of the Early Bronze Age. These then intensify during the Umm an-Nar period (around 2700-2000 BCE) (Cleuziou & Costantini 1980; Tengberg 2012; al-Jahwari 2009; Munoz 2017). Some researchers, however, estimate that oasis agriculture is only fully formed from the second half of the 3rd millennium onwards.

Ancient populations exploited a large variety of resources, focusing on favourable areas, moving seasonally, and exchanging materials with groups in other regions (Tosi 1975). This original and successful adaptation, in the context of the aridification of the climate of the recent Holocene, is well attested by the socio-economical transformations marking the transition towards the Early Bronze Age. The spatial distribution of human occupation (territorial expansion inland) as well as the structure and architecture of the settlements (emergence of permanent villages made of raw bricks and great circular 'towers') all bear witness to these processes (Azzarà 2009; Cable & Thornton 2012).

Moreover, numerous innovations attest to artisanal specialization with a large-scale production (copper exploitation and metallurgy, ceramic production, soft stonework, enhanced sailing and fishing techniques, etc.). These were part of an intensification and diversification of exchange networks at multiple scales (local, intra- and interregional) (Potts 1993; Cleuziou & Méry 2002; Méry 2000; Frenez *et al.* 2016; Méry *et al.* 2017), occurring while the state societies of the surrounding regions (Mesopotamia, Iran, Indus, Egypt) expanded both politically and economically throughout the Near and Middle East.

Finally, we can observe modifications in the funerary practices indicating important social changes that point to an increasingly complex society. During the Neolithic period, the tombs were pits, sometimes covered with stone slabs, and were placed close to settlements. During the Hafit period, these evolved into collective tombs in the shape of towers or igloos, built of stone. During the Umm an-Nar period, monumental circular and compartmentalized tombs were built capable of containing hundreds of individuals (Cleuziou & Munoz 2007; Méry & Charpentier 2009; Bortolini & Munoz 2015; Munoz 2019).

4. Implementation, development, and use over time of the necropolises

From the beginning of research in this area, the specific location of the necropolises of Hafit-type towers have focused the attention of researchers (Cleuziou 1997, 2002b), and GIS allowed the characterization of these choices (Giraud & Cleuziou 2009; Deadman 2012, for a more recent synthesis see Deadman 2017: 73-79). Initially, the presence of Hafit tower tombs near to axes of travel used as commercial networks led Frifelt to propose that the merchants travelling along those routes were also the builders of the tombs (Frifelt 1970; Gentelle & Frifelt 1989: 124-125). More recently, in his analysis of tomb distribution of oriental Ja'alan, Cleuziou introduced the notion that some of the great necropolises would be associated with settlements whilst smaller examples would mark the territory in terms of resources (fishing or well areas), with isolated tombs delimiting frontier zones or passage points (Cleuziou 2002b).

The Hafit tombs are indeed often grouped within necropolises comprising several dozen monuments and, more rarely, they are isolated. In the territories of the Sultanate of Oman and the United Arab Emirates, their number has been estimated to be more than 100 000 (Cleuziou 2002b: 21; Cleuziou & Tosi 2007: 107), although a more recent estimation suggests that the number of well-preserved monuments is around half of this (Deadman 2017: 148). The largest necropolises can include several hundred monuments, for example, in the Jebel Haqlah with over 900 tombs (al-Tikriti 1981), in the

Dhank region with over 700 monuments (Williams & Gregorička 2020), in the Wadi Andam with close to 3000 tombs (Deadman 2012), and at the coastal site of Shiyā with about 400 tombs (Munoz *et al.* 2017) (**Fig. 5**).

In many ways, these tombs mark a rupture with the previous period. Tombs are no longer strictly associated with settlements as they were during the Late Neolithic. Often built on elevated ground, on ridges, slopes, or rocky outcrops, they probably played a role as territorial markers (Cleuziou 2002b; Cleuziou & Munoz 2007: 298-299). At the top of mountain ridges, they overlook areas exploited for their natural resources. They are found on the catchment slopes of wadis, especially those south of the Hajar mountain chain, the Wadi Silaim to the southeast, and at Ra's al-Khaimah to the north, where they probably marked the presence of settlements, of water holes necessary for oasis agriculture, and of grazing areas (Cleuziou 2002b; Giraud 2009; Deadman & al-Jahwari 2016; Deadman 2017). In the piedmonts of Jebel Hajar, they also seem to be linked to possible copper mines, the early exploitation of which is dated to the Hafit period (Deadman 2017: 170-172). On the Oman coastline, they occupy the rocky outcrops overlooking favourable fishing areas (sea or lagoons) (Giraud *et*

Country	Site	N tombs identified (survey)	N tombs excavated	Team	Reference
Oman	Al-Ayn	19	2	Univ. of Tübingen	Döpper & Schmidt 2014
Oman	al-Mahatta (MHT-4/5)	53	2	Joint Hadd Project (JHP)	Cleuziou &Tosi 2000b; 2002c
Oman	Asimah		1	Dept of Antiquities & Museums, Ra's al-Khaimah	Vogt 1994: 36-37
Oman	Bat		2	Danish team	Frifelt 1975b
Oman	Bisya		1	Al Hajar Project	Orchard & Orchard 2007
Oman	Dhank region (Abu Silah, al Aflaj, al Khu	700	21	SoBo American Team	William & Gregoricka 2013, 2019, 2020
Oman	Ghoryeen		1	Sultan Qaboos Univ. (SQU)	al-Jawhari 2010
Oman	Ibri		1	Danish team	Frifelt 1975b
Oman	Khor Jaramah (KJ-97/98/99)	225	2	JHP	Cleuziou & Tosi 2002; Cleuziou 2002b
Oman	Maysar		5	Deutsches Bergbau Museum	Weisgerber 1980, 1981
Oman	Mudhai		3	SoBo American Team	Williams *et al.* 2014
Oman	Ra's al-Hadd (HD-10/7.3)	22	11	JHP	Salvatori 2001; Cleuziou & Tosi 2000b; Munoz 2019
Oman	Ra's al-Jinz (RJ-6/27/31/12/-43)	106	13	JHP	Santini 1992; Cleuziou & Tosi 2000b
Oman	Ra's al-Khabbah (KHB-26/114)	200	1	JHP	Cleuziou & Tosi 2000b; Cleuziou 2002b
Oman	Salut		2	Italian Mission to Oman	Degli Espositi & Philipps 2012
Oman	Shenah	325	8	SQU	al-Belushi & ElMahi 2009
Oman	Shir-Jaylah	58	3	Deutsches Bergbau Museum	Yule & Weisgerber 1998
Oman	Shiya	400	7	French Mission to Shiya	Munoz *et al.* 2017
Oman	Tawi Silaim		4	British Expedition	de Cardi *et al.* 1979
UAE	Buraimi		2	Amateurs	During-Caspers 1971
UAE	J. al-Emalah	4	3	Univ. of Sidney	Benton & Potts 1994
UAE	J. Buhais		7	Sharjah Museum	Jasim 2003, 2006, 2012
UAE	J. Dhanna		1	Dept of Antiquities, Al-Ain	Vogt *et al.* 1989
UAE	Jebel Hafit	163	80	Danish team / French Expedition Iraqi/Emirati team	Frifelt 1970 ; Madsen 2018; Cleuziou *et al.* 2011; al-Tikriti 1981
UAE	Kalba		3	Eddisford & Phillips	Eddisford & Phillips 2009
UAE	Mazyad	317	19	Danish team	al-Tikriti 1981; Frifelt 1975b; al-Noeimi n.d. (cited by Cleuziou, *et al.* 2011: 9)
UAE	Qarn Bint Saud	45	13	Danish team / Dept of Antiquities,	Frifelt 1970; al-Tikriti 1981
UAE	Ra's al-Aysh		1	Dept of Antiquities, Al-Ain	Vogt *et al.* 1989
Total		**2637**	**219**		

Fig. 5 – Number of Hafit-type tombs identified and excavated by site or region, in the United Arab Emirates and in Oman (the number of tombs identified do not reflect the reality, since only sites where tombs have been excavated are indicated) (Data compiled from syntheses by Benton 2006; Munoz 2014; Deadman 2017).

al. 2005; Cleuziou & Munoz 2007; Giraud 2009). Finally, some isolated monuments marked key routeways or boundaries between territories (Cleuziou 2002b). The tombs would therefore have been a way to visibly mark an area exploited by a particular group, for the benefit of enemies, competitors or rivals), legitimizing their claim through the presence of their 'ancestors' (Cleuziou 2002b). Identity was perhaps also indicated, as we will see below, through specific architectural traits.

The use over time of the tombs indicates an intense occupation of inland areas, other traces of which are rather sporadic for the Late Neolithic period. Except for some desertic or inaccessible areas, the entire territory seems to have been exploited. The tombs mark the presence of human communities and are indicative of an unprecedented anthropization of the territory.

It is difficult to estimate the time frame within which necropolises were used, or their spatial evolution. The picture now presented is only a snapshot of something that took centuries to be established, with numerous alterations that we cannot quantify. Due to their permanence in the landscape for 5000 years, tombs may have been subjected to pillage, reconstruction, or reuse, for funerary or other purposes. This makes it difficult for archaeologists to integrate them into a detailed chronology or to comprehend their evolution (al-Jahwari 2016). While artefacts may reveal a sequence of deposits over the long term, the same cannot be said for human remains. To date, less than 100 radiocarbon dates have been published for all the tower tombs and cairns of the Arabian Peninsula (**Fig. 4**). This number might appear high, but it is very low compared to the number of tombs excavated or identified (**Fig. 5**). No radiocarbon dates are available for the tombs excavated in the United Arab Emirates, and only two areas of northern Oman have recently benefitted from radiocarbon dating (Dhank area and Shiyā / Ra's al-Hadd / Ra's al-Jinz area). This lack of direct dating evidence is explained by the cost involved and, more importantly, by the lack of suitable organic material. When present, human bones are almost always devoid of collagen, which degrades due to the arid climate. Only recently has this obstacle been overcome; new technological progress make it possible to date the mineral component of bones (bioapatite), yielding good results in arid contexts (Zazzo & Saliège 2011; Munoz 2014; Munoz *et al.* 2020; Williams & Gregorička 2020). In coastal areas, however, the dating of human remains poses one more difficulty. Coastal populations most likely consumed marine resources, subject to the marine reservoir effect, which artificially ages radiocarbon dates (Saliège *et al.* 2005; Zazzo & Munoz 2013). To calibrate ^{14}C dates obtained on human bones from these areas, it is necessary to know not only the extent of the local marine reservoir effect – which varies over time – but also to estimate the proportion of marine resources in the diets of individuals. Considering the unknown variables, we must calibrate ^{14}C dates obtained from human remains from coastal complexes by assuming 0-100% of marine input in the diet, which considerably reduces the accuracy of the calibrated date (up to 1400 years in error range, see **Fig. 4**).

In syntheses of the information available from sites where several tombs have been excavated, observations diverge. For Jebel Hafit, Madsen (2018: 237) estimates that, considering the artefacts and the low architectural variability, the necropolis was used for no more than a few centuries. In contrast, at al Khubayb, in al Kuthma (Dhank region) and at Shiyā (Sur area), where ^{14}C dates were acquired, it appears the oldest tombs precede the most recent by 600-1000 years, excluding secondary reuse after a period of abandonment (see **Fig. 4**). At Shiyā, recent excavations (Munoz *et al.* 2017) have demonstrated that the oldest tombs (Tombs 4 and 5), which are also the most rudimentary, are built on the most visible ridges of the terrace whilst the most recent and better constructed examples (Tombs 1, 2, 6 and 7) are located at lower elevations (**Fig. 6**). This trend needs to be verified since it is not systematic, as attested by Tomb 3, contemporary with Tomb 2 but located on the higher terrace and relatively well constructed.

4.1 Architecture: a great formal variability

The appearance of Hafit-type tombs constitutes a true break with previous architectures. These circular monuments are built of stone and present an elevation in the shape of truncated conic towers or igloos. All include a single funeral chamber, surrounded by a wall made of two to five slabs and

Fig. 6 – Tomb locations at Shiyā (Oman) and architectural variability of the tombs excavated (Photos: O. Munoz).

covered by a corbelled vault. Their diameters vary from 3-8 m for the most imposing. While most tombs are currently ruined and preserved only to a height of 0.5-3 m, some perfectly preserved monuments can reach 7.5 m, as is the case at Shir (Yule & Weisgerber 1998 ; **Fig. 1a**). The surface area of the chamber varies between 1.5 and 2.5 m², is circular in shape, although sometimes ellipsoid or somewhat quadrangular (**Fig. 6**). The chamber floor is sometimes layed with irregular or unworked rock slabs.

When the chamber access is visible, it consists of an opening, the shape of which can vary (rectangular, trapezoidal, or triangular); its design (e.g., with or without a lintel, a threshold, or a corridor) can differ depending on the material employed. Some tombs, however, have yielded no identifiable openings, suggesting they might have been accessed through the cover. This was probably the case at Shiyā and at Ra's al-Hadd HD-7, and at Shenah (ST-2; al-Belushi & elMahi 2009: 34). Some tombs seem to have been definitively sealed by the addition of a wall across the whole or a part of the upper part of the monument, obstructing the accessway, as is the case at Jebel Hafit (Tomb 1319; Madsen 2018: 203), at Bat (Tomb 6603; Böhme 2011: 29) and at al-Ayn (Tomb 6; Döpper & Schmidt 2014: 222).

These tombs therefore differ entirely from what is known for the Neolithic period, and required an important investment and previously unseen technical knowledge. Domestic architecture for the period includes rectangular buildings made of raw bricks and more temporary structures made of perishable materials (Azzarà 2009, 2013). Tombs differ from these not only by their circular plan but also in the use of stone. These differences could be linked to the availability and nature of materials close to the location of the structures (funerary and domestic), but it is very probable that the durable nature of stone was a key factor in its use in tomb construction; these monuments were definitely made to last.

According to available publications, the majority of the tombs are made of drystone, with non-squared rubble, and roughly put together. The construction material was locally acquired in the rocky outcrops on the summits where the monuments are located. In many cases, although not carefully prepared, the rocks constituting the wall seem to have been chosen according to their shape to ensure maximum stability in their final placement.

While the choice of raw material seems opportunistic in most cases, at some sites such as Bat (Böhme 2011, 2012) and Ra's al-Hadd HD-7 (Munoz 2014: 217) it appears that the blocks of the external cladding were transported over a long distance (around 10 km). At Bat, Böhme (2011: 25) suggests the presence of mortar between some blocks. Some tombs seem to have been given particular attention, especially with regard to their external claddings, which have been renovated (Yule & Weisgerber 1998; Böhme 2011). On this topic, we must also mention the recurring presence of stone tools (hammerstones) near some tombs, leading us to think they might have been used to retouch the stone blocks (Munoz 2014: 230). A similar situation was observed near tombs from the Umm an-Nar period at Hili (Gagnaison *et al.* 2004: 101).

Despite the apparent homogeneity of the structures, we observe some variety, but it is not easy to determine which elements result from technical constraints (accessible raw materials and construction techniques), from cultural and regional choices, and/or from temporal evolution. There have been recent attempts at a typo-chronological classification of several monumental ensembles, suggesting an overall chronological evolution tending towards a gradual increase in structural complexity during the Early Bronze Age (Gagnaison *et al.* 2004; Bortolini 2012, 2014, 2019; Potts 2012; Williams & Gregorička 2019). As underlined by Böhme (2011: 24), however, the regional diversity of the raw material available for tomb building probably led to various architectural solutions being adopted in different localities and, by consequence, to tomb variability. It is therefore necessary to explore this formal variability in specific geographical areas. Moreover, studies at a local scale show that monuments of varying types could co-exist (see for example: Williams & Gregorička 2020), confirming that other criteria, some difficult to perceive (technical know-how, communal belonging, social status), could have played a role. As a rule, as far as Hafit-type tombs are concerned, the main problem with existing typo-chronological classifications is that they are not based on a rigorous analysis of construction techniques, nor on tangible datings.

Only one study has focused on the construction techniques, with an experimental reconstruction yielding important information on building time, technical constraints, know-how, and the resources necessary for construction (Böhme 2011, 2012). A recent study conducted in the Dhank region of Oman by Williams & Gregorička (2020) distinguished between various architectural types (tumulus, Hafit-type tomb, tower tomb, Umm an-Nar-type tomb) recognized within a single necropolis. It is a rare example of a published study based on absolute dating, in addition to our own at Shiyā.

To conclude, the appearance of Hafit-type tombs constitutes a clear rupture with the previous period from an architectural standpoint. Their construction requires a technical know-how, planning, and a consistent (probably a collective) investment (Munoz 2015, 2019). While these constructions follow a common model for the whole Oman Peninsula, the morphological variability documented raises further questions regarding regional particularities and chronological evolution. This is valid both within the Hafit period and in relation to the later architectural type of the Umm an-Nar period (Frifelt 1975a: 67-69; de Cardi *et al.* 1976; Vogt 1985; Yule & Weisgerber 1998; Bortolini 2012; Potts 2012; Williams & Gregorička 2019).

4.2 Recruitment, funerary practices, associated artefacts

The study of funerary practices associated with these tombs is limited by the poor preservation of the human remains within them. Several factors can be held responsible: the mode of deposition (no burying), the arid climate of the region (rapid mineralization of skeletal remains), and various interventions following the original placement of the deceased (voluntary manipulation linked to tomb management, pillage, tomb destruction for material re-use, or later re-use with a funerary or other intention). As such, anthropological studies are scarce, and except for recent excavations, have almost always been conducted *a posteriori* (for example: Martin in Benton & Potts 1994; Munoz 2011, 2014). Detailed data on human bones within their context is rare. There is therefore very little information upon which to build a detailed and sufficiently representative portrait of either funerary practices or biological data.

Of 219 excavated and documented tombs, only 130 have yielded human remains. For over a third (n=53), only a few fragments are mentioned, some of which belong to ulterior deposits (**Fig. 7**). At most, we can suppose that at least one individual was deposited. For the 66 tombs for which a MNI (even provisory) is available, 25 contain at least one individual, 38 contain two to six, and 10 tombs contain more than seven and up to 29. The latter group is exclusively represented by tombs of Ra's al-Jinz RJ-6 (Santini 1992; Munoz 2014) and of Ra's al-Hadd HD-10 (Salvatori 2001), as well as one tomb from al-Buhais which was subjected to later re-use (BHS 89: Jasim 2012: 270, 314). Within these collective ensembles, we can observe the presence of children, men, and women. This evokes the

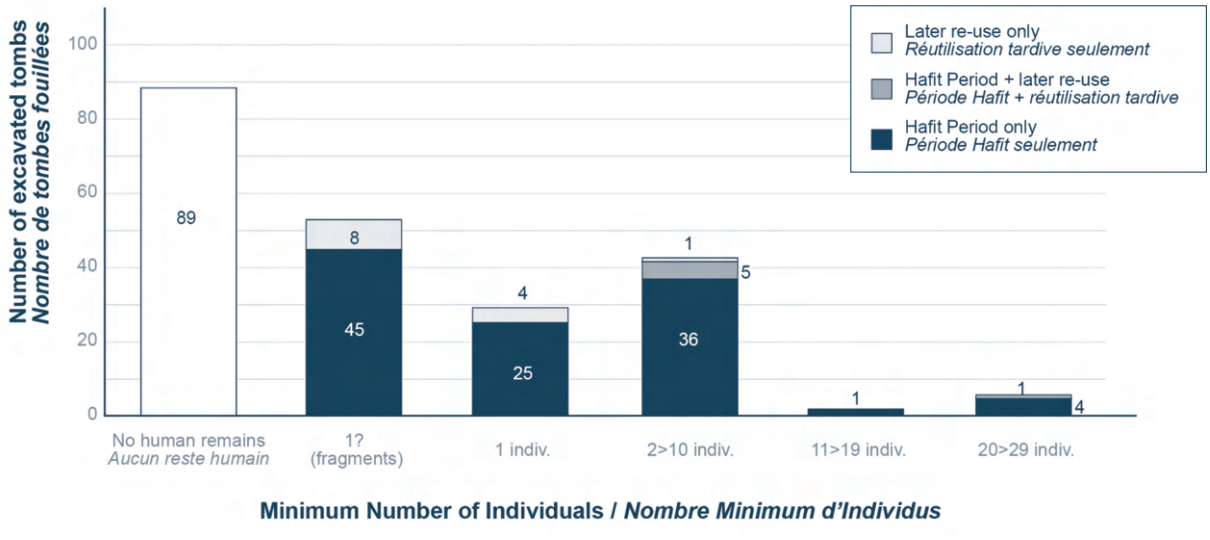

Fig. 7 – Minimum Number of Individuals (MNI) in Hafit-type tombs excavated within the Oman Peninsula (n=207).

possibility of tombs uniting various members of nuclear or extended families (Cleuziou & Munoz 2007; Williams & Gregorička 2013; Magee 2014) despite no biological or genetical analysis yielding any kinship links so far.

Tombs RJ-6 and HD-10, which each contain two to three dozen individuals, constitute exceptional examples which could be linked to intense frequenting of coastal settlements located nearby, and to the small number of constructed tombs present (less than 20) compared to other sites. When the period of use – up to several centuries – is added, the data currently available indicates that, for some tombs, the collective character of the monument was materialized more in the intention of the builders than in the reality of the deposits made within them. Of course, the poor preservation of remains within these tombs might bias our perceptions. Whichever the case, the disparity in the number of individuals within tombs where the MNI is known – from a single individual to as many as 30 – show that the effort invested in tomb construction did not depend on 'needs' but rather responded to an ideology shared over an immense territory.

Within the funerary chamber, the bodies are not buried but rather deposited within a free space. The deceased are laid on one side, in a crouched position. There is no preferential orientation, and some may have been wrapped in a flexible container (Madsen 2018), as is documented for the Neolithic period (Munoz 2014). In the most densely occupied tombs of Ra's al-Hadd and Ra's al-Jinz, the deposition of new deceased individuals required the rearrangements and manipulations of the previously deposited remains (Munoz 2015, 2019).

The deceased are sometimes accompained by ornaments (pearl necklaces or bracelets made of stone and shells), copper artefacts and imported

Fig. 8 – Examples of artefacts found in Hafit-type tombs at Ra's al-Hadd HD-7, Shiyā and Jebel Hafit: soft stone beads (A, C, H, I, J), enstatite beads (B), shell beads (C-G), copper (K) and mother-of-pearl rings (L), perforated shell (M) and mother-of-pearl (N) plaques, curved (O-P) and gorge (Q) hooks made of copper alloy, pottery vessel with polychrome painting (R)
[Credits: O. Munoz (A-Q), Madsen 2018, fig. 36a (R)].

ceramics (**Fig. 8**). These can reveal intra-regional contacts: we find marine shell objects in the inlands and copper artefacts on the coasts, which leads us to think that exchanges were valorized. In parallel, products issued from interregional exchanges are also integrated into the funerary sphere. As was previously suggested, small jars from Mesopotamia (Jemdet Nasr type) attest to recurring exchanges with this distant region, but also to their specific use within funerary contexts, since such items are apparently absent from contemporary settlement sites (Cleuziou *et al.* 2011; Madsen 2018). During the same period, the pottery found in non-funerary contexts (such as those found at Hili 8, period I), are locally made but imitate southeastern Iranian ceramics and those of the Pakistani southwest, a manifestation of technological transfer from that region towards the peninsula (Méry 2000).

5. Conclusion and perspectives

Fifty years after their discovery, Hafit-type tombs are still at the heart of the research conducted in the southeast of the Arabian Peninsula. The first explorations – within a *terra incognita* – answered the need to establish a chronology, to catalogue and to classify these monuments, the importance of which was already perceptible, in order to lay down the foundations of an archaeology of the societies of Eastern Arabia. Over the past ten years, a new investigative phase has started, with a renewal of research perspectives made possible in parts by new technologies (satellite images, GIS analysis, 3D recording, AMS dating), but also by disciplines bringing a different perspective on the tombs and their builders within their geographical, social and economic contexts through geoarchaeology, funerary archaeology, archaeometry, and statistics.

Among discussions animating current research, questions on subsistence and group mobility (pastoral nomads vs. sedentary farmers) are predominant. A future challenge will be to extract information on diet and group mobility through the analysis of the human bones found in the tombs (biological anthropology and geochemistry), with samples that would be well defined chronologically through absolute dating (e.g., Gregorička 2013; Zazzo *et al.* 2014; Munoz 2017). The other frequently discussed question is that of the structural variability of the tombs, which can be related to technical constraints and available raw materials, cultural and regional preferences, to social factors, or to a chronological evolution. Systematic absolute dating associated with architectural studies that take account of local geographical specificities will allow us to better comprehend the factors operating within this architectural variability. This type of approach might also contribute to a better understanding of the technological know-how and the degree of specialization necessary to build the funerary monuments. From this, it might be possible to explore the socio-political context within which these tombs existed. A detailed analysis of the artefacts contained within the tombs could also be exploited towards this goal and may yield indications of the dynamics of the multiscale exchanges taking place at the beginning of the Bronze Age. Finally, while limited by the poor preservation of human remains, biological anthropology and palaeogenetics could provide clues to the diffusion of this phenomenon and evaluate kinship links within individual monuments or within an entire necropolis.

In conclusion, I would remind the reader that in the Arabian Peninsula, despite legislation being in place concerning heritage protection, urban expansion has intensified in the last few years. This development is exacerbated by mass tourism and has already led to the destruction of numerous tombs. Preventive archaeology programmes take place regularly, and we hope for those to be multiplied, just as we hope that the data produced by this research is published and disseminated to international standards.

Acknowledgements

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Tara STEIMER-HERBET

Megalithism in the Middle East

Abstract: Seven thousand years ago, the Middle East witnessed the emergence of new funerary rites. Previous traditions of burying the dead directly in the earth, in jars, or in an ossuary, were replaced with a new practice of inhumation inside megalithic tombs. This change can be observed in the societies living in the Akkar Mountains, the Jaulan plateau, the Jordan River valley, al-'Ula and Khaybar, the Jawf, the Hadramawt, and the Dhofar, to mentioned but a few particularly relevant areas. The monuments, called dolmens or tower-tombs, are elevated constructions comprising a chamber constructed of regular megalithic rock slabs, with a partial or complete tumulus cover. Recent systematic surveys conducted in the region of Homs, in the Leja, the Harra, and east of Jafr have renewed our perspective on the distribution of megalithic tombs in the Levant. Until the 2000s, it was thought that the megalithic necropolises were distributed alongside a narrow north-south axis, following the Rift ditch from the middle of the Dead Sea to Aleppo, alongside the Jordan, the Litani, and the Oronte rivers. Today, we know that the societies practicing megalithism occupied very varied landscapes, extending from the forests of the Syrian Jaulan to the steppe region of the Sabatayn desert in Yemen. The conditions that determined their settlement patterns appear to be the presence of grazing land for pastoralism or, ideally, for olive, fig, and palm trees, the presence of flint, lapis lazuli, obsidian, and salt mines and, of course, the availability of rock slabs suitable for the construction of the tombs and sometimes houses. Other than this access to resources, megalithic societies seem to have favoured communication axes that facilitated economical exchanges with the urban populations of the shorelines or the major rivers. These megalithic groups, which remain relatively unknown to the public, therefore played a major role in the formation of oriental societies.

Keywords: *Early Bronze Age, dolmen, tower-tomb, standing stone, anthropomorphic statue, sanctuary, megalithic art, pastoralism, goods, exchange*

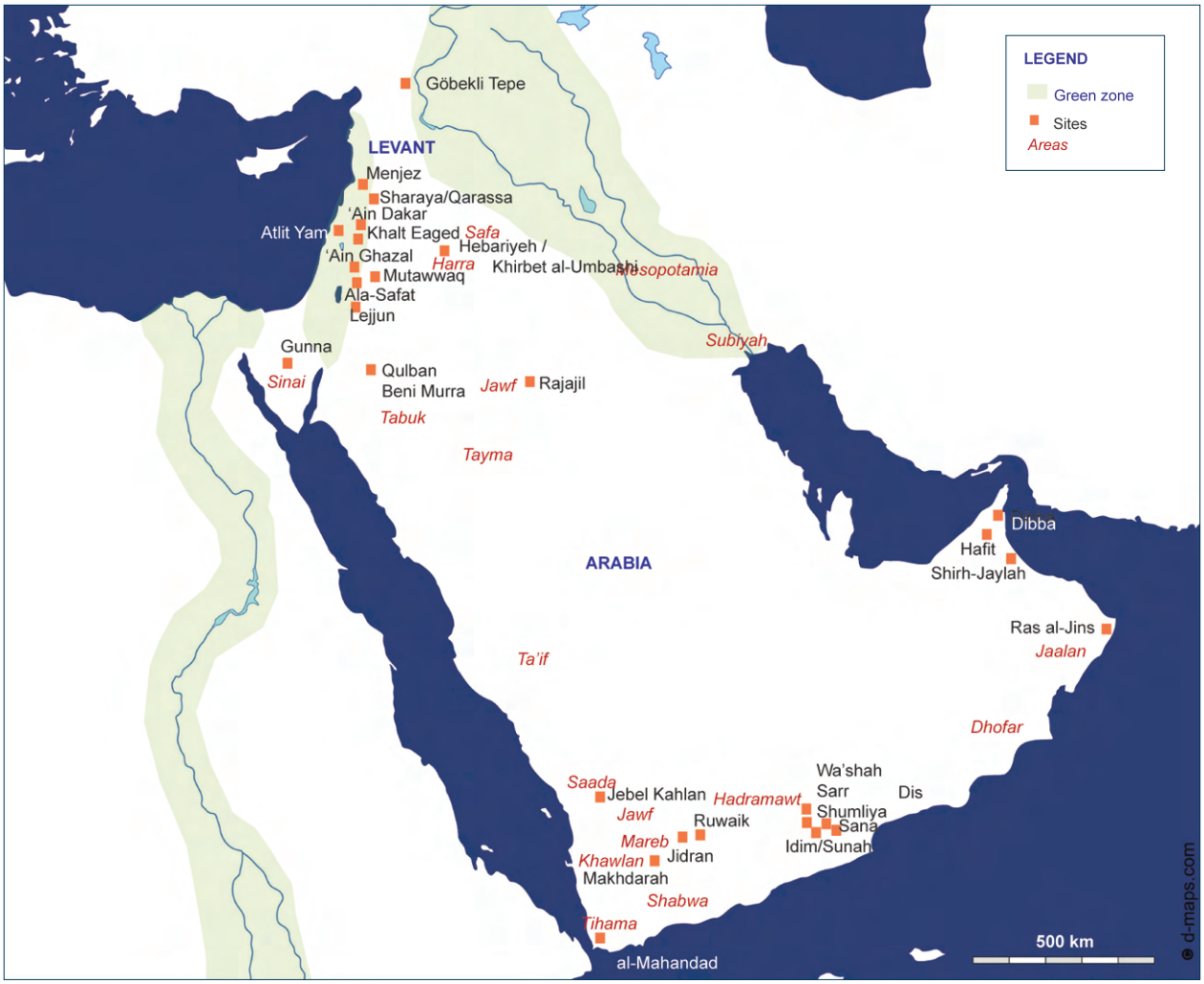

Fig. 1 – Location map of the sites mentioned in the text (© T. Steimer-Herbet).

1. Introduction

The first megalithic manifestations in the Middle East date to the Neolithic period, as attested by the sites of Göbekli Tepe, Turkey (Schmidt 2015), 'Ain Ghazal, Jordan (Rollefson 1998), Atlit Yam, Israel (Galili *et al.* 2013) and on hundreds of *Massebot* sites of the Negev, Israel (Avner 1982). Stone, in the shape of an upright monolith, was a component of Neolithic rites as early as the 9th millennium BC, but it was not until the end of the 5th millennium BC and during the 4th and 3rd millennia BC, the Chalcolithic period (5000-3980 BC) and the Bronze Age (3900-2000 BC), that communities started using massively stone to construct platforms, sanctuaries, and tombs. These ritual architectures, both commemorative and funerary, appear almost simultaneously from the Sinai to Oman, Turkey, and Yemen (**Fig. 1**). They are relatively unknown to the public, both locally and internationally. Built from stones and raw or slightly worked rock slabs, their construction implies the intervention of highly skilled builders and techniques specially developed to manipulate the large blocks (Steimer-Herbet & Besse 2020). These ostentatious structures, sometimes monumental, are 'megalithic' (**Fig. 2**). Boulestin (2019) contests this attribution due to the weight of the rock slabs (less than 15 tons). It is worth remembering, however, that the true essence of megalithism is not to be found in the numbers, but in the intent of the builders, which was to create a monument standing above ground and respecting common codes such as the use of large rock slabs and stone covers.

Fig. 2 – The necropolis of Ruwaik (Photo: T. Steimer-Herbet).

The megalithic monuments of the Levant and Arabia have been victims of their visibility. They have yielded few artefacts and studies have focused on their morphology and spatial distribution. Despite numerous losses due to urbanization or agriculture, intact monuments still number in the tens of thousands. Their morphologies, just like their roles, are very varied. As such, the wish expressed during the Rencontres Internationales sur le Mégalithisme dans le Monde to paint a full picture of megalithism in the Middle East, is a significant challenge worth taking on. Stone, as both a material and a communication tool (Steimer-Herbet 2001, 2018), is the common denominator behind all these multiform and multifunction megalithic monuments. The communities who erected them imposed meaning on this use of stone. Guilaine observes '*the feelings of litholatry: stone* [for him] *was identified as the material of important events, of important people, of common behaviour, of kinship transmission, of beliefs*' (Guilaine 1994: 226).

Following a short history of the research of megalithic monuments in the Middle East, I will present a description of the monuments that will allow us to decrypt the intentions behind the acts of the builders and provide insight into their beliefs.

2. History of fieldwork

After the Second World War, research on megalithism developed in the Middle East within the rigid framework of administrative boundaries defined by the new larger powers (Fraser 2018). Megalithic monuments were quickly abandoned by scholars due to the lack of exceptional discoveries. Archaeological research focused on the study of the great civilizations which, according to the larger

public and their leaders, developed between the 3rd millennium BC and the 8th century AD. The main preoccupations of the time, through until the 80s, are perfectly summarized by Demoule: '*history begins with established states, their religion, their armies, and everything else is consequence. The trajectories that led to their existence are not a problem, not even a research topic*' (Demoule 2020: 49). Thankfully, from the 1990s the work of archaeologists such as Cleuziou (1999) in Gulf countries, Zarins (Zarins *et al.* 1979) in Arabia, and Helms (1981), Avner (1982), Betts (1988) and Braemer (Braemer *et al.* 2004) in the southern Levant used new approaches to develop alternative models. Indeed, the Classical models validated in the fertile areas of the alluvial plains of the Tigris, Euphrates, and Nile, are not applicable to the human societies that lived in arid and semi-arid areas. These groups developed megalithic architectures as early as the 5th millennium BC that remain the only trace of an elaborate and stable symbolic system that honoured both the dead and the living (Steimer-Herbet 2004). Several theses on the topic are available: Mizrachi 1992; Steimer-Herbet 2001; Paz 2003; Khalidi 2006; Giraud 2007; Gibbins 2008; Abu-Azizeh 2010; de Vreeze 2010; Bradbury 2011; Gregorička 2011; Cable 2012; Munoz 2014; Fraser 2015. Our knowledge of modes of subsistence, the distribution of necropolises, as well as funerary and cultual practices has been considerably ameliorated. A certain homogeneity in the architectural models adopted across the whole of the Middle East led to several attempts to geographically de-partition research on the topic. These include concepts of relationships between the communities of the oriental coast of Arabia and those of the Indus (Cleuziou 2005), between the occidental façade of Arabia and the Levant (Steimer-Herbet 2004), and more largely from Sinai to Oman and Yemen to Iraq (Zarins 1992; Orchard 2008). Unfortunately, local politics mean large-scale studies are almost always impossible and it must be mentioned that the immense Saudi territory is still largely *terra incognita* from a scientific point of view. There are therefore major obstacles in our global perception of the megalithic phenomenon in the Middle East.

3. Megalithic trajectories in the Middle East

In the Middle East, there is not one but several 'megalithisms'. The Indonesian doctrine of *Pancasila* '*Bhineka Tunggal Ika*' (unity in diversity), corresponds well to a potential definition of the megalithic phenomenon in the region. These ensembles form a mosaic of 'megalithic cultures' that can sometimes be interwoven, as shown by the photograph of a dolmen at the margins of a tower-tomb necropolis at Jebel Jidran in Yemen (**Fig. 3a**). This monument is imposing, with a chamber composed of orthostats and a cover slab and, in the background, a myriad of small points each corresponding to a tower-tomb (**Fig. 3b**) built of drystones and with corbelled covers (Braemer *et al.* 2001, 2003). Megalithism in the Middle East is also a long-term phenomenon, enduring over 2000 years with phases of abandonment and revival; the evolution of megalithic architectures is not linear.

Fig. 3 – Jebel Jidran, Yemen: a. Dolmen ; b. Tower-tombs (Photos: T. Steimer-Herbet).

From a purely typological point of view, the list of megalithic funerary monuments is long and refers to local specificities: wall tombs, tumuli, dolmens, tower-tombs. The most frequent architectures are dolmens and tower-tombs (Steimer-Herbet 2004). Two occupation areas can be observed: in the region encompassing the Arabian Peninsula, the Sinai Peninsula and the Southern Levant, a predominance of tower-tombs is apparent whilst in occidental Levant and Turkey dolmens clearly dominate; overlapping zones are also present (**Fig. 4**).

Megalithic tombs known locally as *Dirm*, but which we qualify as tower-tombs, still existed in the region of Saada in Yemen (at least before the conflict that currently ravages local archaeology). Their numbers are most imposing in the Jebel Kahlan, where over 100 tombs are distributed on terraces overlooking the Wadi Kahlan, at an altitude of around 1900 m above sea level (Steimer 1998, unpublished report).

Similar clusters are situated to the southeast in the Jawf and the Hadramawt (Cleuziou *et al.* 1988). They exhibit a circular shape, with a diameter of 4 to 4.6 m. Most have been damaged by pillaging, and their preserved height is around 1.1 m (**Fig. 5a**). The best-preserved tombs of Yemen are found at the site of Makhdarah in the Khawlan and measure up to 2.8 m high. The construction techniques include a double wall of sandstone slabs 0.60-0.80 m long and 0.30-0.40 m wide, for a thickness of 0.15-0.20 m. The internal chamber is circular and covered with a corbelled roof. We distinguish between tombs with 'tails' – lines of circular stone piles extending from the tomb – and those without. At Jebel Ruwaik, radiocarbon dates on bones indicate the age of the tombs with tails to be around 2916-2601 BC (Pa 1898, 2 sigmas) (Steimer 1999; Braemer *et al.* 2001). The majority of the tombs of the Jebel Kahlan are associated with architectural elements taking various

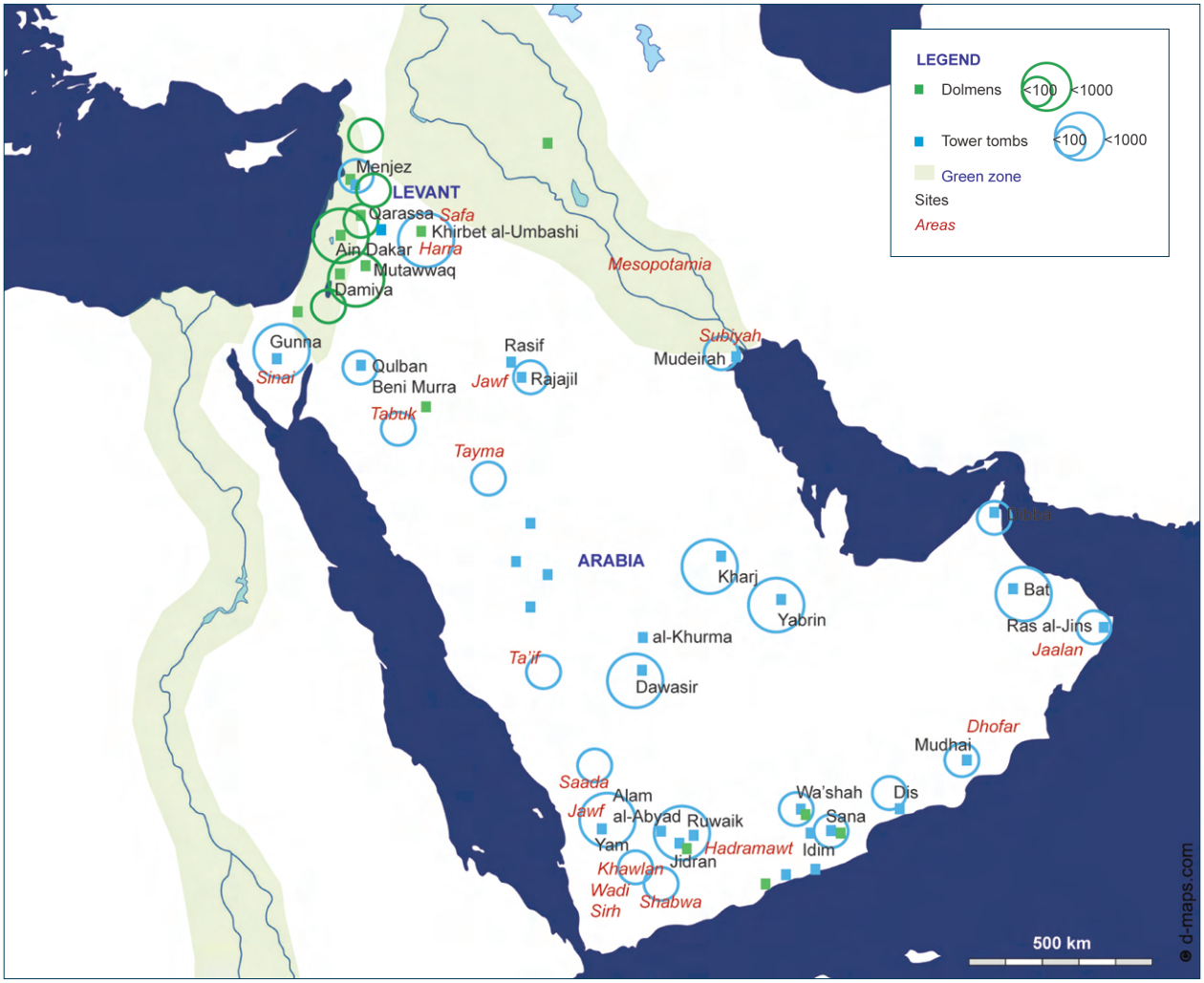

Fig. 4 – Distribution map of tower-tombs and dolmens (© T. Steimer-Herbet).

forms such as tails or low walls. Just as with several other necropolises (Jebel Jidran, Jebel Ruwaik, Jebel Makhdarah), each tomb can be associated with two, three, sometimes even four tails (De Maigret 1996; Steimer 1998, 1999, 2001). One structure, observed only on the Jebel Kahlan, is exceptional in that its tail comprises 12 circular stone piles linked by walls, the entire ensemble measuring 24 m.

Vestiges of Humankind near this vast necropolis are numerous. Several settlement structures in caves have been found, with lithic industries of quartz, rock engravings (transcripts by García & Rachad 1989), as well as South Arabian inscriptions and engravings representing camels. Surveys in the Saada region uncovered several similar necropolises in the Wadi Mourer and the Wadi Nushur.

In the Sinai, several tower-tomb necropolises have been identified (Jebel Gunna, 'Ein Huderah, Abu-Halil, Jebel Hadid, 'Ein Umm Ahmad, El 'Abar, Jebel Sainte-Catherine, Wadi Hbar, Wadi Hebran, Wadi Nasb, Wadi Sawawin). Tower-tombs in the Sinai do not have tails but they all have openings. Those of Jebel Gunna (Bar-Yosef *et al.* 1977) are formed by two monolithic jambs and a lintel (**Fig. 5b**). They are different from the tower-tombs of Jebels Makhdarah, Ruwaik and Jidran in Yemen, which are narrower and elongated. In Yemen, while the openings possess lintels and a threshold slab, the jambs are made of small flat stones (Steimer-Herbet & Besse 2020). The orientation of the tombs is particularly interesting; all tombs from Sinai and Yemen are oriented west, or at least towards the western quarter of the horizon (Bar-Yosef *et al.* 1983; Braemer *et al.* 2001). This distinguishes them

Fig. 5 – a. Tower-tomb of Jebel Kahlan (Yemen) (Photo: F. Braemer); b. Tower-tomb of Jebel Gunna (Egypt, Sinaï); c. Tower-tomb of Hebariyeh (Syria); d. Tower-tomb of Dibba (Fujeira) (Photos: T. Steimer-Herbet).

from the tombs of the oriental façade of Arabia, the openings of which face east.

An original feature of the tower-tombs of tower-tombs of Hebariyeh (Harra, Syria) is the grouping of circular and quadrangular structures. The Hebariyeh area has previously been the topic of an article inventorying several hundred tombs (Steimer-Herbet 2011) situated near a village dated to the end of the 3rd millennium BC and discovered in the 90s by a French-Syrian mission (Braemer *et al.* 2004). This rich site gives us a few indications of the relationships between the settlement and the necropolis. Quadrangular tower-tombs, like that of the necropolis of Khirbet al-Umbashi, are linked to megalithic settlements dating to the end of the 3rd millennium BC (Ly-6027, 2491-2134 BC). Circular tower-tombs seem to be anterior since they were built over the Chalcolithic settlements. They are also linked to camping grounds (stone circles) and enclosures. Tower-tombs with tails, which are also frequent in this region, are more isolated from the visible domestic structures. In numerous cases, they are associated with kites (gazelle traps). We observed examples of tails elongating the main trap wall, and sometimes tails interrupted by the trap wall (Steimer-Herbet 2011: Fig. 7c, 8a, b) (**Fig. 5c**).

Through the variety of their construction and in their large numbers, the tower-tombs of the oriental façade of Arabia play a major role in the megalithism of the Middle East. At Dibba (Fujeira), the tower-tombs are named Hafit after the eponymous site of Jebel Hafit, located to the south of the current oasis of al-Aïn (Bibby 1966). They are built on the first terraces overhanging the intersection between the Wadi Zanah and the Wadi Fay, at an altitude of 200 m. In 2003, 58 monuments were registered in the area (Steimer-Herbet 2003, unpublished report). All are dated between 3200 and 2700 BC (Frifelt 1970). The diameter of the tombs varies between 4 and 8 m. They are formed by two concentric walls built around a circular or oval chamber. The internal cladding presents a slight overlap towards the centre in order to achieve a corbelled cover. The preserved height of the monuments of Dibba does not exceed 2.5 m (**Fig. 5d**). The best-preserved construction at the Wadi al-Ayn reaches a height of 6 m, while a tower-tomb of Shihr-Jaylah described by Cleuziou is 8 m high (Cleuziou 2002b: 19). Twenty-seven of the tower-tombs of Dibba have entrances facing the south and southwest. This is remarkably different from the usual orientation of the tower-tomb necropolises of Oman, the entrances of which are almost always oriented to the east (Cleuziou 2001: 19). The technique of tomb building is rather complex at Dibba since they are often built on steep slopes. Foundations must therefore compensate for the incline and necessitate the use of complex scaffolding. According to the predictive model of Giraud for Ras al-Jins (Oman), tower-tombs are localized near natural resources such as springs, mangroves, coasts, or oases (Giraud 2012). This is the case for the necropolis of Dibba, which overlooks an oasis occupying the coastal plain at the output of two wadis in the Gulf of Oman.

From the Jordan Valley to the Oronte, megalithism is so abundant that it is difficult to choose only a few determining examples among the rich necropolises. In this part of the Levant, dolmens constitute the best-known and most studied model (Stékélis 1961; Epstein 1985; Steimer-Herbet 2001; Fraser 2018). The necropolis of Khalt Eaged, in the north of Jordan, was discovered in 2005, 35 km to the west of the modern town of Irbid (Steimer-Herbet 2005, unpublished report). This site, which includes 16 well-preserved sandstone dolmens, is threatened by agricultural activities. The state of preservation of the monuments is exceptional considering the vast majority have been pillaged for their material, and often only a few orthostats and sometimes the cover slab remain. The dolmens at Khalt Eaged are distinct in having a circular drystone wall covering the chamber (**Fig. 6a**). This observation resolves a question that is several decades old regarding the possibility of a tumulus covering the chamber. In their pitiful state, many dolmens, including those of Ala-Safat, Jebel Mutawwaq, Kufr Yuba (Jordan), Aïn Dakar, Qarassa (Syria) to name but a few, exhibited only one or two base walls, either concentric, quadrangular, or in a half-circle. A more detailed examination of well-preserved dolmen architectures allows us to imagine funerary chambers covered on their external side by a drystone wall. One of the dolmens of Khalt Eaged has two contiguous funeral chambers, which is not exceptional in this area; other such dolmens are found at the site of Marajem (Nicolle *et al.* 1999). At Ala-Safat (Stékélis 1961) and Tell al-'Umayri (Dubis & Dabrowski 2002), dolmens

with multiple levels were found. At Khalt Eaged, the necropolis is set in the middle of vast cultivated fields, prompting the hypothesis that the settlement component that must have been located nearby but has been destroyed over time (Steimer-Herbet & Besse 2017). Houses in this area tend to be rectangular of to have double-apses. The settlement-necropolis relationship is well documented for the site of Jebel Mutawwaq and Sharaya (Polcaro *et al.* 2014; Steimer-Herbet 2006) where double-apse

Fig. 6 – a-b. Dolmen of Khalt Eaged (Jordan) (Photo: W. Abu-Azizeh); c-d. Dolmen of Ain Dakar (Syria); e. Dolmen of Jidran (Yemen) (Photos: T. Steimer-Herbet).

houses have been dated to the Early Bronze Age I (3600-3150/3100 BC).

The dolmens of Aïn Dakar, Syria (Steimer-Herbet & Zuobee 2014) are at the heart of a region that is extremely rich in megalithic monuments: the basalt plateau of Golan, where the initial appearance of dolmens has been highly debated, with important chronological gaps. Some researchers (Dajani 1967; Paz 2005) place the start of megalith building during the second half of the 4th millennium BC, in the Early Bronze Age Ib (3300-3050 BC) while others argue the construction period started during the 3rd millennium, during the Middle Bronze Age IV (2300-1959 BC) (Epstein 1985; Kochavi 1989). Excavations in Jordan and Syria have yielded new chronological indications attributing the first use of these dolmens to the Early Bronze Age (Dubis & Dubrowski 2002; Polcaro *et al.* 2014; Steimer-Herbet & Besse 2017). It is worth mentioning that for dolmens just as for tower-tombs, all necropolises were not in use simultaneously. There is a certain arrhythmia in territory occupation, with phases of abandonment and of the revival of activities that are linked to resources and intracommunal relationships. Some tombs and necropolises could have been reused over several millennia, while others were sealed or abandoned. Of the 400 monuments described by Schumacher in 1885, only 75 are still standing today (Steimer-Herbet 2005, unpublished report; Steimer-Herbet & Zuobee 2014). Few monuments still have their cover slab. Funeral chambers are mostly rectangular and trapezoidal, although a few are oval or square. All chambers are surrounded by one to three circular walls. One of the best-preserved examples reaches a conserved height of 1.5 m and it recoveres the cover slabs of the chamber. Seven chambers have a clearly visible entrance, one of which is a pierced rock slab (**Fig. 6b**). All are oriented towards the east. At Ala-Safat (Jordan) the majority of chambers with portholes open towards the north (Stékélis 1961). The orientation of openings in the dolmens varies considerably from one necropolis to the next but also within each necropolis. The patrons of the tombs privileged an orientation to the north or the east, a choice too heterogenous to suggest any underlying beliefs. It is also important to mention enclosures and funerary tails. At Aïn Dakar, but also at Qarassa, several megalithic monuments are grouped and encircled or linked by a wall.

Similarly, at the foot of the Jebel Jidran and in the Wadi Sarr (Yemen) two dolmens have a wall –in this area are termed 'tail' (Braemer *et al.* 2003). Dolmens are rare in the Yemen. Only six were found by the French and American missions surveying in the Hadramawt (al-Mudarraj, Jebel Jidran, Wadi Wash'ah, Wadi Sana, Wadi Sarr, Wadi Shumlya). These dolmens are contemporary with the tear-shaped or trapezoidal stone platforms that appear at the same time as rock engravings, in the middle of the 5th millennium BC (McCorriston *et al.* 2011: 3-6). They are found on the lower terraces near the wadis. The chambers of the dolmens are rectangular, surrounded by a circular or quadrangular wall. Only the dolmens of Jidran and al-Mudarraj still had their cover slab at the time they were recorded. While no dolmen has been excavated in the Yemen, McCorriston observed that those located in the Wadi Sana and Shumliya are built on the same alluvial levels as the stone platforms. The associated surface artefacts were dated to the 7th, 3rd and 1st millennia BC (McCorriston *et al.* 2011: 8). Geometric designs, made by a pointed stone tool, decorate the rock slabs of the Jebel Jidran and Wadi Sarr dolmens (**Fig. 6c**; Braemer *et al.* 2003; McCorriston *et al.* 2011). In the Wadi Sana, the vestiges of an enigmatic structure, recently broken into several pieces, had a rock slab with similar designs dated to the 5th millennium BC thanks to a hearth within which the rock slab fragments were found (AA81816 - 4586-4334 BC).

Dolmens can be distinguished from tower-tombs by their morphological traits and differing building techniques. Dolmens have a rectangular chamber, orthostats and a cover slab; tower-tombs have a circular chamber, orthostats, dry walls and a corbelled roof. The reality, however, is not so simple, and the monuments of Menjez in northern Lebanon are a good example. In this village, on a small territory of 5 x 5 km, ten clusters of megalithic tombs (87 in total) were found by Reverend Father Maurice Tallon between 1959 and 1969. An in-depth study of the building techniques of 11 monuments yielded no fewer than seven different morphologies. The chambers are circular, oval, quadrangular, with or without enclosure, and all open to the south. Several

bear evidence of a corbelled cover (Steimer-Herbet *et al.* 2018, 2019). During the 4th millennium BC, inhabitants of Menjez adopted the techniques of tower-tomb builders to cover chambers of various shapes (**Fig. 7**). These tombs are characterized by a rich iconography of engraved signs on the rock slabs. Bas-relief in the shape of snakes decorate chamber walls, while other enigmatic figures such as lines, circles, 'U', 'V', or triangles are found on corridors or exterior claddings. Recent discoveries also include engravings with anthropomorphic shapes in a megalithic context, on the cover of a dolmen of the Golan (Sharon *et al.* 2017).

To date, over 20 000 dolmens have been described in the Middle East. The highest known concentration is in the Golan and neighbouring areas (Irbid, Zarqa, Jordan Valley, Mount Nébo, Leja, Homs' Gap). On the occidental façade of the Arabian Peninsula, the number of tower-tombs is about equivalent to the number of dolmens, at around 25 000. To these must be added the 100 000 structures of the Sultanate of Oman.

4. The patrons of megalithic monuments

During the 5th millennium BC, communities experienced important social changes, which are manifest in their behaviour towards their dead. Rather than inhumations directly in the ground, they now chose funerary architectures above ground. Whether in Arabia, in the Levant, in the Balkans, or in Europe, this rapid change in funerary rituals represents a truly societal phenomenon. People invested considerable time and resources to raise these monuments. Their builders respected various codes and despite the poor quality of some rocks managed to obtain the required result, and this occurred over large geographical areas.

The latest studies conducted on tomb location insist that they are built close to oases (Cleuziou 1996; Gebel 2013), on hills at the very heart of the desert, near mangroves on the coast, all prioritizing access to resources (Harrower 2008; Giraud 2010; Cable 2012). Communities developed ingenious water-trapping systems, irrigation systems, and wells (Braemer *et al.* 2004; Gebel 2016). All these

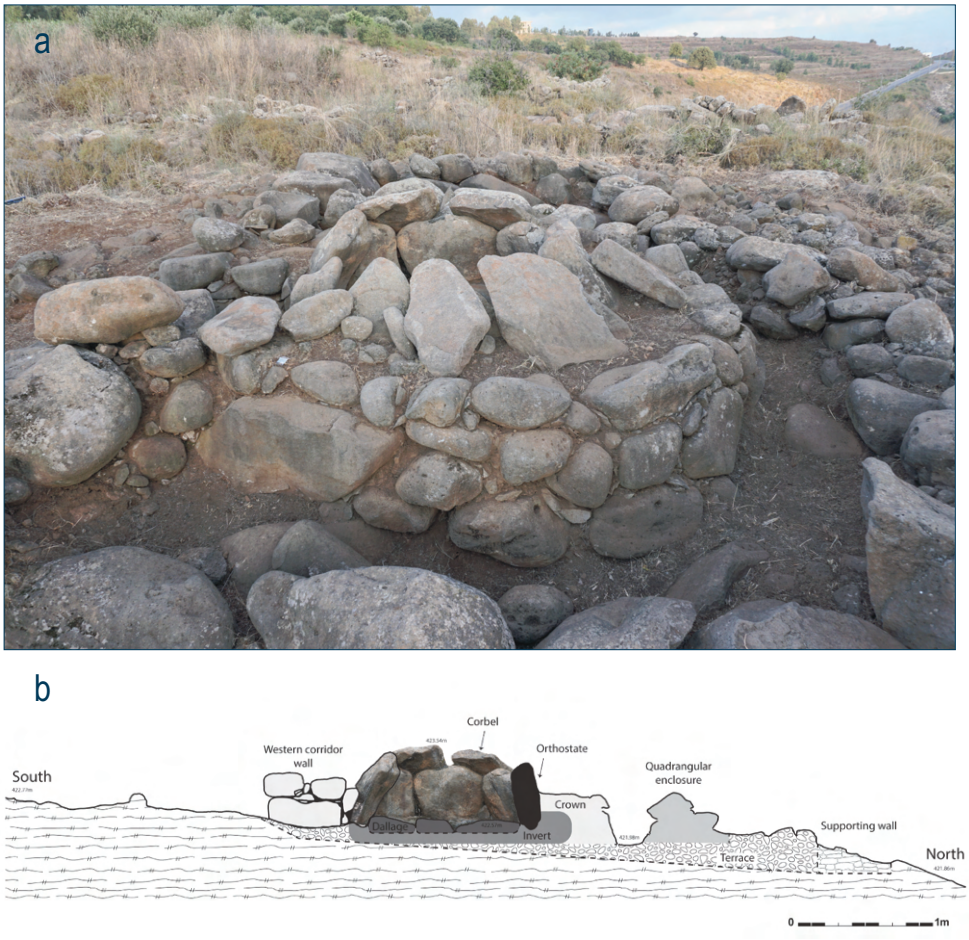

Fig. 7 – Megalithic tombs of Menjez (Lebanon): a. The monument of Kroum Metowmeh (Photo: F. Cousseau); b. 3D cross-section of the monument of Kroum Metowmeh.

subsistence modes are described in '*Megalithic genesis: construction of a cultural identity for better goods situation*') (Steimer-Herbet, volume I, p. 83).

This hold on territory also translates into the clustering of dolmens within funerary enclosures, which is probably related to family alliances or dependency systems. Another observed behaviour is the use of multiple funeral chambers, either with shared walls, or with several chambers within a single monument. This clustering phenomenon has been observed in both dolmen and tower-tomb necropolises and it appears that this tendency occurs towards the end of the megalithic period (Braemer *et al.* 2004; Steimer-Herbet 2004). Another interesting element is the presence of numerous walls found within necropolises. At Qarassa in Syria, systematic recording revealed that the necropolis was organized and structured through a system of sectioned areas (Steimer-Herbet & Besse 2017). Walls were also observed in Jebel Mutawwaq in Jordan (Polcaro *et al.* 2014) and are synonymous with a strong structuration of the funerary system. Furthermore, tower-tombs with tails form continuous lines. The deceased therefore shape the landscape in significant ways (Swauger 1966: 106-107; Cleuziou 2002b; Mortensen & Thuesen 2004: 109-110; Philip 2011).

5. Places of worship and human representations

Within this 'megalithic landscape', it is difficult to translate material constructions into the potential ideological and religious intents behind them. There are, however, a few buildings, interpreted by their discoverers as communal houses, temples, or sanctuaries, that deserve to figure in this inventory.

These structures are usually larger than houses and surrounded by bench seats. Raised stones are found in the middle or integrated into the walls. At Jebel Mutawwaq in Jordan, such a building was found within an Early Bronze Age I village of 450 double-apse houses. To the side of the building, a stone is raised, with a well, a small altar, and a shallow artificial pool (Fernandez-Tresguerres 2011). Two similar building examples were excavated in Yemen in the 1980s. The first, wonderfully preserved, was found at al-Raqlah in the Khawlan (De Maigret 1996). The second, at Rawk in the Wadi Idim, was excavated in 2005. Unfortunately, only a few pieces of the structure were left but a radiocarbon date on bones places its construction at the end of the 4th millennium (Pa 2392, 3499 and 3198 BC (1 σ); Steimer-Herbet *et al.* 2007). Similar monuments were found in the Negev by Avner (1982). At Rawk, the excavation yielded two immature individuals buried in the foundation trenches of raised stones, along with obsidian flints and a covid teeth. Five anthropomorphic statuettes were deposited at the foundation level of the building. A metal fragment of a tool was found, probably forgotten when the bench seats were installed (**Fig. 8**).

Human representations, frequent during the PPNB, seem to disappear for several millennia and then reappear at the end of the 7th and mostly at the 5th millennium BC. Kirkbride excavated the site of Riqseh, on the Jordan-Saudi border in the Wadi Ramm. The discovered remains comprised a large stone circle, 20 m in diameter, with over 200 menhirs-statues delimiting the perimeter. These representations of men and women with schematic faces, clothes, and daggers are exceptional in that they are dated to the end of the 5th millennium BC (4060 BC (Libby's Half-Life); K1467, 6010±120 BP; Kirkbride 1969). In the Middle East, other menhirs-statues have been found in the Hadramawt (Yemen), near al-Ula (Saudi Arabia), Maarat al-Noman and Tell Braq (Syria) and are slightly more recent, dated to the 7th, 4th and 3rd millennia BC (Pirenne 1990; Newton & Zarins 2000: 165, Fig. 8; Steimer-Herbet 2020). Most were found isolated, along axes of circulation such as at Wadi Zabon near Ghail Yamin and Krif Badrid (McCorriston 2011) and Wadi Idim at Rawk and Sunah, and Wadi Bayut at Khushom al-Sanam (Steimer-Herbet *et al.* 2007; Steimer-Herbet 2008). In some cases, these statues adorned the façade of a ritual structure, as at Arf al-Qibali in Yemen (Vogt 1997) or in South-East Jordan in the desert of Jibal al-Khashabiyeh (W. Abu-Azizeh and M. B. Tarawneh, personal communication).

In the Hadramawt, all the menhirs-statues are male. The figures are incised or worked using a hammerstone. Only the upper half of the body is represented; the lower section was probably left unmarked as it was buried in the ground. There are strong stylistic similarities between the figures and rock engravings found in Arabia (Inizan & Rachad 2007; Nayeem 2000). Common anatomical motifs

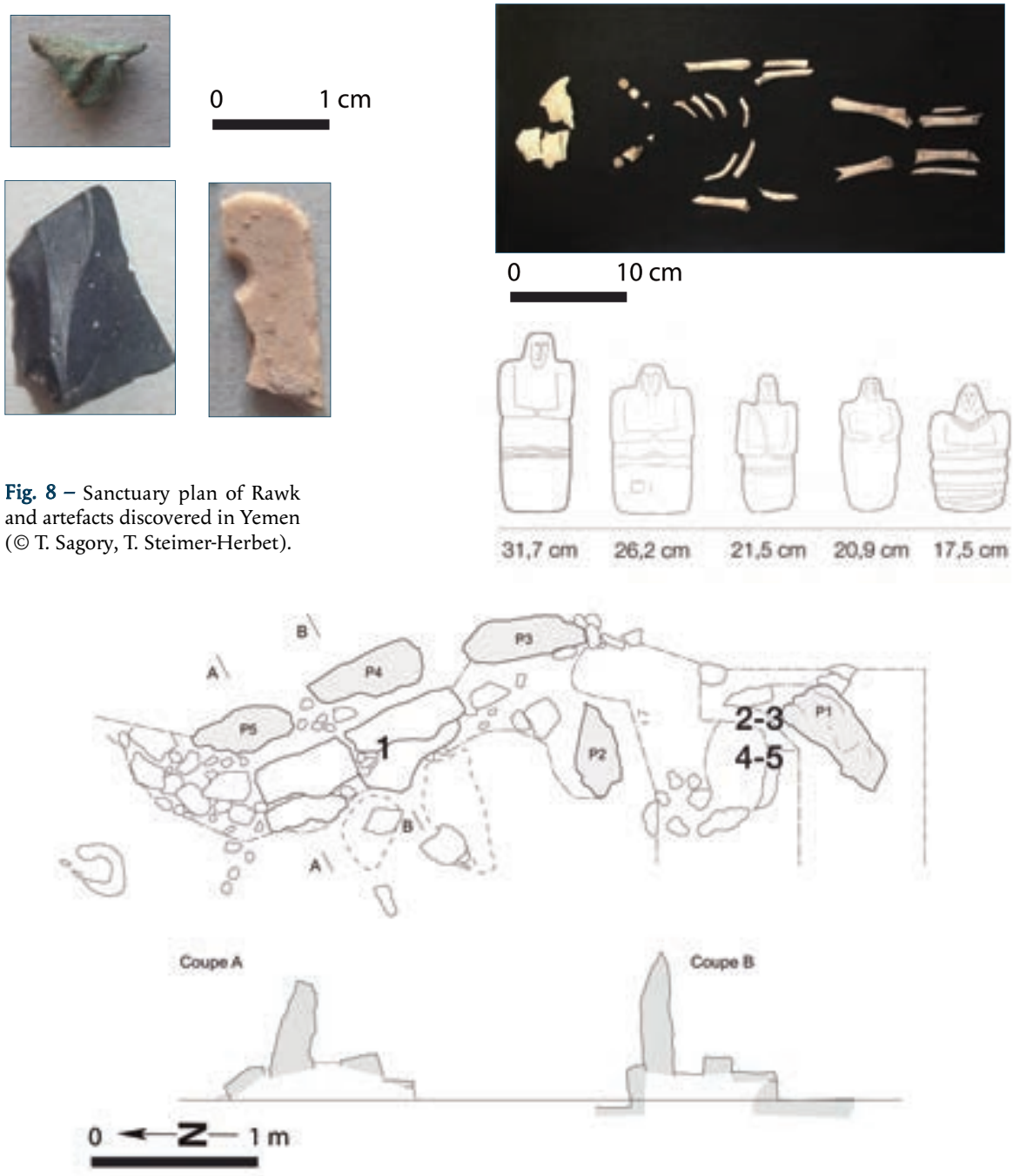

Fig. 8 – Sanctuary plan of Rawk and artefacts discovered in Yemen (© T. Sagory, T. Steimer-Herbet).

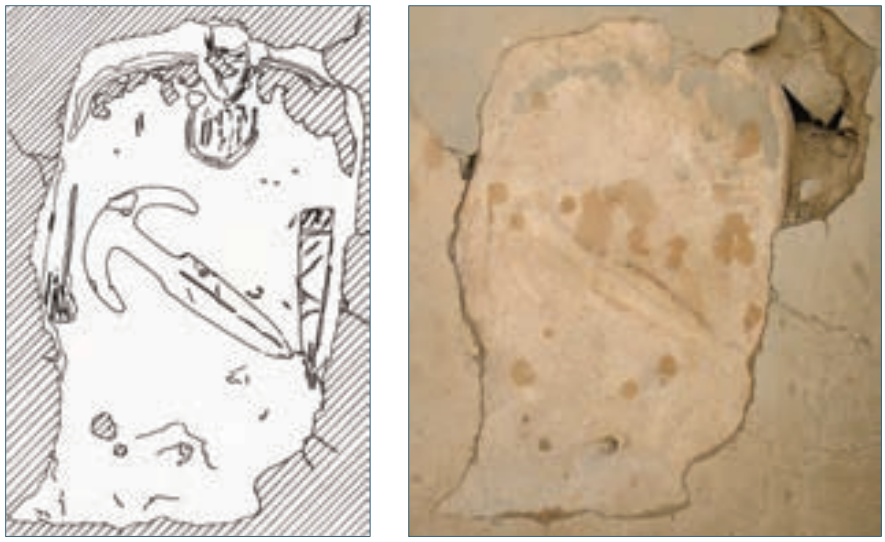

Fig. 9 – Menhirs-statues of the Wadi Idim in Yemen (© P. Lavigne, T. Steimer-Herbet).

include the nose, the brows, and the eyes (T-shaped). The mouth is missing, and the bottom of the face is delineated by a curved line and a beard (which could also be a pectoral muscle). The arms, with or without hands, lie alongside the body. At Rawk, a dagger with a crescent-shaped pommel is represented, probably a status object. It is associated with a sheath of dimensions smaller than the dagger's blade. The belts of the figures are also depicted, often represented by a simple line but sometimes with a fine chevron pattern (Steimer-Herbet 2008; **Fig. 9**).

Small anthropomorphic statuettes are exceptional discoveries in the communal buildings or near settlements. They are attributed to the end of the 4th millennium BC (Steimer-Herbet *et al.* 2007; Steimer-Herbet 2020). In contrast with menhirs-statues, these small statuettes are sculpted in the round. They all depict a standing individual, arms perpendicular to the body. The body is schematic, while the head and facial attributes are realistic. Incisions, fine pecking, and polishing have been used to shape realistic arms, nose, eyes, brows, beard, anatomical features and ornaments (necklaces, belts, or strings). These statuettes are relatively small; they fit in one hand and can be easily transported. All the statuettes from one region to the next present relatively homogenous faces, but the clothing, body, and the details of the face vary. More specifically, depictions of nudity in the Jawf and overweightness in the Marib are evocative of a true desire for realism.

Raised stones, either isolated or aligned, are numerous. No extensive research has been conducted on this topic in the whole of Arabia and the Levant. Sources mentioning these monuments are succinct, and the stones are very difficult to date. An excellent guide by Scheltema '*Megalithic Jordan*' inventories eight sites presenting raised stones dated from the Chalcolithic period to the Early Bronze Age II (2008). The link between megalithic tombs and raised stones is, for now, unproven. At Jebel Makhad (Jordan) and Menjez (Lebanon), isolated stones were found near tombs (Nicolle *et al.* 2001; Steimer-Herbet *et al.* 2019). Extensive alignments are harder to link with necropolises, as is the case for Rajajil, Saudi Arabia (Gebel 2013), Lejjun, Jordan (Chesson *et al.* 2005) and those of Tihama, Yemen (Khalidi 2008).

The alignment of Al-Mahandad in the Yemen valley of Tihama is particularly interesting (**Fig. 10**). It is part of an ensemble of seven sites, inventoried by Khalidi (2008). Dated to the end of the 3rd millennium BC, they are deliberately set at precise points

Fig. 10 – Plan and photography of Al-Mahandad (Yemen): a. View from north; b. View from south-east; c. Aerial view of alignments and circles (Photos: Y. Guichard).

alongside the principal wadis. For Khalidi, raised stones are always located at geographical, territorial, strategic, and/or symbolic transitions. The stones contribute to fostering a special link between individuals and the territory. At this period, we see an increase in the importation of obsidian from the horn of Africa. These raised stones could be the product of a territorial affirmation (border markings), an appropriation of the landscape (control), or simply a commemoration of the living or the dead. Most functional hypotheses rest upon ethnographical observations. In some tribes, raised stones serve the role of cenotaphs. The individual whose body could not be brought back to family or is inhumed in another place is represented by a stone, as a memory of the deceased and as the symbolic equivalent of a tomb. The stone is therefore perceived as a substitute for an individual. The interpretations of Thesiger are very different; in his book about the Danakil, he argues that the stones are a representation of the body count of the deceased (Thesiger 1996).

6. Conclusion

Megalithic practices appear diverse, varying from one region to the next. They nonetheless form a homogenous ensemble, a shared 'megalithic culture' in the Middle East. Considering the multiple facets of these practices, they only make sense when considering the phenomenon from a global perspective. From an anthropological point of view, this global vision allows for some general characteristics to emerge.

The patrons of megaliths practiced a variety of modes of subsistence within arid environments and diverse goods exchange systems. Megalithism can nonetheless be identified as the common denominator of communities peopling this part of the world. The symbolic role of megalithic monuments is deep; it materializes a space and its transformation into a territory. Its social role, meanwhile, is manifested in the physical difficulty of building such architectures, necessitating an organization with authority. The study of funerary architecture, of the various forms of expression of megalithism with dolmens, tower-tombs, sanctuaries, stone alignments, menhirs-statues, and anthropomorphic statues, offers us an opportunity to access the thought process of the megalith builders.

Despite the fragmented remains, it is obvious from the symbols observed on tombs (circles, squares), on menhirs-statues (chevrons), and anthropomorphic statuettes (squares and lines) that the cultural universe of the protohistoric populations of the Middle East was rich. Megalithic art was not just an aesthetic endeavour but embodied a complex cosmology and reminded the beholder of such. The staging of the representations (snakes, daggers, geometric signs) within identical cultural contexts raises the question of a code of understanding that was shared between communities. This common code was probably the result of material and ideological exchanges between the various megalithic societies.

Part VI: Megaliths from Caucasus to the Arabic Peninsula

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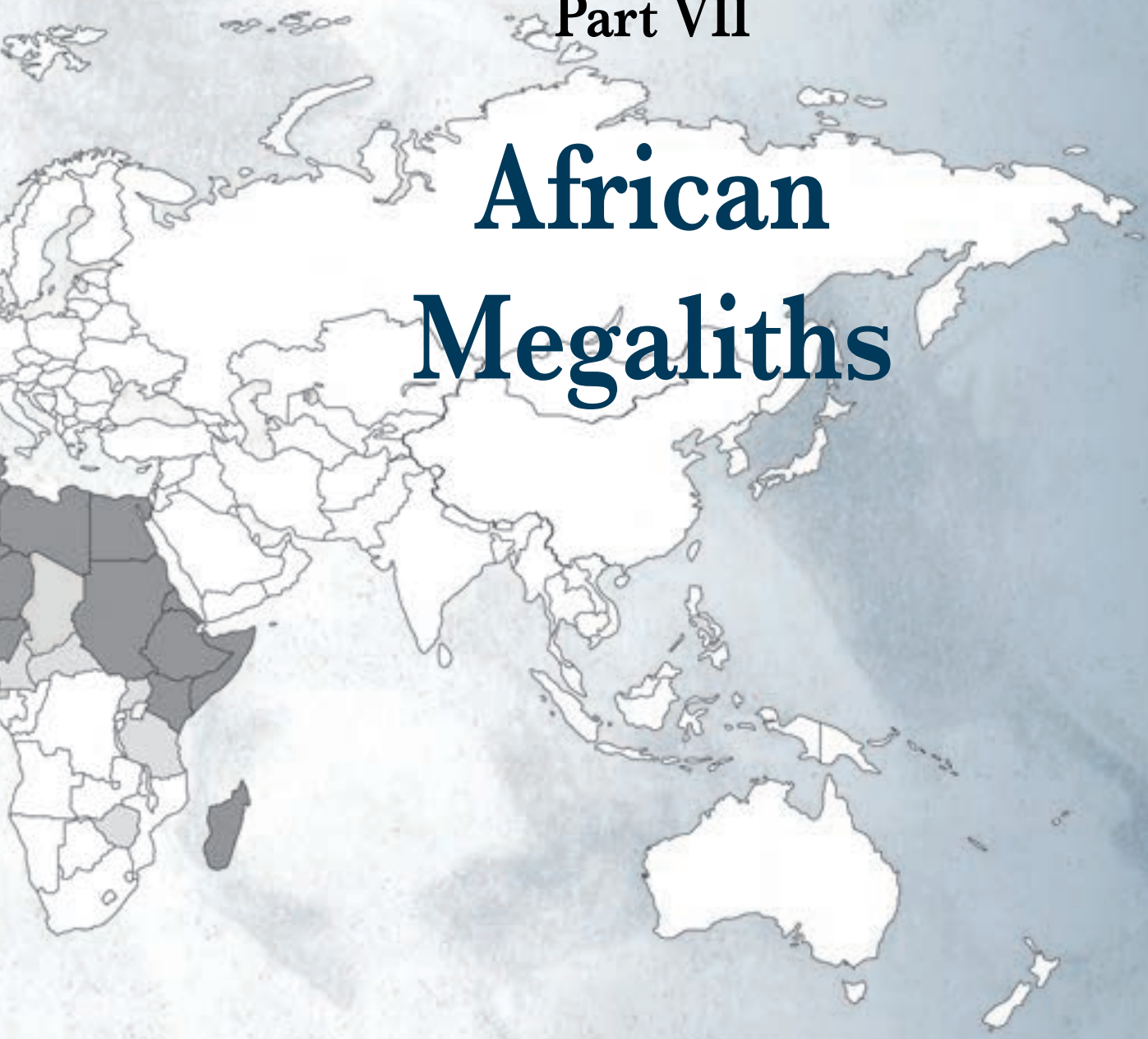

Part VII

African Megaliths

Jean-Paul CROS, Luc LAPORTE

Introduction

The presence of megaliths in Africa is reported in the scientific literature from at least the end of the 19th century onwards, mostly by European scholars. On the Mediterranean shores of the African continent, such as in Cyrenaica (**Fig. 1**), some megalithic features were reported much earlier in that century, although in this particular case there is little evidence of recent scientific work. More generally, it should be borne in mind that, for a long time, most parts of continental Africa were inaccessible to explorers. Other places have remained hidden or practically inaccessible to the uninitiated, regardless of their origin, until now. Thus, even today, there are still a number of sometimes imposing, erected stone structures whose existence is known of only because authorization has been granted to take just a glance, from afar, through the foliage of a sacred forest.

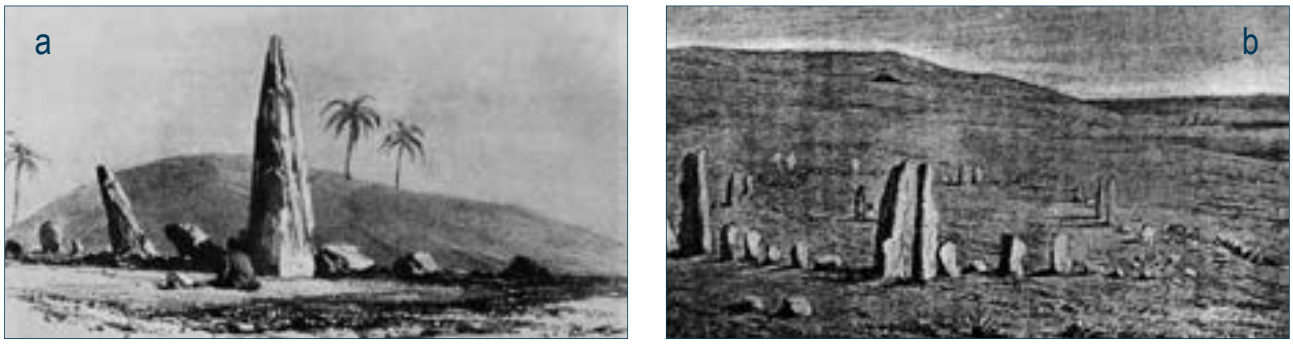

Fig. 1 – Circles of standing stones: a. Mzora (Morocco) – etching after Brooks 1830; b. Circles of standing stones in Cyrenaica (Libya) (Etching after Haimann 1882).

This heritage is increasingly considered by African colleagues, which sometimes radically changes the way in which the study of these very large stones can be approached, as is shown here in the contribution concerning the standing stones of Nigeria (Chapter 48, Edet & Sule Sani, this volume, p. 1033). Such studies have been extended into the English-speaking part of neighbouring Cameroon (Assombang 2004; Notué 2009; Oslisly 2010), as well as the highlands of the Mandara Mountains, located much further north (Marliac 1976; Tchandeu 2007-2009; Tchandeu & Temgoua-Noumissing 2017, cf. also the work on the Sukur site in northeastern Nigeria). In the Gulf of Guinea, the island of Bioko in Equatorial Guinea has 16 sites with 'menhirs', some of which are up to 3 m tall (Oslisly 2007). The distribution range of *tazunu* monuments extends over a watershed between rivers flowing towards the Atlantic on one side and towards Lake Chad on the other, in the eastern part of Cameroon and more broadly in the western part of the Central African Republic. Joussaume (2013: 83) has pointed out the sometimes somewhat contradictory

nature of the results obtained successively by different authors in relation to these megaliths (David 1982; Zangato 1999). A little further east again, in South Sudan, the presence of stone vaults and standing stones, associated with small stone funerary monuments, has gone largely unnoticed (Insoll 2015). However, the Dinka people also live in this same area, and some of their palmiform body tattoo patterns have been compared to those found on sword stelae in Ethiopia (Joussaume 1995).

The wide-ranging diversity of megaliths in the Horn of Africa and related cultural contexts are exposed through a specific contribution in this volume (Chapter 45, Cros, this volume, p. 985). The author stresses a chronological anchorage extending over several millennia, as well as the important role of the first pastoral societies who can also be found on the shores of Lake Turkana. In northwestern Kenya, the *Ng'amoratung'a* monuments were once interpreted as astronomical observatories, but this hypothesis has now been refuted. Each megalithic structure marks the location of underlying, and perhaps earlier, cemeteries in places frequented as early as the 3rd millennium BC (Chapter 46, Hildebrand & Grillo, this volume, p. 1001). Although the southern hemisphere of Africa is reputed to be devoid of such megalithic constructions, we should not forget too quickly how the walls of Great Zimbabwe were bristling with long standing stones (Garlake 1973). The numerous megaliths in Madagascar are also very recent (Joussaume & Raharijaona 1985). Those still in use in the south of this island are the subject of a valuable contribution to this book (Chapter 47, Parker Pearson, this volume, p. 1023). Research projects developed in West Africa have provided opportunities for numerous international collaborations, thus making it possible to better position the megalithic phenomenon in its regional context, and sometimes even to discern its current implications (Chapter 49, Laporte *et al.*, this volume, p. 1051).

The Saharan strip also has a very large number of megaliths, most of which have been little studied due to difficult access, so their inventory is far from complete. Here, two complementary approaches are traditionally implemented in efforts to overcome the problem. The first uses the few available archaeological references, combined with a typology of the remains in their present form (Chapter 51, Vernet, this volume, p. 1094). The second attempts to place these rather sparse data into a much wider framework which, here – and traditionally for more than 100 years – prioritizes studies of rock art

Fig. 2 – Saharan *Choucha*, plural *Chouchet*, or 'small, slumped towers' in the terms of Payen in 1859, where the internal area, which contains human bones (sometimes bordered by slabs lying on their side), is often sealed by a cover slab (After Camps 1994).

(Chapter 50, Gallay, this volume, p. 1077). A comparison with some of the contributions in the previous section on the 'tower tombs' of the Levant and the Arabian Peninsula will reveal the extent to which the architecture of the latter sometimes resembles that of the *chouchet* monuments (**Fig. 2**), in the Saharan Desert, although they are several thousand kilometres apart; some tower-tombs are dated to the 4th and 3rd millennia BC, while the latter are still very poorly documented (Camps 1961). An update of the available data on megaliths in North Africa is another important contribution to this volume (Chapter 52, Sanmartí, this volume, p. 1111).

Africa is generally presented as a continent of standing stones, with only a few 'dolmens' found in peripheral locations: in the Maghreb, in the Harar in Ethiopia, or in Madagascar (**Fig. 3**). Such assertions stem directly from the colonizer's viewpoint, based on a distinction between stones erected in the open-air and megalithic burial chambers, which is particularly pertinant on the Atlantic coast of Europe. Is such a distinction, however, still the most relevant when approaching the archaeological study of megaliths in Africa? As an example, we could cite the numerous circular funerary platforms located on both sides of the intertropical zone, from West Africa to Somalia, sometimes delimited by a low

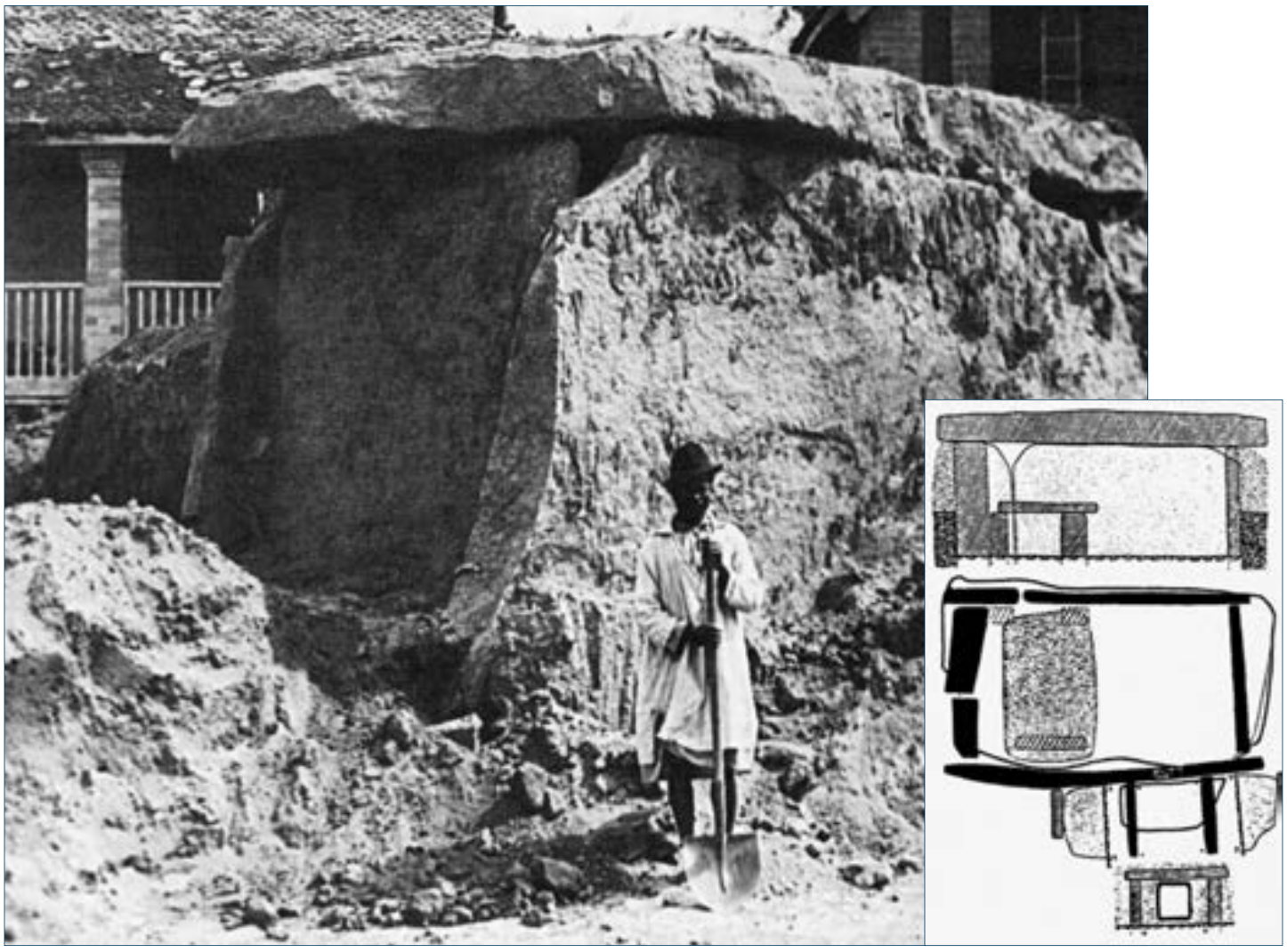

Fig. 3 – Dismantling of the tomb of one of the companions of Andrianampoinimerina, in Madagascar (Photo Archives of Tananarive, and plan of the tomb as reconstructed in a botanical garden of the town. In Joussaume & Raharijaona 1985: fig. 16).

dry-stone wall, which can also incorporate a few regularly spaced standing stones, or sometimes bounded only by large blocks (Laporte *et al.* 2017). These were not necessarily built at the same time or by populations with any kind of connection; they do not all reflect the same general idea and none were built in exactly the same way. As a result, their ruins sometimes appear to us today in very different forms, despite real similarities that only archaeological excavations – which are still too infrequent – allow us to identify (Laporte & Bocoum 2019: 392-393). However, as with the various megalithic tombs built in Europe over more than 2000 years, the geographical area considered here is sufficiently coherent, the examples sufficiently numerous, and the basic principle sufficiently similar that such observations cannot be dismissed as simple convergences (**Fig. 4**).

A similar question can be considered for many other structures, although we do not yet have sufficient elements to reach any conclusions. We are thinking here, in particular, of structures consisting mainly ofthe conical piles of small stones surmounted by, or only associated with, a standing stone, which sometimes seem to have developed by successive accretions. Such structures exist, in different forms and at different times, in the Sidamo in Ethiopia, through southern Sudan or western Central African Republic, and as far as the Grassland of southern Cameroon (**Fig. 5**). Let us restate the question in a different way: if the history of research had taken the opposite course, in the long term, would the

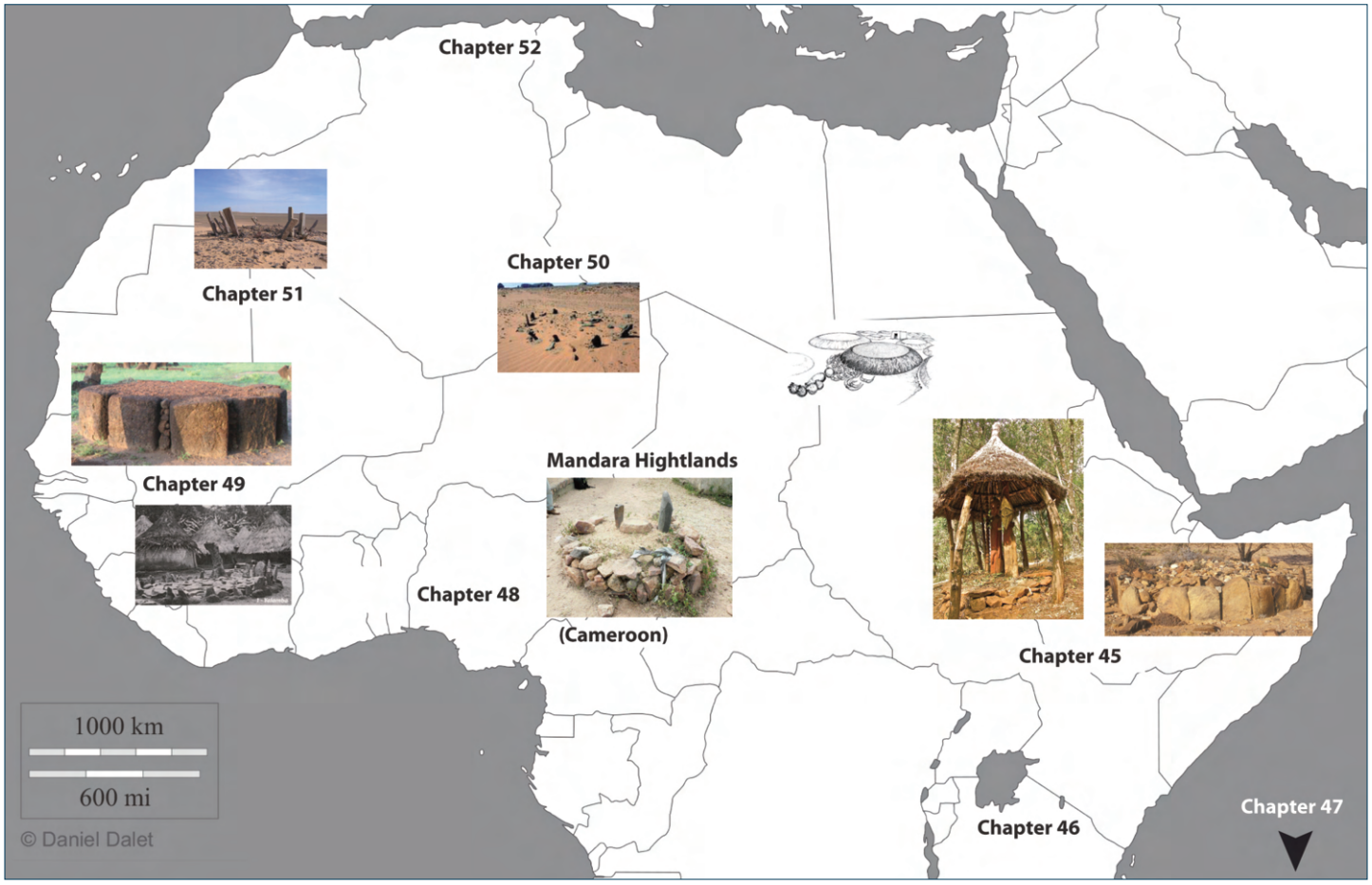

Fig. 4 – Funerary platforms in sub-tropical Africa (After Laporte *et al.* 2017, modified).

description of European megaliths still have been as relevant if it had been based on simple transpositions from African references? This is a subject on which much work remains to be done when we deal with megaliths in Africa. We shall begin this section with an original contribution which proposes to establish, in the light of available data, a general framework for the state of knowledge into which each of the examples discussed here can be inserted (Chapter 44, Gallay, this volume, p. 968).

Translated from French
by Louise Byrne

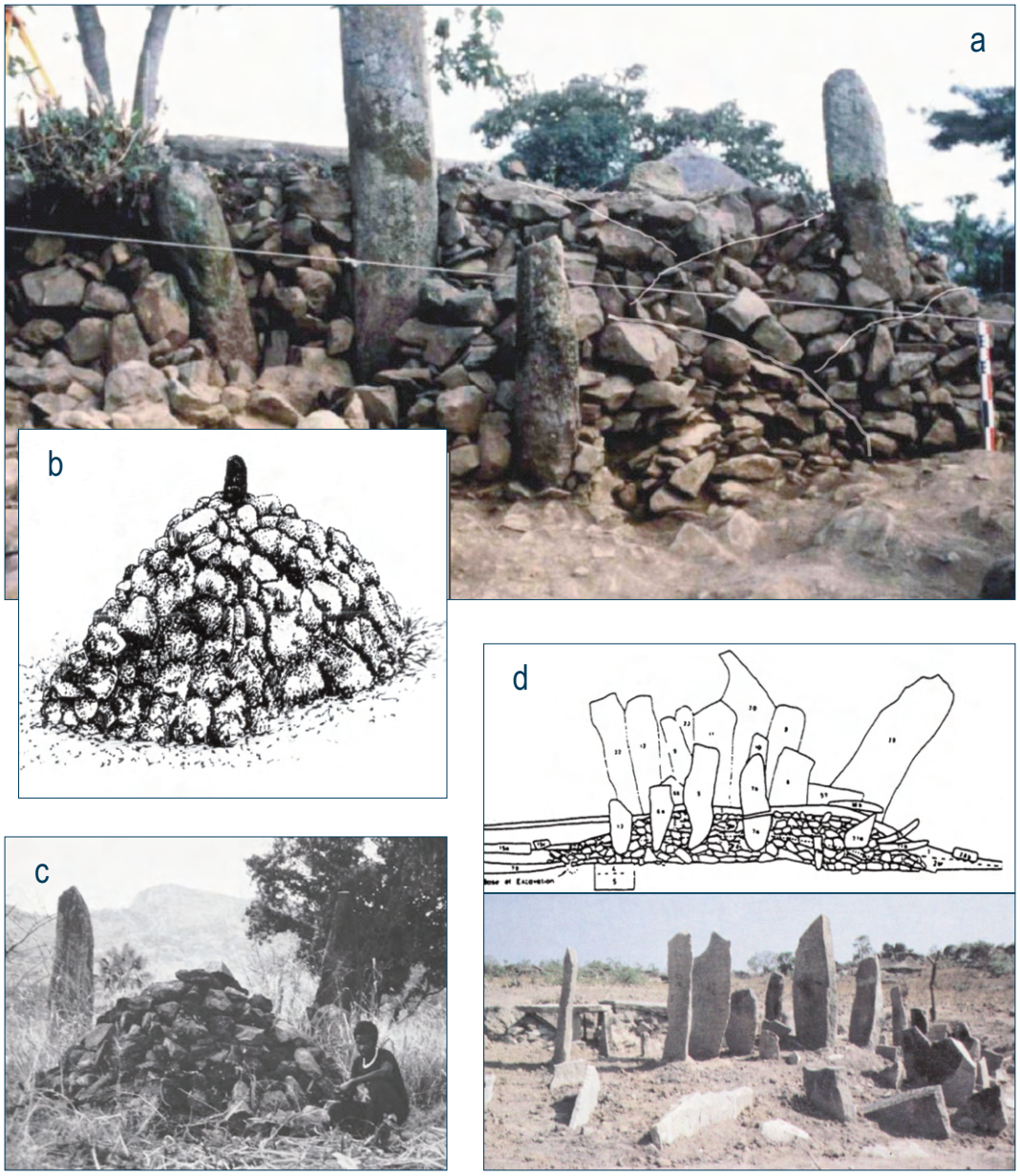

Fig. 5 – Conical mounds of small stones associated with or surmounted by a standing stone: a. The large tumulus of Tuto Fela, in the Sidamo region of Ethiopia, is the result of the successive addition of small piles of stones, each accumulated around a standing stone (After Joussaume 2012); b. Each stone of this religious monument, in the Mentchum valley in southern Cameroon, represents a clan, topped by a small monolith representing the chieftaincy (After Notué 2009: 46, drawing: O. Timma); c. Conical pile of stones directly associated with a standing stone, among the Moru in South Sudan (After Insoll 2015 - cf. Philipson 1981: 6 and Pritchard 1935: 155); d. Tazunu in Central African Republic (survey of the Balimbé monument after David 1982, and photograph after Mohen 1989). Examples b and c correspond to contemporary societies, while examples a and d are the result of archaeological work, sometimes with uncertain or controversial dates.

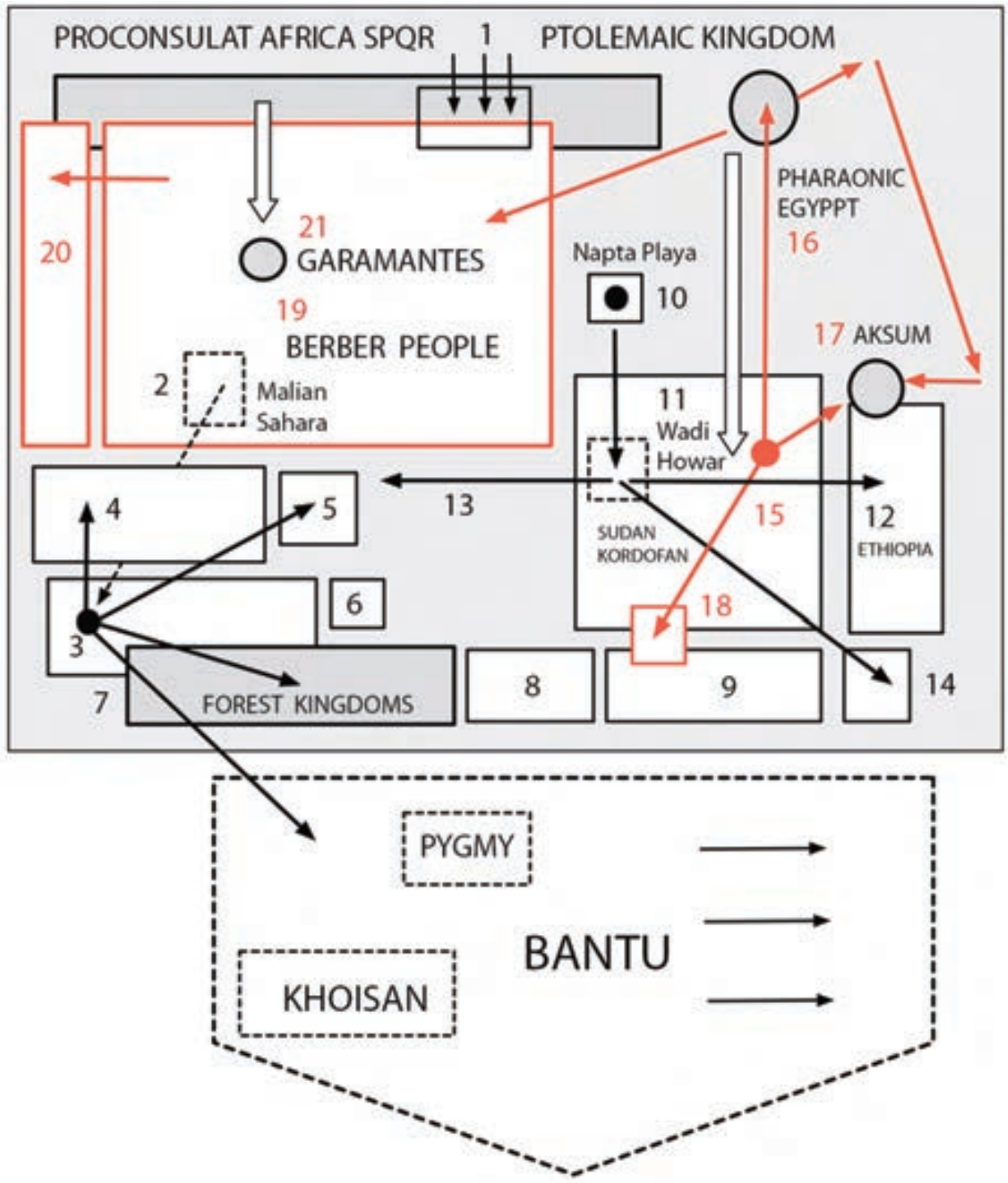

Fig. 1 – Main contexts associated with the problematic of megalithism in Africa.

1. Dolmens related to European Mediterranean cultures; Niger-Congo phylum: 2. Ounanian of the Malian Sahara; 3. Atlantic language family: local civilisations; 4. Atlantic language family: Saussais people, Senegambian stone circles, Serer people; 5. Atlantic language family: Mandé people; 6. Voltaic language family: Batammariba people; 7. Kwa and Gur language families: Forest kingdoms; 8. Benue-Congo family; 9. Adamawa-Ubangi: Bouar people; Nilo-Saharan phylum: 10. Napta Playa; 11. Transit area of Wadi Howar; 13. Western diaspora: Northern Sudanic and Chadic language family; 14. Nilotic language family: Namoratunga ; Afro-Asiatic phylum; 12. East Cushitic language family, Ethiopia; 15. Gezira: Proto-Afro-Asiatic; 16. Erythraic language family: Pharaonic Egypte; 17. Ethiosemitic language family: Aksum; 18. Chadic language family: Mandara Mountains; 19. Berber language family: Central Sahara; 20. Berber language family: Atlantic Sahara; 21. Berber language family: Garamantes.

44

Alain GALLAY (†)

Megaliths of Africa: an overview

Abstract: The megaliths of Africa are concentrated in the northern half of the continent. The greatest diversity of funerary architectures occurs in the Sahelian strip stretching from Senegal to Sudan and encompassing Ethiopia. It is possible to correlate these architectures with the linguistic patchwork, more particularly with the language families of the Niger-Congo phylum, the Afro-Asiatic phylum and the Nihilo-Saharan phylum, which seem to reflect the genetic structure of the populations. Holocene climatic changes appear to have played a crucial role in the spread of distinct pastoral populations, the movements of which may be correlated with phases of climate deterioration. In the southern part of the continent, several regions are *not* involved in the megalithic phenomenon: the West African Forest kingdoms, the Bantu world, the San hunter societies and the Khoikhoi stockbreeders. Megalithism was also influenced by distinct state societies such as Pharaonic Egypt and the antique states in North Africa and Tripolitania (Garamantes), and it disappeared with the spread of Islam.

Keywords: *Africa, megalithism, linguistics, Niger-Congo, Afro-Asiatic, Nilo-Saharan, Holocene climate, population genetics, North Africa, Sahara, Sahel, Ethiopia, Egypt, Sudan, Bantu*

The African continent includes both large geographical areas exhibiting very rich funerary monumentalism and areas located away from this phenomenon, which disappears with the spread of Islam (Cuoq 1984). The extent of research carried out is quite uneven. In areas such as Senegambia, Sudan, the Aïr Mountains, Ethiopia, the basin of Lake Turkana and, to a lesser extent, the Central African Republic, intensive research has been undertaken, supported by outstanding excavations, whereas other regions, for example Cameroon, suffer from a lack of investigations. Only a few surveys can be used to evaluate the potential of these areas. Several detailed studies carried out on isolated populations, e.g., in Northern Togo, should be mentioned but these hardly enable comparative approaches.

In order to gain an overview of the phenomenon we propose here a preliminary presentation of the data ordered according to the linguistic grid, the least inaccurate way to organize our information despite its schematic character (Blench 2006). Our proposal here is limited to suggestions as to how approach this (Fig. 1).

1. The state of our knowledge

1.1 The impact of Europe

The small-scale megalithism of North Africa particularly includes dolmens. These monuments have yielded remains dated exclusively to the Iron Age and it is therefore assumed that they were erected during the protohistoric period. Here, however, we ask whether they could instead be correlated with

the Neolithic megalithism of Southern Europe, in that the monuments were systematically re-used during later periods (Camps 1995). Moreover, the *haouanet* rock-cut tombs, which mainly occur in Tunisia, apparently have a Sicilian origin. Equally, the dolmen-type monuments may to have the same origin or be connected to Southern Spain, as is the case for the rare gallery graves of Kabylia, Algeria.

1.2 Niger-Congo phylum

The classification of the Niger-Congo linguistic families is still a much-discussed topic, for example, as regards the area of origin of the phylum which is argued to be located in West Africa. The phylum starts to diversify prior to the invention of agriculture in about 12 000-9500 BC(?).

Atlantic language family

The Atlantic family groups together four monumental assemblages. The richest and best studied of these are found in the Senegambian area, and include circles of upright stones and tumuli with one or several frontal stones. These monuments can be dated to between the last centuries BC and the 16th century CE. The so-called Socé tumuli (built by the Socé people) have been investigated mainly through surveys. The few data available have been transmitted by oral tradition and do not allow a detailed ethnohistoric diagnosis. Recent monumentalism by the Sereer people (also North Atlantic family) includes the building of tumuli, a tradition probably derived from the Mandé world (see below) but which could also be descended from Socé monumentalism. Lastly, recent local monumental traditions must be mentioned, including the notable circular platforms that can be attributed to North Atlantic (Bassari and Bedik people) and South Atlantic (Temne people) influences (Bocoum & Laporte, in press).

Mandé language family

The Mandé family is characterized by a rich tradition of tumuli building. Some rites are known from the historic tradition, such as those undertaken for the funeral of the king of Ghana in the 11th century, described by the geographer al-Bakrī, who mentions the presence of numerous accompanying deceased (Cuoq 1985: paragraph 138).

Voltaic language family

The Voltaic family is not associated with significant funerary monumentalism. Some particularly well analyzed studies into funerary rites can be mentioned, for example as regards the Batamaribé people of Northern Togo characterized by the use of collective tombs below small tumuli (Sewane 2003: http://www.archeo-gallay.ch/sewane-d-2003/).

Kwa and Gur language families

The West African Forest kingdoms do not adopt 'megalithic' funerary monumentalism. Their funerary rites are very particular, e.g., the ancestor altars of Abomey (Benin) or the very complex funerals of the Ashanti people, where the corpse of the king was defleshed after a period of decomposition and his remains reburied in a coffin deposited in the royal mausoleum. These funerals were accompanied by a hecatomb (public sacrifice) of slaves, whose corpses were not incorporated in the tomb but simply thrown into the forest (Irstam 1970).

Adamawa-Ubangi and Benue-Congo language families (Cross River, Bantoïd)

This area is characterized by very diverse, with poorly known funerary rites, as is the case for the southwestern part of Cameroon. In simple lineage societies (e.g., the Bëti people), the presence of accompanying dead is known. In the case of the Dowayo people, wooden poles are associated with upright stones. The best-known assemblage relates to megalithism of the Bouar people in the Central African Republic (Adamawa-Ubangi family). This is associated with large tumuli (*tazunu*) built with small stones, and which support numerous upright stones. These monuments, which are not used for funerary purposes, reflect a long tradition extending from the 13th century BC to the 16th century CE, at the transition between the Neolithic period and the protohistoric period that witnessed the emergence of iron metallurgy. Earthen graves and burials below

the tumuli, as well as funerary urns are also reported (Zangatto 1999).

The statue-menhirs of Nigeria (Benue-Congo family) are very spectacular but are not associated with an archaeological context.

Bantu language family

The Bantu family, which is linked to a recent spread of population, occupies a very vast geographical area encompassing the equatorial forest regions and East Africa. This immense region is not involved in funerary monumentalism.

1.3 Nilo-Saharan phylum

The Nilo-Saharan phylum may have developed in the Egyptian desert. The Napta Playa sequence may constitute the best reference for approaching the development of this phylum with the individualization of a proto-Nilo-Saharan from 13000 BC onwards (Wendorf & Schild 2001).

Saharan language family

The monumentalism associated with this family seems to be restricted to the Egyptian desert and the Napta Playa region. It includes alignments and circles of menhirs, and a cattle burial below a small tumulus. An initial spread of this language family towards Tibesti (Chad) accompanied the spread of early pastoralism in about 7500 BC; the Round Head stage of rock painting (6200-5300 BC) is not present on these monuments. At the site of Iwelen, single burials are set within pits.

East Sudanic language family (Nubian, Meroitic, Nilotic)

The spread of the proto-Nilo-Saharan in the direction of Wadi Howar (Sudan) and the Nile Valley is better documented. An initial assemblage groups together a vast tradition of tumulus building distributed across the province of Kordofan and in the Nile Valley (Gallay 2016). In the eastern direction the language family can be subdivided into three main branches, the first of which spread upstream along the Atbara River and gave rise to the Gash Group (*ca.* 3000-1500 BC). During the same period, the main Cushitic tumulus tradition (Nubian, Meroitic) occupied the upper Nile Valley with Group A, from which originated the Kerma civilization and the Kordofan province. The third branch, corresponding to the Nilotic family, which stems from the Proto-East Sudanic, curved in a southerly direction, and is related to the Namoratunga platform monuments of Lake Turkana, dated to the 3rd millennium BC (Hildebrand *et al.* 2011).

Central Sudanic language family (Central African Republic and Congo)

Currently we have no information about any monumentalism associated with this language family.

1.4 Afro-Asiatic phylum

The Afro-Asiatic phylum may originate from the 7th millennium Mesolithic of Khartoum (8000-5800 BC) in the Gezira-Butana region in Sudan (Gallay 2016).

East Cushitic language family

The megalithism of Ethiopia is one of the best known and it can be wholly assigned to the East Cushitic language family. Five phases can be distinguished as regards the lowlands:

1. The megalithism of Somaliland and Djibouti at about 2500 BC. In this region, cultures are characterized by local pottery production, the Atbaï Ceramic Tradition (ACT), which developed in the plains between Kassala and Khashm el Girba as early as the 5th millennium BC. It shares distinct affinities with the Nubian Group C (Gutherz & Joussaume 2000). The ACT can be subdivided in several phases. Domestic animals are present as early as the 'Kassala' stage and more particularly during the development of the Butana culture (3800-3000 BC).

2. The dolmens of Chercher at about 2000 BC.

3. The megalithism of the Shay culture from the 10th-14th centuries CE.

4. The early megalithism of the Rift Valley stelae that can be attributed to the East Cushitic of the highlands.

5. The current funerary monumentalism distributed between the East Cushitic of the lowlands (the wooden *waaka* statues of the Konso people) and the highlands (Hadiya people) (Joussaume & Cros 2017; Gallay 2018).

The monuments attributed to phase 1 may evoke the platforms of Lake Turkana, which we associate with the Nilo-Saharan phylum, but a more in-depth analysis of this type of monumentality is still required.

Omotic language family

The Omotic-speaking peoples, who settled early on the Ethiopian plateau, have no funerary monumentalism. Only small stone tumuli mark the graves (Banna and Hamar people). Menhirs that mark the places of distinct villages are also reported (Maale people).

Erythraic language family (Semitic, ancient Egyptian)

The northern Erythraic language family (Pharaonic Egypt) is mainly distinguished through spectacular monumentalism (mastabas, pyramids) related with the emergence of despotic states.

Berber language family

The presence of the Berber people in North Africa probably dates to the 4th millennium BC. They are mentioned in Egyptian chronicles as early as the second half of the 2nd millennium BC (Kamose stelae, 17th dynasty, 1573-1570 BC).

Berber monumentalism covers a large area stretching from North Africa to the Central Sahara and consists mainly of tumulus structures called *bazinas* that have varying degrees of architectural complexity. This monumental form appears to develop in the Sahara during a period contemporaneous with the rock engravings of the *tazina* style at about 4000-2200 BC. On the Atlantic coast, from Morocco to Mauritania, the expansion of funerary monumentalism can be observed, with tumuli built with small stones topped by upright monoliths (Camps 1991; Paris 1996 and contribution by Robert Vernet, this volume, p. 1094).

Chadic language family

The monumentalism of the Mandara Mountains in Cameroon (Kirdi and Mafa peoples) can be associated with this family. Individual graves below circular platforms that are sometimes topped by upright stones are reported (Kapsiki, Podoko and Mafa peoples). Some upright stones were used for delimitating territories (Santotres Tchandeu 2007-2009).

1.5 Khoisan phylum

The Khoisan phylum groups together the San hunter-gatherers and the Khoikhoi pastoralists neither of whom adopt megalithic displays.

2. Degree of linguistic dependence

The diagram in Figure 2, established on the basis of the Saharan, Sahelian and Ethiopian assemblages, makes it possible to recognize the degree of dependence between monumentalism – more particularly funerary monumentalism – and languages. Although distinct types of monuments are specific to one linguistic family, others are widely distributed and therefore less specific. Tumulus architectures are certainly the most common burials, followed by platform monuments, the variability of which should, however, be evaluated because this assemblage clearly groups together monuments that are architecturally different and functionally distinct. The common denominator, constituted by individual burials set within pits, inherited from the Epipalaeolithic substratum, is also a poor vector for population-based interpretations.

It is thus important to stress that these wide distributions cannot be interpreted in terms of diffusion or migration without an in-depth consideration of the historical settings. As an initial analysis, only the correlations between monument types and linguistic families are prone to be subject to historical interpretations based on the hypothesis of a correlation between languages and cultural characteristics. The proposed analysis leads to a general conclusion which reaches beyond the geographical framework of our analysis: '*the phyla, as such, do not convey specific cultural characteristics*'. By contrast, very specific architectures can be discovered that can

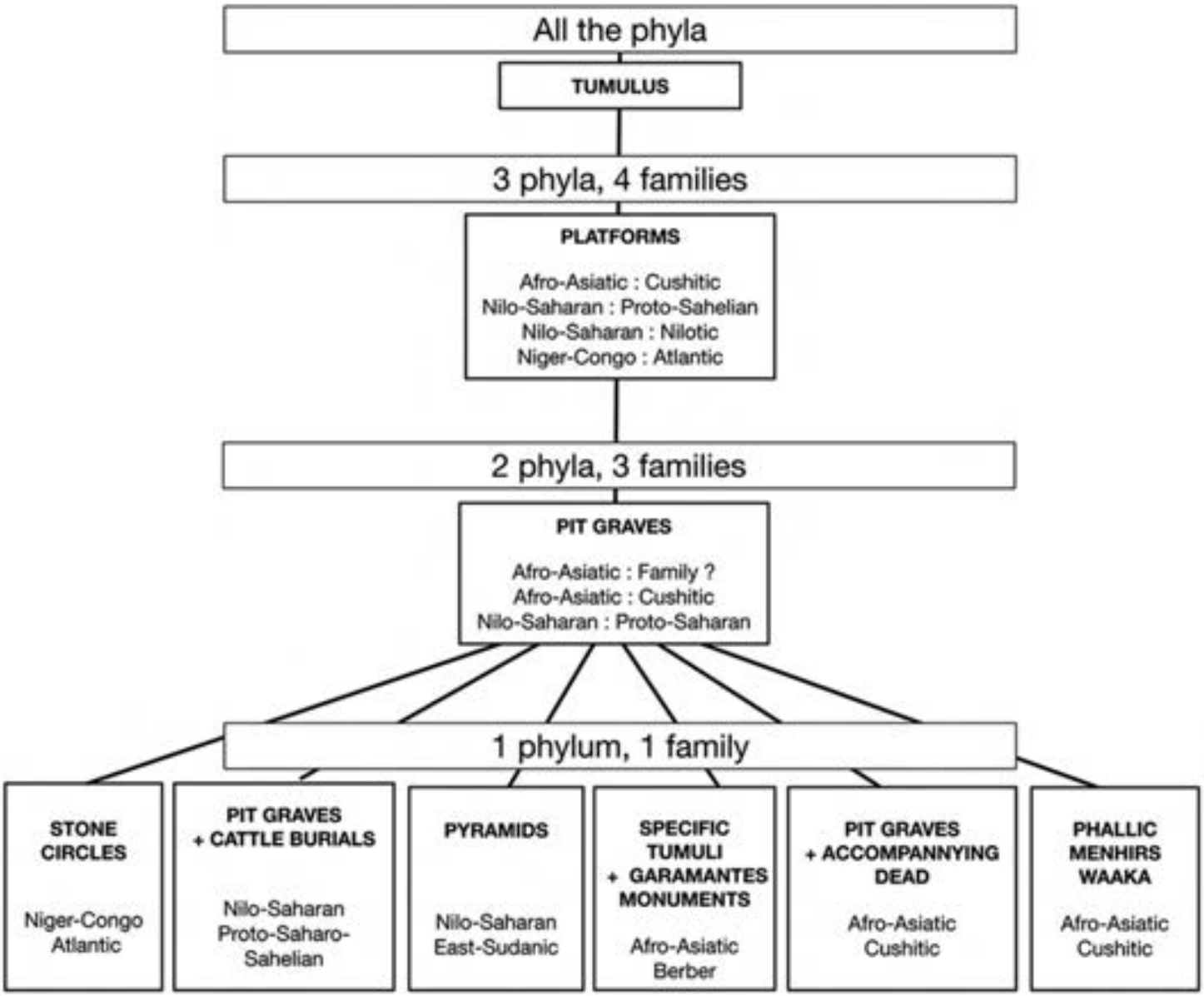

Fig. 2 – Degree of dependence between monuments and languages (© A. Gallay).

be assigned to distinct populations. Therefore, any dogmatism with regard to this matter must be excluded (**Fig. 2**).

3. Degree of climatic dependence

The Sahelian and Sudanese populations show expansionism linked to periods of climatic instability, first to Egypt (Erythraic) and Ethiopia (Omotic) during the first post-Holocene dry phase and then, during the second dry phase, again to Ethiopia (Proto-Cushitic) as well as to the Chad basin (Chadic). One of the most interesting conclusions that can be drawn from the reconstructed scenarios is the correlation between Holocene climatic changes and distinct cultural events.

Firstly, we must mention the stage of the 'invention' of farming, including the cultivation of sorghum which, in the Afro-Asiatic environment of the Gezira, can be dated to the time of the Khartoum Neolithic (5000-4000 BC). The most systematic – and less expected – result, however, concerns the correlation between the diffusion of linguistic families and dry phases. The Middle Holocene dry phase (6000-5000 BC) saw the withdrawal of Nilo-Saharan populations from the Napta Playa region

to Wadi Howar and the diffusion of the Erythraic language, which became the origin of the Semitic languages (Afro-Asiatic phylum), in a northerly direction following the Nile axis. Likewise, the Late Holocene dry phase (4000-2700 BC) witnessed the diffusion of Chadic languages (Afro-Asiatic phylum) along Wadi Howar in a westerly direction and, some time later, the abandonment of Wadi Howar. This latter diffusion is linked to Nilo-Saharan dynamics and has important implications in the entire region in that it was at the origin of the spread of northern oriental Sudanic languages (tama, nyimang, nara and

Climate	Napta Playa	Wadi Howar	Soudan
End of the Holocene African Humid Period 9000–6000 BCE	Nilo-Saharan development Gathering Domestication of cattle?		Afro-Asiatic development Khartoum Mesolithic (8000–5800 BCE) Gathering
Mid-Holocene dry period 6000–5000 BCE	Domestic cattle **Migration to the south** **Diffusion of Nilo-Saharan languages**	Spread of cattle **Occupation of Wadi Howar**	Spread of cattle Gathering 1. Egypt **Diffusion of Erythraic languages** 2. Ethiopian plateaus **Omotic**
Humid period 5000–4000 BCE	Final Neolithic Megalithism		Khartoum Neolithic Farming Domestic cattle
Late Holocene dry period 4000–2700 BCE		1. *Leiterband* horizon (4000–2900 BCE) **Diffusion of Chadic languages** 2. Progressive abandonment **Diffusion of northern oriental Sudanic languages** **Southern oriental Sudanic**	1. Group A **Emergence of Kushite languages** 2. Ethiopian plateaus **Cushitic**
Short humid period 2700–2500 BCE			Pre-state formations Pre-Kerma
Aridification from 2500 BCE onwards		Abandonment of Wadi Howar	State formations Kerma, Napata, Meroe

Fig. 3 – Correlation of the reconstructed scenarios with the Holocene climatic phases. Probable displacements of distinct populations are shown in bold.

more particularly Nubian and Cushite languages) as well as the southern oriental Sudanic languages, including, notably, the Nilotic. The second Holocene dry phase also saw the occupation of the Nile Valley by Nilo-Saharan populations who disseminated a new type of burial under tumuli. These populations were at the origin of the development that lead to the pre-state and state formation in an environment in which the Afro-Asiatic populations still exist.

4. Incorporation of genetic data

The data provided by population genetics can be incorporated into the overarching schema and thus widen the debate about settlement history, although this must be undertaken with care given the negative reception of this type of approach and the obvious racist drifts. The Sahelian genetic data nonetheless show that it is possible to propose distinct correlations between these and linguistic phyla and/or, in some cases, language families (**Fig. 4**).

The work published by Triska and co-authors (Triska *et al.* 2015) is based on Principal Component Analysis of 2.5 million varying DNA positions known as Single Nucleotide Polymorphisms (SNPs) among 161 unrelated individuals of 13 Sahelian populations, and is much more representative than the serological data. SNPs are the variation (polymorphism) of a single base pair within the genome among individuals of the same species. It should be stressed that none of the genetic variations analysed in this study determine cultural characteristics. Rather, they are random mutations of the genome, accumulated over time in the populations and their

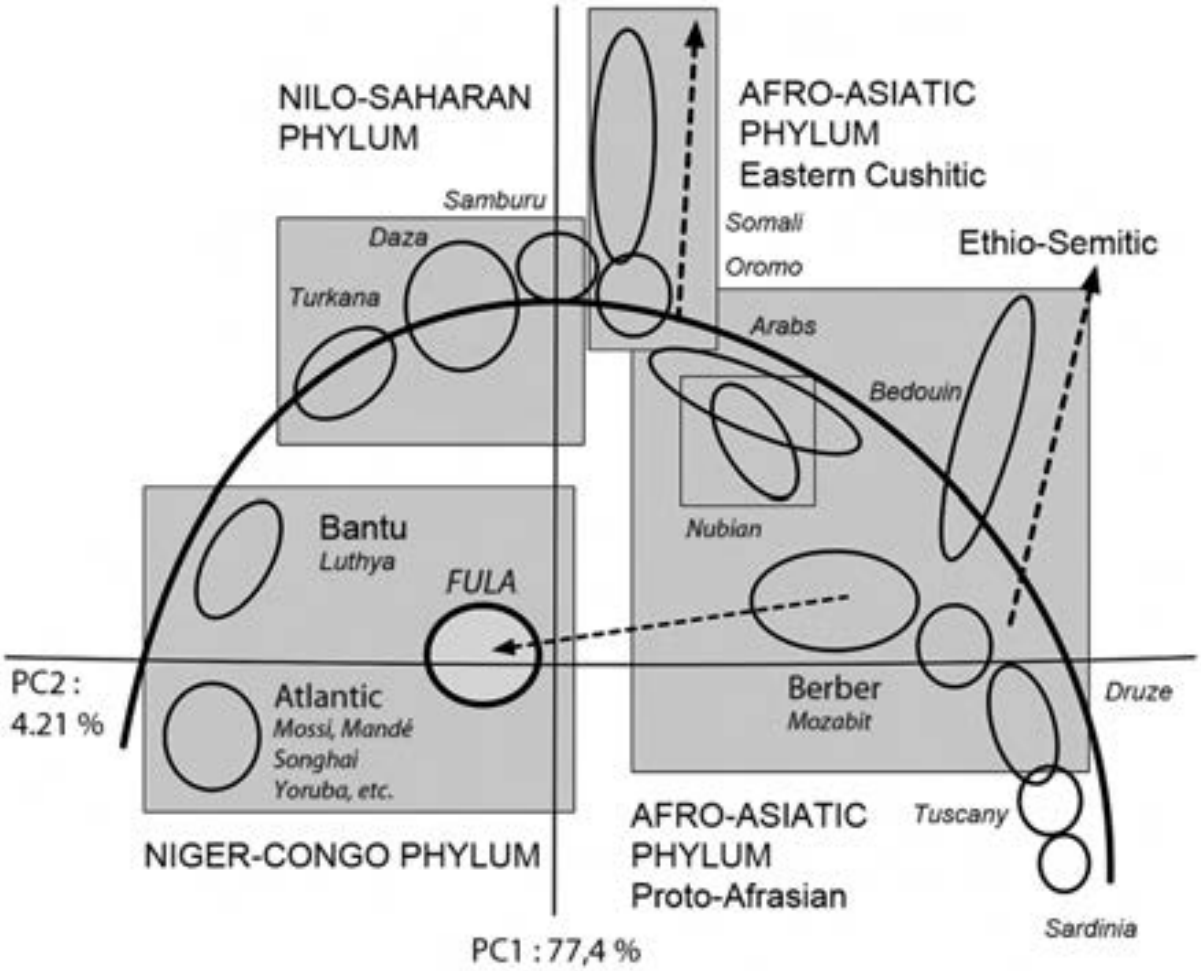

Fig. 4 – Principal component analysis. Concordance between the genetic structure of the Sahelian populations and the linguistic phyla. The eccentric position of the Nubians compared to the Nilo-Saharan populations can be explained through contacts with the Arab populations. The divergent branches corresponding to the East Cushitic and the Ethio-Semitic should be noted. Some isolated Mozabit samples can be found next to the area occupied by the Fula people (dashed arrow) (© Gallay according to the data of Triska *et al.* 2015: fig. 1b).

variations mainly reflect their demographic history (demographic expansions and contractions, genetic exchange by inter-migrations, etc).

In **Figure 4** it can be observed that the first and second axes do not show the same amount of genetic information. There is a significant difference between 77.4% of genetic variation shown on axis 1 and only 4.21% on axis 2. As a result, the interpretation of axis 1 would be sufficient since axis 2 does not provide particularly useful information. However, this schema cannot always be used to define monolithic assemblages. For example, the latest studies on the origin of the Fula people, who belong to the Atlantic family of the Niger-Congo phylum, shows that the Berber impact reaches 30% compared to the West-Atlantic substratum. This is valid for the nomadic groups and not the sedentary Fula people, among which the non-Sub-Saharan contribution is less significant. This Berber impact can be found again, with a lower percentage, among the Daza people of Chad, dominated by East-African components.

The general schema obtained (Triska *et al.* 2015: fig. 1c) reveals a structure that I consider can be interpreted in linguistic terms, a correlation that was not noticed by Triska and colleagues. The particularities used in this analysis can, at the very least, reveal the peripherical expression of complex phenomena which imply populations, cultural diversification, and environmental impact (see also Tishkoff *et al.* 2009). This chapter reveals the great potential of a linguistic approach with regard to the study of settlement history involving ethnological as well as archaeological data.

The main results concern the Nilo-Saharan phylum, which accompanies the initial east-west spread of cattle, rock art, funerary rites, types of society and branding of cattle. The spread can be linked to the Early Bovidian phase of rock art with 'negroid' figures and, notably, to the Round Heads style, which is widely distributed from the Nile Valley to the southern part of the Central Sahara. The funerary rites mainly comprised the use of earthen burials and cattle burials; monumentalism is underrepresented with the occasional rare presence of small tumuli, although the Messak platforms in Libya are an exception.

We are dealing here with acephalous societies. At the ethnological level, the easily identifiable branding of cattle with particular geometric marks, also reflected in rock art motifs, is distributed over a large Sahelian area stretching from Ethiopia and Kenya to the Ennedi and Aïr Mountains through the Nile basin and Sudan. The ethnological and rock art data show that the populations who brand their cattle also adorn their bodies with spectacular paintings and/or scarification. In contrast, the depictions of cattle in the Central Saharan massifs and dated to the Late Bovidian phase with 'Europoid' figures (4000-2200 BC) do not show this type of branding and the cattle are depicted with their natural coats.

The most plausible hypothesis is that the origin of these shared characteristics lies with the populations of the Nilo-Saharan phylum, of which the Toubou people are the current descendants. The main diffusion can be associated with an early origin from the Proto-Sudanese, in the Egyptian Sahara.

Lastly, comparative analysis with the genetic data makes it possible to further differentiate our model. The configuration presented by Triska *et al.* (2015) is consistent with a crescent-shaped arrangement which, in some cases, can be interpreted chronologically (**Fig. 5**). The populations of the Niger-Congo phylum are located to the left of this configuration, which may reflect an archaic situation. It can indeed be acknowledged that the origin of this phylum is sometimes associated with the Ouanian people of the Malian Sahara. By contrast, the Afro-Asiatic phylum may be associated with the most recent date whereas the Nilo-Saharan phylum may be placed in an intermediate position. Indeed, an origin for the Niger-Congo phylum in the Malian Sahara was proposed, dated to between 12000 and 9500 BC, the Nilo-Saharan phylum is dated posterior to 9000 BC, most probably around 8500 BC, and the Afro-Asiatic phylum can be associated with a date of 8000 BC.

Radical discrepancies characterize the more recent secondary subdivisions. Within the Afro-Asiatic phylum, the bifurcation towards the Erythraic (Egypt) may be dated to the Mid-Holocene dry phase between 6000 and 5000 BC, and the settlement of the Ethiopian plateau by Cushitic populations during the Late Holocene dry phase to 4000 BC

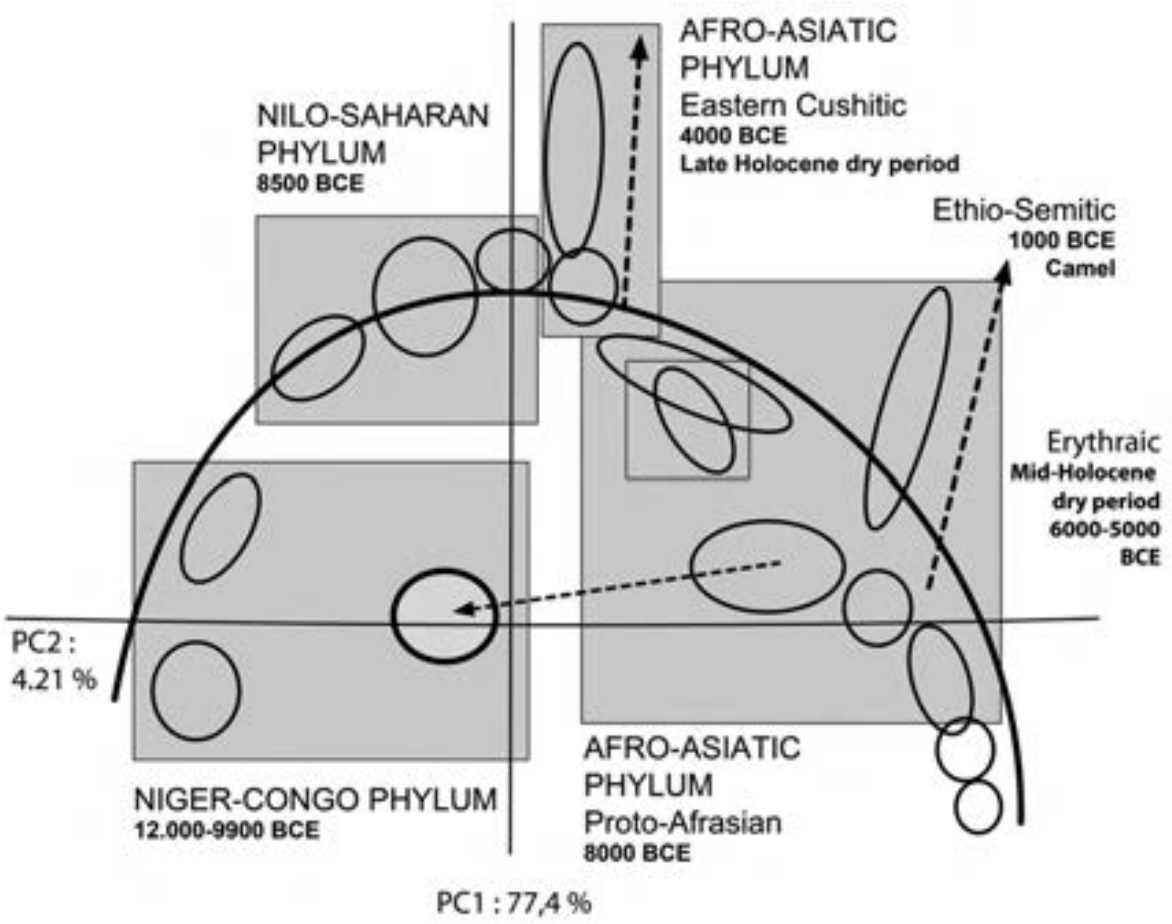

Fig. 5 – Dating of the correspondences between genetics and linguistic phyla from the hypothesis of a topology, which can be interpreted chronologically.

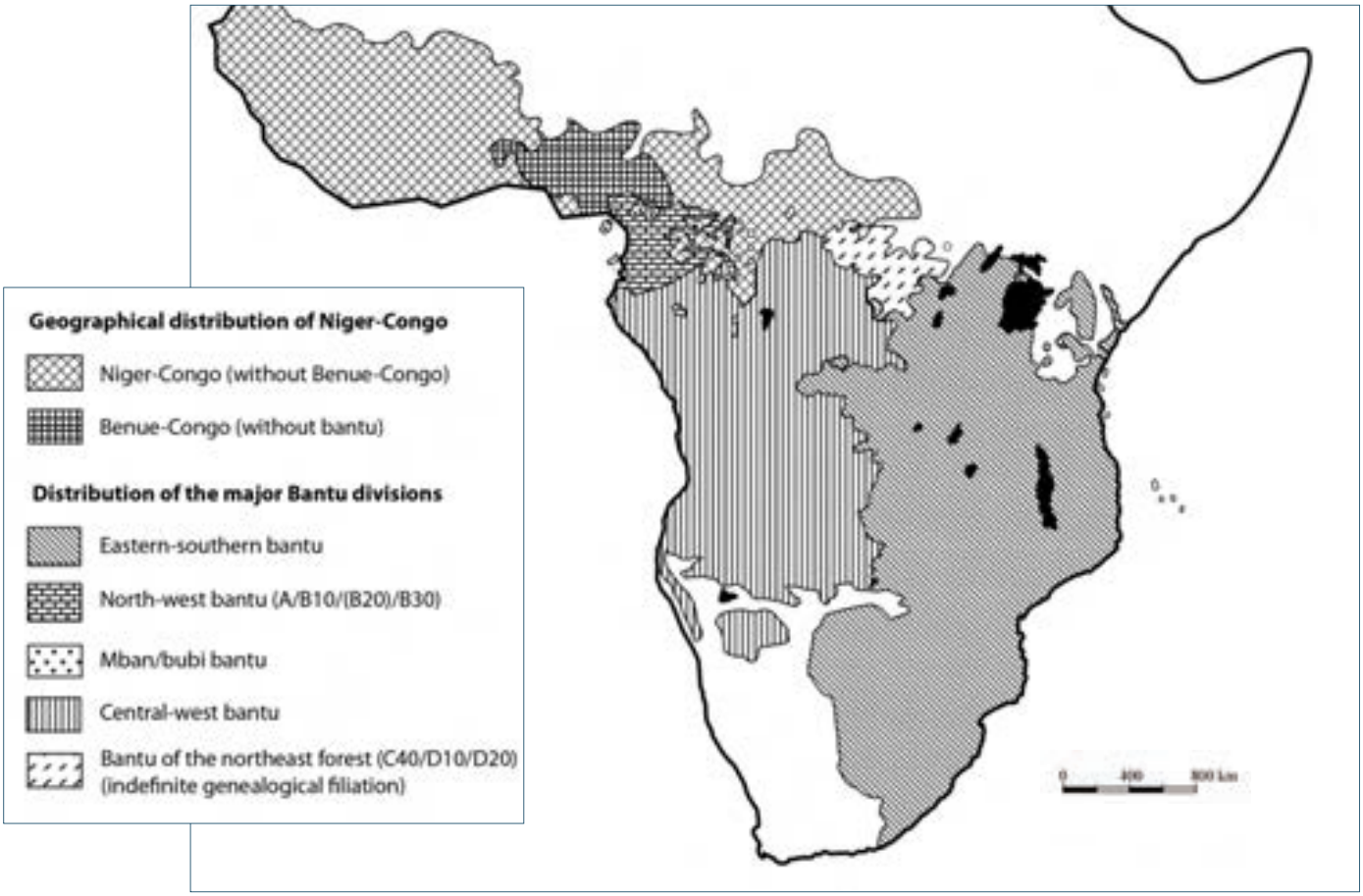

Fig. 6 – Diffusion of the Niger-Congo phylum (Bostoen & Grégoire 2007).

onwards. In this area, the emergence of the Ethio-semitic language, stemming from Arabia, in Ethiopia, is very late and can be dated to 1000 BC, contemporary with the introduction of the camel. The absolute dates, therefore, do not contradict this chronological interpretation.

5. Resistant areas

Funerary monumentalism is mainly concentrated in the northern half of the continent and more particularly in the Sahara, Ethiopia and the Sahel, this latter area showing the greatest linguistic diversity. Three regions, however, are located outside these areas.The Koishan hunter-gatherer and pastoralist societies have never developed funerary monumentalism. This can perfectly be explained for the San given their economic status. By contrast, the lack of monuments amongst the Khoikhoi pastoralists requires a more careful analysis (Lee & Daly 1999).

The Bantu world, associated with recent population spread, is equally limited in terms of monumentalism. The forest areas saw an initial spread linked to the exploitation of forest cultigens such as tubers and palm oil, in the eastern areas where the Bantu absorbed various pastoralist populations, the funerary rites of whom remain poorly known (Bostoen & Grégoire 2007) (**Fig. 6**).

The Forest kingdoms present another resistant area for which the circumstances should be analysed. These are weak kingdoms associated with city-states.

6. Relationships with state civilizations

The cultures, which were studied at both an ethno-archaeological and an archaeological level across the world, are all located in an S/T space situated, from an evolutionary perspective, between hunter-gatherer societies and urban states and despotic societies. Nonetheless, all were confronted at a distinct moment by the presence of urban societies – either through economic contacts or through intrusive conquests – which could change them to a greater or lesser extent. The significance of the impact of these contacts on the development of pre-state societies and their funerary practices has still to be defined. All these cultures manifest themselves through imposing monuments, built within social and political contexts that are very different from those of megalithism.

Three (unequally) documented cases are discussed here: Sudan and its relationships with Pharaonic Egypt (Clayton 1995); Ethiopia and the emergence of the Aksum civilization (Poissonnier 2012); and the Garamantes of the Fezzan and their relationships with the ancient Mediterranean and the Tripolitana (Mattingly *et al.* 2017).

6.1 The Nile valley

As a provider of tropical products and slaves, Sudan was an attractive place for Pharaonic Egypt. Contact profoundly changed the destiny of the Sudanese societies, but to what extent? During the Neolithic period, Sudan developed in an autonomous way and remained free of Egyptian influence. The practice of burying individuals within pits therefore illustrates a truly local tradition in relation to the emergence of the Afro-Asiatic phylum. Contacts with the north remained limited (Adams 1977).

Predynastic period (Naqada, 4th millennium BC)

The people of the Naqada period in Egypt exported craft products. In exchange they received ivory, ebony, incense, plant oils and feline skins from the southern regions, the transportation of which was provided by people from Group A. The first mentions of transactions involving Egypt date to this period but do not indicate the presence of humans among the exchanged goods. Despite potential contact with the predynastic cultures, Group A, i.e., the populations of the Middle Nile Valley preserved a strong individual identity in that not a single purely Egyptian object – more particularly, not a single copper object – ever reached them.

In Sudan, burials of Group A groups under tumuli indicate both a local tradition specific to the Nilo-Saharan phylum and to Naqada prototypes, including stone-built quadrangular pits. The interpretation of the funerary architecture must therefore take into account Egyptian influences from this period onwards, despite limited commercial contacts.

Early dynastic period (Thinite period, 3150-2635 BC)

In Egypt, operations are mentioned that resemble raids carried out by the Egyptians rather than commercial transactions. In Sudan, Group A people occupied Lower Nubia while further upstream, several phases of the pre-Kerma culture developed, which witnessed, around 3000 BC, the emergence of a fortified proto-urban agglomeration. The graves assigned to this period are poorly understood.

Old Kingdom (2700-2250 BC)

The Egyptians were interested in the products from and the routes through the land of Kush. These products included animal resources, minerals and humans. The ancient empire saw the emergence of the most imposing pyramids. In Sudan, the city of Kerma was founded in 2400 BC. The necropolis related to the agglomeration reveals a truly local tumulus architecture. Pottery imports from Egypt are represented only rarely. Commercial exchange is nonetheless mentioned in Egyptian texts relating to the end of the ancient empire.

First intermediate period 2140-2020 BC

In Egypt, the increasing power of provincial kings jeopardized central authority. Families of Sudanese mercenaries lived in Egypt at this time. In Lower Nubia, the Egyptians apparently controlled several trading and production centres such as diorite quarries. In Sudan, the tradition of tumulus graves of Group A continued in Group C with the emergence of quadrangular vaults which sometimes had a brick ceiling. The superstructure could take the form of a *bazina* with a flat surface with stone masonry. In Kerma, the traditions of the ancient city persisted.

Middle Kingdom (2200-1750 BC)

From this period onwards, Nubians in Egypt became soldiers in the Egyptian army. After the conquest of Lower Nubia during the reign of Sesostris I (12th dynasty, 1971-1926 BC), the frontier was closed at the level of the second cataract. In Sudan, the city of Kerma expanded and the necropolis witnessed the building of large tumuli testifying to the persistence of the local tumulus tradition (Bonnet & Valbelle 2000).

Second intermediate period (1750-1550 BC)

In Egypt, a group of Semitic kings took control of the eastern desert and the delta regions. These Hyksos sovereigns formed the 15th dynasty (1663-1555 BC). In Sudan, the first indications of trade in people date to the Classical Kerma period (1750-1450 BC). The land of Kush, exporter of slaves, then controlled Lower Nubia.

New Kingdom (1550-1080 BC)

The New Kingdom in Egypt is associated with the conquest of Nubia beyond the 4th cataract under the reign of Thutmose I (18th dynasty, 1570-1293 BC) and the creation of the kingdom of Kush. This signifies the end of the kingdom of Kerma. The Egyptian city of Pnubs was founded at the Dokki Gel site near to the Nubian city. One of the objectives of the Egyptians was certainly the control of areas of production such as the gold mines or commercial routes to Black Africa.

During this period, the royal families in Egypt were buried in hypogea in the Valley of the Kings. In the reign of Amenhotep III (18th dynasty, 1386-1349 BC), pyramids were erected directly on the ground or above a chamber, and these are a typical element of the Ramesside tombs, in association with a revival of solar cults during this period. A shaft made it possible to access the subterranean funerary vault.

In Sudan, several dozen black slaves were carried to Egypt as a tribute from the Nubian lands. Many of the slaves may have been captured in raids carried out on southern populations or those of the Kordofan.

A typical Egyptian architecture emerged in Nubia with the Thutmoside, Armana and Ramesside temples. With regard to funerary monuments, small private pyramids can be found in Lower Nubia in the necropolis of Aniba and Soleb, dated to the New Kingdom. In Soleb, a necropolis was established under the reign of Amenhotep II (1453-1419 BC), the burials composed of a subterranean vault and

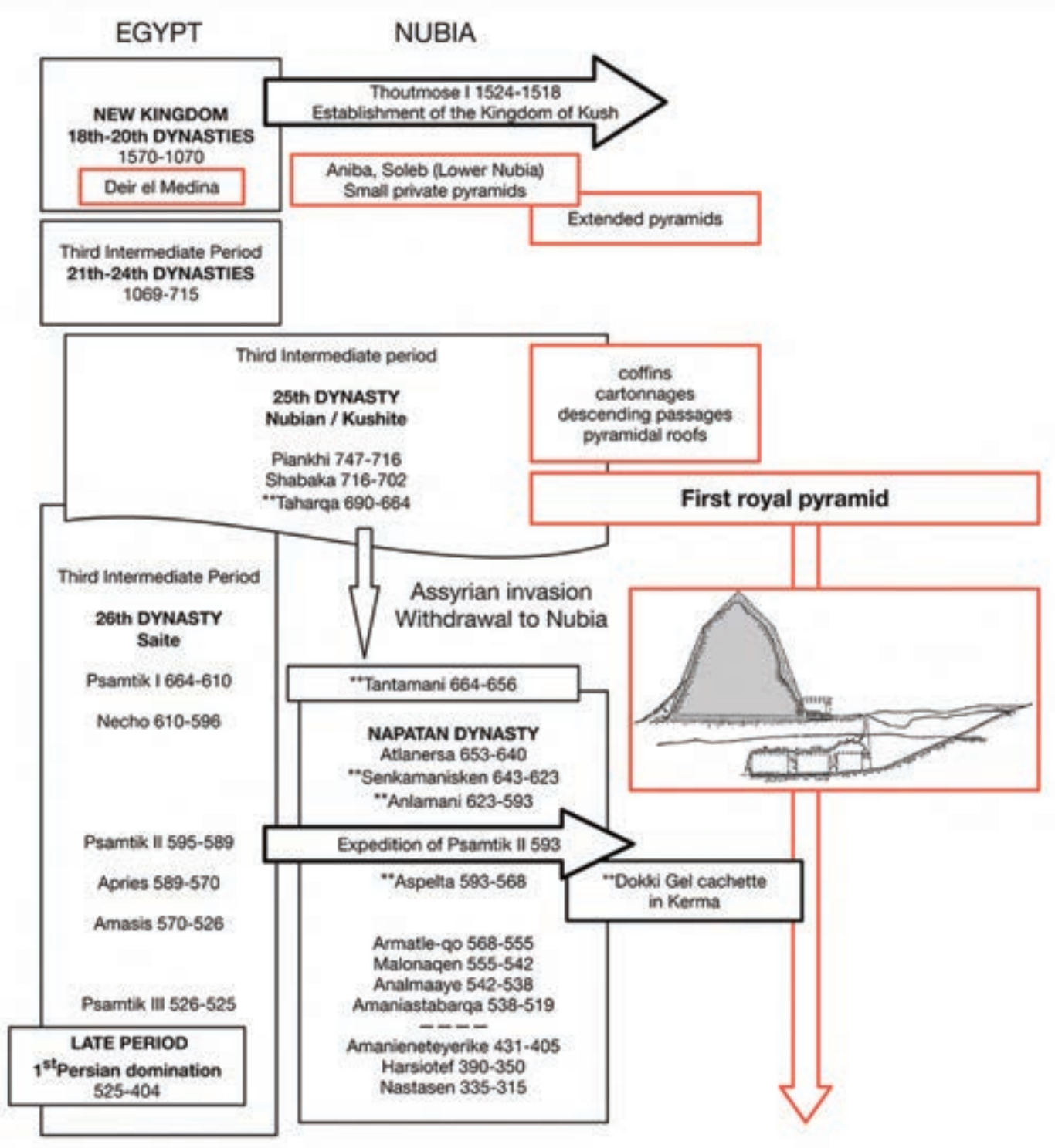

Fig. 7 – Spread of pyramidal funerary architecture between the New Kingdom and the Napatan period. Two asterisks mark the 'black pharaohs' (© Gallay).

superstructures including a chamber and a pyramid built with mudbricks, supporting, as at Deir el-Medina, an important slope which would become one of the characteristics of the Sudanese pyramids of Napata and Meroe. These tombs are probably linked to Egyptian families that played an important role in the kingdom of Kush (**Fig. 7**).

Further upstream, in the region of Kerma, the few known Egyptian graves include an inhumation in an extended position set within a vault above which is a low rectangular superstructure bordered by a small masonry wall.

Third intermediate period (1069-525 BC)

In Sudan, Piankhi (747-716 BC) inaugurated the Cushite line of the 'black pharaohs' of the 25th dynasty (747-656 BC). Psamtik II, second pharaoh of the 26th dynasty, the so-called Saite dynasty (595-589 BC), organized an expedition against Nubia in 593 BC and brought the reign of the black pharaohs to an end. The statues of these pharaohs were destroyed and buried in a pit at the temple of Dokki Gel. The statues at the temple of Gebel Bakal suffered the same fate.

In Nubia, after the departure of the Egyptians, funerary practices make it possible to identify Egyptian influences among the indigenous people, who still respected the rites of the Kerma culture. Indeed, in the southwestern part of the Nubian city, burials dated to the New Kingdom and to the 25th dynasty (747-646 BC) contain inhumations in a crouched position. The rectangular pits were topped by mudbrick superstructures. Other tombs had a shaft leading to a vault dug into the alluvium or partially built with a mudbrick vault. The deceased were laid out on their backs and placed in wooden coffins or cartonnages that were stuccoed or painted. It is possible that these tombs were covered by a mudbrick pyramid. During the 25th dynasty, a new funerary rite of Egyptian inspiration emerges, associated with inhumations in an extended position in a coffin placed in a vault, accessible by a shaft and covered by a pyramid.

Kingdom of Napata (653-590 BC)

At the end of the 25th dynasty, the pharaohs Taharqa (690-664 BC) and Tantamani (664-656 BC), defeated by the Assyrians, progressively lost their ascendancy over Egypt and withdrew to their former territory. At the end of this dynasty, Napata became the centre of the new kingdom. The first Egypt-inspired royal graves below pyramids were built, the Nuri necropolis being the most elaborate. Taharqa, the 5th king of Napata (690-664 BC) built his pyramid in Napata rather than in el-Kurru. The necropolis was then used by the 7th to the 23rd and by the 25th to the 27th kings of Napata, in alternation with the necropolis of el-Kurru.

In Sudan, during the long reign of Psamtik I (26th dynasty, 664-610 BC), a new reign, the so-called Napatan dynasty, was established, which was independent of the Saite dynasty, which then controlled Egypt. Atlanersa (653-640 BC) is considered to be the first king of this new dynasty.

From the 6th century to the 4th century BC, a second kingdom of Napata was rebuilt which, after the loss of its suzerainty in Egypt, developed its influence and its culture in an increasingly autonomous manner.

Macedonian kings (332-305 BC), Ptolemaic dynasty (305-30 BC) and kingdom of Meroe (300 BC-400 CE)

During the Late period of ancient Egypt, the Persians of the 27th-30th dynasty (525-332 BC) were succeeded by the Macedonian kings (332-305 BC), and then by the Ptolemaic dynasty (305-30 BC). The military pressure on Sudan thus decreased in line with the instability in the north, but Egyptian influences, building on a long tradition, persisted in the south.

In Sudan, the Meroe formation developed. The administrative capital moved to Meroe after the destruction of Napata by Psamtik II but the ancient city nonetheless remained a significant religious and dynastic centre. The Meroitic people abandoned hieroglyphic writing, which remained restricted to distinct royal inscriptions, and adopted a syllabic writing that transcribed a language with Nilo-Saharan affinity.

6.2 Aksum

The kingdom of Aksum, which is mentioned by Ptolemy and the Periplus of the Erythrean Sea (2nd century CE), can be attributed to South-Arabic cultures. Driven by the powerful Habesha tribe (from which the name Abyssinia is derived), it developed in the upper basin of Atbara from the 2nd century CE onwards. Its origin may be related to the spread of the Ethiosemitic language family from southern Arabia.

The ancestor of the Ethiosemitic languages of Ethiopia is Tigrinya, not Ge'ez, the now extinct language of Aksum. The separation of Ge'ez, and the other present-day Ethiosemitic languages of Ethiopia, which include the multiple forms of the Gurage language, can probably be dated to around the start of the Current Era (rather than to the fall of Aksum in about 700-900 CE), allowing time for the establishment of the observed linguistic diversity. We propose that the spread of the Proto-Ethiosemitic in Africa occurred within the 1st millennium BC, in parallel to the introduction of the camel.

The Ethiopian tradition established during the 13th century incorrectly ascribes the emergence of this empire to the legendary encounter, at the end of the 9th century BC, between the Jewish King Solomon and the Queen of Sheban Makada (whom the Arabs call Balkis). The conversion of the land to monophysitism under King Ezana in around 340 CE reinforced the relationships with the Mediterranean world, Constantinople and, above all, Alexandria. The Ethiopian navy was then very important and controlled the Red Sea. The cities which developed during that period, the remains of which are scattered across the high plateau of the Tigre and of Erythrea, were market towns born from ancient commercial prosperity. At the end of the 6th century CE, the Sassanids of Persia took control of the Arabian Peninsula and declared war on the Byzantines to gain domination over Red Sea trade. This confrontation marked the beginning of the decline of the kingdom of Aksum. Under pressure from the warlike Bedja groups, the Aksumite kings and notables deserted their capital and fled to more southern regions, safe from the invaders.

Aksum witnessed the development of funerary monumentalism, combining menhirs stemming from local traditions and monumental stelae decorated with designs of multi-floored buildings resembling Yemenite architecture, Yemen then being part of the Aksumite kingdom. The royal funerary vaults were topped with giant stelae (Poissonnier 2012).

The origin of the Aksum civilization may be compared with the development of the Atbara basin cultures in relationship to the Afro-Asiatic phylum. In this region, as noted, cultures are characterized by local pottery production, the ACT. This tradition developed in the plains between Kassala and Khashm el Girba as early as the 5th millennium BC. It shares distinct affinities with the Nubian Group C (Gutherz & Joussaume 2000). The ACT can be subdivided in several phases. Domestic animals are present as early as the 'Kassala' stage and, more particularly, during the development of the Butana Culture (3800-3000 BC).

6.3 Garamantes

The third example of interactions between traditional cultures and state formations is illustrated by the Garamantes of the Fezzan region in the southern part of Libya and their relationship with state formations in the northern part, which presents a quite different situation to that of the Nile Valley. Indeed, the observed changes are clearly limited in space and form a kind of enclave within a traditional Saharan Berber environment (Mattingly *et al.* 2017).

The Garamantes culture emerged in 1000 BC in parallel with the Late Caballine rock art style. The main component of this period is the rise, in the southern part of Libya, of a civilization that corresponds to the Early (1000-500 BC) and Proto-Urban (500-1 BC) phases of the archaeological sequence. The Classical period develops between 100 and 400 AD, and the Late period between 400 and 700 AD.

At the beginning of the Current Era, the Garamantes were strong enough to intervene in the history of Tripolitana. At the height of their power, they apparently controlled a vast desert area covering around 300 000 km^2 and threatened both the cities of the Mediterranean coast and the Subsaharan populations of Chad and Niger.

The end of the Garamantes hegemony is linked to the increasing influence of Arabia and to the moving of the trade routes to the east. This culture presents all the characteristics of a proto-urban civilization that can be qualified as a proto-state or state culture, as listed below.

Development of urbanism including fortifications and monumental temples

The tribal capital Garama (Jarma) had a strong urban character. In addition, fortified villages or *qsars*, were located at regular distances along the valley of Oued al-Ajãal, which can be linked to the extended remains of necropolises along the foot of the rock bluff. Typical *qsars* combined an external rampart fortified with bastions and a central quadrangular *kasbah*, which was also fortified, and which hosted the seat of the authority.

Development of intensive farming irrigated by foggaras and based on mainly Mediterranean cultigens such as wheats, barleys, vine, olives, dates

The system of *foggaras*, or subterranean irrigation channels, emerges in the Fezzan region in south-western Libya during the last centuries BC prior to the establishment of contacts with the Roman Empire, and was therefore probably introduced from Egypt. Slave labour was used to dig and maintain the *foggaras*.

Massive demographic growth

Intensive farming and the density of the settlements are indicative of demographic growth which has few equivalents in the Saharan area.

Funerary monumentalism probably consolidated relationships with an elite

Funerary monuments were originally part of the Saharan monumental tumulus traditions of the *bazina* tombs but very rapidly developed in an original manner under the influence of Hellenistic Mediterranean monumentality. The best examples are the Punic mausoleums of Tunisia. It is not coincidental that the mausoleum, i.e., a construction intended to glorify a man or a dynasty, is unknown in Classical Greece but appears in peripheral societies with the intervention of Greek craftsmen. The smaller monuments probably reflect a similar ambition to exhibit political or spiritual power. The origin of this trend is located in the Achaemenid Empire, with the mausoleum of Cyrus II (559-530 BC) in Pasargadae, which provides the prototype of this architecture.

Cult of the aniconic stelae

The Garamantes stelae were erected in front of tombs and had offering tables placed at their feet. The stelae with a schematic outline are reminiscent of the Arabic or Nabatean *baetyls*, a convergence between these civilizations of the desert based on pastoralism and developing towards urbanization, as well as a type of religious expression which is widespread in the Semitic world.

It can therefore be acknowledged that the god accepted by the Garamantes people was Ammon, the god of the desert, who was worshipped in the Siwa oasis. The Egyptians identified this god with their supreme god Amon and named him 'Ammon of Siwa'. A stela at the Bardo Museum features a Punic bifid stela topped by a disc which may be related to the solar connotation of Amon-Rê. If so, this is a rare example indicating the solar aspect of the Ammon cult.

Presence of a king

The Garamantes were governed by kings. At the end of the 1st century of the Current Era, a Roman expedition in Sudan was accompanied by a Garamantes king, and when Sidi Okba invaded the Fezzan region in 666-667 BC there was still a king in Jarma. Pliny also mentions the deposition of a king although there is no other allusion to the procedure of succession or of limitation of the power of these monarchs.

Development of fire techniques

Control of fire is indicated by local pottery production accompanying Roman imports, the development of copper metallurgy and iron processing, the

shaping of semi-precious stones such as cornalines or amazonite, probably originating from the north of Tibesti, and the production of glass beads.

Hierarchization of society and emergence of a slave class

All the historical and archaeological markers indicate a stratified society including an aristocratic class with royalty, commoners, one or several classes of endogamous craftsmen and a large class of slaves. However, it is difficult to be more specific, and there is some uncertainty about warrior despotism, sacred royalty and divine kingship.

Adoption of writing

Among the Near Eastern texts it is not clear from which form(s) the Libyc alphabet used by the Garamantes stems. Its origin is not Phoenician, which is known in Cartago (the city was founded in 810 BC), but a more archaic writing probably influenced by the Phoenician model. The alphabet was most likely introduced in the Central Sahara from North Africa during the last few centuries BC. The writing is clearly mentioned by the Late Latin authors of the 5th and 6th CE.

Introduction of horse, chariot (early and proto-urban phases), and then camel (classic phase)

The horse is closely connected with the chariots that were used during raids, although there is some doubt as to the reliability of these fragile vehicles on the Saharan terrain.

The dromedary was certainly present during the Classic phase of the Garamantes culture between the beginning of the Current Era and 400 CE. Around 200 CE, the Roman Army in Tripolitana used Garamantes camel drivers to ensure supplies. But the rise of camel breeding is attributable to the use of camels in the significant caravan trade rather than in military roles. The historical testimonies of ancient authors increase in the 4th century CE and provide proof that camel breeding, at least in the Tripolitana, had reached a considerable level of importance among the caravanners of the cities of Leptis Magna, Oea and Sabratha, as well as among the Saharan tribes who threatened them. This pack animal was vital for the development of the east-west trade route connecting Egypt to Fezzan.

Development of trans-Saharan trade and relationships with the Mediterranean, Egypt and the sub-Saharan areas

The land of the Garamantes forms a central hub for pre-Islamic trans-Saharan trade with regard to both the north-south axis connecting Tripolitana to Kanem and the east-west axis connecting the Nile Valley to the cities in the bend of the Niger river. The massive import of Roman pottery, both luxury tableware such as *sigillata*, and amphorae for oil and wine, testifies to the importance of trans-Saharan trade. The slave trade explains the large number of Roman goods among the Garamantes, who were renowned as fearsome slave hunters.

Proof of the existence of trans-Saharan trade at that time is at best partial, but large numbers of goods of Roman provenance discovered at Garamantes sites and in their tombs suggest that something with a high market value may have passed through their land. In addition to slaves, the Garamantes were probably also involved in the trade of salt (a vital and precious Saharan raw material, the extraction of which is attested to by salt works near to Jarma), gold and semi-precious stones (especially red cornaline), ivory, wild animals and natron (used in ancient glass manufacturing). It can be noted that the Fezzan region has not yielded a single coin of Mediterranean origin which leaves open the question of the modalities of trade transactions, an issue which was previously raised with regard to Sudan.

Translated from the French
by Louise Byrne

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Jean-Paul CROS

The Horn of Africa: five millennia of megalithism

Abstract: Apart from the large Axumite stelae in the north of the country and the thousands of phallic and other stelae which dot the south of Ethiopia, the Horn of Africa is rarely cited for its megalithism. The aim of this article is to present some lesser-known sites, such as those in the regions of Harar and Mänz, those still being studied in Djibouti and northern Kenya, and those in Somaliland where, apart from the establishment of early relationships and the excavation of a tumulus near the Laas Geel rock art site, no research has been undertaken. The Horn of Africa is a laboratory for studying the crucial period when hunter-gatherers switched to a production economy. The diversity of ecosystems and the great climatic fluctuations of the Middle Holocene affected these groups in different ways and generated a mosaic of situations that archaeology is now beginning to bring to light. Monumentalism and megalithism are components that appear in a context of pastoralism and at least partial sedentarism, with a significant north-south temporal gradient. They allow for a better interpretation of these periods for which archaeological invisibility is a major issue in many domains.

Keywords: *Horn of Africa, stelae, standing stones, monumentalism, megalithism, pastoralism, sedentarism, comparatism*

Speaking of megalithism in East Africa involves addressing, above all, the theme of non-modified or shaped standing stones, as dolmen-type monuments are rare and only located in eastern Ethiopia. But it also involves considering the demographic, cultural and environmental contexts in which monumentalism and sometimes genuine megalithism were established. We will focus here on three countries in which we have worked: Ethiopia, Djibouti and Somaliland, with some data on neighbouring countries (**Fig. 1**).

1. Northern and Eastern Ethiopia

1.1 The dolmens of Harar

The first to report the presence of dolmens (locally termed *daga kofiya*) in the Harar was the Capuchin priest, François Bernardin Azaïs, who carried out two missions in this province in 1922 (Azaïs & Chambard 1931). Roger Joussaume carried out four field missions between 1970 and 1973 (Joussaume 1980, 2014; for the history of Harar, see Joussaume 2014: 29-33).

Fig. 1 – Location of large concentrations of the different types of monuments and their dates (CAD: J.-P. Cros; *Google Earth* background).

Fig. 2 – Three dolmens at Sourré (Harar) (Photo: R. Joussaume).

During the 2nd millennium BCE, local populations built megalithic monuments grouped into necropolises [(1)] (**Fig. 2**). Each monument consisted of a slab, 2-3 m long, resting on two parallel rows of standing stones, delimiting a rectangular space closed at each end by further slabs. They were covered by a tumulus of stones and earth. The monuments were looted many years ago and only one of the 30 monuments studied still contained a skeleton, which was lying on its right side.

1.2 Megalithism in Axum

The monuments of Axum have been known since the 16th century accounts of the first explorers (Alvarez 1958) but the first major works were carried out by the Deutsche-Aksum-Expedition in 1906 (Littman *et al.* 1913). Various teams have since worked on the site (for a history see Fattovitch *et al.* 2000: 29-30).

The Axumite civilization developed on the highlands of northern Ethiopia and in Eritrea as far as the shores of the Red Sea between the end of the 1st millennium BCE and *ca.* 800 CE (Munro Hay 1989; Phillipson 2002). This followed a pre-Axumite period, from the beginning of the 1st millennium BCE. Monumental architecture emerged in the form of Yemeni-inspired temples, such as that at Yehas (6th century BCE; Anfray 1990). Also notable is the appearance of standing stones on graves from the pre-Axumite period onwards.

The cemetery to the west of the town of Gudit contains hundreds of often unmodified monoliths, marking pit graves (Phillipson 2002). The northern group includes, among dozens of other monoliths, seven giant stelae and a very particular megalithic monument (**Fig. 3**). Only stele no. 3, which stands 21 m above the ground, was still in place at the beginning of the 20th century. The others lay on the ground, in particular stele no. 1, which is 33 m long and weighs 500 tons. All these huge stelae with quadrangular cross-sections were fully shaped to suggest a building with a false door and windows at different levels, comparable to the ancient defence towers of Yemen and southern Saudu Arabia. They were extrac-ted from the Gobedra quarry, located 4 km from their present position. Stele no. 3 was transported to Italy in 1936 but replaced in 2008 after the excavation of its installation pit (Poissonnier 2012).

The installation of these stelae required an enormous amount of excavation work down to the granite

(1) Monuments of Hassan Abdi 2 south, 1300-1590 BCE, Gif 3040:3200 and Hassan Adi 2 north, 1600-1800 BCE, Gif 3039:3450.

Fig. 3 – Axum: in the foreground, stele 1 lies broken on the ground, and on the right are the cover stone and pillars of the monument of Nefas Mawcha. In the background are two other giant stelae (that on the left was previously in Italy) (Photo: J.-P. Cros).

Fig. 4 – Monument of Nefas Mashaw, probably a royal tomb (Photo: J.-P. Cros).

bedrock, then the construction of an underground architecture, and setting with large blocks. At ground level, they were held by two stone 'jaws' on the surface, into which various troughs and cupulas were carved for ceremonial use.

All these giant stelae mark royal tombs, the plans of which were recorded by the various teams that worked on the site and are known to varying degrees (Phillipson 1997). The first half of the 4th century CE marked the end of this period of gigantism, and the adoption of Christianity in the kingdom.

Near the end of stele no. 1 lie the remains of an exceptional monument, Nefas Mawcha, consisting of an immense stone slab weighing some 300 tons (17.50 x 6.50 x 1.30 m), which forms the roof of a (funerary?) chamber, with stone walls delimiting a peripheral corridor covered by joined stone slabs (Phillipson 2002: 68-70; Joussaume & Cros 2017: 27-28) (**Fig. 4**). A second peristalith is present on the northern and southern sides of the monument. The complex and oversized architecture of this monument makes its interpretation difficult, but we can imagine it to be the tomb of an important figure (a king?) surrounded by a structure allowing visitors to circulate.

The Axumite kingdom slowly disintegrated during the 7th-8th centuries CE, particularly under the influence of Islam.

1.3 The tumuli of Harar

Many (sometimes very large) stone tumuli (*daga touli*), are occasionally found in dolmen necropolises. They contain a circular chamber with a lateral cell (Joussaume 1980, 2014). The chamber was built at ground level or in a pit and delimited by dry-stone walls and orthostats. It was compartmentalized into cells by vertical slabs, and human remains were deposited in the cells. Occasionally, there was an access corridor to this chamber. Abundant grave goods accompanied the deceased, including round-bottomed ceramics, metal weapons and ornamental elements. The chamber of the Mijou 3 monument seems to have been used initially for a limited number of individuals, followed by a second, collective funerary phase using the flagstone vaults built inside the chamber. All these structures date from between the 8th and 13th centuries CE. They belong to the same culture, which could be called the 'Seek' culture, and are contemporaneous with the Mänz monuments, which we will now discuss.

1.4 The Mänz tumuli

The Meshala Maryam tumulus was shaped like a cone with a depression at the top that may have marked access to the chamber from above. The repeatedly looted chamber is delimited by a circular wall of basaltic columns of piled polygonal sections. These overflow into the chamber and gradually form the corbelled ceiling (Fauvelle-Aymar & Poissonnier 2012). Researchers have identified two levels of funerary occupation in this chamber, which had no visible access. Only one, or perhaps several individuals would have been initially placed there, along with pottery. The chamber would have been subsequently reopened to deposit other corpses.

At Tatar Gour, a tumulus with a diameter of about 10 m encloses a circular chamber with an access corridor. The whole structure was covered by another mound that would have masked the corridor. A poorly preserved 'high-ranking' individual, accompanied by rich funerary deposits including an iron sword, occupied a privileged position in the centre of the chamber. It is possible that this central figure was surrounded by several accompanying individuals (Testart 2004). In the course of time, other deceased would have been deposited in cells. A very rich array of accompanying material, including low carinated vases with very distinctive cylindrical necks, allowed us to define the 'Shay' culture. This monument is believed to have been built in the first half of the 10th century CE.

2. Djibouti

This region has many tumuli, as does the whole Horn of Africa, and a few standing stone complexes, such as the almost destroyed monument of Loyada near the Somaliland border. We will focus on two sites.

On the **banks of the Ghoubbet el Karab**, at the head of the Gulf of Tadjourah, huge quantities of anthropogenic shell clusters are associated with tumuli, but also with funerary monuments having a façade of

Fig. 5 – A crescent-shaped tumulus in Asa Rhagid (Djibouti). The rectilinear façade of raised stones is oriented to face eastwards (Photo: J.-P. Cros).

standing stones delimiting a crescent-shaped cairn (**Fig. 5**). These are individual burials or, in one case, double. They are dated to the second half of the 3rd millennium BCE at the earliest [(2)] and probably belong to the Asgoumhatian culture, defined by Poisblaud (Poisblaud 1999; Gutherz 2017).

In the **Gobaad Desert**, following the initial work of Joussaume (1995), teams led by Gutherz, then Cauliez have been working for several years on the first food-producing communities of in the Horn of Africa (Gutherz 2017). They are currently excavating a large platform with a double 'crown', i.e., with two concentric circular kerbs of small stones, near Lake Abbey (**Fig. 6**), which contains several hundred burials and is dated to the first half of the 3rd millennium BCE. Here, we are in the presence of funerary monumentalism dating from the time of the emergence of food-producing societies. Work on this site is still in progress (Cauliez & Gutherz 2021).

3. Southern Ethiopia

The south of Ethiopia is the land of standing stones, where we find the largest concentrations in Africa.

3.1 Tiya

Father Azaïs and Roger Chambard were the first to briefly study the site of Tiya (Azaïs & Chambard 1931). Joussaume and his team carried out three field campaigns there (Joussaume 1995) and an anthropological study of the burials was carried out by Claude Bouville. This cemetery of warriors and valiant men was in use from the 12th-14th centuries CE. The 41 stelae were carved in ignimbrite using metal tools. They are divided into three alignments of 33(A), 4(B) and 4(C) stelae. Here, we will describe only the 'sword stelae', although a few other rare types are also found on the site.

The sword stelae vary in size from 1.30-5 m in height, and three levels of engravings are present

(2) Dating of hearths located at the base of cairns 53 and 50: 2460-2200 BCE, Gif 11971 3840; 264-2490 BCE, Gif 11973 4050.

Fig. 6 – Monument with double crown of Antakari 3 (Djibouti), surrounded by pit graves (Photo: X. Gutherz).

Fig. 7 – Tiya: two sword stelae. From bottom to top: the vegetaliform sign, interlaced W's, two breasts (male) and the swords (Photo: R. Joussaume).

(**Fig. 7**). An 'underground' level takes the form of basal perforations (from one to three, when present); there is no satisfactory explanation for their purpose. Above ground, a 'symbolic triad' is made up of a branched, palm-shaped sign, a single 'W' or a double X-shaped 'W' and two circles. There is no clear explanation for the branched sign, which we also find in the south of the country, but it could be a plant symbol and represent 'life'. The other two signs appear to represent the rib cage, and the two circles are the breasts of a male figure. A higher level, the sword level, could correspond to the number of enemies and/or dangerous animals killed by the valiant warrior buried at the foot of the stele.

The Tiya stele tombs are pit graves, in which the deceased were buried, always a man first, sometimes in a wooden box. A stone slab or juniper branches closed the pit, which was marked on the surface by a space circumscribed by stones, where offerings were deposited in pottery vessels. Individual graves are predominant. In the multiple graves, there are fewer bones than are present for the primary occupant(s). Numerous tombs are also found on the west side of the great alignment of stelae A (the decorated surfaces face east). These are often female, very rarely associated with a stele. In the small alignment, B, with west-facing stelae decorations, there are only four graves, which may be the founding tombs of the site, occupied by important figures, especially that installed at the foot of the largest stele of the site: 5 m high with 19 swords depicted! (**Fig. 8**).

Fig. 8 – The largest stele of Tiya: 5 m high with 19 swords. Note the two basal perforations (Photomontage: Y. Carpentier).

Dozens of similar sites exist around Tiya, both with sword stelae and various other types (see Joussaume 1995; Joussaume & Cros 2017).

3.2 The Sidama zone

There are many stelae in Sidama, all of which are phallic and more thickset than those of Gedeo (see below). They bear the vegetaliform sign present in Tiya, which is widespread in these southern regions. In 1925, Azaïs and Chambard excavated a mound in Waheno bearing phallic stelae (Azaïs & Chambard 1931: 225-229), with other stellae beyond the mound. A tomb was found, containing (human?) bones, a beautiful, polished axe and many obsidian items. It is conceivable that an important and worthy person was buried under the mound and was associated with the phallic stelae, and that other stelae were erected in the course of time during commemorative or ritual activities.

3.3 The Gédéo zone

Two key sites from this area are discussed: Chelba-Tuttiti and Tuto-Fela.

Chelba-Tuttiti

At an altitude of 2000 m, on a ridge line, the site of Chelba-Tutitti comprises 800 to 1500 phallic stelae in an area of 1.5 ha, according to the counts of different authors. Most stelae measure around 2-3 m in height, but the largest are 6-8 m tall and weigh 8-10 tons. Most are hewed in ignimbrite and bear traces of paintings and engravings representing the vegetaliform sign mentioned above (Joussaume *et al.* 2010) (**Fig. 9**).

Fig. 9 – Chelba Tutitti: group of phallic stelae north of the site. These stelae were re-erected in 2018 (Photo: J.-P. Cros).

No burials were uncovered during the surveys but a low mound bearing mostly broken stelae, which 'closed' the site to the north, was fully excavated. A pit was found in the central part of the mound, associated with a stele painted with vertical and horizontal red bands. The sparse grave material collected consisted of two fragments of a polished axe and two archaic tools, older than those unearthed elsewhere on the site. Could this represent, as in Waheno in the Sidama, the founding tomb of an important person around whom this immense site developed over time: a place of memory, a place of gathering, a place of worship, or a little of all of these? For the time being, this cannot be confirmed.

Anne Lise Goujon's team recently resumed work on these sites in the Gédéo region (Goujon 2013). She discovered other complexes associating low mounds with phallic stelae. She also defined territories with slightly different stele models, specific glans decorations, and contact zones between groups. This work is still in progress.

Tuto-Fela

This cairn, located on a promontory at an altitude of 2200 m, was reported by Azaïs and Chambard in 1925 (Azaïs & Chambard 1931) and excavated in 1935 by a German team led by Adolf E. Jensen, who carried away 17 of the most beautiful stelae to the Frankfurt Museum, where they still stand today (Jensen 1936). Joussaume's team carried out five excavation campaigns at Tuto-Fela between 1993 and 1997 (Joussaume 2007). A total of 320 stelae have been inventoried. The phallic stelae are the oldest and were often reused and reworked.

The monument comprises two superimposed cemeteries.The first was formed by funerary pits of varying depth dug into the lateritic sediment. At the base of these pits, a sloping side cell contained the remains of the deceased lying on his side (the remains are usually male – see below), with his

hands in front of his face looking toward the pit. These were always individual adult burials, without any accompanying material. The profile of the pits and cells evokes a sock, and we have named them so. The cell and pit were filled with stones, but also with fragments of phallic stelae. The deplorable state of the bones does not allow any further study. A date is available for a grave: 1048-1280 CE (Gif-sur-Yvette 10725).

Above this is another cemetery made up of shallow pits that most often contain the remains of one, or sometimes two or three deceased individuals, covered by other stones in some cases forming a small corbel. The simple stelae with engraved cross-braces, phallic stelae with cross-braces, and cross-braces with faces, all belong to the upper cemetery. Unlike the phallic stelae which were worked with stone tools, some stelae in the upper cemetery show traces of metal tools. Gradually, the addition of new tombs at the top and to the sides of the cemetery gave rise to the cairn we see today, which is 40 x 20 m, and about 1.50 m high at its centre. In one or two cases we observed reuse of the tomb for another individual, with bone manipulations, as in tomb 3 of square H4 (**Fig 10**). The base of this upper cemetery is dated to the 15th-16th centuries CE.

Fig. 10 – Tuto Fela: double burial at the foot of an anthropomorphic stele in the second cemetery. In the background, on the left, two phallic stelae mark 'sock-shaped' tombs from the first cemetery (Photo: J.-P. Cros).

When the sex could be determined, it was found that men were always the first to be buried in these cemeteries. One can imagine, as in Tiya, a cemetery reserved for valorous characters, who were sometimes joined by their wives either in their own graves, or in a neighbouring one without a stele. Numerous pottery deposits accompany these tombs, as well as some ornamental objects.

Other sites

Many other burial sites exist in the vicinity (Joussaume & Cros 2017), such as Sede Mercato where we carried out an extended survey in 2018 (**Fig. 11**), and Soditi where Vincent Ard and his team began excavations the same year. A cairn at this site seals the pit and 'sock' graves. It is associated with a large, elongated platform with phallic stelae. The excavation is still in progress.

One particular site is worth mentioning: Sakkara Sodo, located in the south of the area (Joussaume & Cros 2017). About 40 massive stelae form a slightly curvilinear alignment. Several carved horizontal bulges, sometimes decorated with incisions, emphasize the base of the glans on these phallic monoliths; serpentine motifs are engraved on two of the stones. This is the first time such decoration has been recorded on phallic stelae. The site, which appears 'ancient' based on the morphology of the stones and the decorations they bear, was dated to the 1st century CE by the Duff team (Duff *et al.* 2018).

3.4 In current populations

Some regions of southern Ethiopia are particularly interesting as certain ethnic groups, such as the Konso, Gewada, Borana, Hadiya and Arsi, still erect stones in funerary contexts or on other occasions (see Joussaume & Cros 2017). Ethnological comparatism can be applied here, but it has often received

Fig. 11 – Sede Mercato site: hundreds of stelae are implanted on this large cairn; almost all of them phallic. The treatment of their upper part is often original. We did not see any anthropomorphic stelae at this site (Photo: J.-P. Cros).

Fig. 12 – Grave of a Konso hero, with his wooden statues (*wakas*). The hero wears the *helecha* on his forehead and holds his penis in his hand. His wives are beside side of him, and all his slaughtered and emasculated enemies are on either side. The dark stone on the left marks the recognition of the village, the other small stones represent the fields he owned (According to Azaïs, plate LXXXVII no. 2, 1931).

'bad press' in the past. Recently, Alain Testart clarified the situation, and argued in favour of a careful and well-conducted comparatism (see Testart 2012: 188-197). Two examples are presented here.

The Konso

The Konso live in a mountainous region south of Lake Chamo, in fortified villages consisting of different districts containing agglomerated family units (Hallpicke 1972; Joussaume & Cros 2017; Métasebia Bekele 2007). The society is made up of farmers who form the upper class, and craftspeople. The Konso form a patriarchal and patrilocal society, divided into nine clans, each with its own religious leader (*poqolla mulga*). There are three other *poqolla*, known as the *poqolla tuma*, the most important of which is the *Kalla*, who has religious and customary authority. He lives outside the villages and is buried in his sacred grove. But Konso society is also structured by a complex generational and age-class system called *gada*, several variants of which are found among many southern populations.

On the main square of the village (*mora*), *dega hela* stones, marking the replacement of age class, and *dega diruma* stones, marking a valued individual or collective event, are erected. A *dega diruma*, which is recognized by the whole village, is erected on the tomb of a hero, together with *wakas*, the famous wooden statues representing the deceased wearing the *helecha*, a phallic symbol, on his forehead, his weapons. He is accompanied by his wife or wives, and the emasculated enemies and wild animals he killed (**Fig. 12**). Again, these are pit tombs, with a basal side cell.

The Gewada

The Gewada are an ethnic group living close to the Konso with a similar social organization (Métasebia Bekele 2007), with whom we were lucky enough to attend ceremonies in February 2018 on the occasion of the death of a valiant character who was also a *poqollo* (equivalent to *poqola* among the Konso) (see the film 'Ethiopia, the mystery of megaliths', ARTE, CNRS, https://www. youtube.com/watch?v =oWCi53dmBZA), and also to observe the stones erected on the graves of important figures. One stone marked a grave installed in a small sacred grove; another, acting as a cenotaph, was erected along a path or near a village, adding to the line of stones of previously deceased heroes (**Figs. 13** and **14**). Among the Gewada, these stones are always shaped, whereas the Konso use unmodified basalt prisms.

4. Somaliland

This small country, a former British protectorate and a self-proclaimed independent state since 1991, has been explored since the middle of the 19th century. It was brought to the attention of the scientific community after the discovery, in 2002, of exceptional rock art sites by a French team (Gutherz *et al.* 2003). However, surveys have also brought to light a very large number of megalithic monuments of different types.

The first mentions of dry-stone monuments in the Horn of Africa date from the second half of the 19th century, particularly in the work of Georges Révoil (1882). (For a complete history see Cros *et al.* 2017: 44-45). The numerous monuments observed in 2002, and during subsequent missions, can be classified into four categories, discussed below.

4.1 Tumuli

Thousands of tumuli are scattered across East Africa. The construction of these piles of stones extends over a long period, and some are probably more or less contemporary. They vary in size, few are structured, but some have a depression at the top, probably the result of the collapse of the wooden ceiling described by Cerulli (1931). They can be isolated or grouped together into relatively extensive necropolises.

Near the Laas Geel rock art site, a monument belonging to a necropolis with a dozen flat tumuli has been explored (Cros *et al.* 2006). Its diameter measures 6.80 m, and it was delimited by a crown of obliquely wedged slabs. The surface level of the mound was largely composed of small white and red blocks of quartz. The central part was covered with flat granite slabs, covering a small stone structure, which did not yield any archaeological information.

Fig. 13 – Alignments of cenotaphs at the entrance of a Gewada village (Photo: J.-P. Cros).

Fig. 14 – Cenotaph stone of a Gewada hero. The stones at the base mark his children. The stone is covered with a plant with apotropaic virtues (*Cissus rotundifolia*) and is painted with three horizontal bands (Photo: J.-P. Cros).

4.2 Burials under blocks

These 'burials' are located either at the level of a recess in the rock face or against a rocky scarp that creates a difference in level. The tombs, which do not seem to be very old, often use large blocks and are therefore megalithic in the primary sense of the term.

4.3 Rectangular monuments with standing stelae

These monuments consist of thin slabs of varying lengths, half-buried and placed on their sides, delimiting a rectangular space with the main axis always oriented east-west. A stele is erected on each of the two shorter sides. These monuments are always inserted within a very flat tumulus made of small blocks or fine pebbles, or simply delimited at a distance by a kerb of stones. They are sometimes isolated, or can also constitute cemeteries (e.g., Blacksmith's cemetery, cemetery of the Prophet).

Structures made up of numerous small cells placed side by side to form an overall cross shape are related to the previous group. They consist of four standing stones, set two by two opposite each other, which border the outer edge of the quadrangular cells. Fieldwork carried out by Alfredo Gonzáles-Ruibal's team on the caravan site of Iskudar provides two absolute dates for this type of structure: between the beginning of the 12th century and the end of the 14th century CE [3] (Gonzáles-Ruibal *et al.* 2017).

4.4 Circular monuments with a crown of erected stones

These circular or slightly oval monuments are delimited by a 'crown' of vertically positioned thin slabs, at least 50 cm high. They are often joined, sometimes worked, delimiting an interior space entirely filled by a stony infill. Sometimes two or four diametrically opposed slabs are higher than the others. The burial may be inserted into this filling or placed in a pit dug into the ground. The diameter of these monuments varies from 2-5 m. Their base is surrounded by a thin layer of stones and, 1-2 m from the foot of the slabs, a circular stone kerb is

(3) D-AMS-015990: 827±24 BP; D-AMS-015991: 663±20 BP.

Fig. 15 – Raari (Somaliland): monument with a crown of standing stones. Probably funerary; no such monument has yet been excavated (Photo: J.-P. Cros).

placed on the ground (**Fig. 15**). No dating elements are available for these unique structures, but we would tend to place them in an early phase. They can be compared to similar tombs made by the Arsi people, and even to some funerary structures on Lake Turkana but a lot remains to be done to validate contacts that would have bypassed the Ethiopian mountain range to the southeast.

5. Synthesis and conclusions

5.1 From sedentarization to megalithism

The few dates in our possession for the appearance of megalithism, or at least monumentalism, seem to be globally consistent, zone by zone, with the development of pastoralism. Cattle domesticated in the Near East reached Africa via northern Egypt and were adopted by hunter-gatherer populations in an 'arrhythmic' pattern depending on ecosystems, and along a north-south temporal gradient (Lesur 2017). For example, there is a gap of two millennia between the adoption of cattle in southern Egypt and Yemen, and the Gobbad sites in Djibouti and those of Lake Turkana (**Fig. 1**).

Of the theoretical models for the transition of hunter-gatherer populations from a predation economy to a production economy: an 'economic' response to a demographic increase (Testart 2012), a 'cultural' response through 'a revolution of symbols' (Cauvin 1994), or an 'environmental' response, the latter played a major role in East Africa. The region experienced dramatic climatic fluctuations from the end of the Pleistocene to the middle of the Holocene, with severe phases of aridity that forced hunter-gatherers to adapt. The presence of a large number of ecosystems dependent on altitude (especially the Ethiopian massif), the presence of coastal or lacustrine environments and desert zones, led these populations to implement different adaptive scenarios that were not necessarily synchronous. In some biotopes, societies adopted progressive, partial or total sedentarization [4]; others, who made pottery, undoubtedly stored dried fish or fishmeal, as may have been the case near lakes (Asa Koma and Wakrita sites near Lake Abbe, or sites near Lake Turkana) or on maritime sites such as at Ghoubbet. This was supplemented by hunting, keeping a few head of cattle, and possibly proto-agriculture.

The earliest standing stones seem to mark burials and/or settlement sites, but also show the will to 'take possession', to 'mark out' a territory, and rapidly create places of memory and of encounters [5]. A totally or partially sedentary lifestyle seems to be a necessary, but not sufficient, condition for the appearance of megalithism. Let us cite a few examples from the areas neighbouring our study region.

In the south of Egypt, the site of Nabta Playa has been temporarily occupied since the 9th millennium BCE (Wendorf & Schild 2001; Gallay 2016: 54-55). The domestication of oxen is attested there as early as the 6th millennium, and towards the end of the same millennium, local populations erected rough or worked stones. Alignments, complex assemblages of monoliths, cairn burials of cattle, goats, gazelles, and even human remains, are present on the site, on which more perennial settlement is attested. Megalithism thus appeared here at a very early stage, in an at least partially sedentary population, and in a pastoral context, as shown by the burials of domestic animals.

In the southwest of the great Ethiopian massif, in the Lake Turkana region, nomadic or semi-nomadic pastoralists erected stones and built monumental funerary platforms containing several hundred buried individuals as early as the 3rd millennium BCE (Hildebrand *et al.* 2011; Grillo & Hildebrand 2013). The Antakari 3 site in Djibouti comprise two monumental complexes set at each end of the Ethiopian Rift, like mirror images. They contain the remains of hundreds of deceased individuals, ostentatious markers for the groups who built them. Both complexes were erected at the same time, near lakes and in the same environmental context.

(4) Many hunter-gatherer groups take care of the plants they gather in order to facilitate their regrowth, a kind of proto-agriculture. For agriculture, if we follow Testart '*the adoption by hunter-gatherers of a sedentary lifestyle – or even a semi-sedentary lifestyle – prepares them for agricultural life*' (Testart 2012: 350). This would, thus, represent a certain continuity.
(5) The great rock art sites such as Laas Geel may also play the same role in the same period. However, these were created by pastoralists who practised hunting, but did not know agriculture (and did not have pottery).

In Kassala, on the Sudanese-Eritrean border, the people of the Gash Group began erecting stones on graves in around 2500 BCE and continued for a millennium (Fattovitch 1989). They were pastoralists who adopted bovines at the beginning of the 4th millennium BCE.

For hundreds of years, or even more, this large region thus displayed a mosaic aspect with groups of hunter-gatherers maintaining their way of life, others adopting a totally sedentary lifestyle relatively quickly. Still others integrated cattle, or developed a proto-agriculture and/or the storage of fish. In addition, some groups built monumental architectures or sometimes truly megalithic structures.

5.2 Southern Ethiopia

In southern Ethiopia, thousands of phallic stelae are scattered throughout the Sidamo and Gédéo regions. This recent megalithism seems to have appeared at the beginning of the Common Era in the heart of the mountainous, in tropical zones with lush vegetation. These were truly isolated places where food seems to have been available all year round and where population density must have been high. Neolithization occurred very late: in the shelter of Moche Borago, pottery appeared around the turn of the Common Era, and no domestic animals or cultivated species were present before 1000 CE (Gutherz *et al.* 2002; Fauvelle 2018). This is what Testart calls 'sedentary because of favourable ecological conditions' (Testart 2012: 357-358). These populations erected many stones. Why were they systematically phallic?

In all these regions, there is a 'rustle' of a 'tradition', a 'memory' of latent wars, of neighbourhood conflicts between groups, of the 'duty' of killing an enemy to become a true warrior by appropriating his genitals. The cult of the male hero or warrior certainly existed for a long time and conflicts must have been frequent. Current populations such as the Konso show us that such conflicts are all opportunities to erect stelae, which accounts for their abundance. Today, the remains of these rituals are visible in the sculptures of the Konso *wakas*, in the *helecha* worn on the forehead by certain individuals, and on the thousands of phallic stelae. Some of the latter mark burials, but thousands of others are concentrated together in large groups and are certainly commemorative and places of worship.

Finally, it is perhaps within these groups of hunter-gatherer-fishermen-horticulturists that the vegetaliform symbol was adopted, a sign of life which subsequently spread to standing stones throughout the region and then towards the north of the country.

A change occurred towards the 14th century CE: funerary cairns were built where tombs were marked by anthropomorphic stelae (or 'anthropomorphized' phallic stelae). It is possible that large sites with phallic stelae were then abandoned or destroyed. These dates seem to correspond to the introduction of Christianity in these regions.

5.3 Eastern Ethiopia

In eastern Ethiopia, monuments such as the dolmens of Harar and Mänz represent a somewhat singular form of architecture in Ethiopian megalithism. Apart from the possible influence of Yemeni monuments, which are quite similar but much earlier, being dated to the first half of the 3rd millennium BCE to the Early Bronze Age (Braemer *et al.* 2003), we could imagine a local origin, especially since, to our knowledge, no monument of this type exists between Harar and the shores of the Red Sea. Recent work, however, has shown that Ethiopian obsidian crossed the Red Sea by at least the 3rd millennium BCE (Khalidi *et al.* 2010), demonstrating that contacts, at least step by step, existed from these early periods onwards.

Translated from the French
by Karoline Mazurié de Keroualin

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Elisabeth HILDEBRAND, Katherine M. GRILLO

Pastoral Neolithic 'pillar sites' of northwestern Kenya

Abstract: In northwestern Kenya, at least seven megalithic monumental sites lie near the palaeoshores of Lake Turkana. 'Pillar sites', as they are called by archaeologists, are distinguished by columnar basalt of up to 2 m in height, or smaller sandstone pieces, set in constructed platforms of up to 30 m in diameter. Some sites have additional cairns and stone circles. Recent research by the Later Prehistory of West Turkana (LPWT) research team has clarified the chronology of and contexts for the creation of the pillar sites. Pillar site construction and use began *ca.* 5000-4000 years ago when the first pastoralists in eastern Africa arrived in northwest Kenya, a landscape already home to hunter/gatherer/fisher communities. At this time, Lake Turkana was shrinking dramatically as the African Humid Period came to an end. Most of the pillar sites served as cemeteries: excavations at Lothagam North pillar site, for example, have revealed a mortuary cavity of more than 100 m^2 containing an estimated minimum of 580 burials. In this chapter, we synthesize research on all known pillar sites around Lake Turkana, with special attention to the sites that the LPWT team has studied on the western side of the lake. We explore the implications of new dates for longstanding debates about the possible archaeoastronomical significance of the sites and renew discussion about the pillars themselves. We review the location of pillar sources, the transport necessary to move them from source to installation, and the implications of their spatial distribution within the sites. We also review possible regional antecedents to and descendents of this tradition and observe that megalithism in northwest Kenya was an isolated phenomenon in both time and space. Why did ancient pastoralists construct these sites? We have previously argued that building the pillar sites may have served to create socially symbolic, fixed landmarks for herders in a dynamic physical landscape. Processes of construction and use may likewise have helped to solidify social networks at a time of dramatic environmental and social change. We also discuss other possibilities, and emphasize that interpretations of monumentality within mobile pastoralist societies must depend on contextualizing local and regional data rather than on recycling models developed elsewhere for settled agriculturalist peoples.

Keywords: *mortuary archaeology, archaeoastronomy, monumentality, pastoralism, Africa, Kenya*

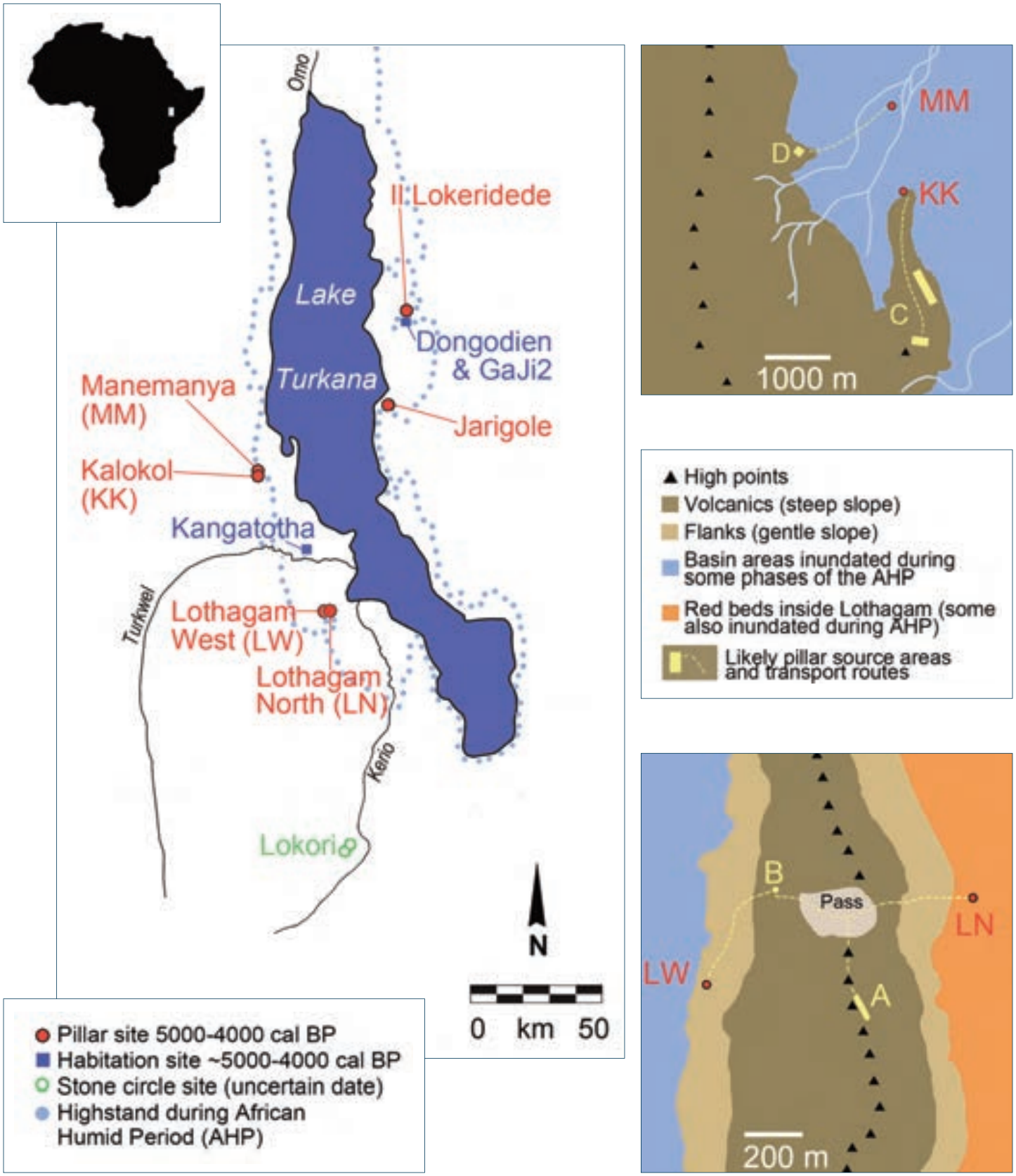

Fig. 1 – Map of known megalithic 'pillar' sites surrounding Lake Turkana, northwestern Kenya. Detailed maps of Lothagam and Kalokol/Manemanya areas, with likely pillar sources and routes of pillar transport.

1. Introduction

A series of at least seven megalithic sites near the palaeoshores of Lake Turkana in northwestern Kenya were built by eastern Africa's earliest herders *ca.* 5000-4000 years ago, during a period of profound environmental, economic, and social change. At the end of the African Humid Period, Lake Turkana shrank in area by 50%, and pastoralists and their livestock from more northerly areas moved into the region, which was already occupied by fishing/hunting/gathering communities. The establishment of new herding economies around Lake Turkana at this time marked the beginning of an era in eastern Africa known broadly as the Pastoral Neolithic (*ca.* 5000-1200 BP). In contrast to Neolithic contexts elsewhere, early pastoralist forms of food production in eastern Africa preceded the advent of farming in this region by millennia. Research by the Later Prehistory of West Turkana (LPWT) team (Hildebrand *et al.* 2011, 2018; Hildebrand & Grillo 2012; Grillo & Hildebrand 2013; Sawchuk *et al.* 2019), as well as other teams (Githinji 1994; Nelson 1995; Koch *et al.* 2002) has established foundational knowledge about the chronology, purpose, design, and context of what were, until recently, one of the most enigmatic of Pastoral Neolithic site types: the monumental 'pillar sites' (**Fig. 1**).

The pillar sites are named for the naturally columnar pieces of basalt of up to 2 m in height, or smaller sandstone pieces, set vertically in constructed platforms. Some sites have cairns and stone circles adjacent to or near the platform/pillar areas (**Fig. 2**). Human remains have been recovered from most of the pillar sites excavated so far. The most spectacular evidence for mortuary behaviour comes from Lothagam North pillar site, where a cavity measuring more than 100 m^2 in area and pits in the sandstone bedrock are estimated to have held a minimum of 580 burials. While early pastoralists clearly constructed at least some of these sites to serve as large communal cemeteries, in doing so they also created socially symbolic, fixed landmarks for herders in a rapidly changing landscape. Activities related to the construction and use of the sites may have strengthened social ties among or between herding groups, as environmental and economic conditions changed (Hildebrand *et al.* 2018).

In this paper, we return to the megalithic pillars themselves, the features which first attracted academic attention to the sites, and which hold cultural importance for local pastoralist communities in this region today. After reviewing the history of pillar site research more generally, we examine the implications of new dates for long-held questions about whether the pillars were originally arranged to be in archaeoastronomical alignments. We describe the distribution of pillars within the sites as architectural elements, pinpoint likely sources for pillars near the sites at which the LPWT team has undertaken excavation, and examine the transportation dilemmas faced by the pillar site builders. These reflections, along with a review of pillar sites in a wider temporal and geographical frame, raise new questions about the significance of megaliths for early herders around Lake Turkana.

2. History of research

Today's knowledge of pillar sites represents an integration of local perspectives, early survey of a pillar site and survey/excavations of stone circles west of Lake Turkana up to 1980, excavation at two pillar sites on the east side of the lake during the 1980s and 1990s, and renewed survey and excavations on the west side of the lake since 2008. **Figs. 3** and **4** present the existing radiocarbon data and calibrated age ranges for all the pillar sites discussed below.

2.1 Local perspectives

The Turkana Basin is today home to ethnically, linguistically, and economically diverse groups of pastoralists, agropastoralists, and fishing communities. There are no groups in the Turkana Basin with a direct historical connection to the construction of the ancient cemeteries marked by the pillars. Nevertheless, herding communities have long recognized the pillar sites as meaningful elements of their landscape.

The origins of many Nilotic-speaking herding communities in northwestern Kenya and surrounding areas can be traced to ancestral groups who, by the 16th century, were living in the region now known as South Sudan. By the early 18th century,

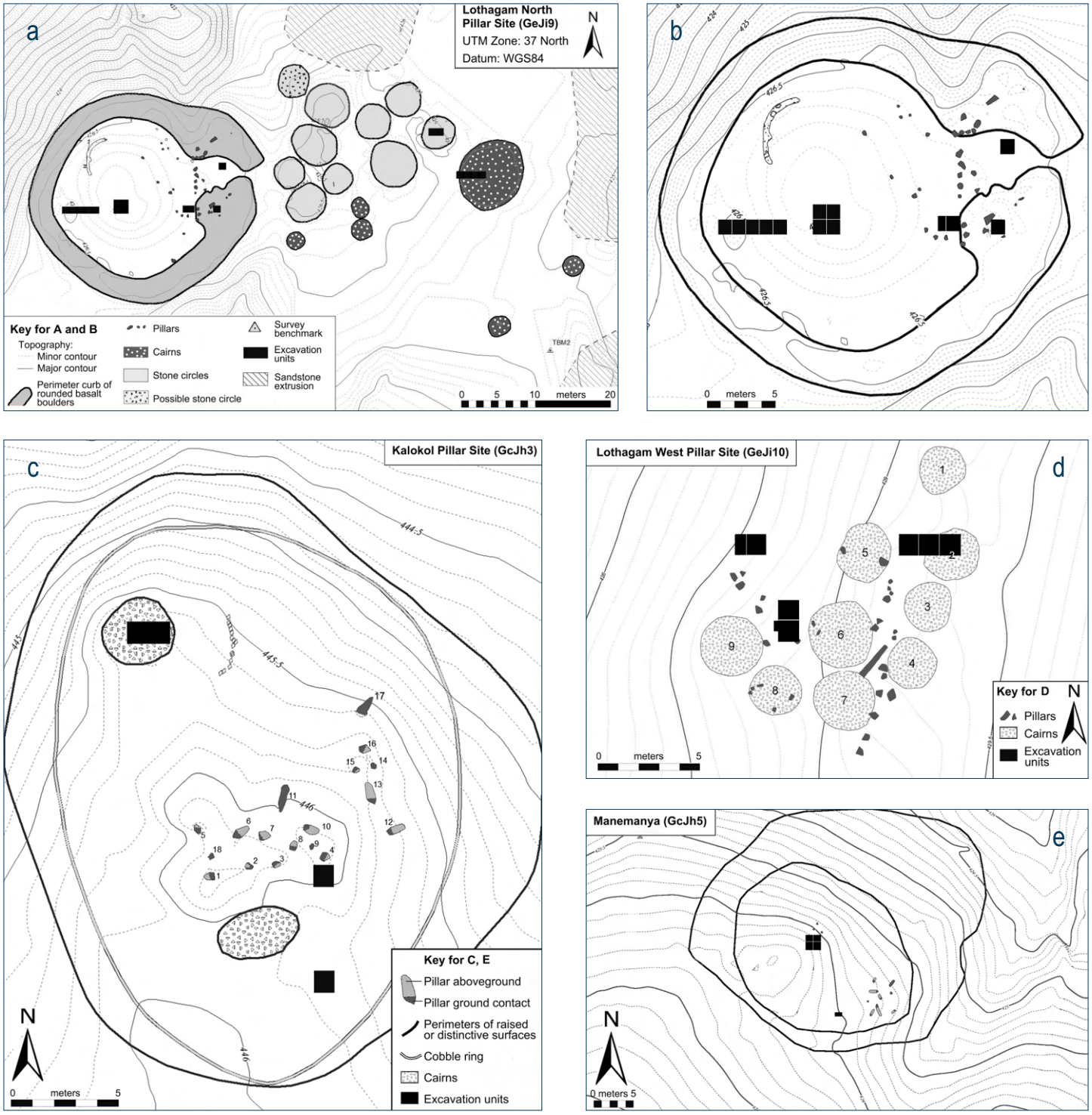

Fig. 2 – Maps of four pillar sites on the west side of Lake Turkana, based on topography by Benson Kimeu: a. Map of the entire Lothagam North pillar site (GeJi9) showing platform, stone circles, cairns, and excavation areas; b. Close-up of the Lothagam North platform showing configuration of pillars; c. Kalokol pillar site; d. Lothagam West pillar site; e. Manemanya pillar site.

Turkana communities had formed from those earlier ethnically-fluid populations and had settled in areas west of Lake Turkana (see Derbyshire 2020; Lamphear 1988). The Turkana people living around the settlement of Lokori today say that the standing stones in their area (and the rock art inscribed on the megaliths) preceded their presence (Lynch & Donahue 1980; Russell & Kiura 2011; Russell 2013). Pillar sites are known amongst the Turkana as *ng'amoratung'a*, meaning 'people of stone'. Turkana oral histories vary in their details (see also Lynch & Robbins 1978: 767) but are united in the story of a gathering of people in the past. Strangers or spirits appeared, who differed in their dress or behaviour or manner of dancing. According to these accounts, when living people laughed at these unusual visitors, their mocking incurred punishment; the spirits transformed the people into stone pillars. The Samburu are Nilotic (Maa)-speaking pastoralists who today live to the southeast of Lake Turkana but once lived in this region. They tell a similar story about the stone pillars, albeit situating them in a very particular historical context: God (*Nkai*) punished the Samburu, who had moved near Lake Turkana during the disastrous droughts and epidemics of the 1860s-1890s, by turning some people to stone. This act was said to be in retaliation for pride and disrespect shown by the youth, particularly young women, in prior decades (Straight 2007: 47).

2.2 Fieldwork west of Lake Turkana prior to 1979

In the 1960s and 1970s, the Turkana Basin saw groundbreaking palaeoanthropological research (reviewed by Harris *et al.* 2006). Around the same time, Lawrence Robbins began Holocene archaeology research west of Lake Turkana. Members of the Turkana community informed him that there were many archaeological sites in the vicinity of Lothagam, a pair of volcanic ridges running north-south near the Kerio Delta (**Fig. 1**). His initial research focused on a locality now known as Lothagam Lokam, where Early/Early Middle Holocene fishers lived on raised beaches at various times during the African Humid Period (AHP; *ca.* 12 850-3550 BCE or *ca.* 14800-5500 BP; see deMenocal *et al.* 2000; Costa *et al.* 2014; Robbins 1967, 1972, 1974). Robbins' subsequent research documented Middle and Late Holocene habitation sites in several locations west of Lothagam (e.g., Bb9) and north of the Turkwel River (e.g., Kangatotha, Lopoy, Apaget) (Robbins 1980, 1984; see also Phenice *et al.* 1980).

Robbins, together with Mark Lynch and Robert Soper, was the first to publish descriptions of monumental architecture around Lake Turkana, focusing on two sites. The Kalokol pillar site, first referred to as Namoratunga II by Lynch & Robbins (1978) and by Collett & Robertshaw (1983), as Namoratunga Site 3 by Lynch (1978) and by Lynch & Robbins (1979), as Namoratung'a 3 by Russell & Kiura (2011), and hereafter referred to as Kalokol, is located near a pass in the Losedok Hills. It comprises 20 pillars on a platform surrounded by an elliptical ring of small, rounded cobbles, with two cairns inside the ring and numerous others nearby outside (pers. obs.; see also Lynch 1978). Lokori, 160 km to the south near the confluence of the Kerio and Kangatet rivers, has major concentrations of archaeological features on two adjacent hills. It was first referred to as Ng'moritung'a (with sub-elements Ng'amoritung'a North and Ng'amoritung'a South located around 1 km apart) by Soper & Lynch (1977); these subcomponents were later referred to as Namoratunga 1 and Namoratunga 2 by Lynch (1978) and Lynch & Robbins (1979), and Russell (2013) refers to the entire site cluster as Namoratung'a South. The southern hill has more than 108 circular arrangements of upright stone slabs in a large cluster. Excavated stone circles had several layers of slabs and sediment covering a pit that had been dug into bedrock, typically containing an individual burial without accompanying artefacts (Lynch 1978; Lynch & Robbins 1978, 1979; Soper & Lynch 1977). Lynch and Robbins famously argued that Kalokol and Lokori together provided the first evidence for African archaeoastronomy in sub-Saharan Africa (Lynch & Robbins 1978, 1979), but others challenged the logic underpinning this assertion (Soper 1982; Collett & Robertshaw 1983). Sadly, Mark Lynch died in a hit-and-run accident before he could undertake follow-up research, and Holocene archaeology on the west side of Lake Turkana ceased until 2007. Recent fieldwork has provided chronological information on Kalokol that is inconsistent with the archaeoastronomy theory (see review in Section 3.1).

2.3 Fieldwork east of Lake Turkana, 1975-1996

John Barthelme (1977, 1985) surveyed transects in a large area between Koobi Fora and Ileret, from Lake Turkana's northeastern shoreline inland. He identified numerous AHP fishing sites, and Middle Holocene sites that yielded dates between *ca.* 4900-4500 cal BP, when Lake Turkana was shrinking rapidly (Owen *et al.* 1982). Among these, the adjacent sites of Dongodien and GaJi2 provided the first well-dated record of early cattle and caprines (Marshall *et al.* 1984; Barthelme 1985). Caprines were the most abundant of the domestic fauna, and exploitation of wild and aquatic fauna continued. Sites contained highly decorated Nderit pottery and evidence of an obsidian-based lithic industry. From the 1980s to 1996, the Koobi Fora Field School (KFFS), led by Charles Nelson and Harry Merrick, undertook excavations at the Jarigole pillar site near Alia Bay. Jarigole has a broad mound with conspicuous (still upright) basalt pillars in the centre, and scattered (often fallen) pillars at other locations. Nelson's (1995) reports describe preliminary results from excavations of a 12 m-long trench from the centre of the mound to its northern periphery, with smaller test units placed at three other locations near or beyond the edge of the mound. Recovery of isolated fragments of human bone, and the observation of deposits without clear stratigraphic demarcations, led Nelson to propose that Jarigole was an ossuary site with recurring episodes of digging and refilling to inter 'bundle burials' or human remains in a secondary context. The KFFS team did recover one intact primary burial near the base of their excavation, but never reached sterile substrate. Although Nelson and Merrick did not obtain radiocarbon dates for Jarigole, a large assemblage of fragmented Nderit pottery suggested a strong chronological correlation with Dongodien and GaJi2.

Another mortuary site near Dongodien, known as Il Lokeridede (GaJi23), saw preliminary excavations in the 1990s by Cesar Githinji and Christopher Koch (Githinji 1994). Il Lokeridede is described as a low mound with angular sandstone slabs (possibly once standing upright) on the surface. Human remains, abundant pottery, and other material culture suggested similarity to, and contemporaneity with, Dongodien and the Ileret stone bowl site. Githinji believed that Il Lokeridede represented a Jarigole-like burial mound, with similar secondary internments. A single date was obtained, indicating a range of 2985-2575 BCE (4849-4532 cal BP) (Koch *et al.* 2002), consistent with dates from the habitation sites of Dongodien and GaJi2.

2.4 Recent research on pillar sites west of Lake Turkana

The LPWT team initiated fieldwork on the west side of the lake in 2007, with four pillar sites as a major focal interest. Test excavations in 2008-9 established dates of between 3300 and 2100 BCE (5300 and 4100 cal BP) for Lothagam North, Lothagam West, Manemanya, and the Kalokol pillar sites and also yielded similar dates from OES for Jarigole collections curated at the National Museums of Kenya (**Fig. 3**) (Hildebrand & Grillo 2012). Architectural layout, thickness of platform deposits, and prevalence of pottery, beads, and lithic raw material types varied among the pillar sites west of the lake (Hildebrand *et al.* 2011).

Further, more comprehensive excavations from 2012 to 2014 included the use of new spatial data collection methods, aerial photogrammetry, bioarchaeological recovery, and ground-penetrating radar. All four sites proved to have mortuary components. At Lothagam North, a mortuary cavity had been created containing pits dug into the bedrock, with additional burials added above as time progressed. Caprine remains and a groundstone palette shaped to resemble a cow were recovered from the site and firmly established that the pillar site builders herded livestock, although other burial adornments (ostrich eggshell beads, hippo ivory rings and bangles, perforated hippo tusks, a headdress incorporating incisors from more than 100 gerbils) were derived from wild animals. The presence of eclectic ornamentation with so many of the burials of all ages and sexes, and the positioning of burials as tightly as possible, so far suggest that there is no evidence for expressions of hierarchical status at Lothagam North (Hildebrand *et al.* 2018; Sawchuk *et al.* 2019). A more complete set of dates confirmed that the pillar site construction and use coincided with Lake Turkana's dramatic recession at the end of the AHP (Hildebrand *et al.* 2018).

Recent surveys by LPWT and other teams have revealed other pillar sites or 'pillar clusters'. During the 2012 LPWT surveys, John Shea observed two other occurrences. The first is a few hundred metres north of Lothagam North. It consists of 18 pillars: two were more than 2 m long, eight more than 1 m, and the remainder less than 1 m. They all lie recumbent on the floor of a gully cutting 10 m into the surrounding landscape. No other artefacts were found in the immediate area. Shea (pers. comm.) surmized that fluvial erosion had cut away the original context, removed sediments and portable artefacts, and left only the pillars near their original location, albeit most likely slightly displaced vertically and/or horizontally. The second cluster lies east of the presumed pillar source for Manemanya described in Section 3.2; a single pillar seems to be set such that it creates an alignment between the source and the Manemanya site (Shea pers. comm.).

Site	SASES #	Lab #	Material	Reported date (BP)	Calibrated BP (95.4%)	Calibrated BP (95.4%)	References
Jarigole	GbJj1	AA85131	OES bead	4381±39	5045-4840	3095-2890	Hildebrand & Grillo 2012
Jarigole	GbJj1	AA85132	OES bead	4251±39	4870-4615	2920-2665	Hildebrand & Grillo 2012
Jarigole	GbJj1	AA85133	OES bead	4401±39	5260-4845	3315-2895	Hildebrand & Grillo 2012
Jarigole	GbJj1	AA85134	OES bead	4146±53	4830-4445	2885-2500	Hildebrand & Grillo 2012
Il Lokeridede	GaJi23	TO-4911	Charcoal	4180±60	4845-4525	2895-2575	Koch *et al.* 2002
Lothagam N	GeJi9	ISGS-A1491	OES bead	4385±15	5025-4855	3075-2905	Hildebrand *et al.* 2011
Lothagam N	GeJi9	ISGS-A1492	OES bead	4265±15	4860-4655	2910-2705	Hildebrand *et al.* 2018
Lothagam N	GeJi9	ISGS-A1505	OES bead	4165±20	4825-4570	2875-2620	Hildebrand & Grillo 2012
Lothagam N	GeJi9	ISGS-A2624	Charcoal	4280±15	4865-4725	2915-2775	Hildebrand *et al.* 2018
Lothagam N	GeJi9	ISGS-A2625	Charcoal	4140±20	4815-4525	2870-2575	Hildebrand *et al.* 2018
Lothagam N	GeJi9	ISGS-A2649	OES frag	4240±20	4855-4645	2905-2695	Hildebrand *et al.* 2018
Lothagam N	GeJi9	ISGS-A3792	OES bead	3845±20	4355-4090	2405-2140	Hildebrand *et al.* 2018
Lothagam N	GeJi9	ISGS-A3793	Charcoal	4135±20	4815-4520	2865-2570	Hildebrand *et al.* 2018
Lothagam W	GeJi10	ISGS-A1494	Charcoal	4290±20	4870-4730	2920-2780	Hildebrand *et al.* 2011
Manemanya	GcJh5	ISGS-A1490	OES bead	3805±15	4240-4085	2295-2135	Hildebrand *et al.* 2011
Manemanya	GcJh5	ISGS-A1504	OES bead	4255±20	4860-4645	2910-2700	Hildebrand & Grillo 2012
Kalokol	GcJh3	ISGS-A1493	OES frag	3890±15	4410-4155	2460-2205	Hildebrand *et al.* 2011
Aliel	N/A	Beta-447966	Bulk organics in pottery	4490±30	5290-4970	3345-3020	Wilshaw *et al.* 2016

Fig. 3 – All available radiocarbon dates for pillar sites. Dates have been calibrated in OxCal v4.4.2 with a mixed IntCal20 and SHCal20 calibration curve (Bronk Ramsey 2009; Marsh *et al.* 2018) and rounded to the nearest five years.

Wilshaw *et al.* (2016) report an additional pillar site some 20 km southeast of Lothagam at Aliel, about 432 m above sea level. The site has an elliptical platform of stones and several cairns including one within the platform with at least one protruding pillar. Bulk organics in an Nderit pottery sherd found on the surface yielded a radiocarbon date from the period 3345-3020 BCE (5300-4900 cal BP). This predates the calibrated ranges for existing radiocarbon dates from other pillar sites – only slightly in the case of Jarigole, by 300 years in the case of Lothagam North, and more substantially for other pillar sites (**Fig. 3**).

3. State of knowledge

Multiple field seasons at several pillar sites have resolved many points of ambiguity. Pillar sites were constructed and used during a time of dramatic climatic change, lake shrinkage, and economic realignment. Most of the sites that have seen excavation have definitive evidence for mortuary use, and architectural histories are emerging for some. As the LPWT team has focused on environmental and economic circumstances of pillar site construction and use, and on mortuary behaviours, including the singular phenomenon of a mortuary cavity, we have suggested that '*the pillars themselves might be the least interesting part*' of the sites (Grillo & Hildebrand 2013). However, in the context of a global volume on megalithism, it is surely worth reflecting on the pillars and their significance to the authors of the sites. In this section, for four of the sites where the LPWT team has excavated and conducted surveys of the surrounding area, we revisit the archaeoastronomical question launched by Lynch and Robbins, present more detailed information on the kinds of pillars present and their positioning, and explore the location of sources in relation to these sites. Jarigole, Il Lokeridede, and Aliel are not included; research at Jarigole is ongoing, and we hope to see further details emerge from Il Lokeridede and Aliel in the future.

3.1 The archaeoastronomy debate revisited

Lynch & Robbins (1978, 1979) advanced a theory that Kalokol and Lokori together provide the first evidence for African archaeoastronomy in sub-Saharan Africa. Their analysis of pillar alignments at the Kalokol pillar site suggested possible correlations with the location of stars and constellations important in the Cushitic calendar systems at certain times in antiquity. The logic of this argument was presented as follows: Christopher Ehret's (1976) model derived from historical linguistics suggested a migration of Cushitic-speaking pastoralists south from Ethiopia around 2000 years ago. Lynch & Robbins (1978, 1979) obtained two ^{14}C dates on bone from Lokori of 2285±165 and 1200±100 BP (*ca.* 300 CE and 750 CE). Based on the earlier of the two dates, they suggested that Lokori was built *ca.* 2200 BP (*ca.* 300 CE) and – observing that Kalokol and Lokori were architecturally similar – argued that both sites were probably constructed by eastern Cushitic speakers in *ca.* 2200 BP (*ca.* 300 CE). Ethnographically documented burial practices by eastern Cushitic speakers in Konso, Ethiopia, were also noted as being similar to those seen at the Lokori site. Other eastern Cushitic-speaking groups, such as the Borana in Kenya today, have calendar systems based on lunar phases and constellations, and Lynch and Robbins determined the possible locations of calendrically-important stars and constellations visible from the area at *ca.* 2200 BP (*ca.* 300 CE). Kalokol was mapped in detail, and Lynch & Robbins (1979) argued that the pillars were intentionally positioned to be leaning in alignments that pointed towards seven important stars and constellations visible in the sky around 2000 years ago. Since then, two main lines of critique have emerged: one centred on the architecture and alignments, and another on chronology.

On architectural grounds, the presumed connection between Lokori and Kalokol is, in our view, tenuous. Lokori has more than 100 stone circles formed from upright slabs that are not of sufficient size to be designated as 'megaliths'; to our knowledge it has no clusters of large, columnar pillars. Kalokol does have one stone circle/cairn feature that may bear some resemblance to features at Lokori, however, this is a single feature at the northern end of what is otherwise a platform-and-pillar construction. In terms of the pillar architecture at Kalokol, Soper (1982, includes reply by Lynch) was the first to advocate caution. He noted that it is not at all clear that the pillars are now in the same alignments they

were when first placed; pillars could have started and/or continued leaning at any point in the past several millennia. We concur with Soper that some have surely moved, as can be seen at other pillar sites. At Manemanya, for example, pillars are now flat to the ground, and at Lothagam North at least one pillar has broken in half. Debates about Kalokol continued through the 1980s as scholars re-measured and statistically re-analyzed the Kalokol pillar site and its astronomical alignments (Doyle & Wilcox 1986). Robbins (2006) provides a useful summary of this work.

On chronological grounds, Soper (1982) noted that because Kalokol remained undated, Lynch & Robbins' logic had unavoidable circularities: arguing that the sites must date to 2200 BP because this is consistent with the linguistic model, and at the same time arguing for Cushitic speaking pastoralists because the sites ostensibly dated to *ca.* 2200 BP. The following year, Collett & Robertshaw's (1983) regional review of Pastoral Neolithic dates echoed Soper's concerns and raised a new issue: bone apatite is vulnerable to diagenetic contamination. Although Lynch and Robbins were following the conventional wisdom of the time in preferring the apatite date (2285±165 BP), both bone apatite and collagen dates should now be treated with caution (see Wright 2017). The untimely death of Mark Lynch cut short research progress that almost certainly would have included excavations and additional radiocarbon dating at both sites. Efforts to redate Lokori have not yet succeeded (Davies pers. comm.), and Kalokol remained undated until recently.

As Holocene fieldwork resumed on the west side of Lake Turkana after 2007, new dates for Lothagam North and West, Kalokol, Manemanya, and Jarigole have placed the pillar sites around Lake Turkana in a much more secure chronological framework, returning dates more than two millennia earlier than those for Lokori (Hildebrand & Grillo 2012). A secure ^{14}C date of 3890±165 BP (2560-2205 BCE or 4410-4155 cal BP) for the platform at Kalokol, and similar dates for other pillar sites, entirely undermines previous arguments for the site's archaeoastronomical significance and its putative association with Ehret's suggested spread of Cushitic-speaking pastoralists in 2000 BP. The positions of stars and constellations and their correlation with pillar orientations could be recalculated using the newly available dates, but there is little *a priori* reason to believe that pillars would have been intentionally aligned with anything at all. Even if they had been, we would be unlikely to know their precise orientations as there is a substantial likelihood that pillars have shifted from their original positions over the last 4000 years. We must conclude that the earlier, extraordinary claims that Kalokol represents the earliest archaeoastronomy in Africa remain unsupported.

3.2 Pillars as megalithic markers?

From a distance, pillars are the most conspicuous architectural elements for many of the sites, protruding from the otherwise homogeneously coloured landscape and catching the eye. However, it is important to recognize that these elements – so visible to us today – may have been some of the last additions to sites' architecture, placed as a coda or even a postscript to the mortuary activities that gave the sites meaning for generations. Where the approximate original positions are still clear, it seems that pillars visible on the surface have different configurations at different sites and interact with other surface features in site-specific ways. Orthophotos showing distributions of pillars are given in Sawchuk *et al.* 2019; here, we present maps (**Fig. 4**) and photos from the ground and standing perspectives (**Figs. 5** to **7**).

At Lothagam North (**Fig. 5**), the main group of large columnar basalt pillars is immediately to the east of the 30 m platform mound. Overall, the group of pillars has a north-northwest/south-southeast orientation but it is a cluster, not a single linear arrangement. Also, several pillars have a pronounced tilt, so one cannot assess potential original arrangements with confidence. Smaller pillars, many of sandstone, are set at various positions in the platform's eastern half. These have mostly remained upright, but we have not been able to detect any patterns in their positioning. Just east of the main pillar cluster, the surface of the site is dominated by small, rounded basalt boulders and cobbles extending for around 5 m eastwards; a 1 x 1 m unit placed here yielded a thin clay-rich deposit with poorly preserved bone

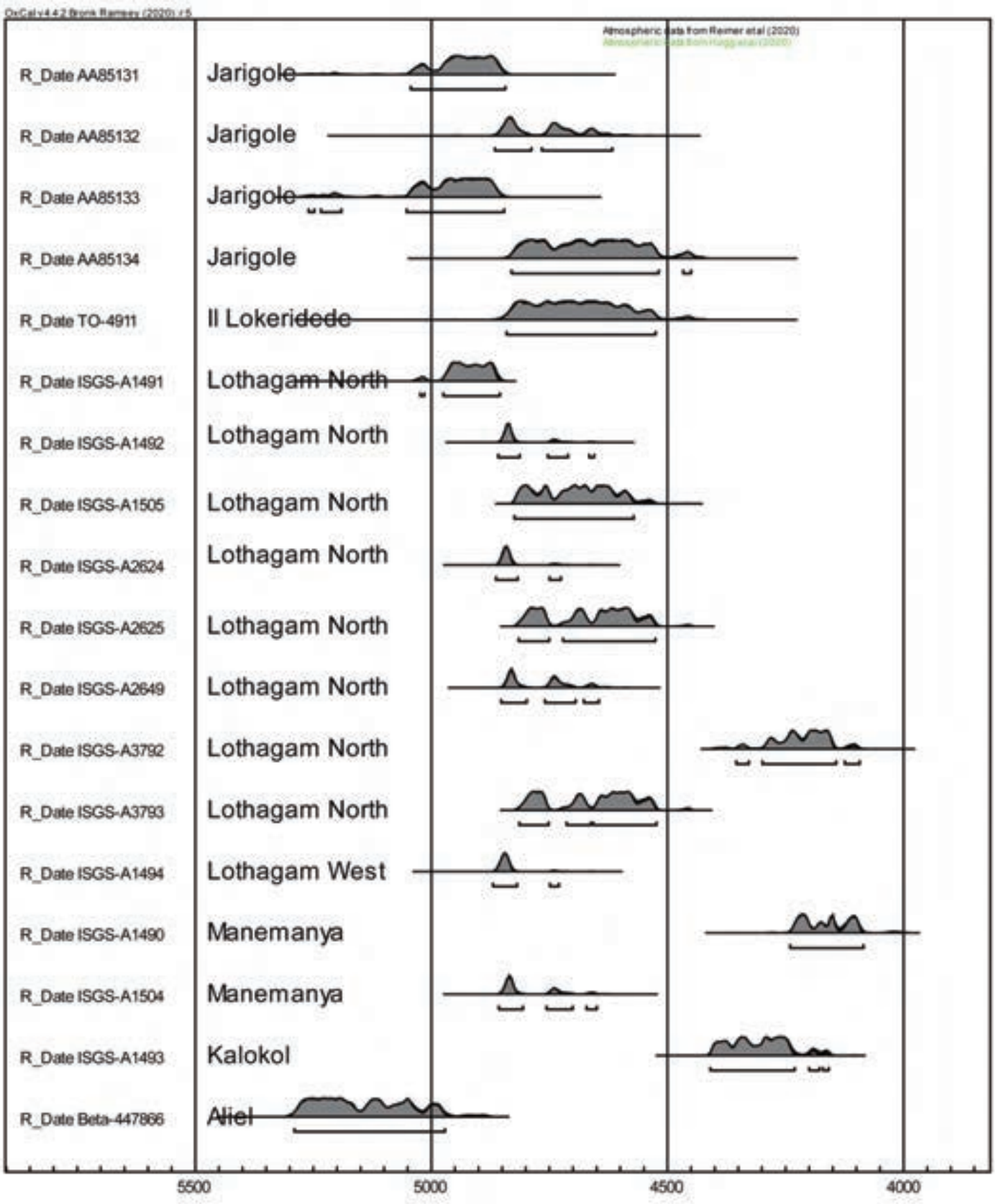

Fig. 4 – Calibrated age ranges for pillar site dates listed in figure 3.

fragments. High densities of small boulders continue around the southeast, south, and southwest edges of the platform. Erosion into steep gullies has destroyed peripheral portions of the platform's west, northwest, north, and northeast sides but it is possible, even likely, that the boulder 'kerb' originally extended around the entire perimeter. A small area free of cobbles and pillars lies just north of the pillar cluster; a test unit there revealed only sterile, sandy deposits.

Lothagam West has more than two dozen pillars (**Fig. 6**). The eastern set has 15 columnar basalt pillars (upright, tilting, and fallen) that are arranged roughly along a north-south axis extending for more than 10 m, curving slightly to the west at its southern end (**Fig. 6b, c**). At least 12 other pillars in the central and western portions of the site vary in material, do not protrude as far from the ground, and do not follow much of a discernable directional arrangement. Additional pillars exist at the southern

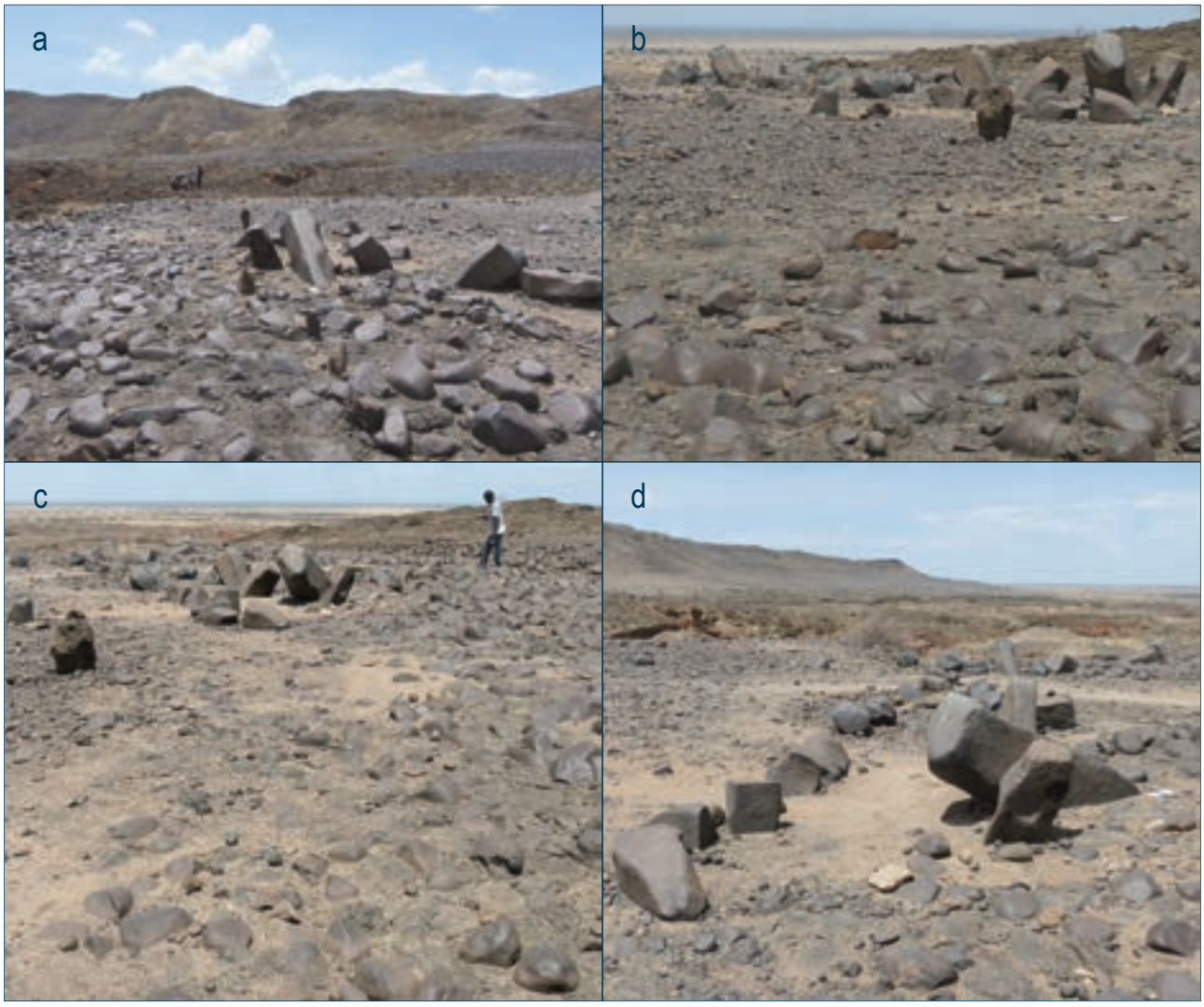

Fig. 5 – Pillars and other surface features at Lothagam North pillar site: a. Standing at the eastern end of the platform, looking southwest across the rounded basalt cobbles and boulders that make up the periphery of the platform (left) and the southern end of the pillar zone. Lothagam's western ridge is in the distance; b. Almost the reverse of (a). Standing at the southern edge of the platform, looking northeast across the cobble/boulder curb at the pillars, plains northeast of Lothagam that would have been submerged during the African Humid Period, and mountains on the east side of Lake Turkana; c, d. View of the main pillar cluster, from the SSW (c) and SSE (d). Although the western pillars seem like they might be in a linear arrangement, several of them are broken or lying flat, enhancing the linear appearance. Pillars on the east side of the cluster are tilted in various directions.

Fig. 6 – Pillars and other surface features at Lothagam West pillar site: a. Standing about 10 m east of the platform, looking west across the site. The Napudet Basin (near distance) would have been inundated during some phases of the African Humid Period. The Napudet Hills are in the far distance; b. Looking south-southeast to the eastern pillar arrangement; c. Looking down at the eastern arrangement of pillars from above and slightly to the north. Pillars are tilted in several different directions and degrees; d. Looking south at the entire set of pillars; e. Wall of excavation unit showing removed pillar; the base of the pillar is about 35 cm below the present-day surface of the site.

Fig. 7 – Pillars and other surface features at Kalokol and Manemanya pillar sites: a. Looking east through the west-east trending arrangement of pillars at Kalokol; b. Standing near the northeast edge of the Kalokol pillar site and looking southwest at the north-south trending arrangement of pillars. Pillars are tilted in several different directions and degrees; c. Looking northeast across the southern half of the Kalokol pillar site; d. Looking southwest across the elliptical ring of cobbles surrounding the Kalokol pillar site; e. Looking across the cluster of fallen pillars at Manemanya.

end of the platform, and in its centre. As at Lothagam North, some pillars are tilted or fallen. Our 2012 excavations showed that one pillar in the west-central part of the platform was placed with its base about 35 cm below surface (**Fig. 6e**); it could be easily moved by a three-person group. Complicating the architectural picture, several broad, low cairns overlap with the distribution of the pillars on the east, west, and south sides of the platform. The chronological relationship between cairns and pillars is not clear; the cairns may have been constructed later.

Kalokol has two groups of pillars, one tending roughly east-west (**Fig. 7a**), and one roughly north-south (**Fig. 7b**), within a larger elliptical curve of medium-sized cobbles (**Fig. 7d**) (see also Lynch & Robbins 1978, 1979). Two cairns (**Fig. 7c**) exist within this ellipse and numerous others (sadly the targets of recent quarrying and looting attempts) dot the surrounding landscape. Our observations on site suggest that the northern cairn may postdate/intrude into platform deposits.

The platform at Manemanya is much less distinct from the surrounding landscape than those at other pillar sites, and the pillars exist in two main clusters (our map in **Fig. 2e** notes two possible demarcations). Three upright basalt pillars are placed at the northern end of the platform, protruding some 30 cm above the present ground surface. Given the length of columnar basalt pieces viewed at the source, it is possible that these pillars are set with their bases more than 1 m below ground surface, but this has not yet been tested: our excavation units were nearby but not directly adjacent. Nine other basalt pillars exist on the southeastern edge of the platform (**Fig. 7e**); these are either fallen or so far off vertical that their original layout cannot be discerned, although the strong clustering does not seem likely to have arisen from a linear starting arrangement. Additionally, some large cobbles/small boulders protrude from the surface in other areas of the platform, but it is not known if they have vertical subterranean orientation. Unlike at Lothagam North, Lothagam West, and Kalokol, no cairns have been observed at or near Manemanya.

Inter-site comparisons demonstrate that although the pillar sites show common elements (platforms, mortuary contexts, pillars and, in some cases, stone circles or cairns), surface data suggest no overarching plan that was repeated from site to site. The LPWT team excavations have not, so far, found subterranean pillars at any of the sites described above. While excavations of platform or near-platform contexts have been limited in scope (9.2 m^2 at Lothagam North, 6 m^2 at Lothagam West, 4.5 m^2 at Manemanya, and 3 m^2 at Kalokol), it is noteworthy that the only boulder-sized stones found thus far were rounded rocks or recumbent slabs; some appear to have been placed immediately above the cranial or torso area of burials in the mortuary cavity at Lothagam North. The only upright pillars known, exist at the present surface of the pillar sites. Given the dimensions of available basalt pieces it is likely that many of these were positioned either during the final stages, or even after the completion of the platform construction. However, some pillar clusters are adjacent to the platform: the main pillar cluster at Lothagam North does not overlie the mortuary cavity (Hildebrand *et al.* 2018: fig. S3), and the cluster of fallen pillars at Manemanya may be similarly peripheral. Thus, the role of megaliths/pillars in the early and intermediate phases of pillar site construction and use will remain ambiguous until contexts around the pillars can be tested more thoroughly. It is clear, however, that vertical pillars were regarded as an important architectural element by the people who carried out the final acts of construction, either as the final elements of platform construction, or as subsequent renovation(s).

3.3 Pillar sources and transport

Miocene and Pliocene volcanic ridges are prominent parts of the landscapes around Lake Turkana and would have been even more dominant when vast tracts of now-open land were covered by the expanded lake. The rocks that form these ridges fracture and weather in diverse ways: rounded cobbles and boulders may progressively exfoliate, columnar basalts may weather into gentle edges, and other volcanic rocks may fracture into angular pieces (**Fig. 8a, b**).

Columnar basalt is the most common material used for the large pillars at Lothagam North, Lothagam West, Manemanya, and Kalokol. These are typically less than 2 m in length; their transverse cross-

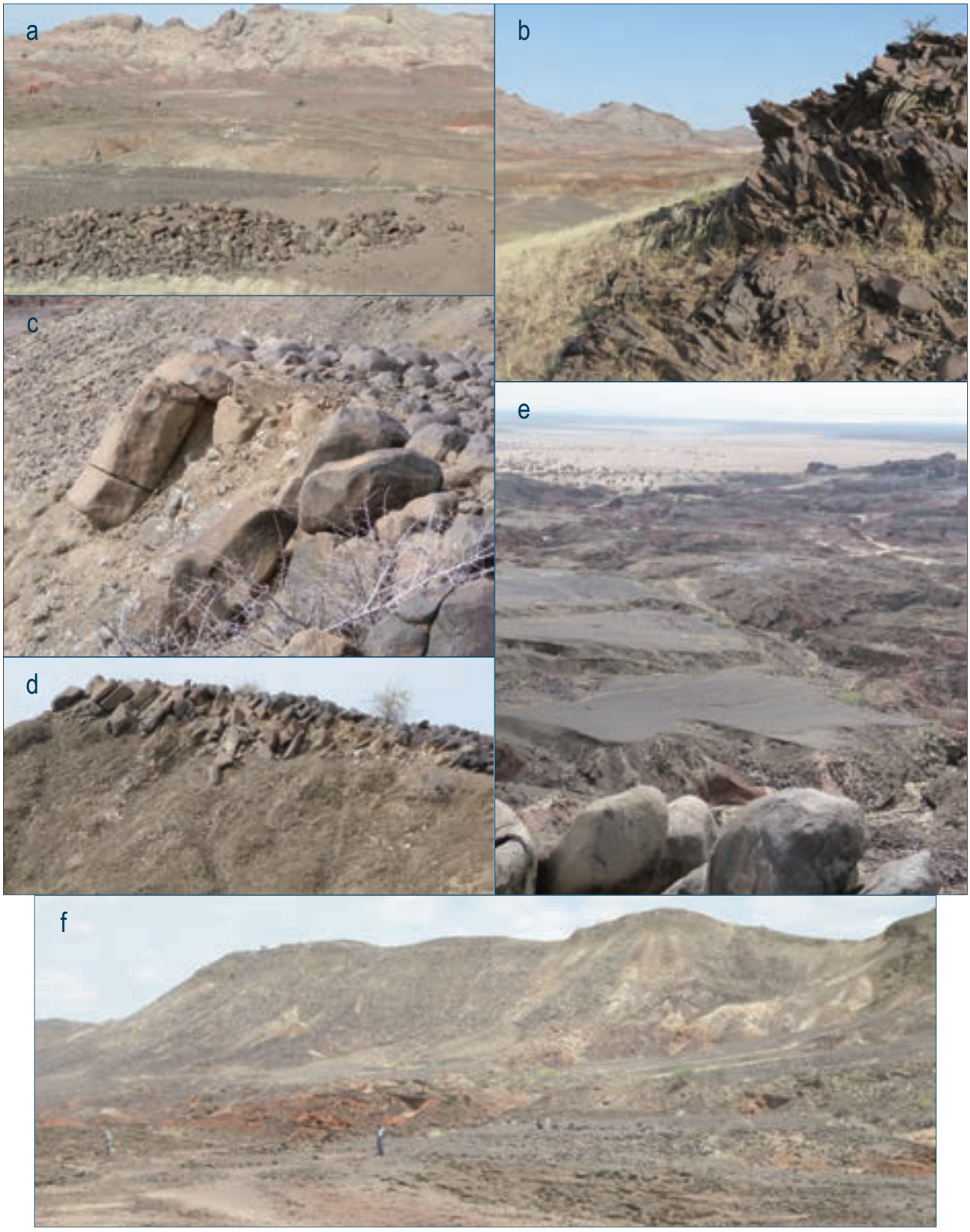

Fig. 8 – Construction material source and transport areas pertaining to Lothagam North: a. Standing on the lower eastern flank of Lothagam's western ridge, looking east across a source of large, rounded cobbles (used in platform edging) to the Lothagam North pillar site, and Lothagam's eastern ridge in the distance; b. Standing slightly farther west/higher on the same path looking southeast, observing volcanic rock formations with angular fractures; Lothagam's eastern volcanic ridge is visible in the distance to the left; c. Close-up view of columnar basalt outcrop ('Source A') atop Lothagam's western volcanic ridge, where pillars are eroding (Photo: J. Shea); d. More distant view looking south to 'Source A' columnar basalt outcrop (Photo: J. Shea); e. View from basalt outcrop, looking northeast beyond Lothagam to the Turkwel and Kerio Deltas on the horizon. Lothagam North pillar site is visible in the centre of the photo. During the African Humid period, Lake Turkana would have inundated all of the plains, and lower-elevation areas between Lothagam's two volcanic ridges (Photo: J. Shea); f. Composite panorama photo looking southwest to Lothagam North's pillars and platform, and on to Lothagam's western ridge. Columnar basalt outcrops are on the top of the ridge.

sections are typically four or five-sided polygons. The sides of the pillars are weathered and rounded, both at the site and at the presumed sources. No 'dressed' or deliberately shaped basalt pieces have been documented at these four sites. Other long, angular rocks of quasi-prismatic shape (up to around 10 x 5 x 50 cm) are available at Lothagam and occasionally found in a recumbent position within deposits at Lothagam North, but seem not to have been preferred for installation as upright pillars on the surface of the site. Pieces of sandstone have also been placed vertically at Lothagam North and some other sites. Due to the soft nature of the sandstone, it is possible that at least some of these pieces were shaped but no distinct working marks have been observed.

Lothagam area

Lothagam has two main volcanic ridges, each running north-south and aligned roughly parallel to each other. The local geological sequence is well described by McDougall & Feibel (1999). The high eastern volcanic ridge (Nabwal-Arangan Beds, *ca.* 14.2-9.1 million years old) is quite far from both Lothagam pillar sites, so the LPWT team has not surveyed it for potential pillar sources. The lower western ridge (Lothagam Basalts, which formed as a flow *ca.* 4.2-4.0 mya) lies between the two pillar sites and contains multiple potential sources of construction material. For Lothagam North, the closest source of columnar basalt pillars (Source A, see **Figs. 1** and **8c, d**) lies more than 500 m southwest of the site, near one of the high points on the western ridge (John Shea, pers. comm). Rounded clasts similar to the boulders used on the platform perimeter are found in natural clusters about 100 m west of the site. For Lothagam West, the most likely source for columnar basalt pillars lies on the west side of the western ridge (Source B see **Figs. 1** and **9a, b**). Natural columnar basalt pieces at both sources are similar to each other, and to the pillars found at both sites, in size and shape and in having rounded sides.

Moving the pillars from sources to either site would have been arduous and tricky. Source A has a dangerously steep slope immediately below it to the east (see **Figs. 1c** and **8e, f**), so people hauling pillars from there to Lothagam North would probably have headed slightly west, away from the edge and then straight north for at least 200 m, first over high ground and then descending towards the saddle that is the easiest passage across the top of Lothagam's western volcanic ridge (**Fig. 9c**); finally they would head east down a steep slope (50 m elevation loss across a 350 m distance) to reach the construction site. The journey from Source B to Lothagam West is slightly less tricky: people probably hauled pillars around 120 m westwards down a moderate slope (descending about 25 m in elevation) to reach a bench of fairly level terrain overlooking the Napudet Basin, and then moved south for around 300 m to reach the construction area (**Fig. 9a, b**). The alternative, traversing the slope straight from source to site, would be difficult due to a rocky, uneven slope with unstable footing.

Losedok area

Manemanya and Kalokol pillar sites lie just east of the Losedok (Lothidok) Range system, for which the geological sequence is described by Boschetto *et al.* (1992). Columnar basalt outcrops in the area are but one element within the Kalokol Basalts (17 million years old), a vast series of more than 20 volcanic flows that make up the basal stratum of the Losedok Range. K/Ar ages range from 28.0 to 17.7 mya. For Kalokol, the nearest known columnar basalts are found in outcrops 1-2 km south of the site (Source C in **Fig. 1**). In this case the terrain is gentle, involving a gradual descent of 30 m in elevation per 1000 m distance. For Manemanya, the nearest pillar source is located approximately 1500 m southwest of the site, in a volcanic outcrop at the foot of the range (Source D in **Fig. 1**) (John Shea pers. comm.). People would most likely have hauled pillars over a gentle slope descending around 25 m in elevation. While it is possible that Source D could also have supplied pillars for Kalokol (which lies 1800 m east-southeast), today's terrain suggests that this would have involved crossing several major and minor river channels.

Knowing that the pillar site builders had livestock, it is tempting to speculate about the possible use of cattle to assist transport. To haul pieces of columnar basalt from sources to construction sites, a sledge or sled-like device must have been constructed, with or

Fig. 9 – Pillar sources and transport areas pertaining to Lothagam and Kalokol: a, b. Standing on the west side of Lothagam's western ridge, looking southwest (a) and south-southwest (b) to see different sides of 'Source B'. The Napudet Basin (middle ground) was inundated during certain phases of the African Humid Period; the Napudet Hills lie in the distance. Lothagam West is off frame, to the left of the photographed areas; c. Although rugged peaks characterize much of Lothagam's western ridge, this pass offers more gentle terrain for easier passage between the two pillar sites, and potential pillar sources; d. View from 'Source C' near Kalokol pillar site, looking east toward Lake Turkana; much of the distant terrain would have been inundated during the AHP (Photo: J. Shea); e. Close-up photo of pillars and other boulders at 'Source C' (Photo: J. Shea).

without runners, using multiple layers of animal skins and/or mats secured by leather or vegetal cordage. Such sleds could have been hauled by people or, perhaps, by draught animals. The latter would have required training the animals to practice controlled traction and the construction of a system of harnesses. No such practices are known from the eastern African pastoral ethnographic literature, and we are somewhat skeptical about their use in the past. Terrain is also a factor: while it is possible that pillars might have been transported in this way on the gentle slopes near Kalokol and Manemanya, at Lothagam, controlling animals and heavy loads on steep, rocky slopes with uncertain footing would have been extremely challenging. Separation of numerous pillars from their source formation, transport of pillars from source to site, and installation on site would have required strategy, coordination of considerable effort, and a strong motivation.

4. Broader temporal and geographical perspectives

In evaluating the possible purposes and significance of the megalithic pillars, and the pillar sites more generally, one should examine these sites in a larger temporal and geographical frame. In this section, we consider potential antecedents for the pillar site tradition, both locally and regionally. We also review what is known about its conclusion and aftermath.

4.1 Antecedents?

Pillar sites were part of a mortuary tradition involving architecturally complex, megalithic spaces around Lake Turkana, which were constructed as pastoralist economies were first established in the region (Sawchuk *et al.* 2019). Given that this period may have involved interaction between incoming pastoralists and longstanding populations of fisher-hunter-gatherers, a search for antecedents should include both local fisher-hunter-gatherers during the preceding period, and the areas from which the immigrant pastoralists might have come.

Around Lake Turkana, there is no evidence that fisher-hunter-gatherers of the preceding AHP constructed monumental sites, although some indications of mortuary behaviour are preserved. At Nataruk, Lahr *et al.* (2016) have documented the remains of numerous individuals who appear to have died during an episode of inter-group violence sometime between 9550 and 8550 BCE (10 500 and 9500 BP). Lahr *et al.* observed indications of perimortem trauma on several of the individuals; some were found face down and in positions that suggest that they may have been left where they fell. There is no evidence for the creation of burial pits or for systematic orientation or positioning of the remains, which implies that formal burials did not occur at Nataruk. However, in and around Lothagam, Angel & Robbins (1980), Lynch (1980a-b) and Phenice *et al.* (1980) describe finding human remains at several locations in AHP beach deposits (see also Goldstein 2017 for recent research). In multiple locations, either the presence of burial pits, the clustering of human remains, and/or a fair degree of regularity in positioning or orientation led them to conclude that fisher-hunter-gatherers did, at least sometimes, have deliberate mortuary practices during the AHP and may even have had dedicated areas for human interments. However, there is no evidence for megalithic installations or any other public architecture in association with AHP fisher/hunter/gatherer mortuary contexts at Lothagam or elsewhere around Lake Turkana.

Expanding our geographical lens, mortuary traditions and monumentality may have played important roles in social dynamics that underpinned the spread of pastoralism in Africa (Hildebrand *et al.* 2018; Sawchuk *et al.* 2018). Reviewing mortuary and architectural/ritual traditions by early pastoralists in northern and eastern Africa, Sawchuk *et al.* note initial manifestations, such as stone arrangements and tumuli in Egypt and cattle burials at multiple locations in the eastern and central Sahara 5550-4450 BCE (7500-6400 BP). Human burials, especially a series of cemeteries along the northern Sudanese Nile, attest to elaborate portable material culture and complex mortuary behaviours *ca.* 5550-3050 BCE (7500-5000 BP; see Sawchuk *et al.* 2018: 194-195 and references therein). However, none of these sites have megalithic architectural components, and all lie more than 1300 km from Lake Turkana.

Intermediate locations amenable to early herding (South Sudan, and rift/lowland areas of southern and southwestern Ethiopia) have not seen as much Holocene archaeological research. Fieldwork in what is now South Sudan (reviewed by Kaye *et al.* 2019) has found no obvious cultural antecedents for the Turkana pillar sites, either in terms of monuments or megaliths dated to the 6th or 5th millennia BP, or other material culture. In southern Ethiopia, traditions of megalithic architecture are well known, but all probably post-date the Turkana pillar sites by more than 2000 years (see Section 4.2 below). In the lowlands just north of Lake Turkana, stone platforms in Mursiland suggest ritual or public construction. These are architecturally distinct from pillar sites in having flat platforms made of concentric arrangements of elongated stones. They recently yielded three radiocarbon dates, all earlier than 300 BP (Clack *et al.* 2017). We conclude that no clear evidence exists for cultural precursors to the pillar sites, either locally, nearby, or farther afield, although archaeological research for the critical period (6000-4000 BP) has been sparse, and fieldwork targeting these goals is urgently needed.

4.2 Afterwards

The use of pillar sites as communal cemeteries in the Turkana Basin appears to have ceased by *ca.* 4000 years ago (2000 BCE). Cairns at many of the pillar sites may date to slightly later periods of use, and the cemetery at Lokori also seems to post-date the main period of pillar site use. Dating efforts, however, have been incomplete and have produced ambiguous results. It seems likely that at least some descendants of the pillar site builders remained in the Turkana Basin, but if so, they no longer participated in the construction of megalithic sites.

Another megalithic tradition developed around 2000 years later in southern Ethiopia, northeast of Jarigole by some 340 km (Gedeo sites) to 560 km (Tiya). These sites are in mid-altitude to upland locations (1500-2000 m asl), often in areas neighboring the rift but in much cooler, wetter ecological settings than the lowland, lakeside Turkana pillar sites. These Ethiopian megalithic sites contain dense arrangements of scores of large stelae, some with phallic forms or engravings, across fields or tumuli (See Cros, this volume, p. 985; Joussaume 2012). Architecturally, these sites seem unrelated to the pillar site traditions of the Turkana Basin: they are not, for example, communal cemeteries or other types of mortuary sites. Preliminary (but intriguing) obsidian sourcing data suggest that people at the Ethiopian sites may have been using lithic raw materials from northwestern Kenyan sources, which does imply some degree of contact between these areas, albeit thousands of years after pillar sites ceased to be used (Duff *et al.* 2018).

We do have solid evidence that at least some people – or their pots – moved southwards from Lake Turkana into the Central Rift Valley of Kenya: fragmentary Classic Nderit bowls were found by Louis Leakey and Mary Leakey at burial sites including Stable's Drift and Hyrax Hill (reviewed in Grillo *et al.* 2022). One radiocarbon date of 460-200 BCE (2410-2150 cal BP) (Wang *et al.* 2020) places occupation at Hyrax Hill much later than the period during which Classic Nderit was used for pillar site ceremonies in the Turkana Basin; we understand little, however, about what may have happened during the nearly 2000 years in between. Nor do we fully understand whether or how the pillar site builders were related to other, later pastoralists who moved southward into the Rift Valley of eastern Africa during the Pastoral Neolithic *ca.* 3100 years ago (see Prendergast *et al.* 2019 for a review of aDNA evidence pointing to complex patterns of pastoralist in-migration and interaction with local hunter-gatherers). Groups identified by archaeologists as 'Savanna Pastoral Neolithic' and 'Elmenteitan', distinguished largely by differences in material culture, were highly specialized cattle, sheep, and goat pastoralists. They had diverse mortuary practices which included cremation and interment in caves and rock shelters, but nowhere have archaeologists found evidence for the kinds of communal, megalithic cemeteries constructed earlier in the Turkana Basin (Sawchuk *et al.* 2018).

5. Synthesis

Pillar sites have no obvious immediate antecedents or successors along the route of pastoral spread. We must see them as *sui generis* spaces, constructed on a 'moving frontier' as pastoralists entered a socially,

economically, and environmentally dynamic eastern African landscape for the first time. What led to this architectural innovation? In previous work (Hildebrand *et al.* 2018), we have emphasized that monumental construction and repeated congregation at pillar sites may have strengthened social ties among mobile herders. Interactions during the construction and use of these sites could have facilitated information exchange as pastoralists were situating themselves within ecological settings specific to eastern Africa and grappling with a rapidly changing landscape as Lake Turkana receded. But pointing out some of the potentially advantageous results of pillar site construction/use is not the same as comprehending the reasons central to the initiative of the pillar site builders themselves, as they undertook this novel, monumental task. Carefully considering pillar arrangements, transport, and other aspects of site architecture gives us an opportunity to evaluate other possible motives or purposes for these sites.

Revisiting the question of archaeoastronomical alignments, it is clear that, given the advances in dating methods and the firm chronology for several pillar sites established since Lynch and Robbins' fieldwork, the hypothesis of megalithic construction by Cushitic speakers 2000 years ago should be laid to rest. The platforms were built and pillars placed by herders of unknown linguistic affiliation more than 4000 years ago. Still, given colonial histories of (mis)attributing African achievements to outside actors or influences, Lynch and Robbins' efforts to probe sophisticated ancient construction played a laudable role in shifting the frame of discussion, casting ancient Africans as agents of innovation. Today, we as archaeologists must recognize the limits of available archaeological evidence. It is not clear whether the pillar site builders had complex astronomical/calendrical systems and even if they did, it would not be possible for us to determine why they may have felt compelled to point large rocks towards certain celestial bodies. Even though the lack of provable archaeoastronomical alignments may be disappointing in one sense, there are other ways in which early pastoralists' achievements can be recognized. At least one pillar site (Lothagam North) is known to have held an estimated minimum of 500 burials within a massive, carefully engineered mortuary cavity.

Perspectives from LPWT excavations and surveys help us distinguish between the pillars and the sites overall. With several of the pillar sites having burials in the deepest/earliest layers, it is clear that those sites, at least, were constructed with mortuary purposes in mind from the outset. The absence of pillars deep within the mortuary cavity at Lothagam North would seem to argue against the proposition that pillars were part of that initial construction/burial phase.

Although large stones were used to mark some burials as the cavity at Lothagam North was filled, both there and at other pillar sites we have only found pillars in surface contexts. It is therefore possible that pillars were installed at the very end of the life of the sites as part of a final episode of architectural closure. If so (and *contra* some of our earlier writings), we must acknowledge that the pillars themselves might not necessarily have served as visible landmarks during the period in which people were being interred, and instead may have been meant to mark the site for future generations after its use was discontinued. On the other hand, at sites where pillar clusters are adjacent to a mortuary (e.g., Lothagam North), people may have installed pillar clusters during the main period of site use as visible markers for their contemporaries. Further excavations in contexts of pillar emplacement are needed to clarify this point; for the moment, we must acknowledge that the motives for placing pillars may have differed from the original objectives that launched the tradition of creating these sites.

Variation among the pillar sites makes the task of interpretation even more complex. Each site had a distinctive layout and arrangement of pillars. Despite use of similar materials and architectural elements, each community of builders employed its own unique design, such that certain elements (e.g., pillars and their arrangements, kerbs around the perimeter of some platforms, etc.) may have had site-specific meanings or significance. The weight of the pillars and their extended transport over difficult terrain that we have documented here both argue for their importance but the *nature* of their significance remains a riddle. Perhaps they were visually important to either the ongoing or final design of the site, as landmarks or as purely aesthetic

elements. Perhaps they were intended as a durable message that the dead were buried in that place. Or perhaps the acts of pillar extraction, transport, and emplacement held enormous symbolic importance in themselves (see also Ortmann & Kidder 2013 on Poverty Point in eastern North America), by re-enacting journeys or key events in cultural memory, by soliciting intervention in natural or supernatural realms, or by achieving some other expressive goal.

Northwest Kenya offers a rare example of megalithic construction by pastoralists who were not in contact with agricultural food producers. Interpretations of monumentality in this context must, as always, avoid two problematic assumptions. The first is that social forces fostering monumentality among herders necessarily echo those of intensively researched sedentary, agrarian societies in Europe and other regions, where hierarchy and territoriality are often invoked as underlying causes or motives. Our research, together with studies of pastoral monumentality on other continents (e.g., Wright 2007), has repeatedly challenged this idea and has attempted to make locally informed and regionally contextualized inferences about pillar sites in which mobile pastoralism itself serves as a structuring variable (Grillo & Hildebrand 2013; Hildebrand *et al.* 2011, 2018; Hildebrand & Grillo 2011). The second problematic assumption, however, is that monumental expressions in non-agrarian (i.e., foraging or pastoralist) contexts necessarily stem from eco-utilitarian calculations. Makarewicz (2013) reminds us that ecologically-centred discussions of pastoralist systems – for example, those focused solely on rangeland management and subsistence – often preclude recognition that pastoralism can sustain dynamic communities in which individuals, families, and other groups lead complex social and political lives. Continued research on the pillar sites is needed to illuminate the various ways that eastern Africa's first pastoralists must have engaged with – and shaped – their physical, social, political, and/or spiritual worlds.

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Mike PARKER PEARSON

Megaliths in Madagascar

Abstract: Madagascar, in the Indian Ocean off the east coast of Africa, has a living tradition of megalith-building that goes back at least 500 years. Known as the 'Island of the Ancestors', it is famous for its stone tombs and standing stones. Stone, with its properties of permanence and endurance, has been traditionally reserved for the ancestors whilst the houses of the living were built of perishable materials – a tradition that only began to erode with the arrival of Christian missionaries in the 1870s. Amongst the many varied and regional mortuary practices of Madagascar, megalithic monuments are best documented and are most dramatic in the central highlands and the extreme south. In the highlands, standing stones have been erected for various reasons in addition to the memorialization of the dead, but in the south they are almost entirely commemorative of the ancestors. Most notable in this respect are the megalithic traditions of ethnic groups such as the Tandroy, who incorporate standing stones into the fabric of their stone tombs, a practice which began around 150 years ago.

Keywords: *megaliths, Madagascar, tombs, standing stones, mortuary practices, ancestors, memorialization*

1. Introduction

Madagascar is the world's fourth largest island, situated off East Africa's Indian Ocean coast (**Fig. 1**). Sharing a common language, the Malagasy have a cultural heritage which derives from both Indonesia and Africa and which has developed over the two millennia or more in which the island has been settled. Known as the 'Island of the Ancestors', Madagascar is well known for its diverse and elaborate mortuary practices and ancestor rites, which vary between regions as well as between and among the 20 or so recognized ethnic groups. Whilst these ethnic groups have been associated with particular regions and distinct burial practices, intra-island patterns of migration within the last century have created a complex and changing situation that is, to some extent, breaking down traditional ways of life and ethnic identities.

Despite island-wide diversity of funerary monumentality and practice, certain traditional themes remain common throughout: mortuary rites are accompanied by cattle sacrifice and feasting; strong concepts of pollution surround death and the dead; and separation of the dead from the living is a key aspect of mortuary practices, whether these involve inhumation or more lengthy secondary rites.

Investment of wealth and labour into burying and monumentalizing the dead can be substantial, resulting in the construction of impressive tombs, mausolea and the erection of standing stones. These

Fig. 1 – Map of Madagascar, showing the main cities and the traditional regions associated with the ethnic groups mentioned in the text and illustrations (M. Parker Pearson).

remarkable monuments and their associated practices have attracted the interest of scholars for well over a century, resulting in island-wide overviews (Decary 1962; Joussaume 1988: 245-250; Joussaume & Raharijaona 1985; Mack 1986) to more detailed regional ethnographies and histories (e.g., Bloch 1971; Crossland 2014; Feeley-Harnik 1991; Heurtebize 1986, 1997; Huntington 1973, 1988; Middleton 1997; Parker Pearson *et al.* 2010; Schomerus-Gernböck 1981). These latter studies cover a multitude of mortuary practices that vary from secondary burial traditions in Madagascar's central highlands to the inhumation rites of the south and west (Parker Pearson & Regnier 2018).

2. Stone for the ancestors: permanent, enduring and eternal

In many parts of Madagascar, tombs, standing stones and other monuments for the dead and ancestors are built of enduring materials, principally stone. This is often in contrast to the houses of the living, traditionally built out of timber and, after the 1870s, brick. Whilst houses are temporary, embodying the brief temporality of life, the monuments of the ancestors are designed for eternity (Parker Pearson & Ramilisonina 1998: 311-14; Wright 2007: 71). Thus megalith-building is primarily bound up with celebrating the ancestors; their tombs, standing stones and other monuments do not only represent the ancestors, they *are* the ancestors. Where stone is not available, as is the case along much of the west coast of Madagascar, harder woods may be substituted (Parker Pearson & Ramilisonina 1998).

The origin of megalith-building in Madagascar is not well understood, largely because tombs and standing stones remain part of a living tradition which is protected from intrusive investigation by taboo and ancestral beliefs. Even with modern development, megalithic tombs and monuments are rarely excavated; an unusual example is the 18th century megalithic tomb now on display at Tsimbazaza Zoo in the capital, Antananarivo, which was moved there from its original location.

3. The earliest tombs and standing stones

Archaeological survey in the central highlands of Imerina, around Antananarivo, has provided a chronology of tomb-building in this region, derived from ceramics recovered in stratigraphic association. The earliest tombs, built of small thin slabs placed on large boulders, date to the 15th and early 16th centuries, continuing into the 17th and early 18th centuries (Wright 2007: 73). Tombs built of smaller horizontal and vertical slabs date to the 17th and early 18th centuries (**Fig. 2**), while more megalithic-sized slabs were employed in tombs of the 17th and early 18th centuries onwards (*ibid.*). Standing stones, known as *vatolahy* ('man-stones') are harder to date, estimated by oral history rather than archaeological evidence; within Imerina, many are associated with rulers of the 18th and 19th centuries although the earliest are claimed to date to the 17th century (Wright 2007: 73-76).

Fig. 2 – The tomb of Ralambo at Ambohidrabiby near Antananarivo in the central highlands of Madagascar. Ralambo ruled the kingdom of Imerina and died *c.* 1612. The photographs show his tomb before (top) and after (bottom) restoration (Photos: M. Parker Pearson and Wikimedia Commons).

It seems likely that the stone tombs and standing stones of Imerina are the earliest in Madagascar, with all other instances in other regions being somewhat later. This is perhaps surprising, given Madagascar's much longer history of settlement and ancient links in language and ancestry with Indonesia where similar practices of secondary burial and megalith-building are known (e.g., Jeunesse & Denaire 2018). Madagascar was settled considerably later than the continental land masses around the Indian Ocean, although there is uncertainty about whether its first colonists arrived during the last 2000 years or earlier (e.g., Anderson *et al.* 2018; Mitchell 2020; Radimilahy & Crossland 2015). Even adopting the short chronology of initial colonization of *ca.* 1350-1100 years BP, the practice of megalith-building seems to have appeared only in the last 600 years, developing in Imerina during the process of early state formation.

4. The meanings of megaliths: standing stones (*vatolahy*)

The term 'megalith' relates to monuments constructed out of sizeable stone blocks or pillars requiring the labour of multiple individuals to move and erect them. The vast majority of stone tombs in Madagascar cannot really, therefore, be considered 'megalithic' since they tend to be constructed from relatively small blocks. It is mainly the standing stones (*vatolahy*) that deserve the term 'megalithic' (**Fig. 3**). Whilst principally associated with the dead, their presence may encompass a variety of meanings and purposes: commemoration of people or events, serving as a family place of sacrifice, representing a reaction to an ancestral visitation in a dream, or warding off malign influences. In the latter case, a standing stone may be erected at the head of a valley that has no running stream to water the village below (Ruud 1960: 113-14). Stones may also be erected to mark and protect limits of influence between individuals, houses and tombs, e.g., to protect a house from the negative forces of a tomb or to form a protective interface between two houses (Ruud 1960: 114; Kus & Raharijaona 1998: 55-58; Parker Pearson & Ramilisonina 1998: 311-312).

Fig. 3 – A standing stone of the mid-20th century at Ivato, in the traditional region of the Betsileo, north of Fianarantsoa (Photo: M. Parker Pearson).

Recent studies have explored the complexity of megalithic meanings and deployment in highland Madagascar (Kus & Raharijaona 1998; Crossland 2014). Crossland (2014: 181-6) explains how *vatolahy* constitute 'signs', 'witnesses' and 'history' that cause people to remember by linking the present and the past. She also categorizes them according to their purpose: mortuary *vatolahy* are erected in memory of the dead and as a substitute for them (*ibid.*: 190-5), while *orimbato* ('stones that are planted') mark treaties and events, particularly common as new forms of state power and authority emerged in 16th-17th-century Imerina (*ibid.*: 187-90). Standing stones known as *vatomasina* ('sacred stones') might also be erected by the state to ensure fertility and health from the king's ancestors to the populace and to commemorate the kingdom's governors and military commanders (*ibid.*: 210-6).

The most impressive traditions of megalith-building in Madagascar are today found in the extreme south, in the ancestral lands of the Tanosy, Mahafaly and Tandroy (Heurtebize 1986; 1997; Parker Pearson *et al.* 2010; Rakotoarisoa 1998; Schomerus-Gernböck 1981). Standing stones (*vatolahy*) in these regions are major elements of funerary monumentality, either standing alone or incorporated into the fabric of tombs. In Anosy (the land of the Tanosy) in southeast Madagascar, monoliths are erected in visible locations at a short distance from burial places hidden in the forest. Whilst commemorative of the dead, they are physically separated from their mortal remains. Traditional forms are unworked stone pillars but more recent styles include cement-constructed obelisks.

In south and southwest Madagascar, among the Tandroy and Mahafaly, standing stones are incorporated into tombs, most of which are of monumental sizes that dwarf the traditional wooden dwellings of the region. Here, the Malagasy adage that 'the house is for the present, the tomb is forever' (Wright 2007: 71) is strikingly apt. The gendered dimension of the name '*vatolahy*' ('man-stone') is also highly significant; although standing stones might occasionally be erected to commemorate women in highland Madagascar, in the south they are exclusively associated with men. Thus, women's tombs do not incorporate standing stones, nor are they commemorated by free-standing *vatolahy*.

Unlike in highland Madagascar, few state-sponsored standing stones have been erected in the south in the last two centuries, no doubt due to the region's relative independence of and resistance to state authority before, during and after French colonial rule. Among the few monuments that are not funerary-related are the relatively recent standing stones erected in town squares after independence in 1960. In some cases, these have been fashioned in the shape of the nation – Madagascar's long, thin insular shape lends itself well to monolithic form!

5. Megaliths of Androy

In the extreme south (Androy, Karembola and Mahafaly country), men's tombs have paired *vatolahy*, placed centrally on opposing sides, one in the east and one in the west (Heurtebize 1986; Parker Pearson *et al.* 2010). A larger stone is erected on the east side, towards the direction of the ancestors (**Fig. 4**). For Tandroy, the principal name for a tomb is *valavato* ('stone cattle pen') since, in size and shape, it mimics the square, timber-fenced enclosure in which cattle are kept overnight within the village. The metaphorical association with cattle is also evident in the placing of their bucrania on top of the tomb. From the moment of a person's death, cattle may be sacrificed until the moment of a tomb's completion, a process which may take several years and can involve the slaughter of over 100 beasts, though generally fewer than 20.

There is a particular aesthetic invoked by Tandroy standing stones. Thin, slender and parallel-sided pillars are the most popular and sought-after form.

Fig. 4 – A Tandroy tomb of the late 20th century south of Andalatanosy, with standing stones and a stone structure on top of its centre. The wooden scaffolding to support the standing stone before raising it to the vertical is visible on the left of this newly built tomb (Photo: M. Parker Pearson).

As well as adorning the tomb, *vatolahy* may be erected singly as cenotaphs for those buried elsewhere or whose bodies could not be recovered (**Fig. 5**). Occasionally, and over time, these will form a stone row, normally in a visible location along a roadside and/or in relatively close proximity to a settlement.

Androy's vegetation is semi-arid spiny forest, much of it cleared to leave pockets of woodland; many these woods are protected by taboo because they contain tombs (Parker Pearson *et al.* 1999; Ramilisonina 2003). Large areas of sand are common throughout central and coastal Androy, so that stone for tombs and for *vatolahy* must be sourced from rocky areas that may be tens of kilometres away. In the sandy regions, tombs may be constructed of

Fig. 5 – A row of standing stones of the late 20th century at Andalatanosy, commemorating men whose remains could not be returned to Androy (Photo: M. Parker Pearson).

wood but are still provided with a pair of stone *vatolahy*. Others may be built only partially of stone. Suitable stone for *vatolahy* comes from outcrops of sandstone where natural jointing can be exploited using steel tools to split the rock into monoliths (**Fig. 6**).

In recent decades, one particular rock source has come to provide the majority of standing stones in southern Madagascar. This is the large quarry at Tranoroa, beside the River Menarandra which traditionally divides Mahafaly from Androy (**Fig. 7**). The soft, banded grey sandstone is cut with steel saws and is then left to harden as it weathers. These slender pillars can be up to 4-5 m in length and are expensive to purchase. Traditionally, they are moved from quarry to tomb, over distances of up to 100 km, by bullock cart, although today, transport by lorry is more usual.

Fig. 6 – A small and expedient quarry, of the late 20th century, for extracting standing stones at Namolora in Androy. Each monolith is about 2 m long (Photo: M. Parker Pearson).

6. Erecting standing stones in Androy

Funerary practices in Androy do not involve the secondary rites so well known in other parts of Madagascar, where long-dead remains are retrieved and reburied. Instead, the dead are inhumed beneath a solid stone tomb and never disturbed. These individual tombs are much larger than houses yet may accommodate only a single burial. They may also, over time, become the resting place for multiple family members – both male and female – each burial in a separate grave, inserted through the stone matrix of the tomb and onto or into the ground below, the depth depending on the hardness of the ground. The process of funerary rituals is, however, both long and complex.

Funerals in Androy attract hundreds and sometimes even thousands of people. In this clan-based, patri-

Fig. 7 – Map of southern Madagascar, showing sites mentioned in the text and illustrations. Early megalithic tombs (mid-late 19th century) are known from Faritsoke, Jafaro and four other locations (marked as black circles without place names) (M. Parker Pearson).

lineal, patrilocal, polygamous society, funerals are contexts for the activation of debt relationships between wife-giving and wife-taking groups; to accept a wife into one's family lineage is to accede to providing gifts in the form of livestock and other goods to her family for as long as the marriage lasts. These obligations, particularly in play at funerals, maintain and construct the social hierarchies between lineages within clans and between clans. This dynamic and hierarchical system can be described as a 'funerary economy' in which wealth is accumulated to spend on funerals and tombs (Parker Pearson 2000).

Funerals may last several days, with the preliminary activities lasting weeks or even months as preparations are made and details of arrangements sent out. The corpse resides in its coffin in the house before burial, with mourners gathering in a temporary shelter erected against the side of the building. Ultimately, after the coffin has been removed and the corpse is in its tomb, the house is set on fire, together with the deceased's personal possessions which have become polluted by the death.

On the day of burial, the coffin is either carried or loaded onto a cart and pulled by hand to the place of burial, where interment takes place as the sun sets. One or more cattle are sacrificed at the burial site and the blood, pouring from the animal's slit throat, is wiped with a leafy branch on the ground to mark the position of the grave. On completion, the spades used to dig the grave are discarded because of their polluted status. Before night falls, the first stage of the tomb – an oval cairn of boulders and rubble – is completed. Over the coming months and possibly even years, work parties will meet at pre-arranged moments to construct the tomb's four enclosing walls and fill up the enclosed space to the tops of the walls. Professional tomb-builders may be paid in cattle for dressing and mortaring the stones of the walls and for obtaining the *vatolahy* (**Fig. 8**).

For a man's tomb, the two *vatolahy* are erected, secured in place with temporary wooden scaffolding, before the walls are built. The stonehole is not deep since the *vatolahy* will be bonded into the tomb wall. Cattle bucrania are arranged on the tomb after it is complete. In cases where resources allow, a small house-like structure of stone and cement may be erected above the centre of the tomb.

Fig. 8 – Building a Tandroy tomb near Andalatanosy. The orthostats of the wall are in place and the mason is shaping blocks to sit horizontally between them. For each wall constructed, he received two cattle (Photo: M. Parker Pearson).

Standing stones may also be erected against the sides of pre-existing tombs in cases where a new burial is interred alongside the primary burial in the same tomb (**Fig. 9**). The *vatolahy* is raised with ropes and timbers to stand vertically against the outside face of the wall, sand set in cement within a stonehole (**Fig. 10**). Where the *vatolahy* is erected as a commemorative act without a burial, the cattle bucrania is mounted on a wooden pole in front of the standing stone.

The permanence of Tandroy tombs contrasts with the ever-shifting settlement patterns of villages as houses are built and burned, and as communities relocate to new sites. Tombs also represent a sterile permanence that forms a stark contrast to the dynamic continuity of human reproduction. Located in the wilderness beyond houses and fields, taboos protect them from being visited except for burial or for cleaning ceremonies (*fafa*).

Tombs are often arranged in linear cemeteries, located within the ancestral territory of each lineage or clan. Favoured locations are along routeways and on high ground – false crests, plateaux and gentle slopes, although not on summits of hills. Since Tandroy tombs face east – the direction of the ancestors – they form north-south rows, arranged by seniority. Elsewhere in Madagascar, seniority in formal situations is arranged from north to south with the most senior to the north; the Tandroy reverse this order so that seniority runs from south to north. Directionality is also used to differentiate

by gender, since women are buried to the west of men, either in westerly rows of tombs or in a position to the west of a man if buried within a pre-existing tomb. Thus, it is common to encounter rows of men's tombs with *vatolahy* and rows of women's tombs to the west of them.

Not only do men's tombs have *vatolahy* but they are generally larger and have more cattle bucrania (Parker Pearson *et al.* 2010: 503-6). *Vatolahy* thus contribute to a visible inequality between the sexes. They also play a part in demonstrating status differences between men of unequal economic standing. Those families that can afford a stone tomb and its *vatolahy* are able to display their ancestry; those that cannot must bury their dead in wooden palisade enclosures (*tseke*) hidden in forest cemeteries.

7. The origin and development of a megalithic tradition among the Tandroy

Before *ca.* 1820-1850, most Tandroy tombs were made of wood, of the *tseke* form which is still common throughout Androy. The earliest use of stone in tombs was for small uprights (*vatomita*) placed around or at opposite ends of the grave, as in a group of late 18th century burials at Faritsoke in northwestern Androy (Parker Pearson 1999; Parker Pearson *et al.* 2010: 479-81). Among these are two burials in which the standing stones are 1-1.35 m high, sufficiently tall to be considered *vatolahy*. This burial place at Faritsoke is associated with the Afomarolahy clan (middle-ranking below the royal clan). *Vatomita* burials, in which the upright stones are no more than 1.35 m high, are also known from the 14th-16th centuries in Androy but there is no evidence for them being part of a continuous tradition through to the late 18th century.

The earliest stone tombs in Androy are also from the Faritsoke area and, based on the chronologies estimated from oral history, date to *ca.* 1840-1880 (Parker Pearson *et al.* 2010: 487-9). A group of eight such monuments form a linear cemetery of conjoined tombs for a man known after his death as Masiake ('Vicious') and his male relatives (**Fig. 11**). Masiake is remembered as the son of a sub-lineage-founder within the Afomarolahy clan.

Fig. 9 – A large mid-20th century Tandroy tomb at Jafaro. The seven pairs of standing stones indicate that the primary burial (marked by the standing stone within the tomb wall) was followed by six other burials (marked by stones standing against the wall of the finished tomb). It is unusual for a single tomb to contain the burials of so many men, though multiple interments of patrilineal kin became common in the third quarter of the 20th century. To the left is a late 20th century tomb with cemented stone walls (Photo: M. Parker Pearson).

Fig. 10 – Erecting a standing stone against an already completed tomb of the royal (Andriamañare) clan near the village of Ambaro east of Jafaro (Photo: M. Parker Pearson).

These early stone tombs can be considered to be megalithic because of the monumental size of their *vatolahy*, standing as tall as 2.5-2 m and likely weighing over a ton, and no doubt requiring some considerable labour to quarry them and raise them. The tombs, measuring up to 5 x 4 m, are a little larger in plan than the remains of wooden houses that have been excavated from this period, and their visual appearance as a 'ruined house' in stone is striking (Parker Pearson *et al.* 2010: 329-471, 494). The *vatolahy* can be considered as stone equivalents of the paired roof posts at opposite ends of these metaphorical transformations of houses.

Our research suggests that these are the earliest megalithic tombs within the extreme south of Madagascar (encompassing the traditional lands of the Mahafaly and Karembola as well as the Tandroy). Oral history provides a window into the people and circumstances of the time, aided by the results of archaeological survey of settlement patterns (Parker Pearson *et al.* 2010: 472-513). These earliest stone tombs appear to have been built on the north frontier of the expanding Tandroy kingdom, as certain of the clans moved off the sandy heartland of Androy and into uninhabited forest zones around its western and northern margins. One of these groups was the small but rapidly expanding Afomarolahy clan, utilising the Faritsoke area for transhumant cattle pasture (Heurtebize 1986). The presence of early Bara tombs (which did not incorporate *vatolahy*) in the same area reveals that the Afomarolahy were encountering cattle herders of this more northerly ethnic group. Oral historical accounts of conflict reveal that the forest pastures were contested with their Bara neighbours.

The tombs of Masiake and his fellow Afomarolahy can be considered as innovations that addressed and exploited a series of pressing economic, demographic, and social issues:

1. High population growth among this middle-ranking clan during the mid 19th century was leading to fissioning of lineages into sub-lineages, in which men such as Masiake and his kin were wealthy cattle-owners. Masiake's father is remembered as the founding ancestor of a sub-lineage (*famosora*), thus Masiake's monumental tomb may have helped to secure the identity of his descendants among the many emergent lineages and sub-lineages at this time.

Fig. 11 – The tomb of Masiake at Faritsoke *c.* 1840-1880, one of the earliest stone tombs in Androy, being recorded by Retsihisatse (left) and Georges Heurtebize (right) (Photo: M. Parker Pearson).

2. The tombs were constructed in contested woodland grazing areas, far from the Afomarolahy clan's heartland on the sandy plains to the south. By building monumental tombs for these ancestors in this previously deserted terrain, Afomarolahy descendants were laying claim to these new pastures.

3. The Afomarolahy clan were moving into new territory away from the constraints of traditional authority exercized by the royal clan. Not only might we expect there to have been more freedom for them to innovate in mortuary practices but also the power of the Tandroy king and the royal clan was in decline in this period. By 1900 the Tandroy kingdom had broken up into a series of smaller polities (Parker Pearson *et al.* 2010).

Madagascar was occupied by the French in 1894. The last Tandroy king, Mahasese, died in around 1905 and was buried in a large stone tomb (although it lacks substantial *vatolahy*). His monument is little different in style to the valovato ('cattle pen') tombs (up to and over 20 x 18 m) that had developed from *ca.* 1880 onwards in northwest Androy, many of them with *vatolahy*. Where names can be linked to tombs, the deceased were wealthy Afomarolahy men who owned many hundreds of cattle, the sons and grandsons of clan, lineage and sub-lineage leaders.

The stone tomb tradition became widely adopted among other clans of the Tandroy, as well as among the Mahafaly and Karembola, during the 20th cen-

tury. Many of the features of the monuments have become increasingly elaborated; not only have *vatolahy* become larger and taller but tombs are larger, more elaborate, more carefully finished and even painted. Tomb monumentality thrived within a culture of resistance to the French colonial government, coupled with a locally devolved authority structure due to the decline of Tandroy kingship. Even after independence in 1960, the Tandroy have maintained a culture of resistance to the political centre and to national government.

In the 21st century there are indicators of change that could see the decline of megalith-building in southern Madagascar. Conversion by Christian missionaries is ushering in a simple inhumation rite with gravestones replacing standing stones. Successive droughts and immigration to other regions of Madagascar are sapping the wealth needed to build monumental tombs, and the local tomb-building tradition is also under threat from tomb styles imported from highland Madagascar. An instance of this latter phenomenon occurred in 2000 in the town of Erada in southern Androy with the funeral of Tsiloza, a former town president. Before his death he stipulated that he wished to be buried not in a valavato tomb but in a roofed mausoleum of highland style, to emulate the traditions of the more politically influential sections of Malagasy society.

8. Conclusion

Despite Madagascar's settlement history of well over 1000 years, it appears that only in the last 600 years have megaliths and other stone monuments been built. The earliest of these were tombs in the central highlands of Imerina, though these were generally built with slabs of less than megalithic proportions. Megalithic standing stones in this region probably originated around 400 years ago. Most of these had a mortuary purpose as memorials for the dead but, as state authority developed in the highlands, standing stones were also erected to mark political events, relationships between rulers and populace, and to commemorate servants of the state.

Today, the megalithic tradition is strongest in the south of Madagascar among the Tandroy, Karembola, Mahafaly and Tanosy ethnic groups. Standing stones in this region are principally memorials for the dead, either as cenotaphs (single standing stones) or as megalithic elements of monumental stone tombs. In contrast to the highlands, there are few state-sponsored standing stones, reflecting the weak authority of the Malagasy state in the south in recent centuries.

Megalith construction in southern Madagascar appears to have started over a century ago, with the incorporation of standing stones into the earliest stone tombs in the region. The tradition appears not to have derived from highland styles but rather to have a local trajectory of origin and development, linked to territorial claims over contested cattle pastures, assertions of group identity within an expanding population, and the collapse of Tandroy royal authority. Within this patrilocal, patrilineal, polygamous society of cattle herders in the south – very different from the rice-cultivating communities of the central highlands – standing stones (*vatolahy*) have strongly gendered associations with masculinity, as well as indicating the economic status of those able to erect them for their dead.

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Abu Solomon EDET, Abubakar SULE SANI

Megaliths of Nigeria: the footprints of ancient civilization

Abstract: The earliest presence of people in Nigeria is still one of the most important unsolved questions in Nigerian archaeological research. The surest way to confirm human habitation in any region of the world, at any time in prehistory, is to '*find unquestionable artifacts, in unquestionable primary geological context with unquestionable absolute dates*' Charles T. Keally (1993). Many Nigerian civilizations have been revealed during the past 50 years of excavation, but prehistoric megaliths are rarely studied. The recent results of trans-disciplinary field research conducted on ancient rock heritage in Nigeria, found strong evidence to suggest that the ancient people of Nigeria had built the megaliths that had baffled early anthropologists and historians. In the absence of adequate information from such studies, this paper attempts a new theoretical approach: a cultural anthropological interpretation of the evidence, to see whether that evidence gives a plausible picture of early people and their life ways in Nigeria. Nigeria has hundreds of megaliths. The work presented here is an attempt to unravel and understand the information about theses sites, which have been considered important in the development and evolutionary history of megaliths. Examples have been documented by Charles Partridge (1903), P. A. Talbot (1926) and Philip Allison (1963), 'The Valleys of the Niger Archaeological Research' in the 1990s, and recent field researchers, the Nigerian Rock Art Network in collaboration with the Trust for African Rock Art (TARA) in Nairobi, and The Factum Foundation for Digital Technology in Conservation in Spain. This paper discusses the megalithic sites, their distribution and functions, and associated route-ways, in various parts of Nigeria. The focus on the Cross River monoliths sheds new light on the concept of perception, and the role of the monolith in burial and ancestor worship.

Keywords: *megaliths, Bakor monoliths, location, survey, perception, interpretation, preservation*

1. Introduction

Mysteries in real life exist to be solved. In this chapter, we explore the reasons that megalithic structures were built, their meaning and contribution to civilizations and their development in Nigeria. They were built for a wide variety of reasons including cosmology, ancestor worship, as fertility and/or harvest monuments, and as sacred burials. The symbolism and purposes of the megaliths have been observed as key indicators of well-advanced human development. They represent the unique memories of early civilizations and they played an important role in the history and development of complex societies throughout Nigeria. The megaliths speak volumes through their dramatic presence, monumentality, and aura of mystery. This chapter is an attempt to unravel and understand the current evidence relating to the megaliths, focusing primarily on their purpose and function, which are important aspects in their development and evolutionary history.

Nigeria has more linguistic and ethnic diversity than any other country in sub-Saharan Africa and has some of the world's most spectacular megaliths, yet most of these are barely documented and have no real protection. This paper reviews the different perceptions over time of the megaliths in Nigeria, a phenomenon of global interest and importance in understanding early human sedentary life and in studies of state-formation. Megalithic sites are found at the locations of early settlements, built for a wide variety of reasons including cosmology, ancestor worship, and burials, and they are considered to be very important indicators of the human development that lead to the rise of civilizations in Nigeria and the sub-Saharan Africa. For example, the Opa Oramiyan statue at Ife is about 18 ft tall (**Fig. 1**). It is a monument erected by the early Yoruba people, and traditionally connected with the founder of the royal houses of Oyo and kingdoms of Benin.

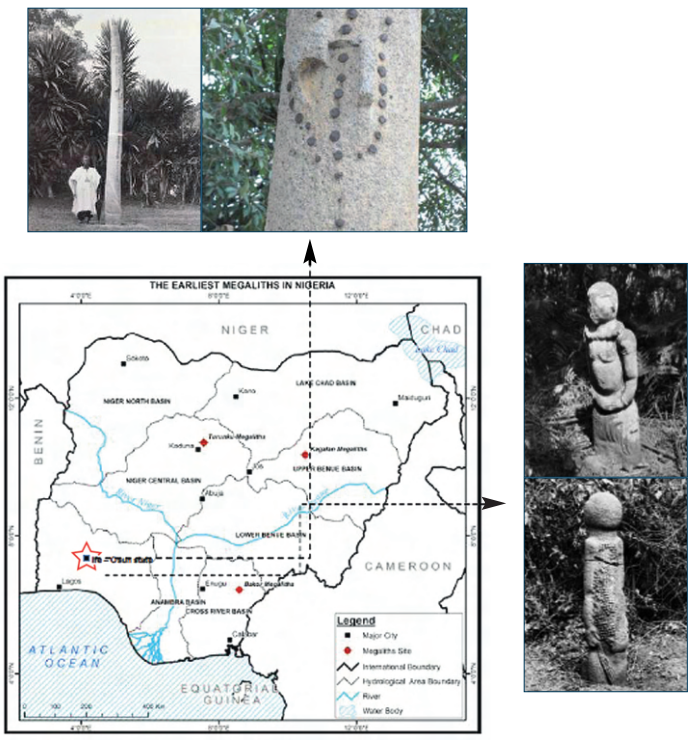


Fig. 1 – The earliest megaliths in the western part of Nigeria. Opa Oranmiyan at Ifé-ifé, Osun State (Nigeria) (Photos: NCMM and Lit caf.com).

Research on the oldest surviving rock art of Nigeria, shows that the region's first people, hunter-gatherers who arrived over 50 000 years ago, brought with them a rich art tradition. These earliest people skilfully produced paintings of animals in rock shelters from North Africa to sub-Saharan Africa. Early sites have been recorded at Nok in Southern Zaria Province. Early settlers erected megaliths to serve different functions. Those constructed in the more open savannah appear to maintain the sanctity of settlement territories and this increasingly became the traditional explanation for the megaliths, being built for 'defence against enemies' or enclosing settlements, but the evidence seriously limits these interpretations. Megaliths in forested areas were an important element in perceptions of their spiritual mystique. The entire megalithic phenomenon has been interpreted, therefore, as indicating the presence of early settlements by sedentary people. The absence of memories about their previous functions meant the megaliths became regarded as more of a mystery than a cultural asset. Their monumentality and materiality have been seen as important aspects in the development and evolutionary history of Nigerian megaliths in the sub-Sahara.

2. Megalithic perceptions

The construction of megaliths was a significant undertaking in terms of time and labour by the different communities who made them using

available massive stone resources to achieve their aims (**Fig. 2**). The megaliths were used to establish territorial boundaries for the spiritual protection of communities, to mark festival grounds where rituals and celebrations were performed, to protect against a poor harvest, and for ancestors or as memorial effigies. In this way, they preserved the connection with the veneration of the ancestors, through the observation of rites of divinities and mythologies and maintained affairs linked with secret societies and warfare. They were protected by perceptions of their purpose and function – a means of conservation and protection that did not require any further resources, helped by the fact that they were located in eras of lower population density and at a time when there were few costs related to land use. These monuments and sites were created for their own use by communities who were unaffected by the outside world. Therefore, perceptions of their functions amongst these communities, as were passed from generation to generation, protected the megaliths. Once all these functions became redundant and there was a rise in population migration, then desecration and destruction set in, despite former allegiances or responsibilities.

3. Conveying values

Megaliths in Nigeria are assertions of development, showing the qualities of wisdom, pride, physical and spiritual power with which the megalith builders sought to identify. They are viewed as expressions of collective values of sedentary life. Megalith developers were also able to gather people into a single union. Some megaliths served as a source of inspiration in a time of distress and division and brought different communities, states and linguistic groups together. For example, a megalith in Sangaya village in the northern part of Nigeria was very well known for leading the farmer movement into

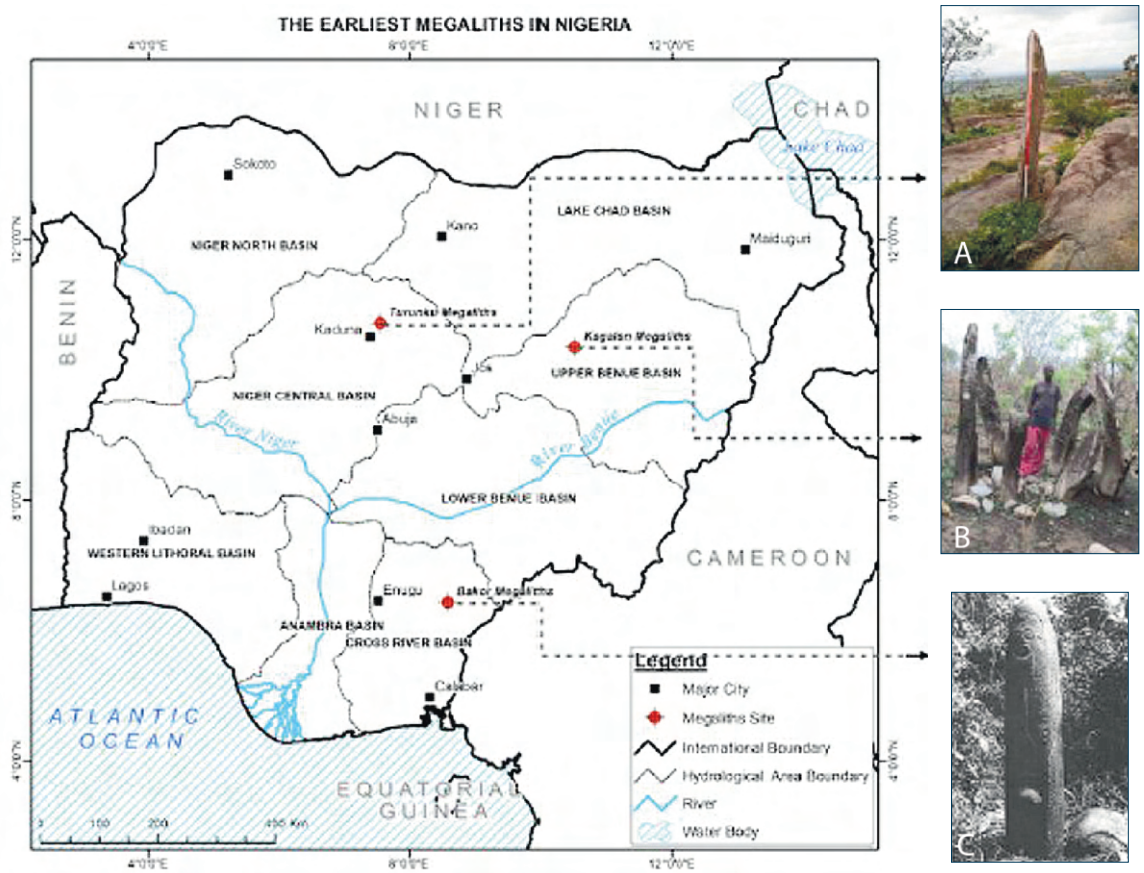


Fig. 2 – Megaliths from the northern and southern parts of Nigeria: A. Turunku, Kaduna State; B. Kagalan, Buchi State; C. Bakor, Cros River State (Photos: the authors).

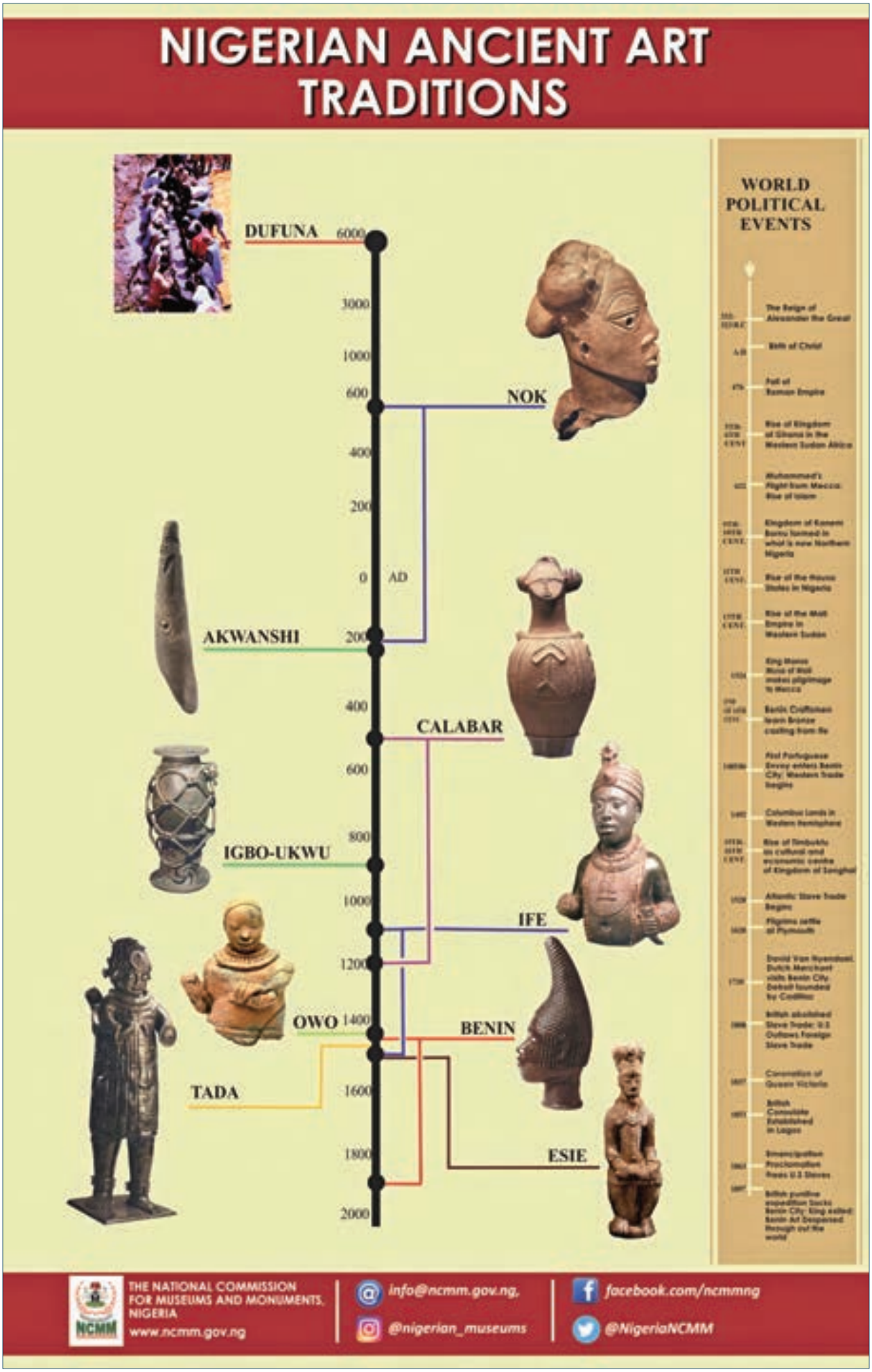


Fig. 3 – Timeline of ancient art of Nigeria.

harvest sales and celebrations, the celebrations mobilized the farming community into active farming season and harvest. Viewing megaliths as serving the aims of the communities that built them, there is perhaps evidence of localism at the heart of megalith-building. The choice of megaliths was related to local religious and social needs. The megaliths were suitable as ethnic or community symbols, having their origins in various cultures and traditions.

Some of the megaliths were established as fertility symbols for spiritual protection against infertility and to increase the birth rate of their communities. Herbs used to increase women's fertility are sometimes found growing around such monuments. These preserve the connection with live births and increase protection of birth rate among their communities, by observing ritual rights for the divinities. Only a few surveys or analyses have been undertaken, and these are thanks to Nigerian colonial anthropologists who documentated some of the sites over 50 years ago. The present survey and recognizance started in 2016 and has led to the discovery of more megaliths related to the heritage practices of both past and present communities in Nigeria, with a focus on the Cross River monoliths. Megaliths can be viewed as a projection of a community's technical abilities. The fact that the ancient people were able to construct them means that they had capable men and women and the required resources. Large megaliths are seen as having prestige value. In the Cross River region there are more than 300 monolithic sculptures that have been used to worship and honour ancestors and deities.

4. Contemporary value

In the last 50 years, the Edo people of Nigeria began a wave of building megaliths dedicated to deities or to traditional Edo religious figures.

A timeline of Nigeria's classical heritage provides a perspective on the importance of the Bakor monoliths to Nigerian national heritage. In chronological sequence, the earliest artefact is the 8000-year-old Dufuna canoe, discovered in Yobe State, North Eastern geopolitical zone; the Nok culture is said to be between 2000 and 2500 years old; next are the Bakor monoliths, some being as old as 1900 years, followed by the roughly 1500-year-old Calabar terracotta found in the lower Cross region (**Fig. 3**). In the southeast of Nigeria, the megalithic tradition first appeared in the upper Cross River region and remain exclusively within this area. Allison (1962, 1968a-b, 1976) conducted the first systematic research. He recorded some 295 stones, arranged in circular and semi-circular formations – with the stones facing into the circle – along with collections of small, shaped figurines usually of cylindrical or ellipsoidal form. These monoliths were found in a wide area bounded for about 900 km by the Ewanyong River flowing to connect to the Cross River in south-eastern Nigeria (**Fig. 5**). Most of the monoliths are carved from volcanic basalt, a few in limestone, and are typically found in Manden Nnam village, or along the Ewanyong River, streams, rivers edges and low-lying lands. They are columnar, boulder-like and monolithic in their geomorphology – many are partially weathered and waterworn – and were selected and sculpted into effigies of the ancestors (**Fig. 4**) showing varying degrees of elaboration in the style of carving.

Fig. 4 – Monoliths in an open quarry (Photos: P. Allison).

The geographical distribution and the courses of ancient rivers and channels reveal settlements with geometric and monolith features, believed to have been developed by the earliest Ejagham-speaking peoples, the forest-dwelling ancestors of the diverse but related sub-ethnic groups that today include the Nta, Nde, Nselle, Abanyom, Nnam and Ekajuk. They live in scattered communities in the forest. They have been variously described as speaking a Bantu or 'semi-Bantu' language, and the northern Ekoi, with whom we are concerned, have recently been classified as speaking an Ekoid Bantu language. In archaeological research, forests have generally been overlooked as fringes, boundaries, and marginal

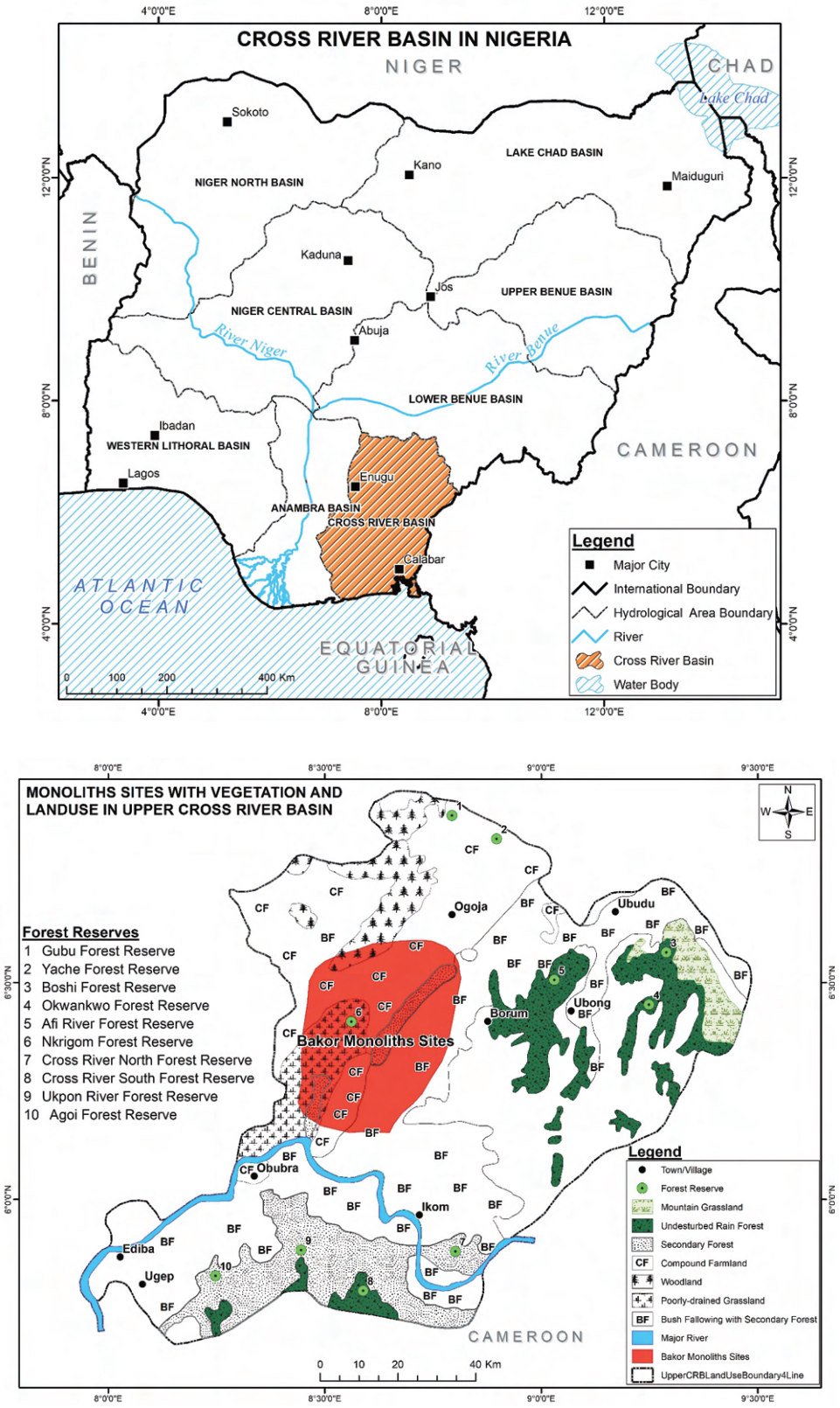


Fig. 5 – Early discovery of Cross River monoliths (Source P. Allison).

landscapes. When we studied these villages in the middle and upper Cross River region, we demonstrated that, not only did family groups live for long periods of time in the forest, but that this has been the case consistently for several thousand years, throughout prehistory. In 2016, using a drone and photogrammetric documentation system, we found evidence of more than 40 monolith sites and structures. Some of the sites featured monolith sites and traces of farmlands dating over at least 1500 years, opening up a new frontier of forest archaeology in the Cross River region.

In Allison's (1968a-b) reports, the largest groups of the most elaborately formed monoliths are found among the Nta, Nselle and Nnam people, but they are also common among the Ekaju, Abanyom and Nde. Basalt was mostly used to sculpt the monoliths while examples at Manden and Mkpalafa sites were made from limestone. The Nta and Nselle are said to refer to the carved stones as *Akwanshi* ('dead person in the ground') whereas in other areas they are known as *atal* ('the stones').

In all, 29 separate groups of monoliths and 11 single examples were counted, totalling 295 carved stones. Twelve of these groups contained over ten individual monoliths and two included over 30. In ten of the groups, the arrangement of the stones was reported to be circular although not all the circles are complete. All carved stones were apparently located in existing or abandoned village sites, in some cases occupying part of an open area of the village, as was the case in Borima village in Abanyom. Many of the monoliths were sculpted but without surface engravings. They occurred either as separate groups or among carved examples. Among the Nta, Nselle and Nnam, the monoliths were large and either shaped as phalliform pillars or, as commonly found among the Nnam people, carved as broad, decorated boulders. It has been suggested that the Nselle forms could be intermediate between the Nta and Nnam styles of carving (Anozie & Ray 1982: 20) but detailed studies of the art forms are yet to be conducted.

Allison suggests that there was a typological development from simple forms to the more elaborately carved monoliths. He sees the survival of dynastic traditions linking the monoliths as ancestral memorials to the *Ntoons* (priest chiefs) among the Nta as evidence of that these were the original inhabitants of Bakorland. By contrast, the monoliths of groups like the Nselle and Ekaju suggest they are secondary inhabitants. Although Allison regarded the Nta Nnam distribution as central and other examples – usually poorly executed – as peripheral, Anozie & Ray (1982) have shown that small monoliths, some of which (at least in Ukelle) are decorated, occur well beyond the limits of Allison's recorded examples, both in present-day and abandoned village sites. Although amongst these other peoples, Anozie and Ray were unable to examine groups of these stones *in situ* because their visit was rather brief, they did note that the names for the stones in these places were also generic: *okwa* ('stone'), *boka* ('stone') or *atal*, rather than *akwanshi* (Anozie & Ray 1982). Indeed, the presence of monoliths at Nsadop and on Obudu plateau near a cattle ranch introduces very important new dimensions not considered by Allison, especially given the nature of the cultural stratum responsible for the development of this art, and its overall age.

5. Monolith sites and geomorphic units

Research by the monolith research team between 2016 and 2019 found that the Bakor people were involved in intensive farming and established monolith sites alongside farm settlements. There is also evidence that the Bakor traded with the outside world, but more research needs to be done using the records of colonial traders. The sites are now ignored by the present settlers, who claim ownership, and neglected by government and heritage institutions. These sites of historical and archaeological importance are disappearing due to theft, vandalism, and bushfires. Some have been saved only through the initiatives of communities intending to develop them into tourist attractions (**Fig. 6**).

Nigerian megaliths fall within the concept of 'traditional' African art, which refers to indigenous art traditions that were viable and active prior to the colonization of Africa by European powers in the late 19th century. Implicit in the use of the word 'traditional' is the assumption that the art is static and unchanging, with the aura of an untainted, timeless past. There are hypotheses of early encounters with the Egyptian civilization, with records of the Star of David represented as a

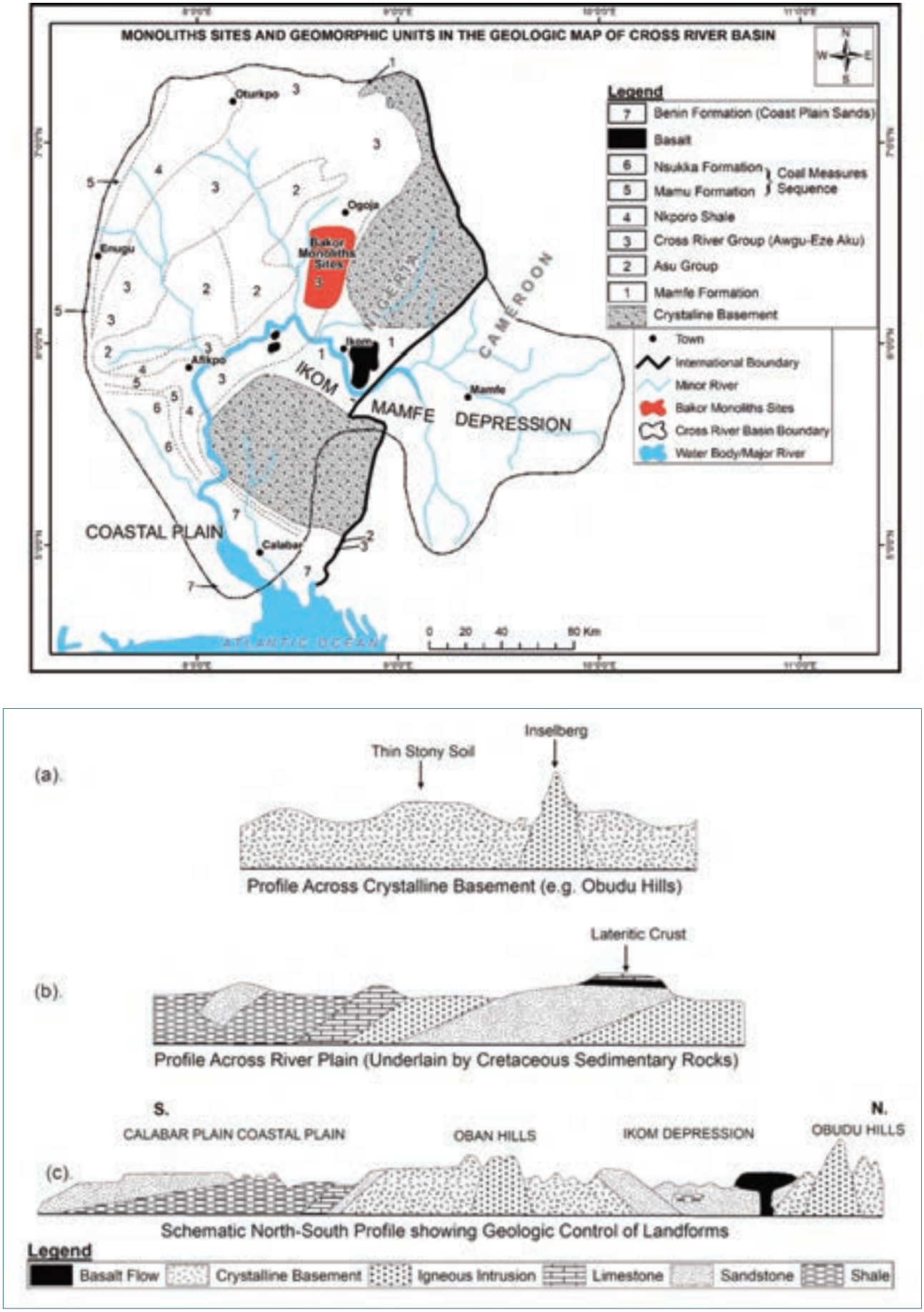


Fig. 6 – Megalithic sites and geomorphic units.

symbol, indicative of wealth, in the Ejagham Nsibiri communication system and a concept that African cultures never existed in isolation: that there was always movement, trade, and the exchange of ideas prior to European contact. These sites from Bakor history debunk the myth that the monolith culture may be traced back to Egypt.

The single most important rationale for the study of all the megaliths is their archaeological value in studying the prehistory of human settlement and group formation. The radiocarbon dates for megaliths in Nigeria indicate a range of dates for prehistoric construction. The oral traditions, surveys and dating of sites remains an urgent archaeological and historical priority if the true prehistory of megaliths in Nigeria is to be established. This settlement history rationale for the survey, dating and conservation of megaliths also requires the recording and analysis of associated surface artefacts such as ceramic materials, and the measurement of the depths of anthropogenic deposits created around past settlements.

6. Peopling of the Cross River region

A new monolith study explores the Ejagham people came from and where the monolith culture migrated to. The upper Cross River region appears to be the origin of the early Ejagham community, although it is yet to be determined exactly when the first settlers arrived or where they came from. Some argue that they probably moved from the Benue Valley, where today's Bantu languages developed, while others suggest that the first people to settle the region came from the lower Nubia region of Egypt. The differences in opinion illustrate the difficulty of tracing population movements based on a patchy archaeological record. The Nigeria Rock Art Research Team is conducting a new study on the monolithic art of the Ejagham people, which gives some clear indications of their origin and where they went before European colonization (**Fig. 7**).

7. Complex social networks linked the region

The upper Bakor area of the Cross River region was not settled until 1500 years ago, according to Ekpo Eyo's archaeological dating of the sites (Eyo Ekpo 2008). The people who settled there are known as the Ejagham speaking group, and they and the other upper Cross River communities such as the Boky were the original inhabitants. By the mid-16th century, however, invasion by the Jukun people and slavery had driven the communities of this landscape to the brink of extinction. The cultural

Fig. 7 – Monolith people (Photos: P. Allison).

elements embedded in stone artefacts provide an archaeological record of these people. Along with other archaeological remains such as rock art, they tell us something of the Ejagham spiritual life beyond that documented in the reports of Allison. But the routes and trade networks that pre-dated European colonization are no more. An understanding of the complementary roles that forests, rivers, lakes and waterfalls played alongside migration and settlements is also lost. These ancient legacies and landscapes are yet to be studied.

The ground-breaking research on the monolithic landscapes of the Nigerian Rock Art Team has uncovered two important features of monoliths that link them to an age of ancestral worship: Nsibidi epigraphy and Mgbe splendour. These further our knowledge of secrete communication signs among the Ejagham people. It has long been suspected, however, that the people of Ejagham descent maintained their stone heritage and practiced traditions handed down from pre-colonial times, from cooking to crafting. There has been a great effort to identify and revive Ejagham culture in the last century and a half, but it has never been clear how directly genetically related the Ejagham people are to their vanished Akwanshi monoliths ancestors.

Most researchers think ancient Ejagham societies were very mobile and interconnected, with regional networks of trade and cultural interaction in the region. The fact that the monolith sites extended throughout the Bakor area, as far as the bank of the confluence of the Ewanyong and Cross Rivers adds support to that picture of a history of regional interaction (**Fig. 8**). Alongside the monoliths we found potsherds, which clearly belong with the artefacts and features observed on the sites. This supports the idea that the monolith builders dealt with pottery and other perishable artefacts made from organic materials which did not survive the weathering conditions of the tropical environment. It also means that the monolith people had a relatively large population before the Europeans arrived. The catastrophic effect of European colonization was that the proto Bakor people could not continue with their monolith tradition. They started using cement effigies to represent their ancestors,

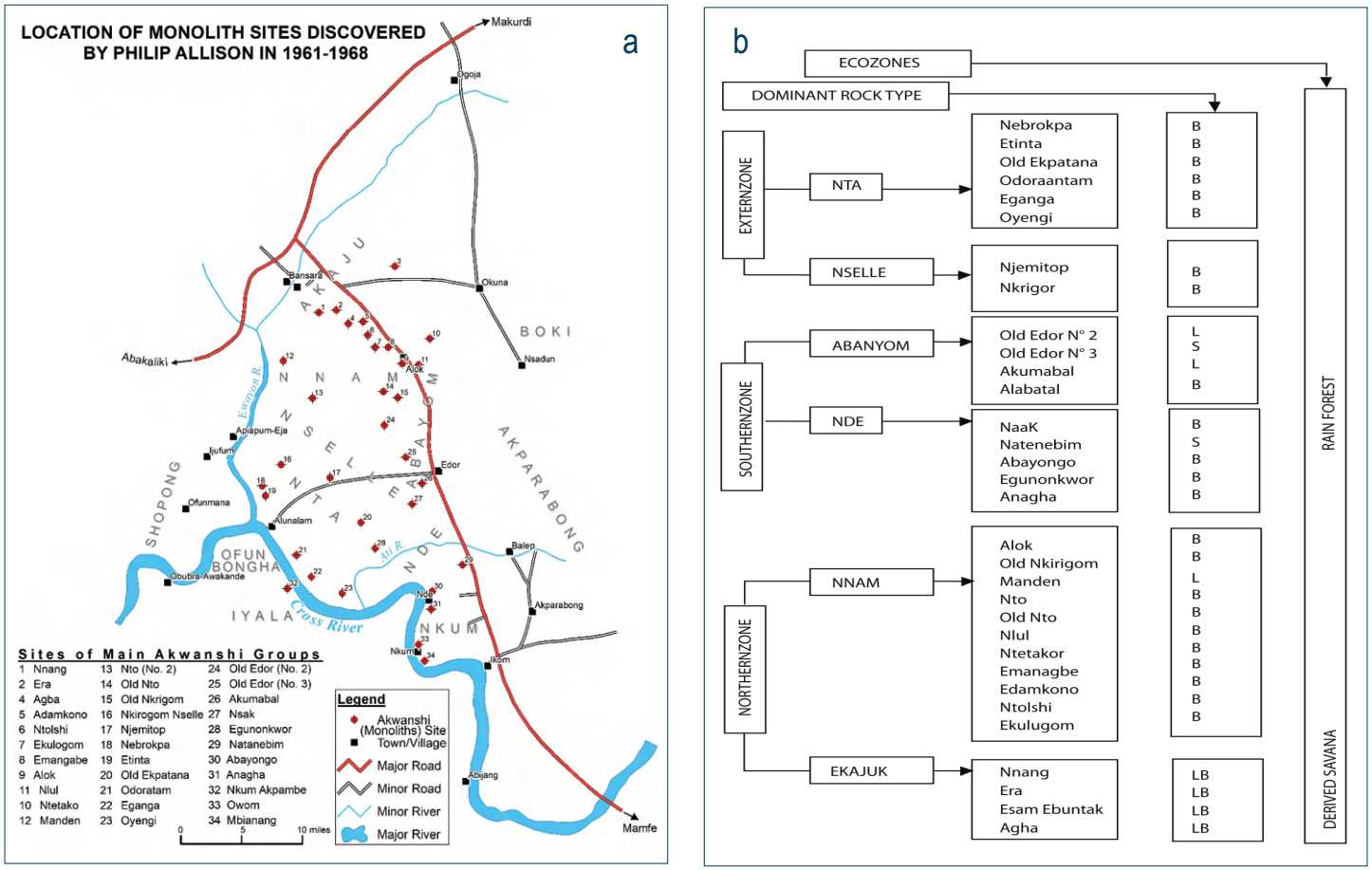


Fig. 8 – a. Location of monolith sites discovered by P. Allison; b. The rock types used for monoliths (b= basalt; L= limestone; S= sandstone).

while decorating the grave goods with imported enamel and using porcelain plates and cutlery. It will be fascinating to see how much of the monolith tradition will survive in the Bakor area and how the use of monolith stone culture will differ across the region.

Ancient artefacts have a lot more to tell us about how people lived their daily lives, how they conducted their rituals, and how they interacted. Detailed studies of Ejagham material culture could tell us the full story of how the Cross River region was first settled. Artefact studies could also help shed light on the connections and interactions between Cross River indigenous communities (**Fig. 9**). Little local knowledge of the material culture is left, but the objects record a history of social interaction that could help us to map out large-scale interactions. It is also possible that artefacts could help us to better understand the history of migrations and settlements, including the cause of the dramatic population declines in the region after the French, German and British historical wars with their policy of 'divide and rule'.

What is the significance of the monolith figurines? Why are they so important to our understanding of the Ejagham ancestors and ancestral worship? We now share the dramatic story of the discovery of the most intriguing monoliths of the 21th century, the surprising tale of how they were acquired and, most importantly, how they illuminate our understanding of the codification of ancestral worship. In addition, we explain how the monolith assemblages further our understanding of life during migrations and settlements and the early ancestral worship among the Ejagham people (**Fig. 10**). In the following

Fig. 9 – Ethnography of monolith living art: tattoos (a-b) and symbols (c) (Photos: P. Allison).

Fig. 10 – Monolith figurines (Clichés : P. Allison).

section we present the story of the monoliths' discovery in the mosaic vegetation of the Upper Cross River region, with a review of the geography of the area. We also explore the significance of the monoliths in the development of the traditional religion of ancestral worship, and show how they help us understand concepts such as 'monolith ancestors' and 'secret burial' in the Ejagham tradition.

8. The ongoing research on the Cross River monoliths

The aim of our research was to survey and determine the number of monoliths and sites in Bakor region. Prior to archaeological excavations, further objectives were to assess the damage to sites by fire, deforestation, cultivation of farmland and theft, and to learn what assistance can be given to encourage better site preservation for future cultural tourism.

8.1 Methodology

We developed a team comprising anthropologists, archaeologists, art historians, historians, conservationists, restorers, community leaders and young people, ensuring teamwork and a systematic approach. We undertook careful survey of the sites, involving the counting and documentation of monoliths and other associated stone objects. We also conducted research into the oral traditions, conducting audio and audiovisual interviews with community members (including women) about belief practices. Aerial mapping was undertaken using drones, and monolith and site locations were documented using photogrammetry. We investigated the significance of the monolith figurines and how they related to Ejagham ancestors and burial practices, and we studied tattoos and symbols of cultural identity.

8.2 From stone to wooden effigies: new theories and directions on meaning

The direction and speed at which the Ejagham culture spread across the lower Cross River region has been underlined by the uncovering of a living monolith culture in the region including amongst the Yakurr, and the Oron people, who use large carved wooden sculptures due to the lack of stones. This suggests that the Ejagham culture of ancestor worship spread southwards a few millennia ago. Kenneth Murray documented wooden *Ekpu* (ancestor figure) carvings in 1935. He set about preserving them and repairing some of the shrines where the figures were housed. The art of making them had virtually disappeared. A guide from the Oron Museum (established in 1958 to accommodate 800 known *Ekpu* of the Oron people) reported that the *Ekpu* figurines were carved from particular hardwoods (*Coula edulis* and *Pterocarpus soyauxii*) which are relatively resistant to the destructive effects of termite attack and bio-deterioration. He noted that some *Ekpu* are believed to be between two and three centuries old. The production of ancestor effigies and traditional worship markedly link the upper to the middle and lower reaches of the Cross River, the result of cultural fusion which played an important role in making ancestor worship a common tradition in the Cross River region, and the eastern and western Delta regions (**Fig. 11**).

Eastern Nigeria, which includes the Cross River region, is one of the most ethnically and linguistically diverse areas on the African continent (Eyo Ekpo 2008: 206). The long history of human migrations and trade in the area has resulted in a rich and varied artistic legacy, with wood as the preferred material for making sculptures, especially where stones are not found. New theories on the meaning and function of effigies in ancestor worship have emerged from this living heritage. Eyo Ekpo (2008: 207) describes the effigies as great and venerable ancestors carved in hardwood and intended to last for generations. The ancient artists of Nigeria's Cross River and Delta regions created an endless variety of cultural forms. The megalithic heritage sites are continually evolving and developing societies are constantantly changing what the megaliths mean to them. We are facing numerous challenges today: the destruction of heritage and threats to the natural and cultural environment, both of which are increasingly important for human welfare and wellbeing.

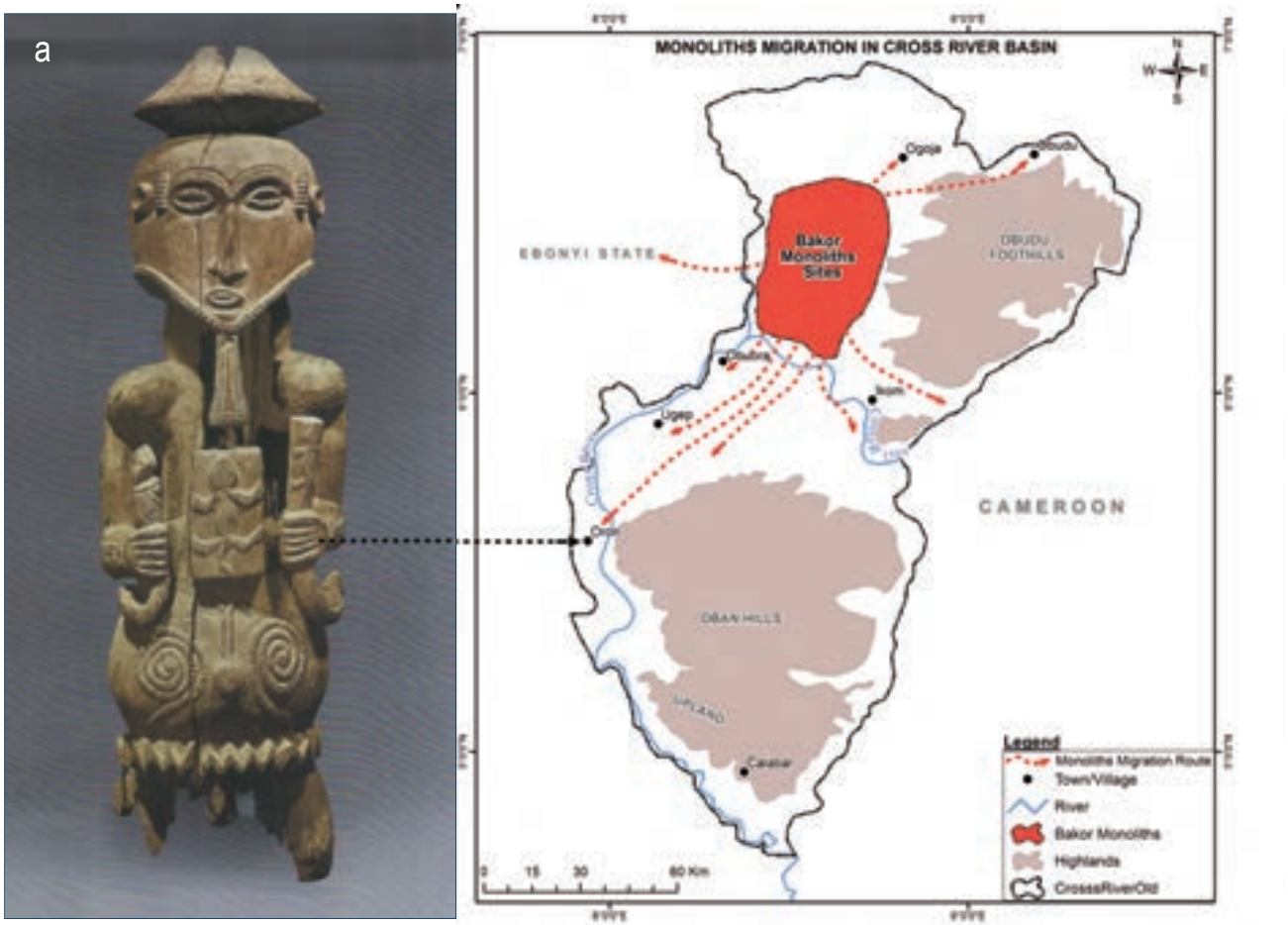


Fig. 11 – Monoliths and contemporary art styles. a. *Oron Ekpu* ancestral wooden carving – over 300 years old; b. Modern artistic expression of monolith art style in wood (Photos: the authors).

8.3 Significance and interpretation

The true meaning behind the architecture, construction and art of the Nigerian megalithic stone structures remains unknown. Whether polylithic (dolmens, cairns and barrows) or monolithic (single standing stones), it seems likely that many of them possessed great significance, not least because of the sheer effort involved in their construction, and because of the presence of so many types of monolithic art (the 'Akwanshi' ancestral monoliths, for instance, include more than 300 decorated stones). It is also worth noting that the groups who built these monuments must have been working to a common design. Not only did they rely on similar decorative features, but their rock engravings also had several motifs in common, such as the protuberant navel. The Nnam monoliths, the living

monolithic sites used for the annual yam festival, also have important internal features in common (Fig. 12). The impact of early Christianity and 21st century evangelism have badly impacted the preservation of the monolith culture. The traditions of an active monolith lifestyle using ancestral practices for healing, ensuring good harvests, maintaining a spiritual connection with the Earth, and preserving secret societies that helped maintain control and management of community affairs have been abandoned.

8.4 Recovery of sites: assessment and evaluation of damage

Since the Cross River monoliths produced such startling revelations about the age of the sites, preservation efforts have been geared towards safeguarding them through policy decisions. Unfortunately, very little systematic work has so far been carried out to assess and evaluate the 35 known sites. Our investigation aimed to document and interpret deterioration and damage. Four sites within Nnam ethnic territory were investigated, namely Alok, Emangebe (Victoria), Edamkono and Nlul (Figs. 13 and 14). Reconnaissance surveys and photographic documentation were conducted. Assessments and evaluations of site deterioration and damage were made, concentrating on both environmental risks and the extent of deterioration; human impacts were also identified (Fig. 16).

Given that the original number of monoliths on each site may have changed, our studies show that a significant number of the monoliths are still in their original position. This observation agrees well with the previously established site history of the monoliths by Allison (1968a-b), who reported that most of the monoliths remained as they had been placed, despite the climate changes and landscape evolution observed at the sites, and the human interference that has been closely observed to have taken place over time (Fig. 15).

8.5 Alok monolith site

The Alok monoliths are a major subject for future research in terms of their chronology, and the geomorphology and environmental history of the

Fig. 12 – The living cultures (Photo: the authors).

sites. The Alok site has remained intact since Allison's documentation and is a potential tourist attraction. The Cross River State Government refurbished the original fence erected by the Nigerian National Commission for Museums and Monuments, giving the site a superb facelift and adding a simple office which can serve as a meeting point prior to visiting the open-air exhibition, or as an information point and photo-exhibition room on the local history of Alok and the monoliths. Our evaluation of site indicates that there is a strong link between the site and its natural environment. The site is associated with abundant rock pieces indicative of a place of continuous activity: broken pot sherds are buried around and under the monoliths, there is evidence of iron technology, and evidence of cult and esoteric activities that explain the nature and use of the site by the local inhabitants

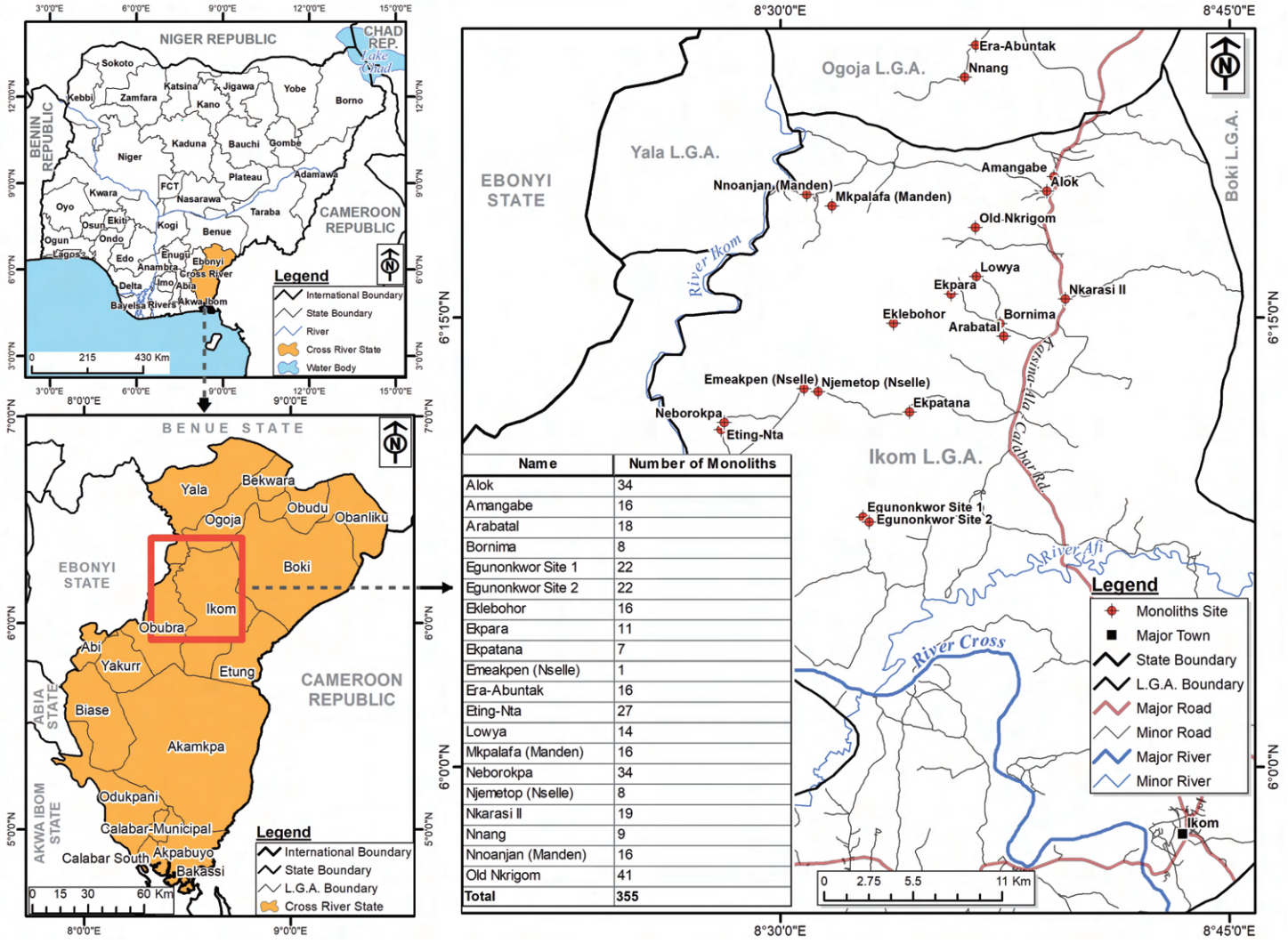
9. Conclusion

In reviewing the megalithic legacy in Nigeria, we have observed that perceptions have been very important. Construction of the megaliths was the main priority, in terms of time and labour, for the different communities who made them, using

Site Name	Number of Monolith
Alok Monoliths Site	34
Old Nkrigom Monoliths Site	41
Mkpananfa Monoliths Site	16
Manden Monoliths Site	16
Emeakpen Monoliths Site	1
Eting-Nta Monoliths Site	27
Neborokpa Monoliths Site	34
Njemetop (Nselle) Monoliths Site	8
Egunonkwor Monoliths Site (Sites et and 2)	44
Bornima Village Monoliths Site (by tree)	8
Ekpara Monoliths Site	11
Lowya Monoliths Site	14
Alabanta Monoliths Site	18
Nkarasi II Site (Relocated) Monoliths Site	19
Akwathana Monoliths Site	7
Kelebo Monoliths Site	16
Era-Abuntak Monoliths Site	16
Nna Monoliths Site	9
Total	**339**

Fig. 13 – Table identifying the number of monolith sites in Nigeria.

Fig. 15 – Monolith sites: destruction and theft (top section missing) (Photos: the authors).



Name	Number of Monoliths
Alok	34
Amangabe	16
Arabatal	18
Bornima	8
Egunonkwor Site 1	22
Egunonkwor Site 2	22
Eklebohor	16
Ekpara	11
Ekpatana	7
Emeakpen (Nselle)	1
Era-Abuntak	16
Eting-Nta	27
Lowya	14
Mkpalafa (Manden)	16
Neborokpa	34
Njemetop (Nselle)	8
Nkarasi II	19
Nnang	9
Nnoanjan (Manden)	16
Old Nkrigom	41
Total	**355**

Fig. 14 – Monolith recovery: site map.

Fig. 16 – Alabanta monoliths site. Monoliths are used by secret societies such as the *Mgbe* Leopard cult or any other esoteric club that involve initiation of members. Larger initiations are carried out at the site when there is an event of ethnic war. Both males and females are present at the site during to a new age class transition. The monolith sites are also used for the fortification of new age class who plants trees to mark their inauguration, usually African silk cotton trees (Photos: the authors).

available massive stone resources to achieve their aims. Other perceptions observed were views of megaliths as territorial and spiritual boundaries, festival locations, ancestors' tombs, and memorial effigies. They were protected by their purpose and function through conservation management practices that did not consume any further resources, and helped by the fact that they were located in an area of lower population density, with few costs related to land use. The monuments and sites were created for the use of their communities, unaffected by the outside world, so the perceptions of their functions protected them. Once all these functions became redundant and population increased due to migration, then desecration and the destruction began. It was only with the re-discovery of their purpose and function that perceptions led to the study of the megaliths: the recognition of their archaeological and historical value resulted in the ongoing rock art research. Today, archaeological perceptions are being joined by others, which may provide new functions and new purposes for the megaliths. These positive new perceptions may well reveal the archaeological provenance of the monoliths. The idea that large statues might act as political and/or social tools is hardly novel. Immortalized figures from the past often serve the local interests and ideologies of the present. The motivation of the ancient people was to create a legacy within their respective environment. Many of the megaliths are perceived of as acts of cultural appropriation, with later occupants associating themselves with megaliths that had already existed and been abandoned. The monoliths show modifications at every stage of their lives, asserting the wisdom, pride, physical and spiritual power with which the megalith developers sought to identify.

Nigerian megaliths have continued to experience steady degradation as a result of the country's unsustainable actions towards their protection and the lack of studies. The monoliths are confronted by several dangers: challenges to their authenticity (replicas are produced in art studios), theft, deforestation and exploitation of sites, vandalism and destruction due to ethnic conflicts, threats from bush fires, disturbance of sites due to traditional use, village expansion due to growth in local populations, gradual forest depletion, and threats by Christian religious fanatics who discourage communities from engaging with their heritage.

Acknowledgements

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Megaliths from Senegal and The Gambia in their regional context

Abstract: Senegambian megaliths are characterized by the presence of standing stones, called frontal stones, erected to the east of funerary monuments whose ruins take various forms in the landscape, sometimes sealed beneath a mound, with platforms measuring 3-11 m in diameter and ringed by standing stones or dry-stone walls. Even today, among the Bassari people, stone platforms support a roof – symbolizing the house of the dead – and cover a burial pit that widens at the base to receive the body of the deceased. Other stones were erected to the east of larger burial pits, covered by a mound, to form arrangements that have been compared to contemporary funerary structures of the Sereer people. The burial practices associated with these megalithic monuments are also varied: individual or multiple burials, exposure of bodies on the ground surface covered by the monumental structure, secondary deposits of human bones in various forms (including deposits of large baskets containing human remains, sometimes in a primary position), and even some reference to cremations. The current state of knowledge in this field, which has been revitalized during the last 10 years, will be discussed in the much broader context of funerary practices over two millennia in West Africa: funerary platforms lined with standing stones are attested in Liberia, Sierra Leone and Guinea and standing stones associated with other forms of mounds occur as far away as the Niger Delta in Mali. Gradually, the megaliths of Senegal and The Gambia are regaining the place that they have always held on the soil of the African continent.

Keywords: *megaliths, western Africa, Senegal, Gambia*

The megalithic ruins in the Senegalese and Gambian landscape appear to us today (in the dry season), either in the form of monoliths arranged in isolation, in pairs or in single or double alignments, or on the chord of a circle with a diameter ranging between 3 and 11 m. The height of these laterite blocks, shaped on at least three of their four sides, is generally between 0.80 and 1.20 m and, more rarely, up to 2 m (Martin & Becker 1974). While monuments with large diameters can consist of more than 25 contiguous standing blocks, smaller monuments are generally composed of fewer than a dozen regularly spaced monoliths. Partially collapsed dry-stone external walls contain a central mound and complete the façade of what must have been the front elevation of a platform (Laporte *et al.* 2012), although many of these platforms were surrounded only by a continuous low wall. A roof of plant materials could have covered such structures, as for the numerous 'houses of the dead' still erected today on the tombs of ancestors among many West African populations. One or more stones stand in a frontal position, east of the monument. Generally, the number of frontal stones is greater for circles with a large number of monoliths, whereas nearly 75% of the platforms surrounded by only a dry-stone wall have no frontal stones (Becker & Martin, forthcoming).

1. A brief history of twentieth century research

The megaliths of Senegal and The Gambia are certainly the most studied and best documented of the West African megaliths (Laporte *et al.* 2017). Small circles of upright stones surrounding a paved area are present in many villages in south-eastern Guinea, northern Liberia, and Sierra Leone (Haselberger 1960; Mauny 1961; Huysecom 1987). Oral traditions (Paulme 1946; Germain 1947) and rare archaeological surveys (Roll 1967) indicate their use as burial platforms (Atherton 1970; Gabel *et al.* 1972-1974). In Guinea-Bissau, numerous laterite monoliths are reported on the Bafata Plateau (Teixeira de Mota 1954; Davies 1967). In central Mali, the Tondidarou site suffered from early interventions (Raimbault & Sanogo 1991; Dembelé & Person 1993). The still active sanctuary of Tikho, at Sogota in southern Burkina Faso, comprises three small laterite monoliths (Père 2004: Fig. 253), with an ogival shape similar to that recorded for examples erected in front of funeral monuments in eastern Senegal.

The first excavations report of the megaliths of Senegal and The Gambia were those of Captain Duchemin (1905), several years after they were first mentioned in the scientific literature (Maxwell 1898). For the 20th century, we have information for about 60 megalithic monuments (Todd 1903; Hamy 1904; Duchemin 1905; Todd & Wolbach 1911; Boutonnet 1916; Jouenne 1916, 1917, 1918, 1920, 1930; Mauny 1957, 1961; Parker 1923; Palmer 1939; Ozanne 1965; Thilmans *et al.* 1980; Gallay *et al.* 1982). The inventory drawn up by Martin and Becker (1984) included 7202 megalithic monuments: 3300 isolated stones (45.8%), 2181 small mound tombs (30.3%), 1053 megalithic circles (14.6%) and 668 megalithic tumuli (9.3%). The currently estimated 30000 km^2 range of these monuments is centred on the northern bank of the Gambia River and corresponds to the distribution of the identified frontal stones (**Fig. 1**). Although this range is, in places, limited by the availability of outcropping raw material, this is not sufficient to explain the absence of megalithic constructions towards western coastal areas.

Funerary monuments of a similar type, but without frontal stones, exist in central and northern Senegal (earthen tumuli; McIntosh & McIntosh 1993), and in western Mali and northern Guinea (tumuli and *cercles pierriers*; Filipowiak 1979; Dupuis *et al.* 2006; Raimbault 2006; Sanogo & Coulibaly 2013). They sometimes cover a sepulchral pit, often of similar shape and dimension to the many hypogea found further east (Liesegang & Sanogo 1977; Kiethega *et al.* 1993). The presence of human remains associated with the megaliths of Senegal and The Gambia is mentioned from the beginning of the 20th century: Du Laurens uncovered two primary burials under a megalithic circle at Kata, while Duchemin observed secondary deposits at Dialato (Hamy 1904; Duchemin 1905; Boutonnet 1916). Between 1915 and 1930, Jouenne carried out excavations in about 15 megalithic circles, where he insisted on the presence of secondary burials and cremations (Jouenne 1916-1918, 1930). Todd & Wolbach (1911) mention the possibility of human sacrifice for a dozen burials at Lamine-Koto, a hypothesis sub-

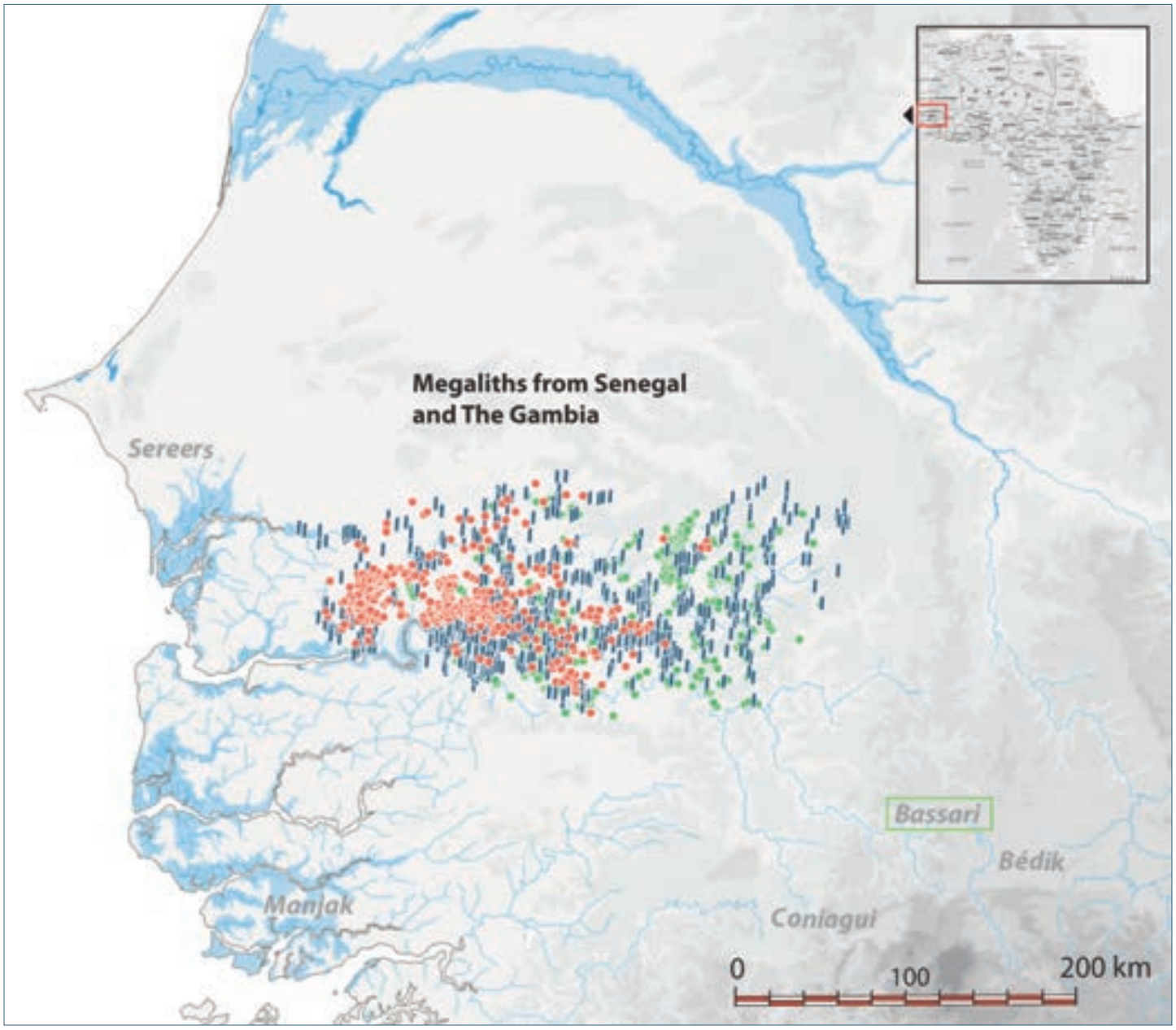

Fig. 1 – Megaliths of Senegal and The Gambia. Red dots: 'megalithic circles'; green dots: 'stone circles' or 'stone tumuli'. On most of these monuments, standing stones were erected in a frontal position. They sometimes also appear in the landscape in a seemingly isolated way, indicated by blue bars (CAD: L. Laporte and A. Delvoye).

sequently adopted by Thilmans (Thilmans *et al.* 1980).

Of three zones of Senegambian megalithism defined at the time (Thilmans *et al.* 1980: 154-156), the western zone (where most of the megalithic circles are concentrated) is by far the best known. The sepulchral levels contain abundant metal objects, mainly weapons or ornaments often directly associated with the human bones, while the external area between the façade of the monument and the frontal stones contains abundant pottery deposits. By contrast, the eastern zone, which contains practically no megalithic circles, is known only by the excavation of a stone covered tumulus in Saré-Diouldé. The final, central zone, characterized by the absence of grave deposits and distinct sepulchral practices is, in fact, a region where these different architectures overlap.

In the first half of the 20th century, a Carthaginian origin was proposed (Parker 1923), whereas other authors already associated the stone circles with the funerary practices of the 'empire' of Ghana (Palmer 1939). After the Second World War, there was no longer any doubt that such structures were indeed the work of African populations. Mauny (1961) attempted a careful comparison between the alignments of frontal stones and those of wooden stakes marking the 'altars' of ancestors among the Cogniagui people in Guinea. In Senegal, wooden stakes were also erected in front of Sereer tombs, as shown by very detailed descriptions by Becker and Martin (1982) in the same volume as reports by Gallay (Gallay *et al.* 1982) of his excavations at Mbolop Tobé, a tumulus with a frontal stone.

Since the dating of the very first sample (Ewans & Hugot 1965), 25 radiocarbon measurements have subsequently been published. Some authors (Holl & Bocoum 2017) attribute a duration of several millennia to the phenomenon; Gallay (2010) places it between the 7th and 15th centuries CE. Some 29 new radiocarbon dates obtained at the Wanar site will further refine this chronological bracket.

2. Large megalithic necropolises

Many Senegambian megalithic monuments are grouped together in necropolises; the ruins are very different from their original state. The widely used vocabulary describes their current appearance as follows: funerary platforms surrounded only by a dry-stone wall are known as 'stone circles'; if bordered by monoliths they are 'megalithic circles'. The only three excavated 'stone tumuli' at Saré-Diouldé (eastern zone), Tiékène-Boussoura (central zone) and Sine Ngayene II (western zone); all cover a low peripheral 'stone circle' wall.

The earthen tumulus seems to correspond to an even greater diversity of monuments, from small pits with tumular fillings, hardly perceptible in the landscape, to very large buildings of up to 9 m in height and 60 m in diameter. Gallay (2006a) has previously highlighted the peripheral position of the former in large megalithic necropolises: at Mbolop Tobé, tumulus 43 covered a double burial, probably protected under a structure of perishable material where a third body was buried in a secondary context (Cros *et al.* 2013). At Soto, the tumulus is a large mud construction with tiered levels, built in a vast pit with a diameter of more than 25 m (cf. Delvoye *et al.*, this volume, p. 1071).

At the heart of each necropolis, a few monuments are often aligned along what could correspond to a square, or an access route. In Kodiam, where only two megalithic circles have been studied this takes the form of a monumental alley. Apart from the few previously mentioned monuments, recent excavations have concentrated on five necropolises producing data that is difficult to compare in light of the very different methods used at the successive stages of research. The interpretative grid developed at Wanar will serve here as a basis for a revision of the observations reported during previous archaeological work.

2.1 Tiékène-Boussoura

The Tiékène-Boussoura site is located to the far north of the central zone and was widely explored during the 1970s (Thilmans & Descamps 1974, 1975; Thilmans *et al.* 1980). Well-documented excavations were carried out using rigorous methodology at five of the nine megalithic circles listed there, as well as two of the ten stone circles and one of the six stone tumuli. Excavations undertaken during the dry season yielded very few stratigraphic observations, except in relation to megalithic circle no. 8, which indicated that the sepulchral deposits and the construction of the megalith were diachronic (**Fig. 2**).

2.2 Sine Ngayene

This necropolis is located in the basin of the small Bao Bolong (river) and contains the highest number of monuments in the whole area of Senegambian megalithism, with 52 megalithic circles and a few isolated standing stones, but also more than 115 earthen tumuli located on the periphery, over an area of about 50 ha (Holl & Bocoum 2017: 98). It was classified as a World Heritage Site in 2006. First mentioned by Captain Fargue, then described at length by Jouenne (1916: 31, 1918, 1930: 333), it was studied and excavated by Mauny (1961). In the second half of the 1970s, three megalithic circles

Fig. 2 – 'Megalithic Circle' no. 4 by Tiékène Boussoura: '*Presence, in the interior space, of denser lateritic blocks in the centre and which are practically interrupted at a depth of 60 cm. Between the monoliths, these blocks formed a low wall, and they continued in a crown outside them*' (Thilmans *et al.* 1980: 77; Photo: C. Descamps - IFAN Archives).

were also excavated by the same team that had begun work at Tiékène Boussoura (Thilmans *et al.* 1980). Four other monuments were excavated in the mid-2000s: two earthen tumuli, an isolated megalithic circle to the north of the necropolis, and the only double circle, located in the centre of the necropolis. The excavation of the latter provided a much more complex sequence than previously described, with a series of radiocarbon dates showing that it functioned during four successive phases between the 8th and 15th centuries CE (Holl & Bocoum 2014). The inner megalithic circle was thus built long after the deepest sepulchral deposits were placed. The main nuance brought since is due to the construction sequence of the two megalithic embossed circles, as the outer circle could be contemporaneous with the erection of the inner circle in the 10th or 11th century CE.

2.3 Santhiou Ngayene

Also located in the basin of the Bao Bolong, the necropolis of Santhiou Ngayene – previously listed by Martin & Becker (1984) under the name of Ngayene NE – includes 18 monuments visible on the surface, including one stone tumulus, three megalithic circles and six stone circles. In addition to an isolated frontal stone, seven other monuments are of an undetermined nature but could be additional stone circles (Holl & Bocoum 2017). In the mid-2000s, large excavations carried out on nine monuments here, over a total surface of 900 m^2, yielded about 100 whole pottery vessels, most of which were deposited in front of the façades of the monuments. This is also the only site where three successive deposits of pottery on the façade can be correlated with three distinct episodes of sepulchral deposits.

Despite observations regarding earth of different colours, none of these seem to be associated with the contours of a sepulchral grave. Human bones were mainly located using an altimetric reference related to the current ground level, according to a similar method previously used by Thilmans. The deepest sepulchral levels were encountered at a depth of 1.4-2 m but the excavation of six stone circles stopped at a depth of 0.5-1 m, which is also the preserved elevation of some of the peripheral dry-stone walls. The information gathered does not illustrate the whole sequence of deeper sepulchral deposits, and the absence of funerary deposits in some of these monuments should be considered in this perspective.

The peripheral low wall of one platform with a very large diameter is rather distinct in that it has a gap and a threshold to the west.

2.4 Ngayene II

The necropolis of Ngayene II – also listed by Martin & Becker (1984) under the name Ngayene Ouest – consists of more than 40 monuments. It comprises two parallel complexes oriented along an east-west axis, composed of five and seven monuments (including seven megalithic circles) respectively and 27 stone circles, mainly concentrated in the southwest of the necropolis. Eight earthen tumuli are located mainly outside the necropolis. Five field campaigns were carried out from 2004 to 2007, resulting in the excavation of the 42 monuments and the extensive stripping of intermediary areas (Holl & Bocoum 2017). The study of so many monuments in such a short period led to somewhat expeditious recording methods. It is therefore very difficult to compare this work with that of Thilmans, or with work carried out elsewhere in Wanar (see below). In particular, the almost systematic affirmation of secondary bone deposits is often impossible to validate given the published data. As at Santhiou Ngayene, stratigraphic observations are relatively limited, and many monuments were only superficially or incompletely explored.

With regard to architecture, the measurements indicated for each stone circle are those of the circle resulting from the collapse of peripheral walls, which can, however, be identified from the published surveys. Two zones then stand out more clearly in this necropolis. The southern part is largely composed of small monuments with diameters of less than 5 m, while the most imposing (either in terms of their diameters or owing to the presence of monoliths) correspond to the two parallel complexes located to the north. The sequencing of these new data, combined with a revision of the contexts of sepulchral deposits, offer a totally renewed vision of the necropolis (**Fig. 3**).

2.5 Wanar

Megalithic circles represent about a quarter of the funerary monuments listed in the western zone of Senegambian megalithism, but more than half of these are centred in a small sector in the middle course of the great Bao Bolong. Research carried out in the first half of the 20th century was concentrated here, with seven monuments excavated at Diouli-Keur-Demba-Loum, and four others at N'Diao (Jouenne 1930). The necropolis of Wanar is located on the northern bank of the river and is now classified as a World Heritage Site. However, no archaeological excavations had been carried out there before our own work began in 2005 (Laporte *et al.* 2007-2009).

Wanar consists of 21 megalithic circles; nearly two thirds of the 52 bifid stones listed in the entire area of Senegambian megalithism are found among the frontal stones. Research was systematically conducted at the end of the rainy season in order to benefit from optimal stratigraphic reading. Extensive excavations carried out on the periphery of eight monuments bordered by standing stones made it possible to locate the position of the protohistoric ground level for the first time.

Structures built in natural earth were then recognized in elevation. The collapse of monumental masses was also well marked in the stratigraphy, imparting many elements of relative chronology, sometimes even between distinct monuments. The contours of structures dug below the protohistoric ground level, such as various pits or post wedges, were also identified for the first time. For six monuments, the excavation of funerary levels in burial pits benefitted from the on-site presence of anthropologists, following an approach previously initiated in Senegal by Thilmans. The observation of sometimes complex stratigraphic sequences, and an in-depth study of architecture, objects and burial practices, has profoundly renewed our knowledge of these megaliths (Laporte *et al.* 2012).

3. Deferred funerary rites

Contemporary traditional funeral rites in West Africa often involve distinct phases (Sidibe 1980). The first burial phase, sometimes accompanied by an interrogation of the deceased (Delacourt 1912-13; Paulme 1954; Lestrange 1955), does not always immediately follow death: various procedures intended to preserve the body may sometimes be implemented (Germain 1947). Sometimes, a great public celebration is organized several years after death; the songs and dances of these ceremonies have attracted the attention of foreign observers. The celebrations may, in some cases, be accom-

Ngayene II

Min. ND. of Indiv	Primary deposits			Symbolic deposits		Secondary (?) deposits				
	Indiv. Burial	Mult. Bur.	Dble burial	no bones	Body Red.	Small	Large	Total/ Mon.	Total/ Type	%
Large Stone Circles									14	6 %
Mon 20	5							5		
Mon 25	4	3						7		
Mon 24	1							1		
Mon T 05	1							1		
Tumulus ?									6	3 %
Mon. T-07		3						3		
Mon. T-01	1							1		
Mon. T-02	1							1		
Mon. 32					1			1		
Stone Circles (3-4m)									8	4 %
Mon. 2				0				0		
Mon. 3				0				0		
Mon. 13				0				0		
Mon. 22				0				0		
Mon. 4					1			1		
Mon 6					1			1		
Mon 7					1			1		
Mon 9					1			1		
Mon 12					1			1		
Mon 16					1			1		
Mon 1					2			2		
Stone Circles (4-5m)									27	12 %
Mon 18						3		3		
Mon 21						3		3		
Mon 8						4		4		
Mon 19						5		5		
Mon 17						12		12		
Meg. Cercles (type A)									47	21 %
Mon. 29	2					6		8		
Mon. 23						1		1		
Mon. 30						2		2		
Mon 26							36	36		
Meg. Cercles (type B)									119	54 %
Mon 27							33	33		
Mon 31					1		35	36		
Mon 28							50	50		
Total	15	6	0	0	10	36	154	221	-	
%	7 %	3 %	-	-	5 %	16 %	70 %			100 %

Fig. 3 – Ngayene II: seriation of the types of sepulchral deposits according to the architecture of the corresponding monuments. Only the best documented complexes have been taken into account, based on available observations (Mainly in Holl & Bocoum 2017).

panied by the sacrifice of numerous heads of cattle (Carreira 1947). Much later, other rites take place, still generally reserved for a restricted sphere. These confer on some of the deceased their status as ancestors, then as spirits or even genies (Père 2004). These rites may continue for several decades. The archaeological observations of the megaliths of Senegal and The Gambia correspond well to this overall pattern, with three sequences staggered in time consisting of sepulchral practices, the monumentalization of sites, and memorial deposits (Laporte *et al.* 2018). The very notion of a necropolis or cemetery, which in the eyes of European observers derives directly from the presence of human bones, must be treated with caution in societies where certain initiation rites are, above all, considered to be a form of rebirth for each of the individuals concerned.

The different architectures also display similar correspondences with archaeological data. In the same way as recorded for stone circles, the stone walls of traditional Bassari houses are composed of a single row of small laterite blocks (1), held upright by internal clay plaster (Laporte, forthcoming). The floor of the room is higher than the outside ground level. The village chief's hut is generally larger than the others. In the past, it could also take the form of a traditional hut lined with an exterior colonnade that supported a conical roof made of plant materials, and which was independent from the rest of the construction. Although settlement is scattered, episodically settled, initiatory villages are organized around a large central quadrangle. Today, the houses of the dead are also sometimes built above a tomb within the village itself, either individually or in small groups, at lower elevations than the houses of the living (**Fig. 4**). Others are grouped together in necropolises outside the village and reserved for the highest Bassari religious dignitaries who, during their lifetime, are not characterized by any accumulation of wealth.

Similarly, frontal stones have often been compared to the wooden stakes generally implanted in the east – more rarely in the west – on the periphery of contemporary Sereer burials (Gallay *et al.* 1982). These burials are frequently grouped together in necropolises and appear as large pits surrounded by concentric ditches, with a tumular filling that forms a slight bulge above the ground over time. The grave is sometimes placed in a recess and is often covered by the roof of the house of the deceased (Becker & Martin 1982). Ethnographic data pertaining to the Mandjak (Guinea-Bissau), Coniagui, and Bassari (Senegal and Guinea) populations indicate the existence of similar structures on the façades of burials, some of which are royal. These stakes, the bases of which are sometimes decorated with engraved grooves, materialize the spirit of the deceased and his eventual accession to the status of ancestor (Laporte *et al.* 2016).

3.1 Sepulchral practices

In the western zone of Senegambian megalithism, the available information on sepulchral practices comes from about 50 monuments, compared to only ten in central and eastern zones. A small number of these have yielded the remains of many deceased individuals, corresponding cumulatively to more than half of the total of the minimum number recorded in the region. This minimum number is calculated differently by different authors, and is probably largely underestimated. It now stands at about 600 individuals, 87% of which come from the western zone. Four main types of deposits have been observed under the monumental structures.

Primary burials

These are usually layered in the filling of the same sepulchral pit. One or more individuals are deposited, sometimes simultaneously, in a central position at the deepest part. Above this, at least one individual was then deposited in a lateral position in relation to the layout of the monument. Near the surface, above the protohistoric ground level, several probable cases of open-air exposure of corpses were also noted. In the central and eastern zones (Thilmans *et al.* 1980), single, double or multiple

(1) Sometimes strong wooden posts consolidating the construction then take the place occupied by monoliths in megalithic circles from the protohistoric period.

Fig. 4 – a, c. 'Altars' of the ancestors built in the image of a small house of the dead, on the tomb of the village chief of Ethiolo, and that of his father Some are much larger in diameter (b). The ruins correspond in all aspects to what has been described as 'stone circles' in terms of archaeological remains (Photos: L. Laporte (2018) (a, c) ; M. Gessain (1947) (b)].

burials account for 81% of the buried individuals, compared with 10% in the western zone (**Fig. 5**).

Body reductions

These are secondary deposits where only a few bones, generally belonging to a single individual but sometimes two or three, and sometimes associated with metal objects, are confined in a very narrow space of a few dozen centimetres on each side, within a bag or box made of perishable material. These can also be purely symbolic deposits consisting of a few metal objects (Holl & Bocoum 2017). Such deposits are found in the centre of the monumental platform and are sometimes covered by inverted ceramics, similar to a lid placed on a funerary urn. From the beginning of the 20th century onwards, the work of Duchemin (1905) in Dialato, of Todd & Wolbach (1911) in Lamine-Koto, and also of Doke in 1931 in Ker-Alpha and de Saint-Seine in 1939 at Thiobé, report the presence of pottery collected below the centre of circles of standing stones, generally found with the opening facing downwards (Thilmans *et al.* 1980: 25) as, for example, at Sine-Ngayene II (Holl & Bocoum 2014: 91). Other deposits complete the filling of sepulchral pits or correspond to secondary deposits below the small mud construction that ultimately seals these pits at Wanar (Cros *et al.* forthcoming). Based on current sampling, when human bones are present they correspond to less than 7% of the buried individuals.

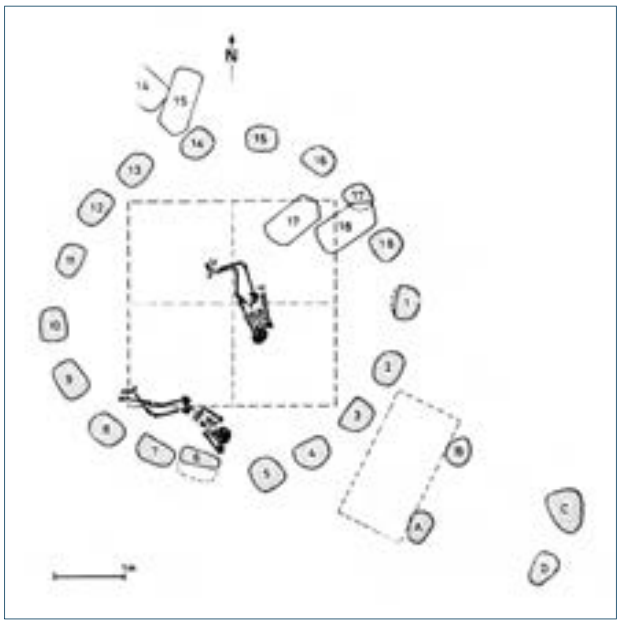

Fig. 5 – Tiékène-Boussoura no. 8: plan of the monument and the two burials: a central and a 'peripheral' deposit (After Thilmans & Descamps 1975).

We distinguished two other types of deposits, both of which were contained within an area – often marked by earth of a slightly different colour – with a diameter of 1 to 2 m, about the size of a bassinet, in perishable material. The latter could have been deposited on the bottom or at different levels of the filling of the sepulchral grave. In the western zone of Senegambian megalithism, 86% of buried individuals come from such contexts. Further east, this is only illustrated by the deepest deposit found under monument 1 of Sarré-Diouldé.

Other secondary deposits of bones

These comprise mainly long bones and skulls corresponding to ten individuals at most (**Fig. 6**). In view of the relatively small number of bones concerned, and their dispersal over what can be a large area, their identification as secondary bone deposits often leaves a degree of doubt, regardless of their state of conservation, the care taken in unearthing each of them, or the recording grid used. All six of the megalithic monuments excavated at Wanar contained deposits of this type. At Sine Ngayene II, however, as at Santhiou Ngayene where the number of individuals (of skulls) is very low, there are rare cases where the existence of multiple burials cannot be totally ruled out on the basis of published data alone.

'Piles' of human bones

These sometimes contain the remains of several dozen or even up to 50 individuals within a cylindrical zone, also with a diameter of 1 to 2 m, several tens of centimetres high. It is not always easy to distinguish between differential conservation, reworking in the tomb, or the selection of secondarily deposited bones. Depending on the case, the authors interpreted these deposits either as multiple burials of very large numbers of individuals (Thilmans *et al.* 1980), or as exclusively secondary deposits (Holl & Bocoum 2017). In fact, we were also able observe body parts with anatomically

Fig. 6 – Secondary burials in the first sepulchral pit (pit 1) of monument XX in Wanar (Photo: S. Djouad).

connecting elements, or even whole bodies, or subsequently rearranged body parts. We thus suggest that these could just as easily be collective burials where the container(s) – made of perishable materials – would be the true 'burial chamber', secondarily moved into the grave (Laporte & Bocoum 2019).

The funerary goods associated with each of these types of burial contexts are only represented in the western zone. These are mainly iron weapons and ornamental objects. Among the weapons were more than 160 spearheads, sometimes compared to the specimens from the shell midden of Diorom Boumak in the Saloum delta (Thilmans *et al.* 1980: 150), a few arrowheads and very rare sword blades, all made of a ferrous alloy. The number of weapons deposited in the tomb cannot be strictly correlated to the number of buried individuals. Most of the spearheads were bent on the blade or on the socket, suggesting that the object was not functional. A few finely worked spearheads display a surface entirely covered with concentric ring decorations. The tip is framed by a double tail, each ending in a barb. More rarely, the spearhead had only one barb. Textile impressions have been observed on some corroded surfaces (Delvoye *et al.*, forthcoming).

Ornamental objects are represented by fewer than 100 bracelets and rings mainly made of copper or ferrous alloys, sometimes found in an anatomical position on the arm, fingers, or ankles of the deceased. A pewter bracelet was discovered in the sepulchral grave of monument XIV in Wanar. Bracelets vary in size, and are sometimes decorated with incisions, or twisted, grooved or fluted. Yellow brass bracelets are rarely found alongside red bracelets made of pure copper or iron (Garenne-Marot 2007). An iron bell was found near the remains of a dog in circle 28 of Sine Ngayene (Thilmans *et al.* 1980: 68), and others were recorded at the ankles of the individual buried under mound T-01 of this necropolis. Approximately 20 glass beads, and a few others in cornelian, metal or terracotta, were also collected. The only gold beads come from Wanar, where they recall other specimens from the shell midden burial heaps of Saloum

(Delvoye *et al.* forthcoming). Conversely, a fragment of an *Anadara senilis* shell, a coastal mollusc, was found in monument 17 at Kodiam, about 200 km inland (Thilmans *et al.* 1980), and a *Conus conus* shell was recovered in monument 52 at Sine Ngayene (Holl & Bocoum 2017).

We only have access to reliable information about the types of burial pits at the Wanar necropolis (Laporte *et al.* 2012), apart from occasional observations at Santhiou Ngayene and Sine Ngayene II (Holl & Bocoum 2017). These are most often silo-shaped pits, 1.30-1.60 m deep, with a diameter ranging between 1 and 1.50 m at the top, and wider at the bottom (1.80-2.70 m). They are generally excavated from the protohistoric ground level downwards, to below the current ground level. At Wanar, the bottom of the pit is 1.80-2.50 m deep, if we use measurements comparable to those proposed by Thilmans and Holl.

After they were filled in, but before the construction of the megalithic monument, the location of the tomb was first marked by a quadrangular platform, 2-3 m wide, made of mud bricks and generally conserved up to a height of several dozen centimetres. The exact location of the tomb underlying monument XIX at Wanar seems to have been somewhat forgotten, before a circle of standing stones was erected, slightly to the south. Similar observations were also reported for the inner circle of monument 27 at Sine Ngayene (Holl *et al.* 2007). There are other circumstances where the monument may never have been built.

3.2 Circular monuments built over the tomb

The monumentality of the edifice built above the tomb is expressed by the external diameter of the circular platform and by the presence or absence of contiguous or interposed monoliths in a dry-stone wall delimiting the circumference of the construction (**Fig.** *7*). The diameter of the circular buildings associated with Senegambian megalithism varies between 2 and 12 m (Martin & Becker 1984). The smallest, with an external diameter of less than 4 m, represent 22% of the stone circles and 29% of the megalithic circles, while the largest, with a diameter of more than 6 m, account for 24% of the former

Fig. 7 – Proposed reconstruction of monument XIV of the Wanar necropolis (Photo: L. Laporte).

and 29% of the latter [2]. However, only 12% of the megalithic circles in the western zone have a large diameter as opposed to 77% in territories further east. The large megalithic circles include 14 monuments consisting of two concentric circles. There is only ever one such monument per necropolis.

The monoliths arranged on the chord of each megalithic circle have diffent dimensions depending on the shape of their cross-section: those with a square cross-section measure on average 45 x 41 cm; those with rectangular cross-sections measure 74 x 44 cm; those with trapezoidal sections measure 83 x 53 cm. This distinction overlaps the groups defined by Thimans and Descamps, in Sine-Ngayene, where three types of megalithic circles were identified: narrow and slender monoliths (type A), short and thickset monoliths (type B), or 'intermediate' dimensions (type C) (Thilmans *et al.* 1980). This same distinction is observed in Wanar where, with one exception, all the monuments with short and thickset monoliths are located to the north of the necropolis, while those with narrow and slender monoliths are arranged in the south around a square area. The façades of the monuments with contiguous narrow and elongated monoliths contain the largest number of blocks, while those with short and thickset monoliths required much greater efforts because of the weight of the transported raw materials. In all cases, "*an 'entrance' is frequently visible towards the west or northwest, notably materialized by a stone with a specific shape, sometimes lying along an east to west axis and forming a threshold*" (Becker & Martin, forthcoming).

In the western zone, about 50 monuments allow for comparisons between the architecture of the elevated structures with underlying sepulchral deposits (**Fig. 8**).

Small constructions with diameters of 3-4 m

These are exclusively surrounded by a dry-stone wall (11 examples) and attest to the symbolic deposition of metallic objects and/or some human bones, sometimes covered by overturned ceramics. The excavated constructions of this type are all from the southwestern sector of the necropolis of Ngayene II, although they represent nearly a quarter of the number of 'tombs' inventoried by Becker and Martin in the whole area of Senegambian megalithism.

Constructions with diameters of 4-5 m

These are by far the most numerous. We can distinguish between those surrounded only by dry-stone walls (six examples) and those also comprising erected blocks, which can be subdivided into type A (ten examples) and type B monuments (ten examples). Type B account for more than three-quarters of the individuals buried under the megalithic circles in the western zone. Type A megalithic circles or stone circles generally only overlie secondary deposits with more limited numbers of remains. Small assemblages similar to those described under small-diameter platforms sometimes appear to have been deposited in a second stage, often in a shallower pit.

Large platforms of more than 6 m in diameter

These cover individual or multiple burials (two or three individuals) and are often layered, sometimes with one individual in a peripheral position in the upper levels (in six cases). This latter configuration is also observed at Tiékène Boussoura, in the central zone of Senegambian megalithism, regardless of the size and architecture of the corresponding monuments. They are distinguished from the burials identified in the western zone by the absence of any accompanying goods. At Ngayene II, as at Santhiou Nagyene, only one of these very large monuments (7 and 11 m in diameter) displays an 'entrance' to the west (Holl & Bocoum 2017) [3].

(2) The majority of these structures therefore have an external diameter of about 4-5m, which today also corresponds to the dimensions of traditional Bassari houses.
(3) Among the Bassari, in eastern Senegal, the presence of a door is indeed what seems to distinguish houses intended for the living from those built on graves for the deceased. The idea that some bodies were first deposited on the floor of a house before being buried [which corresponds in particular to the term 'interim burial' proposed by Holl (Holl & Bocoum 2017)] therefore seems plausible, in agreement with many ethnographic testimonies, for example in Forest Guinea, Sierra Leone or Liberia. Like the equally large 'double circles', such buildings always seem to represent only a single individual in any necropolis.

Min. Nb. of Indiv	Indivividual or Multiple Burials			Body Red.	Bone "Piles"		Total/ Mon.	Total/ Site	%
	Indiv. Burial	Mult. Bur.	Dble burial		Small	Large		or zone	
OCCIDENTAL ZONE	31	17	6	40	82	317	0	489	87%
Sine Ngayene II	15	6	0	11	33	154		219	45%
Santhiou Kohel	1	2	2					3	
Burial Pit								3	
Mon. 43	1	2	2				3		
Sine Ngayene	6	7	2	5	3	117		138	24%
Earthen mounds								2	
Mon. T-01	1								
Mon. T-02	1								
Meg. Circles (type A)								15	
Mon. 32	3	7	2						
Mon. 52	1			1	3				
Meg . Circles (type B)								121	
Mon. 27				4		30			
Mon. 25						28			
Mon. 28						59			
Santhiou Ngayene	3	2	2	4	12	46		69	14%
Large Stone Circles								3	
Mon. 8	-	-		1			-		
Mon. 6	-	-		2			-		
Stone Circles (4-5m)								7	
Mon. 5	1			1	5		7		
Meg. Circles								53	
Mon. 4	1				7		4		
Mon. 2	1					25	26		
Mon. 3		2	2			21	23		
Wanar	6			20	34			60	12%
Meg. Circles (type A)	3			3	22			28	
Mon. I				3	7		10		
Mon. II	3				8				
Mon. XIX					7		7		
Meg. Circles (type B)				7	12			19	
Mon. XIV				1	5		5		
Mon. XX				6	7		13		
%	6%	3%		8%	17%	65%			
CENTRAL ZONE	15	4	2	0	0	0		19	3%
Tiékène Boussoura	15	2	2					17	
Large Stone Circles								4	
Mon. 18	1						1		
Mon. 19	1						1		
Mon. 10	2						2		
Meg. Circles								13	
Mon. 1	1						1		
Mon. 4	2						2		
Mon. 6	2						2		
Mon. 8	2						2		
Mon. 9	4	2	2				6		
Kodiam		2	2					2	
Meg. Circles								2	
Mon. 17		2	2				2		
ORIENTAL ZONE	26	19	12		11			56	10%
Sarré Diouldé	26	19	12		11			56	
Large Stone Circle									
Mon. 1	26	19	12		11		56		
TOTAL	41	23	14	0	11	0		75	
Centr. / Or. Zones	55%	31%		0%	15%	0%			
TOTAL	72	40	20	40	93	317		564	
	13%	7%		7%	16%	56%			

Fig. 8 – Minimum number of individuals buried per necropolis and per type of monument.

Earthen 'tumuli'

This often rather ambiguously used term includes sepulchral deposits similar to the previous examples, which were often discovered due to the presence of frontal stones located a few metres further east. In the absence of a visible mound, we cannot rule out the possibility that some burial platforms were never built (three cases). Conversely, two monuments excavated at Santhiou Kohel (Gallay *et al.* 1982) and Soto (Delvoye *et al.*, this volume, p. 1071) are circumscribed by a wide belt of peripheral ditches, the result of multiple successive excavations. We will reserve the term 'tumuli' for this type of monument (four examples). Two other open-ground graves in Sine Ngayene are distinguished by the type and abundance of the associated funerary goods (Holl & Bocoum 2014).

3.3 Frontal stones and commemorative practices

The eastern façade of circular monuments has attracted the attention of many researchers, as it frequently conceals one or more standing stones, as well as important pottery deposits (in the western zone at least). The 14000 frontal stones arranged on the façades of monuments or in seemingly isolated localities represent a number equivalent to the total of all the standing stones constituting megalithic circles (Martin & Becker 1984). The former are generally taller and more massive than the latter. Conversely, the frontal stones associated with most of the small stone circles at Ngayene II are smaller in size and sometimes have a tapered appearance similar to many others in the eastern zone. Two to three parallel frontal lines have been identified at 35 sites, 20 of which are located in the Ninja Bolon basin.

At Wanar, in the middle reaches of the great Bao Bolon, frontal stones associated with platforms bounded by short, thickset monoliths are surrounded by a lateritic gravel floor (Laporte *et al.* 2012), over an area with a diameter of 2-3 m; they could perhaps be compared with those excavated near a small isolated standing stone at Sine Ngayene (Holl & Bocoum 2017). In Wanar at least, the areas of gravel around several monoliths in the same alignment overlap, suggesting that the construction of each of these monoliths was diachronic. The alignments with several bifid stones form particularly striking complexes, which Jouenne interpreted as a mark of solar worship. He suggested that these arrangements would have been built towards the end of the rainy season, after the harvests, during a prosperous period when the granaries were full and particularly favourable to collective celebrations (Jouenne 1918: 67).

Thirty out of the 47 listed bifid stones are V-shaped or 'lyre stones', associated with at least 29 monuments and 22 distinct sites. All are located in the central and western areas of Senegambian megalithism. Thirteen of the bifid stones appear to be isolated, and at least ten others are arranged in joined pairs (**Y**Y). Three other stones are each positioned at the end of a row of cylindrical monoliths (**YI**IIII), six are in the symmetrical centre of a structure that also includes one or two cylindrical monoliths (I**IYI**I). These three types of structures seem to form the elementary building blocks of more complex sequences (Laporte *et al.* 2016). At Diam-Diam, two distinct segments (**IYI** / **IIII Y IIII**) are visible in the frontal line of megalithic circle no. 1. The base of the lyre stone in the second segment bears a disc engraved in the round (**Fig. 9**),

Fig. 9 – Lyre Stone presenting an engraved disc at Diam-Diam (Photo: R. Mauny - IFAN Archives, ref. C56 205).

as is also the case for the base of a cylindrical monolith erected at the front of monument no. 27 at Sine Ngayene (Holl & Bocoum 2014: Fig. 34). This motif has sometimes been compared to the gold disc discovered at Rao (Joire & Duchemin 1955) in northern Senegal, which is dated by its funerary context to around 1300 CE (Fauvelle-Aymar 2013: 114). Many more monoliths have either a small 'disc' or 'knob' protrusion at the top or, conversely, a depression, or 'cupula', like tenons and mortises, and have a mutually exclusive distributed on each site (Martin & Becker 1984).

The only lyre stone quarry studied is 300 m from the Wanar necropolis (Laporte *et al.* 2012). The traces of stones removed indicate that they were the short, thickset monoliths, erected on the façades of the circular monuments in the northern part of the necropolis. Under the surface layer at the quarry, adjoining depressions were unearthed, corresponding to some 150 monoliths; 145 stones were erected on the façades of type B monuments. On the other hand, one of the quarries identified for the Sine Ngayene necropolis yielded the traces of the removal of about 50 narrow and elongated monoliths (Thilmans *et al.* 1980; Holl & Bocoum 2017). Only about ten quarries have been inventoried, mainly in the western zone, but also at Wassu where the first archaeological experiments in quarrying were carried out (Beale 1966: 9). After hammering to equalize the upper, hardened part of the lateritic outcrop, some of the natural cracks were widened with metal wedges. A groove was deepened to mark the outline of each block using an elongated narrow-bladed tool, the marks of which are also visible on many standing monoliths. The area below the boulder was then carved out, and it was freed from the bedrock by levering it against the quarry walls. In Wanar, four regularly spaced perforations in some walls suggest mechanized lifting operations. Boulders abandoned during transport were identified at Santhiou Kohel (Gallay *et al.* 1982: 221) and at Kerewan Duto (Martin & Becker 1984). The much more irregular extraction face was then positioned towards the interior of the megalithic circle. Frontal monoliths were worked on all sides; the surfaces may have been regularized by bush hammering.

Numerous whole pottery vessels were found overturned on the ground – often with pierced bases – between the frontal stones and the eastern façade of circular monuments, and sometimes in the form of successive deposits on the ground level contemporaneous with the erection of the monument, or above the spreads marking the architectural ruins (**Fig. 10**). Some specimens found in the centre of the architecture were clearly dissociated from the sepulchral areas. These deposits appear to be the remains of commemorative practices (Delvoye *et al.* 2011). Vessels with carinated shoulders were predominant, always accompanied by other vessels such as cups and some bowls. By contrast, jars and cylindrical-bellied vases were often found in peripheral deposits. The most common decorations were roulette patterns, fluted or incised lines, and the application of red engobe. Roulette-printed band decorations, framed by parallel grooves, were associated only with vessels with a carinated shoulder, whereas many cups had parallel fluted decorations (Delvoye *et al.* 2011). In Wanar, the numerous deposits of small vases, bowls, and goblets with carinated shoulders, decorated with parallel flutes or printed bands, were mainly associated with those monuments having short, thickset monoliths. The less abundant deposits in monuments with narrow, elongated monoliths, were more likely to be found inside large pottery vessels with very pronounced carination, the edges of which fit over the mouths of large jars decorated with a roulette wheel of folded flat fibres. Their function as lids would have diminished in the upper levels where small vessels had a vertical, elongated neck (Delvoye *et al.* 2011). These typo-functional evolutions are also accompanied by major technical changes (Delvoye *et al.* 2016) and contribute to the ceramic seriation for the whole area of Senegambian megalithism (Delvoye 2018, forthcoming; Delvoye *et al.,* forthcoming), clarifying and enriching the schema proposed by Gallay (2010).

Numerous structures were also discovered between the funerary monuments. These included large vessels arranged in an inverted position, small 'sock'-shaped pits with no deposits, deep pits with whole vessels, and quadrangular mud brick platforms similar to those that capped the openings of sepulchral pits. A shaft excavated west of Monument II in the Wanar necropolis is one of the oldest structures on this site. On the periphery of the necropolis, the post-holes of a construction were identified, while

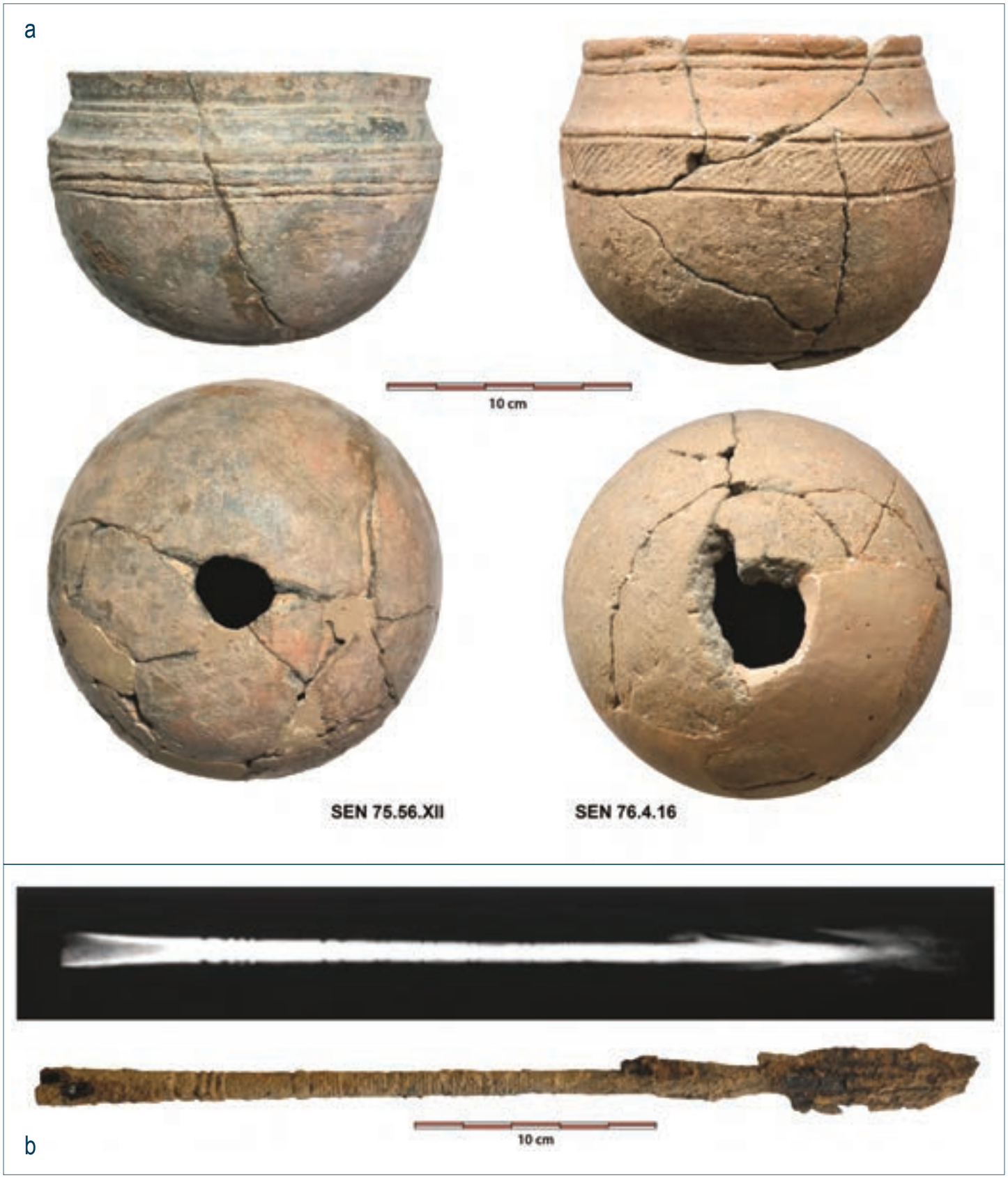

Fig. 10 – Funerary goods: a. Examples of basal perforations on pottery deposits from the Sine-Ngayene necropolis (Excavations: G. Thilmans; photos: A. Delvoye); b. Radiograph of a double-tailed spearhead from monument XIX of the Wanar necropolis (Arc'Antique. Study: S. Lemoine; photos: J.-G. Aubert).

at Ngayene II, a ruby-coloured soil with a 2 m diameter, covered with mud bricks was unearthed (Holl & Bocoum 2017). Numerous fragments of mud walls and ruby-coloured mud bricks were also collected in the tumulus fill of some of the monuments, especially in Wanar. These elements, as well as the abundant ceramic elements scattered in the former floor, raise questions about the presence of early settlements, as at Tiékène-Boussoura (Thilmans *et al.* 1980). The only domestic structure excavated was a small hearth, associated with a scattering of pottery objects that was exposed on the edge of a gully near the necropolis of Ngayene II. The collected charcoal yielded a date from the 14th century CE (Holl & Bocoum 2017).

4. Towards the construction of historical scenarios

Surprisingly, neither the accounts of Arab travellers from the 9th century CE onwards, nor those of the first European navigators from the middle of the 15th century, mention the existence of megalithic monuments. Nonetheless, these same monuments capture the imagination of our contemporaries. Those who live near them tell us only that they were erected by their predecessors. Archaeology thus seems to be the sole source of available information to lift the veil on these past populations. About 50 radiocarbon dates are available, most of which are from charcoal; only two directly date human bones. In the absence of stratigraphic observations, the contextualization of these samples is often problematic and in the past the dates obtained were often applied to the whole megalithic structure, independently of the specific history. About ten radiocarbon dates from samples collected from under the megalithic monuments are from the first half of the 1st millennium of our era, and from previous millennia, but it is not always being possible to distinguish those resulting from previous human settlement or natural fires. The earliest dates related to burial activity correspond to individual or double burials with no megalithic structures, from the 7th century CE onwards.

The construction of the megaliths may not have begun before the 11th century CE and may not have lasted much longer than 200 years, at least for circular platforms bordered by standing blocks (**Fig. 11**). Those with narrow, elongated monoliths appear to be somewhat older than those surrounded by short, thickset monoliths. None seems to have been built after the middle of the 13th century CE. However, we cannot rule out the possibility that other monumental forms, where the frontal stones are the only truly megalithic element, may be slightly more recent. In the western zone, at Ngayene II or Santhiou Ngayene, later interventions are systematically marked by the use of fire, dated at Wanar to the 15th and 16th centuries CE. At the micro-regional scale, coring carried out in the middle course of the Bao Bolong and its tributaries, near

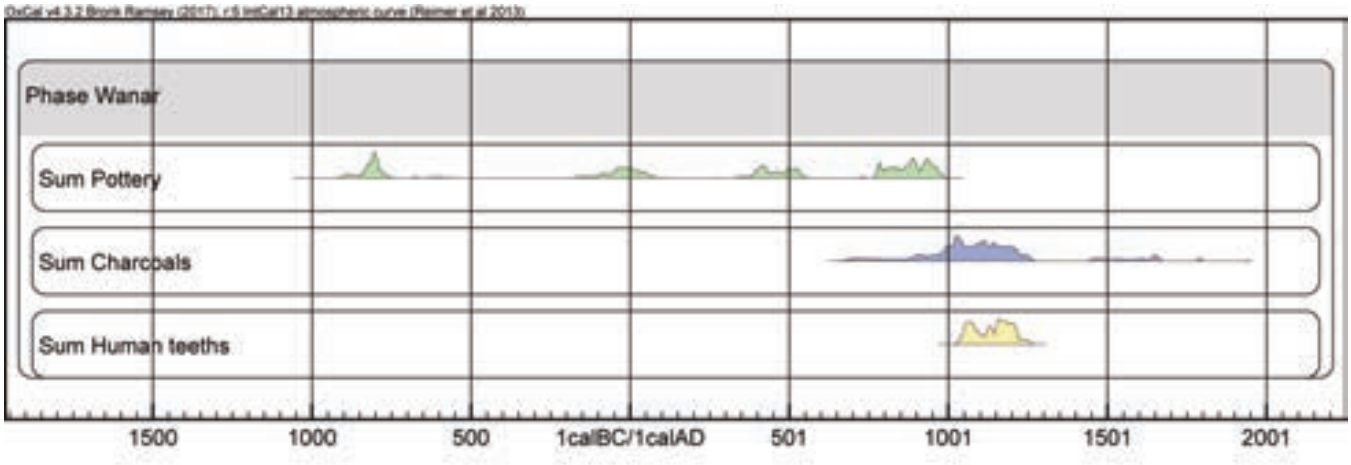

Fig. 11 – Of 29 radiocarbon dates on samples taken at the Wanar site, the only two dates on human bones are from the 11th and 12th centuries CE.

the Wanar and Ndiao necropolises, shows significant variability in hydro-sedimentary dynamics. High sedimentation rates over the past two millennia reflect marked slope instability, probably due to the combined effect of climatic variations and the anthropization of plant cover in the watershed, particularly by fires. On the other hand, more localized incision phases truncate the sedimentary sequences, perhaps reflecting the increased influence of human activities in this sector, first between the 7th and 9th centuries CE, then between the 11th and 13th centuries, and finally around the 14th and 15th centuries (Stern *et al.* 2019).

The period between the 7th and 13th centuries corresponds to the chronology generally attributed by historians to the 'empire' of Ghana, a little further north. In the 13th century, this was followed by the 'empire' of Mali, with a geographical extension covering the area attributed to Senegambian megalithism. According to the same historical sources, the Sereer may have been populations of Sahelian origin who arrived in the 11th century CE and adopted some of the funerary traditions of their predecessors (Gallay, forthcoming). In the oral traditions of the Bassari and Cogniagui, whose Tenda languages are distinct from all others in the region, they sometimes claim to belong to 'kingdoms' defeated by Sundjata, whose epic is considered to be one of the founding myths of the 'empire' of Mali (Boulègue 2013; Fauvel-Aymar 2013). Whilst acknowledging the excesses resulting from the desire of a contemporary group to appropriate a prestigious past, it seems legitimate to attempt to compare archaeological data with those from historical approaches or general anthropological theories that also attempt to synthesize the many ethnographic observations from the 20th century.

An essay by Gallay (2006b) makes an immense contribution by attempting, for the first time, such a synthesis on a wide scale, based on the theory of general anthropology proposed by Testart (2005). Several articles subsequently attempt to develop a historical scenario, on the scale of West Africa, taking into account the implications of the organization of societies (Gallay 2011, 2013). The interpretation proposed by Testart is then nuanced to introduce the concept of African lineage societies (Gallay 2015). Testart's African detractors, however, criticize him for not considering sufficiently the diversity of oral traditions. However, the collection of these traditions is far from complete and other narratives remain inaccessible to scientific approaches as they are formulated in languages that only high-ranking initiates are able to decipher, even today (Faye 1997; Diouf 2016). The fact remains, nevertheless, that there is huge unexploited potential here, just as there is for many ancient texts written in Arabic. The theory proposed by Gallay undoubtedly contains a number of biases and shortcuts but cannot be reproached for its coherence or considerable erudition. In particular, it is based on a revision of the data that Thilmans interpreted as evidence of human sacrifice, and which Testart associates with his concept of 'accompanying deaths'. It is unusual for a society to simultaneously inhume several individuals in the same grave, except in the case of ritualized human sacrifices, or when an important person is accompanied in the grave by members of his family, or his entourage. In the latter case, there is no offering or sacrifice to a higher power, but a certain continuity beyond death with what existed during the lifetime of the deceased (Testart 2004: 31). However, the absence of the most charactistic feature of such burials, (i.e., important figures buried with their entourage) among the archaeological data from Senegambian megalithism prompts us to limit this hypothesis (Cros *et al.* 2013). In the western zone, multiple burials represent barely 3% of the minimum number of individuals buried. This does not take into account the observations made in the 1970s at several sites in the central and eastern zones, for ten monuments at most, which have not since been confirmed.

It is important to bear in mind that the builders of the megaliths had domesticated the dog, and practised metallurgy, and perhaps also agriculture and animal husbandry despite the absence of direct evidence, that they lived in lineage societies with age classes, and most probably had an 'animist' religion, as is frequent in West Africa. For Gallay (2015), this represented the source of a warlike despotism motivated by increased competition from segmented, semi-state societies in search of large numbers of slaves. The latter observation, however, was based on the presence of accompanying deceased in the graves. In addition to the observations made in the central zone, which would merit extension

and updating, the main supporting argument here concerns the deplorable state of the dentition of about 40 individuals whose corpses were deposited directly under the stone carapace that seals the tomb of Sarré-Diouldé (4). As regards the contemporary traditional societies previously quoted for comparative purposes, Nolan also describes the Bassari society as 'military', directed by a 'gerontocracy' of 'priests' rather than by village chiefs, with ostentatious attributes but whose powers remain, all in all, very limited. The very large number of weapons among the funerary goods collected in the sepulchral zones underlying the megaliths of Senegal and Gambia also points in this direction.

5. Conclusion

The megaliths of Senegal and Gambia are often presented as the fruit of a vanished civilization, yet they are gradually finding a place in the history of research that they have never abandoned on African soil. Some would like to view them as ancient monuments, perhaps from the beginning of our own era, and consider them as proof of the resilience of populations martyrized by European colonization. Others highlight the links binding them to a much more recent history, documented mainly for Sahelian zones, and view them as the starting point of a rich trans-Saharan trade. An update of the available data tends to point towards a grey area, from both a geographical and chronological perspective, about halfway between these two opposing theories. References are now also directed towards societies and populations living in southern forested areas and towards a contemporaneous period of an ancient Ghanaian 'empire' with extremely blurred contours and historical foundations. Nevertheless, all seem to agree on the extent of the upheavals that may have taken place during the 11th century CE, perhaps linked at least indirectly to the southward thrust of the Almoravid incursions and well before the emergence of a vast 'empire' in Mali during the 13th century CE. It is in this context that certain populations would have begun to build the monumental stone tombs between Saloum and Gambia, which still mark the landscape of the Senegalese landscape today. But much remains to be done to expand our knowledge of the subject.

Translated from French
by Louise Byrne

(4) In this study, Khayat also focused on a few individuals presenting dental mutilation, including pointed incisors, which are common in contemporary populations such as the Diola, Mandjak and Bassari, among others in Africa (Thilmans *et al.* 1980: 132).

Earthern architectures and megalithism: the Soto monument (Senegal)

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1. Introduction

Since 2015, archaeological research carried out by Laporte and Bocoum on the site of Soto (Kaffrine region, Senegal) has offered new insights into the funerary tomb structures, known as *Mbaanar* which, until this work, were poorly studied (**Fig. 3**). These monuments are large pits filled by earthen mounds with a wide variety of architectures (Martin & Becker 1984). In the central-western region, some can reach several tens of metres in diameter, with a maximum height of 9 m (e.g., Wago Fall). Others form only discrete rises about 0.5 m high, barely perceptible in the landscape. Within the area of Senegambian megalithism, frontal stones erected on the eastern periphery sometimes complete the architectural device.

In Mbolop Tobé (Santhiou Kohel) (**Fig. 1**), excavations revealed the presence of four peripheral ditches, excavated successively, the embankments of which contributed to form the central earthen mound (Gallay *et al.* 1982). These clues led the authors to compare the structures to the funerary monuments known as lomb, still erected in the modern period by the Sereer population (Becker & Martin 1982). Unfortunately, no coherent radiocarbon dating could chronologically locate these archaeological features and the most recent studies do not provide much clarification of the whole phenomenon (Holl & Bocoum 2017).

In Soto, the bifid or 'lyre'-stone originally erected on the eastern side of the monument was removed in 1966 (**Fig. 2**), as were two others at Djigui Tioker

Fig. 1 – Earthen funerary tumulus with a frontal stone from Mbolop Tobé (Santhiou Kohel) (Credit: archéo-gallay.com).

Fig. 2 – Lyre-stone in front of an earthen tumulus from Soto before its extraction (Credit: Archives Cyr Descamps).

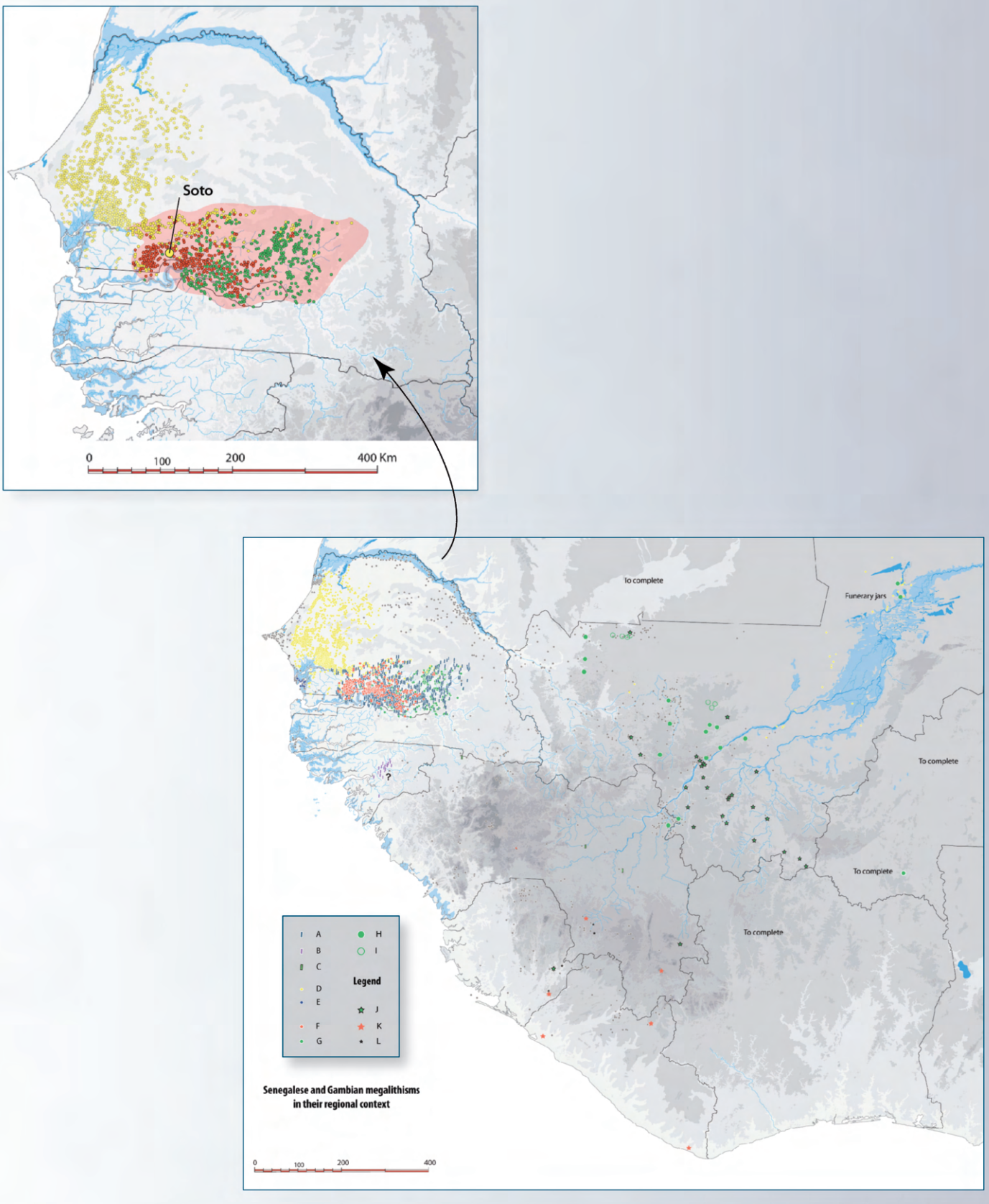

Fig. 3 – Localization of centre-western tumulus region (light yellow), earthen mounds (bright yellow), and Soto in the Senegambian megalithic area and among West African megalithism (Laporte *et al.* 2017).

and Keur Ali Ngane, now exhibited in Dakar and Gorée museums respectively. The Soto stone today stands within the Musée du Quai Branly - Jacques Chirac in Paris, France. The precise archaeological contexts of these stones remained unknown until recently.

2. Geophysical surveys in Soto

The site of Soto, which includes several burial mounds, is located about 10 km southwest of the present-day town of Kaffrine. In 2016, a campaign of geophysical surveys including electrical resistivity, magnetic survey and radar was carried out by four of the authors (Camerlynck, Camus, Boulinguiez and Laporte) on a monument apparently devoid of a frontal stone. Electrical and ground-radar measurements both indicated a central 'argillaceous anomaly'. Magnetic survey revealed a discontinuous peripheral ditch and some hollow structures (**Fig. 4**).

3. Revealing a funerary monument with cob walls

Initial explorations in 2017, followed by extensive archaeological excavations in November 2018 and April 2019, enabled us to unearth the entire monument (**Fig. 5a**): an oval-shaped earthen architecture, approximately 25 m in diameter and at least 1.5 m in height, erected at the centre of a large circular pit and surrounded by several discontinuous ditches. Some of these ditches are clearly overlapped by other hollow structures and thus indicate different phases in the development of the monument. Additional clues of diachrony have been recorded on the central earthen tumulus. Here, multiple layers of earth, appearing as superimposed steps, contribute to the elevation of a cob-built structure.

4. First geoarchaeological study

Two trenches highlighted the stratigraphy of the monument from its foundation and allowed us to investigate different stages of its history. Pedo-sedimentary characteristics discriminate several facies of the earthen architecture. The deepest 'argillaceous anomaly' identified during geophysical surveys formed a dome of about 7 m in diameter, probably surrounded by a palisade of 10 m diameter. This dome was subsequently covered by a construction of superimposed steps of earth layers on the top of which a vertically planted iron spearhead was found (**Fig. 5b**). These steps were overlaid by materials similar to those used for construction, suggesting progressive erosion of the architecture. Other clues indicate a rapid collapse of part of the funerary architecture after it was abandoned. Micromorphological soil analysis will complete this first geoarchaeological study and will specify which construction techniques were used. Strategic samplings were carried out in this direction (**Fig. 5c**).

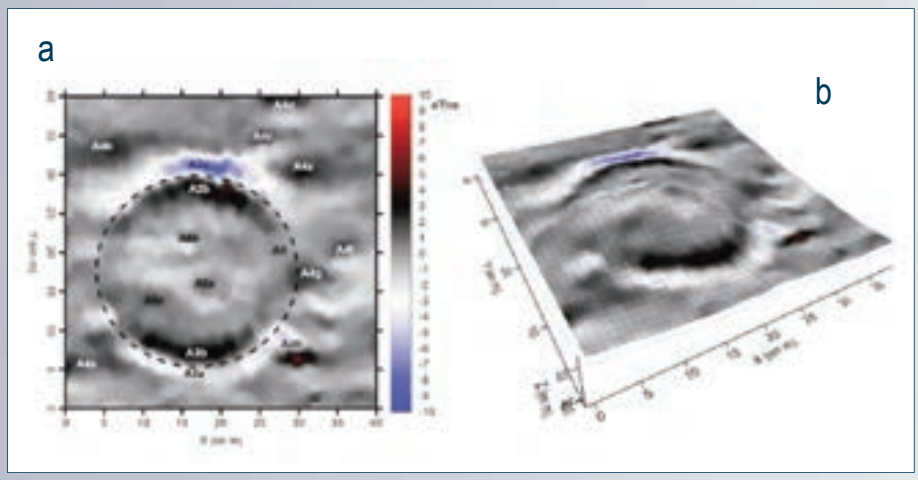

Fig. 4 – Maps of Soto monument showing magnetic anomalies on the tumulus in plan (a), and with topographic information (b).

Fig. 5 – a. Monument of Soto during excavations and location of the spearhead (b) (Photos: L. Laporte); c. Geoarchaeological block samplings (Photo: M. Onfray).

5. Itinerary of a monumental bifid stone from Senegal to France

The excavations carried out in Soto finally led us to confirm the presence of a monumental stone on the northeastern edge of the earthen tumulus. Although the large oval depression is surrounded by a protohistoric ground level composed of lateritic gravels and numerous pottery sherds (**Fig. 6a, b**), dark soil filling its central part clearly indicates a modern perturbation. The archaeological evidence corroborates local oral testimonies and 1960s photographs of the excavation of the lyre-stone which now stands in the museum in Paris (**Fig. 6c**).

6. Conclusion

This multidisciplinary research programme revealed, for the first time in West Africa, a completely unsuspected monument. Although these funerary monuments were seen only as small sandhills during the last decades, our research exposed instead an idea of hidden ostentation associated with a more classic monumental device: the lyre stone, which is today on view to millions of visitors.

Translated from French
by the authors

Fig. 6 – a, b. Ancient lyre-stone implantation pit associated with a protohistoric ground level (Photos: L. Laporte); c. The Soto lyre-stone in the Musée du Quai Branly - Jacques Chirac in Paris, France (Photo: A. Delvoye).

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Alain GALLAY (†)

Types of monumentalism and burial rites of the central and eastern Sahara

Abstract: This paper adopts the chronology of rock art styles defined for the central Sahara, the Hoggar Mountains, the Tassili n'Ajjer plateau, the Acacus Mountains and the Messak plateau. Despite its inaccuracies, this sequence is the best available reference for organizing the information available on the development of burial rites on a large scale, the exceptions being the eastern Sahara and the Nabta Playa region. The analysis concentrates on the history of the peoples belonging to the two language families that are present – the Nilo-Saharan languages and the Afro-Asiatic languages, including the Berber branch – and their relationships with the burial rites. All the graves contain single burials. Research started in the 1950s and peaked in the 1990s-2000s. From the 2010s onwards, field research ceased because of the lack of security in the area, but overview work continued.

Keywords: *Sahara, megalithism, rock art, Berber, Tuareg, Fula,* bazinas*, cattle, Nabta Playa, Gobero, Garamantes, history of research*

The overview presented here concentrates on the central Sahara, the Hoggar Mountains, the Tassili n'Ajjer plateau, the Acacus Mountains, the Messak plateau and the peripheral massifs of Adrar des Iforas, Aïr, Tibesti and Ennedi, and the Nabta Playa basin in the Egyptian Desert. The lack of archaeological data in many of the regions studied makes it difficult to establish sequences specific to monumentalism. The scenario proposed here therefore incorporates data stemming from rock art and population genetics. Moreover, only in very rare cases do the monuments have megalithic components in the strict sense, which prompts us to use the more general term of monumentalism.

1. History of research

Initial research was carried out in the 1940s (two titles published) and mainly concerned the Abalessa monument in the Hoggar Mountains (Reygasse 1940). The 1950s (five titles) witnessed the first investigations of the Tassili paintings including recordings made by Henry Lhote and his team (Lhote 1958) which made it possible for a broader public to discover the artistic richness of this area. During the same period, Fabrizio Mori started archaeological research in the Acacus Mountains (Mori 1965), while Théodore Monod (1958) published his investigations in the Majâbat al-Koubrâ desert.

The 1960s (15 titles) saw a geographical extension of the area of research. The Berliet mission (Hugot 1962) yielded initial information about the Ténéré. Gabriel Camps (1969) excavated the Amekni rock shelter whilst the present author carried out surveys at the Azawad sites north of Timbuktu (Gallay 1966). In the 1970s (11 titles), the first overviews concerning the Acacus Mountains were published

by Mori (1978). In the 1980s (24 titles), Nicole Petit-Maire organised several surveys in the Malian Sahara (Petit-Maire & Riser 1983) whereas Jean-Pierre Roset (1983, 1984, 1987, 1988) and François Paris (1996, 2000) started their research in the Aïr Mountains.

During the 1990s (52 titles), the number of publications significantly increased, notably related to the investigations carried out by Fred Wendorf at Nabta Playa (Wendorf *et al.* 1996; Wendorf & Schild 1998) and by Christian Dupuy (1998) in the Adrar des Iforas. Malika Hachid (1998, 2000) accomplished pioneering work by carrying out two large overviews including archaeology, rock art, monumental constructions and ethnology from the perspective of Berber history. Le Quellec inaugurated a series of studies on rock art which continue up to the present day (Le Quellec 2008, 2009, 2013, 2014). Research carried out in 1956 by Gérard Bailloud on the Ennedi was not published until 1997.

The number of publications in the 2000s (53 titles) was equally high and included the studies of Yves and Christine Gauthier (Gauthier & Gauthier 2003, 2004) on monumentalism, and of David Mattingly (2003, 2007) on the Garamantes. The interest generated by the Wadi Howar area from the perspective of settlement history (Kuper & Kröpelin 2006), the discovery of the Gobero cemetery (Sereno *et al.* 2008) and Italian research carried out on Tanezzuft (Di Lernia & Manzi 2002) should also be noted. Le Quellec, together with Pauline and Philippe de Flers (Le Quellec *et al.* 2005) published reflections about rock art that covered the entire Saharan region.

In the 2010s (13 titles) several overviews again covered local issues such as the periodization of the Messak sequence (Le Quellec 2013). Increasing insecurity in the region, however, heavily impacts current field research.

2. Spread of husbandry across the Sahara

The spread of domestic cattle (Smith 1980) from east to west shows a significant chronological gradient. A critical analysis of the available radiocarbon data and the rejection of certain doubtful dates allowed Le Quellec (2013), following Jousse (2004), to map the earliest presence of cattle across the Sahara. The resulting map argues in favour of an east-west spread and therefore of possible migrations of populations that accompanied the cattle, and this is confirmed by the linguistic data. Nowhere in the Sahara are domestic cattle attested prior to the 5th millennium, so the paintings depicting cattle cannot, therefore, be attributed to an earlier date. The dates for cattle range from 7000-

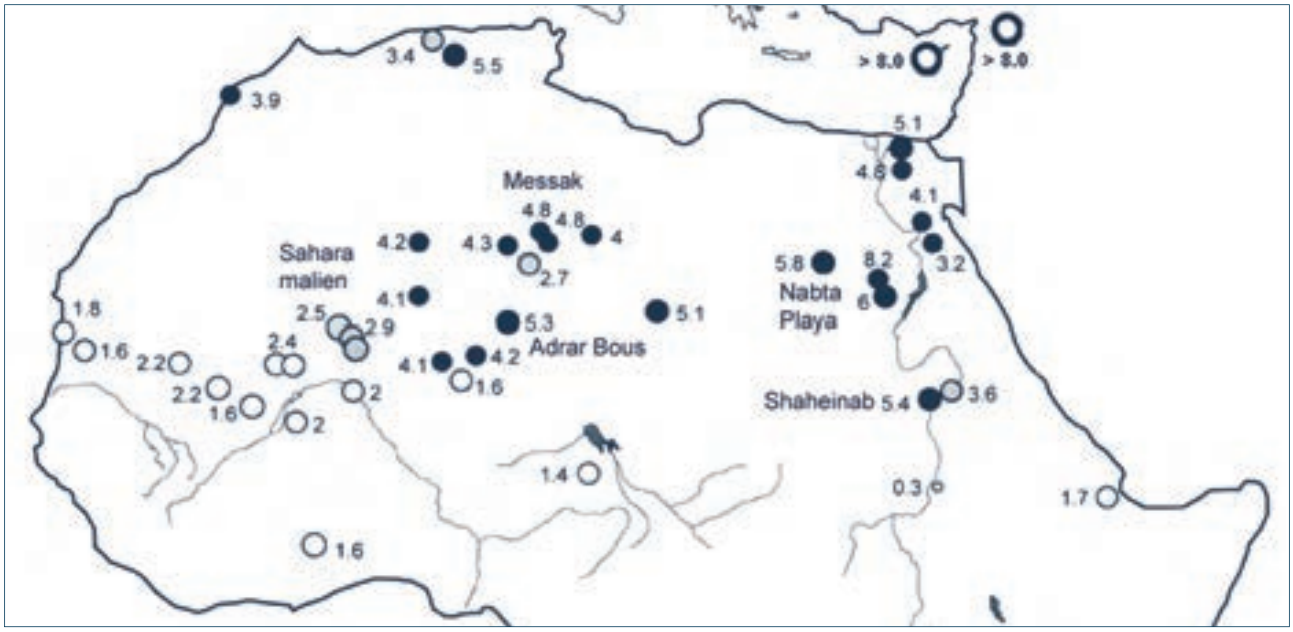

Fig. 1 – Progressive spread of domestic cattle in tens of centuries BC (5.3 = 5300 BC). The black, grey and white circles illustrate the temporal gradient of this diffusion (Jousse 2004: fig. 5; Le Quellec 2013).

5000 BC for the Egyptian desert, 5000-4000 BC for the central Sahara (Tassili n'Ajjer, Acacus Mountains, Aïr Mountains), 3000-2000 BC for the Adrar des Iforas and 2000-1000 BC for the centre of Mali and Mauritania. It thus becomes clear that increasing aridity favoured the southwards expansion of pastoral nomadism to the southern part of Mauritania and Mali at the end of the 3rd millennium BC (**Fig. 1**).

3. The Nabta Playa site as a reference

The Nabta Playa reference (Wendorf & Schild 1998) presents a threefold interest: first, regarding the hypotheses that can be advanced with regard to the development of the Nilo-Saharan phylum; second, regarding the issue of the origin of Early Neolithic cattle breeding; and third, regarding the issue of megalithism present during the Late Neolithic. I propose here a re-evaluation of the sequence based on linguistic studies carried out by Ehret (2011) incorporating linguistic differentiation, the emergence of cognates – i.e., words with a common etymological origin within the same language or in several languages in relationship with cultural innovations – and a correlation with archaeological chronology (**Fig. 2**).

The small number of of cattle remains which can be dated to the Early Neolithic (8850-7550 BC) are problematic in many regards. Gautier (2001) advanced the hypothesis that these belong to a domestic species. Lesur-Gebremariam (2009) is less categorical and admits that this is a diagnosis based exclusively on ecological criteria. The water resources at that time were indeed insufficient for wild cattle, which need water on a daily basis. This context of relative dryness required the herds to be brought to temporary water points by people.

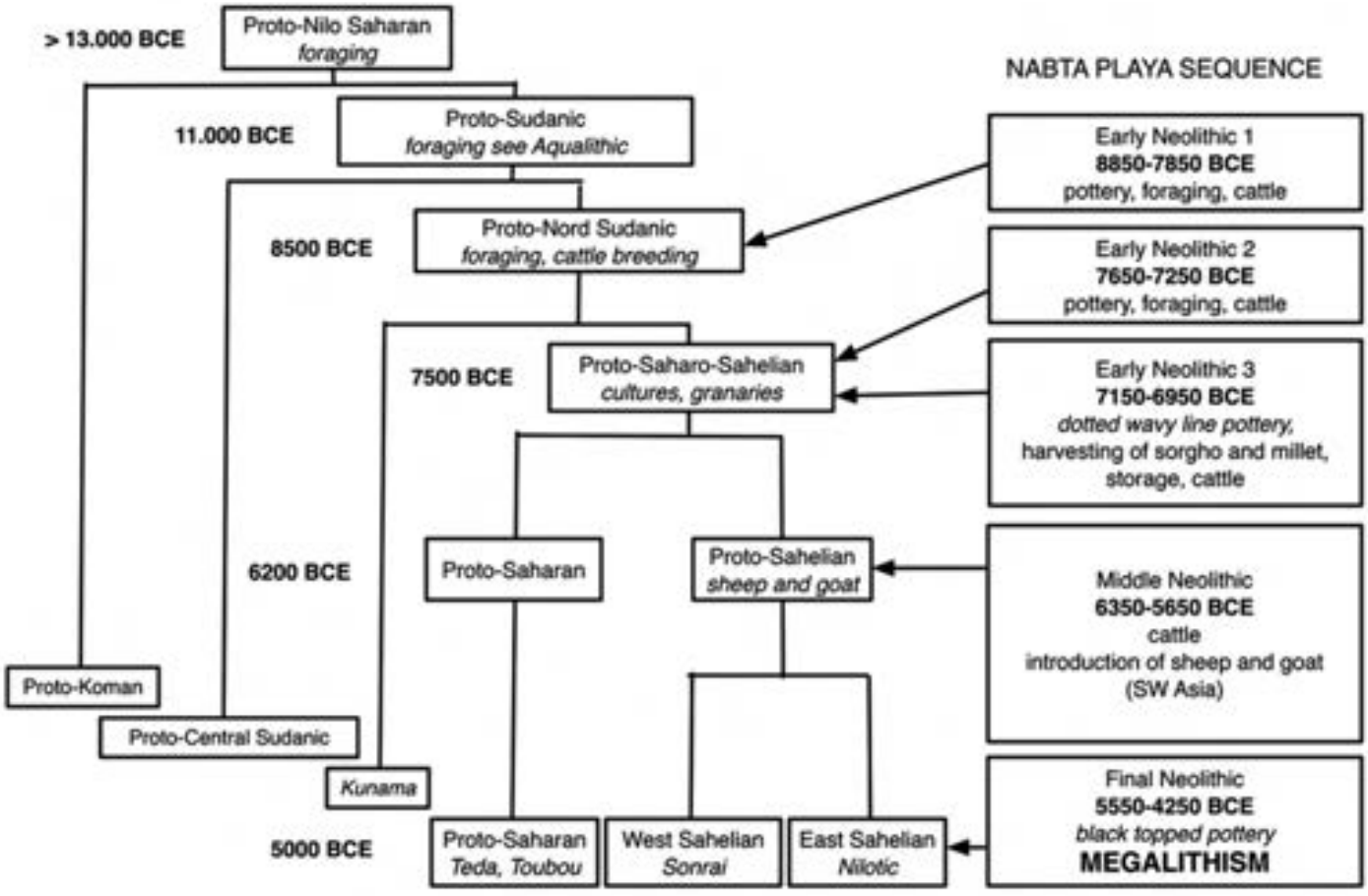

Fig. 2 – Correlation between the archaeological sequence of Nabta Playa (Egypt) and the development of the languages of the Nilo-Saharan phylum according to Ehret (© Gallay, modified after Ehret 2011 and Wendorf & Schild 1998).

According to Brass (2013), three models are proposed: that advanced by Wendorf (Wendorf & Schild 1998, 2001) based on the data from Nabta Playa in favour of very early domestication, independently of the Near East; that advanced by Smith (2005) in favour of a late origin from the Near East, in parallel to the introduction of sheep and goats, and, lastly, the model advanced by Brass himself (2007) in which cattle were introduced at a late date, at the same time as sheep and goats, although the species would have merged with local wild cattle already under human control.

The 'megalithism' evidenced for the Final Neolithic period (5550-4250 BC) also raises questions given the alteration of the remains on the ground and the unusual character of certain features. The alignments of small standing stones and a heavily modified circular feature have been interpreted as an astronomic observatory. The state of preservation of this stone circle, which required the restoration of the scattered, very small stones to their supposed original positions, make it impossible, in my opinion, to define significant alignments at the astronomical level. A strange feature, linking an above-ground tumulus, a massive buried stone and bedrock shaped into a circular basin can also be mentioned, as well as a cattle burial beneath a small tumulus.

Despite its imperfections, the sequence of the central Saharan rock art figures serves as a general temporal framework because there is no other reference which can be applied to the entire Saharan region based on other cultural criteria (for example, pottery or lithics). Moreover, the climatic fluctuations present too many regional variations and are too difficult to

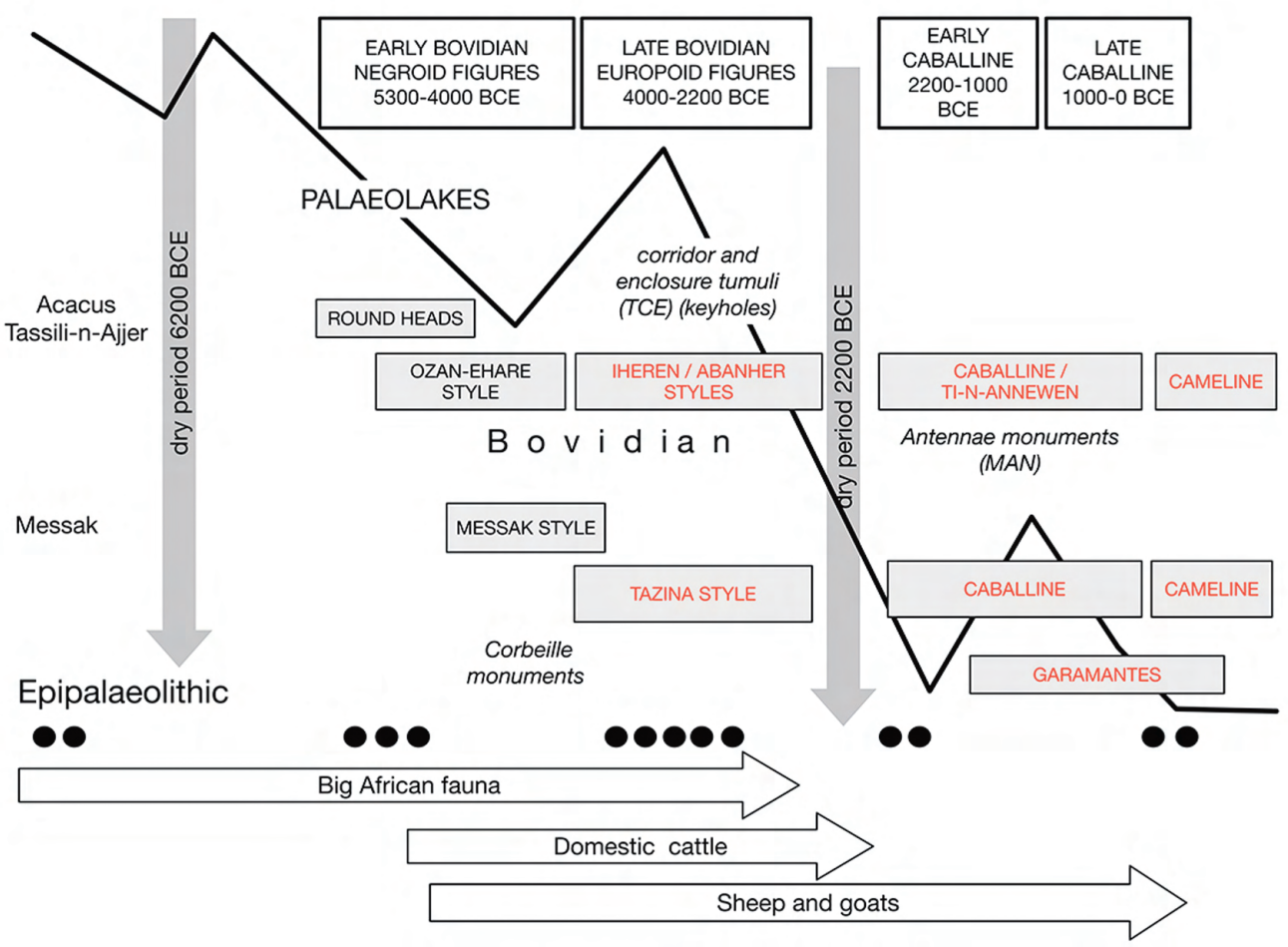

Fig. 3 – Calibration of the identified chronological stages with the evolution proposed by Le Quellec (2013). In black, styles related to southern populations; in red, styles related to 'Europoid' populations (© Gallay).

interpret and therefore cannot serve as a general chronological framework. Some inspiration can be found in the schema proposed by Le Quellec (2013) who, for the central Saharan region, advances a stylistic evolution correlated with the climatic fluctuations and with distinct types of monuments (**Fig. 3**).

4. Early Holocene prefigurative stage <6200-5300 BC

A particularly humid period can be identified from 9000 BC onwards in the Malian Sahara and around 8000 BC in Niger. This corresponds to a major occupation of the Saharan regions by Epipalaeolithic populations, still oriented towards a foraging economy but already familiar with pottery. All the tombs of this period contain burials in a crouched position, set within pits lacking superstructures.

Research carried out by an Italian team in the **Tadrart Acacus** mountain range identified two chronological stages in the Ti-n-Torba rock shelter: a lower Epipalaeolithic or Early Acacus level of 8550-7950 BC (Barich 1987; Garcea 2001) precedes an upper Mesolithic or Late Acacus level of 7940-7540 BC associated with the generalization of pottery.

In the Hoggar Mountains, the earliest occupation levels of the sites of Amekni (8250-7450 BC; Camps 1969), Tin-n-Hanakaten, and Fort Launey (8250-7300 BC; Camps *et al.* 1973) yielded impressed pottery and dotted wavy line pottery. Three burials were identified in the Amekni rock shelter (Camps 1969).

In Niger, the Temet site yielded a lithic industry including Bir Ounan points dated to 9250-8600 BC and 7950-7350 BC. A comb used for pottery decoration attests to the practice of this craft. The Adrar Bous 10 site contained pottery, grinding material related to the gathering of wild grasses (Roset 1987) and an identical lithic industry which made it possible to define the Kiffian culture (8550-8240 BC). A pre-pastoral culture developed on the shores of the palaeo-wadis of the Aïr Mountains and the Ténéré, for example the site of Tagalagal, the pottery of which is dated to 9150-8250 BC and 8550-7750 BC (Roset 1983).

The Malian Sahara was settled from 7500 BC onwards. The assemblages are characterized by an Epipalaeolithic industry including Bir Ounan points and by plain wavy line pottery. Individual burials without protective structures were set within shell middens.

In the Gobero cemetery in Niger, the climatic optimum occurred from 7700-6600 BC onwards, following a hyper-arid period between 14 000 and 7700 BC. The cemetery is dated to 7000-6200 BC and can be assigned to the Kiffian culture, including dotted wavy line pottery (Sereno *et al.* 2008). A second cemetery can be attributed to the Tenerean culture (5200-500 BC).

5. The round heads period: 6200-5300 BC

The Holocene climatic optimum (7000-6000 BC) was followed by a first arid period (Mid-Holocene dry, 6000-4500 BC) during which early rock paintings appeared. This dry phase reached its peak in around 5000 BC. It is associated with the so-called 'Round Heads' period of rock art, a denomination introduced by Henri Lhote at the Tassili n'Ajjer, and which corresponds to the earliest paintings currently known in the central Sahara (Lhote 1958; Le Quellec 2013) and which can also be found in the Acacus Mountains (Gauthier & Gauthier 2005; Le Quellec 2008). They seem to develop between 6200 and 5300 BC, when the aridification became established. Domestic cattle, although particularly rare, are occasionally depicted (Faleschnini *et al.* 1996; Le Quellec 2013: fig. 9). The images of hands that sometimes accompany these paintings may be of an earlier date.

The issue of the spread of this style beyond the central Saharan massifs has been the subject of numerous discussions. Analogous but not identical rock art figures can be found in many regions: in the Ennedi (Bailloud 1977; Faleschini *et al.* 1996); in Niger on the Djado plateau; in the southern part of the Libyan desert at the Djebel el-'Uweynat and in the Wâdi Sora region (Le Quellec 2009); and in the northern part of Sudan where Kröpelin (2004: figs. 14 and 16) indicates figurations associated with a palaeo-lake in the 'Dry Selima' depression. An early stage comprises similar figures with round heads associated with wild fauna. Almost all authors

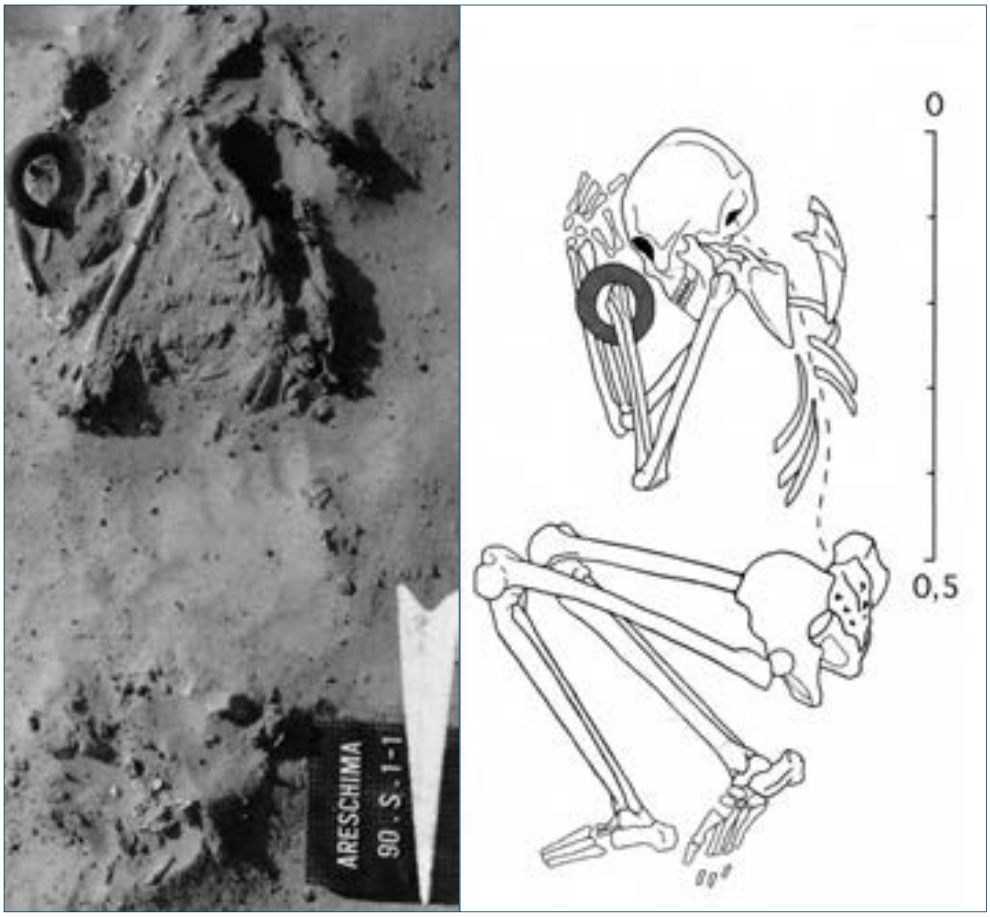

Fig. 4 – Areschima (Niger) RSHS1 H1 (Paris 1996: index card 69).

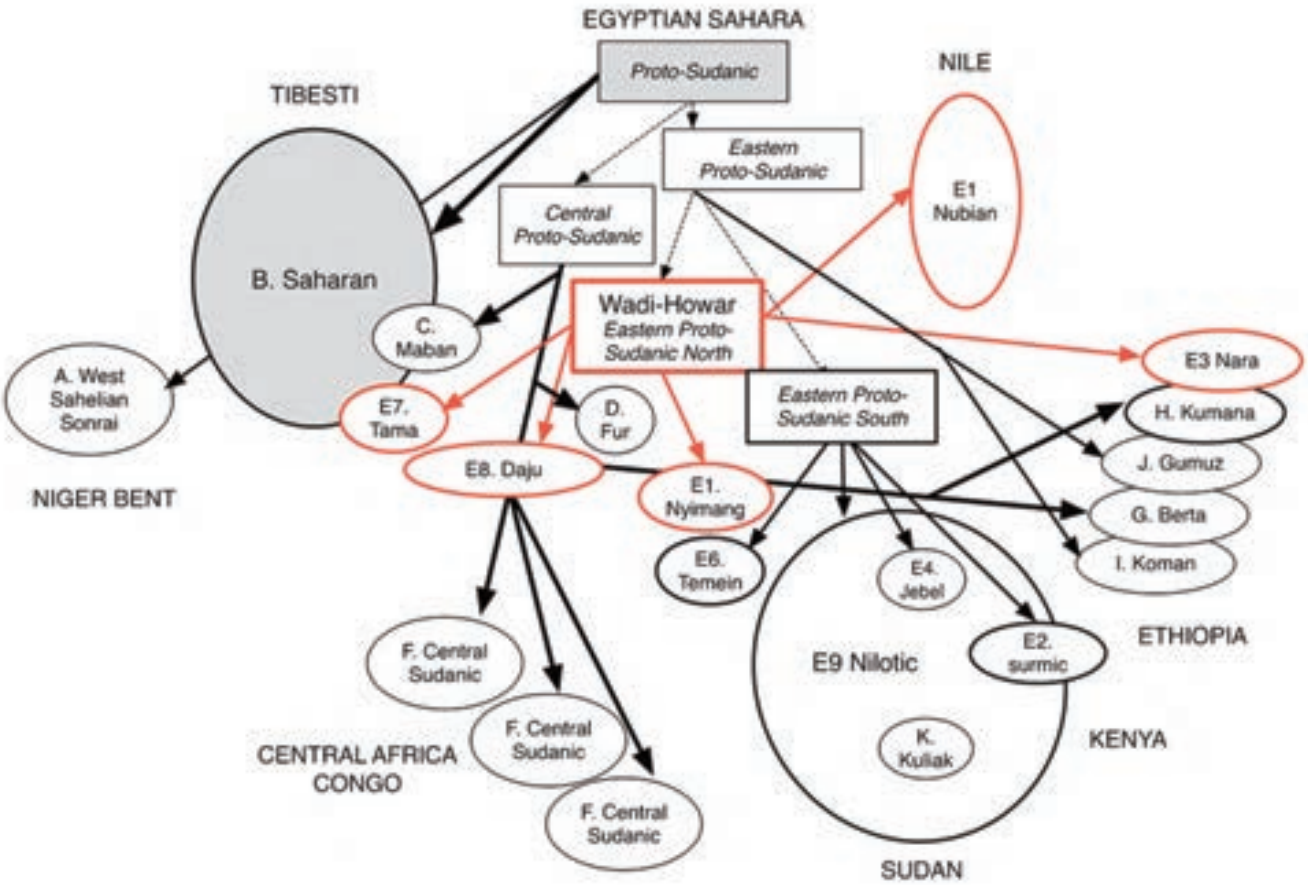

Fig. 5 – Spread of the Nilo-Saharan phylum. In red: families of the oriental North Sudanic stemming from the diaspora of the Wadi Howar area. In grey: languages of the Saharan family associated with the Round Heads rock art style. The origin of the oriental South Sudanic from which stem the Nilotic languages is not specified (© Gallay).

acknowledge the 'negroid' character of this iconography and suppose them to be produced by black populations (Soleilhavoup 2005).

The question of whether the denomination 'Round Heads' should be restricted to the central Sahara, Tassili n'Ajjer and Tadrart Acacus, as proposed by Le Quellec is, in my opinion secondary and depends on how this phenomenon is defined. Indeed, an essentialist vision of the issue should be abandoned and an intrinsic level of description should be defined, which is likely to be interpreted at the extrinsic level, in this case from a historical perspective.

Not a single burial or megalithic monument can be attributed directly or indirectly to this stage. In the Aïr Mountains, a region in which the chronology of monumentality is well established, the period 6000-4700 BC is represented exclusively by single earth burials lacking superstructures, for example at Iwelen (5955-5350 BC) or Areschima (5360-4910 BC) (Paris 1996 and **Fig. 4**).

What languages were spoken by the populations who made these figures? The simplest hypothesis would be to associate them with the populations of the Nilo-Saharan phylum (of which the Toubou people are the present-day descendants) at the level of the Saharan family precociously derived from the Proto-Sudanic present in the Egyptian Sahara. In the absence of palaeogenetic data, caution is needed with regard to such assertions (**Fig. 5**).

6. Early Bovidian phase with 'Negroid' figures [1]: 5300-4000 BC

This period, which corresponds to the end of the Mid-Holocene dry phase, is characterized by a significant increase in rainfall as early as 4500 BC, and the considerable spread of stock breeding in the central Sahara between 5300 and 4400 BC. Two rock art styles are found in the region. The Ozan-Eharé style (or *Sefar-Ozaneare*; Muzzolini 1986) occurs mainly in the numerous rock shelters of the central Tassili n'Ajjer plateau but also to the east, in the Wadi Ertan (Rothert & Kuper 1981). The paintings depict exclusively 'Negroid' individuals. The Messak style includes mostly engravings: 'Bovidian' figures are found in the Adrar des Iforas, in the Aïr Mountains (Dupuy 1988) and the Ennedi (Bailloud 1997), but these are poorly dated and although, globally, they preceded the Caballine engravings (see below), they probably overlap with the subsequent period.

In the central Sahara, early funerary monumentalism, which also concerns cattle, emerged during the Bovidian period. In the Aïr Mountains, tumuli of small stones – Paris denotes these 'TSS' (4600-300 BC) were built alongside simple earth burials (5500-4700 BC). They contained single burials in a crouched position (Paris 1996).

Small tumuli built with small stones covering the remains of cattle are also found in the Tenéré. Paris (2000) indicates such constructions at the Tenerean culture site of Adrar Bous AB S1, north of the Adrar-n-Kifi. A first stone tumulus (T1) covered the connected remains of a bovine; a second, (T2), dated to 5100 BC, the remains of another bovine in a very poor state of preservation. Two isolated human burials without stone-built superstructures were located nearby (Paris 1996: 131 and index card 67).

From the same perspective and still in the Adrar Bous, the site of Agoras n'Tast yielded the complete articulated skeleton of a bovine dated to 4681-1961 cal BC (Gifford-Gonzalez 2008: Fig. 12.1) as well as disarticulated bones including an assemblage located in a well and covered by stones (Paris 2000). During this period, cattle burials with varying degrees of articulation were placed beneath small stone-built tumuli, as distinguished from simple single human burials set in a pit without a superstructure.

The most spectacular monuments, dated to between 4500 and 4000 BC, are located in the Messak (**Fig. 6**). This is a rare monumental complex with a perfectly established correlation with the rock art figures of the Messak style (Gauthier & Gauthier 2004). These figurative engravings include oval-

(1) In this contribution the opposition between Negroid and Europoid population, widely used in the literature, was maintained. More politically correct designations should involve ethnically neutral terms connected with Mediterranean and Sahelian populations.

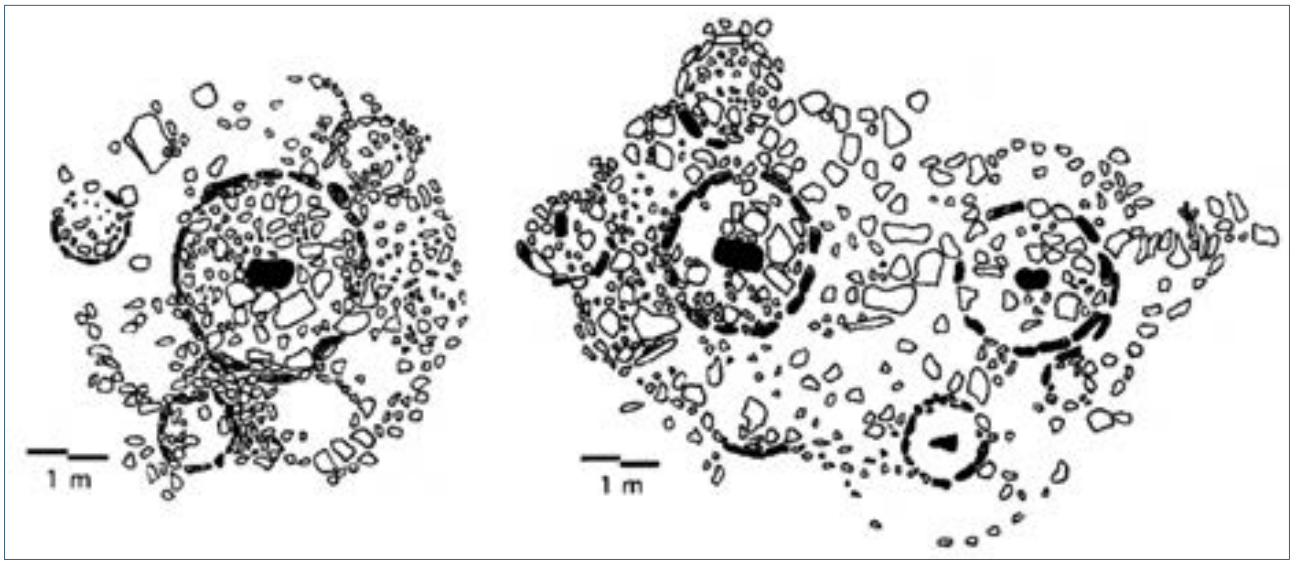

Fig. 6 – Messak (Libya). 'Corbeille' monuments (Gauthier & Gauthier 2004: fig. 3a).

shaped signs, domestic and wild animals and some human figures. Domestic animals dominate (80%). The stelae are of greatly varying sizes and their height above ground can reach 1 m. Some bear fine engravings in the Tazina style (Soleilhavoup 1997). We believe that there is no reason to consider these to be of a later date, which confirms distinct overlapping between the Messak style and subsequent Tazina style.

A funerary purpose is not supported for the 'corbeille' ('basket') type of monuments, the only examples that have been subject to excavations. In the absence of human remains, the massive presence of domestic fauna and, more rarely, of wild fauna including calcinated bones, encourages us to interpret these monuments as the manifestation of rituals that involved cattle, sheep and goats. The publication relating to the site of In Habeter mentions a pit filled with the bones of an adult bovine and pottery sherds, topped by an upright stela dated to around 4000 BC.

South of the Aïr Mountains, the second cemetery of Gobero (5200-2500 BC), which can be assigned exclusively to the Tenerean culture, contained burials in a crouched position set within a pit (Sereno *et al.* 2008: figs. 5 and 7).

In short, the development of Messak megalithism and the other burials associated with cattle remains can be dated to the same time span as the development of megalithism at Nabta Playa. It is therefore likely that we are still dealing here with the Nilo-Saharan phylum. However, it cannot be confirmed whether the transition from the Round Heads to the Bovidian styles represents a rupture in the settlement processes.

7. Late Bovidian phase with 'Europoid' figures: 4000-2200 BC

The end of the Mid-Holocene dry phase coincides with increasing rainfall from 4500 BC onwards; the Neolithic humid phase is dated to between 4500 and 3000 BC. This period is characterized by the arrival of new populations from the north, related to the ancestors of the Berber people, i.e., the Afro-Asiatic phylum. This expansion can be correlated with the Tazina style of rock art (**Fig. 7**). The distribution of these engravings is notable for its extensive spread, one of the largest of all the Saharan rock art styles, and the largest in this area. The engravings are distributed around two poles: a northwestern pole towards the Atlantic and a central Saharan pole which extends from the Messak to the eastern edges of the Ténéré. Tazina rock art can also be found in the Aïr Mountains and on the Djado plateau but is completely absent from the Adrar des Iforas, the Tibesti and the Ennedi (Muzzolini 1995; Gauthier *et al.* 2010; Le Quellec 2014).

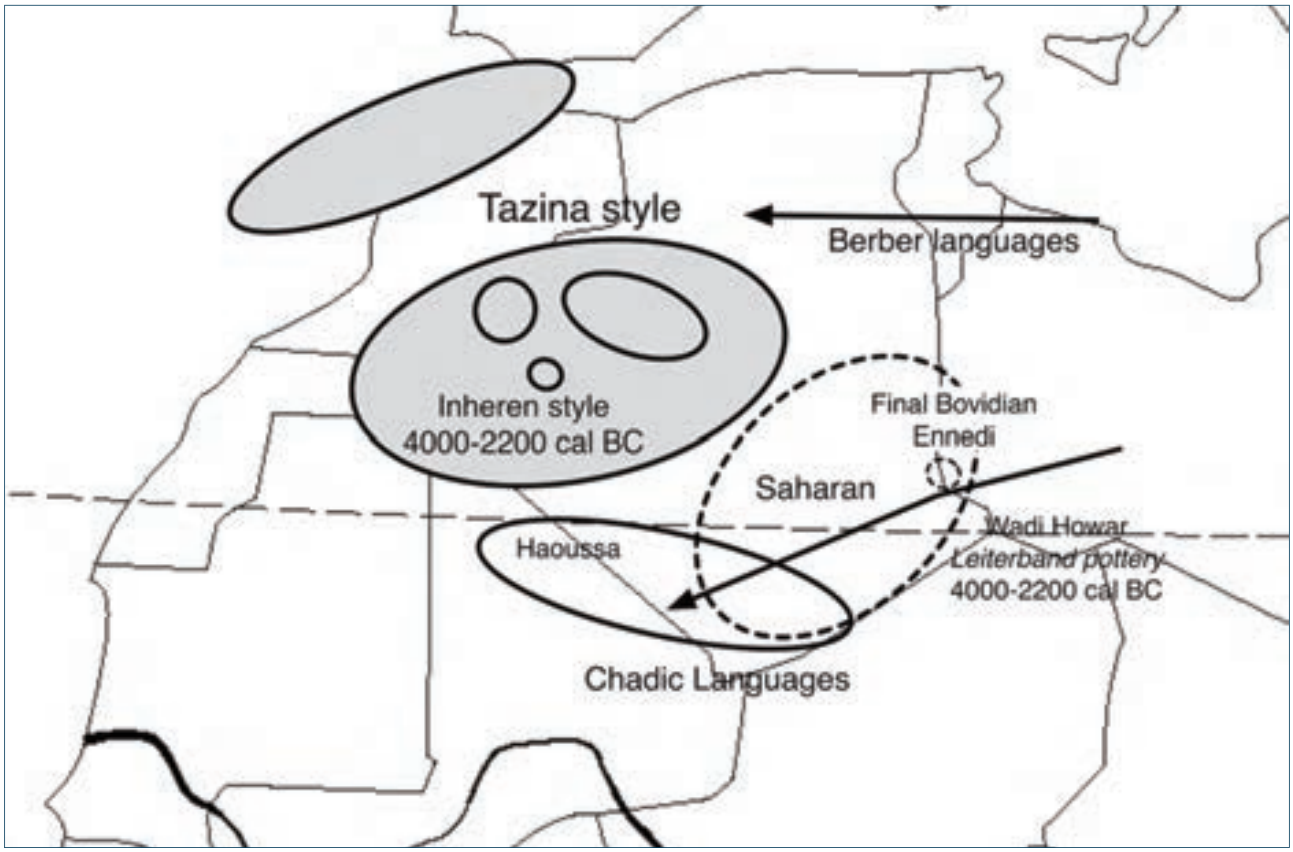

Fig. 7 – Spread of the Tazina style of rock art and the early spread of the Berber languages (© Gallay).

Various styles, related to differing degrees with the Iheren style (or Iheren-Tahilahi) are scattered across the central Sahara. These include the Ti-n-Abaher (Abaniora & Muzzolini 1986), Uan Amil (Mori 1978) and Uan Tabou styles. There is agreement about the identification of the human figures depicted in all of them as 'Europoid', however, uncertainty regarding the dating creates huge difficulty in terms of ordering these multiple pastoral styles in relation to each other.

As regards the funerary rites, single burials beneath small tumulus emerge between 3500 and 3200 BC, for example in the Malian Sahara (Petit-Maire & Riser 1983) and La Frontière cemetery, in which the buried individual was surrounded by large pottery sherds (Mauny *et al.* 1968; Gaussen & Gaussen 1988). During this period, multiple forms of monumental constructions emerged, of which only very few can be dated with accuracy and/or related to rock art styles. A reference list published by Paris (1996) for the Aïr Mountains is restricted to the central Sahara **(Fig. 8)**. These monuments are designated *Adebni* (pl. *Idenân*), corresponding to the term *edebni* which is used by archaeologists to describe the protohistoric funerary monuments of the Sahara (Camps 1985).

From 4000 BC there was a coexistence in Niger between this important funerary monumentalism found in cemeteries that also included single burials set in pits without superstructures and burials of animal remains, more particularly cattle, also without superstructures; these two burial types are not directly connected by the same funerary activities. The presence of cemeteries exhibiting these two fundamentally different funerary rites is notably visible in the Ighazer plains east of the Aïr Mountains, where cemeteries including single burials and animal burials such as Chin Tafidet coexist with the emergence of crescent-shaped tumuli (Paris 1996: 1, 305, fig. 85). This situation, which continues until the 2nd millennium BC, is difficult to interpret. The following two hypotheses can be advanced: either the cemeteries containing single burials are related to the persistence of

		Late Bovidian with 'Europoid' figures	Early Caballine	Late Caballine	Camelline
		4000-2200 BCE	2200-1000 BCE	1000-0 BCE	0-1000 AD
	Pit graves and animal burials	**Chin Tafidet**	**In Tuduf Afunfun**		
TCE	Corridor and enclosure tumuli	+++			
TEC	Crescent-shaped tumuli	+++			
PCG	Cylindrical platform cairn	+++	++		
TTP	Conical platform tumuli		+++		
BAD	*Bazina* with a vault		+++		
M A N , etc,	Antennae monuments		++		
TCS	Cap tumuli		++		
TAC	Crater-topped tumuli		+	+++	+
B A T , TAT	Monuments with an alignment		+	+	++
CPG	Small stone circles				++
MDP	Tower-shaped cylindrical monuments				++

Fig. 8 – Main funerary monuments for which dating is possible based on the data from the Aïr Mountains (Paris 1996).

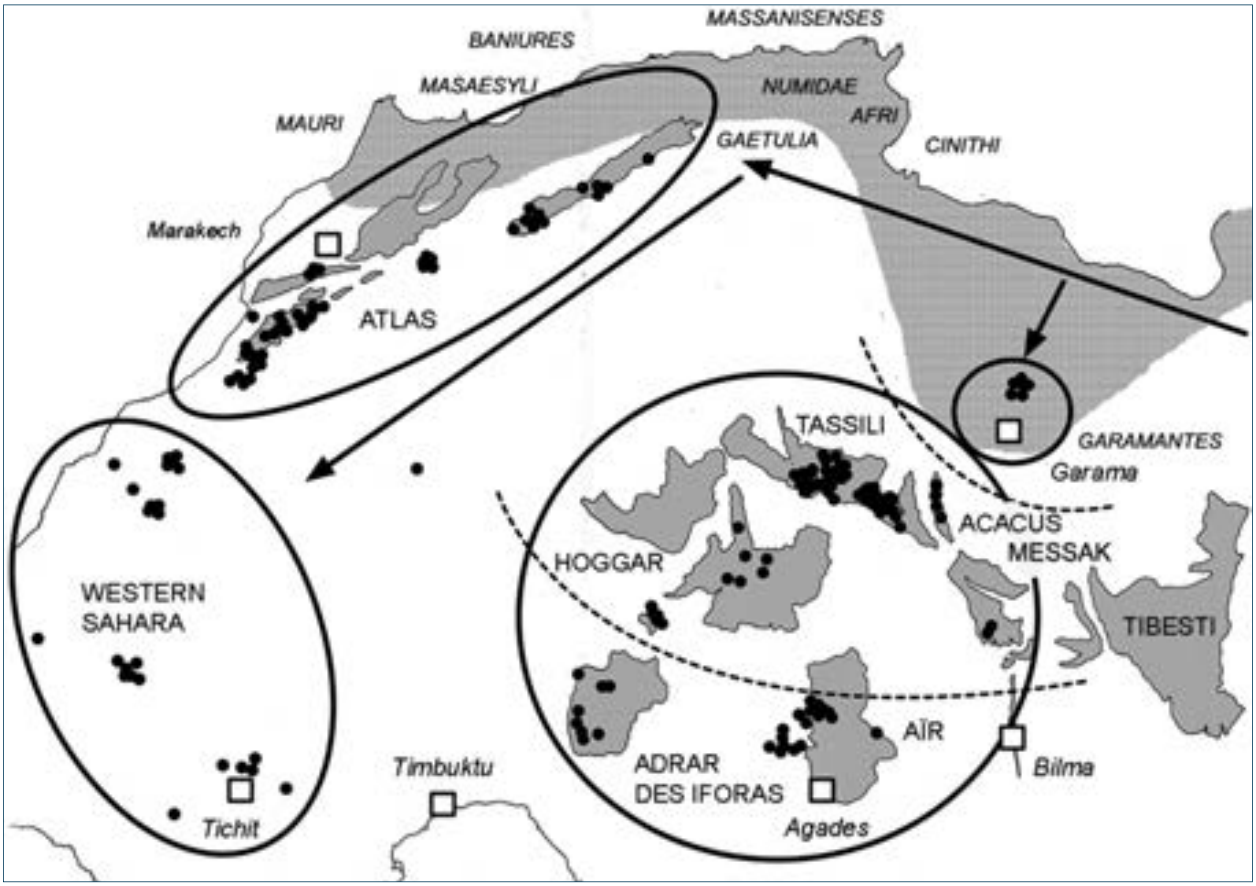

Fig. 9 – Distribution of chariot engravings. In grey: the area in which chariots are mentioned in historical sources. Dashed lines: possible gradient of the distribution of chariots from the shores of the Mediterranean Sea (© Gallay).

populations stemming from the Nilo-Saharan phylum and the Early Bovidian phase with 'Negroid figures', whilst the tumulus tradition is related to the Berber language families; or the variations reflect social differentiation between the Berber population. The first of these should, in my opinion, be given priority.

8. Early Caballine phase with 'Europoid' figures: 2200-1000 BC

Climatic studies tend to stress, from 2500 BC onwards, a rapid increase in aridity (which continues to the present day despite distinct oscillations), which reinforced a situation that pushed the pastoralist herders to the south (**Fig. 9**). The rock paintings and engravings attest to the introduction of the horse and the chariot which are distributed across the Sahara as early as 1500 BC (Camps 1989). In the Acacus Mountains and the Tassili n'Ajjer, the Ti-n-Annéwen (Tin-Anneuin) style developed (Muzzolini 1986).

The Caballine period witnessed a significant development of burials with megalithic superstructures including new monumental forms among which are the tronco-conical platform tumuli (TTP; Paris 1995), the *bazinas* with a vault (BAD; Paris 1996) and the antennae monuments (MAN, TAA, BAA; Paris 1996). The *bazinas* of North Africa, which are autochthonous burials, were the forerunners of the later large mausoleums in this region (Camps 1991).

In the south, the custom of earth burials associated with animal burials persisted, as is the case in the In Tuduf cemetery in Niger. The animals were sometimes buried in anatomical reconstructions. For the first time it is possible to identify human burials directly associated with cattle, as at Afunfun (Paris 2000).

The diffusion of chariots across the central Sahara and the Atlantic areas can be linked to a continuity of Berber settlement from the preceding period; it is unlikely to represent a break in settlement, which contrasts from a spatial point of view, with the occupation of the Nilo-Saharan origin concentrated on the Tibesti and Ennedi. The large-scale development of war chariots, however, testifies to a significant turning point for society, with new types of hierarchization.

9. Late Caballine phase with 'Europoid' figures (1000 BC-0)

The aridification trend continued into the 1st millennium BC but development during this period remained complex. Initially, there was a return of more humid climatic conditions during a short period between 1000 and 800 BC. The presence of Sudanese faunal remains at the latitude of the Adrar des Iforas reflects a more humid environment compared to the present day, at least temporarily. A return to a drier climate can be identified between 800 and 450 BC.

9.1 The Late Caballine style develops from 1000 BC on

The main characteristic of this period is the rise, in the southern part of Libya, of the Garamantes civilization, including the early phases (1000-500 BC) and proto-urban phases (500-0 BC) in the Mediterranean basin and in Egypt (**Fig. 10**). At this point the Sahara enters history. Analysis of the situation in the southern region, more particularly in the Adrar des Iforas and the Aïr Mountains, is more difficult.

The Garamantes civilization developed mainly in the Fezzan region in the area of the depressions of three west-east oriented wadis on the margins of completely desertic dune areas. The Garamantes present all the characteristics of a proto-urban civilization which can be qualified as a state: the emergence of urban features including fortifications and monumental temples; the hierarchization of the society and emergence of a slave class; adoption of Lybic script which is the origin of the Tuareg Tifinagh script; development of intensive farming including *foggaras* (irrigation channels) based on mainly Mediterranean cultigens such as wheat and barley species, wine, olive trees and date palms; the introduction of the horse, the chariot (early and proto-urban phases) and, later, the camel (classical phase); pottery production, development of copper metallurgy and processing of iron (no reduction furnaces attested); shaping of semi-precious stones, cornalines, amazonite, probably stemming from the northern Tibesti; and production of glass beads. All these techniques attest to a great mastery of pyrotechnical processes, development of trans-Saharan

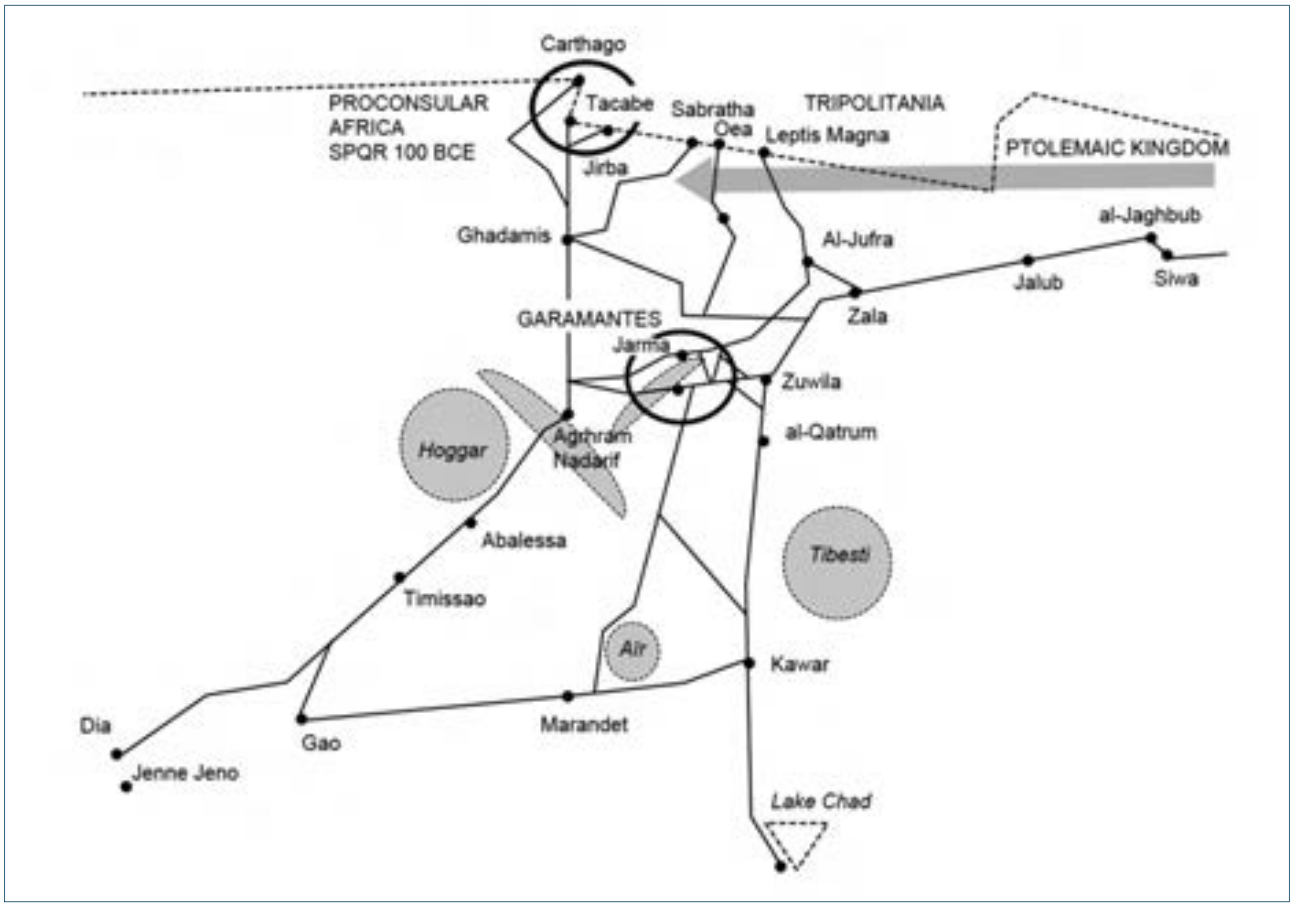

Fig. 10 – The ancient routes of trade relationships (A. Gallay, after Leitch *et al.* 2017, fig. 11.1).

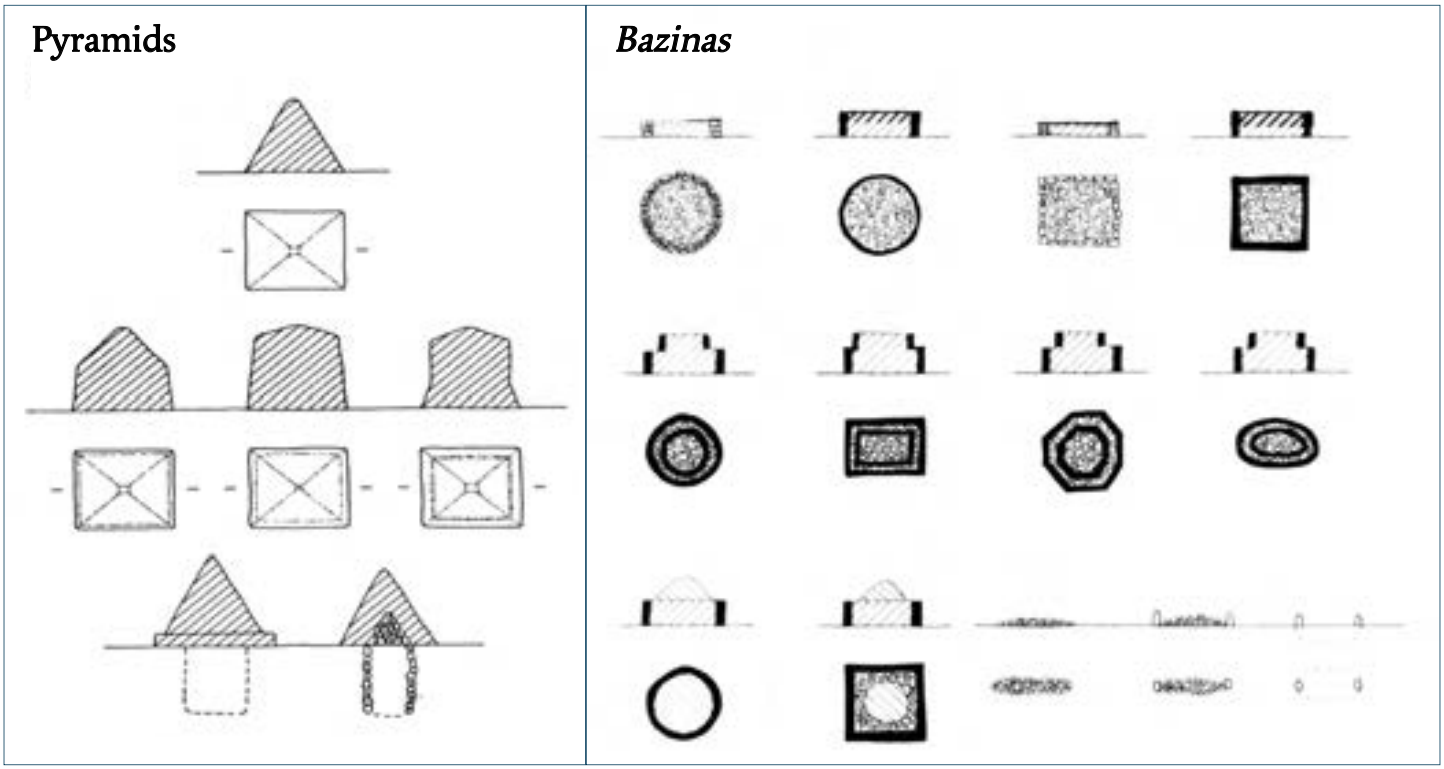

Fig. 11 – Garamantes tombs: pyramids and *bazinas* (Mattingly 2003: fig. 6.16 and fig. 6.20).

trade and relationships with the Mediterranean basin, Egypt and the sub-Saharan regions, and massive demographic expansion (Mattingly 2003).

Originally, the funerary monuments were part of the Saharan monumental traditions but they rapidly evolved in a very original manner under the influence of Mediterranean monumentality.

Typical Garamantes monumentality developed later with large mausoleums, pyramidal tombs and the simple or step *bazinas* associated with stelae (**Figs. 11** and **12**). Stelae and stone tables for offerings are often associated with these monuments which contain grave goods including imported Roman pottery.

The Tanezzuft culture(?), in a peripheral position, represents more traditional monumentalism including single burial beneath tumuli and antennae monuments (**Figs. 13** and **14**). This period corresponds to the development of the Aghram Nadharif citadel near the Barkat oasis, immediately south of Gaht (Liverani 2005a-b).

In the south, the rock art paintings of the Caballine style extended as far as the central massifs but a new style of rock engravings emerged from the Adrar des Iforas to the Ennedi, passing through the Aïr and the Tibesti Mountains (Staewen & Striedter 1986). The engravings depict spear-bearing human figures and cattle, giraffes and ostriches (Dupuy 1988, 1991, 1998). They reveal an original assemblage which is very different from the figures in the central Sahara (**Fig. 15**). Traditionally, these engravings are assigned to the Libyan Warrior style, but the rock art data hardly make it possible to connect the art with northern roots. A connection with the Fula people of the Niger-Congo phylum was also hypothesized (Dupuy 1999).

The custom of earth burials associated with animal burials disappeared and diversified funerary monumentalism emerged, the Iwelen site in the Aïr Mountains being typical (Paris 1996; Roset 1984). The associated engravings can be assigned to the Spear-Bearer style of rock art (**Fig. 16**).

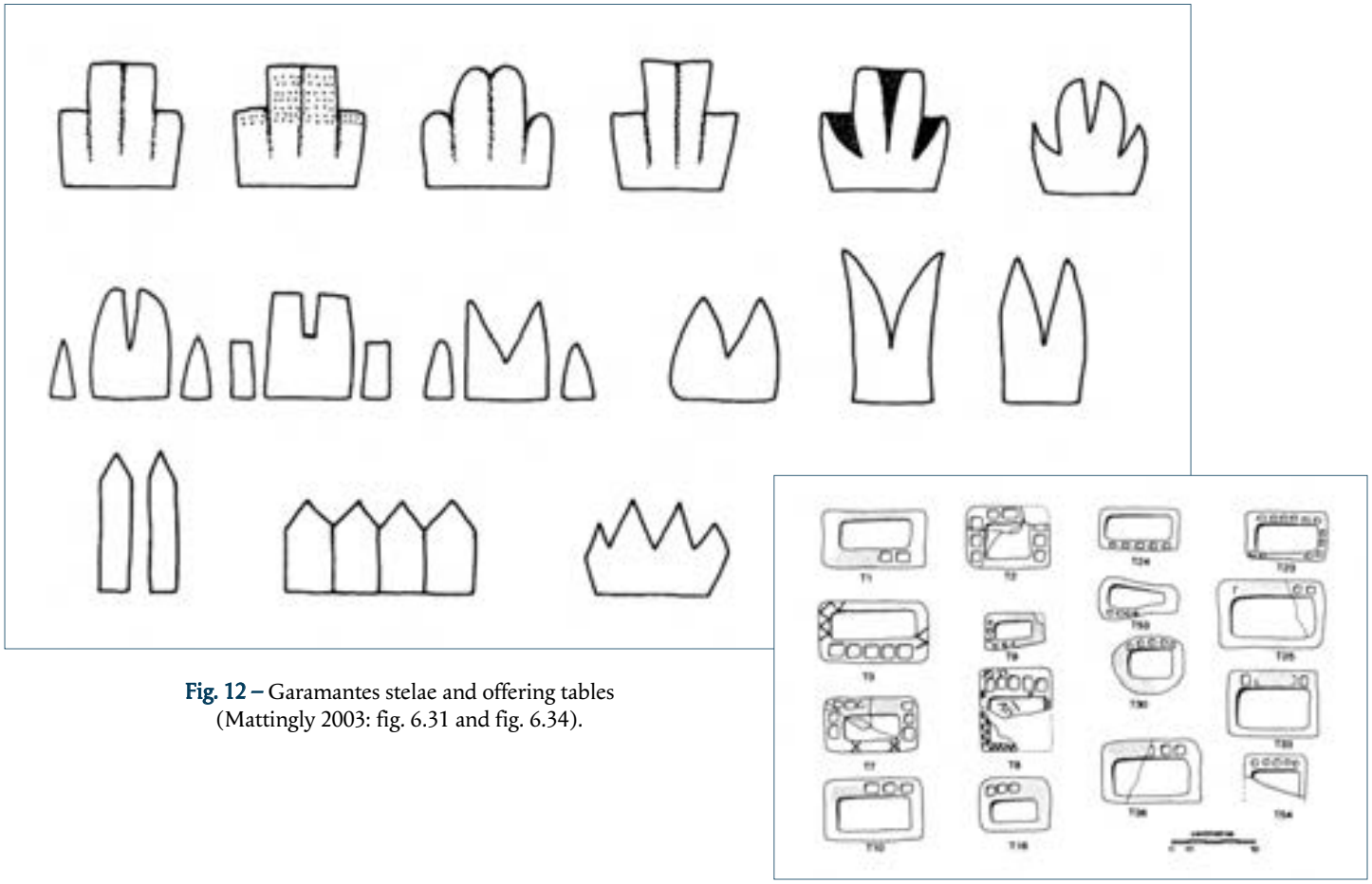

Fig. 12 – Garamantes stelae and offering tables (Mattingly 2003: fig. 6.31 and fig. 6.34).

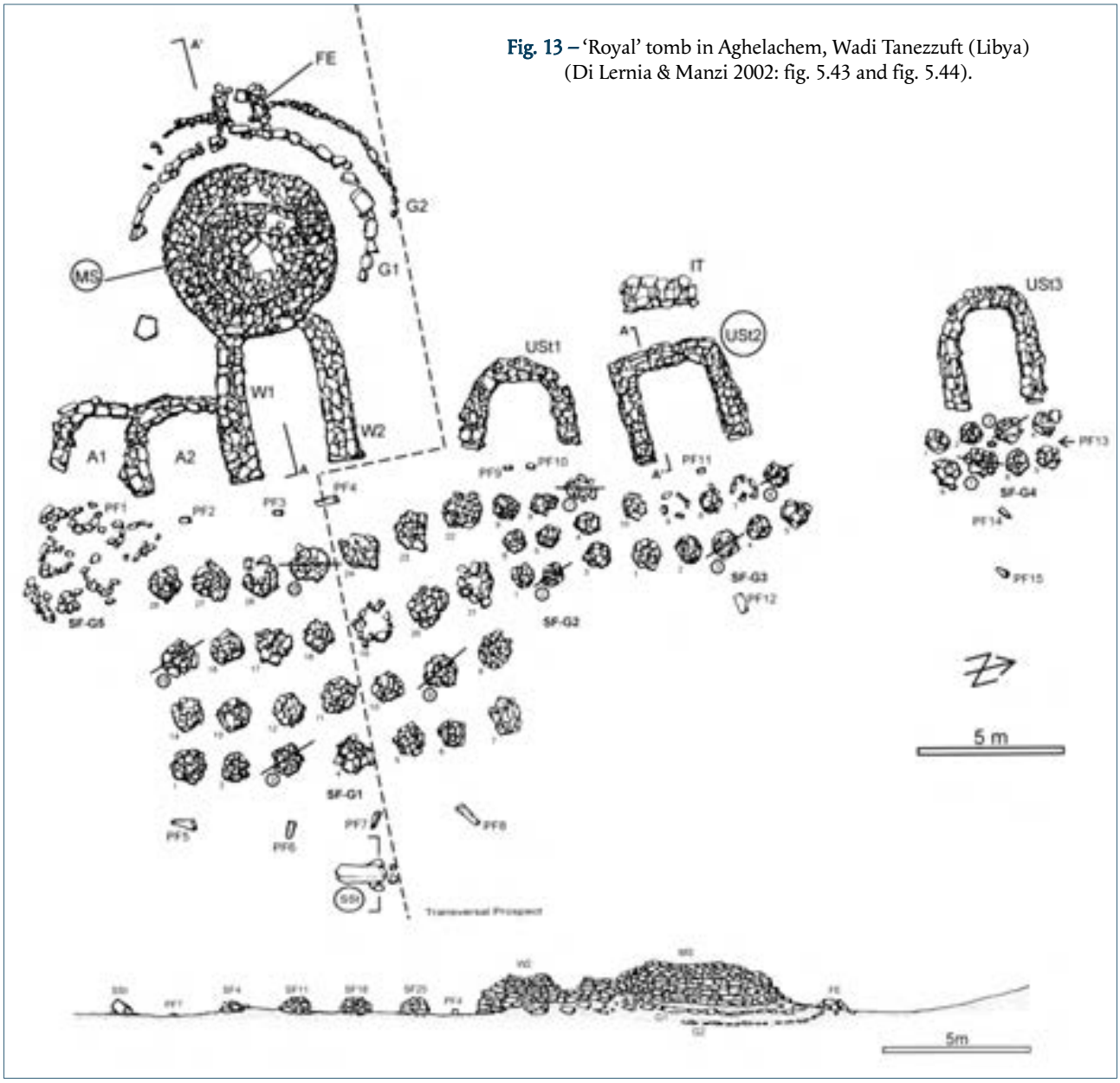

Fig. 13 – 'Royal' tomb in Aghelachem, Wadi Tanezzuft (Libya) (Di Lernia & Manzi 2002: fig. 5.43 and fig. 5.44).

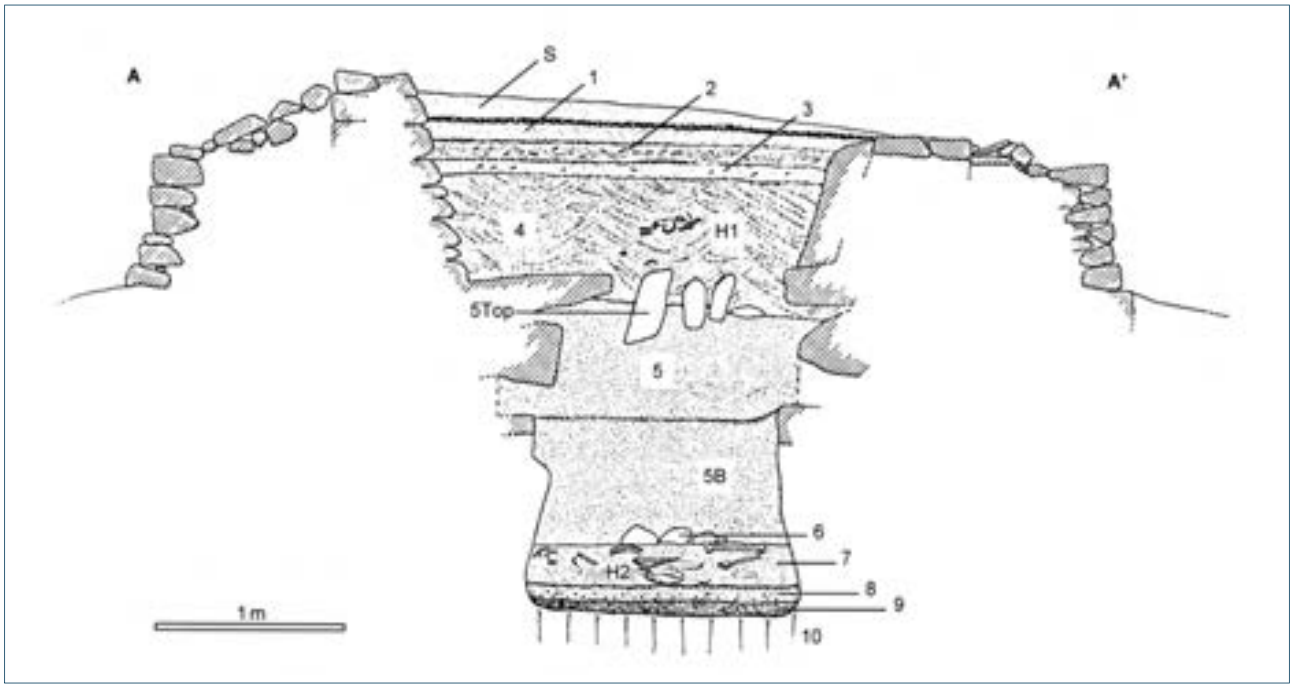

Fig. 14 – Profile section of the *bazina* of the 'royal' tomb in Aghelachem, Wadi Tanezzuft (Libya) (Di Lernia & Manzi 2002: fig. 5.45).

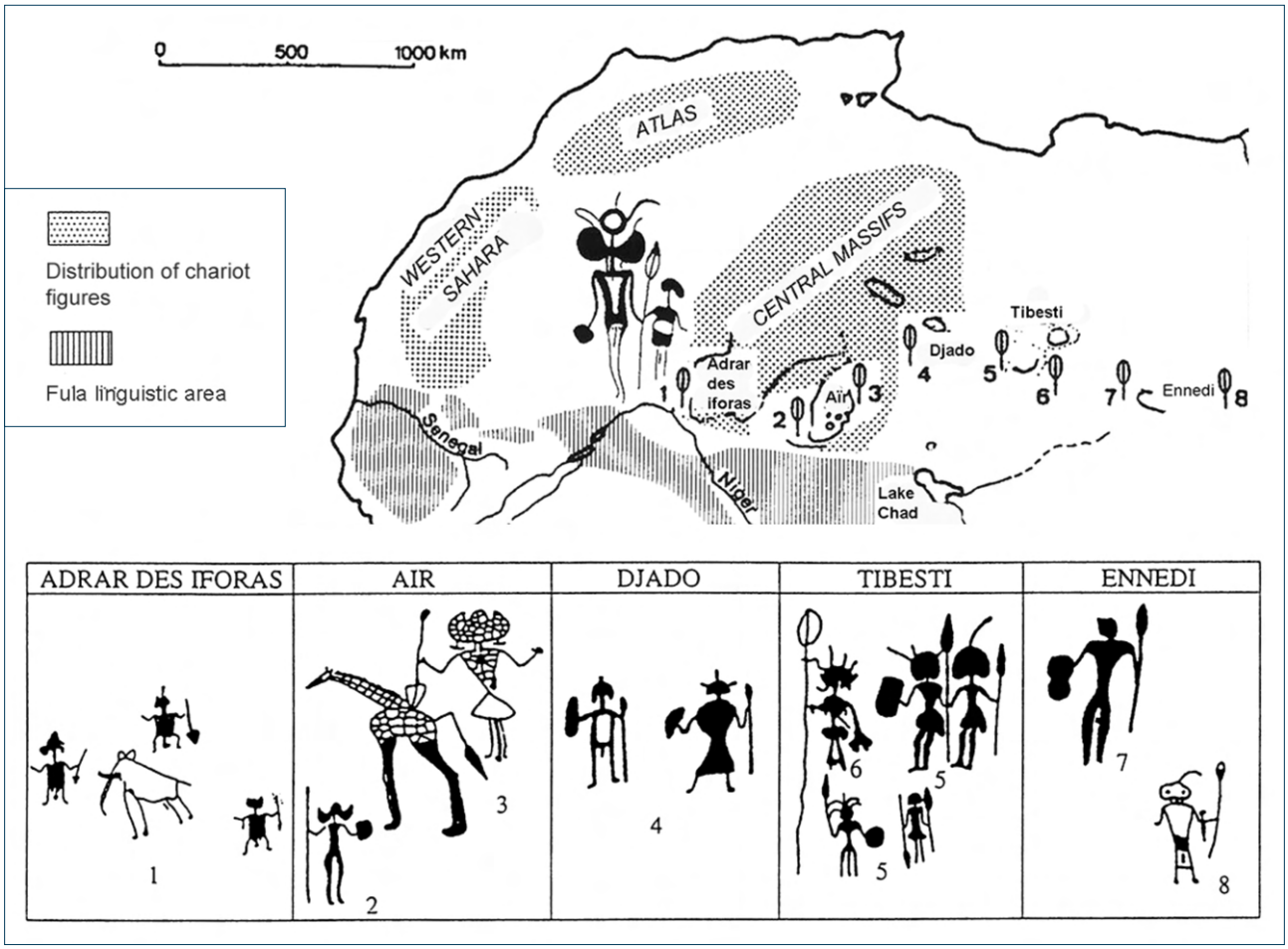

Fig. 15 – Distribution of spear-bearer engravings and current extension of the Fula people (vertical hatchings). (1) Camps & Dupuy 1996, after Dupuy 1991 and 1998; (2) Lhote 1987; (3) Roset 1988; (4) Védy 1962; (5) Monod 1947; (6) Staewen & Striedter 1987; (7) Courtin, personal documentation; (8) Huard 1963.

Dates BCE/CE	PCG	TEC	TSS	TAC	Settlement
4000-3500	2	-	-	-	
3500-3000	1	1	-	-	
3000-2500	4	1	-	-	
2500-2000	-	-	-	-	
2000-1500	-	-	1	3	
1500-1000	1	-		4	
1000-500	3	-	1 (+1)	15	3
500-0	-	-		2	3
0-500	-	-		-	
500-1000	-	-		2	

Fig. 16 – Iwelen. Number of radiocarbon dates in 500-year intervals for the platform cairns (PCG), the crescent-shaped tumuli (TEC), the simple tumuli (TSS), the crater-topped tumuli (TAC) and the settlement site. The same tomb was re-used (Paris 1996).

10. Camelline period: 0-1000 AD

The data published by McInstosh (1988: fig. 22) for the southern part of the Sahara and the inner Niger delta indicates a period of strong aridity lasting from 300 BC to 300 CE. A short humid optimum followed between 300 and 1100 CE. Historical and, notably, Roman sources make it possible to fix with some accuracy the introduction of the camel to the Sahara, whereas Saharan rock art yields only imprecise indications beyond the fact that it was later than that of the horse. The earliest remains in north-west Africa stem from the Qasr Ibrim site in Lower Nubia and are dated to around 900 BC (Lesur-Gebremariam 2009). The camel was certainly present during the Classic Garamantes phase between the beginning of the Current Era and 400 CE (Mattingly 2003: 354).

This period saw the emergence of the first engravings and paintings of camels. The human figures still had a bi-triangular aspect, stemming from the preceding periods. In the central Sahara, the warriors depicted were now equipped with several spears; their tunics had become longer and swords were featured (**Fig. 17**).

The Camelline period is characterized by the regression and then, under the influence of Islam, (established in North Africa in the 7th century CE), the disappearance of funerary monumentalism. Certain types of monuments, however, were specific to this period. Extended burials appeared, while the tombs still contained burials in a crouched position. These tombs were the monuments with antennae (TAT, BAT; Paris 1996) and the tower-shaped cylindrical monuments.

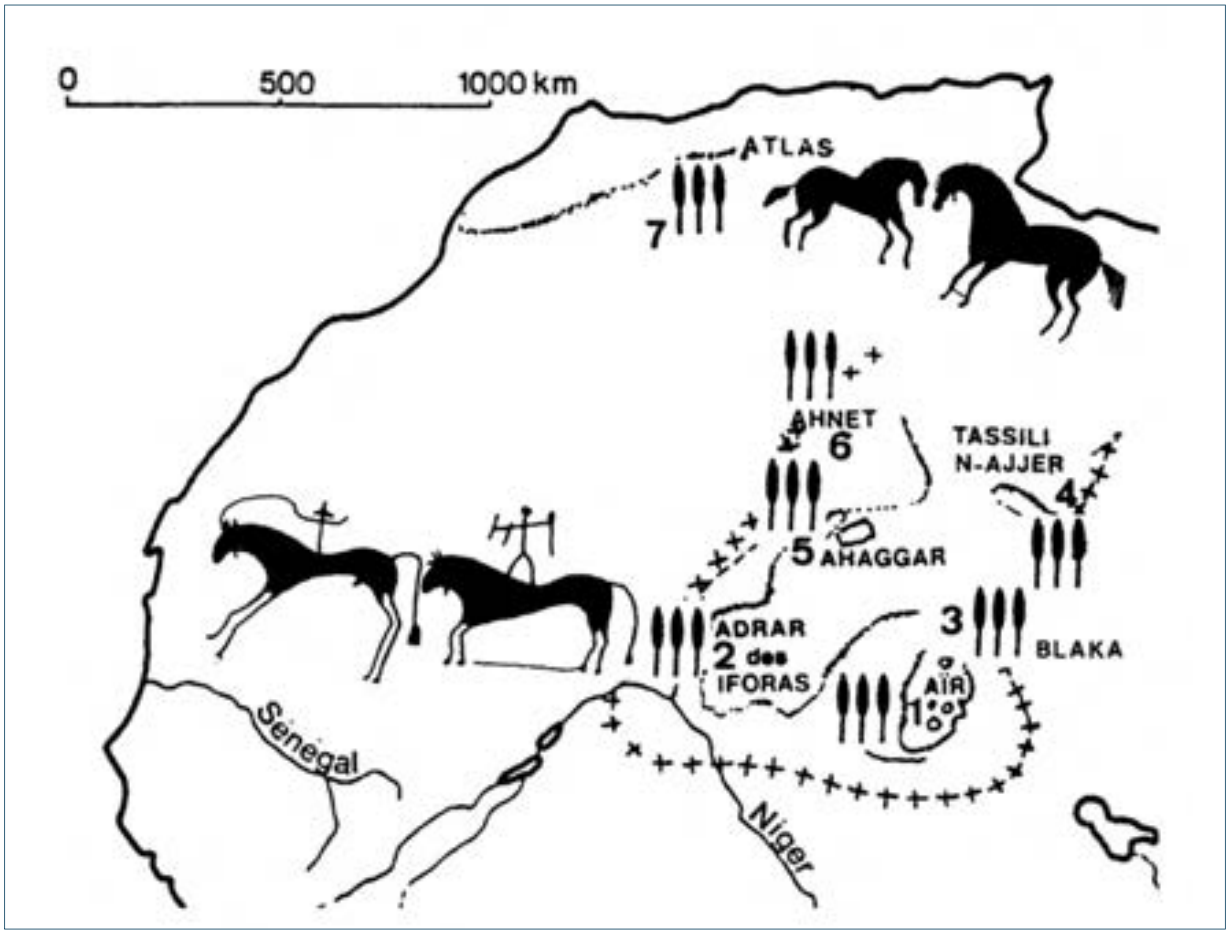

Fig. 17 – Geographical distribution of figures of warriors equipped with several spears and javelins, covering the major part of the Tuareg region: 1. Aïr Mountains; 2. Adrar des Iforas; 3. Blaka; 4. Tassili n'Ajjer; 5. Hoggar Mountains; 6. Ahnet; 7. Ahnet (painted and engraved stelae of Djorf Torba). +++ = present limit of the Tuareg territory (Camps & Dupuy 1996: 6).

Two exceptional funerary sites can be attributed to this period and merit some clarification. These are the tomb monument of Tin Hinan at Abalessa in the Hoggar Mountains (Reygasse 1940; Camps 1974a) and the Djorf Torba cemetery at the foot of the Atlas (Lihoreau 1993).

The figures depicted in the rock art of the Camelline period, including javelin-bearing warriors, indicate the establishment of the current Tuareg people, who developed west of the areas occupied by the Garamantes.

11. Conclusion

In conclusion, the study of monumentalism cannot ignore either the temporal framework provided by rock art, the linguistic data or population biology. Within this framework it can be stated that monumentalism developed mainly within the sphere of influence of the Berber language family of the Afro-Asiatic phylum, which has a Mediterranean origin. It is superimposed on an ancient tradition of individual burials which can be associated with cattle burials. These latter rites, the most recent manifestations of which are distributed on the southern margins of the Sahara, can be connected with populations of eastern origin stemming from the Nilo-Saharan phylum.

Translated from the French
by Karoline Mazurié de Keroualin

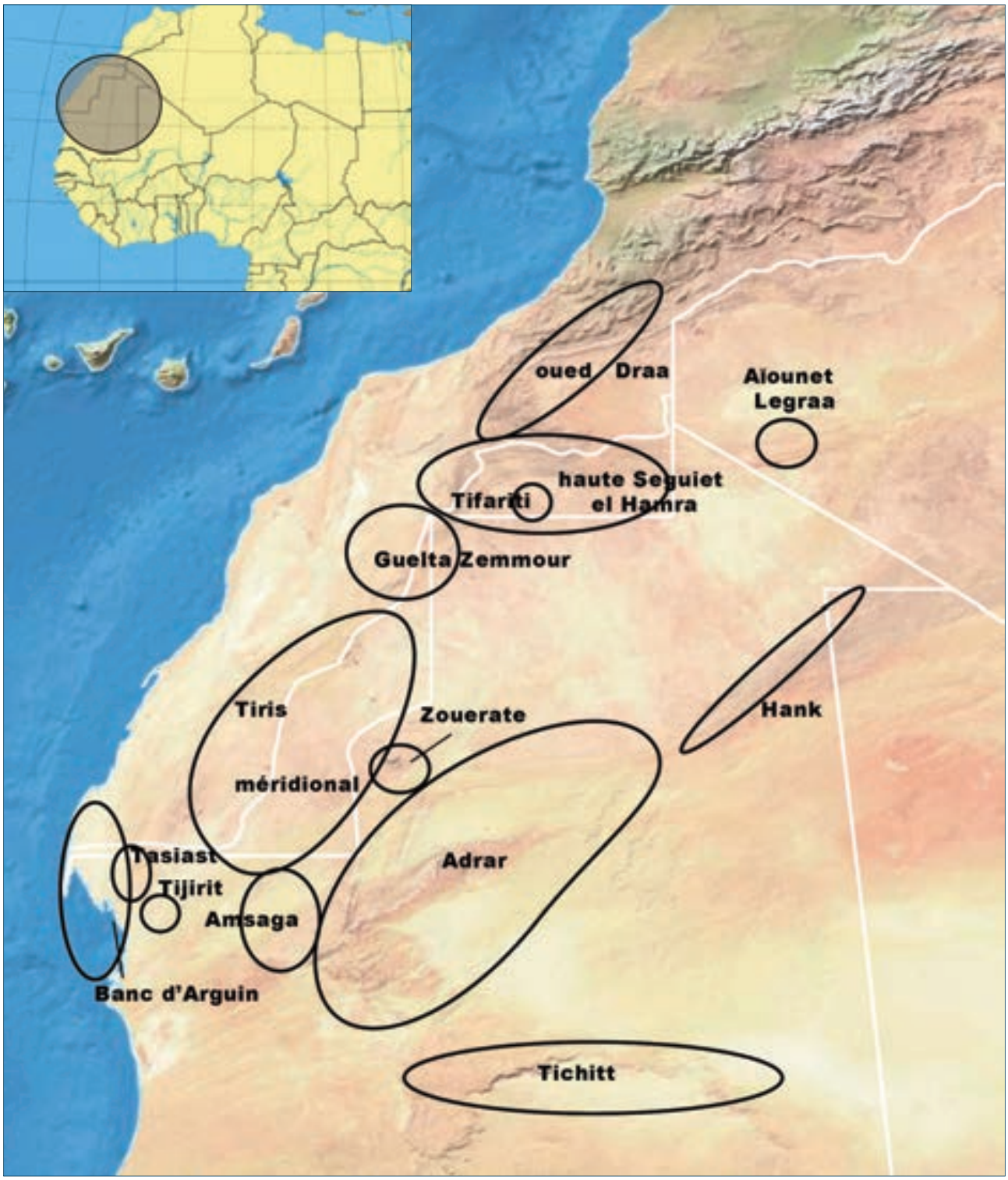

Fig. 1 – Main complexes of 'standing stones' known in the northwestern Sahara.

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Robert VERNET

Neolithic monuments with standing stones in the northwestern Sahara

Abstract: In the northwestern Sahara, most of the countless 'standing stones' – as neutral a term as possible – seem to be associated with graves. Yet those that are recorded (but seldom excavated), are so few that it is difficult to be more accurate. This kind of monolithic structure is found from the Atlantic Ocean to the western Algerian Sahara, and from the Saharan Atlas Mountains to the Mauritanian Adrar plateau. A description of these constructions can only be general, because diversity is their main characteristic: standing stones, isolated or in a group; driven into the ground or erected on the top of a tumulus; a monument or tombstone made up exclusively of standing stones; engraved pillars, etc. Their location is often significant. Until scientific work has been undertaken, we are limited to enumerations, based on poorly localized illustrations without context, although whether geographical, historical, cultural or archeological, that context is remarkably varied. Little is known about the age of the standing stones, but they seem to be largely Neolithic, although this kind of monument continues to be used during the historical epoch, and the Saharan nomads still raise stones to mark graves. Despite the uncertainties, it has been established that, during Neolithic and at the beginning of the historic period, the northwestern Sahara was undoubtedly homogeneous; this vast region remained under the rule of Berber populations until the middle of the current millennium.

Keywords: *standing stone, gravestone, monolith, Neolithic, northwestern Sahara*

The Neolithic raised stone monuments of the northwestern Sahara are rather poorly known, in terms of both their geographical distribution and their shape and materiality. Their geographical context has long been unfavourable to scientific research in this very barren part of the Sahara. They have thus received little attention and represent only a modest part of the stone monuments (funerary or otherwise) of the Sahara and the Sahel and so may seem secondary compared to other African and European megalithic complexes. The northwestern Sahara covers about 1.5 million km^2, most of which has been little explored, let alone studied. Descriptions and illustrations are therefore rare. Most often, information appears in relation to random itineraries.

The known 'standing stones' – to use the most neutral term possible – are present throughout the region, from the Atlantic to the west of the Algerian Sahara and from the Saharan Atlas Mountains to the south of the Adrar plateau of Mauritania (**Fig. 1**). At the latest count, there are about 900 examples, most of which are associated with one of the countless funerary monuments also present. So few have been documented that it is difficult to be more precise, especially since they have only very rarely been excavated. There are very few areas where complexes

of stone structures (funerary or not) have been studied. Mapping is very incomplete and there is practically no radiocarbon chronology. The description of these constructions is therefore sketchy. It is important to note that their main characteristic appears to be diversity: they may be isolated or in groups; monoliths fixed in the ground or erected on the top of a tumulus; funerary or non-funerary; monuments consisting only of standing stones; engraved pillars, etc.

We must rely on inventories, frequently based on poorly localized illustrations with no context, although be it geographical, historical, cultural or archaeological, that context is remarkably varied. The age of these monuments is usually Neolithic, but is poorly understood, even less so than in the central Sahara, and the use of this type of monument extends into the historical period; nomadic and sedentary Saharans sometimes continue erecting stones to mark tombs today.

Despite the uncertainties, it has also been established that, from the Neolithic period to the middle of the 2nd millennium CE, the northwestern Sahara presents a certain homogeneity. At that time, this immense region was largely dominated by Berber populations, who display very similar cultural practices. Standing stones are, perhaps, a distinctive feature of this region.

1. Documentation

As trivial as it may seem, the main limitation for a set of structures built in stone is the presence of stones. The northwestern Sahara is unevenly endowed with stone. In Mauritania, the northern part is more rocky than sandy, whereas a large part of the south is covered with dunes. But we are not only referring to large dune massifs: in the plains and on the regs (natural desert pavements), a simple sandy coating is enough to hide stony ground. This natural constraint has therefore often deprived communities of the possibility of erecting stone structures across more than half of the northwestern Saharan region. This does not mean, however that they did not travel through the sandy regions.

Research history

Research began in the early 20th century but almost always consisted of scattered observations along civil or military exploration routes. The first monographs and syntheses date from the 1930s with the Adrar Ahnet (Monod 1932) and 1940s with the Spanish Sahara (Martinez Santa Ollala 1944; Almagro Basch 1946; Monod 1948). The 1950s saw an acceleration in research (Reygasse 1950; Mauny 1951, 1952; Bessac 1953; Frederic 1954; Spruytte & Vincent-Cuaz 1956, 1957; Woisard 1955), before a slowdown in the 1960s, with Mauny continuing his Saharan inventory. A revival of research on the funerary structures in the Sahara began in the 1970s, with Denis (1970), Pellicer and Acosta (Pellicer *et al.* 1973-1974), Nowak and Ortner (Nowak *et al.* 1975), Petit-Maire (1979) and Milburn, whose PhD dissertation (1978) focused on this issue.

More systematic recent work did not begin before the early 21st century, in the Western Sahara by Sáenz de Buruaga (2014, 2015, 2018) and Clarke & Brooks (2018), and the project of the University of Gijon, directed by Soler Masferrer and Soler Subils which produced numerous publications and theses (cf. Ventura Almeida 2019; Rodrigue 2011). In Mauritania, research was carried out by Tauveron (2010), as part of work by Bordes and colleagues (Bordes *et al.* 2010) and Vernet (2003, 2018). The numerous references to standing stones provided by Gandini in his Moroccan tourist guides should be added to this list.

From the beginning of research (1907) to the 1970s, only about a hundred illustrations representing standing stones were published, 60% of which were by Milburn, Spruytte, Cuaz and Monod. More than 900 further illustrations have since been added. The number of stone structures is obviously much higher, as can be seen from satellite imagery, and as shown by the work carried out, for example, around the Idjill Massif (more than 3000 structures over 100 000 km^2; Vernet *et al.* 2016), or along the northern cliff of the Adrar (more than 6000 over a narrow strip about 400 km long). Yet only a few dozen photographs of funerary monuments are available for these regions [(1)]. These figures are

(1) https://prehistoireouestsaharienne.wordpress.com/wp-admin/post.php?post=1419&action=edit

counterbalanced by those from vast areas where stone structures have not, or have hardly been inventoried: Wadi Draa, Seguiet el Hamra, Rio de Oro, Zemmour, Amsaga, Akjoujt region, southern Adrar, etc. We must therefore bear in mind that even though, statistically speaking, the available corpus is substantial, in no way does it reflect the reality of the entire northwestern Sahara.

2. Description of standing stone structures and typology

The typology of standing stone structures depends primarily on the types of rock available in the area under consideration. This determines the morphology of the stele, which can be of different heights and widths. Some are quarried, others are not. Of course, the absence of usable rocks rules out the presence of standing stones. A recent article (Delor & Germon 2010) provides an example of this in southern Morocco, on the Tata wadi, a tributary of the Draa wadi. The authors studied a very large site where numerous and varied monuments were built exclusively with large blocks or pebbles, with the exception of a few slabs, which were used only in a horizontal position. Only one standing stone was found: a rather large sandstone pebble, 50 cm high, engraved with grid patterns (**Fig. 12a**).

The main challenge in describing the standing stones is the huge variety of possible subtypes, which give rise to typologies that are so detailed that they become unusable. We therefore prefer to limit the number of subtypes as much as possible (**Fig. 2**).

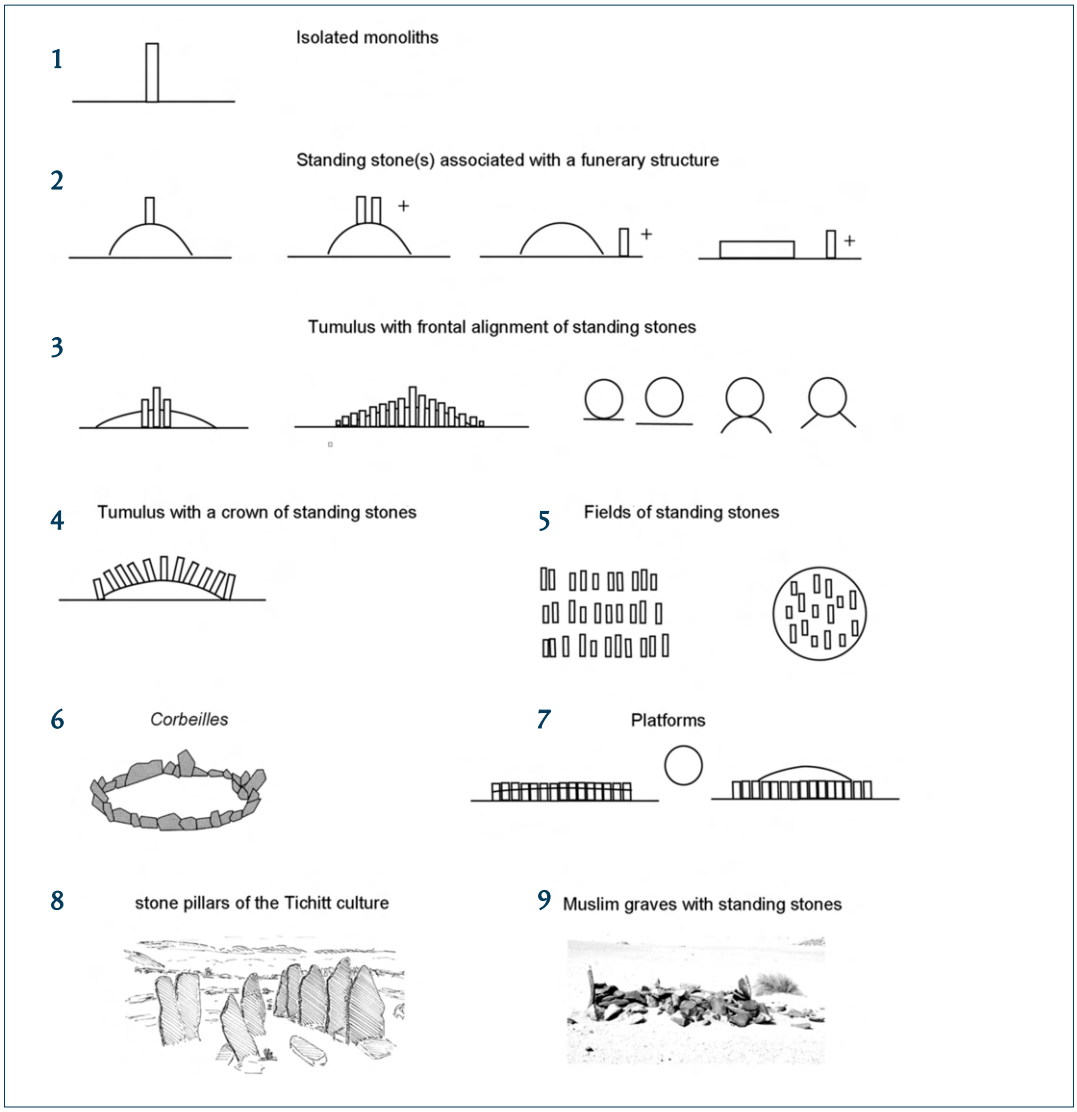


Fig. 2 – Typology of Neolithic monuments with standing stones in the northwestern Sahara.

Fig. 3 – Isolated monoliths: a. Chaif ould Attiya (Photo: R. Vernet); b. The monolith during its exile in Dakhla (Photo: Pellicer *et al.* 1973-1974: plate XVII); c. Wadi Dahab and southern Tiris: Oudei Sfa (Photo: M. Aymerich - Internet; d. Sebkha Amtal (south Dakhla) (Petit-Maire 1979: pl. XIV).
For several years the 3.6 meters high monolith of Chaif ould Attiy was moved from the Aousserd area to Dakhla, by decision of the Spanish colonial authorities. The photographs shown here do not represent the place where the monolith was originally located. The oldest one (a black and white picture) was taken after its installation in Dakhla; the remaining two are from the beginning of the 2000's. Yhus, the original layout is not known.

2.1 Isolated monoliths

There are about 40 isolated monoliths, not all of which have been illustrated (**Fig. 3**); the tallest can reach 3.50 m. This number of examples is obviously insufficient for a cartographic and statistical study. Many others have probably escaped the inventory, as fallen monoliths are often barely visible. Moreover, it seems that several apparently isolated standing stones are in fact linked to discrete structures: low tumuli, small paving stones (often quartz), stone circles, etc. Ould Khattar (1995: 241) suggests that some of the monoliths may have been a lure to distract attention from the exact grave location. More recent, often Islamic, funerary structures may be associated with the monoliths; some may also have been secular markers.

2.2 Standing stone(s) associated with a funerary structure

More than 400 examples of standing stone(s) associated with funerary structures have been recorded. This is a minimum number, as the marking of a grave with a raised stone is widespread. They are distributed throughout the whole region, including Adrar, Tijirit, Tasiast, Hank, southern Tiris, Black Zemmour and high Seguiet el Hamra.

The funerary structure is most often one of the many types of known tumuli. It can also be a *bazina* - with or without layers, or even a tumulus with a chamber or passage (e.g., el Mreiti, Lebnié, Guelta Mustapha) or, much more rarely, a structure with antennae or a crescent-shaped structure. This type of burial was frequent throughout the Neolithic and the early historical period in the region, and did not cease after the establishment of Islam, although it evolved.

It is obvious, therefore, that countless subtypes could be defined and catalogued. **Figures 4** and **5** show the diversity of the funerary monuments and the associated standing stones. The latter play an essential role in personalizing the tumuli and associated structures and identifying the deceased (his name, his family, his tribe, his ethnicity, his social status, etc.) in addition to certain ritual aspects, particularly the orientation of the tomb, most of which face the rising sun.

Finally, the distribution of the different types of monuments enables us to map human groups. But

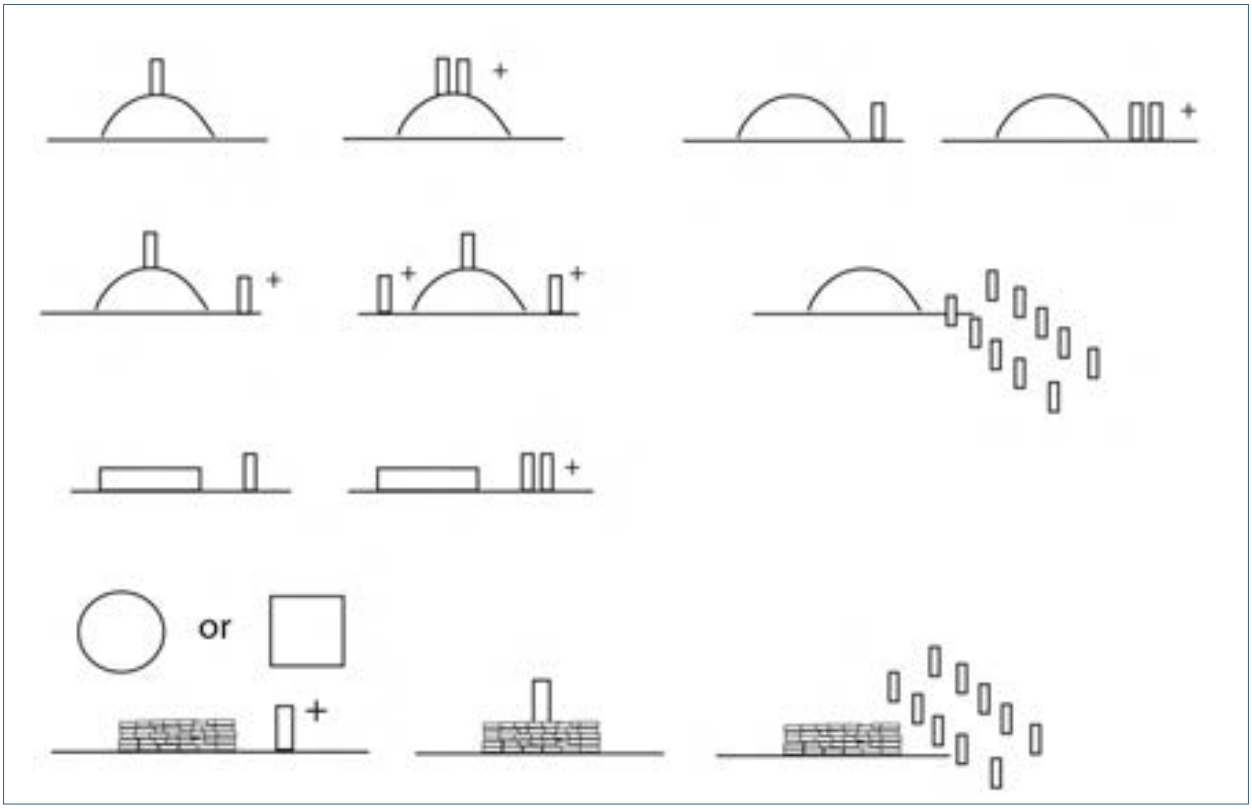


Fig. 4 – Non-exhaustive typology of standing stone(s) associated with a funerary structure.

Fig. 5 – Standing stone(s) associated with a funerary structure: a. Guelta Zemmour (Milburn, in Klenkler 2018: 392); b. Nord Tifariti (Clarke & Brooks 2018); c. El Ghaicha - Tasiast (Photo: R. Vernet); d. Meyateg (Adrar) (Photo: Bordes); e. Hamdoun (Adrar) (R. Mauny, field notebook 1958 - photo 101); f. Guelb Amersal - South Adrar (Photo: R. Vernet); g. Ittelène Telli (south Adrar) (Tauveron 2010: 281, pl. 98-a).

the absence of radiocarbon dating and, above all, the fact that standing stones have been used from the beginning of the Neolithic period to the present day, prevent us from going further.

Tumulus with frontal alignment of standing stones

This very homogeneous subtype combines a tumulus and an alignment of standing stones. Approximately 350 examples have been identified. The alignments of standing stones can be short or long, and straight or curved (**Figs. 6** and **7**). The central stele is sometimes much higher than its neighbours and 'marks' the funerary structure. The number of standing stones can vary from 3 to 50. The tumuli are generally low and fairly small in size. A few examples present divergences, for example with rare crescent-shaped arrangements of stelae on the tumulus.

Overall, the distribution of these tumuli seems limited to the northwest Sahara, centred on southern

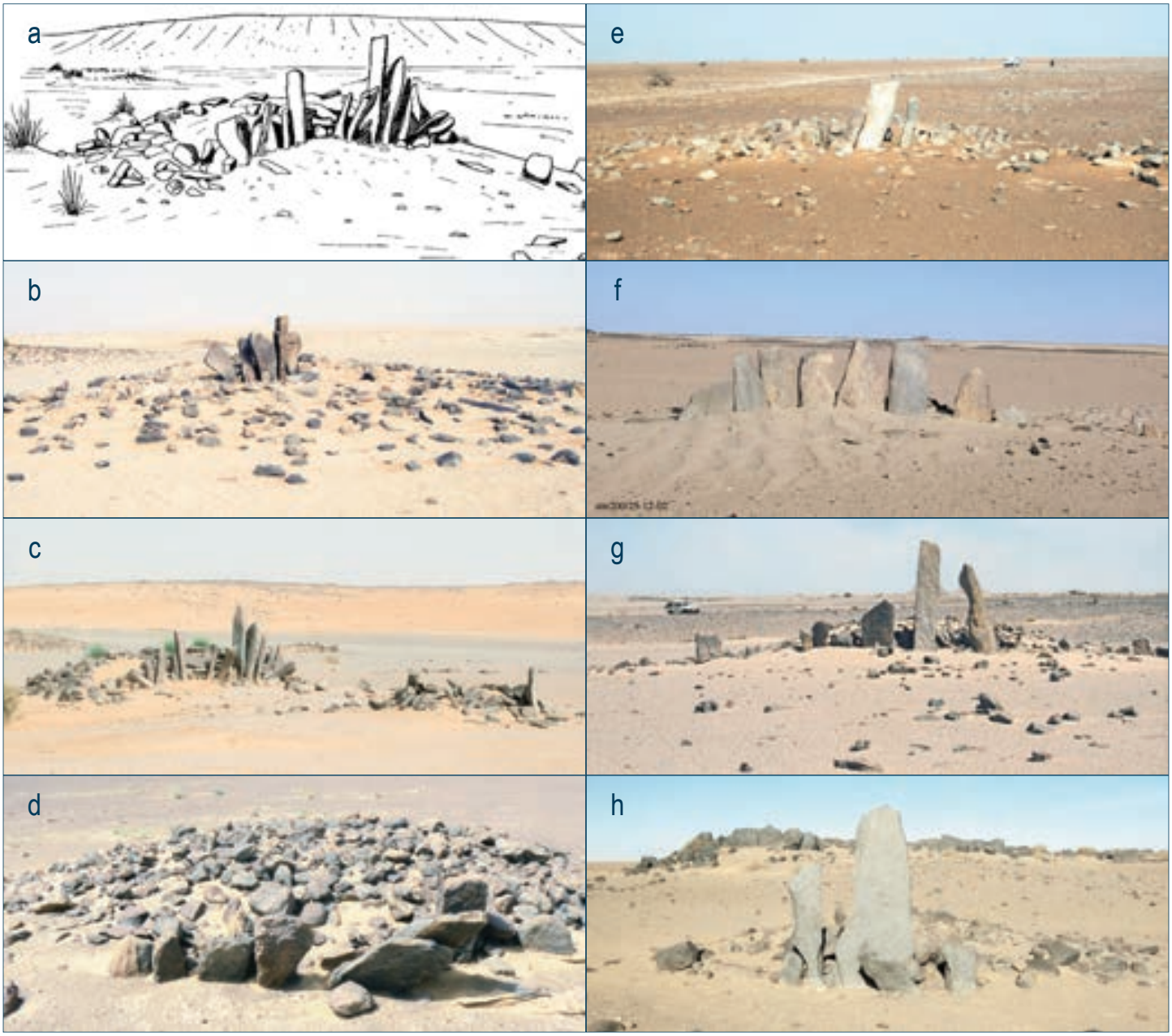


Fig. 6 – Tumulus with frontal alignment of standing stones (1): a. Necropolis of Meyateg (Adrar) (Monod 1958: fig. 94); b-c. Tauveron 2010: pl. 109; d. Boujertala (NE Adrar) (Photo: Vallette 2010: TA06HL_TV-1002); e. Between Richat and el Beyyed (Adrar) (Photo: R. Vernet); f. Lebnié (Tasiast) (Photo: R. Vernet); g. El Mreiti region (Hank) (Photo: R. Vernet); h. Amsaga (Photo: R. Vernet).

Fig. 7 – Tumulus with frontal alignment of standing stones (2): a. Limsharsha (wadi Ternit, high Seguiet el Hamra) (Brooks - Internet: Western Sahara Project – Flikr); b. Region Aousserd (mapio.net); c. Oued Ermina (Aousserd region) (Gandini 2014 – http://www.prettylook.com/atlas-igoudar/tumulus/tumulus-maroc6.swf); d. Near Chinguetti (du Puigaudeau: *La route de l'ouest*, 1945); e. Bu Lariah (Aousserd region) (Nowak 1972: 264); f. Boujertala (north Adrar) (Photo: Vallette 2010: HL767-TV.0464); g. Legteitira (Aguenit) (Sáenz de Buruaga 2014: 235).

Tiris where there are about 100 examples. There are 40 in the Tasiast and Tijirit, about 30 in the Adrar, and about 20 in the upper Seguiet el Hamra.

According to Gauthier, the author of a statistical study covering both the central and western Sahara (2014), tumuli with a frontal alignment of standing stones (which he calls 'TLS': tumuli with a line of stone) diverge from other types of Saharan funerary monuments in that they are less often east-facing. Their orientation ranges from east-facing to southwest-facing. However, the orientation of only 71 examples has been noted, as shown in Figure 8.

Tumulus with a crown of standing stones

Like the previous type, tumuli with a 'crown' of standing stones belong to the vast group with associated standing stones. They extend over a very small area, limited to a series of rocky ridges, in a region of Algeria, about 70 km from the Mauritanian border to the north and east of Aiounet Legraa, and 150 km east of Tindouf (map: Augiéras 1923). Several people travelled through the area and provided information, mainly on the 'crown tumuli'. About 30 monuments were mentioned and a few were illustrated (Fig. 9), but there are undoubtedly many more. Bessac (1953: 1590) asserts that there would be '200 to 300' such tumuli. There is no doubt that there are many other structures, some of which are similar to the 'tumulus with a platform bordered by standing stones'. This set of structures has not been seen since the 1950s and has not been studied. However, Brooks published some photographs in 2006 (on Flickr), but without any commentary (Fig. 9). A few examples have also been reported further south, between Tmemichat and Hank, and in Adrar.

2.3 Fields of standing stones

This is a well-defined group of standing stones of different sizes, but which are rarely very high, as it is not often possible to group stelae of more than 1 m in height in a limited space. There are about 100

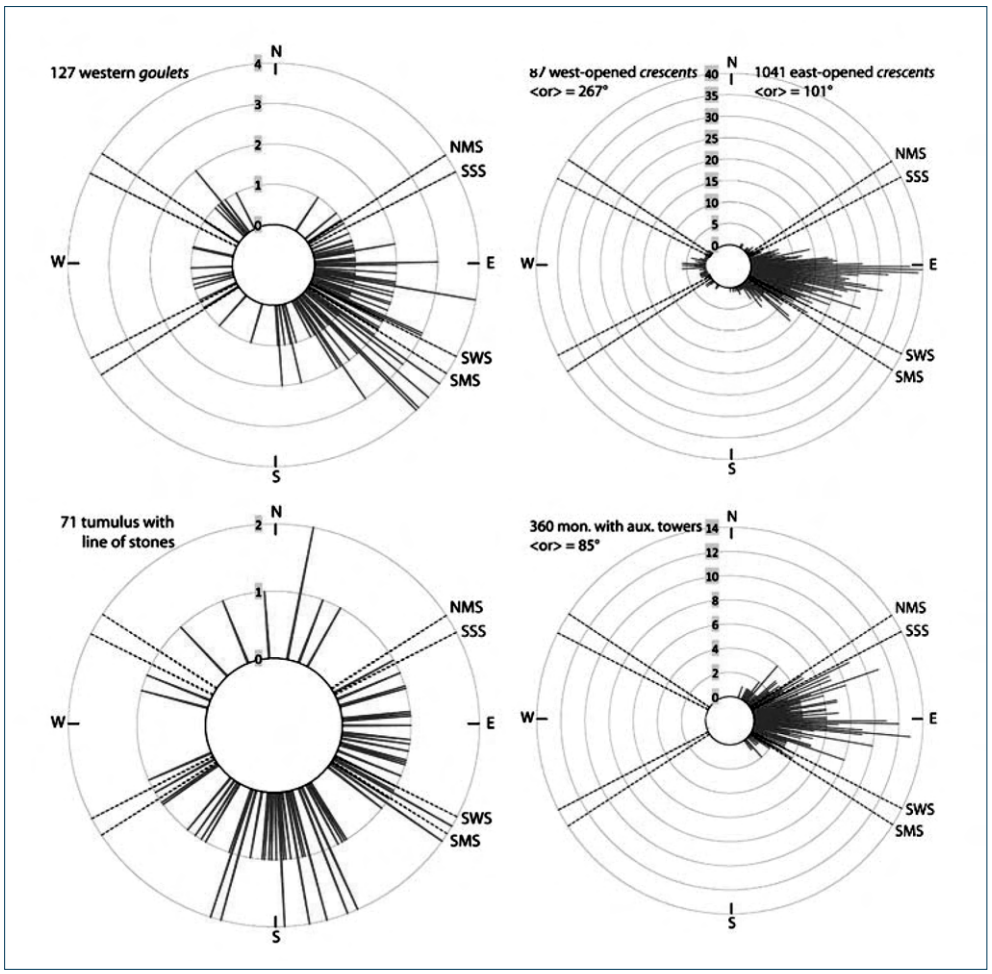


Fig. 8 – Orientation of tumuli with frontal alignment of standing stones (calculated on 71 monuments) in relation to other regional types (Gauthier 2014: 9).

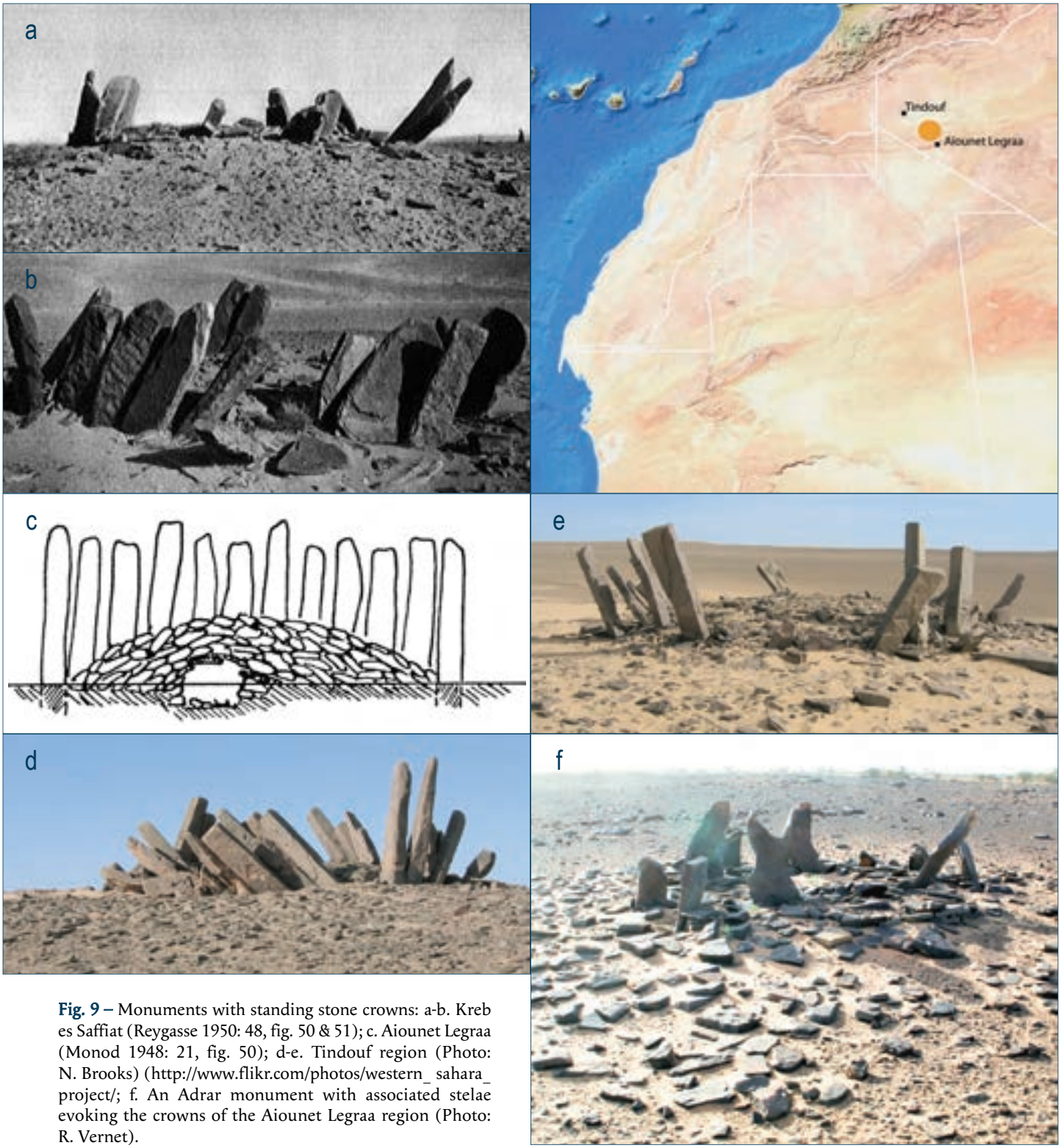


Fig. 9 – Monuments with standing stone crowns: a-b. Kreb es Saffiat (Reygasse 1950: 48, fig. 50 & 51); c. Aiounet Legraa (Monod 1948: 21, fig. 50); d-e. Tindouf region (Photo: N. Brooks) (http://www.flikr.com/photos/western_ sahara_ project/; f. An Adrar monument with associated stelae evoking the crowns of the Aiounet Legraa region (Photo: R. Vernet).

of these 'fields' of standing stones scattered from north to south, but especially in the region of Tifariti (high Seguiet el Hamra) and in the whole of the Adrar (Gour Aouarach, Boujertala, Meyateg, etc.). The number of standing stones in a field varies from a dozen to about 120. The field is often delimited by a circular, oval, or rectangular belt of blocks; the ground is bare or sometimes paved. There are many Neolithic subtypes, but some examples are from the Muslim period. The most peculiar types are found east of the Adrar region (**Fig. 10**), as highlighted by Tauveron: circle of erected stones; circle of paved stones with a central tumulus with one or more stelae; circle of partially paved stones and stelae; circular paving with stelae, with or without associated semi-circular paving; circular paving most often extended to the east, by an 'arm' paved in an semi-circle ('antechamber'), always accompanied by stelae... (Tauveron 2010: Chapter 13).

Fields of standing stones are rarely accompanied by tumulus-type structures, not even discreet ones. It is therefore possible that they are ritual rather than funerary complexes, although at this stage of research this assumption is based only on poorly evidenced archaeo-astronomical considerations, except for the favoured eastward orientation.

2.4 Platforms

The platform is distinguished from the *corbeille* ('basket') monument in that the inside of the edge of the standing slabs is filled with blocks or pebbles to a height ranging from a few decimetres to that of a mound exceeding the height of the edge. A central stele may be present. About 20 examples are known, in the same regions as the *corbeilles* (**Fig. 11**). Some are located a long way south of the focus of the standing stone monuments of Mauritania, in the region of Tichitt.

2.5 Engraved stelae and slabs

A small number of monuments include engraved stelae and slabs; about 20 are known, which is very few compared with the corpus of stone structures in the northwestern Sahara. Nine of these have no documented location, and three are merely mentioned on a map by Mauny (1974-1975: 176) without further details; eight are in the former Spanish Sahara, including seven near Aousserd. Several are simply cited as being in Algeria, at Aiounet Legraa, 80 km from the Mauritanian border. The types of monuments with engraved stelae are varied. The most widespread are the tumuli with a frontal alignment of engraved stelae (see above): there are three in the Adrar region and two or three in the Aousserd region. Three seem to be at isolated mounds or are accompanied by very discreet mounds; two belong to mounds with associated stelae. Finally, the engraved stelae mentioned by Bessac (1953) are related to tumuli with a crown of stelae (see above).

The engravings are from various periods. From the Neolithic, the oldest are found in the upper Seguiet el Hamra, at Tucat en Haila where antelopes and ostriches are engraved on a slab erected on the edge of a mound. Later, in the Adrar, bovids are depicted (**Fig. 12**). The engravings may extend into the 'Libyco-Berber' period and be *tifinagh* script. But this meagre corpus hardly allows us to compare funerary monuments, engraved stelae, and regional chronology.

2.6 A special case: the stone pillars of the Tichitt culture

The largest complex of standing stones in the northwestern Sahara is in southeastern Mauritania, between the Tagant River to the west and the cliff that extends in an arc from there to the Nema region in the east. They are 'pillars' (but sometimes slabs or blocks) grouped in arrangements of 3 x 2, 3 x 3 or sometimes more, within the 'concessions' that make up the innumerable stone villages of the Neolithic culture of Tichitt (**Fig. 13**).

The height of the pillars ranges from 0.30 m to 1.60 m (average: 0.96 m; Amblard 1996: 362) and they are wedged on the often-rocky cliff floor by blocks of stone. The tops of these pillars are frequently flattened, indicating that they supported a wooden platform. We can therefore presume that they were granaries intended to protect foodstuffs, primarily millet, grown from about 3500 BP onwards, in the depressions at the foot of the cliff, as well as fodder, but also anything that the community preferred not to leave lying around on the ground

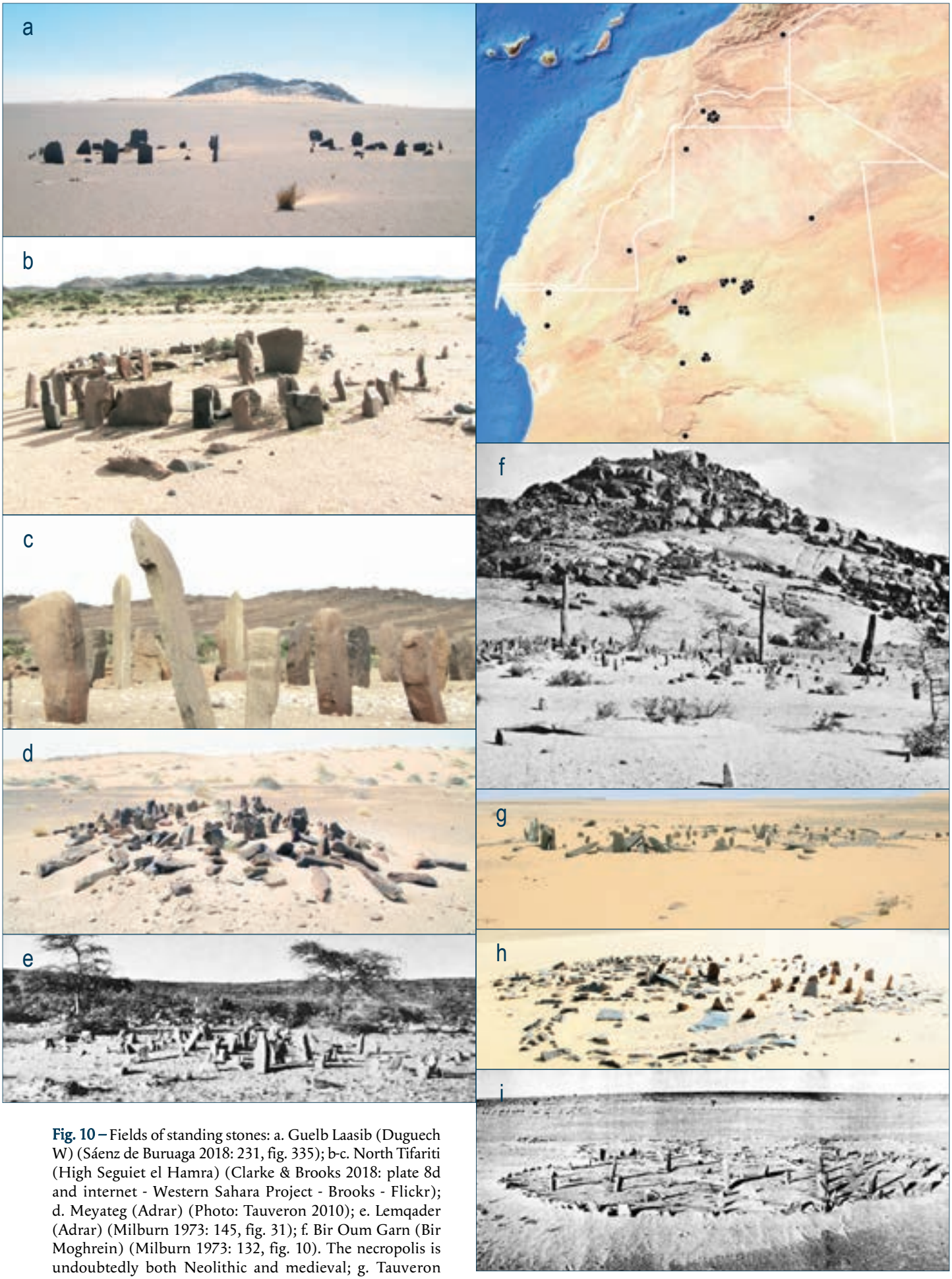
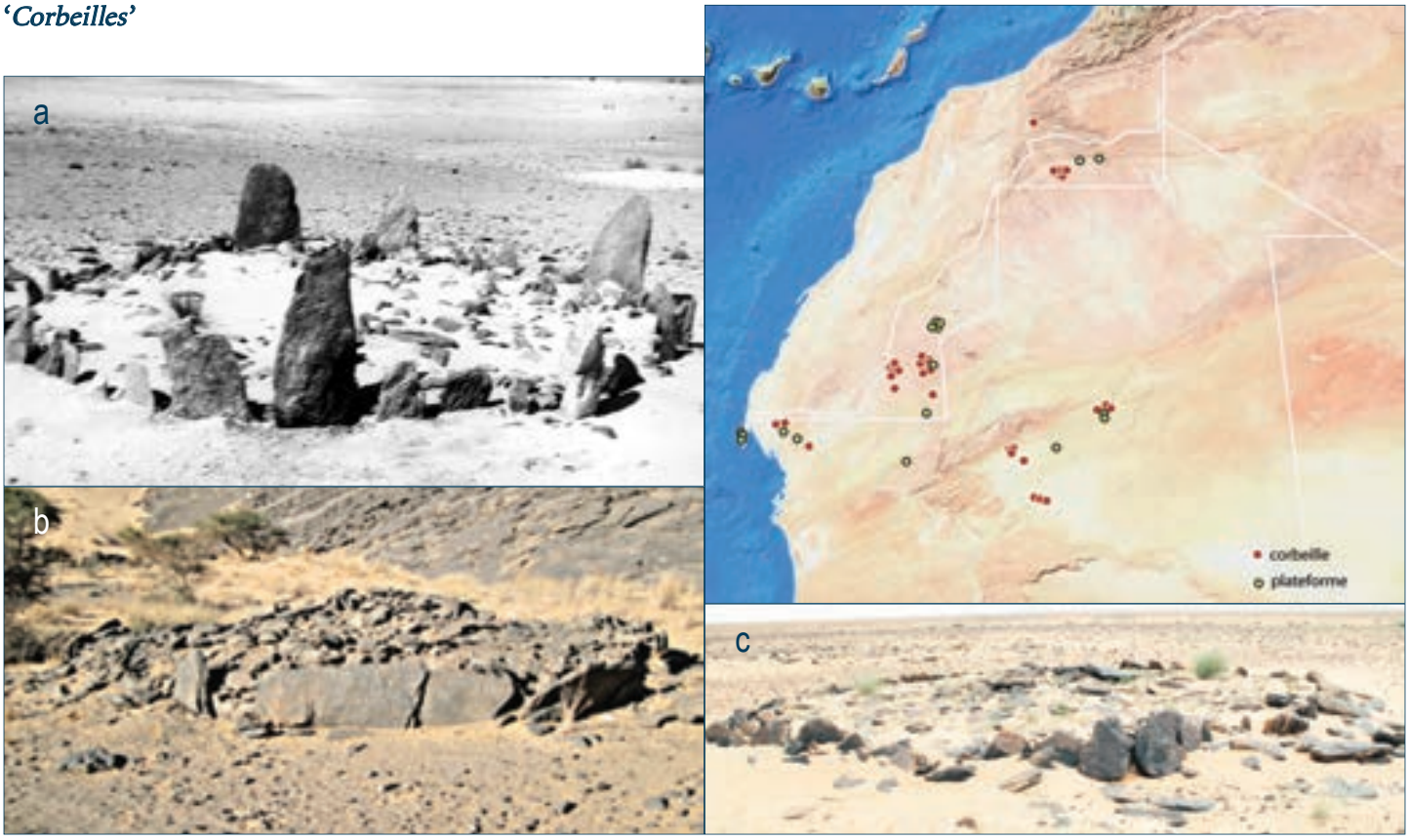


Fig. 10 – Fields of standing stones: a. Guelb Laasib (Duguech W) (Sáenz de Buruaga 2018: 231, fig. 335); b-c. North Tifariti (High Seguiet el Hamra) (Clarke & Brooks 2018: plate 8d and internet - Western Sahara Project - Brooks - Flickr); d. Meyateg (Adrar) (Photo: Tauveron 2010); e. Lemqader (Adrar) (Milburn 1973: 145, fig. 31); f. Bir Oum Garn (Bir Moghrein) (Milburn 1973: 132, fig. 10). The necropolis is undoubtedly both Neolithic and medieval; g. Tauveron 2010: 276, pl. 93a; h. El Rhallaouiya east (Photo: R. Vernet); i. Assabet el Meddahya (between Adrar and Azrag - Lambert 1989: 985).

'Corbeilles'



Platforms

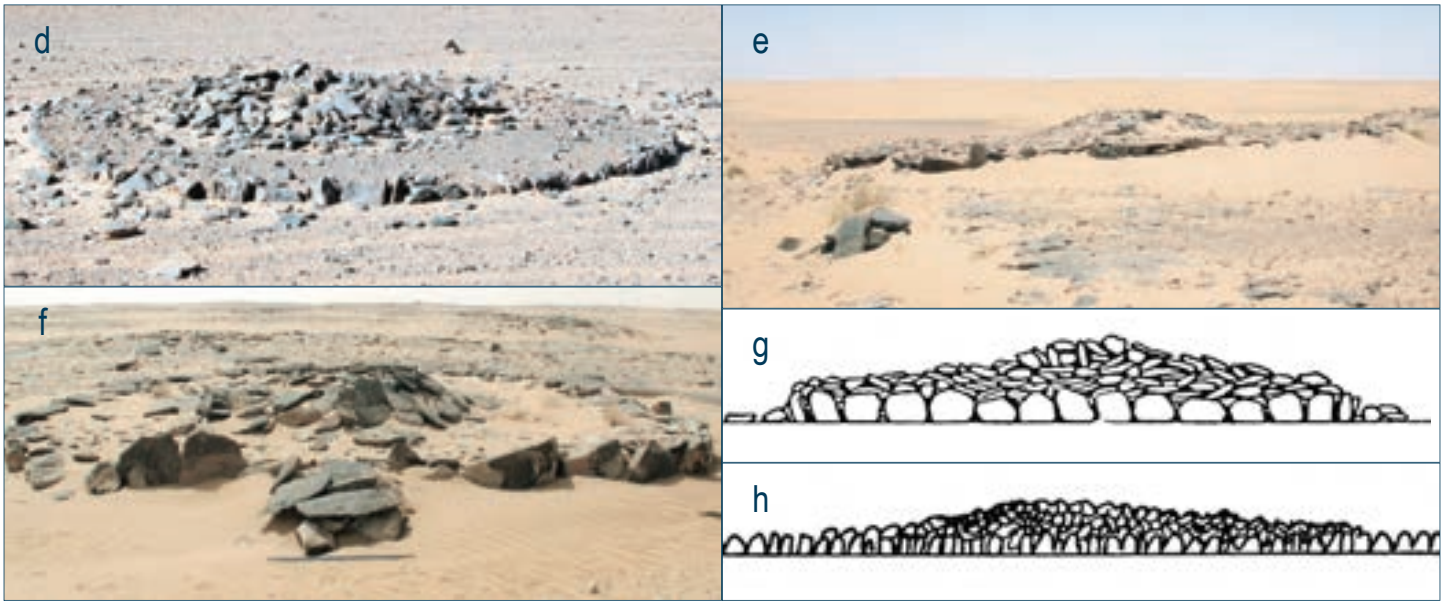


Fig. 11 – *Corbeilles* (baskets) and platforms: *Corbeilles*: a. Arouyeit (Tasiast) (Spruytte & Vincent-Cuaz 1956: 151); b. Aguenit (Tiris) (Sáenz de Buruaga 2018: 508); c. Meyateg (Photo: R. Vernet, 2008); Platforms: d. Amsaga (Photo: R. Vernet); e. Tauveron 2010: plate 104c; f. Tauveron 2010: plate 104b; g. Tucat en Haila (high Seguiet el Hamra) (Almagro-Basch 1946: 287, fig. 255); h. near Zag (South Assa) (Milburn 1974: 106, fig. 5).

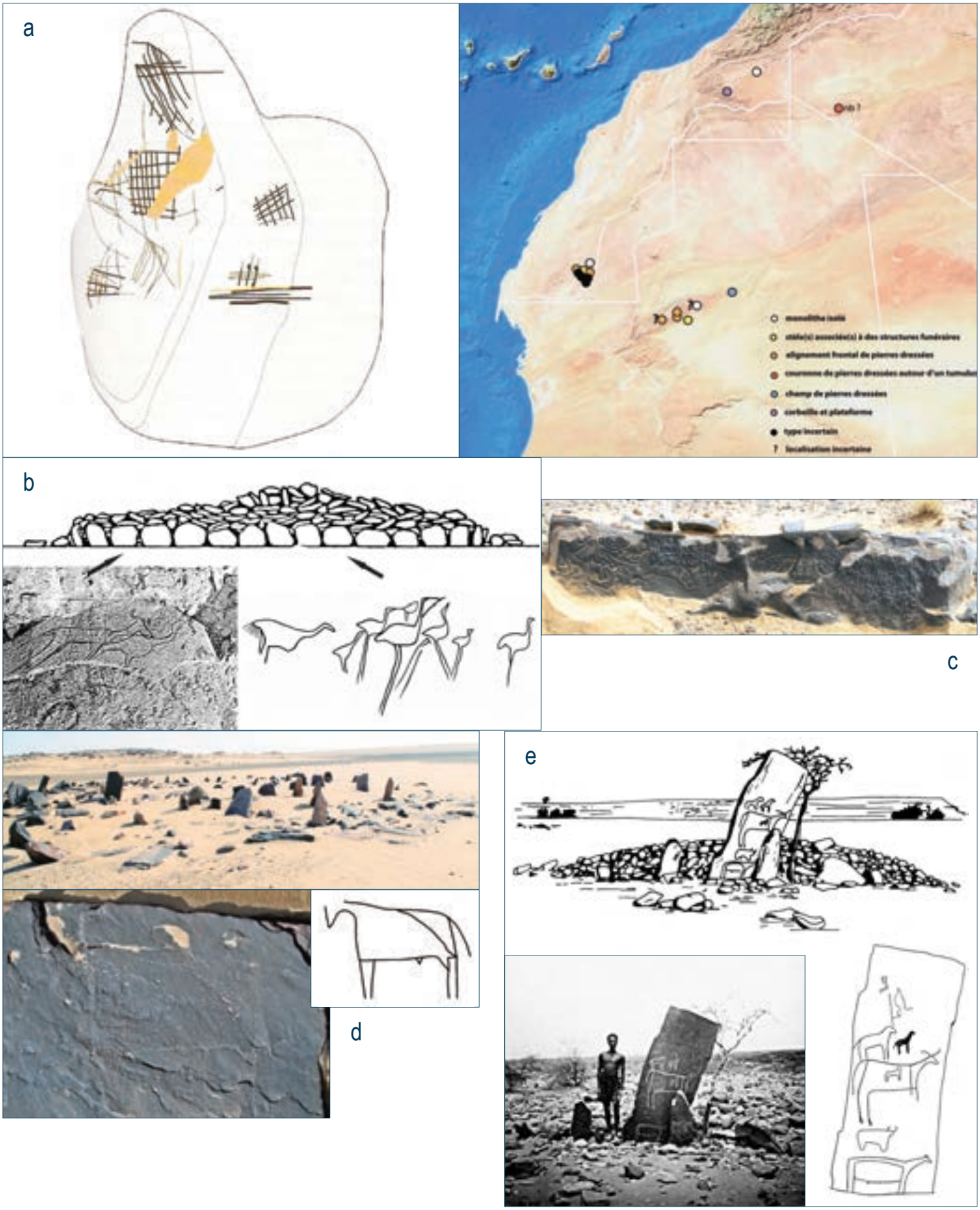


Fig. 12 – Engraved stelae and slabs: a. Oued Tata (Southern Morocco), from Tiggane to the Oued Meskaou (Delor & Germond 2009: 107, fig. 60); b. Tucat en Hailat (upper Seguiet el Hamra): left, Almagro-Basch 1946: 253, fig. 212); right: (Mateu 1945-1946: 53, fig. 1); c. Adrar: pillar 3 m long, engraved with unknown characters, that was intended to be erected (Photo: Cyril and Sylvie – http://www.mauritanie-au-gps.fr/); d. Gour Aouarach (north Adrar) (Photo: R. Vernet); e. Lemqader (Monod 1938: 59, fig. 53-54 & pl. VII, no. 2).

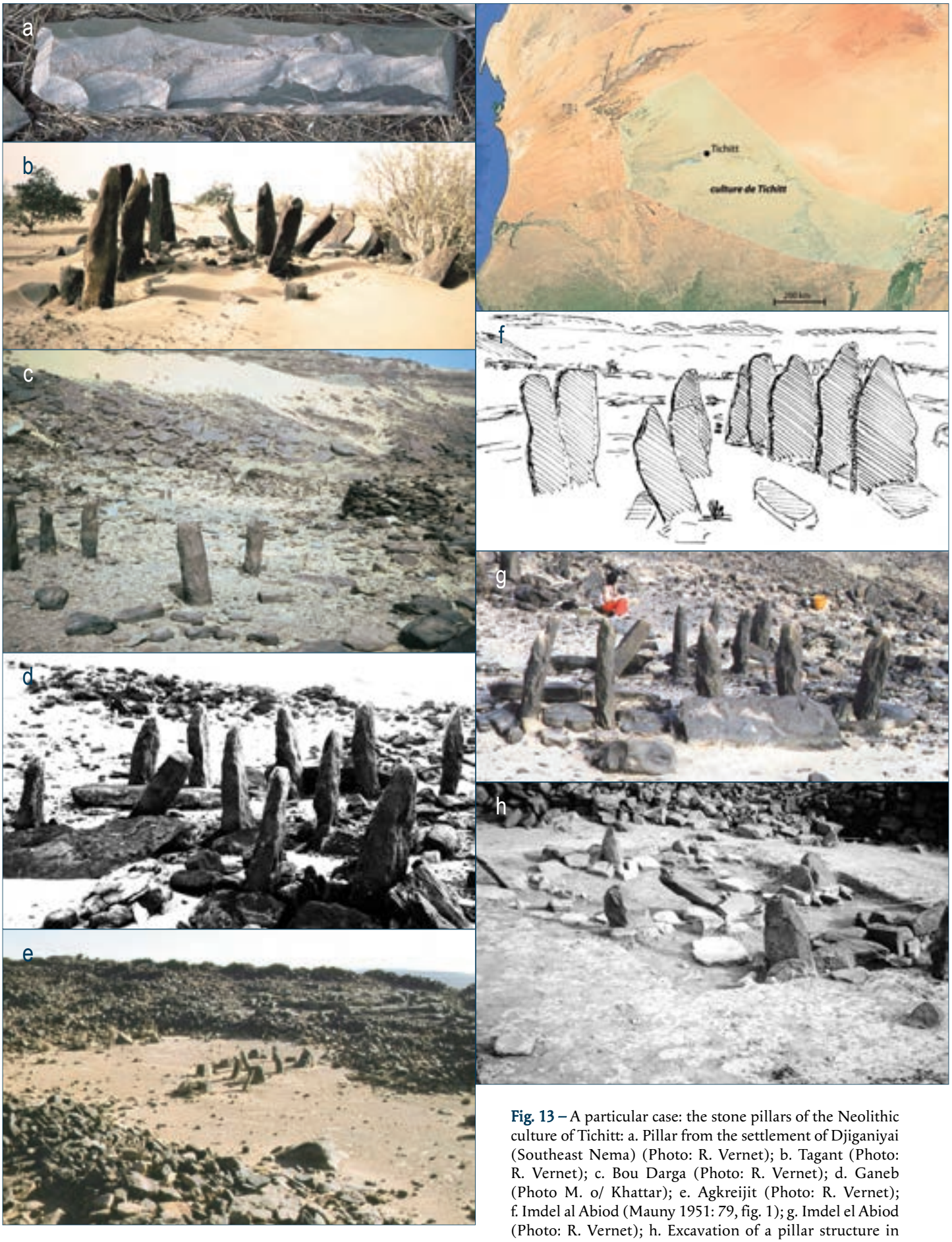


Fig. 13 – A particular case: the stone pillars of the Neolithic culture of Tichitt: a. Pillar from the settlement of Djiganiyai (Southeast Nema) (Photo: R. Vernet); b. Tagant (Photo: R. Vernet); c. Bou Darga (Photo: R. Vernet); d. Ganeb (Photo M. o/ Khattar); e. Agkreijit (Photo: R. Vernet); f. Imdel al Abiod (Mauny 1951: 79, fig. 1); g. Imdel el Abiod (Photo: R. Vernet); h. Excavation of a pillar structure in Akreijit (Holl 2012: fig. 3).

of the settlement. It is unlikely that these structures could have been used as huts, as the pillars are not tall enough. At most, we can presume that the lowest structures may have been slightly raised – and therefore ventilated – platforms for the comfort of the inhabitants, as are still used in Sahelian villages. The highest structures, which would allow people to sit under the platform, may have been workplaces, as shown by the abundant knapping waste and objects found there.

These structures can in no way be 'monuments with ternary stelae' (Monod 1948: 30) with associated funerary or ritual functions, as thought by the first discoverers, for example Mauny, who wondered: '*what these monuments represent? No one knows yet: tombs, houses, places of prayer?*' (1949: 109). At the end of the 20th century, Amblard established the role of the 'pilings' of the pillars and thus removed all doubts about the strictly secular use of the structures (Amblard-Pison 1996: cf. in particular the illustrations).

3. Elements of conclusion

It should be noted that the northwestern Saharan region lacks a number of types of monuments found in neighbouring regions. For example, in Senegal (Sine Saloum region) there is an exceptional concentration of monuments – more than 1000 – dated between the 3rd century BC and the 16th century EC (Laporte *et al.* 2017), and in Mali the monoliths of Tondidarou date to the 1st millenium of the Common Era) (Person *et al.* 1991).

The main conclusion is that most structures built in stone are funerary monuments, with the possible exception of some alignments of stelae with currently undefined functions. It is difficult to evaluate their number but they reach several tens of thousands whereas, for the moment, the number of identified standing stones is around 1000. The different monument types have similar geographical distributions with a few exceptions, such as crown tumuli. The reasons for this are mainly geological (nature of the rocks) and geographical (sandy or not, presence of water and circulation routes). The chronology is largely unknown, as dates are extremely rare and scattered, despite the efforts of some specialists, who sometimes look to dates from sites that are thousands of kilometres apart to outline a regional chronology. On the other hand, there have been several attempts to link the different markers of the Saharan Neolithic: archaeology (especially lithics and pottery), rock art, funerary structures, rare dating elements, etc. In truth, this is extremely hazardous, given the vast expanses of the northwestern Sahara and the rarity of publications. There is considerable contrast between the well-known areas (around Tifariti, southern Tiris, and Adrar) and almost overlooked areas, such as the Upper Seguiet el Hamra, the Zemmour, the Rio de Oro, the northwestern Algerian Sahara, the southern Adrar, and the Tagant.

This proclaimed homogeneity is not, however, exempt from regional or thematic specificities that cannot be explained. One example is particularly striking: in the long corridor extending from the High Atlas to the Seguiet el Hamra, then to the southern Tiris, we could try to link the metal axes frequently depicted in rock art (Sáenz de Buruaga 2015) with the very coherent group of funerary structures, especially in the southern Atlas. But there are no metallic axes in the rock art of northern Mauritania, even though the funerary sphere (including standing stones) is the same in this region. Lithics and pottery are better known thanks to scattered but enlightening works, and these also show a wide diversity of human groups throughout the centuries. We will need many radiocarbon dates to unravel such a complex tangle in time and space. We can merely conclude that standing stones, in all their diversity, illustrate over a time frame of about 7000 years, the variety of human groups (and subsets!) of the northwestern Sahara.

Translated from French
by Louise Byrne

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Joan SANMARTÍ

The megalithic necropolises of the eastern Maghreb

Abstract: The study of megalithic monuments in the eastern Maghreb began more than 150 years ago but was interrupted in the second half of the 20th century. Some recent projects in the Tunisian High Tell mountains have achieved important breakthroughs that allow us to take up the issue again. In particular, they have made it possible to clarify the typological diversity of these tombs, the spatial structure of the necropolises, and the chronology of some of the monuments, so that we can begin to understand their evolution over time. We present a review of the state of the art which, in addition to describing the evidence, includes a proposal for the interpretation of the evolution of megalithic monuments that is linked to the development of social stratification and institutionalized inequality in the 1st millennium BC. More specifically, we raise the possibility that the classical dolmens, of which hundreds of thousands of examples are known, correspond to an early phase of this process of social stratification, in the first half of the 1st millennium BC; at this time, almost all of the population seems to have had access to burial in monuments of this type. However, complex monuments such as those of Ellès or Makthar, which are much less numerous and dated to the last centuries of the 1st millennium BC, seem to correspond to a limited number of élite family groups. In this later period, the progressive polarization of society resulted in a limitation of the right to be buried in funerary monuments; it appears that dolmens were no longer constructed or used on a regular basis.

Keywords: *eastern Maghreb, megalithism, Iron age, social evolution, state formation*

1. History of research

The subject of this paper has a long tradition of study. It starts shortly after the conquest of Algeria by the Kingdom of France, which began in 1830 and extended over four decades. As early as the 1840s, the extraordinarily numerous megalithic monuments in the east-central region of the country attracted the attention of the European colonizers, who were already familiar with monuments of this kind in their homelands. In the 1860s and soon after, certain sites were carefully recorded, for example the necropolis of Djebel Mazela (Bou Nouara), published in 1868-69 by General Faidherbe. With the establishment of the French Protectorate in Tunisia in 1881, the activity spread rapidly to this country. The history of the research until the mid-20th century has been thoroughly covered by Camps (1961: 11-28), so we will merely point out that, in colonial times, most of the archaeological research (especially of the official variety) focused on the Roman Imperial and Late Antique periods. Excavations of prehistoric sites were carried out mainly by the military, doctors, high school teachers and

government officials rather than by professional prehistorians or archaeologists. The quality of their contributions is very variable: notable in some cases, such as Carton's work in Tunisia (Carton 1891, 1905), but with considerable shortcomings in many others.

The situation changed in the middle of the 20th century, with the arrival of Gabriel Camps and his wife, Henriette Camps-Fabrer. They started a modern research programme, particularly with their excavations at the Djebel Mazela necropolis (Camps & Camps-Fabrer 1964) and Aït Raouna (Camps 1961: 153). The end of the colonial era marked the beginning of a period of much more limited activity which lasted for several decades until the end of the century, when a major megalithic monument was excavated at Makthar (Ghaki 1997, 1999).

Two major projects carried out in the early 2000s in the Tunisian High Tell marked a turning point in the research tradition. In addition to careful excavation, the research teams also carried out a systematic survey of large areas and, as a result, thousands of megalithic structures were located and meticulously recorded.The first of these projects was sponsored by the Tunisian National Heritage Institute (INP) and the University of Cagliari, and was conducted in the territory of Henchir Mided (the ancient Mididi) (Tanda *et al.* 2009). The second was carried out by the INP and the University of Barcelona in cooperation with the Catalan Institute of Classical Archaeology, and focused a little further west, in the area of the El Ksour Massif (Kallala *et al.* 2014; Sanmartí *et al.* 2015; Kallala & Sanmartí 2017a).

There has also been a renewed interest in this subject among Tunisian researchers, which has produced notable results in the form of Emna Ghith-Hmissa's doctoral dissertation (Ghith-Hmissa 2015) and several papers published by Souad Miniaoui (2013, 2019). Despite the clear progress made in the research, the reference book on the protohistoric funeral world in North Africa (and therefore on megalithic monuments) remains Camps' great synthesis published in 1961 (see also Camps 1995a for a clear summary of megalithic monuments). This is testimony both to the quality of his work and to the paralysis of research for almost half a century.

2. State of knowledge

2.1 Geographic location

Megalithic monuments are not found everywhere in the eastern Maghreb. A mere 14 *allées couvertes* are known in the coastal area of the Great Kabylia region, east of Algiers (**Fig. 1**). Typical of the Aurès

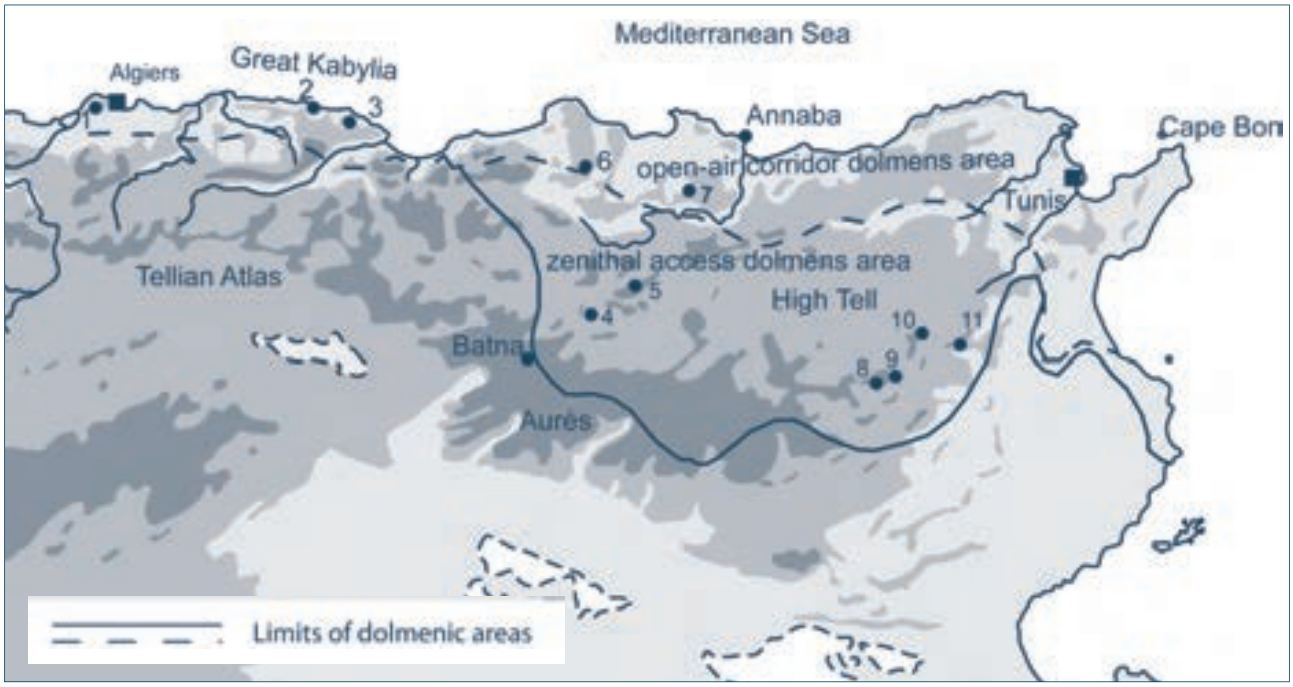

Fig. 1 – Map of the eastern Maghreb, with indication of the sites mentioned in the text: 1. Beni Messous; 2. Aït Raouna; 3. Ibarissen; 4. Sila; 5. Djebel Mazela; 6. Tiddis; 7. Roknia; 8. Althiburos-El Ksour; 9. Henchir Mided; 10. Ellès; 11. Makthar.

region, also in Algeria, are the *chouchet* (sing. *choucha*): that is, finely built tower-shaped monuments covered with a large megalithic slab. Dolmens are mostly present in a much larger area which extends over a large part of the eastern Maghreb (**Fig. 1**). This area embraces the entire coast between the region of Algiers and the Enfida, in the Sahel; inland, it stretches over a large mountainous region from the Tunisian High-Tell to the Batna region in Algeria. Within this region dolmens are extremely numerous and often clustered in large necropolises of hundreds and even thousands of monuments, and sometimes stretching over tens of square kilometres; they represent a characteristic trait of the landscape of this region.

Given their large number, their visibility and ease of access, megalithic monuments have been easy prey for treasure seekers; many have been plundered over the centuries. It is not possible to offer an exact figure of their number, but it is estimated that there are some 10 000 at the Djebel Mazela necropolis, about 3000 at Roknia, about 2000 at the Althiburos-El Ksour necropolis, 292 at Henchir Mided, and between 200 and 300 at Beni Messous. These figures suggest that the total number in the whole area must amount to many tens of thousands, if not hundreds of thousands, but many more systematic surveys would have to be carried out to obtain a more precise figure.

There are several possible reasons for the construction of so many monuments. Firstly, the population reached a significant size during the 1st millennium BC (which, as we will see, may be the date of most of these monuments); this is also suggested by other data in the historical and archaeological record (Sanmartí *et al.* 2020). Secondly, it is probable that all or a very substantial part of the population were entitled to be buried in dolmens. Finally, the fact that many dolmens were small in size and designed to hold only a few bodies (often perhaps only one) also accounts for their large number. Their relatively good state of preservation is due to their frequent location on the top or the slopes of mountains, areas that are more likely to be used for grazing rather than for agriculture.

Megalithic monuments are by no means the only type of protohistoric tomb attested in the territories where they are present, although they are certainly the most common in many of them. There are also a great many rock-cut chambered tombs called *haouanet* (sing. *hanout*) in the Cape Bon area in northern Tunisia and in north-eastern Algeria (Camps 1961: 91-110). Mounds of varying size are also common in some areas, frequently close to necropolises, and called *bazinas* when they are delimited by a low wall of stones (Camps 1961: 65-84). To this we should add a number of hypogea and large pits. At the current stage of research (quite preliminary) it is not possible to give an unambiguous explanation for this diversity, but it may be linked to major changes in the social structure in the mid 1st millennium BC, as we shall discuss in more detail later.

2.2 Typology

Dolmens with an open corridor (coastal area)

Characteristic of the coastal area are dolmens with an open passage that crosses the tumulus (delimited by a circle of stones) and leads to the entrance of the funeral chamber (**Fig. 2**). A number of these dolmens were excavated long ago, most notably at Beni Messous (within 20 km of Algiers), which was first explored by Bertherand in 1868 and 1869. However, the study of this type of monument has remained stagnant for years, and nothing can be added to Camps' descriptions from the 1960s (Camps 1961: 125-130).

Zenithal access dolmens (interior region)

Dolmens of this kind comprise two built elements: a quadrangular chamber, generally small in size (1.2 m² on average in the necropolis of Althiburos-El Ksour), the walls of which rest on the base soil, and a circular or (much more rarely) quadrangular enclosure, built with vertical slabs or roughly square blocks of varying size (**Figs. 3** and **4**). The burial chamber is covered by a large slab, which, given its size, is often the only element of these constructions that qualifies them as 'megalithic'. The location of the burial chamber is approximately central in most monuments, and there is no corridor crossing the surrounding tumulus. This means that the chamber was accessible only from the top, by removing the covering slab. This might not have been a serious

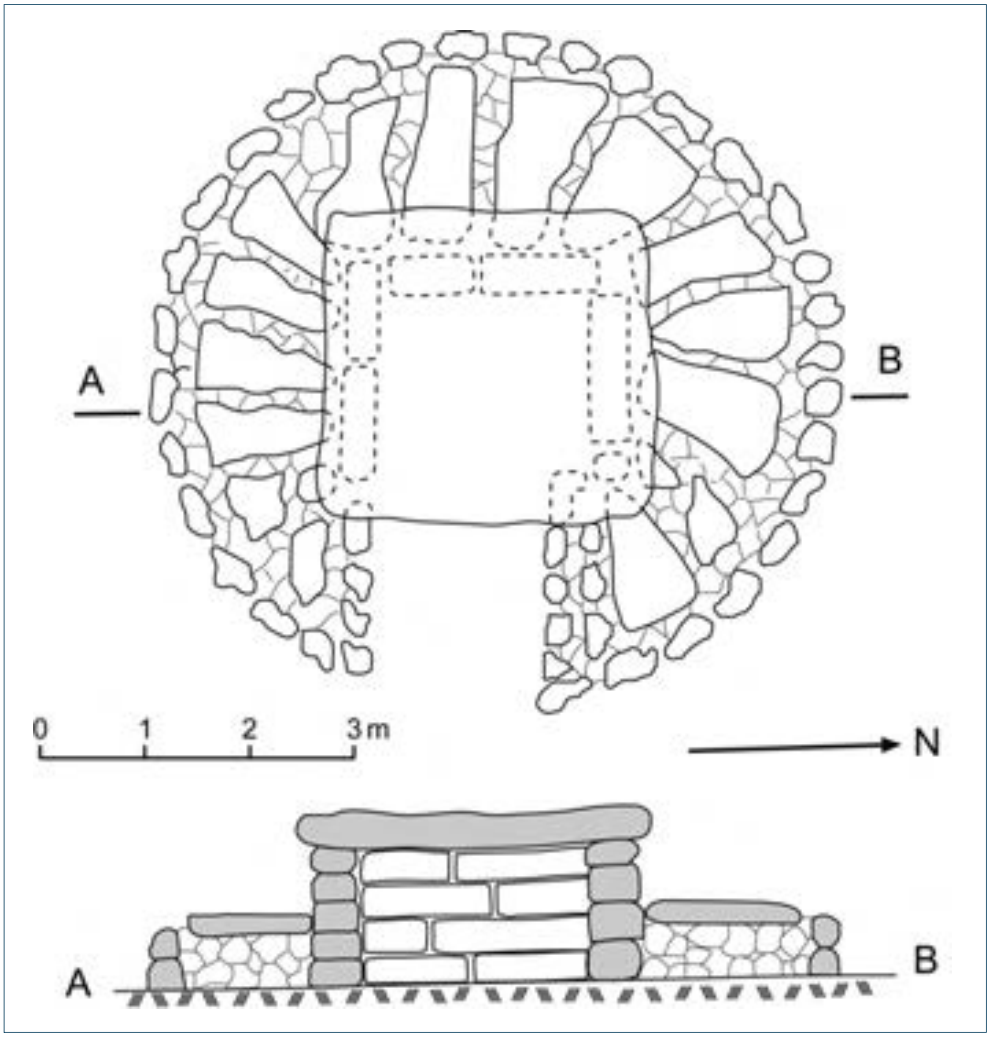

Fig. 2 – Open air corridor dolmen, Djebel Gorra (After Carton; reproduced by Camps 1961: 127, fig. 25; redrawn by the author).

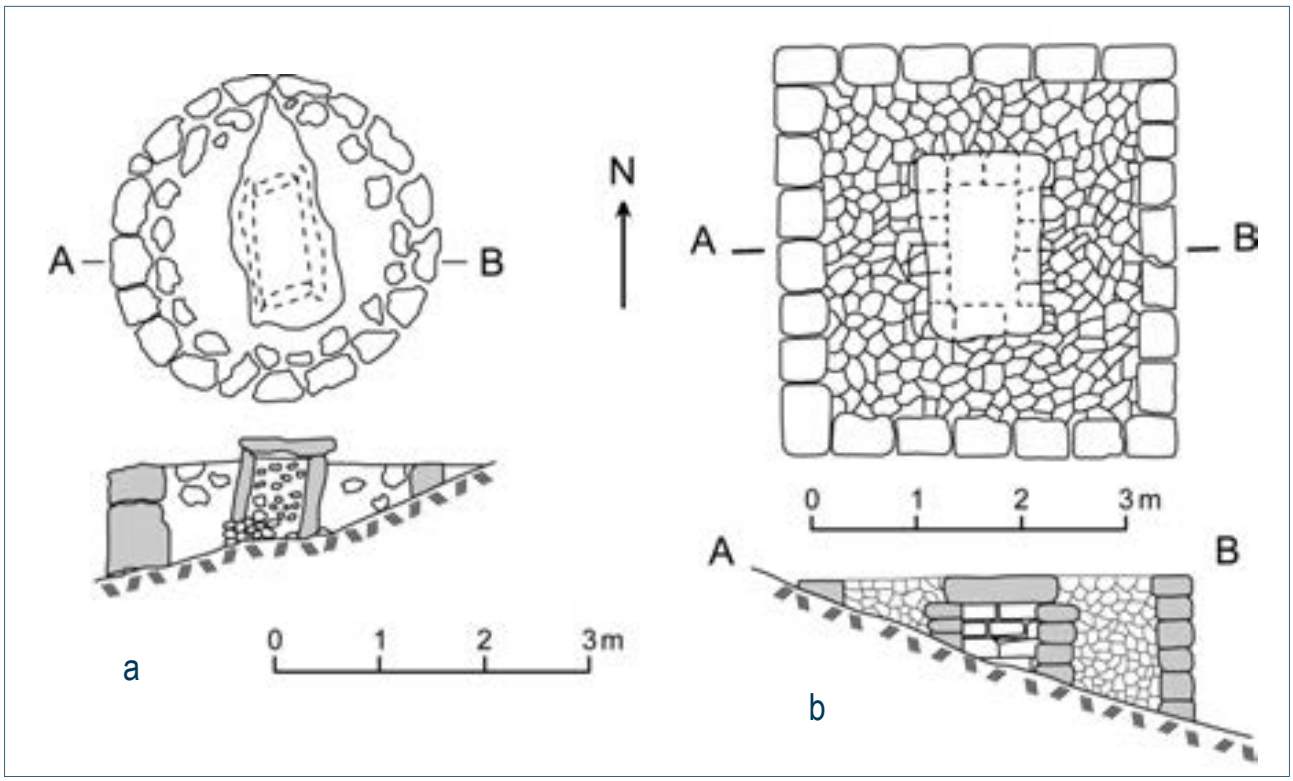

Fig. 3 – a. Circular zenithal access dolmen, Djebel Mazela (After Camps & Camps-Fabrer 1964: 22, fig. 12; redrawn by the author); b. Quadrangular zenithal access dolmen, Aïn Riran-Sila (After Frobenius 1916; reproduced by Camps 1961: 134, fig. 34; redrawn by the author).

Fig. 4 – Circular zenithal access dolmen, Uzappa (Photo: D. Montanero).

disadvantage, since, if we are to judge from the few monuments found intact (and properly excavated and published) we can assume that they were mostly individual graves – perhaps cenotaphs in some cases.

Excavations and systematic surveys at the Althiburos-El Ksour necropolis have confirmed the existence of several subtypes, as well as a considerable variability in their structural complexity and size (Kallala *et al.* 2017a-b). For example, some of the monuments with a circular enclosure (52 out of a total of 751) have a second circular wall between the chamber and the enclosure wall. The average diameter of the examples with a single circle delimiting the tumulus is 6.2 m, but 28 measure only 3-4 m, while 35 measure 10-17 m, and a few are even larger (up to 26 m). Monuments with a double enclosure are generally larger, with an average diameter of 7.9 m. The same can be said regarding the surface area of the funeral chambers: the average is 1.24 m^2 in the simplest type with a single enclosure, but 1.52 m^2 in those that have two, i.e., they are 23% larger. It can be concluded that larger dimensions are often (although not always) coupled with greater complexity.

Quadrangular monuments are generally square, or nearly so. However, six of the 66 examples of this type are formed by two juxtaposed, roughly square enclosures, with a burial chamber in each, in a central position. The maximum dimension of most examples of the simpler type (51 of the 58 in which this dimension is measurable) is between 4 and 7 m. The average surface area is 28 m^2, but varies between 8.7 and 58.7 m^2. The largest number (28 examples) measure between 20 and 30 m^2. The dimensions of the six more complex examples are very varied: from 7.8-11.4 m in terms of length and from 3.6-5.5 m in terms of width, with areas ranging from 28.1-62.7 m^2.

Free-standing dolmens and complex megaliths of central Tunisia

The free-standing dolmens of the rather small Henchir Mided region comprise rectangular funeral

Fig. 5 – Dolmen, Henchir Mided (Photo: D. Montanero).

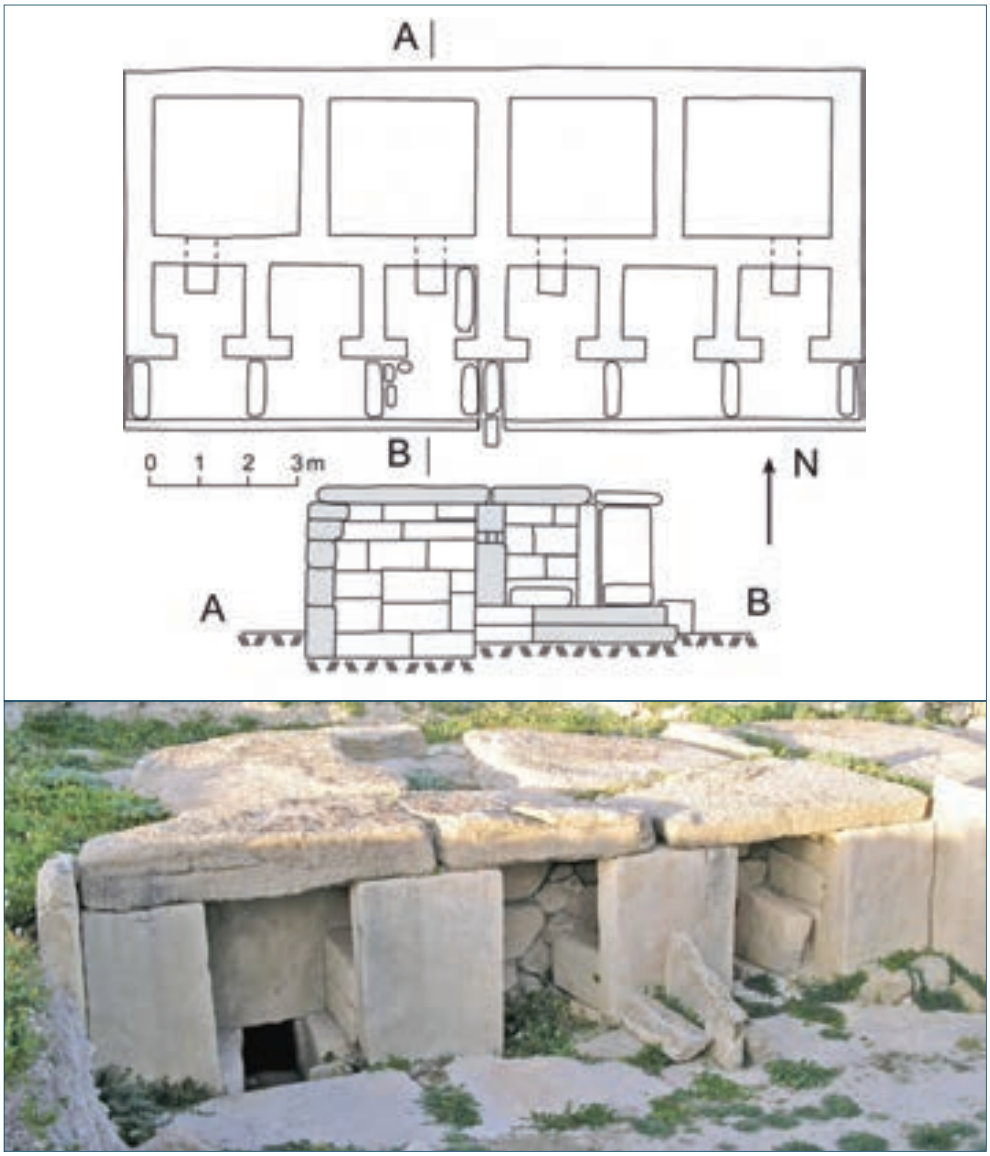

Fig. 6 – Complex megalithic monument, Makthar (After Pauphilet; reproduced by Camps 1961: 192, fig. 78; redrawn by the author; photo: J. Sanmartí).

chambers formed by large slabs, with access to one of the short sides and apparently without a mound or the stone circle that would delimit it (Fig. 5). Sometimes, two or three monuments are immediately juxtaposed or share common walls. A developed version of the latter type is found in Makthar, where there are two large monuments consisting of four juxtaposed funeral chambers, preceded by five chapels and a front porch supported by vertical slabs (Fig. 6). Still more complex are the monuments of the necropolis of Ellès; these comprise multiple burial chambers built with very large stone slabs and arranged on either side of a central corridor from which they are accessible (Fig. 7). These tombs also have a small side entranceway supported by large vertical slabs.

The covered gallery graves (allées couvertes) of Kabylia

A further group consists of the covered gallery graves (*allées couvertes*) of Kabylia, an important mountainous region west of Algiers. As noted above, only 14 examples are known, located close to Aït Raouna (eight monuments) and Ibarissen (six). They all consist of elongated covered chambers about 8-15 m long and exceeding 2 m in height, and they are covered with corbelled vaults or with flat slabs resting on the walls and have an axial line of pillars (Fig. 8).

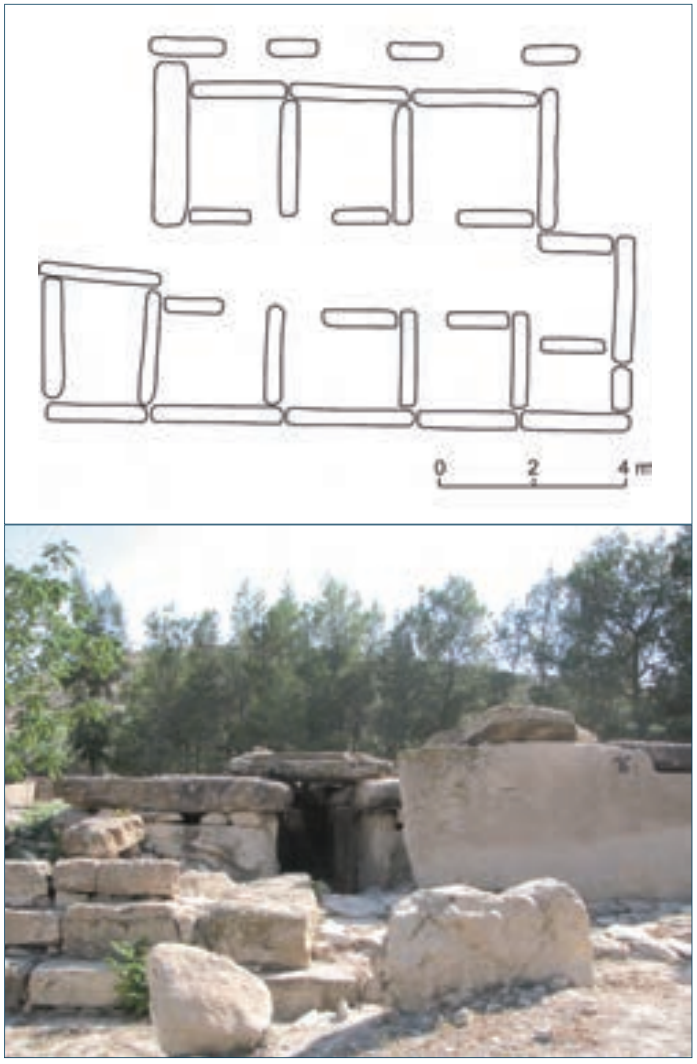

Fig. 7 – Complex megalithic monument, Ellès (After Denis; reproduced by Camps 1961: 190, fig. 77; redrawn by the author; photo: M.C. Belarte).

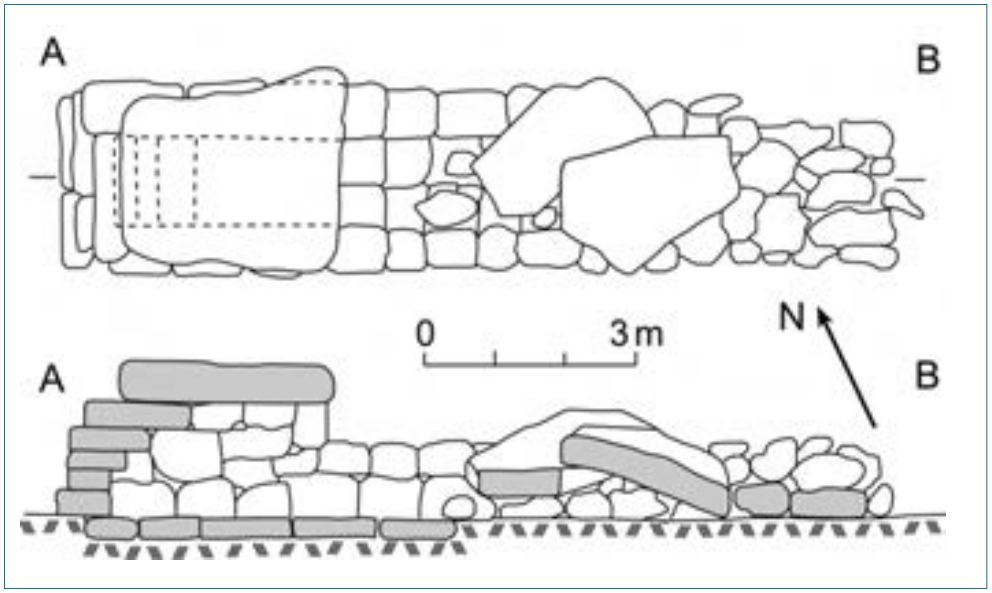

Fig. 8 – *Allée couverte*, Aït Raouna (After Camps 1961: 153, fig. 46; redrawn by the author).

Chouchet

These carefully constructed towers can be considered as megalithic monuments because they are covered with a large slab. Their dimensions are variable, with a diameter ranging from 3-15 m and a height between 2.5 and 3 m (**Fig. 9**). Since they do not have side doors, the access had to be from above, as for the dolmens of the inland regions. The considerable thickness of the walls, 2 m or more, would have facilitated the displacement of the large roof slab in the case of reuse.

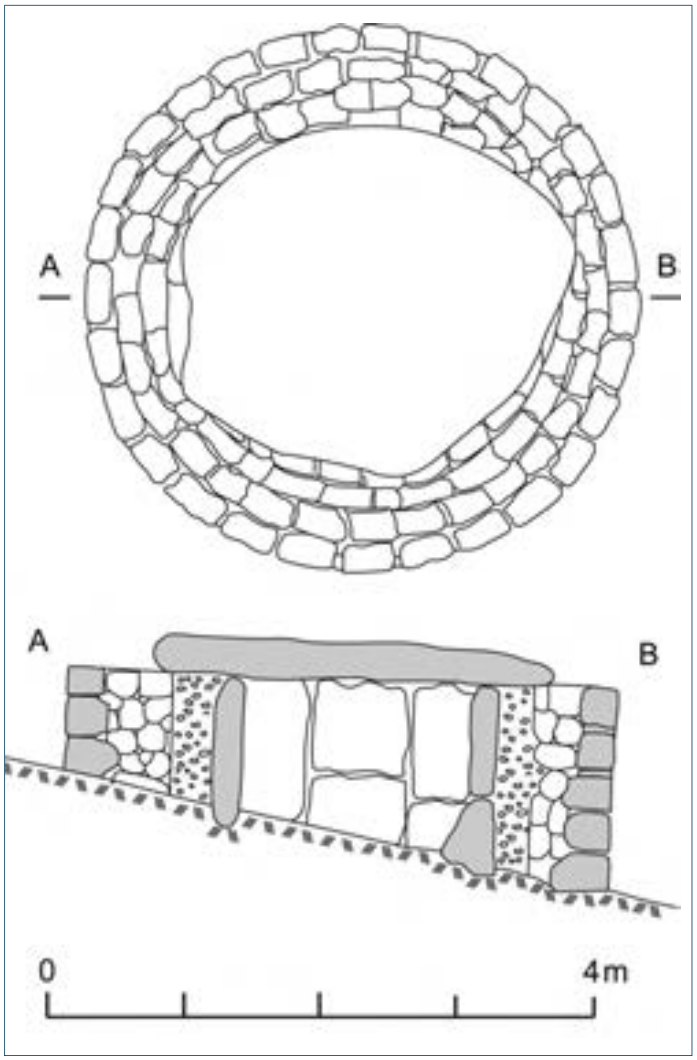

Fig. 9 – *Choucha*, Djebel Kharouba (After Payen; reproduced by Camps 1961: 171, fig. 61; redrawn by the author).

2.3 Chronology

None of the dolmens of the eastern Maghreb has yielded any Neolithic, Chalcolithic or Early-Mid Bronze Age items. Camps rightly assumed that they must have dated from some time between the Late Bronze Age and the 1st millennium BC, because they often contained iron items. To my knowledge, only the necropolis of Beni Messous has yielded material clearly datable to the Late Bronze Age – specifically a vase imported from Europe, a conical bronze button and some incised bronze rings (Camps 1995a: 29-30). This necropolis, however, undoubtedly continued to be used during the Iron Age.

Three radiocarbon dates are available: two from the necropolis of Althiburos-El Ksour - monuments 53 (Beta-283142) and 647 (Beta-333228) (Kallala *et al.* 2014: 29, 41), and another from dolmen 102 of Henchir Mided (Marras *et al.* 2009: 188). All three fall within the 'Hallstatt plateau', and thus suggest a date in the middle centuries of the 1st millennium BC. Significantly, another Henchir Mided dolmen has yielded an Attic black-glazed Vicup-type kylix (drinking vessel), produced in the second quarter of the 5th century BC (Ferjaoui 2010: 344). We should add that the dates obtained from Althiburos for Numidian ceramics (based mainly on their association with well-dated Phoenician and Punic pottery) also suggest a chronology between the 8th and 5th centuries BC for five dolmens excavated by Camps and Camps-Fabrer at Djebel Mazela (Kallala *et al.* 2014: 551). The same dates can be applied to vessels recovered from the Beni Messous necropolis, in particular from dolmens XII and XXII. Finally, monument 42 of the Althiburos-El Ksour necropolis was erected on a level containing Punic pottery shards dated to the second half of the 1st millennium BC, and ceramics of the same kind were found in the tumulus (Kallala *et al.* 2014: 35). In short, the evidence available from these dozen monuments suggests they date to between the 9th and 5th centuries BC. The data are obviously too limited to generalize this conclusion to the whole dolmenic area of eastern Maghreb, but they match the dating proposed by Camps, who worked with much less evidence but was exceptionally rigorous in his reasoning. In particular, he noted that wheel-thrown pottery (but also Numidian coins) was extremely rare in dolmens, and could be interpreted, when present, as the result of reuse, so that: '… [les]

dolmens nord-africains semblent avoir été construits avant que la civilisation phénicienne, à qui ils ne doivent rien, ne rayonne à travers le Maghreb' (1961: 148) – an impact that he placed in the 3rd century BC.

It is necessary to mention these details because the occasional presence in these dolmens of wheel-thrown pottery, and even of coins of the Roman Empire, has led some scholars to date them to the late 1st millennium BC or even later. However, Camps himself demonstrated that the presence of these items is due to the later reuse of the dolmens (Camps 1961: 140-146; 1995: 28-30). The 'new lives' of the megalithic monuments may have been strictly funerary, but there is good reason to think that they often entailed something of a more political nature, in particular the manifestation of specific cultural forms that challenged imperial power and social order and the 'official' culture linked to these. At least one of the Althiburos-El Ksour monuments (no. 53) has afforded some evidence of a reuse of this kind in the late 2nd to early 3rd century CE (Kallala *et al.* 2014: 57-58, 2017a: 48). In addition, it was enlarged in the time of the Vandals – that is, about 1000 years after its construction – probably by autochthonous powers seeking to legitimise their political position by linking it to a distant past. Only careful excavation (which has not always been the norm) can help us to clearly distinguish the different biographies of some of the dolmens.

The dating of the complex monuments of Ellès and Makthar is uncertain, due to the incomplete and inaccurate publication of the findings. What is known strongly suggests that they were used in the last three centuries of the 1st millennium BC and in the beginning of the Imperial period, but this does not allow us to establish the date of construction, which may be older, though probably not much (Pauphilet 1953; Camps 1995b; Ghaki 1997: 92, 1999: 97). The situation is little better as regards the *allées couvertes* of Kabylia. Camps, however, mentions the presence of an amphora dated to the 2nd century BC in one of the monuments of Aït Raouna, where he conducted a limited dig which has remained unpublished (Camps 1961: 153). He accepted a general dating from the 4th to the 2nd century BC for this site (Camps 1995a: 25).

2.4 Ritual

Knowledge of funeral rituals is hampered by several factors, among them a long history of tomb plundering, which has often significantly altered the contents of burial chambers. Another problem is that much of the excavation work was performed using substandard methods or has not been properly reported (if at all). Further, Libyan ritual practices present considerable diversity; some have left few remains and are not always easy to interpret.

Body treatment

As in the rest of the Maghreb (not counting the areas of Punic culture) and the Saharan region, the characteristic funerary ritual is inhumation (as opposed to cremation, even partial). Nevertheless, an important divide exists regarding the integrity of the bodies at the point when they were ultimately interred. In the first mode, primary deposition, the bodies were placed in the tomb in a complete and articulated state. This is clearly attested at Henchir Mided's dolmen 102, where the Tunisian-Italian excavation discovered two complete, superimposed bodies, both in a crouched position (a frequent finding in tombs of other kinds and in other areas like the Fazzan and Morocco) and lying on their right side. In the second form, secondary deposition, only a few selected bones or fragments of bones are placed within the tomb. This seems to have been a very common practice in the zenithal-access dolmens, since it has been attested in carefully conducted excavations in Djebel Mazela and Althiburos-El Ksour. In the dolmens, the number of bones may be extremely small (sometimes only a few fragments), or there may be none at all, as attested at Djebel Mazela (Camps & Camps-Fabrer 1964: 79). In monument 647 at Althiburos-El Ksour, which was intact, the burial level contained fragments of human long bones and skulls, as well as ribs and two teeth. This implies the excarnation of the bodies before burial, by means that are completely unknown to us (Camps suggested exposure to the elements, or deposition in a temporary grave), and the subsequent selection of the remains that were deposited in the tombs. This practice is probably also attested, though indirectly, by the finding at the city of Althiburos, of human remains in habitation layers dated to the 8th-4th centuries BC; we may assume

that these were preserved in domestic areas. They suggest highly complex funerary rituals, which we are still a long way from understanding. Post-mortem manipulation of the bodies is also suspected in the Fazzan, and some instances of excarnation are known in eastern Algeria and Morocco. However, this seems to have been essentially a Numidian practice and is not frequently attested in the rest of the Maghreb.

The evidence yielded by the large, complex megalithic monuments at Makthar is different in so far as a large number of human bones were found inside the square funerary chambers of both monuments. Most appear disarticulated (Pauphilet 1953; Camps 1961: 191) but others seem to be in anatomical connection and were laid in a crouching position on their right side (Ghaki 1997: 67). This evidence recalls the forms of deposition documented in other types of Numidian tombs, for instance some *bazinas* at Djebel Mazela and Althiburos, and pits and underground chambers at Tiddis and Sila, where excarnation prior to burial is also attested but the skeletons, though disarticulated, are complete (Camps 1961: 489-498; Bussière 1998).

Given the kinds of practices described (and the limited state of the research) it is difficult to determine how many individuals are buried in the dolmens. In the case of the Althiburos-El Ksour necropolis we can say that the few bones contained in tomb 647 might have belonged to a single body, in accordance, perhaps, with the rather small size of the tomb (maximum diameter 4.7 m). In contrast, the lower levels (the only ones that have been preserved) of the funeral chamber in tomb 53, which is much larger (maximum diameter 13 m), yielded the remains of six individuals, three of them infants, two extremely young. There may have been many more, but most of the chamber level was disturbed by looters and so nothing conclusive can be stated. The data obtained point to a correlation between the size of the funeral monuments and the number of individuals buried, but at the current stage of research we cannot go any further. Though the data available are scarce, there do not seem to have been significant differences in the funerary treatment of children and adults. This is in agreement with the funerary record from northeastern Morocco but contrasts sharply with what has been observed for contemporaneous periods in other cultural areas of the western Mediterranean, including the Punic world and the Iberian culture.

Funerary offerings

The funerary goods are generally modest when compared with the lavish assemblages that are present in funerary contexts in several areas of Europe during the 1st millennium BC. They are limited to animal bones, pottery vessels and, sometimes, small bronze or iron objects. Horse bones are particularly common, but bones of sheep/goats, birds and gazelles are also attested. Dolmens lacking artefacts of any kind are quite usual, as attested in several small examples at Djebel Mazela, in monument 647 of the Althiburos-El Ksour necropolis and the already mentioned large dolmen of Henchir Mided (Camps & Camps-Fabrer 1964: 79-81; Kallala *et al.* 2014, 2017a; Marras *et al.* 2009). The vessels found in undisturbed, well-excavated, contexts are locally produced; some are common utilitarian vessels, mostly cups, but votive miniatures ('microcéramique' in Camps' terminology) are also very frequent. Conversely, many of the forms attested in the excavations at the city of Althiburos are completely absent in the dolmens and in other kinds of tombs. Foreign pottery is extremely rare, although an important exception is an Attic vicup found in a dolmen at Henchir Mided. The almost complete absence of Punic or other imported pottery must be interpreted as a deliberate ritual choice rather than as a chronological phenomenon. For example, the excavation of dolmen 53 of the El Ksour necropolis has produced only local hand-made pottery in the foundation levels of the tumulus; however these pieces are dated to the 6th-5th centuries BC, a period when Punic imports are well attested at nearby Althiburos, albeit in small quantities. The same holds true for the 24 tombs excavated by Camps and Camps-Fabrer at Dejebel Mazela. As regards other items, weapons are extremely rare; personal items such as bracelets, rings, fibulae, knives or beads are also present, but never in large numbers.

Funerary feasts?

Evidence of feasting is extremely scarce. Nevertheless, the excavation of dolmen 53 at the Althiburos-

El Ksour necropolis has afforded some data that may hint that they occurred. The evidence comes from the lower levels of the tumulus that surrounds the funerary chamber. The excavations yielded hand-made pottery that may be typologically dated to the 7th-5th centuries BC, a chronology that is consistent with the ^{14}C dating of the bones found inside the funerary chamber. These vessels are almost exclusively cups, with one large jar, and many are covered with the red slip that is typical of Numidian tableware. Storage and cooking vessels are completely absent, and there are no bones (animal or human). It is not unreasonable to consider the vessels to be the remains of pottery used in funerary ceremonies; if so, these ceremonies would have involved only drinking. Slightly different, but possibly related evidence has been found in dolmen IX at Djebel Mazela. Here, the fragments of a large vessel were found intentionally scattered over several square metres in the tumulus, and a fragment of the same vase was placed inside the funerary chamber. The previously mentioned vicup found at Henchir Mided also hints at practices of this kind.

Funerary cults

Convincing evidence for funerary cults has been observed in the large, complex megalithic monuments excavated at Makthar by Pauphilet (1953) and Ghaki (1997, 1999). Here, the six small rooms preceding the funerary chambers contained anepigraphic stelae and a large number of pottery vessels filled with animal bones, earth and ashes (**Fig. 4**). They are most likely the remains of sacrifices linked to a funerary cult.

In the vicinity, and under the portico of one of the great monuments of Ellès, there are traces of a funerary cult, signalled by a deposit of cippi (low pedestals) and anepigraphic stelae and the remains of animal offerings.

2.5. Social organization

Funeral remains may or may not faithfully reflect the actual organization of society; sometimes they are deliberately designed to distort it. They should therefore be considered with caution and always in a broader context, including settlements and material culture. However, we may assume that the very large number of preserved dolmens indicates that all, or at least a large part of the population was entitled to formal burial in structures of this kind. Nevertheless, the diversity among dolmens in terms of their morphology and size must probably be explained in socio-economic terms. The analysis of large dolmenic necropolises may yield interesting data from this point of view, but the lack of excavations carried out, and consequently the lack of chronological data, inevitably clouds the interpretation.

To identify the order that governed the distribution of these elements, and to deduce aspects of their social organization, requires a detailed analysis at the macro-spatial scale – one that takes into account not only the location of the monuments and their reciprocal spatial relationship, but also their size and structure. This, in turn, requires geolocation and detailed analysis of each monument, but very little work of this type has been carried out to date. An exception is the study undertaken at the large dolmenic necropolis of Althiburos-El Ksour. It is not possible to describe all its aspects in detail, but the main conclusions are summarized below.

The first main feature is the respective spatial distribution of circular and quadrangular dolmens. While circular dolmens are found throughout the necropolis, quadrangular structures appear almost exclusively in the southwestern part, on a single well-delimited mountain (Djebel Ayata). In the absence of excavations at these monuments, the interpretation of this feature (in chronological, ethnic or social terms) remains highly uncertain.

Further analysis indicates important (and not fortuitous) differences in the respective distribution of dolmens with a single or double circular enclosure. For example, the latter are proportionally more numerous (63%) than the former (34%) at elevations above 900 m. Since, as we have already said, double-circle monuments are more complex and larger than their single-circle counterparts, it is logical to assume that they contained the remains of the members of the higher-ranking clans and, therefore, that they probably played a structuring role in the overall organization of the necropolis. In addition, double-circle monuments are concentrated in the central part of the studied area, especially in

the middle of the Althiburos valley; indeed, 20 of these monuments (39%) are located there. In the remaining area they are fewer in number but are still present on every elevation with a sufficient surface area, forming groups that can be distinguished according to the topography. The significance of these groupings remains uncertain. They may obey symbolic or social criteria, or both, perhaps related to the relative importance of the different segments of the tribe that inhabited the region. This assumption is reinforced by the apparent attraction exerted by the city of Althiburos: one might think that powerful lineages would have their funerary monuments near the city.

In terms of the spatial relationships between the two types of dolmens with a circular perimeter wall, it is a logical assumption that the larger and more complex monuments have a structuring role, and that the dolmens with a single enclosure were arranged around them, or at least located in relation to them. This is particularly clear in the southern and western parts of the surveyed area, for example at Djebel Bou Jifa.

In short, the existence of one or more underlying structures that explain the spatial distribution of the different types of monuments seems evident. They should be interpreted in terms of social organization, although it is not easy to determine whether the hierarchical structure of the necropolises is due to the development of institutionalized inequality or rather to differences in the authority of certain family groups within an essentially egalitarian system. Resolving these issues would entail a systematic excavation programme, as the data available so far are insufficient.

3. Synthesis. The megaliths of eastern Maghreb in the context of early-state formation in North Africa

Despite the long tradition of study, North African megaliths are still little known and poorly understood. Fortunately however, research over the last 30 years has allowed the reopening of a dossier that had been almost forgotten since the mid-20th century. Several kinds of megalithic tombs are present in the eastern Maghreb; among them, dolmens are predominant, often grouped in large clusters formed by hundreds or even thousands of examples. Their numbers seem to indicate that access to this type of tomb was quite generalized, that considerable manpower was available, and that burials were usually individual. Suggestions of population increase are attested by the excavations at the city of Althiburos, where archaeobiological data indicate changes in the economic management of the environment that support this hypothesis (Cantero & Piqué 2016; López & Cantero 2016; Sanmartí *et al.* 2020: 455-460; Valenzuela-Lamas 2016).

To the extent that it can be established, the chronology of the dolmens seems to embrace the period from the Late Bronze Age to the 5th century BC. A detailed survey and excavations at the Althiburos-El Ksour necropolis indicate a notable complexity within this category of monuments, regarding both their morphology and their size. This may reflect a parallel increase in social complexity, which is also suggested by findings from the excavations in the city of Althiburos, including shifts in building methods, the adoption of Phoenician hydraulic techniques, and the construction (in the 4th century BC) of a strong defensive wall (Sanmartí *et al.* 2020). In a context of demographic growth, all these may be considered as material reflections of paths towards the formation of a true city, which we believe is linked to the rise of early states.

A further indication in this direction is the fact that the funeral evidence dated to the last three or four centuries of the 1st millennium is quite different from that of earlier times, probably confirming the rise of a social hereditary elite that might have claimed specific (and maybe exclusive) rights to funeral practices and formal burial. We should note, in this regard, that the large, complex megalithic monuments of Ellès and Makthar probably date from the 3rd century BC. The same can be said of the only well-dated *allée couverte* (at Aït Raouna), and *bazina* 241 at Althiburos, which was used in the late 2nd century BC but has not been completely excavated (Kallala *et al.* 2017a: 48-53), and perhaps of *bazina* XXII at Djebel Mazela, which yielded two carinated bowls that may be from this period, although they may also be older (Camps & Camps-Fabrer 1964: 42-45). In all these tombs, as in the pits at Tiddis and the underground chambers at Sila, there are a large number of human remains, generally not in anatomical connection but not, as a

rule, fragmented, and in some cases, especially the skulls, at least grouped according to anatomical criteria. This is in stark contrast to the evidence from the dolmens, where the number of bones (or bone fragments) is usually small and (save for dolmen 53 at the Althiburos-El Ksour necropolis) belong to a single or just a few individuals.

In summary, the available data, however limited, suggest that dolmens were no longer built after the 5th century BC. We may conclude that in the late 1st millennium BC there was a marked reduction in the number of tombs and, possibly, that individual burials were no longer performed. Large complex structures were built holding a huge number of bodies, with their bones disjointed but not fragmented. With all due caution given the many gaps in our knowledge, we suggest that in the last centuries of the 1st millennium BC, funeral rituals were reduced to a limited number of higher status families whose members were buried together in these collective tombs, as their putative ancestors had been in the larger dolmens, such as dolmen 53 at Althiburos-El Ksour. A similar evolution in funerary customs has been observed elsewhere, for example in Greece and in the Iberian world, and seems to characterize processes of social change that lead to the formation of aristocracies. These aspiring elites attempt to emphasize their prestige in a variety of ways, for instance by wearing distinctive attire and engaging in particular forms of consumption, but also via a supposedly exclusive relationship with the supernatural world, probably with implications about beliefs related to the afterlife.

4. Perspective

Of all the areas in the entire Western Mediterranean, the history of North Africa during the 1st millennium BC is the least well known; we lack essential data for understanding the processes of state-formation and the development of the Libyan kingdoms attested from the 3rd century BC by Graeco-Roman sources. This limits our understanding, both of the particular historical processes in this region and of the general and intercultural models of socio-cultural transformation, which are in a continuous process of theoretical reformulation and refinement. In both cases, to investigate the developments further we need to increase the number of solidly argued case studies available.

The causes of this state of affairs are diverse; the most important is the preference traditionally given to the study of other periods, especially the Roman Empire, which in colonial times was presented as a model of the 'progress' provided by European colonization. Over time this preconception has slowly lost influence, and several current or recent projects have explicitly aimed at broadening our knowledge of the protohistoric period. The results they have provided have been important from a qualitative point of view but remain insufficient considering the immensity of the territory and the large range of material potentially available for study. In addition, recent terrorist attacks have slowed, and sometimes disrupted, these projects. From these experiences we may conclude that it is necessary to implement projects that cover the whole territory of the Maghreb in a more balanced way, and that allow a more thorough study of different aspects of the archaeological record, including both habitation sites and necropolises. The project carried out at Althiburos and its surroundings could serve as a general model, to be adapted to the local circumstances of each region. We should also add the need to publish fieldwork and material assemblages which remain only partially published (or not at all), in particular those of large tombs and funerary monuments dating from the last centuries of the period considered, such as Ellès and Makthar. At these sites, and others such as the Althiburos and Djebel Mazela basins, studies based on human remains are needed, not just to determine their chronology but also to shed light on the living conditions and the degree of inbreeding among the individuals buried in these collective tombs. This would allow us, for example, to verify our hypothesis of the social and political character of the monuments.

Finally, we also stress that, in addition to the inherent scientific interest of the issues at hand, the task of reducing the imbalance in the knowledge of this period between the European and North African shores of the central-western Mediterranean is an act of justice and reparation which the European countries, particularly those with a colonial past in the region, should whole-heartedly embrace.

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Part VII: African Megaliths

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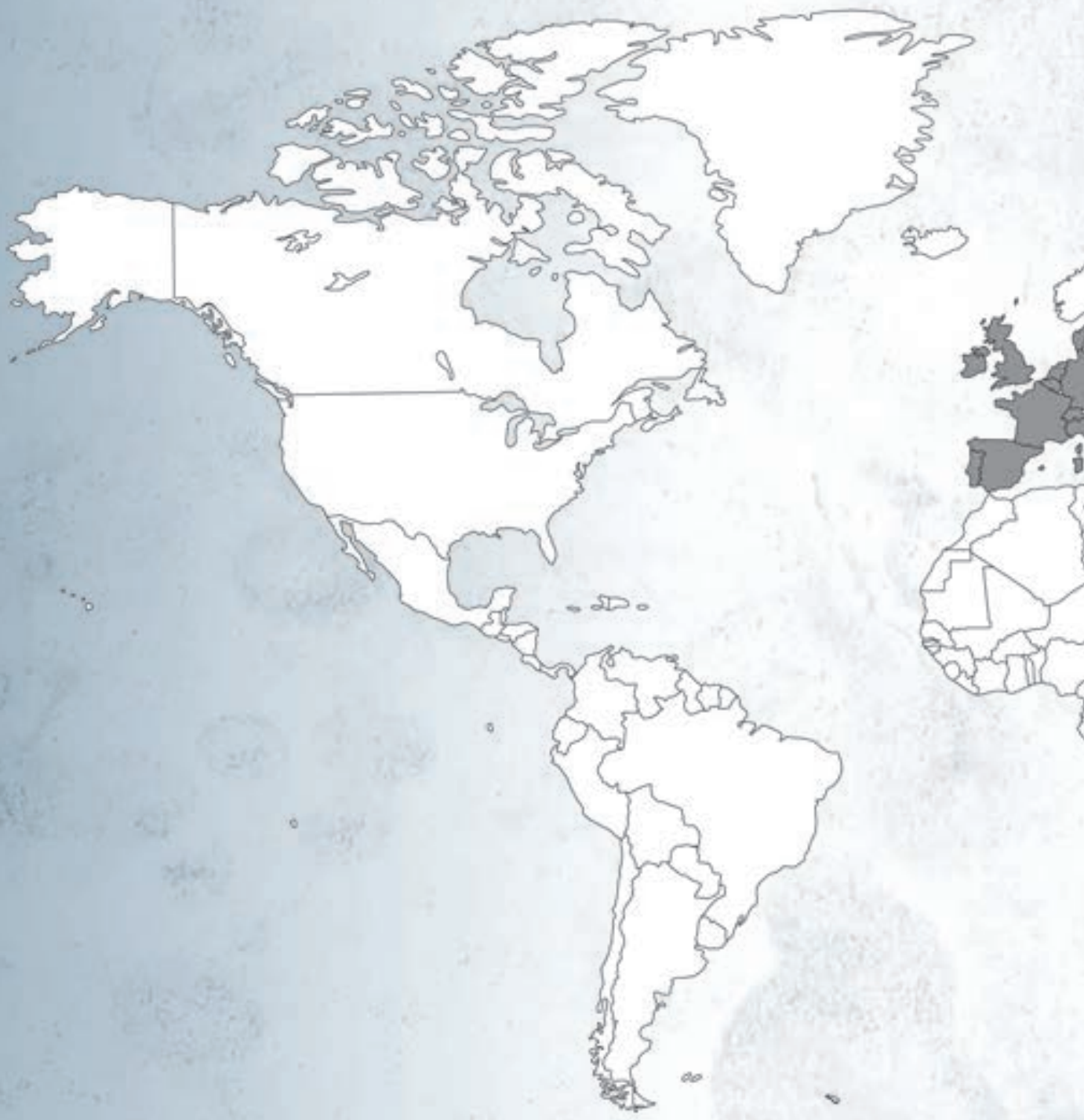

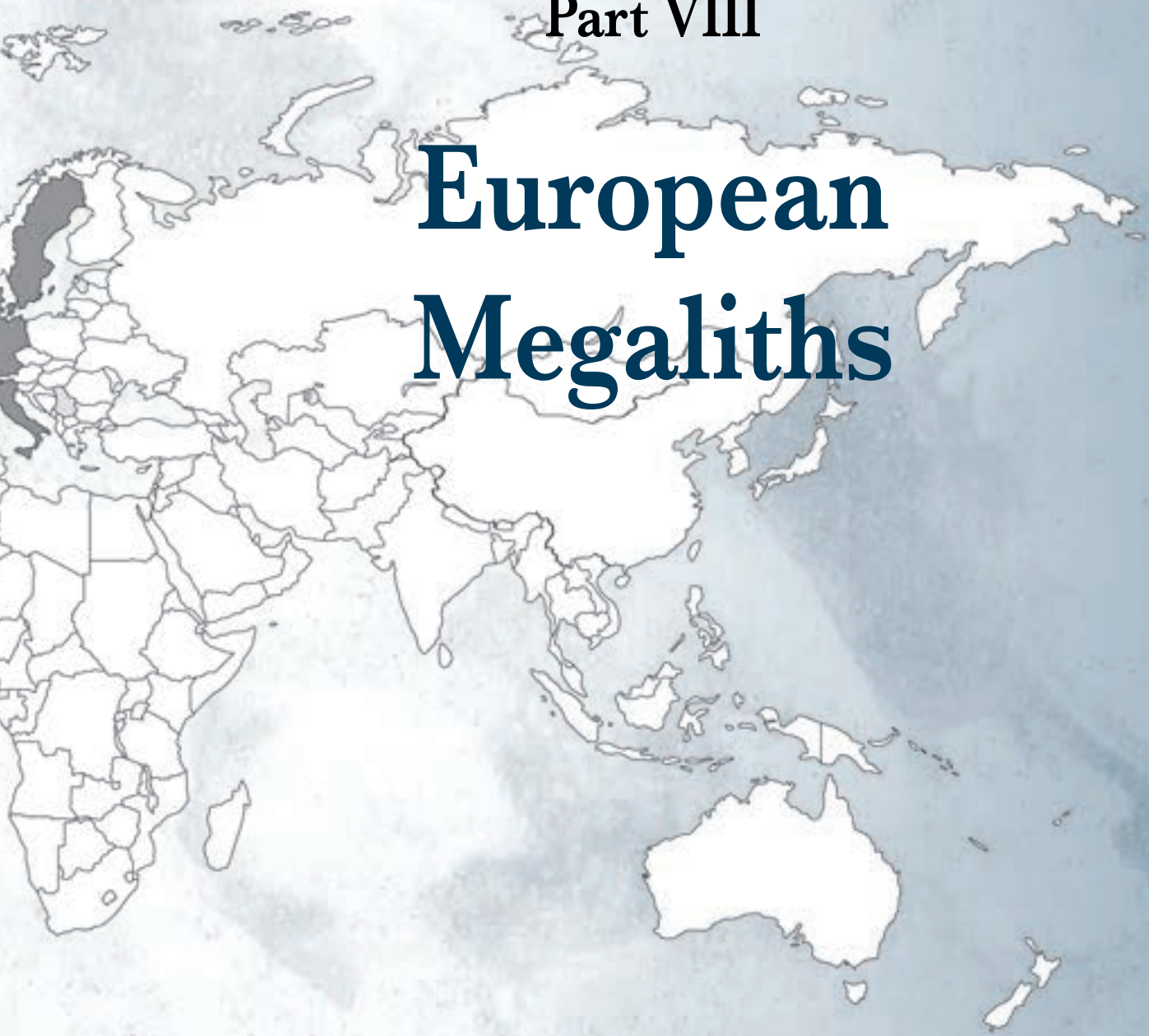

Part VIII

European Megaliths

Chris SCARRE

Introduction

The megalithic monuments of western and northern Europe, along with Neolithic monumentality more generally, have drawn the attention of scholars and researchers since the late Middle Ages. The earliest of these monuments appear on current evidence to date to the Middle Neolithic, in the early or middle centuries of the 5th millennium BC, although there are stone-built Late Mesolithic burial features in northwest France, and stone structures at Late Mesolithic settlements in the Danube Gorges (Chapter 53, Borić, this volume, p. 1153). Evidence for the erection of timber posts by Mesolithic communities also survives, for example close to Stonehenge (Allen & Gardiner 2002; Cleal *et al.* 1995). In general, however, the construction of the first megalithic monuments in Europe may principally be associated with the early farming societies of the 5th and 4th millennia BC (Chapter 54, Laporte & Bueno Ramírez, this volume, p. 1173; Chapter 59, Guilaine, this volume, p. 1281). That marked the beginning of a long tradition in some regions, where the deployment of megalithic blocks, either individually or as parts of larger structures, continued into the 3rd millennium BC and beyond.

The geographical distribution of European megalithic monuments led antiquarian researchers to attribute them to the spread of a people or peoples moving from northern Europe along the Atlantic coasts (Scarre 2018). By contrast, a model of independent regional origins was proposed in the 1970s, when radiocarbon dates began to become more widely available. Within recent decades, the development and application of new analytical methods has provided more secure insights into the origins and spread of megalithic monumentality. Ancient DNA analysis has demonstrated, for example, that the spread of the Neolithic across Europe, which preceded the earliest monuments, was indeed associated with movements of people (e.g., Rivollat *et al.* 2020). Stable isotope analyses of human remains from megalithic tombs have revealed patterns of mobility of the kind that may have underlain the spread and adoption of the megalithic 'idea' (Neil *et al.* 2020). At the same time, statistical analysis of the increasing number of available AMS dates has allowed us to revisit the issue of overall chronology, and the origins and spread of the megalithic tradition (Schulz Paulsson 2017). Coupled with this have been systematic studies of key artefact types, such as jadeitite axeheads from the western Alps and variscite beads and pendants from Iberia. These have documented the long-distance movement of materials and revealed exchange networks operating across western and northern Europe during the 5th and 4th millennia BC (Pétrequin *et al.* 2012, 2017; Querré *et al.* 2019).

The origins of the megalithic monument tradition has been one of several major themes in the study of the European evidence. Another has been the diversity of the monuments themselves, including individual standing stones, groups of stones arranged in circles (e.g., Stonehenge) or alignments (e.g., Carnac), and burial chambers of various kinds (Chapter 56, Müller & Sjögren, this volume, p. 1213; Chapter 58, Scarre & Laporte, this volume, p. 1253; Chapter 59, Guilaine, this volume, p. 1281). Some of these are clearly funerary in character, particularly the megalithic chambered tombs (even though in many regions geology has hindered the survival of human remains). Whether the special quality of megalithic monumentality was in all cases connected with death and the ancestors, however, remains open to debate. Stone circles, for example, may have been places of ceremony and assembly, although some, such as Stonehenge, were associated with funerary deposits, albeit primarily in its earlier phases (Willis *et al.* 2016). Individual standing stones, such as the statues-menhirs of southern France, may have commemorated individuals, although whether living or dead remains unclear.

Megalithic monumentality was dependent on the availability of suitable raw materials and largely limited to areas where large stone blocks were easily accessible: the rocky landscapes of Atlantic Europe, or the deglaciated erratic-strewn lowlands of the North European Plain. Elsewhere, massive timbers were used to create monuments that must have been equally impressive, although they only survive today as patterns of postholes. That is not to say that the two materials were directly equivalent, and the contrasting character of timber – drawn from living trees – and stone – derived from the earth itself – must have imbued them with specific symbolic meanings and associations. In rare cases, the timbers themselves survive: the Neolithic chambered tomb at Haddenham, for example, or the Early Bronze Age circle at Holme-next-the-Sea, both in eastern England, or the Middle Neolithic enclosure of Le Vivier at Passel in northern France (Brennand & Taylor 2003; Evans & Hodder 2006; Granai *et al.* 2020). The substantial nature of the 249 oak posts at Passel serves to illustrate the scale of social organization required to construct such large monuments of timber.

The relationship of megalithic monuments to social organization and social change is, indeed, another major theme. Megalithic chambered tombs were constructed in extraordinarily high numbers in some regions of Europe, notably in Galicia which has 3300 recorded tombs (Carrero-Pazos & Rodríguez Casal 2019), and in northern Europe, where they may originally have numbered in the tens of thousands (Müller 2019: 34). There also are high frequencies in regions of France such as Brittany and the southern part of the Massif central. This suggests that in some regions, or at certain periods, almost every local community may have built and used its own tomb. Conversely, the construction of especially large monuments, such as the Carnac mounds of southern Brittany, the long mounds of west-central France, or the Boyne Valley passage tombs of Ireland, implies the involvement of larger numbers of people. They indicate social processes that may, for limited periods, have assigned special power or prominence to local élites, especially where the number of individuals buried within them was relatively limited. In some cases, aDNA analysis has shown that some of those buried within megalithic chambered tombs belonged to particular families or close kin (Fowler *et al.* 2022).

Many of these monuments were the product of cumulative processes that involved the modification and enlargement of earlier, smaller structures. Hence, individual standing stones originally erected in the open air might subsequently be incorporated into tomb

chambers and covered by a mound or cairn. What had been highly visible monuments, sometimes with carved, engraved or even painted motifs, became largely hidden from view. The process has been well documented in Brittany, where an early series of decorated standing stones was dismantled and re-used in chambered tombs, perhaps suggesting a change in ideology, symbolism, or religious belief at some point in the 5th millennium BC (L'Helgouach 1983, 1997; Lecornec 1998; Cassen 2009). The same phenomenon is found in the Iberian Peninsula: in Galicia, for example, or at the Dolmen de Soto near Huelva, where an entire circle of standing stones, many of them decorated, may have been dismantled and re-used within the large and impressive passage tomb (Bueno Ramírez *et al.* 2018). Some chambered tombs may, indeed, have been constructed around pre-existing standing stones, as at the dolmen of Las Casas de Don Pedro in Andalucia (Gavilán Ceballos & Vera Rodríguez 2005). In Ireland, conversely, stones from an earlier dismantled passage tomb may have been used in the construction of the large main mound at Knowth with its two passage tombs (Eogan 1998). Later monuments might also intentionally copy those of earlier periods. In eastern Scotland, the Orkney-Cromarty tombs of the 4th millennium BC provided the models and stimulus for a new cycle of monument construction, the Clava Cairns, over a thousand years later (Chapter 57, Bradley, this volume, p. 1239).

The carved, engraved, and painted motifs that are found on standing stones and in megalithic tombs in Atlantic Europe provide insight into the symbolism and belief systems that were associated with their construction and use (Chapter 62, Bueno Ramírez *et al.*, this volume, p. 1325). The majority of the motifs are abstract and non-representational. They offer points both of comparison and contrast with the Atlantic rock art found at open air sites and rock shelters in Iberia and northwest France, and in Britain and Ireland (Bradley 1997, 2009; Chapter 62, Bueno Ramírez *et al.*, this volume, p. 1325). That broad geographical distribution again suggests some shared community of beliefs or social practices that may have connected the various megalithic regions of Atlantic Europe. The prevalence of sunrise orientations in the direction of tomb entrances in southern Europe also points to shared traditions or beliefs. Once again, however, there are regional differences, and while the solar emphasis is strongly represented among the megalithic tombs of southern France and Iberia (Hoskin 2001), it is less widely observed elsewhere. In Ireland, for example, while the impressive passage tomb of Newgrange has an entrance skilfully directed towards midwinter sunrise, Irish passage tombs in general follow no particular orientation (Prendergast 2016).

A persistent difficulty in most regions has been to situate megalithic monuments in relation to contemporary settlements and other sites. There are some exceptions. In the Sarup area of Funen in Denmark, excavation has revealed enclosures, megalithic tombs, and Neolithic settlements, while on Orkney, tombs, stone settings and settlements provide a rich archaeological landscape (Andersen 2018; Richards & Jones 2016). Analysis of the wider landscape setting in which megalithic monuments were constructed has also led to more detailed studies of stone extraction and quarrying. Megalithic quarries with direct traces of stone removal have been identified in a number of regions including the Alentejo, south Wales (source of the Stonehenge 'bluestones') and Orkney (Calado 2016; Parker Pearson *et al.* 2019; Richards *et al.* 2013). Close examination of the surfaces of the megalithic blocks within the finished monuments has also provided evidence of the way they were extracted and manipulated (Mens 2008; Ard *et al.* 2016).

That brings us back, very appropriately, to the materiality of the megalithic blocks – their size, shape and visual impact. It is those qualities that led to frequent practices of use and reuse across the centuries, giving many megalithic monuments complex biographies. This too, has, become a major theme in the study of European megaliths (e.g., García Sanjuán & Díaz-Guardamino 2015). Those biographies extend through prehistory down to subsequent centuries, when some megalithic monuments were 'christianized' by the addition of crosses and other symbols, while others ultimately became the heritage sites that are such an attraction to visitors today.

Fig. 1 – The megalithic chambered tomb of Pentre Ifan in southwest Wales (Photo: C. Scarre).

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Dušan BORIĆ

Larger than life: monumentality of the landscape and non-human imagery at Lepenski (Serbia)

Abstract: With the title of the first publication about Lepenski Vir in English – Europe's first monumental sculpture: new discoveries at Lepenski Vir (Srejović 1972) – the excavator of the site, Dragoslav Srejović, hinted at the importance of the site as the earliest place on European soil where artworks made from durable material (sandstone) might have achieved monumental significance and connotations. By revisiting the evidence, this paper looks at the ecology of relationships between humans and 'other-than-humans' at Lepenski Vir and broadly contemporaneous Mesolithic and Mesolithic-Neolithic transitional sites in the Danube Gorges area along the River Danube. Development and elaboration of relationships between the specific landscape and other-than-human beings in this setting might have given rise to the tradition of sculpted boulders. It is argued that, apart from the likely mimetic, animatory and commemorative roles of sandstone boulders, the whole landscape, along with its many inhabitants, might have been understood in monumental terms underlined by their consubstantial modes of relating to each other.

Keywords: *Lepenski Vir, Danube Gorges, boulder artworks, landscape, Mesolithic*

1. Introduction

When I received the invitation to participate at a conference on megaliths around the world, I was slightly puzzled. My immediate thought was that someone might have made a mistake. Why was I invited to speak at a megalithic conference and what did Lepenski Vir have to do with megaliths? But, after this initial thought, I recalled the English edition of the first book about Lepenski Vir by Dragoslav Srejović, the excavator of the site – Europe's first monumental sculpture: new discoveries at Lepenski Vir, published by Thames and Hudson (Srejović 1972). The English translation of the book differs from both the Serbian (Srejović 1969) and German (Srejović 1975) versions of the same book, and hints at the importance of Lepenski Vir as the earliest place on European soil where artworks made from durable material (sandstone) might have achieved monumental significance and connotations. Surprisingly, the idea of the monumental character of the stone imagery of Lepenski Vir has neither been elaborated further by the excavator nor others who have written about the site and its most recognizable features. So, I take this opportunity to work through some of the evidence from Lepenski Vir and other

sites in the Mesolithic Danube Gorges to see what themes, in a very broad sense, can perhaps be linked productively to the evidence of megalithism and monumentalization (Hinz *et al.* 2019; Laporte & Bocoum 2019). Lepenski Vir certainly has nothing like the typical Neolithic megaliths or monuments found across much of western European during later prehistory, nor can it easily be compared with early examples of monuments seen, for instance, in Upper Mesopotamia, notably at the site of Göbekli Tepe and elsewhere. Yet, certain features of the main architectural phase at Lepenski Vir and its landscape setting could be seen from the perspective of monumentalization. Three aspects of evidence come to mind: (1) expression of territoriality linked to the placement of burials and importance of the principle of verticality in connection to some early burials; (2) links between the monumentality of the landscape and built environment; and (3) the significance of different types of material, probably intentionally chosen to be durable, i.e., non-perishable material in the commemoration of burials and/or their covering, as well as in the prolific manufacture of dressed sandstone boulders and their contextual positioning in relation to architectural features.

2. The archaeological context of Lepenski Vir

At this point, let us turn to the case study and give some background to its research history. The site of Lepenski Vir, situated in the Danube Gorges region of the central Balkans (**Fig. 1**), on the border between Romania and Serbia, was discovered in the early 1960s during surveys in the area ahead of a rescue project. This project was, at the time, conducted on both sides of the River Danube, prompted by a joint venture between the socialist governments

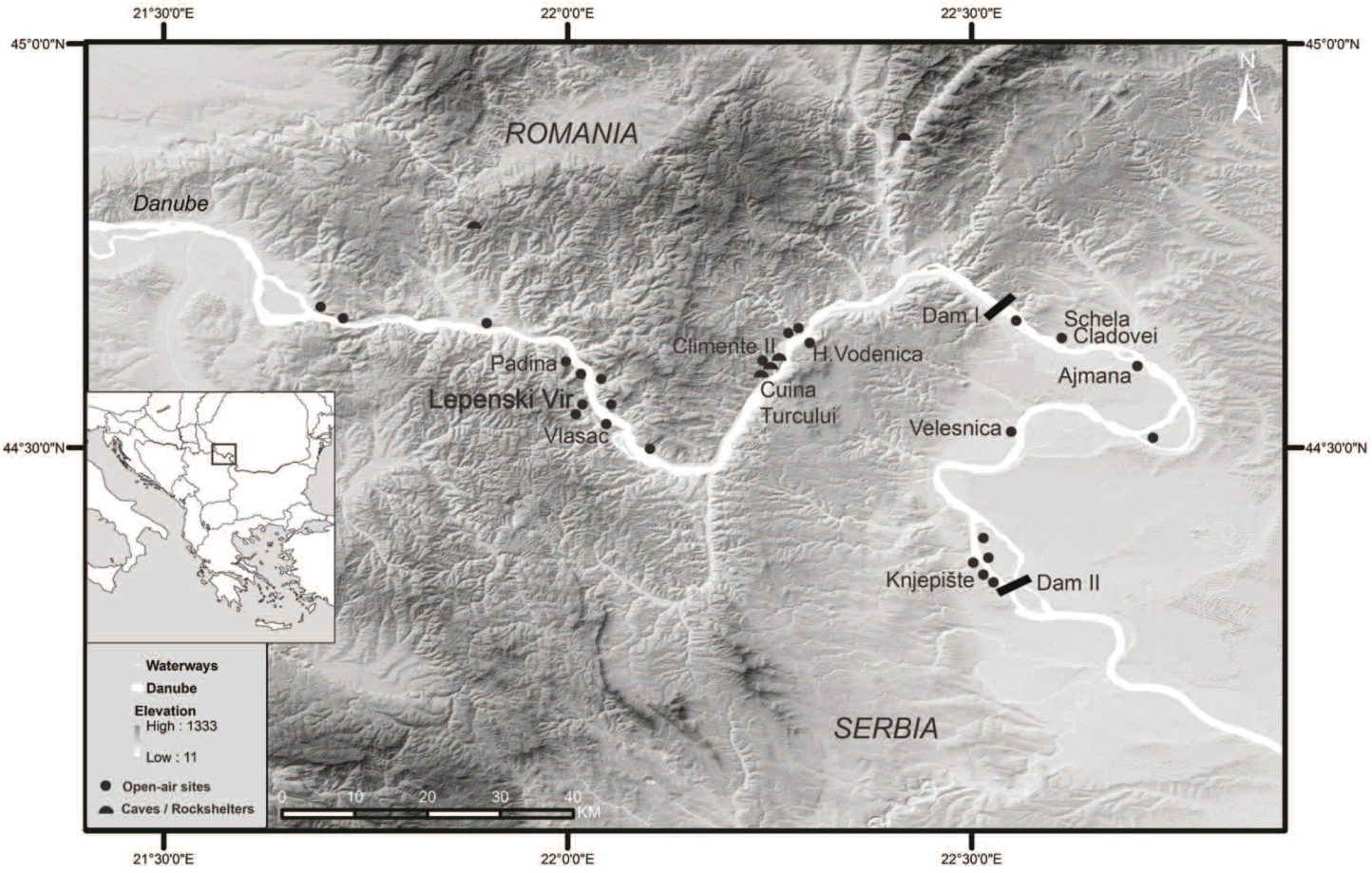

Fig. 1 – Map of the Danube Gorges area showing Lepenski Vir and other Mesolithic and Neolithic sites along the Danube [Base map elevation data source: ASTER GDEM ('ASTER GDEM is a product of METI and NASA') courtesy NASA/JPL-Caltech; Base map: K. Wehr].

of Romania and Yugoslavia to construct a hydro-electrical power plant, Đerdap 1. When the construction of the dam was completed in 1971, the water levels behind the dam rose some 15 m, flooding the lowermost riverbanks (**Fig. 2**). Excavations at Lepenski Vir started in 1965 and, for the first two seasons, it was thought to be yet another typical (and relatively well-known) Early Neolithic Starčevo culture settlement (Srejović 1966). By the end of 1966 and with the start of the excavation season in 1967, it became clear that what was being uncovered at Lepenski Vir was an entirely new and hitherto unknown archaeological culture (Srejović 1969, 1973; Radovanović 1996; Bonsall 2008; Borić 2011, 2016, 2019). Two particular types of evidence made the site exceptional: first, trapezoid-shaped, reddish/

Fig. 2 – Lepenski Vir during excavations in the 1960s and the landscape of the Lady's Whirlpool gorge downstream from Lepenski Vir, facing southeast.

pinkish limestone floors with central, rectangular stone-lined constructions (**Fig. 3**), which were themselves sometimes surrounded by square-shaped supports made of stone slabs; and second, more than 100 sculpted sandstone boulders, either decorated with curvilinear geometric motifs or turned into figural depictions of human-fish hybrid faces with down-curved mouths. These dressed stones, as well as various non-dressed boulders of the same material, were largely associated with the trapezoidal building floors (Borić 2005; Srejović & Babović 1983).

Soon after the first monograph about Lepenski Vir was published, the question emerged of how to adequately understand this new phenomenon, both culturally and chronologically. During the same rescue project along the Danube in the zone that was destined to be flooded, some 135 km along the river, a dozen sites dating to the Mesolithic and Early Neolithic were identified, both on the Serbian and Romanian sides of the river. Moreover, at least two sites had the trapezoidal features found at Lepenski Vir. At the neighbouring site of Vlasac (**Fig. 1**), constructions that appeared to be early prototypes for the elaborate trapezoidal buildings later seen at Lepenski Vir were found in a Late Mesolithic context (Borić 2007; Borić *et al.* 2014; Srejović & Letica 1978). No sculpted sandstone boulders were found at Vlasac but occasional 'aniconic' (undercorated) sandstone boulders were used in various locations. At another neighbouring site, Padina, some 5 km upstream from Lepenski Vir (**Fig. 1**), the excavator, Jovanović (1987), identified Early Neolithic ceramics in association with buildings similar to those found at Lepenski Vir, but within a smaller settlement and with earthen rather than limestone floors. At Padina, only a few dressed sandstone boulders were found, covered in geometric motifs but never turned into figural imagery. It should be noted that apart from Late Mesolithic and Mesolithic-Neolithic transition levels, Padina also provided an important sequence of Early Mesolithic features, including burials associated with a stone construction (Borić & Miracle 2004; Borić 2011 and references therein).

Despite a series of early radiocarbon dates made on charcoal from various building structures at Lepenski Vir, and his own remarks about the finds of ceramics on or between overlapping floors of the trapezoidal buildings, Srejović (1972) believed that

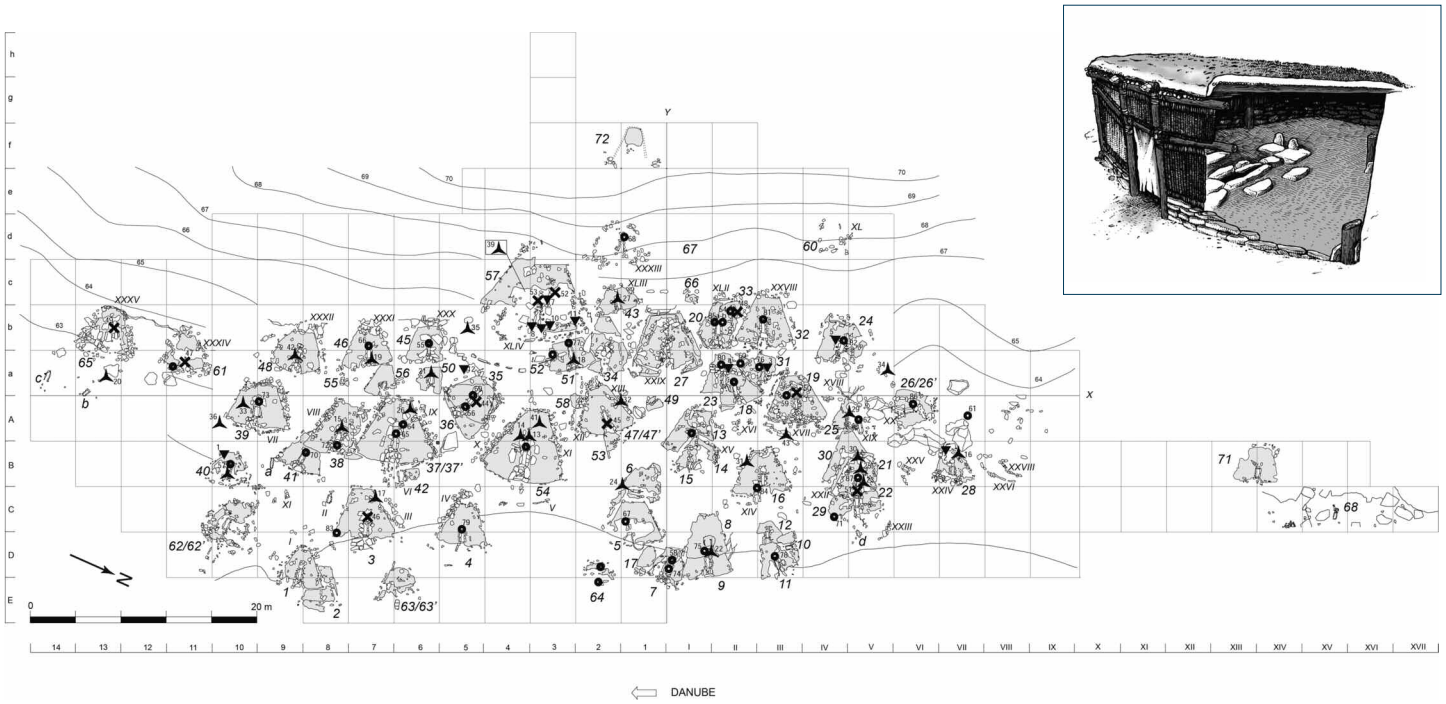

Fig. 3 – Plan of Lepenski Vir with phase I-II trapezoidal building features and distribution of sandstone boulders with a reconstruction of the upper construction of a typical Lepenski Vir building (After Borić 2016). Key: triangles - depiction of hybrid human-fish faces; stars - geometric patterns over boulder surfaces; x - non-dressed boulders; circles - ornamented and unornamented mortars.

these architectural features belonged to a Mesolithic culture, and predated the Early Neolithic sites then known. For some time now, I have argued along with other colleagues for the need to replace Srejović's original chronological placement of Lepenski Vir and to reinterpret the site's stratigraphy. The key stratigraphic and contextual issue is the way in which the trapezoidal buildings were built within the dug-outs made in the sloping terraces of the site (where such features appear), and the fact that the semi-subterranean space below each building may have been subject to different formation processes during infilling. The method by which archaeological features at Lepenski Vir were exposed during the original excavations, by horizontally cutting across and into the sloping terrace instead of emptying the fills of the semi-subterranean features stratigraphically, created a misleading representation of how the site might have looked. This issue also affected earlier building reconstructions (e.g., Borić 2002; Borić & Cristiani 2016, 2019) (see **Fig. 3**).

Today, we have a much better understanding of the chronology of the site. Bayesian modelling of a large set of radiocarbon dates and a redefined stratigraphy suggest three main phases (Borić & Cristiani 2016; Borić *et al.* 2018). The early phase of 'Proto-Lepenski Vir' extends through the Early and Middle Mesolithic from the start of the Holocene to the last centuries of the 8th millennium BC. This phase was possibly punctuated by various discontinuities in use. The Proto-Lepenski Vir phase is followed by a hiatus in the occupation of the site for most of the 7th millennium BC, i.e., during the regional Late Mesolithic, when other sites, such as nearby Vlasac and Padina, were intensively occupied, along with a number of other sites along this stretch of the Danube (**Fig. 1**). A significant new presence at the site started again, according to the formal Bayesian modelling, only in 6160-6080 cal BC (95% probability), creating what is now the best-represented architectural phase with the trapezoidal buildings, many associated with the sculpted boulders, and with a large number of human burials beneath or above the floors, or in other contextual units outside building spaces. This phase, 'Lepeneski Vir I-II', lasted only 120-210 years (95% probability) and ended in 5980-5940 cal BC (95% probability) (Borić 2019: 29; cf. Borić *et al.* 2018). After this time, from *ca.* 5950 cal BC, most (if not all) the trapezoidal buildings were abandoned and many were back-filled. During this final phase, 'Lepenski Vir III', the site was occupied as a typical Early Neolithic Starčevo village with almost no trace of its earlier Mesolithic tradition.

A sound chronological reconstruction of Lepenski Vir going beyond earlier controversial aspects is key to understanding the exceptional features that make this site so unique – not only in the wider context of European and world prehistory, but also among other broadly contemporaneous sites in the Danube Gorges region.

Two other strands of recent data have made a significant impact on the interpretation of the evidence from the site: strontium isotope analysis and aDNA data. Results of strontium isotope analysis on a large sample of Mesolithic and Early Neolithic individuals from different sites in the Danube Gorges area suggest that, while the population had been largely stationary for most of the Early, Middle, and Late Mesolithic, the pattern changed dramatically during the Mesolithic-Neolithic transition (phases I-II) and Early Neolithic (phase III) at Lepenski Vir. During these two latter phases, non-local strontium signals are seen in several exclusively female individuals (Borić 2016; Borić & Price 2012). This pattern of an increased number of non-local individuals at the site during and after the main architectural phase (with trapezoidal buildings, starting in *ca.* 6150 cal BC), has been confirmed by newly obtained genome-wide aDNA data on about 40 individuals from various Mesolithic-Neolithic sites in the Danube Gorges area (Mathieson *et al.* 2018). These data suggest that, apart from a distinct mix of Eurasian eastern and western hunter-gatherer ancestry, which is characteristic of indigenous population in this area during the Mesolithic, at the sites of Lepenski Vir and Padina there is an additional presence of first-generation immigrants with a distinct northwestern Anatolian genetic ancestry and examples of several individuals with the pattern of admixture (approximately 50:50 ratio) between the two. This evidence makes the sites in this region, and Lepenski Vir in particular, striking examples of clear cases of admixing between indigenous foragers and incoming farmers in Europe at the time of their initial contacts and exchanges.

3. Territoriality, principle of verticality, and human burials

One aspect of mortuary archaeology, formally elaborated since the 1970s and heavily used in the early days of processual archaeology, relates to the so-called 'hypothesis 8' from the unpublished doctoral dissertation of Arthur Saxe (1970). Saxe hypothesized that, in traditional societies, the creation of formal disposal areas for the dead was directly linked to the expression of claims by corporate groups regarding their use and/or control of certain restricted resources in the territory where that group buried their dead. A later amendment to this hypothesis suggested that, apart from formal disposal areas, other forms of ritualized actions and behaviour might also often have been mobilized to claim the right of a group to a certain territory (and its resources) by emphasizing direct descent from ancestors linked to that land (Goldstein 1981). While it remains difficult to reduce the past social realities of mortuary practices to ambitious law-like generalizations (cf. Hodder 1979), a generic link between formal burial grounds and certain forms of territorial claims by human groups in various times and places worldwide would be hard to dispute (e.g., Bloch & Perry 1982; Morris 1991); the proliferation of classic megalithic monuments has also often been seen as a way of claiming a group's right to a territory, among other social functions.

In the Danube Gorges area, direct radiocarbon dates on various human remains from several sites indicate that many of these monuments started being used for interment of human burials from at least the beginning of the Holocene (Borić 2011). Admittedly, only a small number of individuals from the assumed biological populations were inhumed in these monuments, and the male gender is dominant (Borić 2016). For instance, at the site of Padina, sector III, 19 burials could be attributed to the Early and Middle Mesolithic periods, of which six (burials 9, 11, 12, 14, 15, and 21) have been AMS dated to between *ca.* 9600 and 8000 cal BC (Borić 2011; Borić & Miracle 2004; Mathieson *et al.* 2018). A number of burials dated to the Middle Mesolithic were found in relation to a linear stone construction found in the upslope, southern area of sector III at Padina. The construction consisted of four layers of piled stones with layers of soil between them (Borić 2011; Jovanović 2008: Fig. 17-19). Within the stone construction, burials were surrounded and covered by piles of stone placed next to naturally protruding and erratic colluvial rocks.

During the Middle Mesolithic, around the end of the 9th and the beginning of the 8th millennium BC, a specific aspect of the burial evidence was the placement of bodies in seated positions, often with crossed lower limbs splayed outwards. The practice is also found in other Mesolithic contexts in Europe (Grünberg 2000; Orschiedt 2018). This principle of verticality might not be accidental and might have played an important role in various forms of expression, something I will develop further below. But a general hypothesis, admittedly speculative, could be put forth that this concern for placing the deceased in a vertical position might have related to beliefs that the body of the deceased represented – or was a medium between – tiered cosmological realms, possibly between the powers 'above' and 'below', i.e., celestial and chthonic realms (cf. Borić 2016), a basic and common means of mythological ordering of the world in many traditional societies worldwide (e.g., Lévi-Strauss 1988; cf. Fowles 2013: 152).

Further confirmation of the importance of verticality in the placement of early phase Mesolithic burials comes from two Middle Mesolithic burials from Lepenski Vir, both now dated with overlapping ranges in the first centuries of the 8th millennium BC. One of these, burial 69, is among the best-known from the site. An adult male individual was placed with lower limbs flexed at the knees and splayed outwards, resembling a seated position, while the torso was placed in a supine position (**Fig. 4**). Importantly, the vertical position of the skull indicates the deliberate placing of the head in this position. Proving that this is not a haphazard instance of such a burial mode, a second burial from Lepenski Vir, child burial 97, found beneath the floor of building 31, is now directly AMS dated to the same chronological interval (unpublished; contra Borić & Cristiani 2016); it shows the same vertical position of the skull while the lower limbs were similarly flexed and splayed outwards.

The rarity of such burials in the region could relate to their 'exceptional' character, linked perhaps to the circumstances of death of the buried individuals and

prompting their burial in particularly prescribed ways at locations that were used as important fishing grounds (Bartosiewicz *et al.* 2008). The locations of many sites directly correspond with features of the landscape, such as whirlpools, rapids, narrows, and protruding rocks, which all most likely facilitated successful fishing activities, especially those targeting large species of fish, such as anadromous sturgeon (beluga, starlet), catfish, but also species of the carp family. Based on recorded ethnographies of fishing, this landscape was used in similar ways in later, historical times (Borić 2003). Lepenski Vir in translation from Serbian means 'Lepenski whirlpool' and in the past there was a strong whirlpool in front of the site that was utilized for fishing. There is a possible case to be made here that the marking of the landscape was initiated at the start of the Mesolithic through the interment of selected individuals. These early phase burials might have, to some extent, played the role of territorial markers for the various forager groups claiming their right to use certain stretches of the river linked to everyday and/or seasonal practices of fishing. Some elements of this territorial behaviour might have given rise to the social and cultural complexity of these Early Holocene foragers in the Danube Gorges area as expressed in later phases of the regional Mesolithic sequence.

During the Late Mesolithic, from *ca.* 7200-6200 cal BC, except for at Lepenski Vir there is a continuing recognition of the same locales for fishing and a range of other everyday activities, but the sites also continued to be filled with the dead. It seems that there was no clear-cut separation between the realms of the dead and the living in these inhabited spaces of human activity. During this period, many burials were oriented to be parallel with the Danube, with their heads pointing downstream. It has been suggested that this burial norm might have originated in a belief about the link between the deceased and anadromous fish. The annual upstream arrival in the spring of beluga and other species of the sturgeon family (following their downstream migration in the previous fall), might have been perceived as the annual return of the souls of the

Fig. 4 – Middle Mesolithic burial 69 (OxA-25215: 7940-7590 cal BC at 95 per cent confidence) from Lepenski Vir.

dead (Radovanović 1997; cf. Borić 2005). This type of burial tradition is possibly one of the earliest indications in the realm of symbolic expression and ritual behaviour of strong (animist?) links to different species of fish, with possible beliefs in corporeal metamorphosis into fish upon death, or descent from and/or affinity with these other-than-human entities.

Further support for the thesis that certain species of fish might have been perceived as important in the realm of exchanges with humans is the discovery of a large number of personal ornaments fashioned from the pharyngeal 'teeth' of *Rutilus* sp., most likely Black Sea roach or pearl fish, *Rutilus frissii* (Nordmann 1840), in Late Mesolithic burials at the sites of Vlasac and Schela Cladovei (Borić 2003; Borić & Cristiani 2019; Borić *et al.* 2014; Cristiani & Borić 2012; Živaljević *et al.* 2017). In some burials there were several hundred such beads used as garment embellishments, probably on some sort of cloaks that adorned the bodies of the deceased.

These deep roots of special connections that Mesolithic humans had with various species of fish provide a key contextualization for the appearance of the sandstone boulder artworks at Lepenski Vir, but also at some other sites in the region (Padina, Hajdučka Vodenica, Cuina Turlucui) at the end of the Late Mesolithic, i.e., during the period of Mesolithic-Neolithic contacts that saw the build-up of Lepenski Vir during phase I-II. There were human/fish hybrid depictions on some of the figural boulders, and geometric motifs that resemble X-ray images of fish skeletons and flesh even on those boulders without the features of a face. The appearance of these objects seems to further underline the importance of these non-humans in the beliefs and ecology of relationships established by the indigenous forager populations, which at this time came into contact with and absorbed some of the first groups of Neolithic immigrants of Anatolian origin to the region. But before I dedicate some space to this particular set of objects, their contextual associations, and possible monumental significance, let me first examine the links between the landscape of Lady's Whirlpool gorge and the built environment that was created at Lepenski Vir over a short span of a century or so, starting *ca.* 6150 cal BC.

4. Monumentality of the landscape and built environments

The geology and geomorphology of the Danube Gorges is complex (Banu 1972); the river cut a path through the southern arm of the Carpathian Mountains, in places creating narrow and sometimes very deep gorges along its steep course. Rapids and cataracts were also formed, as well as whirlpools where softer geological deposits were encountered. In places, the current carved out large cauldrons in the riverbed, whilst elsewhere rocks that were more resistant to erosion remained projecting from the river bottom, making travel by boat challenging in later periods. These irregularities in the riverbed and in the flow of the river through the region presented an excellent opportunity for prehistoric (and more recent) fishermen, who used various naturally created traps to capture large species of fish, as highlighted earlier.

Apart from its utility for fishing, which possibly sustained complex forager communities throughout the Early Holocene, something about the dramatic nature of this landscape also attracted later travellers, especially in the 19th century, who either described its features in detail or, more often, provided visual renderings of the natural beauty (e.g., **Fig. 5**).

The revival of Lepenski Vir with a phase of constructing trapezoidal buildings, and the choice of this particular location is very likely to have been related to its position, directly across the Danube from a large trapezoidal rock, known as Treskavac (meaning a place that attracts thunders!) (**Fig. 6**). This rock is a remnant of volcanic activity during a distant geological era dominated by Cretaceous and Jurassic limestones (Rabrenović & Vasić 1997). The association between the durability of the rock and that of the buildings might have been underlined by 'rock-hard' limestone floors at Lepenski Vir, which are different from the contemporaneous and similar building structures at the neighbouring site of Padina. We can only speculate about the importance of this natural landmark for the forager communities at this particular historical juncture around the mid 62nd century BC. We may suppose it was considered 'sacred' or of special importance, whatever specific connotation we want to assign to these terms (see below for more discussion on this topic). It might have held central importance given the reflection of

its shape in building constructions. It also might have become a focal point at the time when these forager groups came into contact with genetically and culturally foreign populations.

The previously cited formal Bayesian modelling of the start of phase I-II at Lepenski Vir seems to indicate that, after its abandonment for a millennium or so, the re-occupation of Lepenski Vir coincided with the end of the period of global chill known as the 8.2 ka event (Borić *et al.* 2018). This period might have affected the productivity of the River Danube for fishing (Bonsall *et al.* 2015), although we currently lack both the chronological and environmental evidence to evaluate the impact of this period of climatic instability on human settlement along the river. While evidence of correlation should not be taken as evidence of causation, there is a chance that these two dated events might be more than coincidental. Some of the motivation to resettle an old locale with a whirlpool in front of it and a monumental trapezoidal mountain directly across the river, might have stemmed from a recasting and reinvention of aspects of forager social and cultural identity and practice. We may speculate that this new branding of the site of Lepenski Vir at this particular time as a central place for increasingly small forager populations in the region as a whole might also have been what drew in the Neolithic immigrants with their novel genetic and cultural heritage. While that heritage soon completely eclipsed the local forager cultural tradition, for a short period, over 4 to 6 generations, it seems that the newcomers adapted to local practices, as we find examples of genetically admixed individuals or individuals with 100% northwestern Anatolian genetic ancestry buried according to Mesolithic rites of extended supine positions in the

Fig. 5 – Illustration of the protruding 'Babacai' rock at the entrance to the Golubac Gorge of the Danube. Engraved by J.C. Armytage; drawn by W. H. Bartlett, from *The Danube: its history, scenery, and topography by William Beattie, M.D., splendidly illustrated from sketches taken on the spot, by Abresch and drawn by W.H. Bartlett, Esq.* Published by James & Virtue, London (1840).

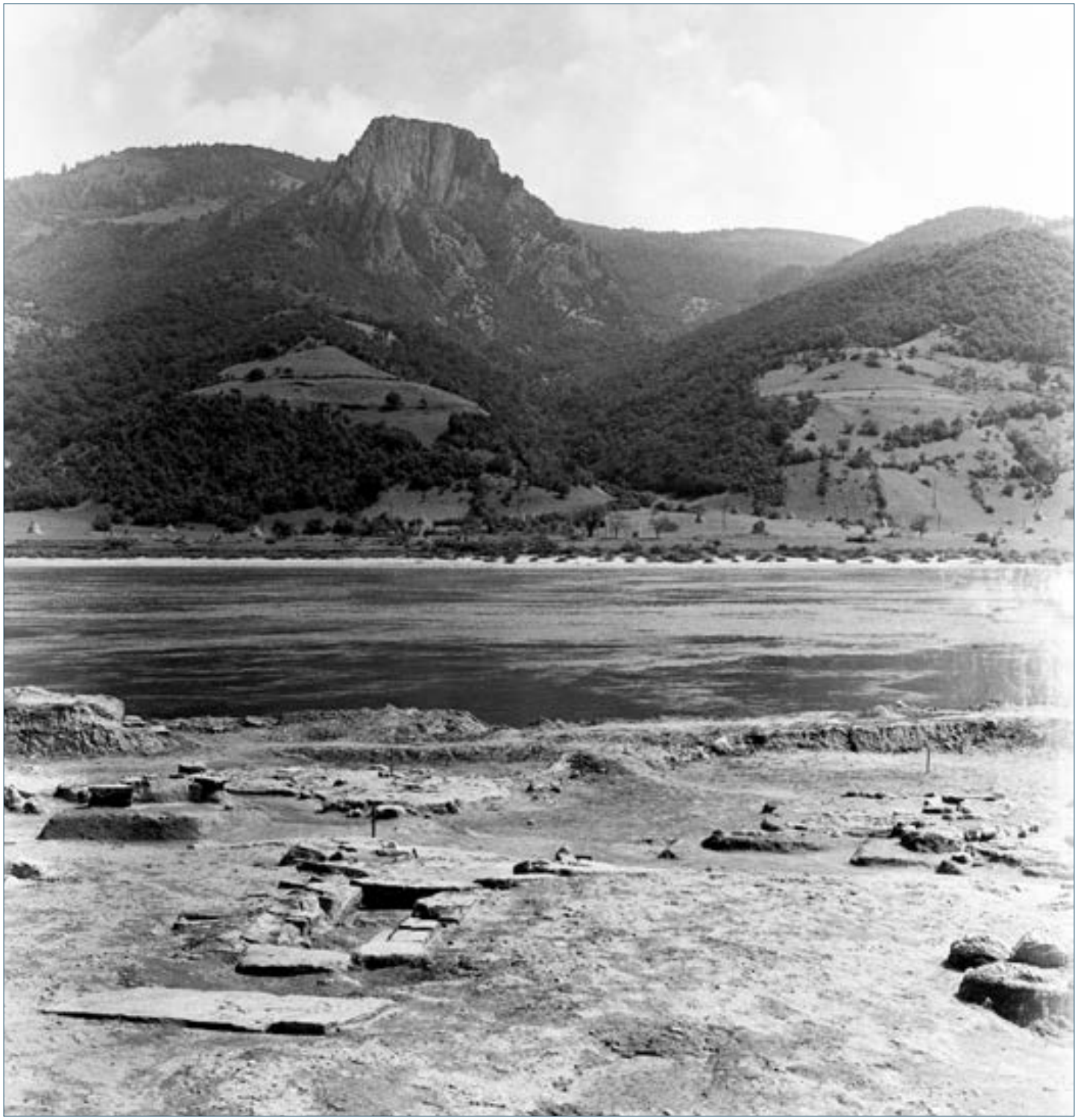

Fig. 6 – Trapezoid-shaped rock Treskavac across the river from the location of the Lepenski Vir settlement.

spaces of trapezoidal buildings (Borić & Cristiani 2019; Mathieson *et al.* 2018).

From the perspective of the discussions on monumentalization in this volume, the landscape of the Danube Gorges the trapezoidal rock of monumental dimensions, which might have been perceived as built rather than neutrally 'natural', became mirrored in the construction of the built environment at Lepenski Vir, and thus internalized (cf. Borić 2008a: 118). In this way, the buildings at this and other sites in this gorge of the Danube might have taken on certain monumental properties. This suggestion finds further support in the aspects of furnishing, use, and life cycle of many of the building spaces, to which I will turn in the following section. We have reasons to believe, based on associations of material culture with architectural features at the site, that domestic aspects were well represented, hence these buildings should not be seen as purely sacred sanctuaries that excluded other aspects of life (contra Babović 2006). In fact, it has been argued that *'…domestic structures often represent the background and link of symbolic and ritual components associated with monumentality*' (Hinz *et al.* 2019: 22).

Finally, I note that some rather unscientific attempts were made in the past to interpret the site as a place dedicated to the worship of sun, with buildings seen as shrines inhabited by priests (Babović 2006; for a critique see Borić 2008b). While this kind of interpretation is highly problematic and entirely decontextualizes the evidence, for the moment we should also resist excluding the possibility that the positioning of Lepenski Vir and its evident elaboration might have been related to possible alignments of the sunrise behind the trapezoidal Treskavac rock at certain times of the year (e.g., summer solstice). Future dedicated archaeo-astronomical analysis would be welcomed as a further way to better understand the unprecedented investment of resources and activity seen at the site.

In conclusion, early attempts to monumentalize either landscapes or places might have related to some of the profound changes that the society was undergoing (Hinz *et al.* 2019: 22); it is easy to imagine that mobilizing monumental aspects of the landscape and built environment at Lepenski Vir might have been directly linked to key changes in the fabric of this forager society.

5. Dressed and non-dressed sandstone boulders

Despite the claim in the title of the English translation of Srejović's (1972) main publication on Lepenski Vir, most of the boulders from Lepenski Vir are not monumental, at least not in the way other authors in this book define the term. Their weight ranges from 1 to 55 kg (Borić *et al.* 2018: SI Table 3). Many trapezoidal structures had larger or smaller dressed or non-dressed (also referred to by the excavator as 'aniconic') sandstone boulders (over 100 pieces) placed in commanding positions around hearths in the central parts of buildings or as architectural components – for example as the side of a hearth in the case of building 43 or in the dry-stone walls that surrounded the excavated sides of these semi-subterranean structures (Borić 2005). The raw material for these objects can still be found in the upper reaches of the Boljetinska River, a small tributary of the Danube in the vicinity of Lepenski Vir (**Fig. 7**). Some of the dressed boulders were also clearly used as mortars for grinding and pounding based on central hollows found on them, and some were inserted into the building floors, often behind rectangular stone-lined hearths in the centre of a structure (Srejović & Babović 1983).

In the Danube Gorges area, the sandstone boulder material was used from the Late Mesolithic in the manufacture of ground stone tools, likely utilized for various everyday tasks (e.g., Borić *et al.* 2014). It is hard to date the occurrence of the first dressed boulders. Most of the objects found at Lepenski Vir were in contexts associated with trapezoidal buildings and in association with building structures that are dated to the end of the 7th millennium BC. We could therefore assume that the tradition of carving sandstone boulders very likely dates to the same period or slightly precedes it (Borić *et al.* 2018). A small number of geometrically decorated stone boulders have also been found at other sites, such as Padina (Jovanović 1969), Hajdučka Vodenica and Cuina Turcului (Srejović & Babović 1983: 56-57). We are left to wonder whether, even before such artworks were created in stone, this carving tradition with its specific style of depiction already existed on other, perishable material media such as wood, leather, or in the form of body painting. Engraved motifs of zig-zag lines, cross-hatching,

chevrons, and combinations of these are known in the area of the Danube Gorges from the Epipalaeolithic period at the site of Cuina Turcului (Borić & Cristiani 2016 and references therein), and the same range of motifs continued to be applied to the surfaces of bone, antler, and stone implements throughout the Mesolithic in the region (e.g., Cristiani & Borić 2021), and in other areas of Europe.

Yet, some of the motifs can also be seen as parts of very complex curvilinear continuous lines that cover the bodies of sculpted sandstone boulders, and it appears that this whole oeuvre is very specific and perhaps also an integral part of the way of decorating the chosen spherical surfaces of the boulders; the tradition of dressing sandstone boulders appears to be something quite different from earlier ways of engraving. Given the associations and symbolism highlighting the affinity between the anadromous behaviour of certain species of fish and the normative burial posture of extended supine burials parallel to the Danube with heads pointing downstream, along with the presence of *Rutilus* sp. ornaments in burials in the the preceding Late Mesolithic phase (see above), it appears that the choice of sandstone boulders as a medium of depiction was anything but haphazard. Hence, (a) boulders were intentionally chosen as an obvious canvas when depicting fish, in an deliberate elaboration of existing sets of mental images, and (b) there might have been some importance in choosing rock as a durable medium for depicting, representing, and/or standing for the dead. I have previously shown how several boulders seem to have directly commemorated four different individuals (burials 7/I, 47, 92, and 61) from Lepenski Vir (Borić 2005; Borić & Cristiani 2016). Even aniconic, i.e., non-dressed boulders might have been imbued with such connotations. For instance, in building 65/XXXV which, after a probable period of domestic use, was turned into a multiple burial place, two large non-dressed

Fig. 7 – Upper reaches of the Boljetinska River today: the source of the sandstone boulders (Photo: D. Borić).

boulders flank the entrance, while another non-dressed boulder was vertically inserted next to the large stone slabs of the floor level, next to the remains of the dead (Fig. 9). In many other instances, despite the lack of direct links, boulders might have stood for the dead or been linked with the realm of the dead and ancestors. In a similar vein, it has been argued that specific square-shaped supports made of worked stone plaques – with one example of a human mandible placed in the same way – found around rectangular hearths in many buildings, might have been a synecdoche of absent ancestral figures (Borić 2005; Borić & Cristiani 2016, 2019).

Many of the depictions on sculpted boulders fall within the genre of the so-called 'X-ray' images of human or animal bodies, a specific mode of depiction used by some traditional societies, such as indigenous Australian peoples. For example, in some cases chevrons seems to have been related to the patterns seen in the flesh of fish, while complex meandering curvilinear patterns and sculpted circles placed in multiple rows seem to depict fish roe and/or intestines. This association with the body of fish cannot be accidental and on one of the most striking figural boulders there is an unambiguously carved vertebral column (Fig. 8). Both dressed and non-dressed boulders sometimes have differently coloured zones on their surfaces with black or red hues dominating. These often result from a natural differential colouring of the raw material but also seem to have been produced intentionally using

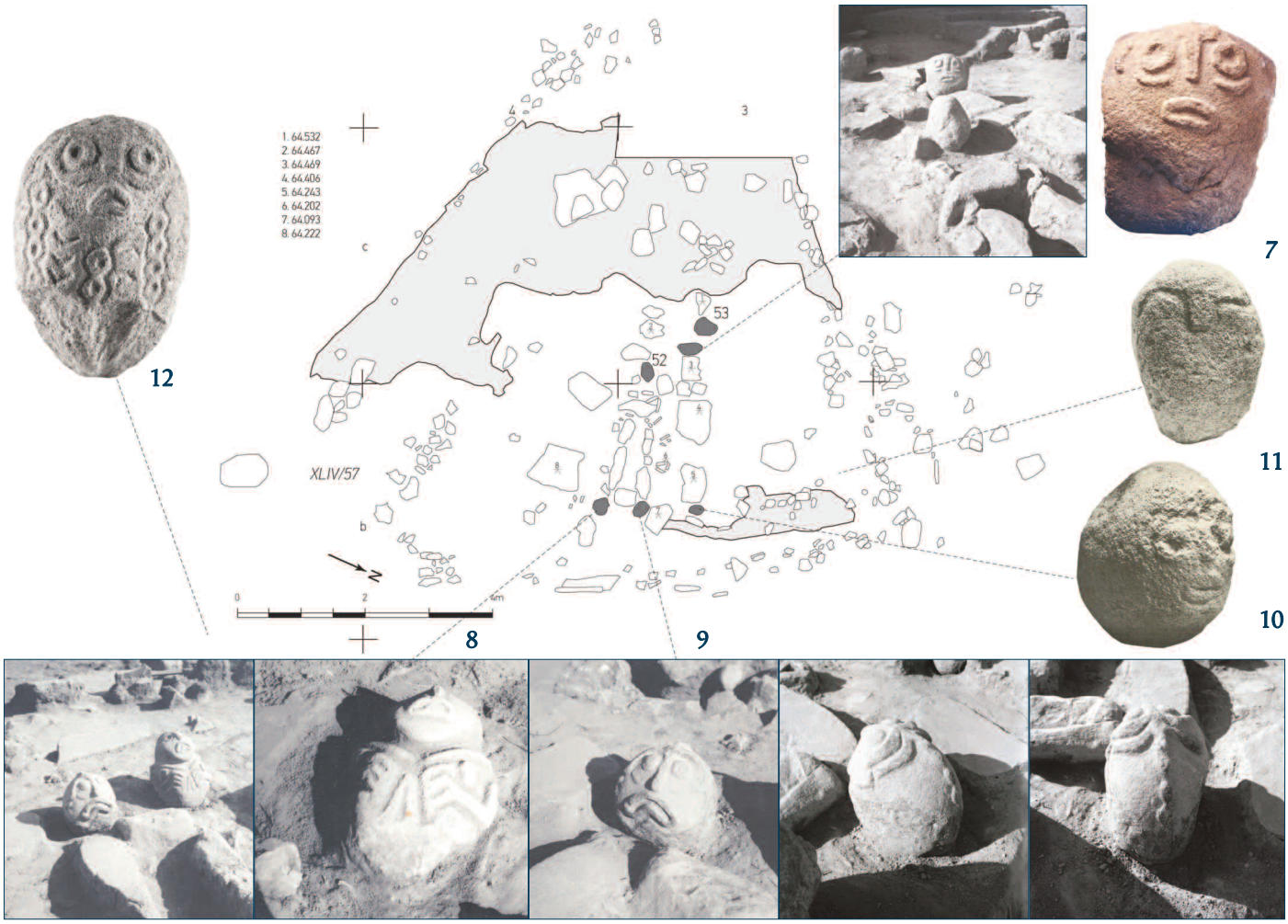

Fig. 8 – Plan of building 57/XLIV at Lepenski Vir and positions of sculpted boulders around the building's hearth (photographs not to scale). The following numbers marking boulder objects relate to the catalogue in Borić *et al.* (2018: SI Table 3). 7: 33 x 32 x 52 cm, 55 kg; 8: 39 x 27 x 51 cm, 38 kg; 9: 33 x 25 x 51 cm, 53 kg; 10: 26 x 17 x 36 cm, 21.25 kg; 11: 18 x 18 x 26 cm, 10.5 kg; 12: 26 x 19 x 38 cm, 23.1 kg.

Fig. 9 – Building 65/XXXV and burials 54a-e with the visible retaining walls surrounding the structure and two large non-dressed boulders flanking the entrance-way to this structure.

pigment or scorching with fire, as was the case with the two dressed boulders from building 54, the lower parts of which were inserted into the floor, and left unaffected by scorching (**Fig. 10**).

Some of the most impressive specimens, with figurative depictions of human/fish hybrid bodies, were found around the hearth of one of the largest excavated structures at Lepenski Vir, building 57/XLIV, which is located at a central location and higher up the sloping river terrace than other structures (**Fig. 3**). Here, two figurative boulders were found in front of the hearth, facing the inner part of the building (**Fig. 8**). Both were massive (weighing 38 and 53 kg respectively) and had human faces depicted with down-curved mouths resembling fish. One of the two, seemingly emerging from the ground upwards, had the fish spine described above, and possibly also scales, while the other, which had a carved dent at the back, might have been propped up by an object made of organic/perishable material (wood?) and had stylized, atrophic arms and fingers that seem to have held open a womb. On the other side of the hearth was a large (55 kg) carved boulder with the depiction of a human face, facing the first two boulders. Several other carved boulders were found in this building structure or nearby. The nature of these items, their high concentration in this building and their structured arrangement may indicate that this building had a very special role in the settlement. The impression we have formed, based on the way the boulders were positioned and arranged here, but also in other contexts, is that these objects might have been understood as animate bodies. There is an almost a theatrical element to the arrangements, similar to the way some animal figures were arranged in the enclosures of Göbekli Tepe (cf. Borić 2013).

6. Between multi-species ontologies and secularist agendas: some concluding remarks

"*One of the problems with calling the kiva a 'religious structure' (or a 'specialized ritual structure', which in the archaeological discourse amounts to the same thing) is that this leads us to draw an acceptable boundary between it and other, nonreligious structures, cordoning off the kiva in the same way that so many Western theorists of religion have premised their arguments on the conceptual chasm between sacred and the profane. This firewall approach to categorization and analysis is precisely the modernist brand of purification that we must struggle against if we are to understand nonmodern societies on something closer to indigenous terms.*" (Fowles 2013: 149-150).

Based on the evidence of documented and elaborated links between people and other-than-human entities (animals, landscape features, dressed and non-dressed sandstone boulders), could the social context at Lepenski Vir be linked to animist or totemist ontological schemes of practice? Was it the exchange of vital force or consubstantial modes of sharing the same essence that defined relationships between humans and other-than-humans? The terms used here refer to the concepts of animist and totemic ontological universes and their materialization in images provided by Tim Ingold (2000) and Philippe Descola (2010, 2013). Descola (2013) suggests that schemes of practice in different sociocultural contexts determine different relationships between humans and non-humans along axes of physicality (the body) and interiority (the mind) and can form sets of relationships different from those that structure the dominant western ontology. Such different combinations affect the way images are produced in each context depending on different ways of seeing, understanding, and being in the world, or what he also refers to as 'worldings'. Ontology, here, means something different than a worldview or culture (Descola 2014).

Totemism sees the continuity between humans and non-humans both in terms of their bodies and their souls and is primarily found among indigenous Australian peoples. In the totemic world, animals and humans share the same ancestral land. All living beings descend from the era of the 'Dreaming' when the ancestral figures shaped the features of the land through their movements. The relationship that all living beings have with the land can be described as essential – that is, these beings are consubstantial (of the same essence). In the indigenous art of Australia, one can often find images of kangaroos depicted in the X-ray style of painting, which shows the internal layout of organs and lines along which the body parts are partitioned during butchering. The body

Fig. 10 – Building 54 and detail of two boulders inserted into the floor behind the building's hearth. Boulder dimensions: 27 x 19 x 36 cm, approx. 50 kg (a); 27 x 19 x 36 cm, approx. 20 kg (b).

of the depicted kangaroo can be seen as the ancestral, immobile landscape in its totality.

Animism sees humans and non-humans as having the same 'culture' or underlying humanity, rather than animality; their differences stem from their respective bodies which determine the different perspectives of different beings. Animism, as an ontological scheme of practice, is characteristic of many traditional societies around the world, perhaps best documented among Amerindian groups of the circumpolar North and in the lowlands of South America. In this type of ontological regime, a vital force exists in human exchanges with the animal world. Here, hunting can enable the flow of vital force between human and non-human beings; there is a limited pool of souls and predatory modes of relationships between different human and other-than-human collectives (sensu Latour).

According to Descola, a subcategory of animism is perspectivism, identified among Amazonian groups by the Brazilian anthropologist Eduardo Viveiros de Castro (2004). This refers to the idea of having different perspectives on the question of one's humanity. The perspectival difference is grounded in the body. Viveiros de Castro (2009) finds Descola's taxonomic ordering reductive (cf. Ingold 2016) and argues that perspectivism evades taxonomic classifications and is an indigenous philosophy, a 'cannibal metaphysics,' or a 'bomb' to our naturalist mode of thinking rather than a subspecies of a neatly ordered taxonomy of ontologies (cf. Latour 2009).

In an animistic universe, modes of depictions narrate the transformation between different classes of beings and can encompass metamorphosed or even hybrid forms, such as therianthropic images. Often, hunting scenes can be depicted that are anything but routine exchanges between different classes of beings that inhabit different planes of existence due to the different bodies they occupy. An exchange of perspectives for a human hunter can be deadly when encountering a powerful spirit animal. Here, the importance of ritual practitioners, or shamans, can be paramount in negotiating these different perspectives and they are the only beings who can cross from one to another without getting lost. Masks that are found in the rich cultural tradition of the groups inhabiting the North West Pacific coast are another example of the type of artworks characteristic of this ontology. The purpose of masks is not to cover up, but rather to reveal the true being lurking beneath the surface of the body form. The activity of carving is seen as linked to the process of releasing this being, as the shape and the properties of the raw material determine the final shape of the carved object (Ingold 2000).

I have previously suggested that, in the case of the imagery and archaeological context seen at Göbekli Tepe, which had often been referred to as 'totemic' by the ad hoc use of older ethnographies, we may be more likely within a predatory and animist universe than in what is often defined as totemist in current anthropological discussions (Borić 2013). Of course, using this conceptual characterization is a heuristic device to describe sets of complex and changing meanings embodied in these objects rather than something 'fixed', and mine was not an attempt to dig up an ontology! Andrew Jones sees these kinds of attempts to work through archaeological evidence using categories derived from social anthropology as mistaken, arguing that "archaeologists should not be aiming to simply confirm preconceived anthropological concepts" (Jones 2017: 169). Jones further argues that the use of Viveiros de Castro's concepts of perspectivism is a more fruitful way to think critically through archaeological evidence and generate fresh concepts. I remain puzzled by this critique as it rather misrepresents the nuances of my argument that works through diverse anthropological theoretical constructs with archaeological evidence always centre stage. However, what might be lurking behind this rather unnecessary criticism, which knocks on an open door, is less to do with the way archaeologists appropriate concepts from other disciplines, but rather something – not well articulated in Jones' piece – that refers to an ongoing debate in social anthropology between Descola's proposal on the taxonomy of ontologies seen as ideal types and Viveiros de Castro's approach that attempts to introduce the 'cannibal metaphysics' in our conceptual categories by destabilizing the very grounds on which our ontological universe operates. It would take us astray if I were to further engage in this debate here. It suffices to say that I find both authors' approaches of great interest and heuristic value. Here, I am primarily keen to explore Descola's approach of wide lateral comparison that he inherited as a valued modus operandi from his

intellectual forebear, Claude Lévi-Strauss. Hence the question remains: knowing what we know about the ways other premodern people in the world depict images, could we see foragers in the Danube Gorges area with their culture and stone boulder imagery as closer to animist or totemist modes of relating between humans and other-than-human entities?

A short answer would be that the evidence seems to present neither purely animist nor totemist mode of relationships (sensu Descola). While therianthropic images of fish/human hybrids and the very act of carving materials to release images from the boulders are features of a dominantly animist ontology, X-ray images and strong links to certain landscape features, as seen at Lepenski Vir through a mimetic relationship with the trapezoid-shaped mountain, could be seen as elements of a totemist ontology. Further, given the current evidence, modes of predation, which are dominant in an animist ontology, are rather absent at Lepenski Vir. Yet, choosing between one or the other ontology would probably be a mistake. Looking at diachronic changes that affected these groups of foragers could suggest changing modes of relating and different emphasis given in different situations – perhaps with more animist elements during earlier times and a development of totemist modes of relating in later parts of the sequence, still mixed with animist modes of being. Importantly for our discussion here is that aspects of monumentalizing in relation to the landscape and built environment most likely relate to the totemist 'worlding' of the Danube Gorges foragers.

To conclude, I would like to provide a couple of critical remarks regarding the way we talk about the 'function' of monuments and megaliths or monumentalizing aspects of evidence, to which I alluded earlier when discussing the case study of Lepenski Vir. In archaeology, when writing about monuments, their social significance and links to religion, beliefs, and the sacred, we often remain oblivious to discussions among socio-cultural anthropologists in a post-Geertzean world. The key problem is that archaeological discussions of religion and belief are often taken either in integrationist terms through functionalist, rationalist or Neo-Darwinian perspectives, or in legitimizing terms through Marxian narratives of the control of power by mobilizing the idea that ideology is a way for a group of cynical men to control a society at large (cf. Fowles 2013: 66). By talking about religion, belief, and the sacred in integrationist or legitimizing terms, we are doing two things. First, we underline secularist agendas of our own making, be it to explain the role of the religious and the sacred in politics or to explain what might have kept certain groups together. Second, we violently separate and purify conceptual categories, pulling apart what we consider religious from political, economic, and all other aspects of life. The separation between 'natural' and 'supernatural' may similarly be of our own making, not necessarily corresponding to anything in the way that human groups perceived their social totality. In this process we might miss taking past social and cultural practices on their own terms.

In the work that examines the notion of the existence of Pueblo religion and aspects of the Greater Chaco Canyon world of the American Southwest, Severin Fowles (2013), probes vernacular terminology of various Native American groups that have inhabited this area. Based on both archaeological and ethnohistorical sources, Fowles suggests that the relationship of these groups to the sacred, which is part of the everyday existence, is best captured by reference to the various practices of ritual and religion as 'doings'. 'Doings' permeate every aspect of life and the focus on them reveals a world populated by various connections, constant heightened attentiveness to relationships between different entities, be they human or other-than-human, and blurs boundaries between practices that are considered ritual from those that are considered soley utilitarian.

For many archaeologists, religious and ritual practices would appear as fundamental to competition over power and resources, or as Fowles (2013: 120) puts it, '*…strip away all the talk of snake women, lightning arrows, and magic medicine, and one will eventually arrive at a hardened core of individual competition, optimization, and biological strategy –where individuals talk religiously as a way of competing politically, as a way of acting economically, as a way of (in the end) reproducing biologically.*' This kind of reductionism is not satisfying. To paraphrase an article that takes on

Jared Diamond's publication *Guns, germs, and steel*, it is like academic porn: '*…the costumes change, the props change, but in the end it's the same repeated theme*' (Antrosio 2011). The question lingers: can we do better and differently, taking other people's ontologies and understandings seriously, rather than necessarily reducing them to secularist agendas?

Taking this secularist critique into account, how could we best understand the explosion of unprecedented and quite exceptional aspects of monumentalizing seen at Lepenski Vir in one specific, rather short moment, without resorting to functionalist secularist agendas? One concept that could perhaps be usefully appropriated in this context is mobilized by Fowles (2013: 145-150) in his discussion of the creation of large collective Pueblo villages. It is the old notion of effervescence, proposed by Émile Durkheim (1965), a pioneering figure in the anthropology of religion. According to Durkheim, religious effervescence arises when a large group meets in one place, creating the social excitement of different people coming together. For Durkheim, among ethnographic examples of such effervescent instances are the seasonal and ceremonial aggregations of indigenous Australian peoples. Admitting that Durkheim's notion of religious effervescence could easily be criticized as overly imprecise, or that we could be tempted to envisage participants in such gatherings as blind followers of the assembly, stripped of their individual or subgroup idiosyncrasies, Fowles insists on a more nuanced understanding of the notion of effervescence. He stresses that the key spark in such gatherings might have been the underlying differences among those participating, which led to the forging of new identities

I would suggest that we might be encountering precisely such a process in the context of Lepenski Vir at this particular juncture, and that the notion of religious effervescence could perhaps be explored productively in many other megalithic contexts. As discussed earlier in this paper, during the short-lived phase I-II at Lepenski Vir in the last century of the 7th millennium BC, when the site was being resettled with a buzz of activity, there is now clear evidence that it acted as a hub for the meeting of two genetically and culturally different groups – the indigenous foragers and the migrant farmers of Anatolian origin. Evidence of admixtures between these different groups of people have also been established in the burial record of this and at least one other contemporaneous neighbouring site. Elaborate buildings constructed at Lepenski Vir at this time and associated burial rites draw strongly on forager cultural traditions, but have a renewed vigour and new means and media of expression (e.g., the use of sandstone boulders for carving). At the same time, portable material culture (e.g., ornaments, osseous tools, flint raw materials, grounds stone tools) in many instances embody technical gestures characteristic of Neolithic cultural assemblages (cf. Borić *et al.* 2018). Further, a large number of neonate burials beneath trapezoidal building floors and the introduction of aurochs remains in the burial arena (Borić 2016) could also be seen as elements of Neolithic cultural traditions and repertoires of expression. Earlier, I hinted at a possibility that there might be a correlation between the end of 8.2 ka cold event and the start of these activities at Lepenski Vir, with this location almost certainly deliberately chosen as the site for unprecedented building and dwelling activities based on its proximity to the trapezoid-shaped Treskavac rock of monumental dimensions found across the Danube.

The meeting of these diverse groups of people, with their profound differences, at this unique location at this specific time might have generated the social excitement, heightened awareness, and reflection required to forge new types of experiences. These experiences and practices (perhaps similar to 'doings' in the sense of the term used by Fowles in the Pueblo archaeological context) could perhaps have approached the idea of religious effervescence previously described – the bubbling of new and exciting ways of reshaping both individual and group identities in the face of radical alterity and potential adversary, while at the same time drawing on past potencies (cf. Borić 2003). The trapezoidal buildings of Lepenski Vir might have played a special role in this, hence their extraordinary elaboration at the site at this time. Here springs to mind the insightful one-liner by Maurice Bloch who, when asked to talk about religion at Çatalhöyük, famously proclaimed that there was no religion at Çatalhöyük, just houses (Bloch 2010). I am tempted to say that at Lepenski Vir religion did not exist separately from the flux of existence within and around the buildings that might have played a pivotal role in the shaping

of idiosyncratic understandings of that existence. Rather than functionally understood just as places of either everyday activities or of ritual, they were most likely places *par excellence* of social encounter, reflection, and negotiation. Their large centrally-positioned hearths with flat stone slabs around them, embedded in the limestone floors in an almost ergonomic way, seem to have invited social proximity and storytelling, while at the same time the building of these structures repetitively – and almost obsessively – drew on an elaborate ecology of multiple links with an array of other-than-human entities. This intersection of emotions, politics, power relations, spectacles, and probings into new ways of being at this place must have created the extraordinary material record, holding things together for only a short while before similar nexuses of effervescent ecologies of relationships were created elsewhere.

Acknowledgements

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Luc LAPORTE, Primitiva BUENO RAMÍREZ

On the Atlantic shores. The origin of megaliths in Europe?

Abstract: The megalithic monuments of Europe are some of the oldest in the world. Despite the wide diversity of forms throughout the continent as a whole, it is the Atlantic façade that contains almost all of those megalithic monuments that are thought to be the oldest. Defining the precise geographical contours of the Atlantic façade, however, requires the inclusion of some more continental areas, both in France and in the Iberian Peninsula. The origin of these Atlantic megalithic monuments has been debated for many years; the question takes a different form, however, depending on whether the problem is approached from the point of view of the very first stone monuments, or from the idea of mobilizing very large stones to create architecture, or whether it is the symbolic and social changes associated with new funerary practices that are considered. The question of chronologies is, here, of paramount importance, although the problem of recycling, with megaliths erected more than once on the same site, must not be ignored.

Keywords: *megaliths, Neolithic, France, Spain, Portugal*

European megaliths are one of the oldest manifestations of this type in the world. During the Neolithic period, megaliths were built in Europe from central Sweden to southern Portugal and from Orkney and Ireland to the island of Malta (Joussaume 1985: Fig. 2; Laporte & Bueno Ramírez 2016: 229). Despite a very wide diversity of types throughout the continent, the Atlantic façade brings together almost all forms of the oldest megaliths, built during the 5th millennium BCE, as noted by the archaeological community at the Bougon symposium in 2002 (Joussaume *et al.* 2006) and confirmed since by numerous publications (Bueno Ramírez *et al.* 2016a; Furholt & Müller 2011; Laporte 2015a; Scarre 2011, among others). However, accurately defining the geographical extent of the 'Atlantic seaboard' requires the integration of several continental areas, both in France and in the Iberian Peninsula, since the division of Neolithic Europe between the Linearbandkeramik and Mediterranean cultural groups is now perceived as more permeable. The potential contribution of Mesolithic traditions must also be taken into account.

The question of the origin of these megaliths has been debated for a long time but the answer depends on whether it is approached from the perspective of the very first stone monuments, or of the first mobilization of very large stones to create architecture, or from the angle of the symbolic and social changes associated with new funerary practices. The question is also very different depending on whether the focus is on Great Britain and Ireland, the west of France or the Iberian Peninsula. It is now accepted that the first British and Irish megalithic

monuments are a little more recent. Their relationship with the monuments of northern and western France is dealt with in another article in this volume (Scarre & Laporte, this volume, p. 1253). We will concentrate here on the Atlantic coast of France and on the Iberian Peninsula. Other manifestations, specific to the northwestern limits of the Mediterranean, are dealt with by J. Guilaine, this volume, p. 1281.

For the last 30 years, discussions concerning the oldest megaliths in Europe, whatever their origin, have faltered with regard to three points in particular: the sometimes prior presence of collective burial practices in the same territories, in the context of hunter-gatherer societies; the antiquity of certain standing stone structures in relation to megalithic burial chambers, and their relationship to the advent of the Neolithic period; and the emergence of the first funerary monuments, in distinct forms depending on the geographical areas concerned. The same ambiguity surfaces each time: the available data and the resolution of the chronologies do not always allow us to prove the local existence of a strict causal link between the recurrences that emerge from studies over a long period of time. We will deal with each of these points after a few brief historiographical reminders.

1. Brief historiography

The oldest archaeological excavation reports on megaliths in Europe date to 1685. They concern work carried out on a monument in the Netherlands and, independently but in the same year, on another in western France. At the beginning of the 20th century, the Swedish archaeologist Montelius proposed a classification of megalithic ruins, henceforth attributed to the 'Polished Stone Age', which distinguished 'dolmens', 'passage graves' and 'gallery graves'. This classification was based exclusively on the arrangement of the large stones forming the sepulchral area and was defined largely by the absence or configuration of access structures. Even today, this approach contributes to structuring of the seriation applied throughout northern Europe.

This same author situated the origin of European megaliths in 'the East' (Montelius 1899), in keeping with diffusionist theories, which were widespread at that time. The first inventories already showed strong disparities in the distribution of these megalithic ruins (Martin *et al.* 1880), with areas of concentration that served as anchor points for megalithic 'routes' used to explain the expansion of the phenomenon across Europe (Fergusson 1872); maritime movements along the Atlantic coast were frequently cited, among others. Indeed, a proposal outlined by Montelius (1907), applying his own classification to Brittany, was based entirely on such routeways. At the same time, and shortly after the discovery of Troy, Siret (1893) presented the results of his excavations at Los Millares (Andalusia) and Almería as the fruit of a Near Eastern colonization, also testified by the presence of *tholos* tombs (**Fig. 1**).

The perimeters of the Mediterranean Basin were at that time considered to be subject to external and civilising influences. Faidherbe (1869) had already carried out several excavations on megalithic ruins in Algeria, on territories recently colonized by France. In the same year, Galles (1869) published a cautious comparison between the shape of these North African dolmens and the megaliths he had excavated a few years earlier in the region of Carnac, in Brittany. Diffusionist theories underpinned the study of megaliths for a long time, in some places until the late 1960s.

A century later, the rudimentary assemblages of very large stones composing the *antas* structure in Almeria were thus presented as pale 'indigenous' copies of masonry constructions with a circular chamber and regular walls, as were the *tholoi*, which characterized the cemetery of the fortified city of Los Millares, in southern Andalusia (Almagro & Arribas 1963). However, excavations carried out by Leisner & Leisner (1951) at Reguengos de Monsaraz (Evora), Portugal, had already demonstrated that such *tholoi* were unquestionably later than the megalithic chambers built with orthostats. The *anta* / *tholos* sequence of Farisoa, (also in Evora), made this very clear. Bosch Gimpera (1932) also positioned the oldest megaliths on the Atlantic coast with subsequent expansion towards the southeast of Spain.

Further north, from the 1930s onwards the work of the Péquart (Péquart *et al.* 1937; Péquart & Péquart 1954) on the Mesolithic cemeteries of the Breton islets of Téviec and Hoëdic argued for a local,

a

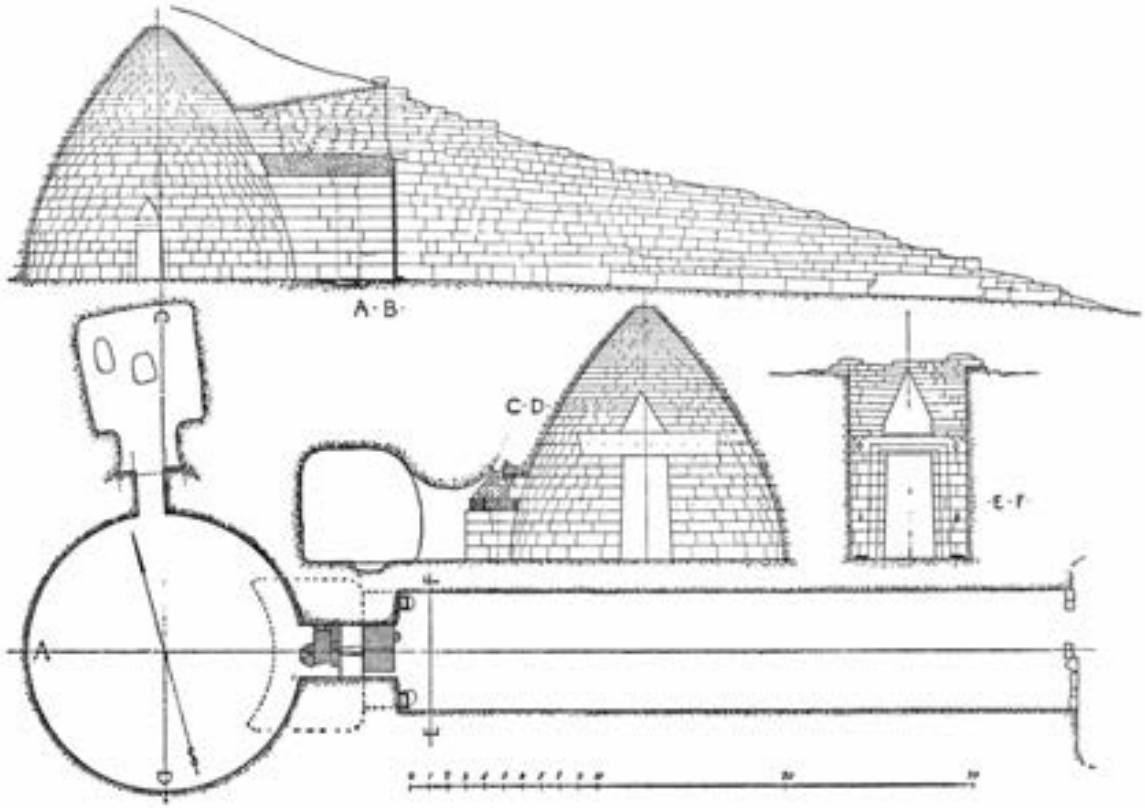
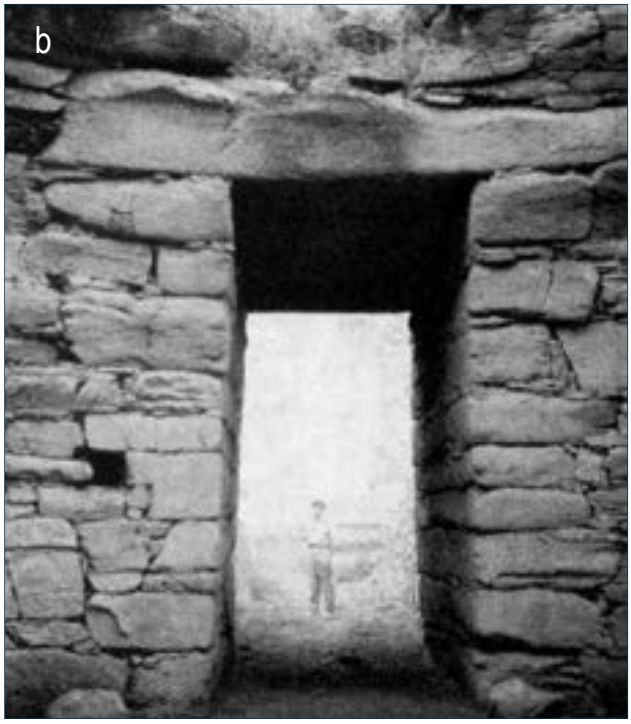


Fig. 20. — Planta y alzados de la tumba de corredor y cámara cubierta con falsa cúpula, llamada del Tesoro de Atreo o Tumba de Agamenón, en Micenas, hacia el 1330 a. de J. C. (Según Wace.)

b



c

Fig. 1 – Historiography - Ex orient Lux: comparisons proposed by Almagro & Arribas (1963) for the *tholos* of the southern Iberian Peninsula: a. Treasure of Atrea in Mycenae (p. 223); b. Tomb at Dimini, in Thessaly (Pl. CXXXXIV, 1); c. Tomb of Kephala in Crete (Pl. CXXXXIII, 4).

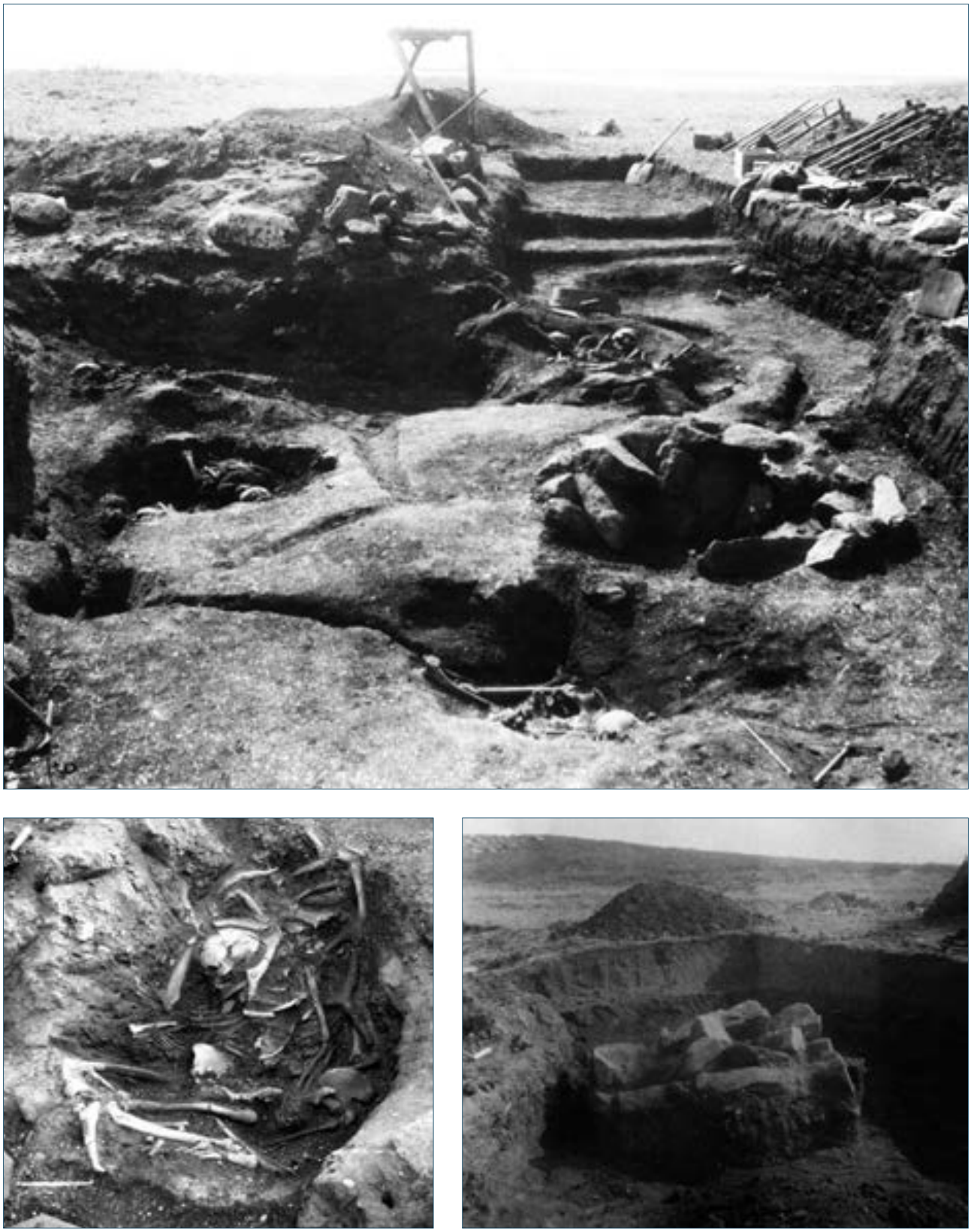


Fig. 2 – Historiography - A local origin? Archaeological excavations by the Péquart couple on the islet of Téviec, in Morbihan (France), in 1928 and 1929 (Photos: St-J. Péquart, Museum of Natural History Paris, Melvan collection).

European origin for Atlantic megalithism (**Fig. 2**). In the 1960s, burials unearthed in the shell midden of Muge in Portugal (Roche 1957) were also interpreted as the graves of hunter-gatherers, locally resisting the advance of Neolithic culture until a rather late stage, as though, at this far end of the Neolithic world on the Atlantic coasts of Europe, the idea of building megaliths was the result of such a confrontation (Whittle & Arnaud 1975). This was a pattern that seemed to be reproduced even on the Danish coast. The attribution to the Neolithic period of most of these megaliths was hardly questioned.

Until the 1950s, the duration of the entire Neolithic period was believed to be somewhat short, perhaps less than a millennium, and its chronology was believed to be rather late. Megalith building and the Neolithic period were considered part of the same horizon, the terms for which were sometimes confused. In the 1960s, the first radiocarbon dates, particularly those obtained in Brittany for the monuments of Carn and Barnenez (Giot 1960, 1987), marked a turning point. They demonstrated for the first time that these megaliths were more than 2000 years older than the pyramids, stimulating a cycle of regional, even regionalist studies in Europe that had begun many years previously.

The duration of the Neolithic period was further extended by several millennia with the calibration of radiocarbon dates in the 1980s. From then onwards, the terms 'megalithic' and 'Neolithic' had to be strictly dissociated against a background of locally enhanced periodization. At the same time, a synthesis published by Joussaume (1985) offered a renewed overall vision of these megaliths on a European scale and beyond. In Brittany, the discovery of the reuse of two fragments of the same stele for the construction of two distant megalithic chambers, at Gavrinis and Locmariaquer (Le Roux 1985), raised the question of the anteriority of certain structures of erected stones (L'Helgouach 1983).

In Portugal, Calado (2005) subsequently proposed associating some standing stone structures with an early Neolithic, an interpretation supported by the chronology of megaliths with reused stelae in the Iberian Peninsula (Bueno Ramírez & Balbín Behrmann 1992). In the centre of the Paris Basin, the superimposition of Passy-type funerary structures on the site of houses locally attributed to the last expansions of the VSG culture (Mordant 1997) led to the dissociation of the emergence of the first funerary monuments and the first developments of megalithism. In Brittany, excavations of the Villeneuve-Saint-Germain (VSG) culture house at Haut-Mée revealed a spatial association with the wedging pit of an isolated standing stone (Cassen *et al.* 1998, 2019: 577). The chronology of major Carnac-type monuments was also revised (Boujot & Cassen 1992). The presence of some Early Neolithic elements underlying many megalithic funerary monuments was then reported in Bougon, western France (Mohen & Scarre 2002), on the Spanish Meseta (Zapatero & Delibes 1996), and in Galicia, northern Portugal (Abad Gallego 1993; Cruz 1995; Domínguez-Bella & Bóveda 2011; Vaquero Lastres 1999).

At a European scale, the anteriority of megaliths built on the Atlantic coast was established at the end of the 1990s (Müller 1997) and the beginning of the 2000s (Joussaume *et al.* 2006). A decade later, the refinement of radiocarbon chronologies through Bayesian analyses (Whittle *et al.* 2011) definitively dated the megaliths in the British Isles. Like those in northern Europe, they are the result of a later neolithization. The extension of the method to all the radiocarbon dates available for megaliths in Europe led Schulz Paulsson (2017, 2019) to propose three successive waves of megalith expansion across Europe, through maritime routes. This interpretation, as well as the assumed return to diffusionist theories, leads us back to the work of Montélius.

2. The Mesolithic period and megaliths

The appearance of the oldest megaliths on the Atlantic coast of Europe was frequently attributed to Neolithic populations who were derived, at least in part, from hunter-gatherer ancestors, previously established in these same regions. This was perhaps due to the rudimentary character attributed to such constructions at that time, but also probably to the totally foreign character of these traditions within the 'package' of the first Neolithic settlers, both the LBK and Cardial cultures. However, no truly megalithic construction in Europe can be directly linked to Mesolithic populations, apart from a few

structures (and sometimes even stone cists), dated to the Upper Palaeolithic (van Berg & Cauwe 1996). Arguments are thus based on the idea of an indirect, very long-term transmission of much more general cultural traits.

One such frequently raised argument concerns the early practice of collective burials (Cauwe 1998; Schmidt *et al.* 2018). Another relates to the particular staging of the burial of a few individuals, sometimes involving a large quantity of boulders (Laporte *et al.* 2011: 293). Yet another argument highlights a certain form of continuity in the repertoire of symbolic representations used in prehistoric cave and open-air parietal art (Bueno Ramírez *et al.* 2015a: 67-69; Bueno Ramírez & Balbín Behrmann 2021). In the Paris Basin, Passy-type monumental funerary structures were constructed by the Cerny culture in which Bailloud (1964) thought he could identify some remnants of their hunter-gatherer past.

Collective cemeteries are now attested in the centre of the Iberian Peninsula during the Mesolithic period, as well as in the Levant, in Catalonia, and on the Atlantic coast of Portugal where they were previously known. New studies particularly concern the burials of Muge, interspersed within mounds resulting from a progressive accumulation of shell waste and other materials (**Fig. 3**). The burials in these shell middens accumulated over a long period extending from the 8th to the 5th millennia BCE (Bicho *et al.* 2017). A continuous sequence between the Mesolithic and Early Neolithic periods seems convincing for recently documented sites such as Cabeço de Amoreira, in which collective burials were part of social practices for millennia.

Similar observations are beginning to be characterized on the Cantabrian coast, where Canes Cave contains a succession of burials dated from the 7th to the 5th millennia BCE, with the possibility of expanding the extent of these discoveries during new excavation campaigns (Arias *et al.* 2009, 2013; Bueno Ramírez *et al.* 2018a). New discoveries have also been made in the Levant region, near the shores of the Mediterranean. The funerary deposits of El Collado, Valencia, include 14 individuals dated between the 10th and 8th millennia BCE (Gibaja *et al.* 2015; Terradas *et al.* 2016), and burials at the Corona Site, Alicante, have chronologies from the 8th and 7th millennia BCE (Fernández-López de Pablo *et al.* 2013).

Growing documentation also confirms that important Mesolithic and Neolithic sites, traditionally associated with the prehistory of the Taje estuary (Peyroteo 2016), also existed elsewhere on the Iberia. Most revealingly, funerary customs, shown through material assemblages, link the Mesolithic to the Neolithic in continuous diachronic use, sometimes in the same burial sites. The natural caves of Romangordo (Cáceres) in Spanish Extremadura were used for sepulchral deposits between the second half of the 8th and the 4th millennia BCE (Cerrillo & Gonzalez 2011), as was the cave of Nerja near Malaga (Jordá & Aura 2008) in the 8th millennium BCE, other sites in the bays of Cádiz and Málaga (Ramos Muñoz 2006) between the 7th and 6th millennia BC, and that of Cerro Virtud near Almeria in southern Andalusia (Montero *et al.* 1999) in the 5th millennium BCE.

The custom of being buried with other individuals during public ceremonies with certain objects displayed was not specific to megalith builders, nor to the 'maritime' populations of the Iberian Peninsula. In western France, in Charente, Mesolithic burials are attested in Peyrats Cave in Agri (Boulestin 1999), which experienced a long period of ritual activity until the end of protohistory. They were even identified in the burial deposits of Artenac Cave, the eponymous site of a cultural group from the end of the Neolithic period (Bailloud *et al.* 2008). The collective burial in Bélestat Cave in the Pyrenées is attributed to the beginning of the Middle Neolithic and has often been evoked as an example of a possible continuity of funerary practices between Mesolithic and Neolithic collective burials (Claustre *et al.* 1993).

Sometimes, the staging of funerals also involved the mobilization of large masses of stones. The stone structures rising above the Mesolithic burials of Téviec and Hoëdic in Brittany are now interpreted along these lines (Boulestin 2016). The radiocarbon dates associated with these burials have been largely revised (Schulting & Richards 2001; Marchand 2014), and today, their links with the oldest Breton megaliths seem very distant (Marchand 2017). Similarly, at Auneau, in the centre of the Paris Basin, an individual deposited in a seated position was

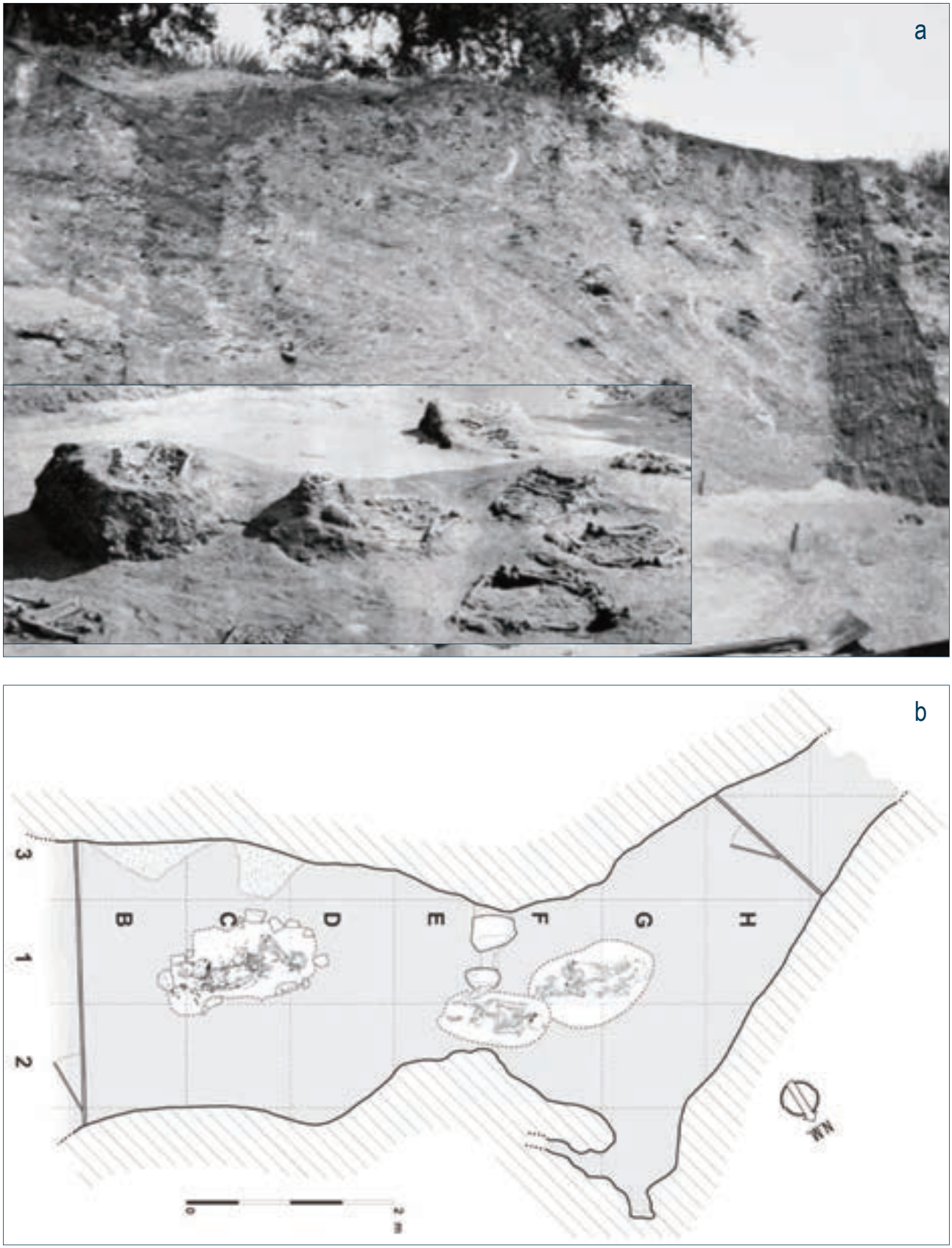


Fig. 3 – Last hunter-gatherers. Mesolithic sepulchral practices in the Iberian Peninsula: a. Shell middens and graves of Muge in the Tagus estuary, Portugal (After Jackes & Lubell 2016); b. Burial cave of Los Canes in Asturias, Spain, containing several burials from the 6th millennium BCE (After Arias *et al.* 2013).

covered by more than 300 kg of rock in a Mesolithic burial dating from the 8th millennium BCE (Verjux & Dubois 1996).

At Pontcharraud in Auvergne, several individuals deposited in an extended position and placed side by side were partially covered by a single stone slab (**Fig. 4**); this multiple burial is attributed to the end of the Early Neolithic or the beginning of the Middle Neolithic (Mohen 1989: 173). In the centre of the Paris Basin, Malesherbes-type slab burials date from the middle of the 5th millennium BCE. These belong to the Cerny culture group (Verjux *et al.* 1998). They are single or double burials overlain by a very large stone slab moved horizontally, somewhat like the cover slab enclosing the burial area of a dolmen. In fact, the cover slab is sometimes the only megalithic element of a passage grave, as in chamber III of tumulus C of Péré at Prissé-la-Charrière (Deux-Sèvres, France), where it rests entirely on dry-stone walls (Laporte *et al.* 2021).

The term 'collective burial' encompasses a wide variety of practices (Schmitt & Déderix 2019). Recent developments in palaeogenetics point to family burials in several burial areas within such passage graves in western France (Cheronet *et al.*, this volume, p. 1260). However, it would be risky

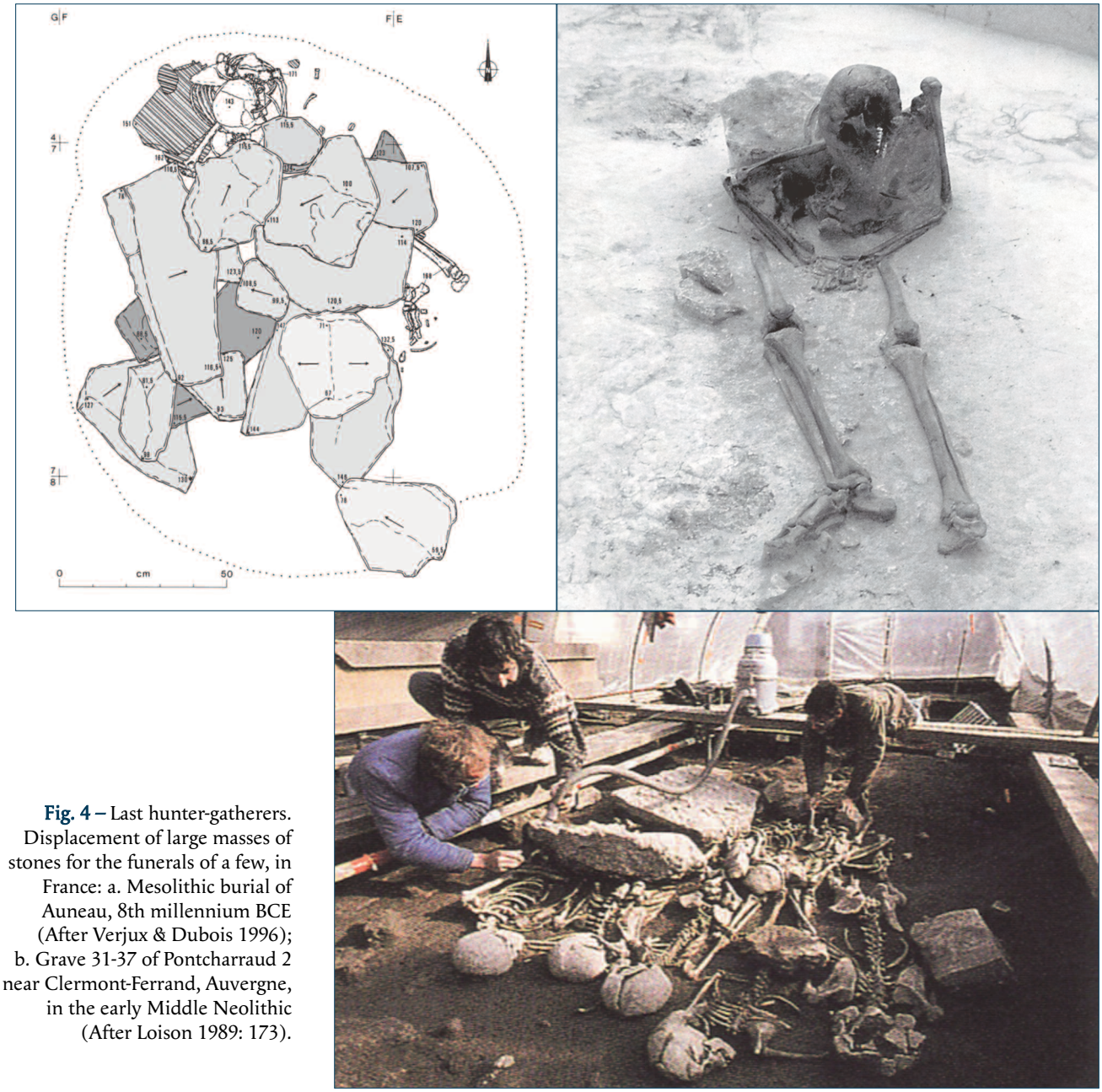


Fig. 4 – Last hunter-gatherers. Displacement of large masses of stones for the funerals of a few, in France: a. Mesolithic burial of Auneau, 8th millennium BCE (After Verjux & Dubois 1996); b. Grave 31-37 of Pontcharraud 2 near Clermont-Ferrand, Auvergne, in the early Middle Neolithic (After Loison 1989: 173).

to transfer these practices to much older periods too hastily. Also working in France, Chambon (2003) introduced an additional element of discontinuity when he suggested distinguishing Late Neolithic collective burials from those of the Middle Neolithic, citing an example in Normandy on the westernmost margins of the Paris Basin, where a small number of individuals were merely laid out side by side in the same megalithic chamber.

What remains is the continuing idea of corpses deposited successively on the floor of underground cavities (Laporte *et al.* 2011). The symbolic repertoire of some of these burials does not appear to reflect an abrupt break between the burial practices at the end of the ice ages and those of the first farmers (Bueno Ramírez *et al.* 2019). This can be observed on the Iberian Peninsula but may, of course, be more difficult to accept for colleagues studying the burials of northern Europe, where such elements of continuity are lacking. Very recent developments in the palaeogenetics of western Europe report similar disparities, albeit through totally distinct mechanisms, in the transmission of a heritage passed down from the last hunter-gatherers in Neolithic populations (Rivollat *et al.* 2020).

3. First farmers and megaliths

For Joussaume (2003), the emergence of megalithism in Europe was less related to the collective nature of funeral deposits and more to the fact that the dead now took their place on the ground that the living walked upon, within elevated constructions reserved for them. This was not the case among the earliest farmers in western Europe but is not surprising as the latter were absent from the whole Atlantic coast of Europe. The possible existence of Epipalaeolithic or Mesolithic populations beyond the coastal fringe of the Iberian Peninsula was even ignored for many years.

The interior of the Iberian Peninsula, where megalithic constructions are less common, was for many years – until at least the 1980s – considered practically devoid of human settlement during late prehistory. Previously, only the region of the Levant was believed to have been home to pioneering Early Cardial Neolithic settlements, similar to the south of France (Guilaine 1980: 54-55). New discoveries on the coasts of southern Spain and Portugal – at first only a few scattered sherds – began to suggest the existence of an Early Neolithic as presence on the coasts of central-western France (Joussaume 1981).

The extent of the wave of continental colonization was also slow to be acknowledged; its expansion to the tip of Brittany, through some of its later developments, was little accepted until the 2000s (Tarrête & Le Roux 2008: 11, 24). Twenty years later, in France as in Spain and Portugal (Bueno Ramírez *et al.* 2016a: 163; Carvalho *et al.* 2003; Diniz 2001; Fábregas *et al.* 2019; Sanches 1997), all regions are known to have experienced at least some interaction with the various groups of the early Neolithic, during a period that lasted longer in the south of France and in the north, west and south of the Iberian Peninsula. Each time that knowledge advances, the position of the oldest known megaliths has to be renegotiated locally against the new backdrop.

3.1 In the west of France

On the Atlantic façade of France, the oldest standing stone structures were erected at least as early as 4700 cal BC, which is the more recent of two charcoal dates from the fill of the wedge for a standing stone erected in Beltz, in the Morbihan (Hinguant & Boujot 2009). On the island of Hoedic (**Fig. 5**), a row of standing stones is associated with an ancient floor that yielded pottery from the Cerny group (Large 2015). Independently, in the Yonne department in the centre of the Paris Basin, the oldest Passy-type structures are dated to around the same period (Pillot & Lemercier 2014). In central-western France, two similar dates on human bones come from small circular burial chambers built of dry stone in the Bougon Necropolis (Mohen & Scarre 2002). It has been suggested that the bones could be relics, placed there at a later stage (Chambon 2003). The earliest dates for burials in stone cists, both in Switzerland and on the edge of Poitou in France, certainly predate the middle of the 5th millennium BCE (Soler 2007).

The various elements that contribute to the form of many megalithic monuments seem to be implanted

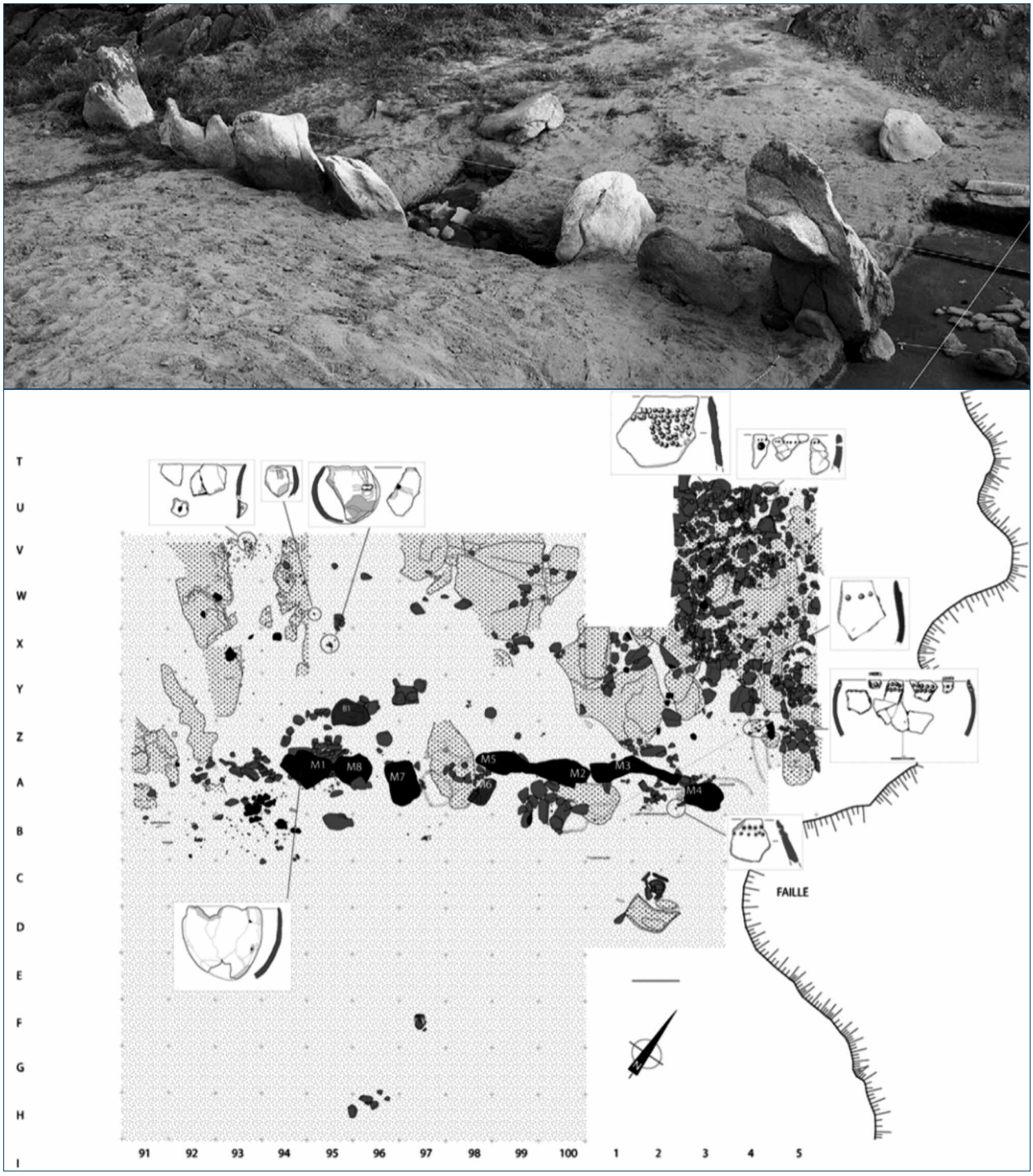


Fig. 5 – First farmers and megaliths in western France. Alignment of standing stones of Douet, at Hoedic (Morbihan), with wedge pits associated with a former floor containing pottery attributed to the Cerny group (4700-4300 cal BC) (After Large & Mens 2008).

in distinct places both in the north of France and in central France, from the second quarter of the 5th millennium BCE onwards (Laporte *et al.* 2011). It has been suggested that this is the result of increased social competition, something which is also reflected in the establishment of long-distance exchange networks for prestigious goods – towards the Alps and towards the Iberian Peninsula – which were particularly active until the third quarter of the same millennium (Pétrequin *et al.* 2017; Querre *et al.* 2019). The (early) discoveries of a concentration of such prestigious goods on the shores of the Gulf of Morbihan has, however, focused attention on one particular aspect, promoting an excessively unilinear periodization of funerary architecture against a background of somewhat circular reasoning (Laporte 2010, 2019).

On the scale of the whole of western France, several discoveries in the past ten years confirm the idea of a polythetic genesis where each of the above-mentioned elements only gradually combines with the others, and in a different way in each place.

For example, dated between 4700 and 4550 BCE, the very large building on wooden posts at Beaurieu, in the Aisne, monumentalizes the trapezoidal plan of the LBK culture houses (Colas *et al.* 2018). In Normandy, at about the same time, monument 29 at the Fleury-sur-Orne necropolis shows a similar plan bordered by lateral quarries, except that it is built mainly with mud walls, or clods of grass (Ghesquière *et al.* 2015, 2019). Neither site is directly associated with a burial area. On the other hand, in Brittany at La Croix-Saint-Pierre (Saint-Just, Ille-et-Vilaine), two pots with deformed mouths were collected in a probable burial pit that was initially dug in the centre of a small circular construction on posts, and secondarily buried under a tumulus crowned by a stone carapace (Briard *et al.* 1995), as at Souc'h at Plouhinec in Finistère (Le Goffic 2006). Such pottery with deformed mouths is attributed to the beginning of the Middle Neolithic, between 4700 and 4300 cal BC.

Small circular funerary huts and monumental houses with a very elongated layout appear in the same chronological horizon as the construction of the first rows of standing stones erected on the Morbihan coast. Depending on the location, some of these edifices are in wood, others are built with mud walls, and perhaps others with dry-stone walls. Malesherbes-type slab burials, or 'boulder graves', mentioned above, are contemporaneous with these structures. Initially, different forms of burial chambers were then integrated into equally diverse monumental architectures (Laporte *et al.* 2002: 209-211). The internal volume of the small, circular dry-stone constructions with corbelled vaults, surrounded only by the masonry strictly necessary, for example the first phase of chamber F of Barnenez (Cousseau 2016), is hardly different from that of a wooden hut (**Fig. 6**).

In the case of some cists, also built of wood, raw earth, or stone – for example, the open-ground grave of Croix-Saint-Pierre – the funerary function of holding the bodies of several persons in succession may have pre-dated the monumentalization of the site (Scarre & Laporte 2021). This does not mean that the funerary area was devoid of any access structure, nor does it posit that it was provisional or perennial, as we demonstrated at Prissé-la-Charrière (Scarre *et al.* 2003; Laporte *et al.* 2021). The use of stone as a building material indicates above all a concern for durability, regardless of the nature of sepulchral practices. The presence of a covered access or passage extends this concern for durability to the entire monumental mass. In Normandy, one of the exclusively dry-stone passage graves of the necropolis of Condé-sur-Iff (Dron *et al.* 2016) was built in around 4450 cal BC. It is thus contemporaneous with the Passy-type structures recently excavated during rescue archaeology in the neighbouring necropolis of Fleury-sur-Orne (Ghesquière *et al.* 2019).

Some sepulchral areas built above the ground include standing stones, some of which may have been reused, interspersed within dry-stone walls. The construction of a few other such funerary areas, sealed only by a large cover slab, may perpetuate a tradition of moving very large slabs of stone during the funerary rites of a few individuals (**Fig. 7**). All the technically possible combinations, which produce so many regional styles, were implemented. Sometimes, these individual elements lost their own significance and the construction becomes a very large stone cist with orthostatic walls. This is the image that many want to retain of the (passage)

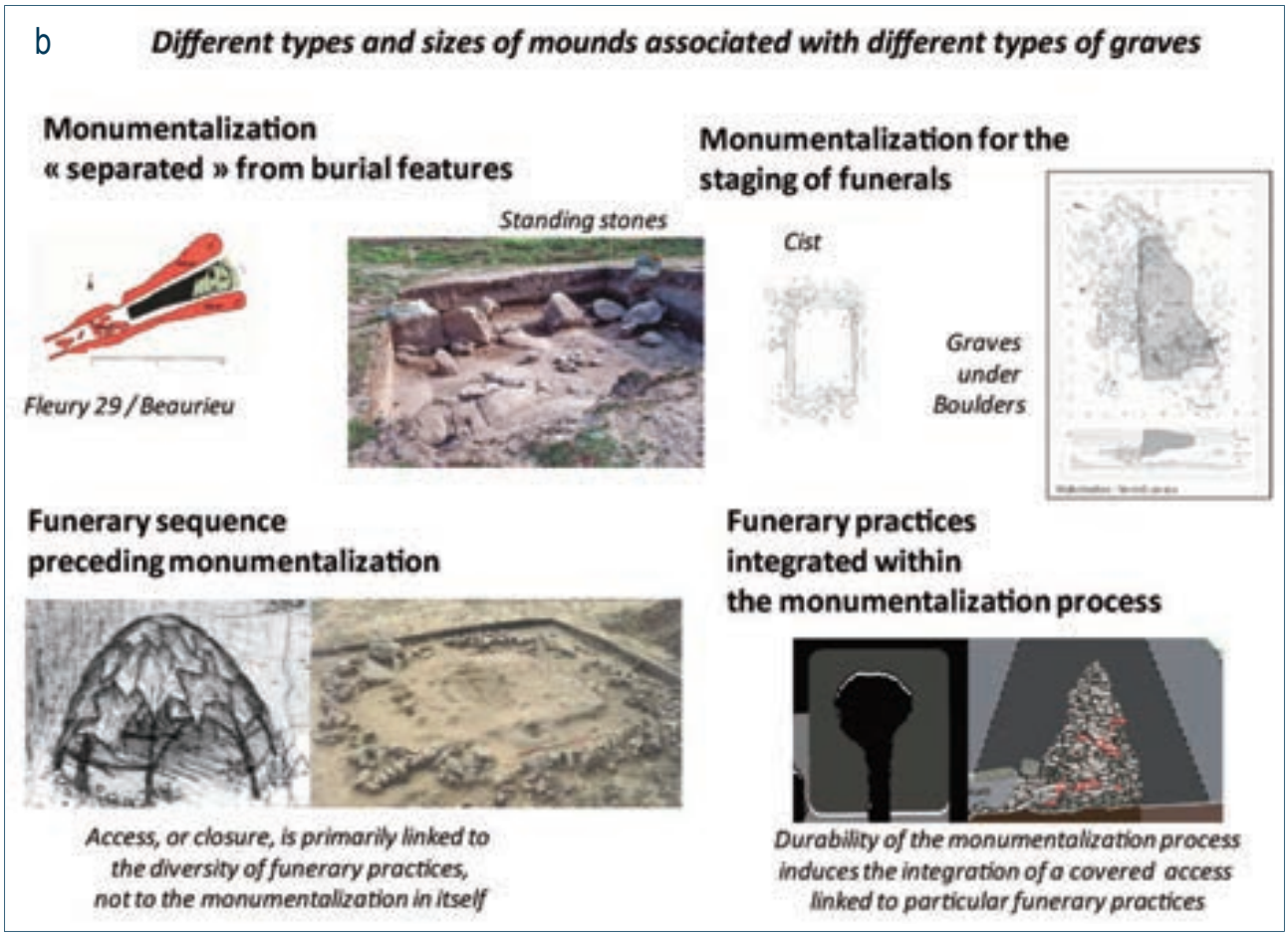


Fig. 6 – First farmers and megaliths in the West of France. Multiple combinations: a. Passy-type monuments at La Jardelle in the Vienne, some with a buried stone cist and an access ramp (Photo: J.-P. Pautreau); b. Different associations between monumental structures, with or without associated funerary structures, and different architectural forms of the burial chamber, built above ground (According to Briard *et al.* 1995; Cousseau 2016; Ghesquière *et al.* 2019; Soler 2007; Verjux *et al.* 1998).

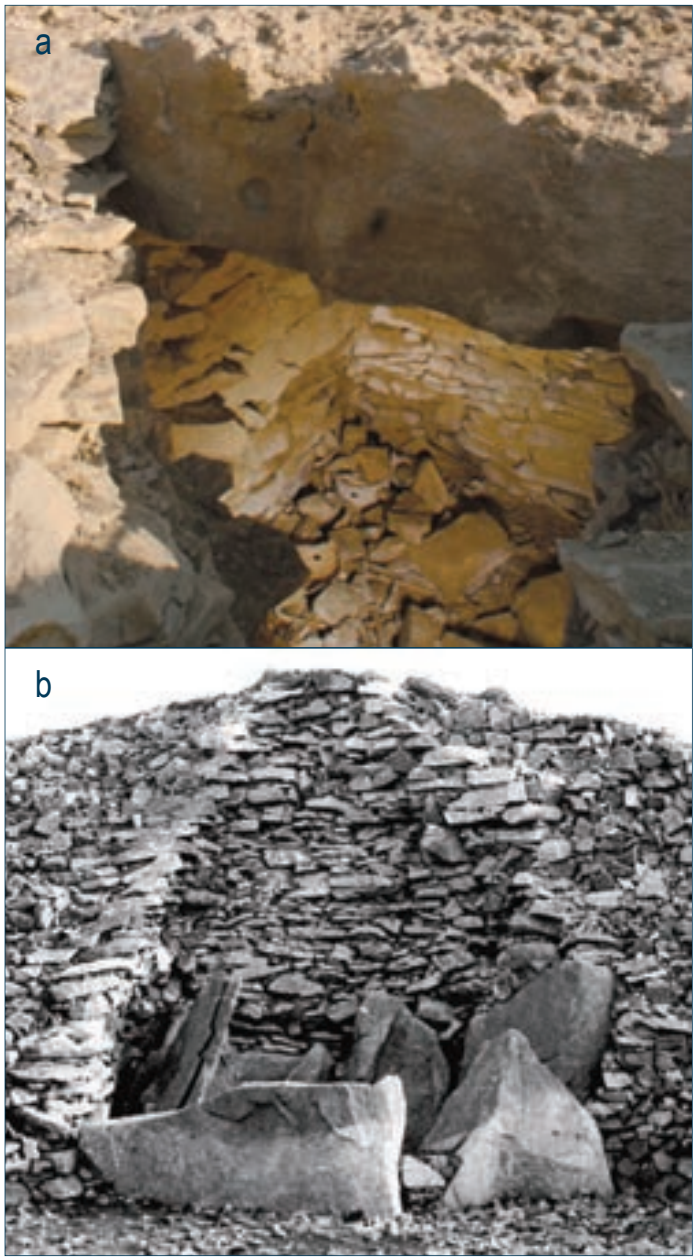


Fig. 7 – First farmers and megaliths in western France. Cover slab and standing stones along the walls of a stone burial chamber: a. Chamber III of tumulus C of Péré at Prissé-la-Charrière (Plaine d'Argenson, Deux-Sèvres), where the cover slab is the only megalithic element capping walls built exclusively of dry stone; b. Standing stones along the walls of chamber A of the great cairn of Barnenez in Plouézoc'h (Finistère) [Photographs: P. Aventurier and Archives of the Archéosciences laboratory (UMR 6566, Rennes)].

graves in the west of France, although it is the result of a process of multiple additions that did not stabilize until the last third of the 5th millennium BCE (Laporte *et al.* 2011).

The unilinear sequence proposed for the Gulf of Morbihan is thus only one case among the diversity of interactions observed at the scale of western France, and the idea that there might be a phase of pre-megalithic funerary monumentalism no longer makes much sense (**Fig. 8**).

On the Morbihan coast, elongated mud monuments and large standing stones erected in the open air are considered to predate the construction of megalithic chambers with upright stone walls, sealed by a cover slab and with covered access. Elsewhere, in Normandy as well as in Poitou and perhaps in the north of Finistère, small circular dry-stone burial chambers were built from at least the middle of the 5th millennium BCE onwards. On the sedimentary margins of the Armorican Massif, elongated monuments surrounded by peripheral ditches were still in use until at least about 4300 or 4200 cal BC (Laporte *et al.* 2018) and even beyond, for example, the Chamblandes cists in central France (Chambon 2016). In the Morbihan alone, recent studies demonstrate the existence of close links between open-air standing stone structures and those erected in the walls of passage graves (Laporte 2015b; Gouézin 2017).

3.2 In Spain and Portugal

As in the west of France, the question of the age of open-air standing stone structures in the Iberian Peninsula cannot be totally dissociated from their presence in megalithic chambers, in the same way as for symbolic representations in the open air or on the walls of a chamber. Such long-term approaches also highlight a certain complementarity in collective burial practices in natural or artificial cavities, and throughout the Iberian Peninsula. Stone is an integral part of the ideological system of the first producers and forms the basis of social pacts, as well as ritual displays over more than three millennia (Bueno Ramírez *et al.* 2007).

The inventory of these standing stone structures, which are very numerous on the Iberian Peninsula, has been largely completed in recent years in the

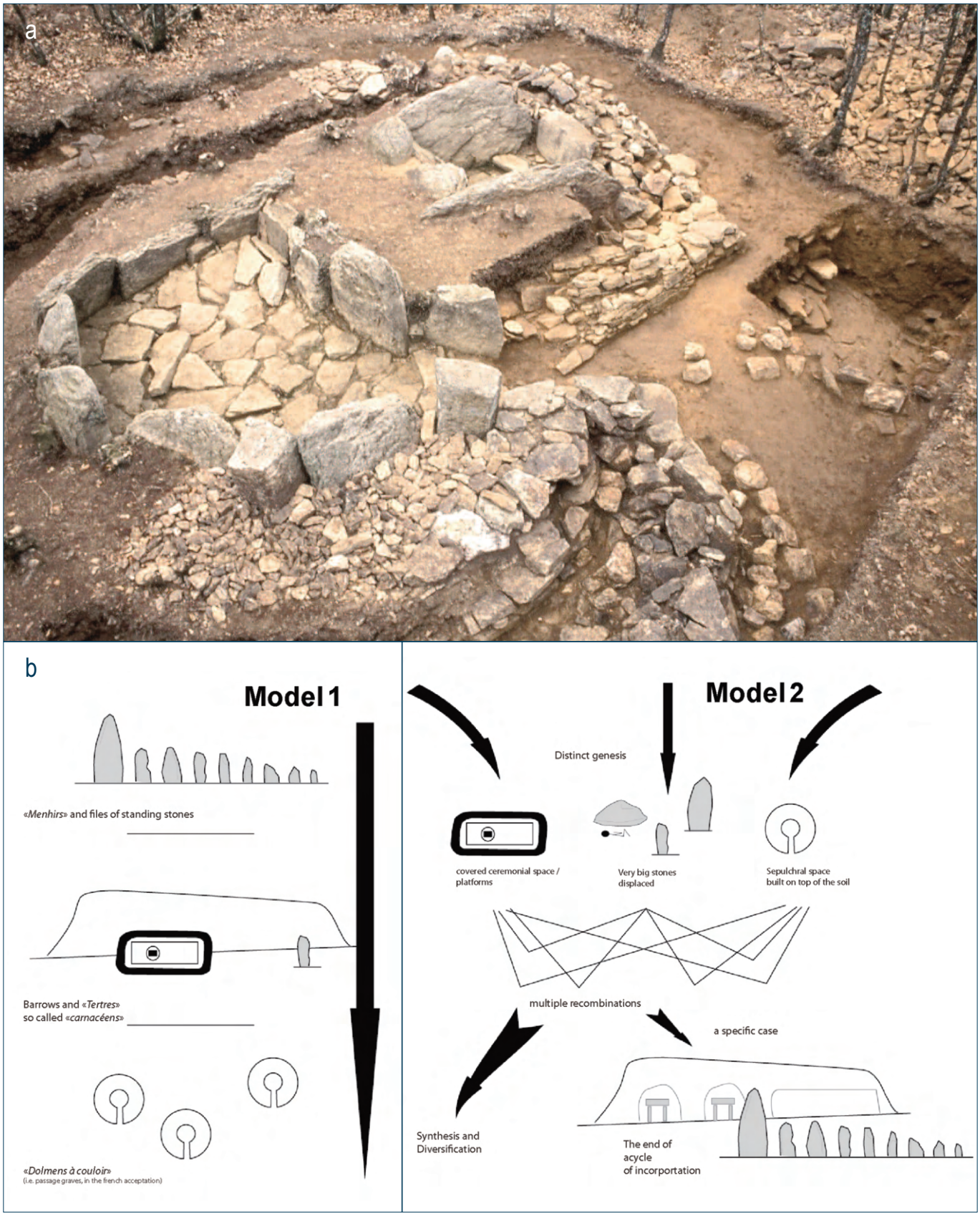


Fig. 8 – First farmers and megaliths in the West of France. A polythetic genesis: a. Passage grave built against the outer wall of the dry-stone massif enclosing a former cist, at Trédion in the Morbihan region (Photo: P. Gouézin); b. What is presented locally as an unilinear model (model 1), for example around the Gulf of Morbihan, is only a specific case in the context of a polythetic genesis (model 2), on a regional scale (After Laporte *et al.* 2014).

Basque Country, the Meseta Norte, Andalusia, and Catalonia. Some were erected in the 4th and 3rd millennia BC (Moreno Gallo *et al.* 2010; Peñalver 1983; Tarrús 2011), and some even until the Iron Age (Rocha 2003). Calado (2005) suggested attributing some of the standing stone circles in Alentejo to the Early Neolithic, to the 6th millennium BC, based on what seemed to him to be a recurrent spatial association between sites with impressed pottery surface finds. This situation is common in southwestern Portugal and was recently confirmed around the collapsed standing stone of Cabezo near Alcantara (Bueno Ramírez & Balbín Behrmann 2020). New radiocarbon dates on charcoal (**Fig. 9**), collected from the filling of wedge pits of the standing stones of Patalou and Meada (Oliveira 2016), now clarify previous dates with large margins of error (especially OSL dates). As in France, menhirs were erected all over Iberia during the 5th millennium BCE, from the Atlantic coast to the interior and Catalonia, while older dates have yet to be validated. Such structures were subsequently built throughout the period corresponding to the development of megaliths (Bueno Ramírez *et al.* 2015c, 2018b).

The reuse of decorated stones in the construction of a new megalithic chamber can stem from the dismantling of an older funerary monument the appropriation of standing stones originally erected in the open air (Bueno Ramírez *et al.* 2015b: 55-60; Laporte *et al.* 2017). This is the case with many monuments in Galicia, for example, with all the elements of the great dolmen of Dombate (**Fig. 10**), including two decorated panels (Bueno Ramírez *et al.* 2016b). In the province of Huelva, the original stele of the Dolmen de Soto must have been 6 m high (Bueno Ramírez *et al.* 2018b: 198). The structures from which these reused slabs come could not themselves be dated but they clearly predate the constructions into which the slabs were later integrated, some of which date from the end of the 5th millennium (Alberite dolmen in Cádiz, Otoxobaso and Pariburu in Basque Country), and many others from the very beginning of the

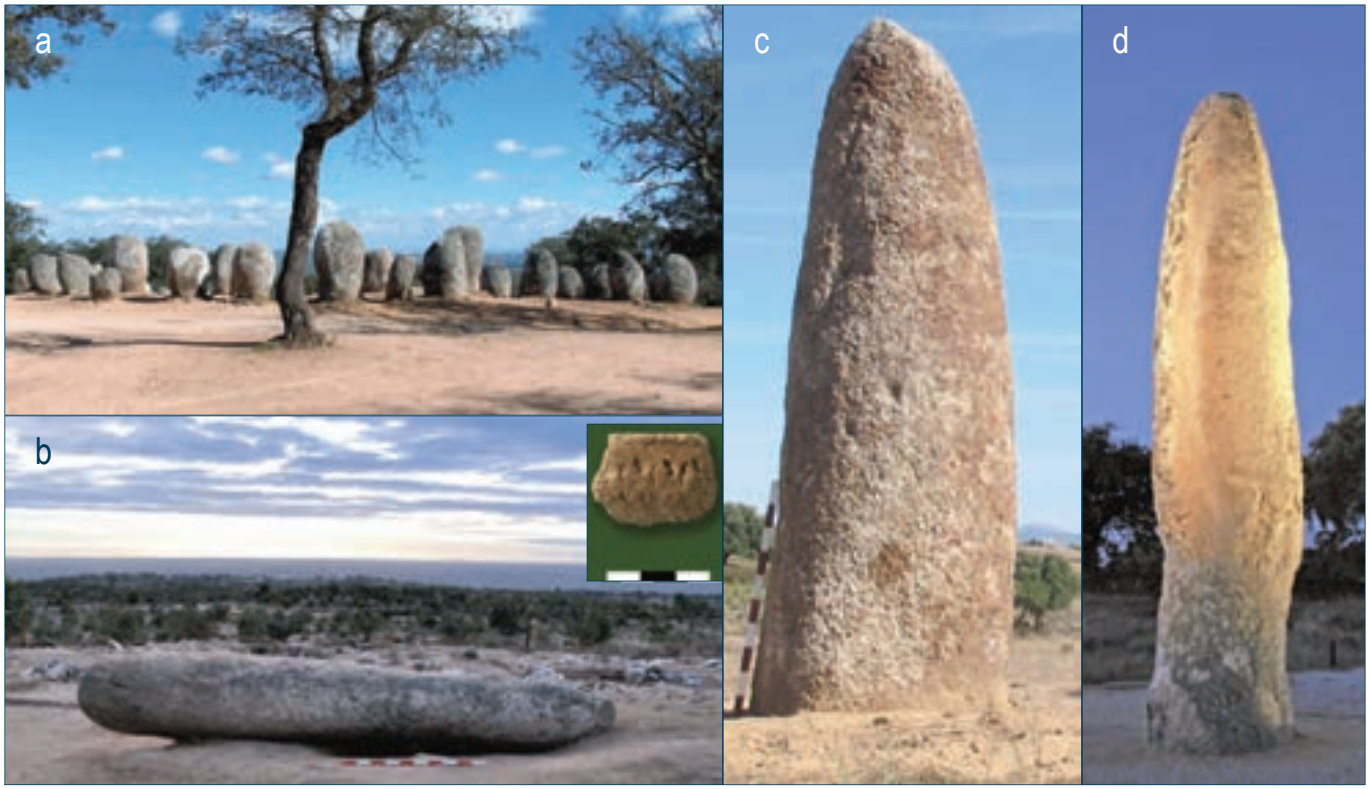


Fig. 9 – First Farmers and megaliths in the Iberian Peninsula. Early Neolithic standing stones: a. Almendres circle of standing stones, near Evora (Portugal), taken as an example by M. Calado (2005); b. Cabezo Menhir in the province of Alcántara (Spain), collapsed on an archaeological level containing Early Neolithic impressed ceramics (Photos: R. de Balbín Behrmann); c. Menhirs of Patalou and Meada (d), in Portugal, where charcoal gathered from wedge pits gave radiocarbon dates contemporaneous with the Early Neolithic, respectively 5240+/- 30 BP (Beta - 416341) and 6022+/- 40 BP (Utc - 4452) (After Oliveira 2016b; photos: R. de Balbín Behrmann).

Fig. 10 – First farmers and megaliths in the Iberian Peninsula. Dolmens of Dombate, in Galicia (Spain). The upper photograph shows a first tumulus, enclosing a small dislocated megalithic chamber, and the large tumulus covering it, associated with a passage grave (Photograph: Lestón). The lower photograph corresponds to a detail of the large megalithic chamber built with reused stelae, in particular the truncated cover slab (After Bueno Ramírez *et al.* 2016b; photos: R. de Balbín Behrmann).

4th millennium BCE, such as the necropolis of Pozuelo in the province of Huelva, Spain (Linares Catela 2016, 2017), or the monument of Châ de Arcas in Viseu, Portugal.

The same reasoning is sometimes applied to objects deposited in funerary areas (**Fig. 11**). This is how the presence of San Martin-el Miradero-type bone spatulas, which gave radiocarbon dates between 4900 and 4700 BCE, has been interpreted (Bueno Ramírez 2020a: 212). These objects, decorated with human images, can be found both in the megaliths of La Rioja (Ebro basin), and in those in the centre of the Iberian Peninsula, where circular chambers with a large diameter and a corridor, so characteristic of the Portuguese region of La Beira, are common.

The radiocarbon dates associated with these architectures confirm an attribution to the last centuries of the 5th millennium. There are also several cases in the centre of the Iberian Peninsula, such as the sites of Azután, El Castillejo or Valdemuriel, which yielded dates similar to those obtained for the spatulas (Bueno Ramírez *et al.* 2016a). In the Basque Country, the confidence interval of the oldest radiocarbon dates associated with the megalithic chambers without corridors, such as Igartza, Otsaarte and Larrarte, extends to the middle of the 5th millennium BCE (Mujika & Edeso 2011: 165).

In Catalonia, where megaliths had previously yielded radiocarbon dates from the end of the 5th millennium BCE (Tarrús *et al.* 1987), large cists covered by

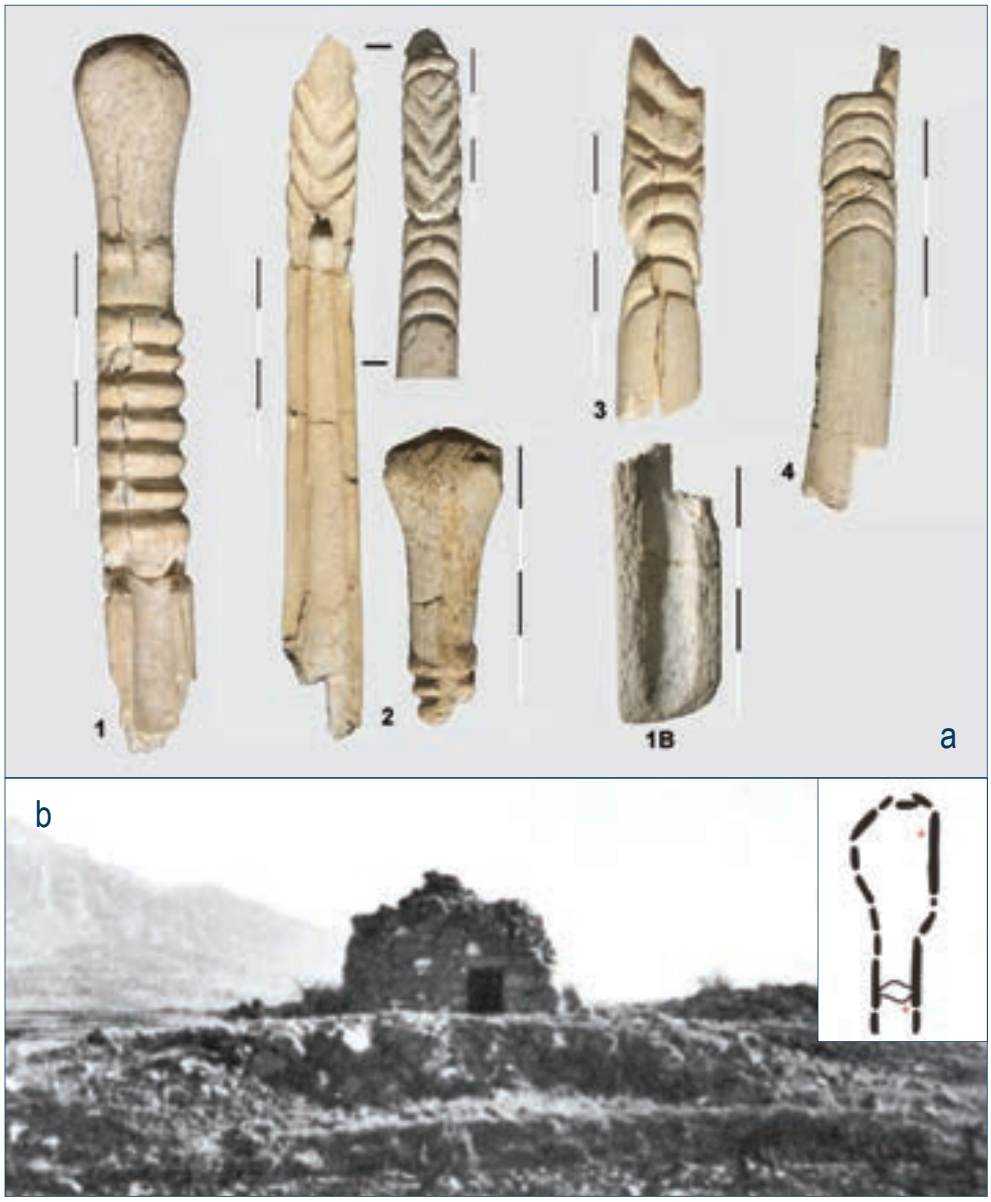


Fig. 11 – Early farmers and megaliths in the Iberian Peninsula. Dolmen of San Martin in Laguardia, in the province of Alava (Spain): a. Decorated spatulas, two of which were radiocarbon dated to the 5th millennium BCE: 5920+/-40 BP (Beta-317865) and 5380+/-40 BP (Beta-339342); b. The dolmen of San Martin at the time of discovery, and position of the two dated spatulas in the passage grave. Human bones from the same source have yielded four dates, all from the second third of the 4th millennium BCE (After Fernandez-Eraso *et al.* 2015).

a Tavertet-type circular mound are associated with Montbolo pottery (Tarrús & Carrera 2018; Molist *et al.* 2007). They thus belong to the first half of the 5th millennium BCE, and show links with Chamblande-type necropolises, such as the Camp de Ginebre in Caramany (Vignaud 1998), and with some pit sepulchres (*sepulcros de fosa*) in the lower Ebro valley. Much further south are the pits and hypogea of the Campo de Hockey in Cadiz (**Fig. 12**), where radiocarbon dates on shells have been confirmed by dates from bones (Sanchez-Barba *et al.* 2019; Vijande *et al.* 2015). The grave at Arroyo Saladillo, at Antequera, and the cemeteries of Los Cascajos and Pateranbide in Northern Iberia, repeat similar funerary associations, in architectures and grave goods, with the same dates (García Gazólaz *et al.* 2011; Oms *et al.* 2016; García Sanjuán *et al.* 2020).

In northern Portugal and Galicia, funerary monuments with megalithic chambers were certainly erected from the end of the 5th millennium BCE, some with chambers accessed by a corridor, and others without, as at da Cruz (1995) previously noted in the Serra de Aboboreira. Dates obtained for paintings in the dolmens of Galicia attest to the antiquity of some of these architectures. Genuine 'decorative stratigraphies' have been identified there, as in Antelas, Monte dos Marxos and Os Muiños. Some of the oldest phases have been directly dated (Bueno Ramírez *et al.* 2007, 2016b; Carrera 2008: 123, 2011: 444; Castro & Vázquez 2007; Fábregas & Vilaseco 2013).

Fig. 12 – Early farmers and megaliths in the Iberian Peninsula. Burial in a cist under the mound of the Campo de Hockey in Cadiz, Andalusia (Spain): details of the cover (a) located above the two central burials (b), and two of the burials in a peripheral grave covered with red ochre (c). General view of the circular burial mound, the central chamber and the peripheral sepulchral pits (d) (After Vijande *et al.* 2015 and Sanchez-Barba *et al.* 2019: Fig. 2).

Another important aspect of research carried out over the past ten years is a consideration of the architectural transformations undergone by these monuments during the Neolithic period. In Galicia, examples of enlargement of the mound are frequently dated to the beginning of the 4th millennium, as in Romea (Mañana Borrazás 2003), Cotogrande 1 (Abad Gallego 2000), Ponte da Pedra (Vaquero Lastres 1999), Chan da Cruz 1 (Patiño Gómez 1985), A Granxa (Chao Álvarez & Álvarez Merallo 2000), and are sometimes associated with a reformatting of the decorative system, as is the case at Mamoa Grande (Chao Álvarez 2000), Monte dos Marxos (Carrera & Fábregas 2002) or Dombate

Fig. 13 – Early farmers and megaliths. Architectures of stone, earth and wood: similar walls, made of dry stone or mud (and sods), which tightly surround the burial chamber, as at Prissé-la-Charrière in the Deux-Sèvres (a) or at Chousa Nova I in Galicia (b), or which structure the monumental mass, as at Petit-Mont in Arzon (c) in the Morbihan or at Cruchaud in Sainte-Lheurine (d) in the south of Charente-Maritime (Photos by L. Laporte (a), M. J. Boveda (b), P. Gouézin (c) and (d) after Burnez & Louboutin 1999).

(Alonso Mathías & Bello Diéguez 1995). The identification of wooden or mud structures in Galicia, as in Asturias, now allows for a more complex interpretation of these architectures (**Fig. 13**), as well as their reshaping over time (Dominguez-Bella & Bóveda 2011; Rodriguez del Cueto & Busto Zapico 2020).

Architectonic polymorphism define the early megalithic phases of the Iberian Peninsula (Bueno Ramírez 1991).

A similar chronological range from the 5th to the 3rd millennium is also cited for the use of natural caves as collective burials (Pardo Gordo *et al.* 2019; Idearq), with similar objects to those collected in megaliths. Such caves are well documented in the eastern part of the peninsula where no megalithic monuments are known (Salazar García *et al.* 2016). However, the vast majority of the megalithic ruins on the Iberian Peninsula are attributed to different stages of the 4th millennium BCE (Boaventura 2011; Bueno Ramírez *et al.* 2007, 2016a; Fábregas & Vilaseco 2013; Linares Catela & García Sanjuán 2010; Mújika & Edeso 2011; Santa Cruz del Barrio *et al.* 2020; Scarre *et al.* 2003, among others). A similar complex of collective graves and standardized deposits was identified in natural caves (Carvalho 2014), *tholoi* (Aranda *et al.* 2021), and hypogea (Boaventura & Mataloto 2013), contemporaneous with some small passage graves (Bueno Ramírez *et al.* 2004; Mataloto *et al.* 2017), and the earliest phase of the large, enclosed sites of Perdigões (Valera *et al.* 2017). At that time, megaliths were being built as far away as the British Isles and northern Europe however this is beyond the chronological framework of this article.

4. Conclusion

In conclusion, we would like to emphasize the very small number of megalithic funerary monuments for which we have reliable *ante quem* and *post quem* radiocarbon dates available to document each construction stage and each project – sometimes built successively in the same place – for these architectures in inert stone materials. In France, as in Iberia, such firmly dated monuments can be counted on the fingers of one hand for periods before the 4th millennium BCE. Standing stone structures are undoubtedly the simplest expression of such constructions in elevation. They are also the most difficult to date. In the absence of a context layer in a primary position strictly contemporaneous with construction, dates on charcoals from wedging pits provide only a *post quem*. Elements of relative chronology from the rather systematic reuse of some of these stelae in megalithic chambers cannot be too hastily assimilated into a periodization schema. Debates on the oldest megaliths in Europe are thus far from closed.

In Brittany, as in southern Portugal, the attribution of some standing stones to LBK culture or Cardial Early Neolithic groups, is based on rather tenuous spatial associations. In France and in the Iberian Peninsula, the most reliable recurring elements for the construction of such structures seem, for the moment, rarely to occur prior to 4700 BCE. In western France, such stones are only one component of an integration process observed throughout the 5th millennium BCE with multiple combinations similar, perhaps, to the Iberian Peninsula. Here, long-term approaches highlight the complementarity, over several millennia, of symbolic representations exposed in the open air or on the walls of natural or artificial cavities; there is similarly no reason to dissociate the oldest standing stones in the open air from the oldest megalithic burial zones. In any case, the dead (the 'ancestors') came to occupy a place in the land of the living that neither the last hunter-gatherers nor the very first farmers more widely in Europe seemed to give them.

Translated from French
by Louise Byrne

Standing stones and sepulchral stone assemblies. Towards a convergence in thinking. The example of the megaliths in the Morbihan department, France

Philippe GOUÉZIN

1. Introduction

The study of megalithic architecture has frequently been approached through distinct aspects: sepulchral spaces and raised stones were often considered separate areas of research. Only recently has complementarity between sepulchral spaces and 'free range' standing stones really been proposed (**Fig. 1**). Yet, analysis of the engineering involved in the construction of these architectural projects indicates many points of convergence between the arrangements of stones raised in the open air, in sepulchral spaces, and in tumuli. These analyses seem to show that the intention of the builders was to reflect the strong links between the world they observed and inhabited, and the particular attention they paid to their dead. Using the updated corpus of megaliths in the department of Morbihan to study the forms of architectural arrangements could provide a valuable basis for comprehension of this phenomenon.

2. Methodology: architectural analysis of the structures

The aspects evaluated in these studies included architectural classification, morphology and architectural anomalies. Observations were made on groups of individually placed standing stones and these were compared with those made on stones in the walls of sepulchral spaces. The history of each monument was also considered.

In the 1413 megalithic monuments in our inventory, 13 200 vertical slabs were observed. Here we must

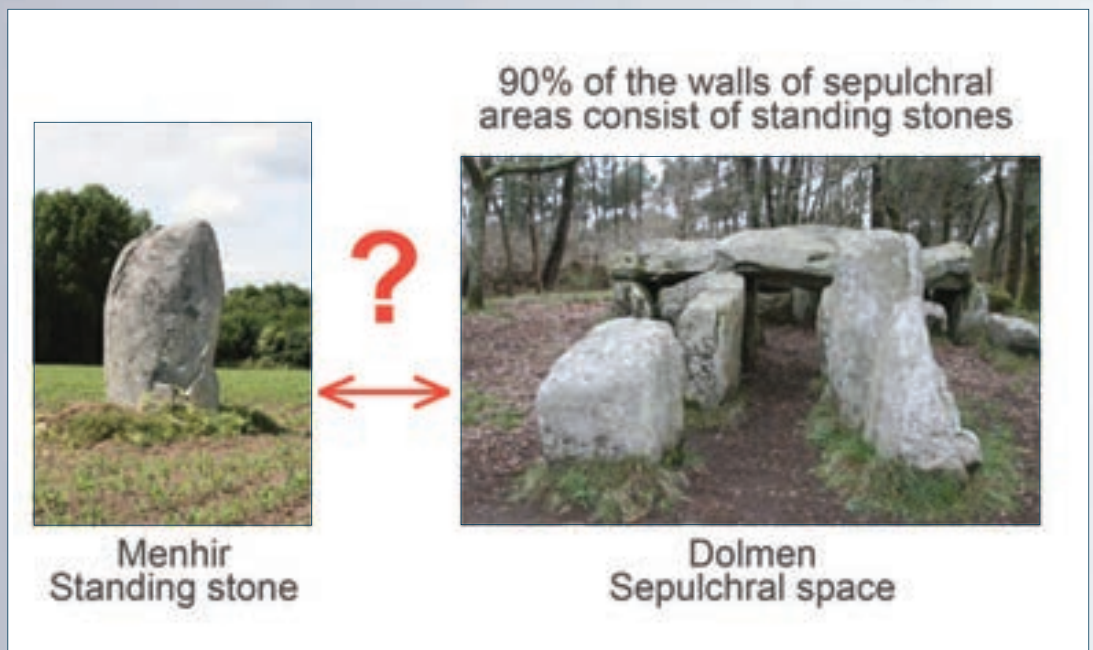


Fig. 1 – Standing stones and sepulchral areas: towards a convergence of structures?

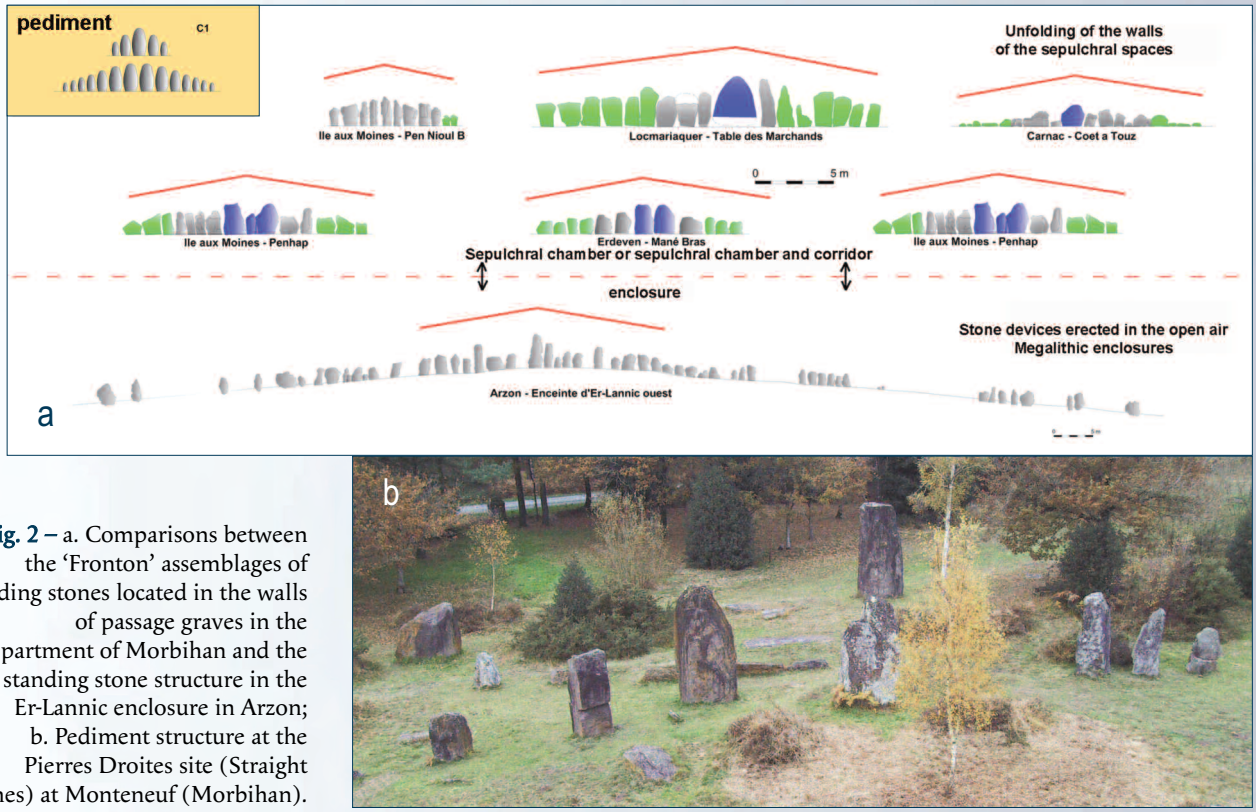


Fig. 2 – a. Comparisons between the 'Fronton' assemblages of standing stones located in the walls of passage graves in the department of Morbihan and the standing stone structure in the Er-Lannic enclosure in Arzon; b. Pediment structure at the Pierres Droites site (Straight Stones) at Monteneuf (Morbihan).

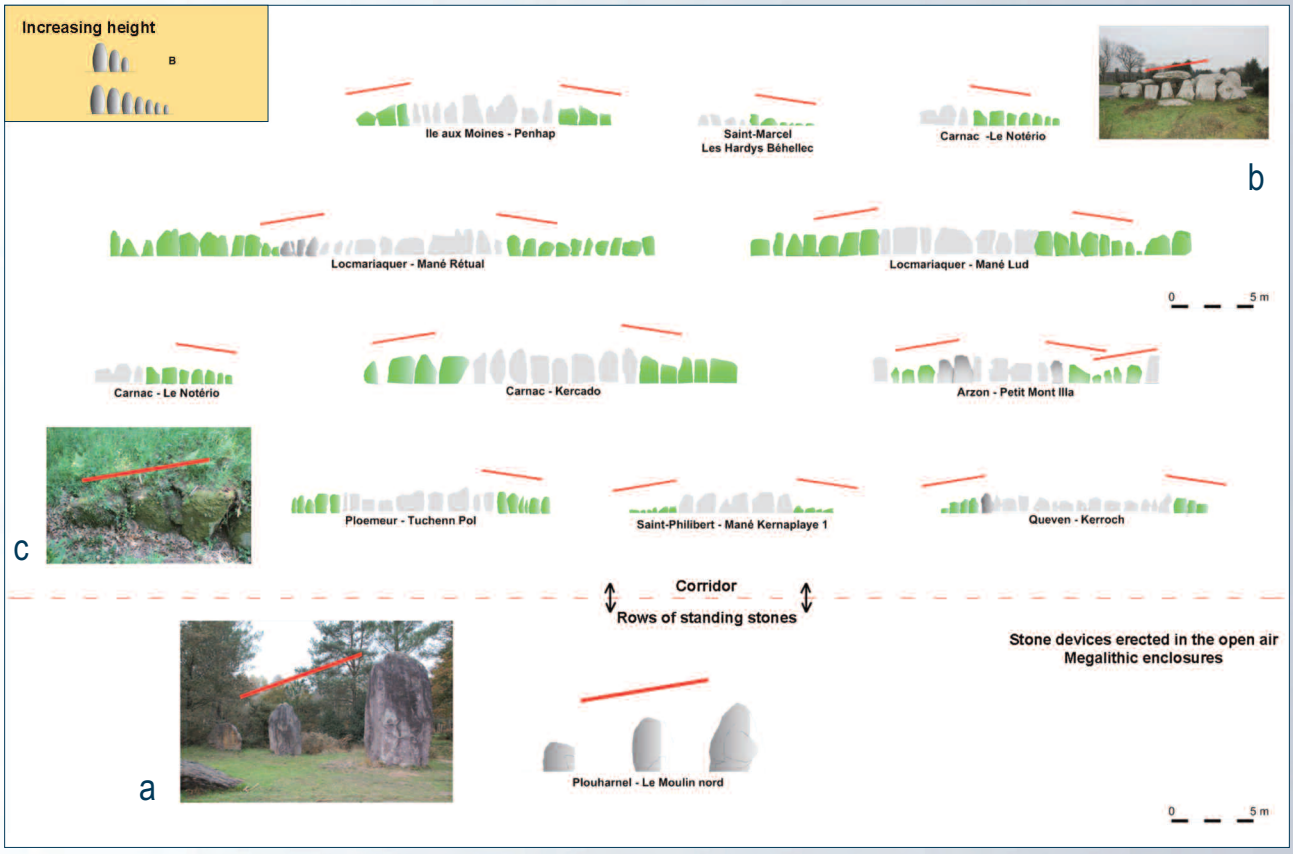


Fig. 3 – Comparisons between rows of standing stones of increasing heights in the walls of passage graves in the department of Morbihan: a. Row of standing stones at the Pierres Droites site (Straight Stones) in Monteneuf; b. Kermarion passage grave at Carnac; c. Kerroch passage grave at Queven.

point out that the state of ruin of many groupings does not, at first glance, reveal the truth that analysis later exposes (**Figs. 2** and **3**).

2.1 Raised stones

The staging of stones erected in the open air and the combinations of the types or forms, often seemed to correspond to a search for symbolism or aesthetics. The height(s)/shape(s) combinations revealed arrangements that appeared deliberate and allowed the development of a typology adapted to each type of erect stone structure. We identified, among other things, stones arranged in increasing height, as a fronton, in procession, in groups of the same height, and some pairs of erect stones associated with each of these. The presence of natural rocks in some erected stone structures suggests an integration of the natural world into the world of the living and the world of the dead.

2.2 Sepulchral spaces

Whatever the architectural type concerned, the floor plans of the sepulchral spaces were mostly delimited by vertical slabs. About 90% of the walls were formed by megalithic slabs.

The re-use of previously erected or contemporary monoliths, the trimming of some of these, the reappropriation of old elements, and the integration of natural rocks were all commonly encountered. As with the standing stones, assemblages of specific heights and shapes were observed in the upright stone structures of the walls of sepulchral spaces. There is a similar variety of staging combinations in relation to surface and texture, progressive heights, pairs of erect stones, etc.

Cross-analysis of the architectural features revealed striking similarities and allows us to propose a relationship of transposition or inspiration (in terms of assemblages, forms and heights) between stones erected in the open air and those used in the walls of the sepulchral spaces. This opens up an innovative avenue of research as this relationship seems to reflect interactions between the world of the living, the world of the dead and the natural world.

3. Conclusion

Our results were considered in relation to historical data. The observations were limited by the lack of certainty regarding the original state of the monuments and by our inability to attribute specific chronological periods to the different phases and changes visible in the stones erected in the open air (**Figs. 4** and **5**). Major deficiencies in stratigraphic relationships and building phases were encountered throughout this study, often due to the widespread use of data that was, in some cases, acquired a very long time ago.

These results should be tested on other parts of the Atlantic coast to increase understanding of the history of such architectural structures, and to help us to interpret the intentions of the builders.

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by Louise Byrne

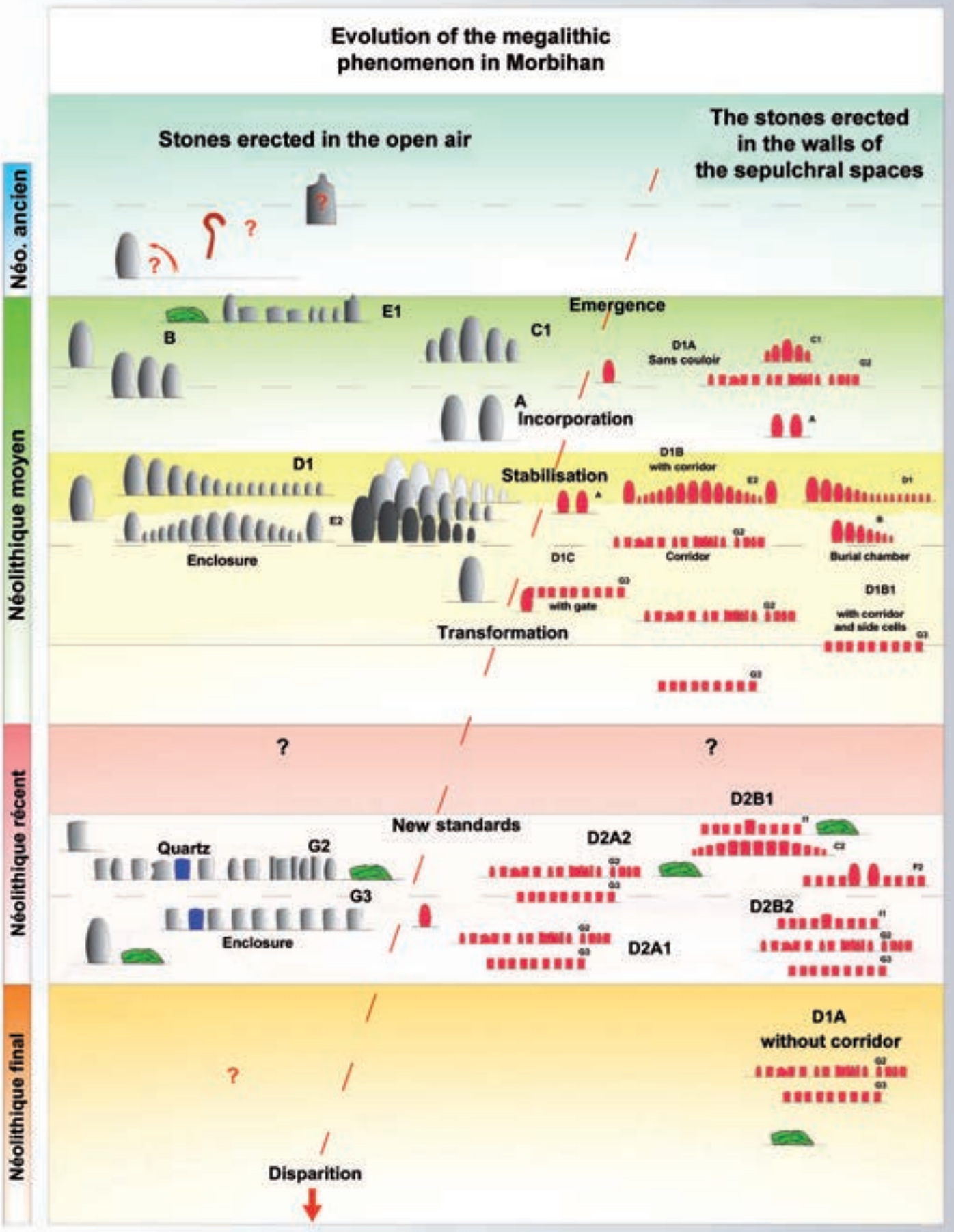

Fig. 4 – Evolution of the megalithic phenomenon in Morbihan (sepulchral areas and standing stones) with an association of the scheme *Megalithic Traditions in the West of France and the construction of identities*, according to Laporte 2011.

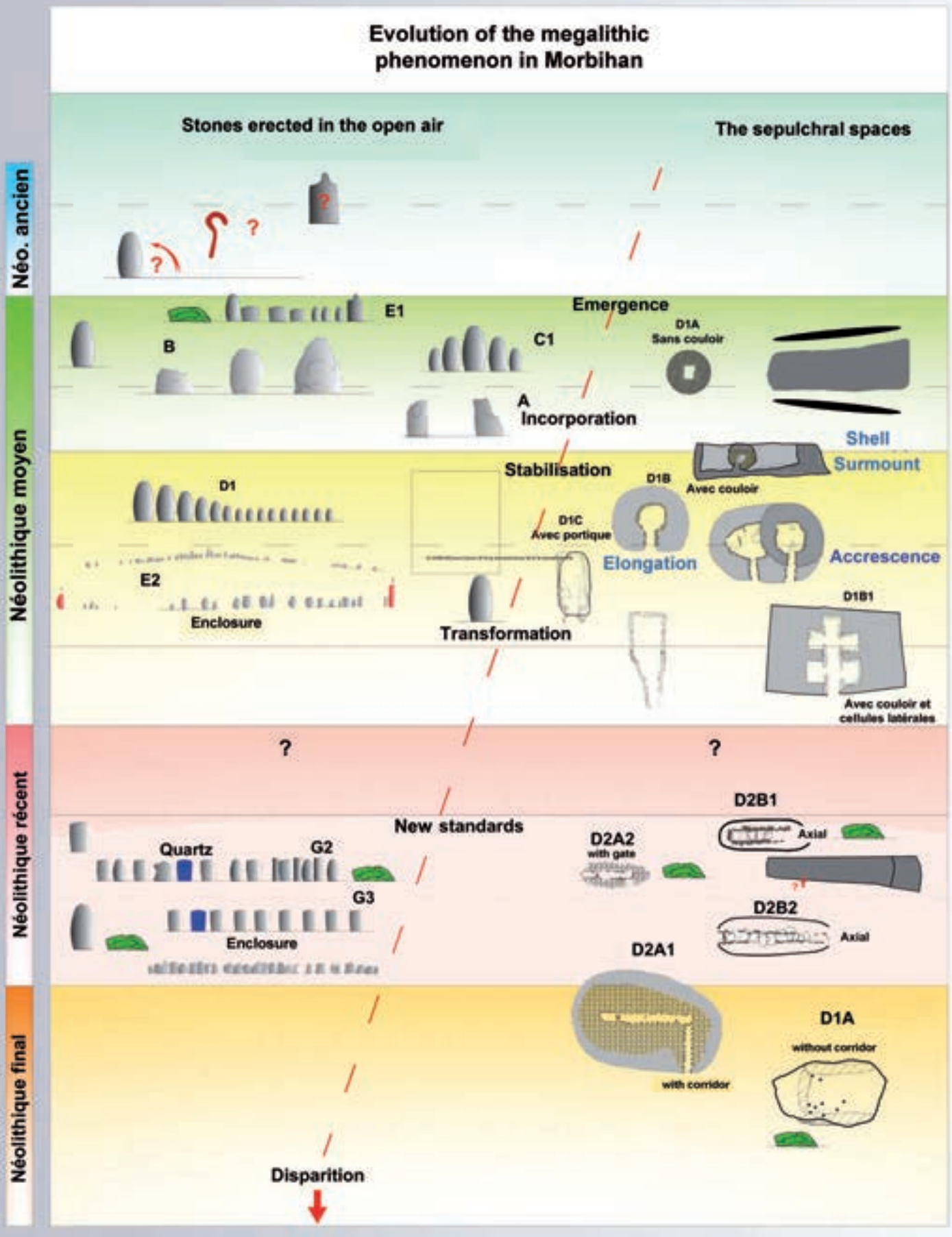

Fig. 5 – Evolution of the megalithic phenomenon in Morbihan (sepulchral areas and standing stones). Comparison between open-air assemblages of standing stones and those in the walls of sepulchral areas.

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Emmanuel GHESQUIÈRE, Philippe CHAMBON,
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First monumentalities in Western Europe: the necropolis of Fleury-sur-Orne, 'Les Hauts de l'Orne' (Normandy, France)

Abstract: The necropolis of Fleury-sur-Orne, known since the early 1990s, has been the subject of several limited investigations over the past 20 years. In 2014, in advance of a large development project, the entire cemetery was excavated across a surface of 21 ha; in 2016, a supplementary excavation covered 4 ha. Thirty-six Passy-type monuments were uncovered. These are long, elevated earthworks surrounded by ditches, originally intended to contain a single burial. Most of the inhumed individuals are archers, the richest of whom are accompanied by sacrificial sheep. The mound of one of the monuments was preserved between two large ditches, protected by the installation of an ancient road. At Fleury, these monuments are dated to between 4700 and 4205 cal BC. The construction of individual funerary monuments, as in the Yonne Valley, could be linked to the societal organization that emerged a few centuries after the first neolithization phase in the large coastal zone of Atlantic Europe. Both the monuments and tombs appear to correspond to the same symbolic norms.

Keywords: *Passy-type monuments, burial, sheep, necropolis, mound*

Fig. 1 – Location and distribution of long barrows around Caen (Normandy, France).

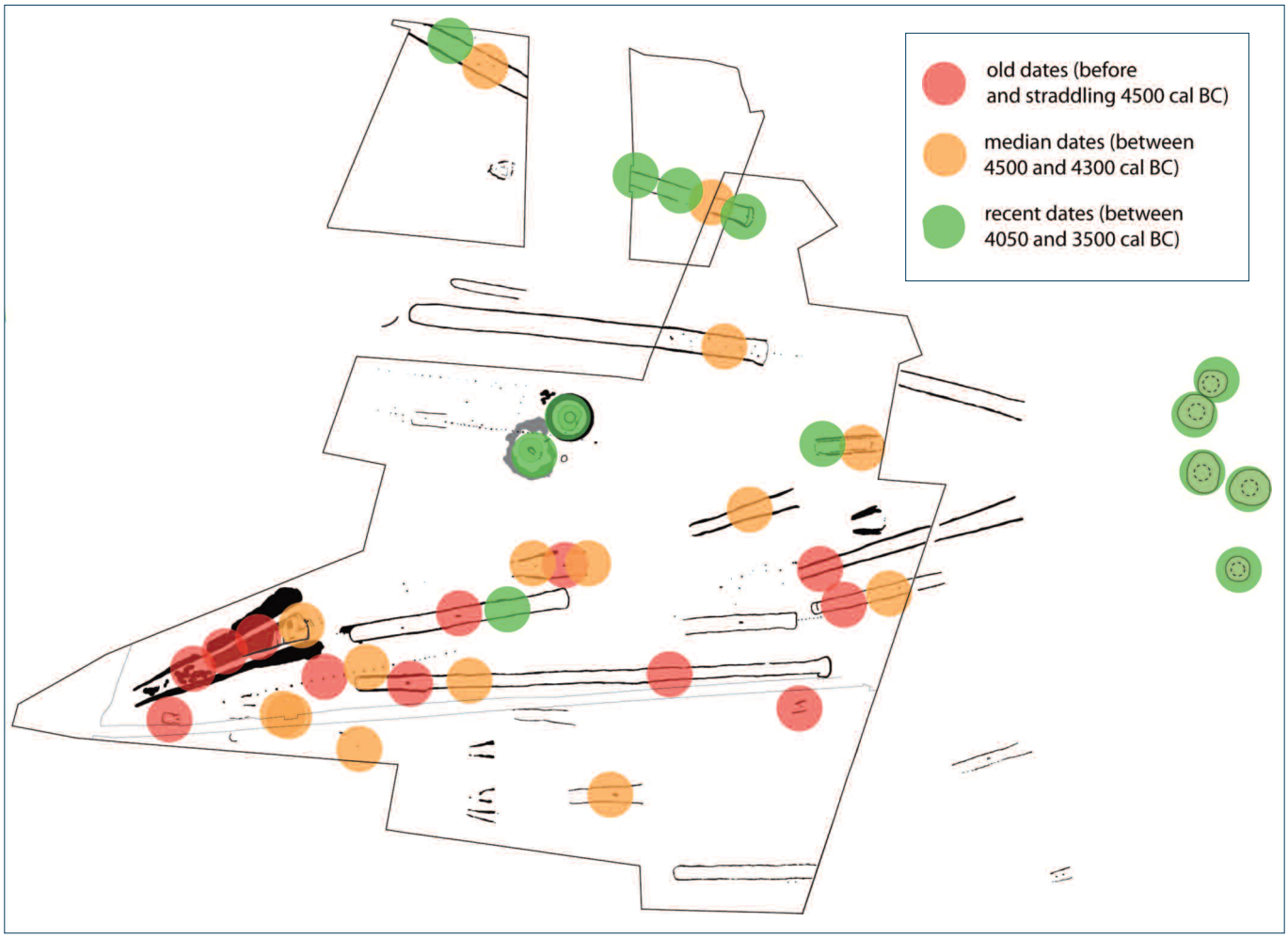

Fig. 2 – Fleury-sur-Orne 'Les Hauts de l'Orne': Location of the dates of the use of the monuments (Digital drawing: E. Ghesquière, Inrap).

1. Introduction: the context of the Passy-Type monuments

The Fleury-sur-Orne cemetery (**Fig. 1**) is part of a global trend of emerging funerary monumentalism in the 5th millennium BC. The emblematic markers of this development are the Passy-type graves in the Paris Basin. French researchers became aware of these monuments during the 1980s through the identification and excavation of the Passy cemetery. The role of the graves in the evolution of funerary and wider social performances during the Neolithic is still intensely debated, even though it is no longer possible to consider them as a secondary phenomenon linked to the appearance of the first monumental funerary architecture: firstly, the disappearance of elevated grave structures does not diminish the exceptional dimensions of some of the monuments (over 300 m long), and secondly, the dating programmes in progress (directed by Chambon) confirm that these constructions are older than the Atlantic corridor tombs, regardless of the final form of the monument of which they are a part. Passy-type structures were constructed as early as 4700 BC, or even earlier, and the grave at Fleury is only slightly younger than that of Passy (**Figs. 2** and **3**).

Passy-type cemeteries are currently still rare. Two major groups have been excavated *in extenso* in the heart of the Paris Basin: Passy 'Sablonnière' and 'Richebourg' (Chambon 2003), and Balloy 'Les Réaudins' (Chambon 1997), and a third was partially explored (Escolives-Sainte-Camille 'La Pièce de l'Étang'). Only three other comparable cemeteries (identified through aerial photographs) remain intact in the Paris Basin.

The Fleury cemetery is not isolated in the area around Caen; at least two other large examples are located nearby – at Rots, where the monuments are very similar to those of Fleury, and at Blainville-sur-Orne, where the monuments are a little different. The Cuverville monument, discovered in the area just a few years ago and excavated in 2014, is very similar in form to Monument 29 at Fleury. These two cemeteries and the monument (currently an isolated case) are all located within a 7 km zone on both sides of the Orne Valley. In this highly urbanized area, it is possible that many other cemeteries have disappeared, but it is also very likely that that others are detectable by aerial photography.

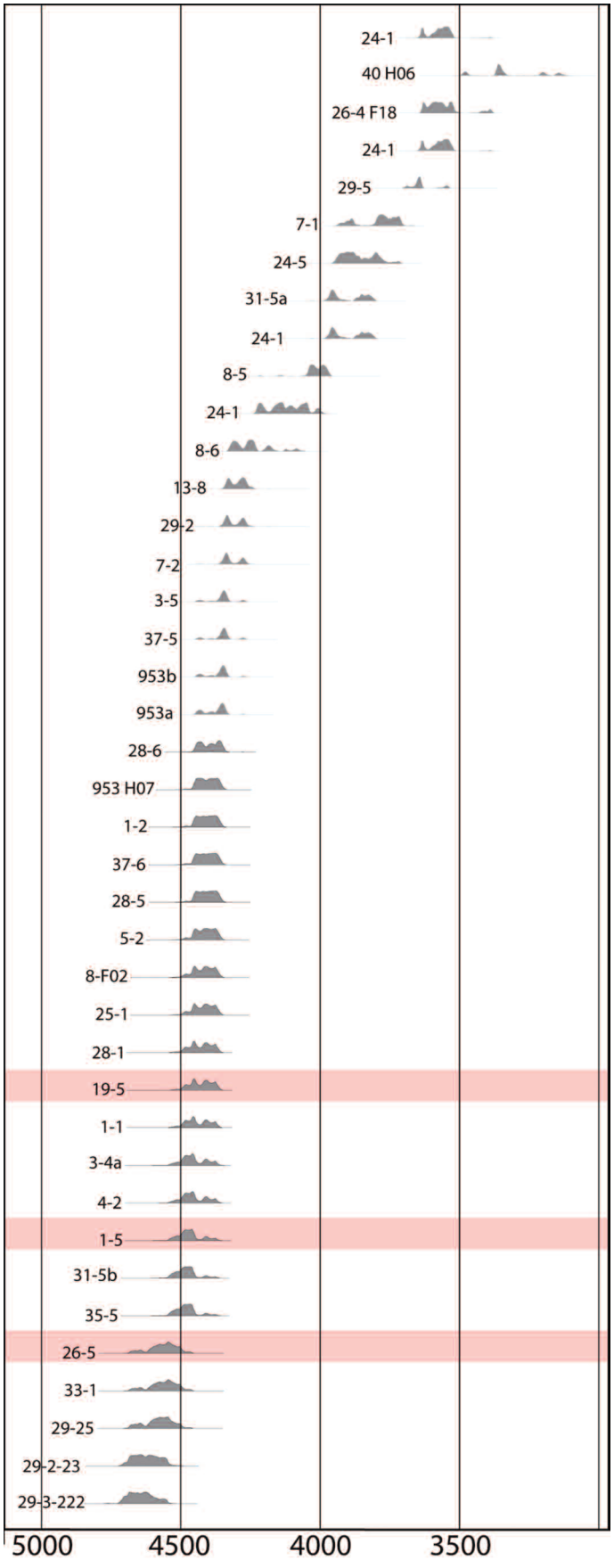

Fig. 3 – Calibration curve of the use of the long barrows of Fleury-sur-Orne.

While these cemeteries are associated with distinct communities, their proximity to the urban sector of Caen (where they are identifiable by plane or through rescue archaeology) attests to an intensive occupation of this area. That is also evidenced by the significant megalithic structures at the site of Fleury (seven cairns) or just next to it (La Hogue and La Hoguette cairns). Our insufficient knowledge of the domestic or fortified installations during the same period ('fortified' wall of Saint-Martin-de-Fontenay 'Le Diguet', 4 km from Fleury) makes it impossible to understand patterns of regional organization. They nonetheless indicate a societal model composed of communities or chiefdoms that were probably rather bellicose in their customs, as indicated by the importance accorded to warriors and hunters in the cemeteries.

2. The Fleury excavation

2.1 The site and the monuments

The 2014 excavation covered a continuous triangular surface of 25 ha. It revealed 36 Passy-type monuments, two cairns and three alignments of pits (**Fig. 4**). Analysis of the distribution of the monuments across this vast surface reveals that those with an east to west orientation are located in the centre and those with a west-southwest to east-northeast orientation are in the northern part. This distribution follows a chronological gradient, the monuments in the central part being the oldest, followed by those in the south and then those in the north (**Fig. 2**).

The Passy-type monuments are between 13 and 372 m long. The ditches are formed by the accumulation of 24 m long segments, respecting a general east to west direction following a rather meandering line. This pattern of construction probably indicates

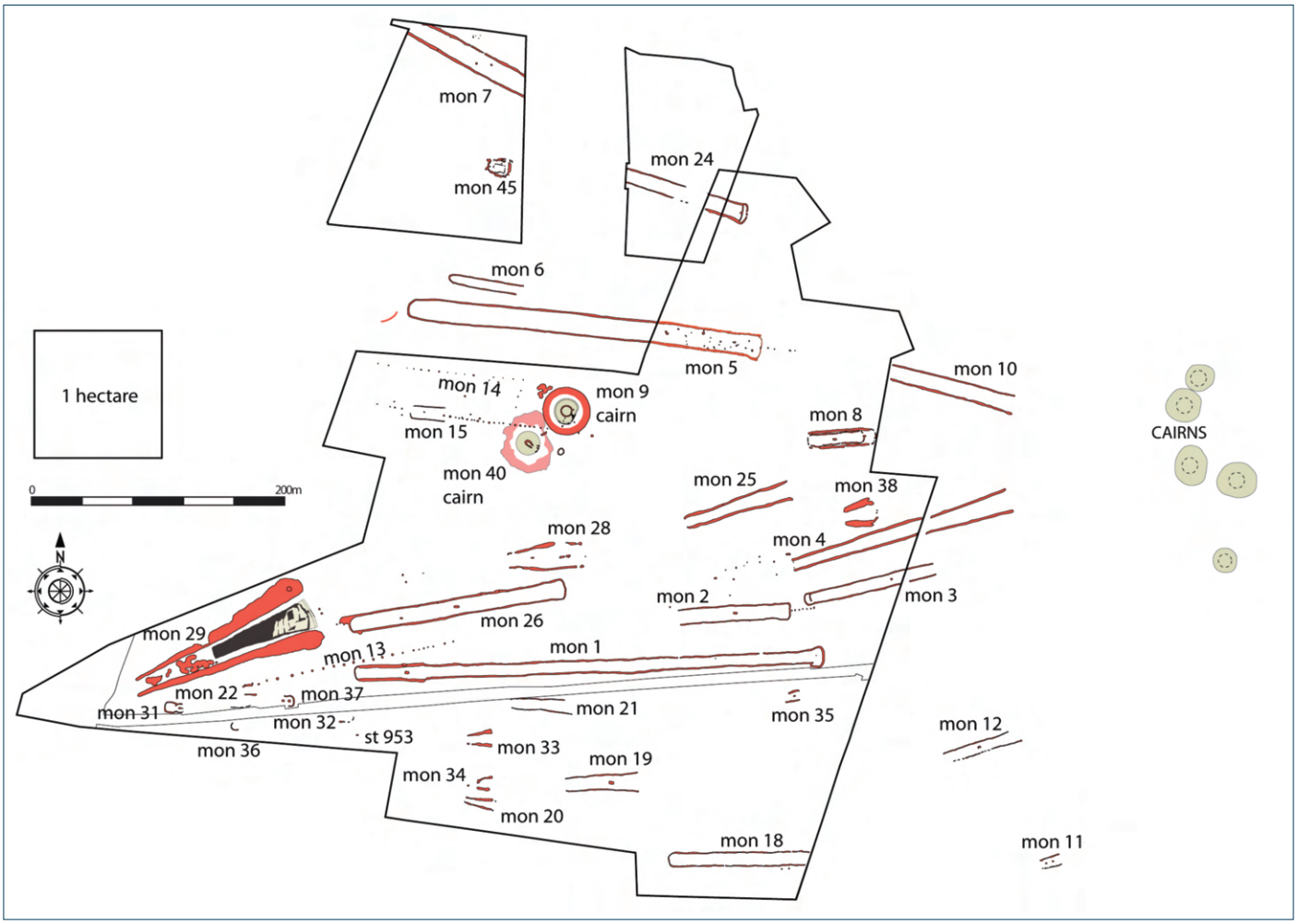

Fig. 4 – Fleury-sur-Orne 'Les Hauts de l'Orne': simplified plan of the cemetery (DAO: E. Ghesquière).

the work of numerous diggers. The profile of the ditches is sometimes narrow, forming a (palisaded?) trench, or can be open and wide. The only artefacts found in the ditches were the tools used to dig them, consisting of a few bones (especially bovid *scapulae*) and massive picks of a local red sandstone.

Three monument types coexist:

Small monuments

Three small monuments (nos. 31, 36, and 37) have the form of isolated or interlocking circles that are 3-12 m in length/diameter.

Trapezoidal monuments

Five trapezoidal monuments (nos. 20, 22, 25, 29, 33 and 34) have a slightly splayed interior surface and a significant enlargement of the ditch at their eastern end, giving them a clearly flared appearance. These are generally small (less than 20 m), but one is much larger, measuring 150 m long and 60 m wide. They have no closing ditches at their extremities.

Monuments with two parallel ditches

The most common monuments are those consisting of two parallel ditches. There are 16 examples (nos. 1, 2, 3, 4, 5, 7, 10, 11, 12, 15, 18, 19, 21, 24, 26 and 35). Their dimensions are highly variable with the shortest measuring 13 m, the majority between 50 and 100 m, two between 150 and 200 m, and the two largest more than 300 m. Some are closed at their western or eastern end, some are not, while others are closed at both ends. In addition, there is one double monument (8a and 8b) comprising two groups of concentric ditches, each with a grave.

Six monuments are difficult to situate in this typology, as their form is either intermediary (no. 28) or 'deviant' like the 'crab claw' layout of monument no. 38, or a double structure or the double monument no. 45 which is bulbous and rectangular in form. Two other monuments (nos. 32 and 41) are incomplete and located partially under a road that traverses the site (*Chemin des Anglais*).

The terminals of the monuments have several variations and are thus particularly significant. Some have a visible closing in the form of a shallow ditch which is less deep than the lateral ditches. This ditch abuts one of the lateral ditches and usually extends outwards a little, creating a 'light-bulb'-shaped extremity, which is very similar to that of some of the monuments at the site of Passy. The random nature of this terminal ditch, located at the western, eastern or both ends, seems to correspond to the final phase(s) of the monument's construction. This principle prevails among 'hairpin' and sub-circular monuments.

Another type of structure is occasionally found only at the eastern ends of the monuments and could be associated with a closing ditch. These centred structures of the 'posthole' type have a shallow depth that could indicate that they served as as a base for the erection of stelae. They are single, double or form an alignment of six pits.

The ditches are one of the difficult elements in the study of this site. In six monuments (nos. 20, 22, 28, 33, 34 and 29) they are wide and open, and their spoil may have sometimes been used to visually enhance the height of the mound. All the other monuments have narrow ditches that are usually as deep as they are wide. They have a U-shaped section with a flat base, and sometimes splayed walls (**Fig. 5**). This U-shaped profile could have served a specific function, or it may be the result of digging into a substratum of rock slabs. There are significant differences in the dimensions of the deeper ditches, for example, between the deep, narrow ditches of monuments 1, 4 and 5, the narrow ditches of monuments 2, 19 and 21, and the very shallow ditches of monuments 37, 15 and 35. These attest to different types of installations. Can we thus consider that they all had the same function? This is difficult to determine based on either their shape or infill, however a few elements contribute to the discussion.

2.2 Colouration and pedogenesis (Fig. 6)

The aim of the excavation of the entire cemetery was to answer several questions including whether each monument was covered by a mound and whether the mounds still visible under the monuments were of natural origin.

The idea that monuments were installed under natural hills arose from the observation of hillocks

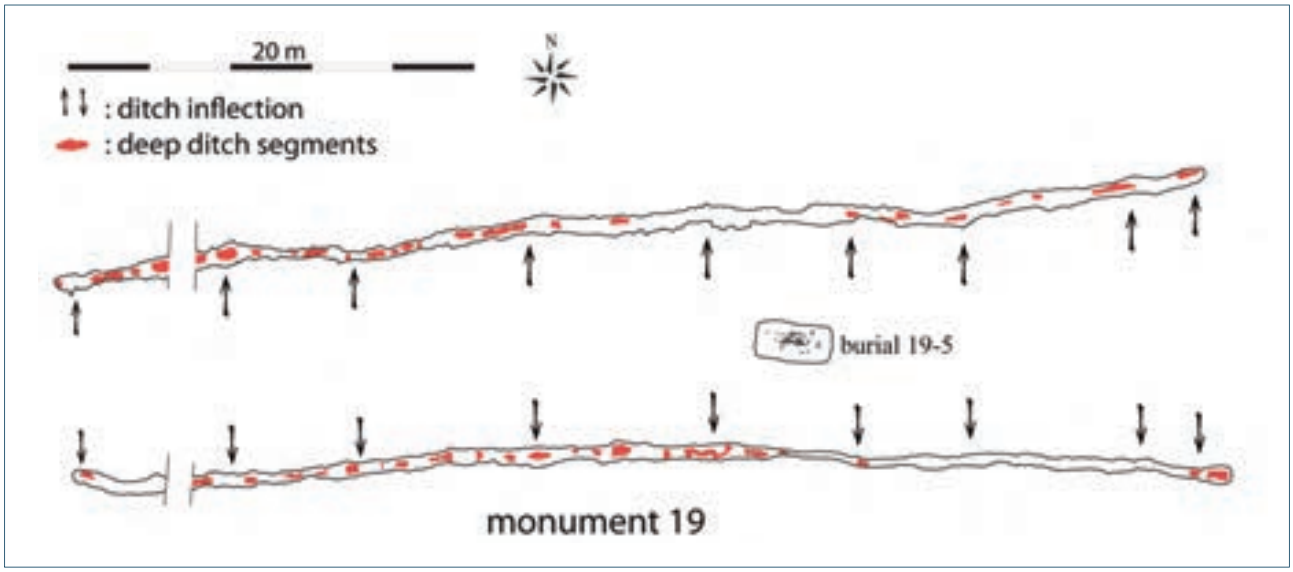

Fig. 5 – Fleury-sur-Orne 'Les Hauts de l'Orne': plan of the monument 19-5 with the deep areas (in red) and the inflection points of the ditches (Digital drawing: E. Ghesquière, Inrap) (DAO : E. Ghesquière).

Fig. 6 – Fleury-sur-Orne 'Les Hauts de l'Orne': Monuments 1, 2 and 3 as seen from a kite during machine-stripping (Photo: A. Lepoirier).

(around 0.2 m high) next to some of the monuments at Fleury. This particularly concerned the large monument no. 5, but also monument no. 8. However, according to geologists specializing in limestone (Olivier Dugué, Jean-Pierre Coutard and Xavier Savary), these hills could not have had a geological origin, or at least not at Fleury, and there is no evidence that they predate the monuments. Monument no. 29 could be one exception, but its convex shape may be related to its installation on a small crest, with the ground sloping slightly on either side.

Excavations proved to be the most useful method for understanding the original state of the monuments. There was a nearly systematic absence of rendzina roots in all of the monuments (except for a few small ones, such as nos. 33, 34 and 37), often slightly overflowing at the extremities, but also often slightly distant from the longitudinal trenches. It is this absence of rendzina roots that is responsible for the white or grey colour inside the monuments (**Fig. 6**). Both the geologists who visited the site and the responsible archaeologists believe that the absence of rendzina roots under the monuments is evidence, where the substratum is white-grey, for a large amount of sediment covering the upper substratum to a height of 0.4 m, the maximum burial depth of the vegetal root system of a rendzina soil type [1]. This absence of rendzina roots may thus indicate a mound covering all of the white or grey parts inside the monuments, at least 0.4 m high in most cases, or perhaps less for the small monuments that show a more moderate colour difference between the inside and outside.

The non-definitive conclusions concerning the original appearance of the monuments are thus based on these observations. Mechanized agriculture would have levelled the mounds as it dug into the substratum around the monuments, artificially creating false mounds at the site of some monuments, possibly those with the highest mounds. Moreover, the white or grey colour of the entire inside of the monuments (absence of rendzina roots) might suggest an extension of the mound across the whole interior surface. That would not have affected the height differences between the mounds, depending on the monument and depending on their location in the cemetery (increased height from east to west?) since their preserved height is greater than 0.4 m throughout the Neolithic and post-Neolithic sequence. The different colours of the substratum could thus be linked to differences in the material constituting the mound: either limestone pieces originating from the lateral ditches (white colour), or sods of grass (grey colour), at least for the first levels of construction.

2.3 The timing of the construction of the monuments

There are few elements that provide information on the timing of the construction of the ditches. They could have been dug all at once after the inhumation of the deceased, or over several weeks, months, or even generations. Even if there are few certainties, there are a few elements that can inform our lines of inquiry.

Concerning the small monuments, whose form and shape are homogeneous (nos. 20, 22, 31 and 37, for example), the hypothesis of a single digging episode is clearly applicable. The somewhat larger monuments, such as monument no. 8, raise some questions, but the coherence of the plans and closing systems of each of the two superimposed phases also suggests a single digging episode for both 8a and 8b. The same kind of constructional coherence, extending over two phases, may also apply to monument 38.

The situation is more complex for the larger monuments, which do not always have a closing system (to the east and/or west). Monument no. 2 is a perfect example. In the infill of its southern ditch (across the central third of its length), and in the infill of its grave, there is an intentional deposit of sandstone picks. This correspondence between the deposits in the grave and the ditch (both on the southern side) probably suggests a single digging episode for the grave and the central part of the ditches. But what about the eastern and western ends? Were they dug at the same time? If so, why

(1) Versus 0.25 m of limestone covering today, and 0.05 to 0.10 m during the Neolithic.

were no picks deposited in them? Or were they dug at a different time?

In monument no. 28 the situation is different. It contains three graves, and its floor plan varies from trapezoidal (to the west) to rectangular (to the east), with a contact zone that in some places reveals the presence of two juxtaposed ditches. The idea of two monuments, not superimposed as with monuments 8 and 38, but joined lengthwise, can be maintained here, and is supported by the presence of multiple burials.

The case of monument no. 1 is also emblematic. Its eastern part is 53 m long (containing one grave) and its ditch is deep, while the rest of the monument toward the west is shallower and does not contain a visible or preserved grave. The dichotomy between the two parts of this monument, emphasized by its disproportionate length, suggests several digging phases, implying a long period of intervention starting from an original monument (eastern part).

2.4 Monument no. 29 and its mound

With a length of 146 m, monument no. 29 is the largest at the site. It is 14.6 m wide at the western end and 57.5 m at the eastern end (ditches included). The area between the two ditches measures between 9 m in the west and 26.5 in the east (**Fig. 7**). These two ditches are similar in form, with a sub-vertical concave profile toward the inside of the monument and a slight slope toward the outside. Their depth ranges from a few decimetres in the west to 1.5 m in the east. Their dimensions (around 1000 m^3 of dug out material) surpass those of the other ditches at the site. Two very homogeneous ^{14}C dates were obtained from bones: 5730±30 BP (4685-4495 cal BC) and 5770±30 BP (4705-4540 cal BC), suggesting a combined range of between 4685 and 4540 cal BC for the construction of the monument.

The mound is trapezoidal in shape and very elongated, being twice as long as it is wide. It is approximately 80 m long (the western end is very degraded), including the 3.5 m terminal to the east. It is 11 m wide (estimated) in the west and 23 m in the east where it terminates in grass sods. The exterior, which is even wider, is difficult to estimate due to the absence of angles but it is around 25 m long. The mound is preserved to a height of 0.8 m, the most preserved part corresponding to the grass sods of the eastern façade. The distribution of stone debris at the eastern end (some of it in the southern ditch) suggests an original height of 2.5-3.0 m in the east.

The excavation of the mound made it possible to study the method used to construct its interior part. The areas raised by limestone slabs yielded the remains of grass sod banks installed directly on the palaeosoil; these were used to delineate the monument's outline (**Fig. 7**) as follows: the external wall (from 0.8-1.0 m wide), the load-bearing walls (from 0.3-0.4 m wide) and an orthogonal or curvilinear grid (very thin), which leans on the load-bearing walls. The exterior surface is very well preserved on the eastern façade and on part of the southern side. It is thus possible to observe its extension toward the inside to ensure its stability, and its homogeneous thickness (0.8 m high in the best-preserved part). The internal load-bearing walls were very likely incomplete. They are characterized by two features. Firstly, they are thicker near the exterior walls than in the centre of the monument. Secondly, they are thicker at the base than at their height of 0.5 m. Judging by how tapered they are the walls probably did not extend to the full height of the monument, although the incomplete preservation makes this difficult to gauge. Lastly, the grass sod walls that delimit the square or round spaces between the load-bearing walls are variable in height: in the western part, where there are few, they vary by at least 0.4 m; in the eastern half, the variation amounts to only 0.1 m. In this latter area they seem to have no structural function. In contrast to the load-bearing walls, they do not seem to have played a role in ensuring the stability of the structure, but probably served as markers at the beginning of the construction. The grass sods joined or overlapped in the boxes (*caissons*), so as to be either stable and/or relatively flat.

The eastern third of the monument was constructed only with limestone slabs deposited in a flat position between the load-bearing walls made of grass sods. The slabs were carefully spaced, most likely to ensure a degree of stability. They formed a homogenous layer although this was incomplete towards the base of the mound.

The striking contrast between the part of the mound made of grass sods and that constructed in stone

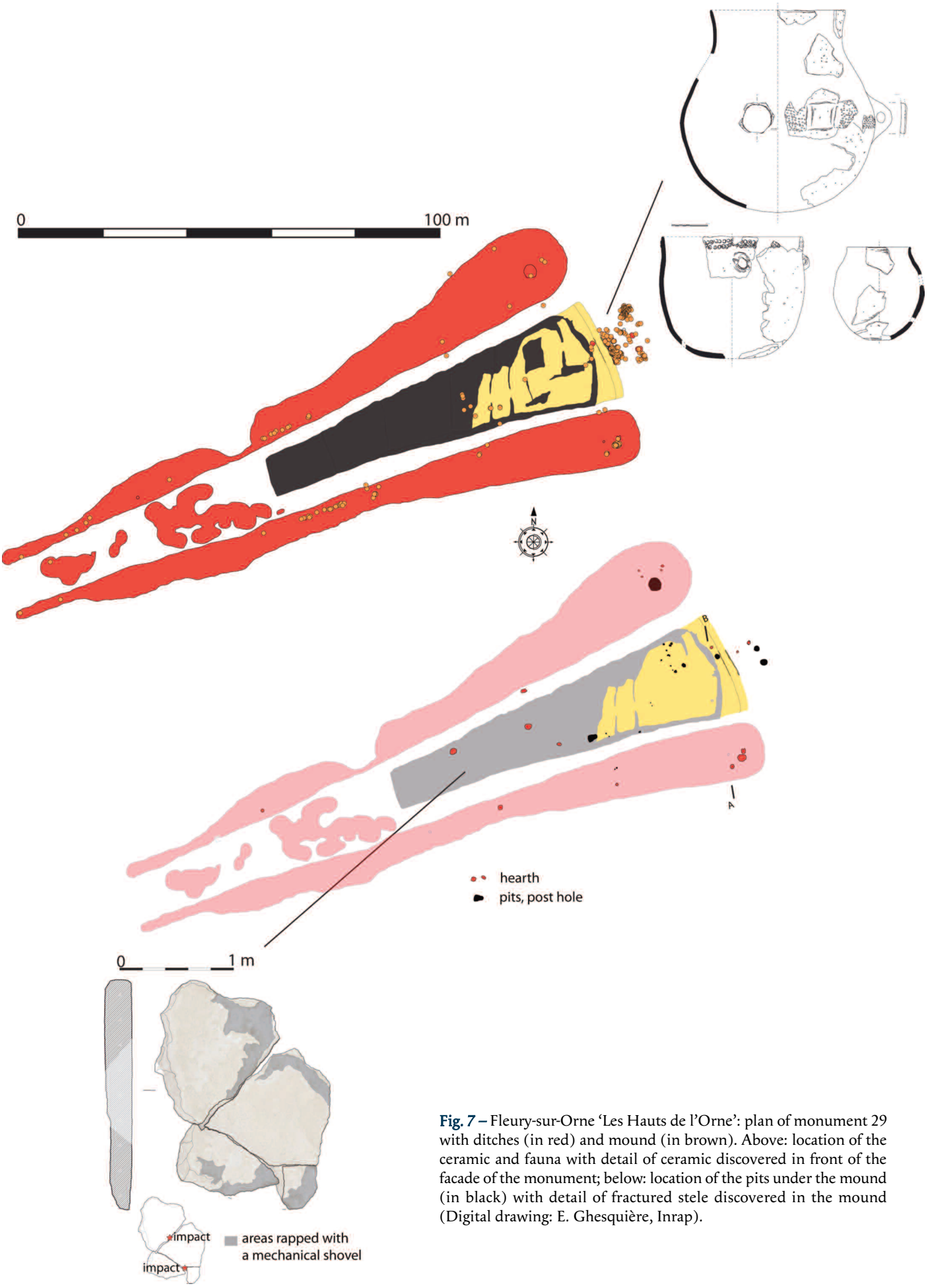

Fig. 7 – Fleury-sur-Orne 'Les Hauts de l'Orne': plan of monument 29 with ditches (in red) and mound (in brown). Above: location of the ceramic and fauna with detail of ceramic discovered in front of the facade of the monument; below: location of the pits under the mound (in black) with detail of fractured stele discovered in the mound (Digital drawing: E. Ghesquière, Inrap).

suggests that the monument may have been extended. However, the excavation of this part of the mound, and the recording of a sequence of fills in this area suggest that this cannot be the case. The transition from one fill to another occurs on both sides of the load-bearing wall. The fill on each side is composed of slanted layers, sloping down from the base of the wall. This suggests a tapered shape for the wall, the top being narrower than its base (this is true of all the load-bearing walls). Unlike on the surface, the layers on either side of the wall are not homogeneous. This is contrary to what could be expected: i.e., grass sods in the west and stones in the east. Instead, they form a succession of stone and grass sod layers that become gradually rockier toward the east. This gradual progression from grass to stone, on either side of a load-bearing wall, clearly indicates a significant filling sequence along the entire length of a single monument. This observation, however, does not apply to the repair of the exterior of the eastern façade.

2.5 The eastern extension of the façade: necessity or change to the outside appearance?

The eastern end of the mound has a convex exterior made of grass sods which is preserved to a height of 0.8 m. This façade takes the form of an outwardly projecting bulge and probably reflects the addition of materials. In its centre there is a deep circular structure that may be interpreted as the support for a megaxyle (a large tree trunk or piece of wood set up vertically) which must have been taller than the monument. These two features (the bulge and the megaxyle) suggest that this was the original façade of the mound. Its height in the east and the accumulation of fills would have destabilized the facing, making it prone to collapse. Indeed, the façade may have required the support of a buttress, which took the form of a 5 m long double stone layer, reinforcing the eastern wall. If the grass sod exterior partially collapsed before it was repaired, a different scenario could be applied to the stony façade. Although the latter features one (or several) bulges, it may have been reinforced before it collapsed, however the monoxyle embedded in the posthole was probably removed before the extension of the façade. This is suggested by the fill of the posthole, which consists of a jumble of limestone slabs, indicating a rapid and deliberate deposition of material. That process may have weakened the new façade. The facing was made with limestone slabs larger than those used in the filling of the *caissons*. Even if the raw material is identical (Creully limestone), the slabs are much larger on average, especially those at the base, each measuring more than 1 m in length. To obtain these, it would have been necessary to descend deeper into the ditch-quarries, since the slabs are less cryoturbated at greater depths. The discovery of pottery fragments at the outer edge of the façade's exterior suggests that this extension was added shortly after the initial construction, or at least within the same cultural context.

A few postholes and fireplaces under the eastern part of the grass sod mound could suggest the presence of a small (funerary?) building predating the monument. However, their function and relationship to one another remain unclear. Although the long Breton tumuli could also have been constructed from earth (Cassen *et al.* 2000), the British monuments of the Cotswold-Severn tombs type (southeastern Wales) offer the best source of comparison with monument no. 29. Beckhampton Road, South Street, Giants Hill, Julliberies Grave and Skendelby (Scarre 2006) all have a very elongated mound framed by two large ditch-quarries. These monuments sometimes cover previous funerary structures (burned and made of wood), or sometimes no funerary structure at all (e.g., South Street and Beckhampton Road), and are thus very similar to monument no. 29 (Scarre 2006). As at Fleury, the grass sod construction of these British monuments shows the use of abundant local materials. However, this comparison is made difficult by the late date of the Cotswold-Severn tomb monuments, between 3800 and 3500 cal BC. This gap of 700 to 1000 years (despite a few early dates) means that the British monuments do not simply continue a tradition of monumental architecture that was already present at Fleury. The lack of an intermediary phase makes that kind of sequence impossible.

2.6 Status and symbolism of the inhumed

In total, 18 individual graves were found along the central axis in half of the monuments. One of the characteristics of the graves at Fleury-sur-Orne is their shallow depth (0.05-0.55 m) which cannot be due to soil erosion (limestone paving). This feature implies that the graves were built and in part raised, which is in line with the reconstruction of mounds on the monuments. It is thus possible that the disappearance of most of the mounds has deprived us of exposed graves and that monuments that are now empty once contained at least one grave. The Passy cemetery has yielded flexed burials (only two lying down), but it has not been possible to truly reconstruct the corresponding graves.

The preserved burial pits are oval to rectangular with rounded angles and are of varying size: the longest are 4 m, the shortest 1.57 m. The widths of the pits range from 0.65 to 1.90 m. Few graves allowed reconstruction of their architecture. Taphonomic analysis of the bones was often impossible, given their mediocre preservation, however a study of the varying fills in the graves allowed their reconstruction. At minimum, two types of burial layout were identified: those with quadrangular chambers built inside the pit, and those with two longitudinal walls abutting the transverse edges of the pit.

The artefacts found in the funerary context of Fleury-sur-Orne are dominated by arrowheads, which account for 48 of the 82 flint objects present in the tombs (**Fig. 8**). These arrowheads are intact and, like those studied in the Paris Basin, they were not used (Chambon & Pétillon 2009). This could indicate that the arrowheads buried with the deceased had a specific status. Even if there is evidence for the use of similar arrowheads at the site itself (specimens present near the lower abdomen of several individuals?), we cannot exclude the possibility that those buried with the deceased were manufactured specifically for the purpose of inhumation. This hypothesis would be consistent with the idea that the inhumed individuals were 'posthumous hunters'. At the same time, we should remember that the absence of use wear on the arrowheads does not prove that they were not functional tools. However, the recovery of used arrowheads is perhaps not so easy: after an impact, a transverse arrowhead is often too damaged to be reused (Philibert 2002). Extracting them from a human or animal corpse is not always easy, and is even taboo in some North American cultures (Hamm 1992). It can also be dangerous to handle used arrowheads if they were poisoned.

Furthermore, we cannot assume that a smallnumber of arrowheads in a tomb was not part of the functional (as opposed to symbolic) personal equipment of the archer (four pieces in tombs 19.5, 31.5 and 37.5, five in 24.5). These arrowheads could have been held in the same hand as the bow, following a widely observed behaviour in ethnology (Pétrequin & Pétrequin 1990). The absence of a specific container would mean that only a small number of arrowheads was carried, but they would still be part of the personal equipment of the archer. Alternatively, the archer may have been inhumed with only part of his equipment, or other arrowheads could have been present, but made of more perishable materials.

By extension, the significance of the arrowheads raises the question of the status of the inhumed individual, who was probably an archer and perhaps a hunter according to some authors (Chambon & Pétillon 2009). On this subject, we fully agree with the observation of Sidéra (1997, 2000) and reconsidered by Thomas (2011), that hunting and the wild environment were associated with a specific and important representation in the symbolic domain of the Cerny populations, in large part based on the role of wild species in the bone industries found in the graves (at Passy and Balloy). It would be easy, therefore, to conclude that these individuals were hunters rather than warriors (either in reality and/or symbolically). However, we do not agree with this interpretation for several reasons, regardless of the fact that the respective individuals were buried in monuments. Firstly, anthropological studies conducted by Thomas (2011) show that some of these individuals display physical marks attributable to intensive bow hunting. Even if the deposits of archery equipment relate to ritual activity, as proposed by Chambon & Pétillon (2009), based in part on their study of child burials, this ritual is still not separate from the deceased's activity during his/her lifetime. We can thus stipulate that the archery equipment deposited in the grave does indeed correspond to that used during the individual's

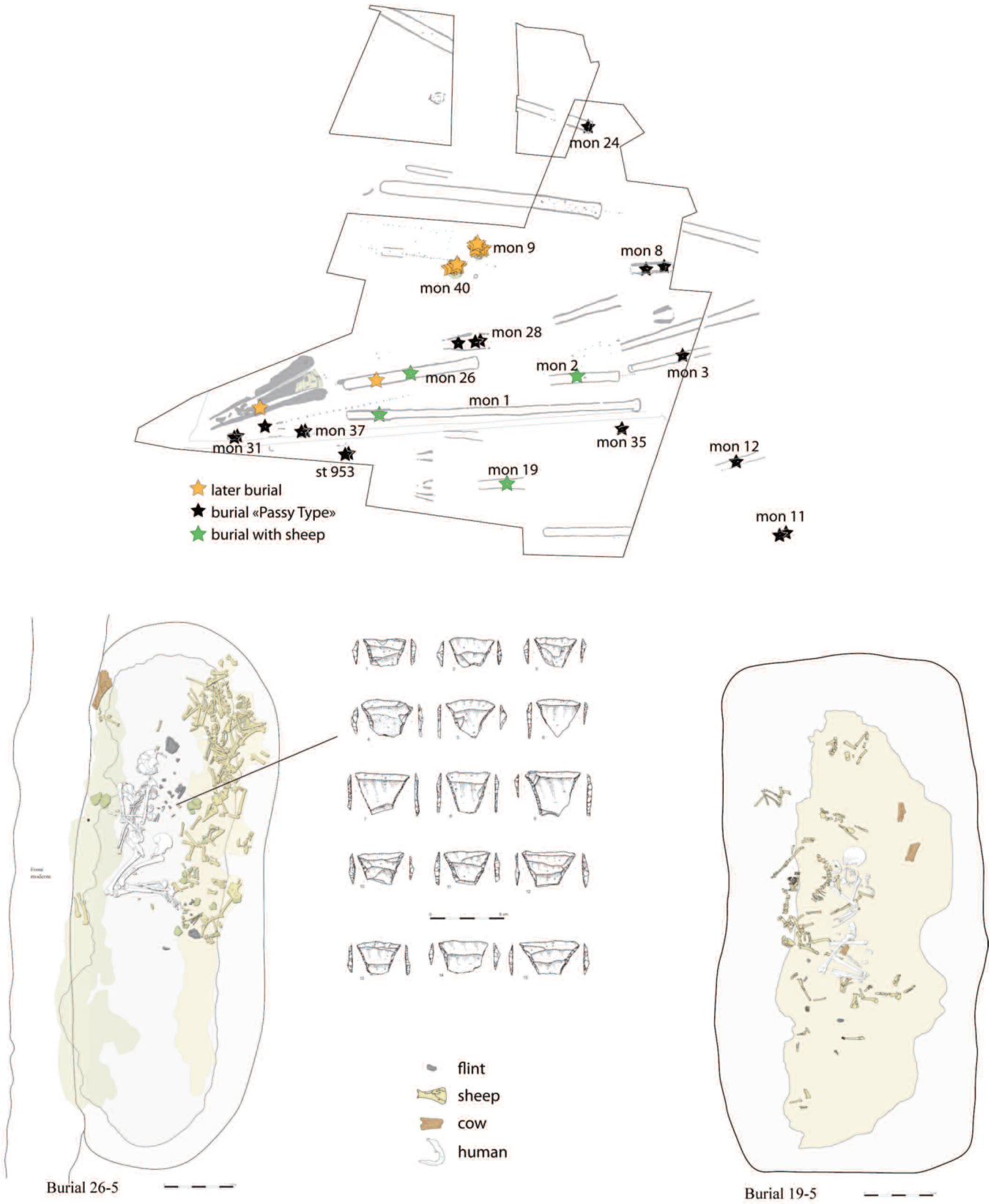

Fig. 8 – Fleury-sur-Orne 'Les Hauts de l'Orne': plan of the grave 26-5 and the arrowheads and grave 19-5 (Digital drawing of the grave: C. Thévenet, Inrap; drawing of the arrowhead: F. Charraud, Inrap).

lifetime. Secondly, ethnographic examples of archers preparing their quiver only for hunting, and not for interpersonal combat, are rare (Pétrequin & Pétrequin 2006). Even when preparing for a hunt, the archer also plans for the possibility of a violent encounter and also carries combat equipment.

From this perspective, the four graves at Fleury-sur-Orne are especially intriguing as the arrows are found in the area of the lower abdomen, and one perhaps even embedded in the pelvis (tomb 26-5, uncertain due to the condition of the bone). This suggests that these people lived a violent life. Moreover, starting in the Cerny culture, major socio-economic, technical and cultural transformations occurred within the Middle Neolithic societies of western Europe. The appearance of fortifications at the same time as funerary monumentalism and the intensive use of certain natural resources (hard stones, flint, salt, etc.), all accompanied the development of social complexity in northwestern Europe. It is difficult to imagine that such transformations could have occurred without violence, according to the principles of social evolution (Clastes 1977).

The grave goods associated with the richest tombs at Fleury are not limited to arrowheads, although these are the most frequent items. Four graves contain sheep (twelve in tomb 26-5, seven in tomb 19-5), which were sacrificed but not consumed (**Fig. 8**). In at least two of the burials submitted for zooarchaeological analyses (G. Auxiette and L. Hachem), the bucrania and the first phalanges were removed (probably related to the removal of the hide) and may have been exhibited as trophies.

3. Conclusion

The excavation of the Fleury-sur-Orne cemetery significantly enhances our understanding of the first monumental funerary architecture in western Europe. The excavation of the entire cemetery, the use of an appropriate excavation methodology and the quality of the data recording, coupled with a detailed sampling procedure, permitted many specialized analyses. The analysis of micromorphological sections (Ghesquière *et al.* 2015), radiocarbon dating, and artefact analyses, have already enabled many observations (**Fig. 2**). For the graves, the analyses (micromorphology, radiocarbon dating, analyses of pollens and phytoliths, human and animal isotopes, intestinal parasites, and DNA) have also produced significant results that will be presented in several future publications.

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Johannes MÜLLER, Karl-Göran SJÖGREN

Early monumentality in northern Europe

Abstract: In southern Scandinavia and the northern central European lowlands, megalithic graves were erected mainly between 3600 and 3100 BCE. These collective tombs shape the cultural landscape of the so-called older and middle Funnel Beaker (TRB) societies. At this time, a 'megalithic boom' occurred with the introduction of new agricultural techniques such as ard ploughing, animal traction, manuring, and land clearance. Recent research projects have considerably increased our knowledge of the builders of the megalithic sites. In Falbygden, Sweden, and in Holstein, northern Germany, projects have informed us about the environmental conditions, economic practices, and burial customs of the builders of the Nordic megalithic tombs. On the Cimbrian Peninsula, excavations have helped to clarify the relationship between causewayed enclosures and megaliths. It now seems that the megalithic boom was connected both to agricultural innovations and to a peak in ceremonial activities in general.

Keywords: *megalithic landscapes, dolmens, passage graves, causewayed enclosures, Funnel Beaker societies*

1. Introduction

The phenomenon of monumentality occurs relatively late in southern Scandinavia and the north central European plain, compared to western Europe. The megaliths of the north, and especially the boom and bust of monumentality in *ca.* 3600-3100 cal BC, are set within the context of the Funnel Beaker (TRB) societies. A second wave of monumentality appeared in Cimbrian Early Single Grave societies (2800-2600 cal BC) with single grave mounds, and a third occurred in the Scandinavian Late Neolithic, *ca.* 2200-1700 BC. Here, we will limit ourselves to a presentation of the first phase of monuments. As the palaeo-environmental and archaeological archives of the northern central European and southern Scandinavian TRB societies have proven useful to the reconstruction of social processes linked with the introduction of agriculture, the construction of the first monuments provide examples for investigating the triggers and meanings of monumentality.

Within the scope of European archaeology, the northern central European plain has long been known for its richness of megalithic tombs and the high quality of environmental archives. Pollen records were first analysed in Sweden and antiquarian studies of these monuments go back several hundred years (Worm 1643; Picardt 1660; Bekmann & Bekmann 1751; Sjögren 2009; Bakker 2010). These were followed by systematic studies after the emergence of archaeology as a discipline in the decades around 1850 (Danneil 1843; Estorff 1846; Madsen 1886, 1891; Retzius 1899; Nordman 1917; Ebbesen 2007). During the 20th century, increasingly detailed excavations and field surveys were carried

out in several regions including Sweden (Strömberg 1968, 1971; Sjögren 2015; Andersson *et al.* 2016), northern Germany (Sprockhoff 1966, 1967, 1975; Schuldt 1972; Schirnig 1979; Beier 1991; Roß 1992; Bock *et al.* 2006; Rinne 2019) and Denmark (Skaarup 1985; Madsen 1982; Andersen 1997, 1999; Ebbesen 2007, 2008, 2009, 2011).

Due partly to the large-scale excavations now common in rescue archaeology, partly to particular scientific projects on megaliths, and partly to the range of new methods of scientific analysis that have become available during the last 20-30 years, recent investigations of megalithic landscapes have brought new insights into chronology, burial treatments, subsistence economies, agricultural practices, individual mobility, landscape and settlement structure, and kinship structures (e.g., in Falbygden and East Holstein). However, we are probably only beginning to see the full range of possibilities that will be opened up by new methods, which continue to develop.

In this paper, we will summarize current knowledge of north European megaliths and other monuments in the period ca. 4100-2800 BC, the TRB period. We will focus on the following themes: architecture and chronology, economy and agricultural practices, mortuary practices, and the role of megaliths within the larger complex of TRB ceremonial practices.

2. Number and distribution of megaliths

Estimates of the original number of megalithic tombs are difficult to make. In Denmark, 2800 scheduled monuments are registered and, thanks to generations of archaeological fieldwork, it is clear that about 7300 additional examples existed (Ebbesen 1985). In northern Germany, Müller (2019) reports 11 658 known monuments. In Sweden, the numbers are lower; around 550 monuments are known today. An additional 53 are known from Drenthe (Giffen 1925-1928; Sanden 2015) and about 17 from Poland (Sprockhoff 1967; Matuszewska & Schiller 2016) (**Fig. 1**).

Although the number of known megaliths is quite impressive (around 23 000 megaliths across roughly 300 000 km²), their discovery and survival rate are very strongly dependent on regional conditions. While the general average is 0.07 megaliths/km², in those areas with records prior to agrarian industrialization or produced by general surveys (*Landesaufnahmen*), this increases to about 0.25 megaliths/km² (**Fig. 2**). Even if we take into account areas where intense modern surveys have taken place and significantly enlarged the amount of evidence for megaliths (e.g., South Funen, **Fig. 2**), this value is not exceeded. Consequently, the original density of megaliths could be set at around 0.25/km². If we transfer this value to the whole area under discussion, we could expect a minimum of about 75 000 megaliths to have originally been constructed (Müller 2019). The triggers for northern Neolithic monumentality and its general development were investigated with these estimations in mind.

Megaliths show a dispersed distribution in numerous Scandinavian and north European regions. There are also core regions of distribution e.g., in Falbygden in southwestern Sweden, on the Danish islands, on the Cimbrian east coast of Denmark, on the German island of Rügen, on the Lower Elbe river, the Altmark and the western Lower Saxony regions of Germany, and Drenthe in the Netherlands (**Fig. 1**).

North European megaliths and, indeed, megaliths in other parts of Europe, are in many regions part of a larger complex of ceremonial sites, some of which are monumental, e.g., earthen long barrows and causewayed enclosures, while others, such as wetland deposition sites, are not. How these sites relate to each other is still a matter of discussion, although it has been suggested that mortuary practices could have been performed not only at the megalithic tombs but also at causewayed enclosures (Andersen 2000) and settlements (Brozio 2016). In fact, human skeletal remains are found in a variety of contexts, such as earthen long barrows, megalithic tombs, flat earth graves, causewayed enclosures, wetland deposits, and scattered at settlement sites (Raetzel-Fabian 2000; Sjögren 2014).

3. The monuments: architecture and chronology

North European megalithism consists mainly of megalithic chamber tombs, built of substantial stone blocks, covered with large capstones. Chambers built in the dry-stone technique are known from

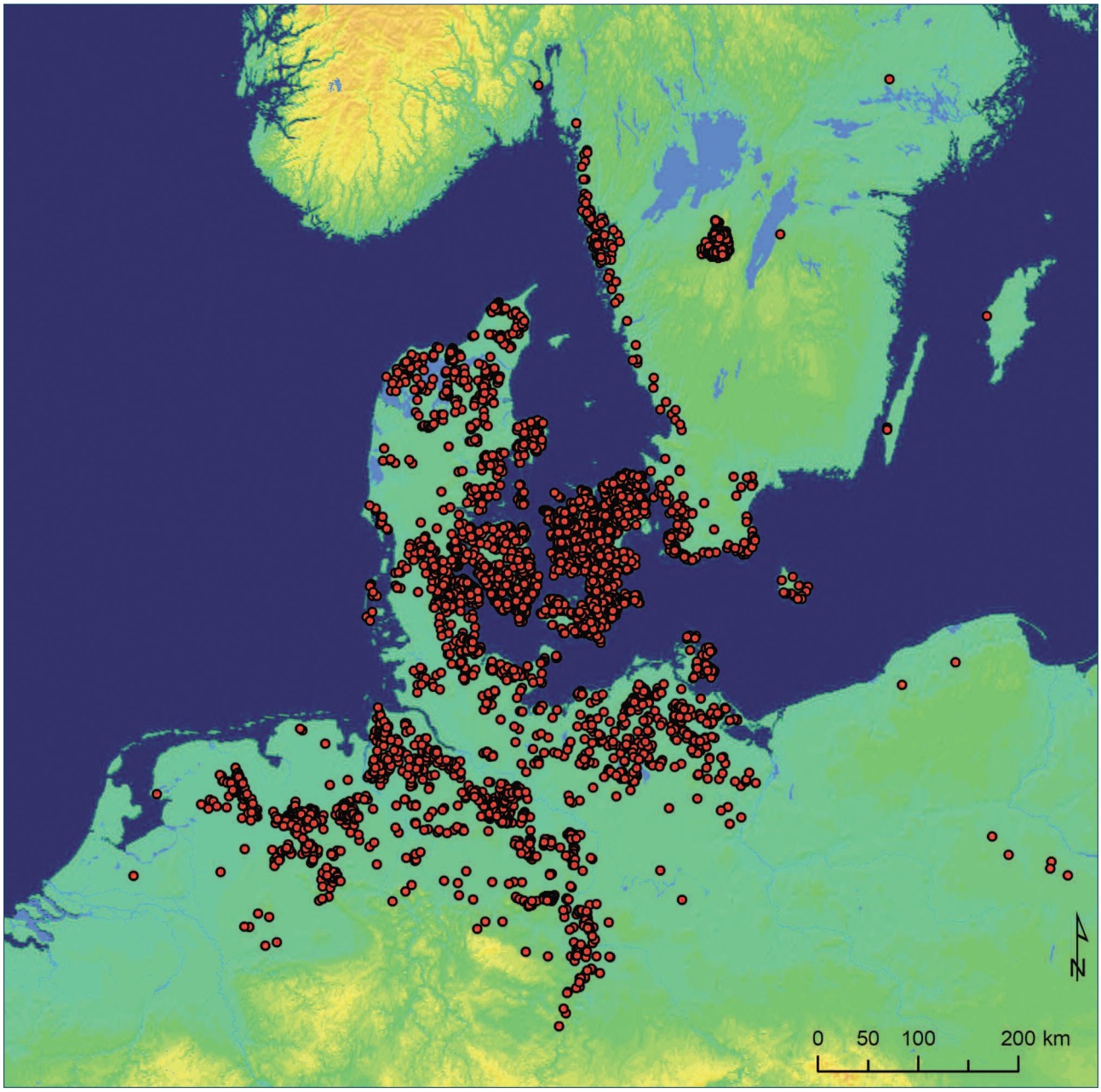

Fig. 1 – Distribution of dolmens and passage graves in northern Europe (Data from Fritsch *et al.* 2010 with additions).

Region	Size (km²)	Known megaliths (n)	Preserved megaliths (n)	Known megaliths (km²)	Preserved megaliths (km²)	Remark
Uelzen district	1 454	250	13	0.17	0.009	Schirnig 1979: 223 ; Estorff 1846
Altmark (Salzwedel)	2 293	207	47	0.09	0.02	Bock *et al.* 2006
Schleswig-Holstein	15 802	4 016	188	0.25	0.01	Rinne 2011
Rügen	926	254	54	0.27	0.05	Schuldt 1972: 16
Mecklenburg-Vorpommern	23 214	5 991	443	0.26	0.02	Schuldt 1972
Denmark	42 925	7 000	2 500	0.16	0.05	Ebbesen 1985
South Fünen	(2 985) 1 000	122 (290)	3	(0.29)	0.003	Andersen 1997; 94, fig. 1 ; Midgley 2008: 31
North Frisian Islands	202	94	33	0.47	0.16	Müller 2011b

Fig. 2 – In some TRB regions, monuments were documented before the appearance of industrial agriculture. Indicators of the density of known and the original expected megaliths were calculated.

southern but not northern areas although here, dry walling can be used to fill gaps between blocks (Midgley 2008). Menhirs and stone rows are extremely rare, although recent excavations in southern Sweden and northern Germany have uncovered monuments including standing stones, such as the enclosure at Döserygg (Andersson & Wallebom 2011) and probable freestanding stones or façades at Odarslöv and Truls hoj (Andersson *et al.* 2016; Andersson 2017), Lüdelsen 3 and Hundisburg-Küsterberg (Demnick *et al.* 2011; Schmütz 2017).

Montelius is credited with developing the first widely accepted typology and chronology of Scandinavian megalithic tombs (Montelius 1874, 1905). Based on the typology of chamber forms and stone axe types, he argued for a development from small dolmens via passage graves to Scandinavian gallery graves. This typology is still in use, although refinements and definitions of subtypes have been made (e.g., Sprockhoff 1938; Aner 1963; Schuldt 1972; Ebbesen 2011; Eriksen & Andersen 2014).

3.1 Long barrows

About 40 years ago, a fourth type of Early Neolithic burial monument was defined: interments beneath earthen long barrows (Madsen 1979). These are elongated monuments constructed of earth and timber but without a primary stone chamber; they are now recognized as the earliest form of monumental construction in a wide area from western Poland to northern France and Britain and are also found in southern Scandinavia (Midgley 2005; Rassman 2011; Rzepecki 2011). From the 364 unchambered long barrows of the northern central European plain and Scandinavia (Rzepecki 2011: 99-121), more than 70 are known from Denmark and between five and seven from southern Sweden (Rudebeck 2002). This is certainly only a small fraction of the original number of monuments. Whilst in the British Isles, in Denmark and in northern Poland, non-megalithic long mounds have been excavated for decades, this is not the case in northern Germany, with the exception of the Baalberg trapezoidal mounds in the Mittelelbe-Saale region (cf. Madsen 1979; Midgley 2005; Müller 2017; Rzepecki 2011). Various sites in northern Germany have recently been excavated or analysed, helping to clarify the role of non-megalithic long mounds (Dibbern 2016; Hage 2016; Müller *et al.* 2014). In a number of cases, the long barrows display a complex series of alterations and embellishments, often ending with the addition of one or more stone chambers, thus converting them to 'long dolmens'.

There are no less than three different types of long mounds (Müller *et al.* 2014: 178, Fig. 10): type 1 - rectangular or trapezoidal mounds with single burials or façades used for rituals (e.g., Lüdelsen 6, Tosterglope 2); type 2 - long mounds with single burials and a megalithic stone kerb (Tinnum LA 37); and type 3 - a sequential alignment of non-megalithic graves, culminating in a long mound (Flintbek LA 3) (**Fig. 3**). Some long mounds started with wooden enclosures and never evolved into a full mound, while others were later transformed into monuments with megaliths. Borgstedt LA 22, with a double-post enclosure (61 x 10.5 m) and recently dated to the 39th century cal BC, represents the earliest known type 1 long mound in northern Germany. During the 37th century cal BC, a rectangular dolmen was added changing the structure into a megalithic monument (Hage 2016: 180, Fig. 225-226). At Albersdorf LA 56, an early non-megalithic long mound (86 x 14 m) was erected in the 38th century cal BC, while a rectangular or polygonal dolmen was placed within the monument in *ca.* 3650 cal BC (Dibbern 2016: 116-118).

Taking the evidence from the new excavations into account, long mounds in the classical sense (type 1) were erected from the 39th to the 37th/36th century cal BC (Mischka 2014: 136, Fig. 13), and long mounds as cumulations of different individual burial mounds (type 2) from the 35th century onwards. These mounds are an integral part of the European long mound phenomenon, which stretches from the Upper Vistula River in Poland to the Isle of Man and where the gap between the central and south Scandinavian distribution and the British Isles might be narrowed by a few candidates, for example from Dalfsen or Schipluiden in the Netherlands (Peeters *et al.* 2018: 156-162). In northern Germany, Denmark and Scania, these mounds are the predecessors of the megaliths, even if an overlap in time exists. Sometimes, the early long mounds are clustered in small groups, in

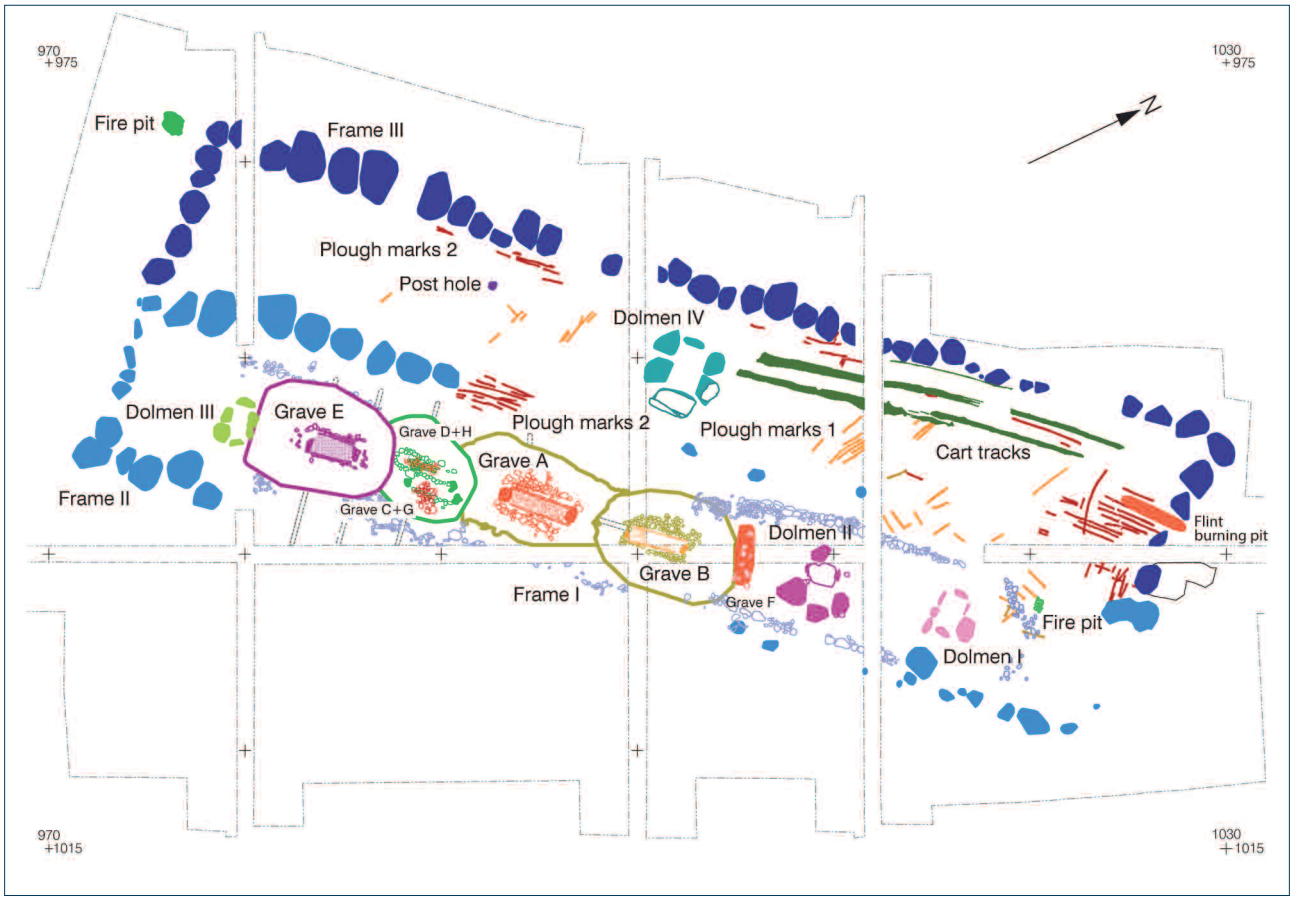

Fig. 3 – Flintbek LA 3. Four single burials of mainly Konens Høj type with individual small oval mounds were erected in a chain-like manner and later linked to a long mound in the 35th century cal BC (Mischka 2011). In following phases elongated dolmens were added. A cart was used for ritual transport of burnt flint from a fireplace to dolmen IV (After Furholt *et al.* 2018: 93, fig. 4).

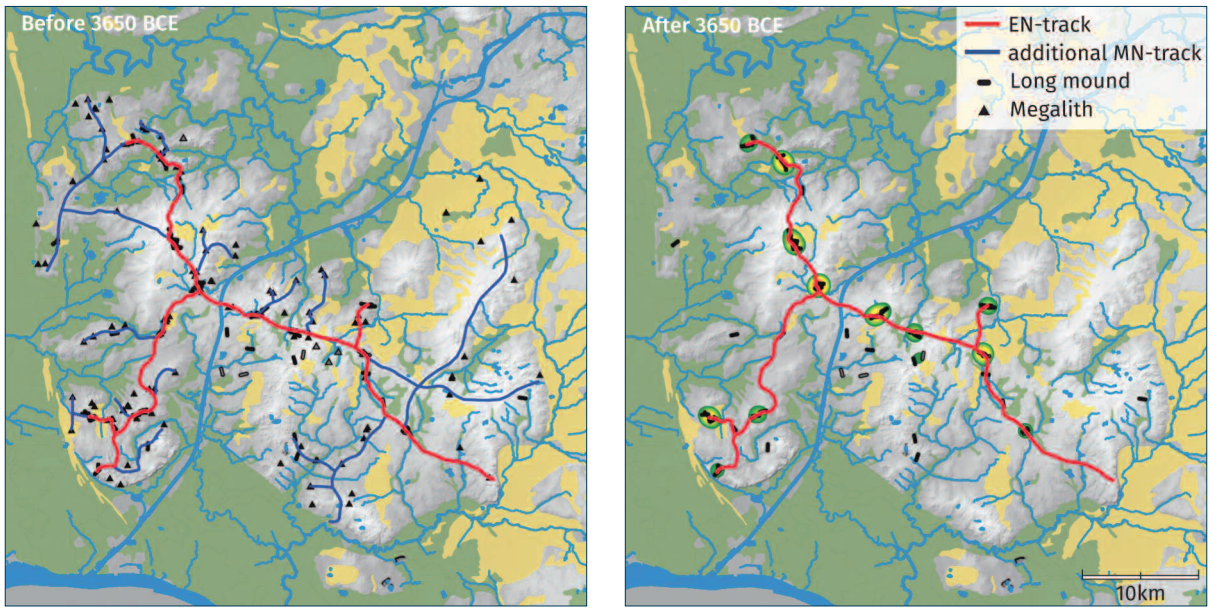

Fig. 4 – West Holstein. In contrast to later megaliths, early long mounds cluster in small groups, in locations clearly linked to routeways within the landscape. The causewayed enclosure of Albersdorf-Diekskнöll is located at the communication hub of three settlement areas. The green areas were part of the North Sea during the Neolithic (After Dibbern 2016: 169, fig. 11.12).

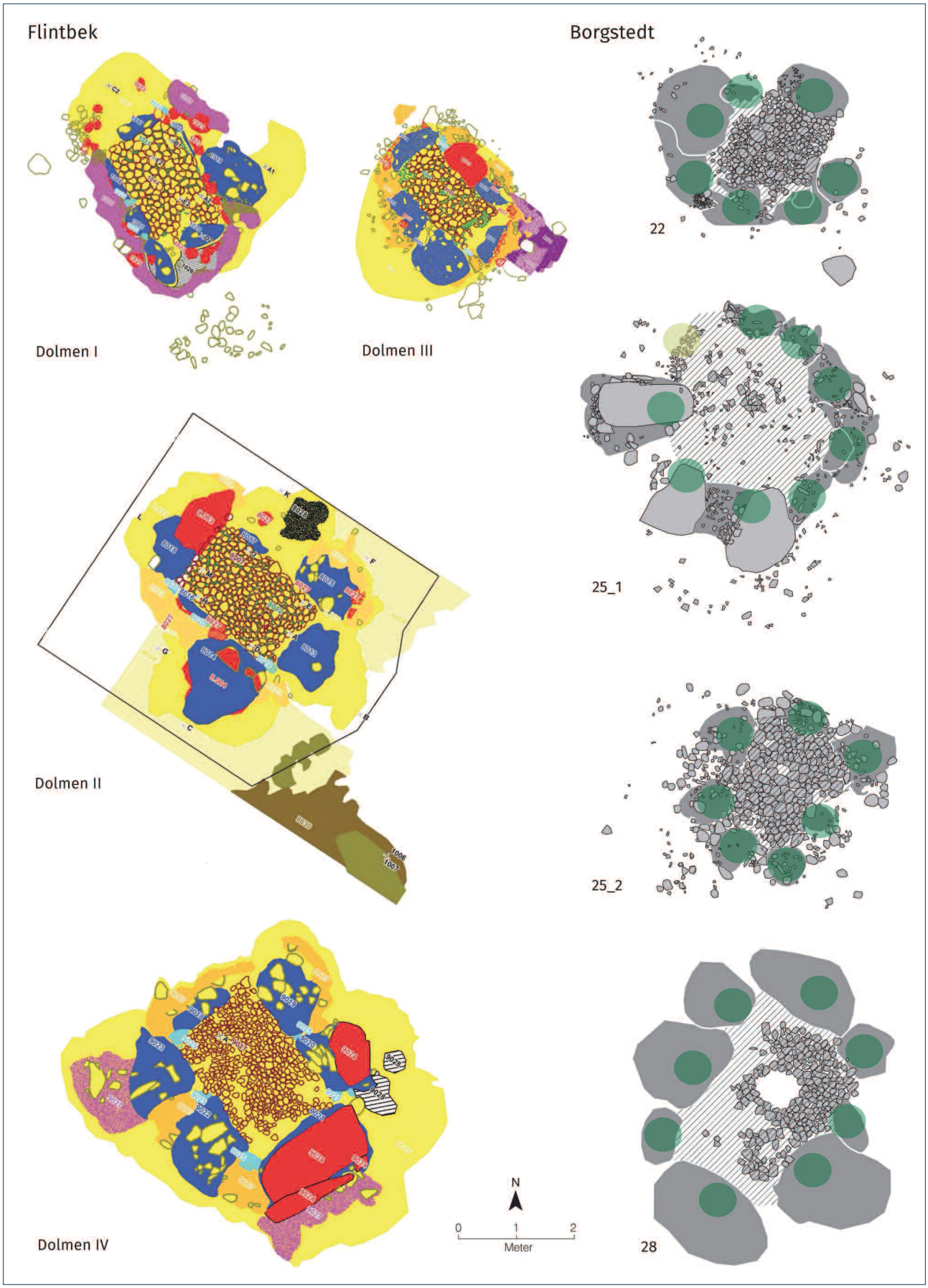

Fig. 5 – Dolmens at Flintbek LA 3 and Büdelsdorf (Furholt *et al.* 2018: 95, fig. 5; Hage 2016: 72, fig. 91).

contrast to the later megaliths, the locations of which are clearly linked to routeways within the landscape, at least in the region of West Holstein in Germany (Dibbern 2016) (**Fig. 4**).

3.2 Megaliths

From a typological perspective, the traditional categorization of the monuments into different kinds of dolmens and passage graves has been in use for decades and there is no obvious reason to change the system (**Figs. 5** and **6**). In Denmark, Ebbesen (2011) and Eriksen & Andersen (2014) recognize four main variants of dolmens, which can be briefly described as follows. Type I encompasses relatively small, closed, rectangular or slightly trapezoidal chambers, less than 3 m long, with four to six side stones. Type II are similar in shape and size to Type I but have an open gable with only a low sill or entrance stone. Type III are relatively large chambers of elongated form, often oval or pear-shaped, with an opening or short passage at the gable end. Type IV have a polygonal or rhomboid chamber of five or more stones and a short passage. Common to all four types is that they are covered by only a single capstone. All types are normally surrounded by round or elongated mounds and are accordingly termed 'round dolmens' or 'long dolmens'.

Often the mounds are the most monumental aspect of these tombs, ranging from around 30 m in length up to more than 150 m. Bordered by large kerbstones, often much larger than the stones in the chambers, these monuments would have made a strong impression even at some distance. The mounds can contain more than one stone chamber; up to five chambers in the same mound have been recorded. There is, however, no relationship between mound length and the number of chambers. The longest long dolmen in Denmark, the Lindeskov long dolmen on Funen (168 m-long mound), and the Büdelsdorf-Borgstedt LA 32 dolmen in Holstein, (190 m-long mound), have only small single chambers.

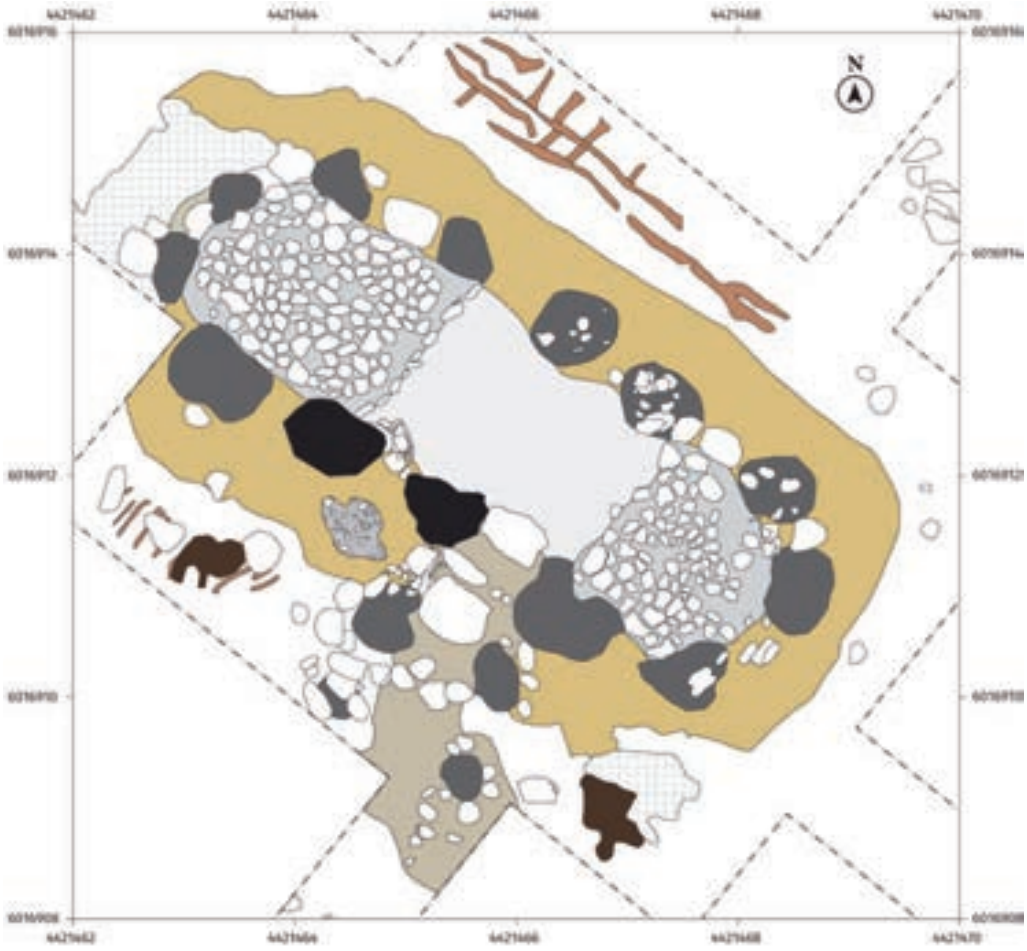

Fig. 6 – The Holsteiner passage grave, Wangels LA 69 (Brozio 2016: 131, fig. 116).

Passage graves are distinguished by their larger size and by having a passage reaching to the edge of the mound. Chamber forms are variable and range from round to oval, rectangular, and trapezoidal. Simple chambers dominate, but side chambers also occur, and some tombs have double chambers with a common gable wall. They usually have several roof blocks, normally three to five. There is a trend for the number of roof blocks and the size of the chambers to increase from north to south. In Lower Saxony, for example, we find megalithic tombs of the Emmeln type with up to 17 roof blocks (Schlicht 1979). Ceremonial depositions of pots, burnt bones and artefacts are usually found by the entrances to the tombs or on the kerbstones (**Fig. 7**).

From a chronological perspective, in northern Germany the earlier 'start' of dolmens and the later emergence of passage graves is supported by both radiometric dating and typochronological considerations (cf. Hoika 1999; Mischka 2014: 132-142, Fig. 9, 13): most dolmens are dated to 3650-3350 cal BC and passage graves mainly to 3300-3100/3000 cal BC (Sjögren 2011b: 107-108). Some earlier dates indicate the availability of the new architectural innovations prior to the explosion of each new architectural concept. This is exemplified with early dolmen dates from Borgstedt (Hage 2016: 196) and the early dates for the Hvalshøje and Mysinge 2 passage graves in southern Scandinavia (Dehn & Hansen 2006; Ahlström 2009; Mischka 2014). Thus, single dolmens were already being erected in the 39th century cal BC and single passage graves were constructed in the 36th century cal BC.

Parallel developments and regional differences exist throughout the history of megaliths (e.g., Persson & Sjögren 1996; Schulz Paulsson 2017; Blank *et al.* 2020), indicated by the large series of ^{14}C dates, mainly on human bones, that are now becoming available (Mischka 2011, 2014; Furholt & Mischka 2019; Blank *et al.* 2020; Sjögren & Fischer, in press). For passage graves, a remarkable series of dates is available from birch bark found in the dry walling of the chambers (Dehn & Hansen 2006). These are (beside datings from construction pits) the only dates directly connected to the construction of the tombs, while other dates pertain either to the use of chambers for burial or to activities preceding construction.

Fig. 7 – Hundisburg-Küsterberg passage grave. The reconstruction displays the entrance situation with standing stones, and the placing of vessels on stone blocks (After Schmütz 2017: 119, fig. 81).

The Scandinavian dates suggest that small rectangular chambers were built alongside various types of more complex dolmen chambers during the period *ca.* 3600-3350 BC, after which passage grave were erected, most likely in parallel with the construction of extended types of dolmens. The construction of passage graves continued for a couple of hundred years, probably up to *ca.* 3100-3000 cal BC.

This chronology emphasizes some important developments, crucial for the interpretation of megalithic tombs in social terms. Firstly, the development moves from small, closed chambers towards larger chambers accessible from an opening or a dedicated passage, and ends with the large passage graves of the early Middle Neolithic period. Secondly, this change is paralleled by increases in the numbers of buried individuals and by considerably longer periods of use, cf. below. Thirdly, the early monuments are numerous but contain few individuals, while the later burials are concentrated in fewer monuments with larger chambers. With the elongation of the monuments, there is a reduction in their number. This observation has been described as reflecting a concentration of power within vanishing cooperative societies (North Frisian Islands, cf. Müller 2011).

Flat graves occur alongside monumental tombs throughout the TRB (Ebbesen 1994; Kossian 2005; Müller 2019). They can occur either as isolated graves, as small cemeteries, or in connection with long barrows or megalithic tombs. In recent rescue archaeology projects in southern Sweden, single Early Neolithic flat graves are regularly found on the outskirts of contemporary settlements (Andersson 2004). The number of cases is not very large, but non-monumental graves are most likely severely underrepresented in the archaeological record, due to difficulties both in recognition and in dating. Details of the grave constructions are quite variable; Müller (2019) distinguishes 12 subtypes with various combinations of stone and wooden construction details.

3.3 'Boom and bust'

The combination of radiometric dating, typochronological dating of the earliest inventories within the megaliths and an aoristic approach has made possible an absolute quantification of the megalithic development in northern Germany (Brozio *et al.* 2019). Monuments were erected particularly between *ca.* 3400 and *ca.* 3100 cal BC, an extraordinary boom and bust of monumentality that is visible in both Schleswig-Holstein and Mecklenburg-Vorpommern (**Fig. 8**). About 1200 monuments were probably erected in *ca.* 3200 cal BC in only a 50-year period on the southern Cimbrian Peninsula, i.e., about 25 megaliths each year! If the distribution were random, a megalith would have been constructed every 25 km (a walking distance of about 7 hours by foot). After *ca.* 3050 cal BC, almost no new megaliths were erected during two 'non-monumental' centuries before the boom of early single grave mounds started in some areas. A similar calculation for Falbygden indicates that some 300 monuments were built in a period of at most 200 years, i.e., an average of 1.5 monuments per year, or more if the construction period was shorter. Most likely, several building projects would have occurred simultaneously, each competing for resources in the form of work force, material, sustenance, and political support.

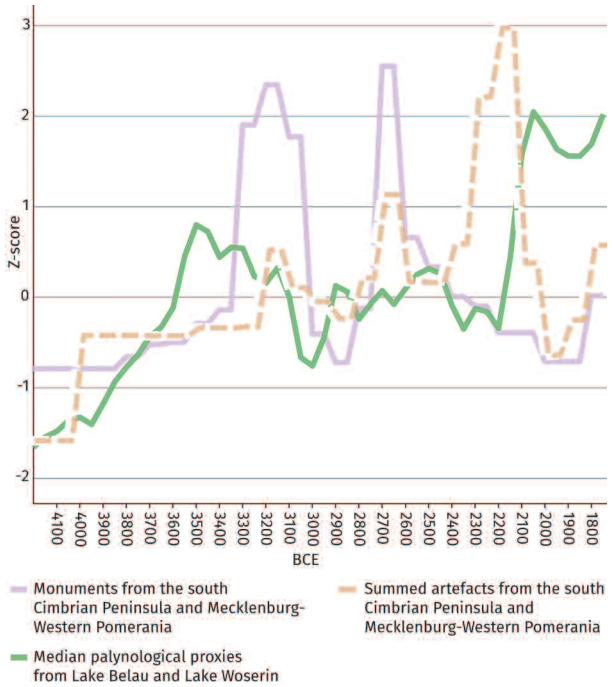

Fig. 8 – The quantification of frequencies of monumental construction and artefact production (Brozio *et al.* 2019, fig. 6). Monuments were erected particularly between *ca.* 3400 and 3100 cal BC. After 3050 cal BC, almost no new megaliths were erected, and two more or less non-monumental centuries followed (before the boom of early Single Grave mounds).

3.4 Enclosures

The role of causewayed enclosures, especially the Sarup type of causewayed camps, in Neolithic societies has been much stressed in recent archaeology (cf. Klassen 2014). These are sites enclosed by ditch systems and palisades, thought to have played a major part in the reproduction of Neolithic social systems. Enclosures are known from South Scandinavia and much of Central and Western Europe. These still enigmatic constructions are the most monumental elements of the Neolithic landscape. Though variable in size and shape, most of them would have demanded the mobilization of large workforces during short periods of time, in order to fell trees, transport large timbers, construct palisades, and dig ditch systems. Despite this large labour investment, the sites were rapidly abandoned and the ditches backfilled, only to be reactivated after some time, often several generations later.

Research on causewayed camps and similar enclosed sites has been active for many years, particularly in Denmark, England, France and Germany, but more recently also in Iberia (e.g., Andersen 1997, 2000, 2018; Klassen 2014; Dibbern 2015; Hage 2016; Meller & Friedrich 2017; Gandelin *et al.* 2018; Raetzel-Fabian 2000; de Valera 2014). In northern Europe, such sites were first discovered in the 1970s and now number at least 48, although very few have been subject to detailed investigations; there are also several 'uncertain' sites.

Based on present knowledge, this type of enclosure seems to originate in the Paris basin in *ca.* 4700-4400 BC, then possibly spreads towards the south, north and northeast (Klassen 2014; Müller 2017; but see Müller *et al.* 2019). The oldest sites in the TRB region are now dated to *ca.* 3800-3700 BC, i.e., the Scandinavian Early Neolithic I period, e.g., Liselund, Albersdorf-Dieksknöll and Büdelsdorf (Torfing 2015; Dibbern 2016; Hage 2016). Construction, reconstruction and use of the sites appears to have continued for a long time, in some cases into the Younger Neolithic period.

Opinions concerning the functions of enclosure sites have varied, ranging from defensive structures to cattle enclosures, social/ceremonial gathering places or places for mortuary rituals. This is an ongoing debate, but recent work has emphasized their role as hubs in social networks, where people from larger areas gathered, and exchanges and socially important ceremonies were performed.

Among the intriguing aspects of these sites, is the evidence for refilling and recutting of the ditches. At Albersdorf-Dieksknöll in Schleswig-Holstein, at least 21 recuttings could be documented, taking place over a period of some 800 years (Dibbern 2016). In the earlier phase, the ditches would have been recut every two to three generations, but the recuts later became less frequent, perhaps every six to eight generations. The site thus seems to have been activated only on very special occasions with long intervening periods when it would have lived on only in traditions, stories and memories passed between generations, along with details of the proper ceremonies to perform (**Fig. 9**). The sequence at Büdelsdorf in Schleswig-Holstein was somewhat different (Hage 2016). Here, at least three different phases of ditches and palisades could be distinguished, each probably short-lived and separated by some 100 years. Between the last two ditch phases, the site was occupied by a large settlement with about 40 houses. After the final ditch phase, the site appears to have been abandoned. The pattern at Büdelsdorf thus recalls the alternation between domestic and ritual activities seen at other sites, for instance the eponymous Sarup site in Denmark (Andersen 1997).

As suggested by several authors, certain stages in extended mortuary rituals were probably performed at such sites, either before or after placing bodies in collective graves (Andersen 1997, 2000; Madsen 2009; Meller & Friedrich 2017; Raetzel-Fabian 2000). Arguments in favour of this view are based mainly on finds of human bones, particularly crania and long bones, in the enclosure ditches at some sites. However, preservation of bone is in many cases poor, particularly at south Scandinavian sites.

4. Burial practices

Human remains are not very well preserved in long barrows, but in a few cases something can be said about the treatment of the dead. Commonly, one or two graves are found along the axis of the barrow, usually containing single burials but in some cases with up to five individuals. This was the case with

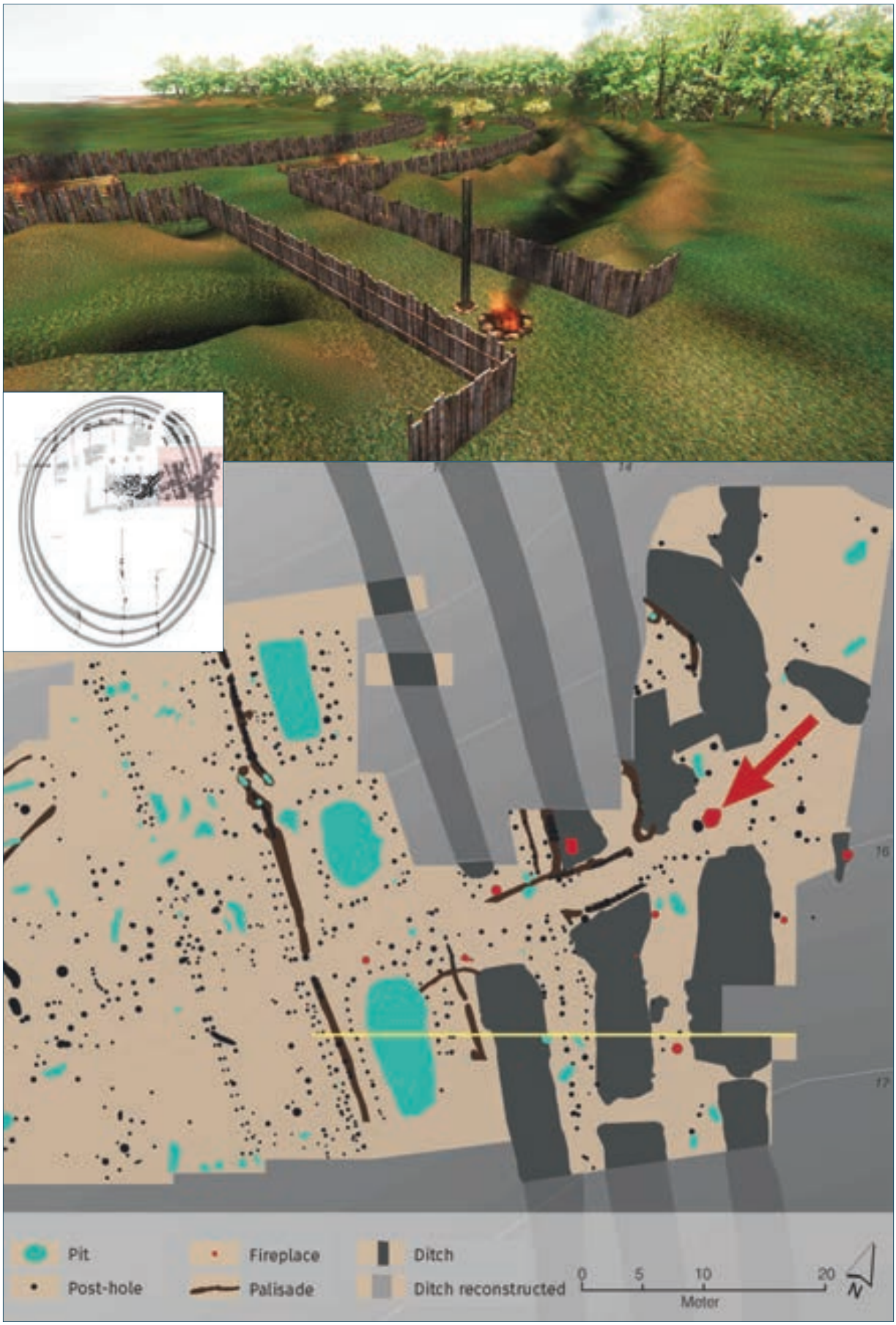

Fig. 9 – In Büdelsdorf, one of the causeways was marked with a huge wooden post and a fireplace, at which cereals were burnt. The arrangement, along with a series of mostly rectangular fire pits between the palisade and ditch system, both enhanced the visibility of the site and the ritual experience (Hage 2016: 33, fig. 17 and 249, fig. 298).

the famous barrow at Bygholm Nørremark on Jutland, where a primary burial was found within a small oval structure, interpreted as a mortuary building. Only dental enamel was preserved, but this proved to be from a teenager, between 16 and 18 years old. The barrow was later enlarged and another grave, containing four individuals, was placed further west (Rønne 1979). The bodies had been arranged in pairs, lying on their backs in opposing directions, and they were not accompanied by any grave goods. Later, the burials were covered by a mound, into which a megalithic chamber was inserted (Rønne 1979).

Another situation was found at the Skipshøj long barrow, where a timber chamber was uncovered at the eastern end, containing the remains of five skeletons (Jørgensen 1977). The bodies were laid out side by side on their backs in an orderly fashion, most likely buried within a very short time, after which the construction was burned. The bodies were those of an adult, between 20 and 30 years old, and four children of various ages. A single jaw from a sixth individual had been placed on the chest of the adult.

The number of people interred in these monuments varies widely. In long barrows and small dolmen chambers, only one or a few individuals were buried, although the number of sites with preserved bones is small. Andersen (2000) notes ten dolmens with partially preserved skeletons from Denmark, the best known of which are the Kellerød, Frellesvig, and Ølstykke dolmens. In these cases, the burial practice seems to have been the primary burial of complete bodies, placed on their back in an extended position. The burials were accompanied by only a few artefacts, such as a pot or a flint axe.

In the somewhat larger Klokkehøj dolmen, a more complex situation was found (Thorsen 1981). In the bottom of the partly destroyed chamber, large parts of an intact primary burial were found. The skeleton, laid out on its back, was from a 20-35-year-old male, and has now been redated to the Early Neolithic I, i.e., contemporary with small rectangular chambers (Sjögren & Fischer, in prep). Although the skeleton was largely intact, the cranium was missing along with the four upper neck vertebrae, suggesting intentional removal at an early stage of decomposition (Kaul 1994; Thorsen 1981). Beside the male skeleton, parts of another adult and the skull of a child of around five were found, also suggested as primary depositions. On top of the primary burial was a layer containing around 500 bones forming three distinct concentrations. The bones were from at least 19-20 individuals: 11-12 adults and eight children. No anatomical order was noted. Radiocarbon dating suggests they were later than the primary burial and belong to the Younger Neolithic. Based on the fragmented and disarticulated bones in the secondary layer, plus the low number of small hand and foot bones, Thorsen suggested that the burial practices had changed over time. In the Early Neolithic, small numbers of people were buried and their bodies were placed intact in the chambers; later, larger numbers of people were interred, but now in the form of already defleshed bones, as a form of secondary burial. Given the very few individuals interred, a strict selection of individuals for burial must have been applied in these early monuments; age and sex do not seem to have been important criteria.

In contrast to these rather small chambers, the minimum number of individuals in the passage graves is generally much higher, from a normal range of between 20 and 50 individuals up to 131 individuals in the Rössberga passage grave in Falbygden (Ahlström 2001, 2009; Sjögren 2003, 2015). The higher number of interred individuals is mainly due to longer periods of use. Based on a large series of dates on human bones from Swedish passage graves, the primary periods of use have been calculated to around 900 years at Rössberga and to 500 years at Hjelmars rör, both in Falbygden (Blank *et al.* 2020; Sjögren 2003). The longest period of use has been found at the Resmo (Mysinge) passage grave on the island of Öland in the Baltic. Here, the (at least) 56 interred individuals were dated to three main periods, covering the Middle Neolithic TRB period, the Later Neolithic, and the Early Bronze Age (Ahlström 2009; Blank *et al.* 2020; Eriksson *et al.* 2008). Despite the higher total number of individuals, the number of burials per generation would therefore have been low. At Rössberga with its 131 individuals, on average only three to four individuals would have been interred per generation, most likely too few to represent a living population (Sjögren 2003). Selection of individuals must also have been applied to burials in passage

graves, although the criteria for selection is unclear; as in the early monuments, sex and age do not seem to be important.

Since the 19th century, the dominant view of burial practices in Scandinavian passage graves has been that of secondary burial and deposition of defleshed bones, using the chamber tombs as a kind of ossuary. Only a few scholars have expressed other views, notably Strömberg (1971). Tilley & Shanks (1982) saw burial practices as ideological, whereby social relationships and social contradictions could be denied or masked, as much as they could be demonstrated or emphasized. In the context of burials in megalithic tombs, they suggested that the mortuary practice was one of secondary burial resulting in the dissolution of individuality through dismemberment and redeposition of human bones, and the creation of an anonymous collective of ancestors.

Much of the older bone material from megalithic tombs must, however, be regarded as problematic. This is due to several factors, including variable preservation, schematic documentation, and loss or discarding of bones in museums. These problems severely hamper discussion of the details of mortuary practices.

A different situation is seen in Falbygden in Sweden, where recent excavations at the sites of Landbogården and Frälsegården have given new information about burial practices. At both sites, a situation similar that at Klokkehøj was found: intact skeletons, presumably from primary burials, in the bottom layer, covered by a layer with largely disarticulated and fragmented bones (**Fig. 10**). At Landbogården, a rectangular passage grave only 2.7 m long was excavated in 1987 (Bägerfeldt 1987; Persson & Sjögren 2001; Ahlström 2009). In the bottom of the chamber, three articulated individuals were found lying on their sides in contracted positions and dated to the Middle Neolithic A. The lowermost skeleton was a woman of between 40 and 50 years of age, overlaid by an adult man and an adult woman. A tight concentration of partly articulated bones from two persons, an adult male and a child, was found in the passage. These were dated to the same period as the skeletons in the chamber.

At Frälsegården, only 2 km from Landbogården, a ploughed-over passage grave was excavated in 2001 (Ahlström 2009; Sjögren 2015). The partly damaged bone layer contained some 10 000 bone fragments from an estimated 78 persons, but also some almost intact skeletons (**Fig. 11**), as well as partial skeletons in various stages of decomposition. In several cases, intact hands and feet could be observed, and the presence of many small, fragile, and easily detached bones was notable. The preserved bodies were mostly in contracted positions, and the presence of numerous pig phalanges suggests they were wrapped in the skins of these animals. In the northern part of the chamber, three skulls were found close together, and in the passage, a shallow pit contained numerous smaller bones without anatomical connections.

Based on these new data, primary burial of intact bodies seems to be the dominant practice in Falbygden. This is also proposed for collective dry-stone tombs and Wartberg gallery graves in Germany (cf. the sites of Odagsen, Niedertiefenbach, Altendorf), which are contemporary with Nordic TRB megaliths (Pape 2019; Schierhold 2012). In many cases, rearrangement within the chambers also seems to have been practiced, as well as secondary handling of bones. The latter is indicated by the underrepresentation of crania at the Danish site of Trekroner (Kaul 1994). The rather common occurrence of collections of crania or long bones in certain parts of the chambers can also be viewed in this way but may also result from internal rearrangements. Variation in burial practices is also indicated by bone histology (Hollund *et al.* 2018). For example, disarticulated femurs at Frälsegården showed a higher degree of histological breakdown than femurs from articulated skeletons, suggesting better conditions for gut bacteria to attack the bones in the former. Such differences may result from subtle changes in burial practice, such as the introduction of skin wrapping or the timing of the burials. Further variation is clear from the cremations in passage graves (Blank 2021), and we must acknowledge the possibility of parallel practices as well as geographic and chronological variation.

In TRB flat graves, usually one or two persons were placed in extended or contracted positions, accompanied by only a few artefacts such as a flint axe or

Fig. 10 – Articulated skeletons in the Landbogården passage grave in Falbygden, Sweden (Redrawn from Bägerfeldt 1987).

Fig. 11 – Articulated skeleton (individual B) from a female, aged around 30-40 years, in the Frälsegården passage grave, Falbygden. According to 87Sr/86Sr analysis she was born outside the Falbygden geological formation, in an area where megaliths were not built (Photo: K.-G. Sjögren).

a pot (Kossian 2005). There is little to distinguish the artefacts in these graves from those found in long barrows or megalithic tombs. In Denmark, Tilley (1996) has noted the preference for combinations containing axes in flat graves and pots in dolmen chambers, although one type of grave cannot be said to be 'richer' than the other. The reasons for this pattern may be a combination of chronological difference and varying regional traditions. The anthropological evidence from flat graves is scant. Only in a few cases, such as Dragsholm (**Fig. 12**) and Lohals in Denmark or Oldenburg-Dannau in Holstein, and the large grave field at Ostorf in Germany, is anything more than tooth enamel preserved. In a couple of the Scandinavian cases, such as at Lindebjerg on Zealand (Liversage 1981) and Borgeby in Scania (Runcis 2002), tooth remains – as well as the sizes of burial pits – suggest the predominance of children among the buried, which may indicate differentiation of mortuary treatment according to age categories. Given the currently available evidence, most of the examples are compatible with the practice of primary burial.

In some cases, however, there are indications of secondary burial or manipulation of bones. At Fakkemose on Langeland (Skaarup 1985: 206), a flat grave was found underneath a dolmen with the skeletons of two adults in apparently anatomical position. However, one of the femurs was lying in the wrong direction, suggesting some rearrangement of bones, perhaps to simulate an intact skeleton. Indications of secondary manipulations also come from German graves, such as at Ostorf (Kossian 2005). At Oldenburg-Dannau in Holstein, a late Early Neolithic inhumation grave of an adult woman was excavated. However, the right femur was missing, and a corresponding femur was found in a nearby well (Brozio 2016). Seemingly, the femur had been extracted from the grave some 200 years after the original burial.

In some regions, primarily in eastern Sweden, secondary burial occurs in the form of cremations which have recently been dated to the Early Neolithic through direct dating of the bones (Hallgren 2008). The graves consist of small pits filled with cremated bones, often covered by small stone packings and without any grave goods. Cremations from the TRB period are now also being recognized in Swedish megalithic tombs (Blank 2021) as well as in German flat graves (Kossian 2005; Müller 2019).

As mentioned above, some scholars have suggested that certain stages in extended mortuary rituals were performed at enclosure sites, either before or after placing bodies in collective graves (Andersen 1997, 2000; Madsen 2009; Meller & Friederich 2017). Arguments in favour of this view consist mainly of finds of human bones in the enclosure ditches at some sites. However, few details of these deposits are known from north European sites, due partly to

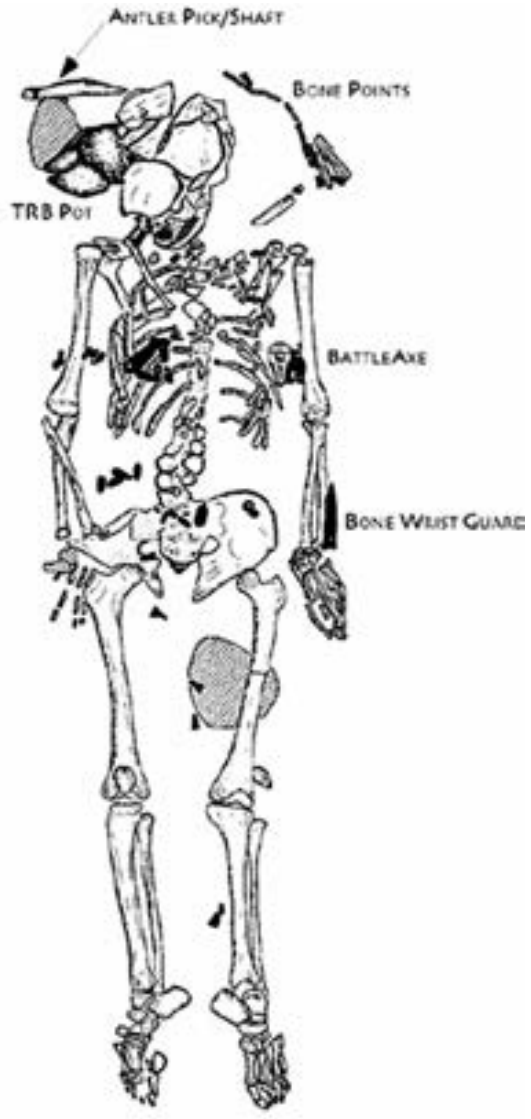

Fig. 12 – Dragsholm individual D, a male of around 20 years old. This flat earthen grave contained at least 60 amber beads, a stone battle axe, flint blades and projectile points, an antler pick or shaft, a bone spoon and a wrist guard, and a small ceramic beaker from the early Neolithic Funnel Beaker (TRB) culture (After Price *et al.* 2007).

poor preservation and partly to limited excavations. Similar sites are found in most regions of western and central Europe, and in areas without megalithic tombs. Finds of human bones are common, sometimes in large numbers. Recent excavations have revealed complex patterns of mortuary treatment. The finds range from complete skeletons to isolated bones, found both in the ditch systems and in more regular graves. Secondary manipulation of skeletal elements is evident in several cases, most prominently by the removal of crania and deposits of skulls in special concentrations (Meller & Friederich 2017).

Palaeogenetic studies are ongoing but have so far produced limited results regarding biological relationships between the persons interred in megalithic chambers. Evidence of close kinship has been demonstrated in some cases, but only between a few of the individuals buried in the same chamber (Fraser 2018; Sánchez-Quinto *et al.* 2019; Immel *et al.* 2021). Suggestions of patrilinear descent have also been made, based on a higher variation of mtDNA haplogroups than of Y chromosome haplogroups, and on the predominance of the I2 Y haplogroup among males (Fraser 2018; Sánchez-Quinto *et al.* 2019). In our view, these data are not, at present, convincing evidence of patrilinearity, since the I2 Y haplogroup probably dominates in the population at large, and also because the mutation rate in the Y chromosome is lower. Further analyses will hopefully clarify this issue.

5. Settlement

The main settlement type in northern Germany and southern Scandinavia in the Early Neolithic, *ca.* 4000-3350 cal BC, was the single farmstead or small hamlet. An example is the two-aisled rectangular house from Rastorf with waste pits, nearby flat burials, and a ploughed field, situated on a raised area near the Schwentine river (**Fig. 13**). Dispersed single farmsteads also dominate in the period 3350-2800 cal BC, but now combined with larger agglomerations, at least in some regions. Examples of villages are known from Büdelsdorf (*ca.* 3350-3250 cal BC) and Oldenburg-Dannau (*ca.* 3300-

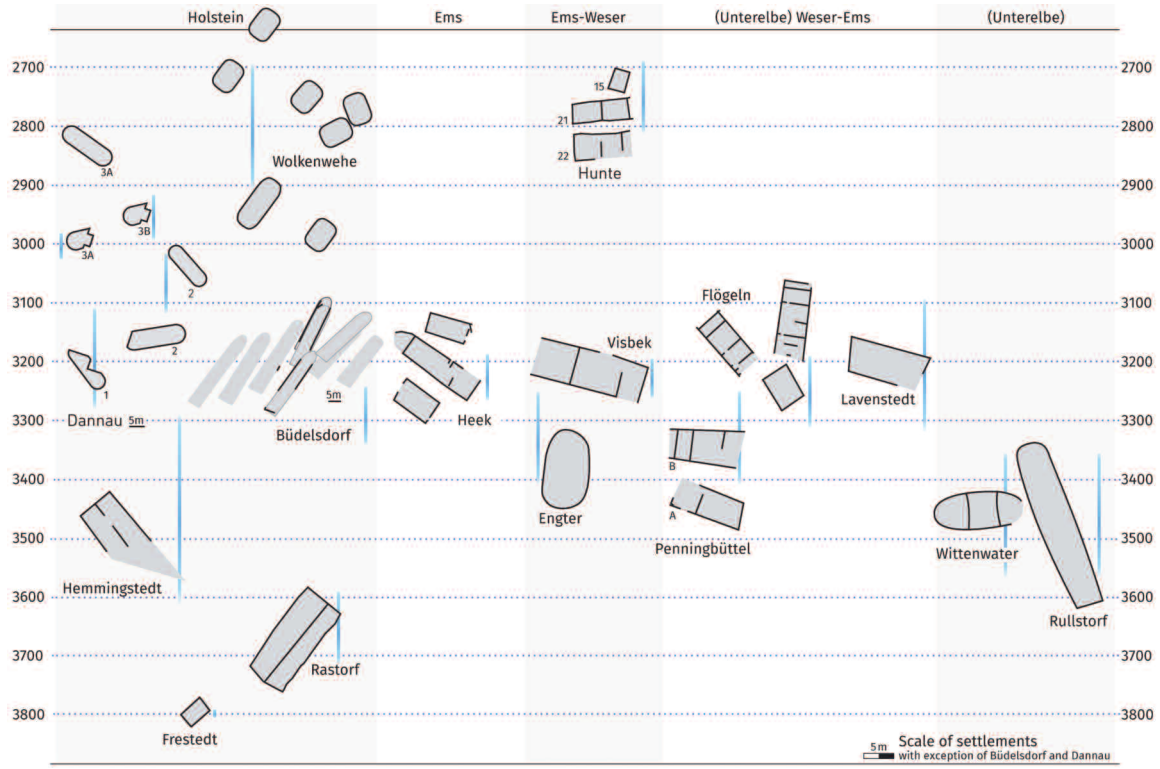

Fig. 13 – A scaled compilation of TRB house plans from northern Germany. Early huts with sunken floors (Frestedt), two-aisled houses of rectangular type (Rastorf), houses of Mossby type (Wittenwater and Oldenburg-Dannau), houses of Büdelsdorf type with one apsidal and one straight wide site, and three-comparted houses of the Flögeln type are displayed. The variation of contemporary individual house types and huts, size differentiation, and the development of the three-comparted Flögeln house with different house modules is clear.

2950 cal BC), where several houses formed clusters, probably of originally 40-50 houses with up to 400 inhabitants (Fig. 13). Communal wells, palisades, waste areas and spatially separated production zones identify cooperative activities that joined the households as a village in the classical sense (Dibbern 2016; Hage 2016; Mennenga 2016). While the 'farmstead era' (primarily until *ca.* 3350 cal BC) is mainly associated with long mounds and dolmens, the 'villagers' (*ca.* 3350-2950 cal BC) were more associated with the construction of passage graves.

During the Neolithic, domestic activities were linked to ritual activities, and this is visible in the remains from the settlements. One example is the identification of three to four compartments in the Flögeln houses in Lower Saxony, three of which are associated with utilitarian purposes, while the small southern or southeastern module is linked to single graves or TRB depositions (Mennenga 2016) (Fig. 13). The integration of rituals into the houses in around 3400 cal BC is also comparable with further ritual activities within the settlements or at their boundaries. Examples include stone packing graves from Oldenburg-Dannau or from Penningbüttel, which are placed separately from the main domestic area at the border of the settlement. The deposition of human remains in the wetland waste area is of particular interest.

'Memorization' and 'destruction' are narratives that are also visible in the domestic record of the sites. At Oldenburg-Dannau, the earliest feature of the settlement is the flat burial of a 40-50 year-old woman, which was respected until the 31st century cal BC. In around 3070 cal BC, two wells in the village were filled in the same manner, with burned apples and cereal at the base, followed by destroyed TRB pots and querns, with shiny white shells at the top (Brozio *et al.* 2013). This obviously ritual infilling was also added next to the femur of the female flat grave, for which a pit was specially dug. In principle, for about 250 years the burial of the female village founder was respected, but at a moment of change it was destroyed and used for ritual performances. While this happened in a settlement, the case of Rastorf especially holds interest. The already-mentioned farmstead was replaced by a dolmen, erected in the central space of the original house (Fig. 14). After several elongation phases, a slightly trapezoidal long mound was added, which exactly followed the symmetrical lines

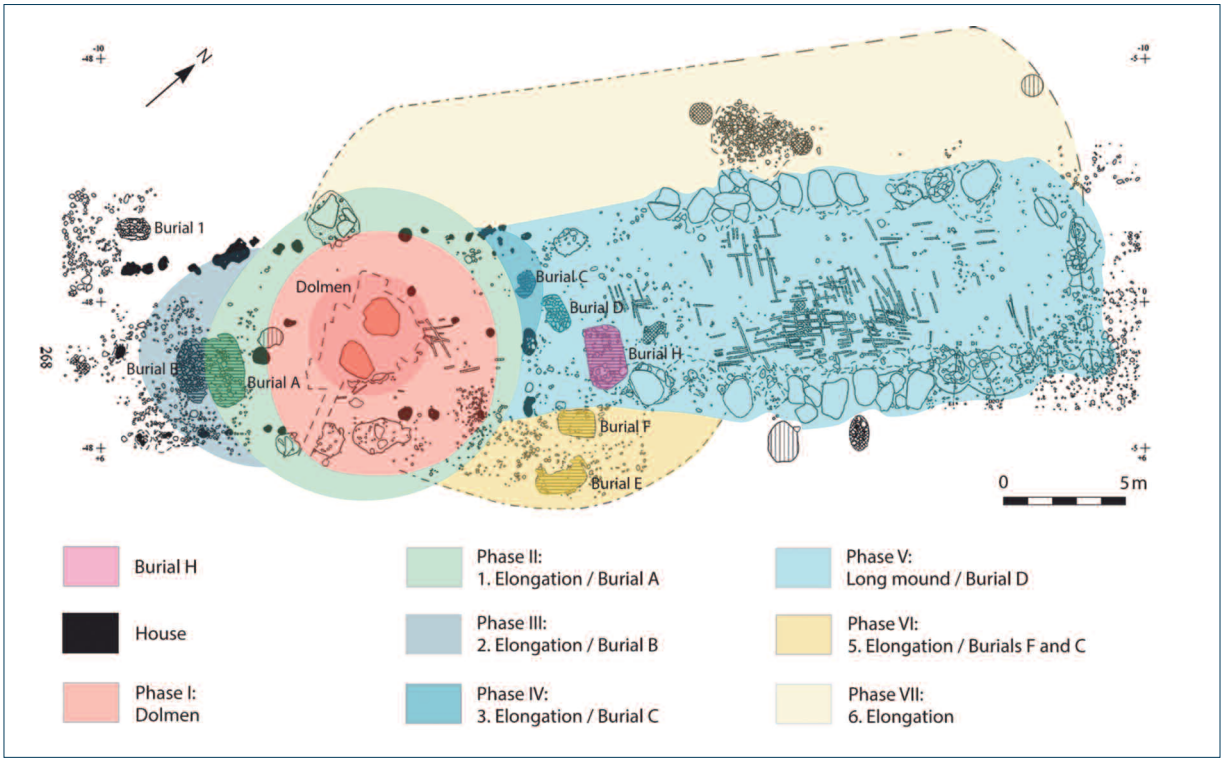

Fig. 14 – Rastorf LA 6a. After about three to four generations, the domestic house from the 37th century BC was changed into a burial monument (dolmen). A memorization is visible, as a later long elongation of the round mound followed the spatial axes of the ruined house (Müller 2017: 38).

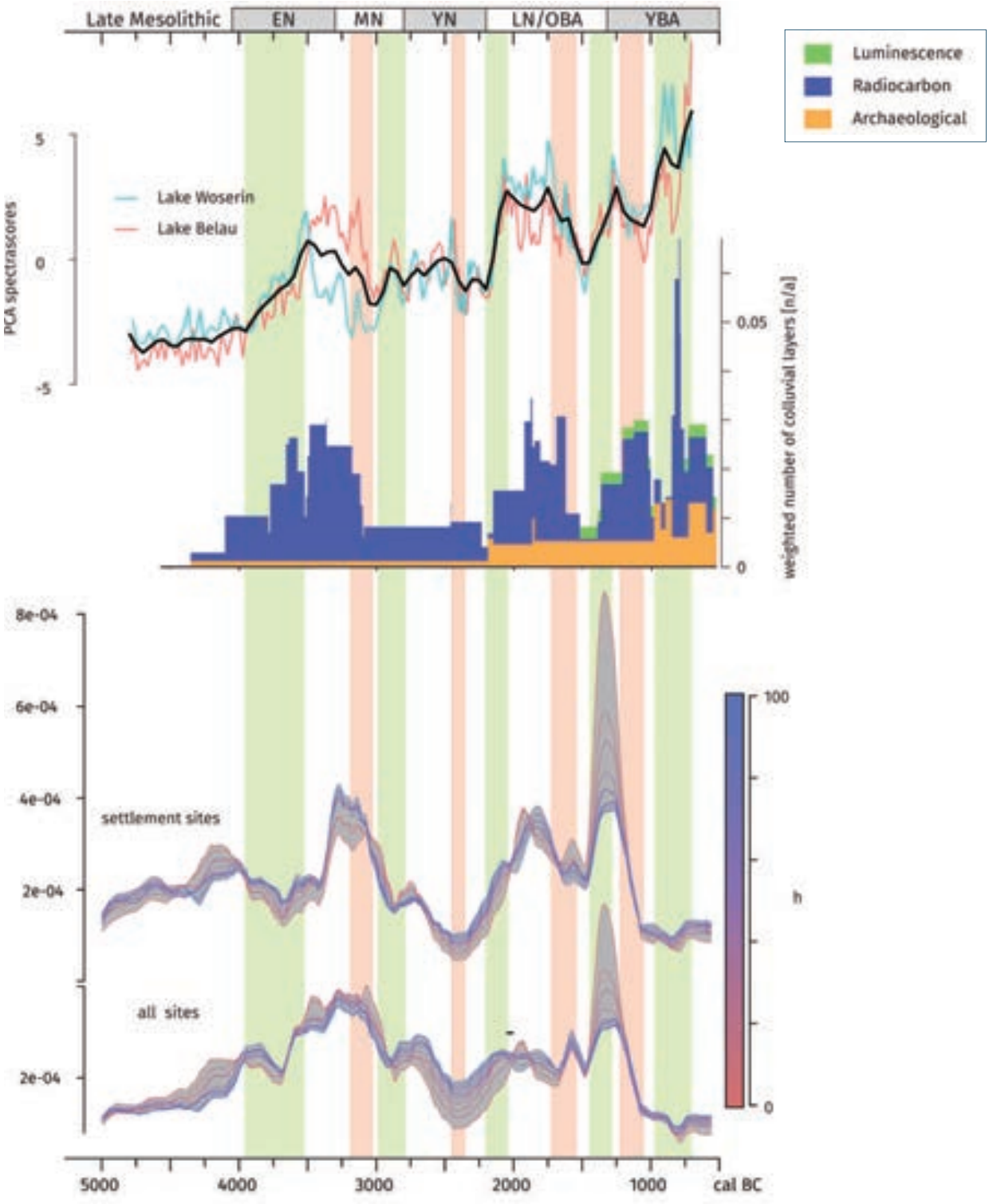

Fig. 15 – Land clearance and reforestation are indicated by palynological data (Feeser 2019: fig. 3). Increasing land openings around 4200-3600 cal BC are followed by a boom around 3600-3400 cal BC with a high level until around 3200 cal BC. Colluvial layers support these observations by increasing and decreasing amounts of colluvial incidence. Radiometric dating for settlement sites indicates a possible population increase especially observable in around 3300 cal BC, and a decrease in around 3100 cal BC. Taking all ^{14}C-dates from archaeological contexts, an increase in population from around 3700 cal BC until 3400 cal BC and a high population level until about 3050 cal BC are indicated. A decrease in the values occurs after 3050 cal BC.

of the original house (Steffens 2009; Müller 2018). Once again, after many generations, the memorization and ritualization of the ancestor house at Rastorf is perhaps comparable with the memorization and secondary ritualization of the individual in Oldenburg-Dannau.

In summary, the evidence of TRB domestic sites in northern Germany exemplifies the domestic background of the non-monumental and monumental ritual activities of these households and villages. While manifold domestic activities are represented, non-utilitarian activities and features are also visible within the domestic world, from flat graves to episodes of memorization. Nevertheless, the main thrust of rituals had shifted to the 'outside' world.

6. Environment, economy and subsistence

Within a landscape that mainly comprised closed mixed oak forests with patchy open areas along the waters and open areas along the coasts, the early transformation from foraging to farming is contemporary with the North Atlantic Bond Event 4 (an abrupt climatic episode with massive releases of icebergs from glaciers and ice sheets), with regional input in southern Scandinavia and northern Germany. This was deduced from Skagerrak deep-water reconstructions around 4000-3800 cal BC (Butruille *et al.* 2016) and high-resolution sedimentological evidence from Lake Belau (Dreibrodt *et al.* 2012). Evidence for the 40 especially bad years between 4050 and 4010 cal BC in Ostholstein suggests that this climatic event had a huge impact on economic and social development (Weinelt 2018). From an environmental perspective, the warmer and improving conditions until the 35th century cal BC and the climatic deterioration around 3200 cal BC might have modulated the economic and social developments, including the 'boom and bust' of monuments.

Phases of land clearance and reforestation are indicated by the palynological proxy record (Feeser *et al.* 2019) (**Fig. 15**). Increasing land clearances in around 4200-3600 cal BC are followed by an impressive surge in around 3600-3400 cal BC, with a high level maintained until around 3200 cal BC, followed by a steep decline in around 3100-3000 cal BC. Weighted numbers of colluvial layers support these observations by increasing and decreasing amounts of colluvial incidence. Besides environmental triggers for the land clearances, the intensity of human impact must be seen as the main cause of the observations. Demographic developments and changes in the economic strategy could both have contributed to the landscape changes.

The subsistence economy depended increasingly on cereal cultivates and domesticated animals (Steffens 2007; Kirleis *et al.* 2012; Kirleis & Fischer 2014; Kirleis & Klooß 2014; Sjögren 2017; Hinz 2018; Brozio *et al.* 2019; Kirleis 2019; Sjögren *et al.* 2019). The cereal spectrum included free-threshing barley and emmer as the main crops, followed to a lesser extent by einkorn (*Triticum monococcum*) and free-threshing wheat (*Triticum aestivum* sp). The ratios of free-threshing barley/emmer-spelt and perennial/annual weeds indicate changes within the agricultural practices with respect to intensive versus extensive agricultural practices. In around 4000-3300 cal BC, free-threshing barley was grown extensively. As emmer and annual weeds were also present, the intensive crop growing was probably an add-on to the dominant extensive system (Brozio *et al.* 2019). In contrast to these phases of dominantly extensive agricultural practices, in around 3300 cal BC, intensive agricultural practices became more dominant. The development of animal husbandry (Hinz 2018; Steffens 2007) is indicated by a steady increase of domesticates in *ca.* 4000-3700 cal BC, from about 10-70% of the bone assemblages to 70-90% by around 3400-3100 cal BC, continuing into the 3rd millennium cal BC. No other clear trends are observed except for a reduction of the dominance of cattle in the domestic animal assemblages from about 75% to approximately 50% in *ca.* 4000-3400 cal BC.

Through analysis of $\delta^{13}C$ and $\delta^{15}N$ isotopes it has been clear for some time that a significant change in protein sources occured from *ca.* 4000 cal BC, contemporary with the first evidence for agriculture and the oldest occurrence of TRB material culture (Fischer *et al.* 2007; Terberger *et al.* 2018). The isotopes suggest an abandonment of marine and freshwater food sources in favour of terrestrial foods at a lower trophic level, most likely cultivated plants in combination with meat and milk products from domesticated animals.

The importance of cultivation versus animal husbandry has been much discussed, with several authors seeing husbandry as economically dominant and cultivation playing a minor, perhaps even only symbolic role (Liden 1995). Based on the results from the growing number of isotopic analyses available from humans, animals and cereals, the revision of trophic level effects in humans, and the development of new software tools, the reverse now seems more likely, at least for the Middle Neolithic TRB. Modelling of the human diet at Frälsegården in Falbygden and from the TRB cemetery at Ostorf in Germany strongly suggests the predominance of plant foods, with a moderate contribution from animal foods and even less from fish (Fernandes *et al.* 2014; Sjögren 2017).

Agricultural practices in the first Neolithic phase are debated. Suggestions include hoe garden cultivation and swiddening (Hallgren 2008; Kirleis *et al.* 2012; Kirleis 2019). Ard cultivation, probably drawn by oxen, is attested from at least *ca.* 3500 cal BC onwards (Beck 2013; Mischka 2013). Cart tracks at Flintbek in Holstein indicate the presence of ox-drawn wagons at *ca.* 3350 cal BC (Mischka 2011). Recent analyses of $\delta^{15}N$ isotopes in cereal grains from Middle Neolithic TRB settlements in Falbygden and East Holstein indicate the practice of manuring, most likely on permanent fields used for long periods of time (Filipovic *et al.* 2019; Sjögren *et al.* 2019). Since ard cultivation also presupposes well-cleared fields, this implies the long-term investment of labour in the fields, in addition to investment in training draught animals. Maintaining herds of livestock also implies long-term planning to maintain the age and sex structure of the herds, controlling their reproduction, and providing access to pasture and possibly to collected fodder.

In conclusion, from an economic perspective the introduction of the animal-pulled plough and the wheel fostered important changes within the agricultural system and the land use practices. While evidence of ploughing is indicated in the 38th century BC, the main breakthrough of the new technology took place between *ca.* 3650 and 3300 cal BC (Mischka 2013). The increasing role of intensive agricultural practices might be a result of this technological change, as well as the possible trigger for the appearance of the first villages in the 34th century BC. Clearly, the boom of megalithic constructions in northern Germany is associated with this change from 'horticulture' to 'agriculture'. This probably also implies a change in the rules for access to and transfer of productive resources such as land and livestock, meaning that stricter regulation of access and inheritance could have come into place.

Gathered plants and fish also played a role within the subsistence economy. Modelling of the land use pattern for East Holstein indicates that, especially during changing times, non-domesticated sources of nutrition gained importance, although the carrying capacity of the environment was clearly never reached (Knitter *et al.* 2019a-b). Hunting, gathering, and especially fishing, continued to be practised, although not as main subsistence activities. For example, fish traps continued to be built in Danish coastal waters (Pedersen 2013), and the processing of fish in Early Neolithic TRB pottery is demonstrated by analysis of lipids (Craig *et al.* 2011), and specialized hunting/fishing stations are found along the Swedish and Danish coasts (Skaarup 1973, 1985; Sjögren 2003, 2011a). The evidence for continued fishing is concentrated in the Early Neolithic, while most Middle Neolithic sites tend to be completely dominated by domestic species (Sjögren 2003; Nyegaard 1985). However, after the megalithic boom in the context of the crisis from 3100 cal BC onwards, the proportions of marine food e.g., in East Holstein, increase considerably (Knitter *et al.* 2019a). In southern Scandinavia, the Pitted Ware complex appears after *ca.* 3100 cal BC, dominated by fisher-hunter-gatherer subsistence.

Within the northern TRB development in Germany, the already-pronounced variability of the economic systems in the different regions is indicated by isotope analysis on human bones (Terberger *et al.* 2018). Some assemblages reflect a high agricultural nutrition and others a high aquatic nutrition. The variability is due to the local conditions and expected from Neolithic societies, who lived in and created a landscape with a high degree of sustainability. This might also explain the observation that the main factors for the location of domestic sites did not change within the period under discussion (Knitter *et al.* 2019b): the economic practices did not change dramatically, but rather were constantly adopted to the local conditions. Interestingly, the comparison of lipid analyses of

ceramics from a megalithic grave and a settlement in East Holstein demonstrated that plant food dominated in the settlement, while in the megalithic grave, cattle meat in particular was given as a burial gift (Weber *et al.* 2020).

7. TRB society

While most scholars agree that some form of ranking, hierarchy or elite was present in TRB societies, there is considerable disagreement as to the degree and character of the social inequalities. Most proposals have been developed through the theoretical framework of neo-evolutionist ethnology (Service 1975), while Marxist and political economy approaches have also been proposed (Sjögren 2003; Artursson *et al.* 2015). The interpretations range from proposals of egalitarian but competitive societies (Wunderlich 2019), acephalous societies (Hinz 2011; Müller 2019) via 'Big-Man' systems (Brozio 2020), ranked clan systems (Sjögren 2003), low-level chiefdoms (Artursson *et al.* 2015; Sørensen 2020) to stratified chiefdoms (Bägerfeldt 1992; Nordqvist 2001; Ebbesen 2007). Most authors support a view of TRB society in the mid-range between egalitarian and stratified, corresponding to social forms characterized as trans-egalitarian or intermediate level societies (Hayden 2014). Commonly, a chronological development is proposed, from more egalitarian societies in the Early Neolithic to more hierarchical in the Middle Neolithic (e.g., Müller 2011; Andersson & Artursson 2020).

Some authors argue for a system similar to the ethnographically documented 'Big Man' societies, where certain individuals are able to mobilize a following through prestations, kinship or other political alliances (Brozio 2020). Prestige building, gift exchanges and demonstrative feast giving are important features in these systems, in which relationships between groups are typically competitive and fluid. The standing as a Big Man is largely dependent on personal achievements and is not necessarily passed on to members of the next generation. While attractive in many ways, this model does not explain the frequent occurrence of children and juveniles in monumental graves, nor the probable emphasis on ancestral links and deep memory displayed in the monuments. Similar problems apply to suggestions of egalitarian or acephalous societies. These could be more relevant to the earliest, non-monumental phase of the TRB.

Arguments for the existence of stratified chiefdoms, where positions of power would have been hereditary are, among others, the inclusion of children and juveniles in the tombs, which suggests ascribed rather than achieved status, and the likelihood that only part of the population was buried in monuments (Skaarup 1985; Nordqvist 2001). This is countered by new aDNA analyses from megalithic collective graves, suggesting that adults and children are not necessarily related (Immel *et al.* 2021). The probably executed or drowned individuals found in wetlands have also been used to argue for stratification, with some persons having the power of life or death over others. Yet there are also arguments against hereditary stratification, including the lack of clear distinctions in burial treatments and grave goods between burials in monuments versus those in flat earth graves. Further, isotopic dietary evidence and other bioarchaeological evidence have not revealed such differences, suggesting that the basic conditions of life were similar for everyone. This even applies to the individuals found in wetlands.

We therefore propose the existence of a mosaic of TRB societies with different social ties, for which cooperation was most important, e.g., in the construction of monuments. Within aspects of 'sharing' and 'competition', different variations are observed, but in northern Germany and Scandinavia these never progressed to the construction of social pyramids. This might contrast to 'megalithic' societies in other areas of Europe. We also suggest that ideology, as manifested in various monumental projects and other kinds of ceremonial behaviour, was linked to production in ways that created a specific dynamic towards intensification of land use, labour, and the creation of a socially necessary surplus. This dynamic would inherently lead to social differentiation between and within groups, but was countered by processes of fission and competition, thereby creating instability and fluidity. It was this kind of dynamic that primarily defined northern TRB societies, rather than any specific level of social organization.

Old bones or early graves? A brief summary of megalithic burial sequences in southern Sweden based on radiocarbon dating

Malou BLANK

1. Introduction and aim

In Scandinavia, megalithic graves are divided into three main types: dolmens, passage graves and gallery graves (**Figs. 1** to **3**). The conventional chronology of these graves is based on typological seriation of chamber forms and axes developed by Montelius in 1874. According to this chronology, the first megalithic graves were small, closed dolmens, which evolved to encompass larger chambers and short passages, developing into passage graves with longer passages, becoming large gallery graves in the final Neolithic period, and then small, closed stone coffins in the Bronze Age. Despite the fact that Neolithic chronology has since developed and the typology has been challenged (e.g., Sjögren 2003; Ebbesen 2011), the terminology of the grave types remains undisputed and Montelius typological seriation is still the prevailing model used by Swedish archaeologists.

It is commonly accepted that dolmens and passage graves in southern Scandinavia were built at the transition between the Early and the Middle Neolithic periods (3500-3000 cal BC), in the cultural setting of the Trichterbecher (TRB) complex (e.g., Mischka 2014; Schulz Paulsson 2010; Sjögren 2011). Previous research indicates that dolmens emerged slightly earlier than the passage graves but were used largely contemporaneously. Gallery graves are

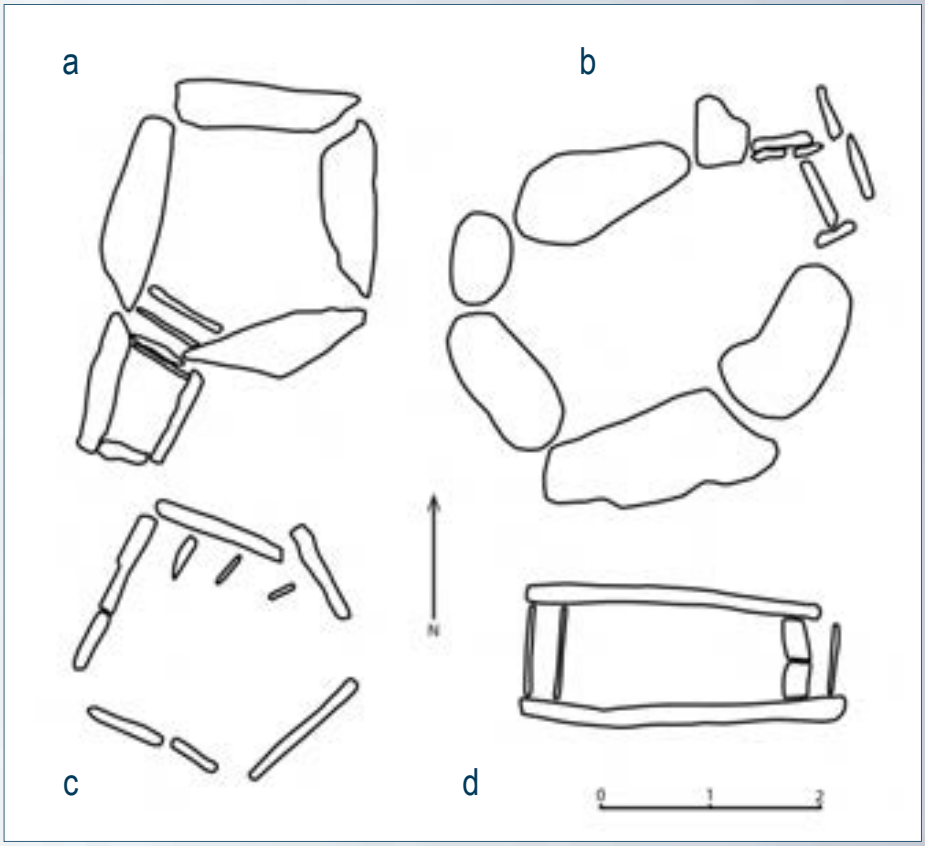

Fig. 1 – Examples of dolmens in Scandinavia (After Blank *et al.* 2020).

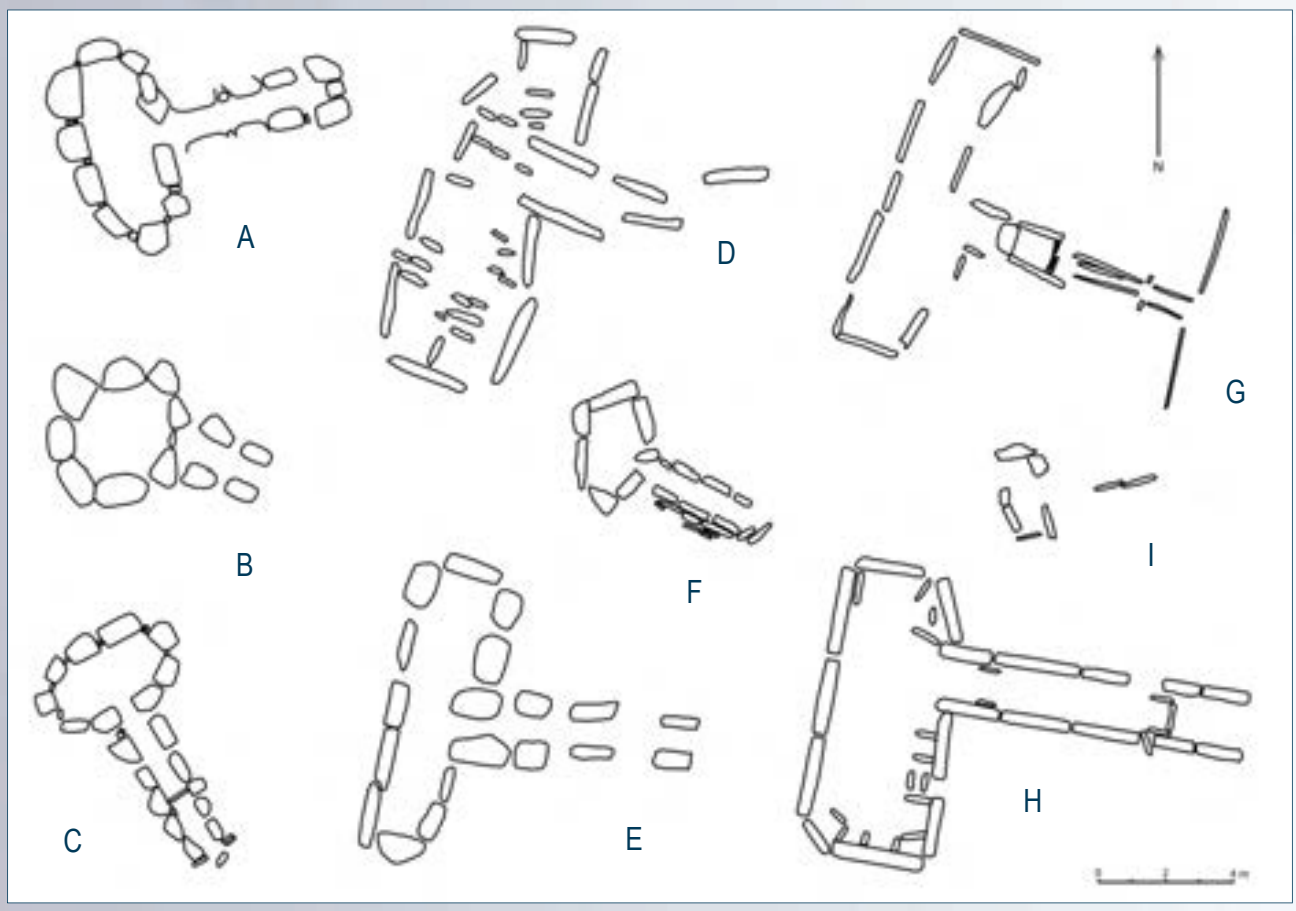

Fig. 2 – Examples of passage graves in Scandinavia (After Blank *et al.* 2020).

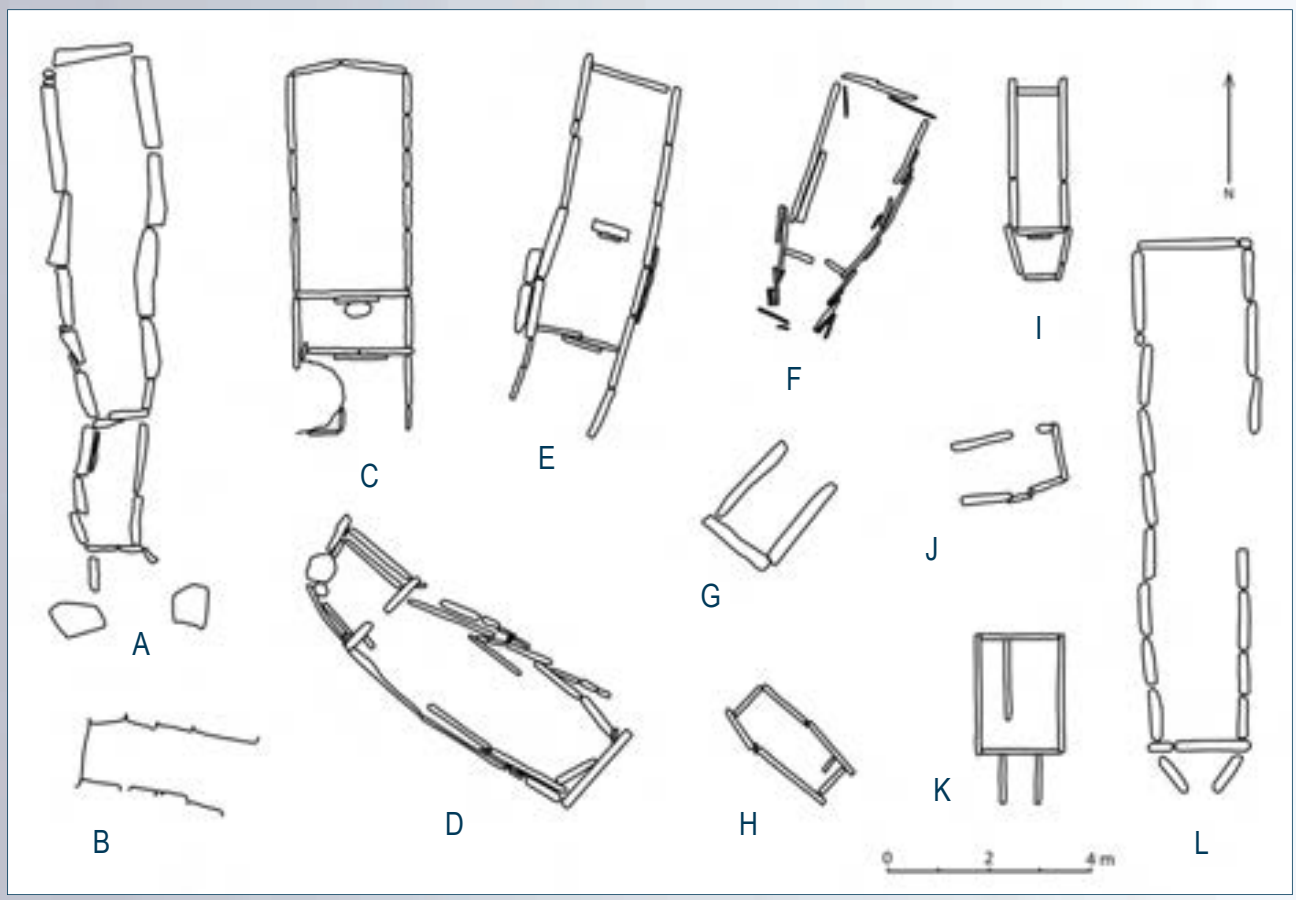

Fig. 3 – Examples of gallery graves in Scandinavia. (After Blank *et al.* 2020).

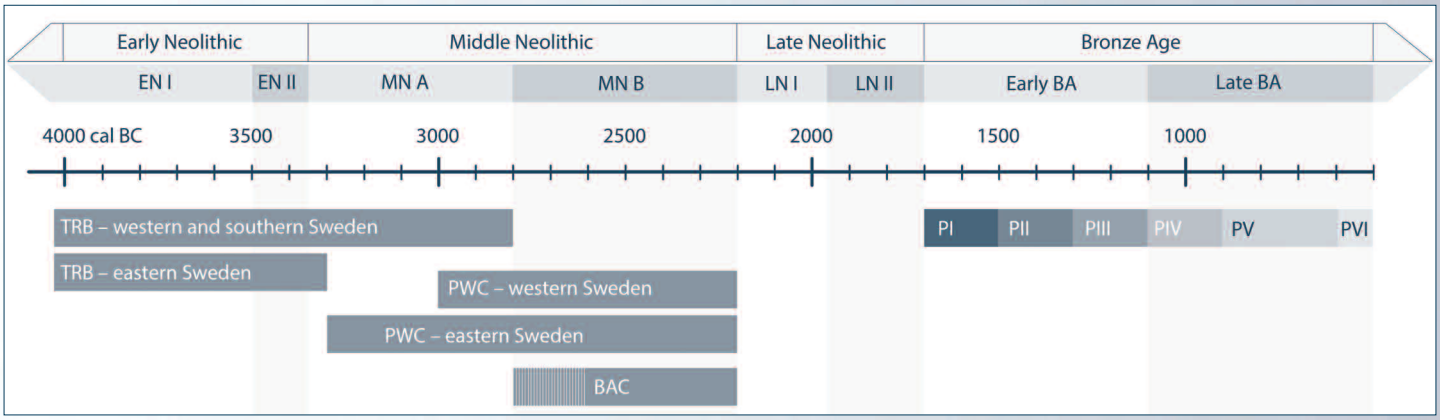

Fig. 4 – Chronology for Sweden. (After Blank *et al.* 2020).

mainly assigned to the Late Neolithic, i.e., 2200-1700 cal BC (**Fig. 4**).

This article is a summary of a recently published project (Blank *et al.* 2020). The primary aim of the study was to investigate the period of use of the conventional types of megalithic graves in southern Sweden, with special focus on the less studied gallery graves.

2. Material and method

The date of the construction and primary use of megalithic graves is a complex issue due to the scarcity and insecure contexts of preserved datable material. However, the number of available ^{14}C dates on human remains has significantly increased during the last decade, enabling the compilation of good quality data (Blank *et al.* 2020). The project

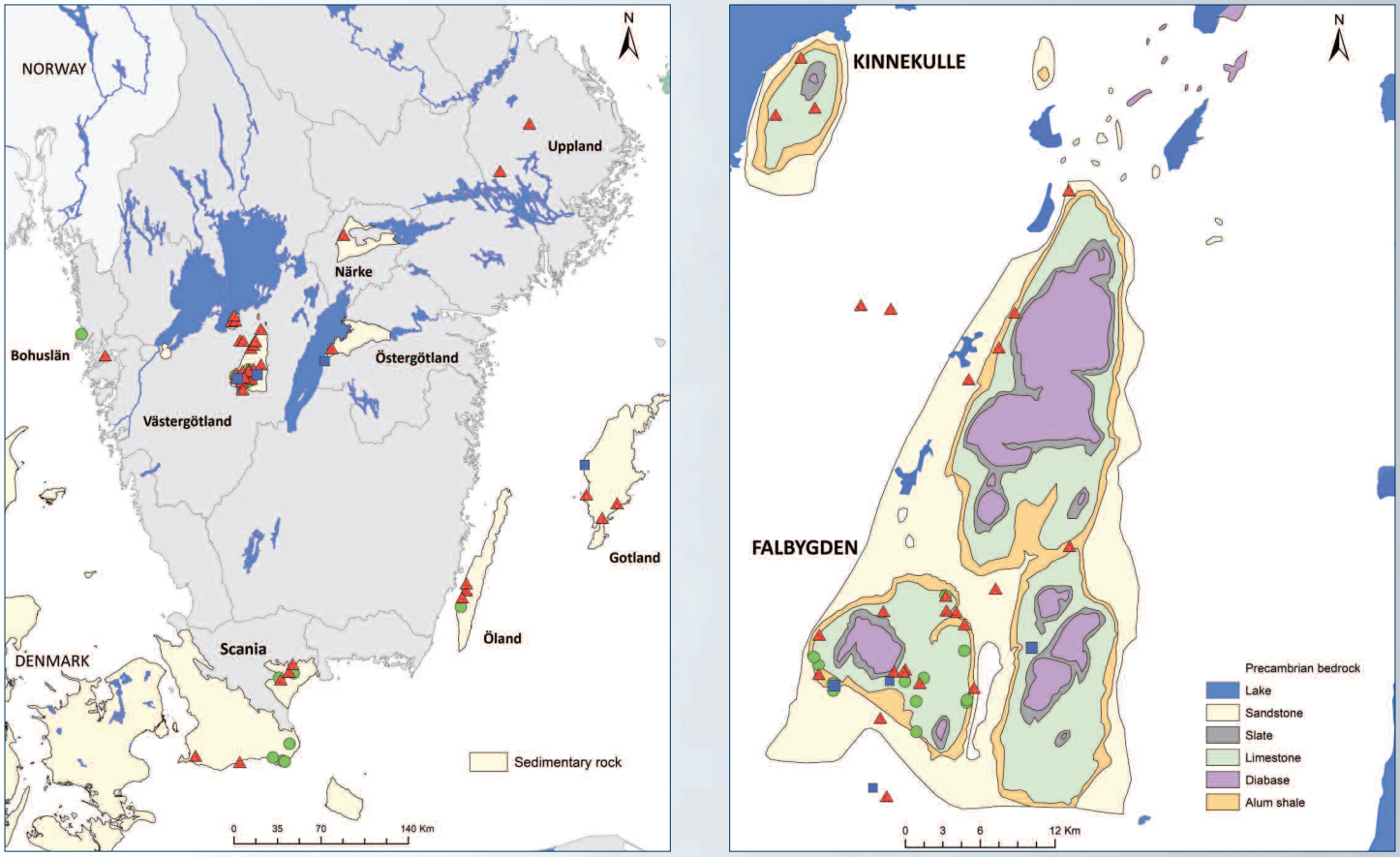

Fig. 5 – Overview of sites included in the study: dolmens (blue squares), passage graves (green dots), and gallery graves (red triangles) (After Blank *et al.* 2020).

encompassed 374 ^{14}C dates from unique individuals selected from a dataset of 499 ^{14}C dates on human remains from 66 Swedish megalithic graves (Fig. 5). By comparing sum plots, KDE models, individual ^{14}C dates, and typological dates of burial finds, the existing chronologies of the megalithic graves were re-evaluated.

3. Results

The ^{14}C dates from dolmens and passage graves approximately agree with the conventional chronology, however the presence of early skeletons in gallery graves is unexpected and does not fit the prevailing view of these graves (Fig. 6). Middle Neolithic B artefacts and human remains were recovered from two gallery graves with antechambers on the island of Öland. In Västergötland, southwest Sweden, four open, single-chambered gallery graves of various sizes and three multi-chambered gallery graves with portholes contained skeletal remains dated to the Early Neolithic and Middle Neolithic A. Furthermore, Early to Middle Neolithic artefacts appeared in 10 out of 23 sampled gallery graves in Västergötland.

4. Conclusion

The results indicate that megalithic graves were first used in the final part of the Early Neolithic, around 3500-3300 cal BC. The dolmens and passage graves were used contemporaneously, although the proportion of early dates supports a slightly earlier start for the dolmens.

In Västergötland, some of the single-chambered gallery graves were most likely constructed and used simultaneously with the dolmens and passage graves, which suggests that Middle Neolithic megalithic graves were more varied in shape than the conventional typology proposes. This suggests a wider geographical distribution of Middle Neolithic megalithic graves than is currently known. Middle Neolithic artefacts and animal bones support an early introduction of some of the multi-chambered gallery graves, although reburial of old bones cannot be ruled out; further bone analysis would resolve this question.

It is likely that the ^{14}C dates of buried individuals partly reflects the demographic situation with a population decline in the Middle Neolithic B and first part of Late Neolithic I. However, other factors such as changing burial practices may also affect this result. Investigations of pollen diagrams and artefact density over time could be a way of approaching the issue.

Acknowledgments

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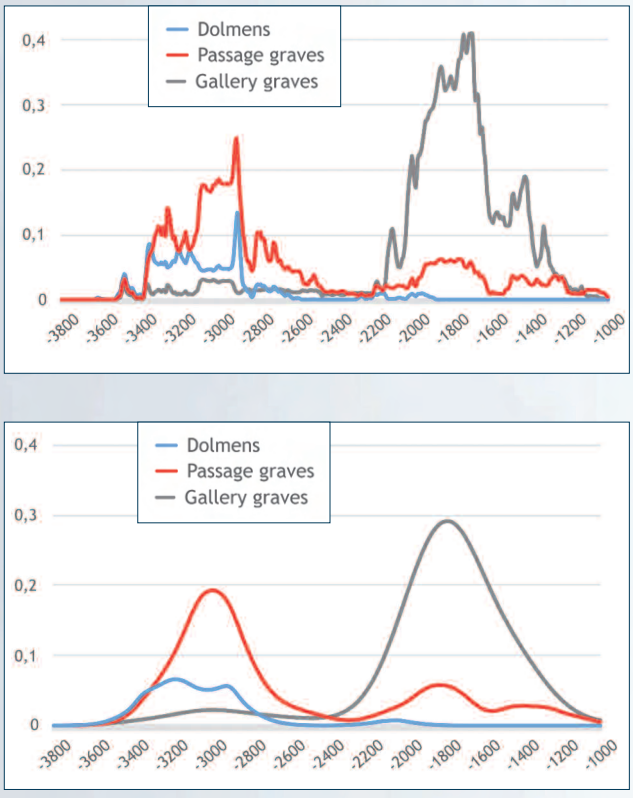

Fig. 6 – Sum plot and KDE model of ^{14}C dates from megalithic graves (cal BC, 95.4%). Dolmens N=42, passage graves N=131, and gallery graves N=201 (After Blank *et al.* 2020).

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Richard BRADLEY

Beyond comparison: the diversity of megalith building

Abstract: Studies of megalithic building usually depend on comparisons between constructions that date from similar periods, but they also investigate structures dating from the remote past alongside those documented in the ethnographic present. They also compare examples in neighbouring regions and the ways in which they were used. This paper describes a project that was originally meant to investigate two groups of megalithic monuments in the north of Scotland. Located on either side of an important estuary, they were thought to have been built simultaneously and have mutually exclusive distributions. Fieldwork produced unexpected evidence that one of these groups – the Clava Cairns – was constructed a thousand years after the other, the Orkney-Cromarty Cairns, on the other side of the water. Is it helpful to treat them together as megaliths? How can we explain the similarities between them that led to so much confusion? This paper contends that the later tradition represented a conscious attempt to renew links with a remote and little-understood past at a time when traditional norms were threatened by the introduction of Bell Beakers and the people who used them. Older monuments were reused, and the newer constructions attempted to copy their distinctive features. This unusual sequence is compared with the reuse of prehistoric monuments in the same region during another period of resistance: the first millennium AD, when established beliefs were challenged by the spread of Christianity.

Keywords: *Northern Scotland, Clava Cairns, Orkney-Cromarty Cairns, chronology, the invention of tradition, Bell Beakers, monument reuse*

1. Introduction

There are problems of scale in modern archaeology. Analogies can be drawn between societies thousands of kilometres apart, and those comparisons are valuable as a source of ideas. In most cases such studies compare living people in one region with extinct communities in another, but an equally productive approach is to compare areas which were closely linked with one another in the past. But how can researchers be sure that they are comparing like with like? This volume is dedicated to megaliths around the world, yet the term 'megalith' is a very broad category, and the world is an extremely large place. Even on the most local scale researchers depend on comparisons, but how far should these extend? And what happens when they prove to be misguided?

2. Background to the research

This paper begins with a conventional field project which never achieved its objectives. This was not for the usual reasons – lack of funds, lack of time, difficult landowners – nor was it discouraged by

colleagues, who were supportive throughout. The problem was that it was based on a false premise: the research design depended on the wrong comparisons. The aim was by no means original. It was to study two groups of chambered tombs in adjacent parts of northern Scotland and to investigate their place in the Neolithic pattern of settlement (for the definitive accounts of these structures see Davidson & Henshall 1991: 3-85; Henshall & Ritchie 1995: 20-76, 2001: 36-75, 80-97). The work had an excellent pedigree as Gordon Childe (1944) had studied the monuments on the ground and Stuart Piggott (1956) sampled five of them by excavation.

These sites were located on opposite sides of an estuary of the North Sea, the Moray Firth. They conformed to two long-established types: Orkney-Cromarty cairns to the north of the estuary and Clava Cairns to the south (Henshall 1963: 12-44, 45-120). Although different names had been proposed by different researchers, there was general agreement on how these structures should be defined. Even more important were their mutually exclusive distributions which encouraged the idea that the two groups were contemporary with one another (Fig. 1). With the exception of certain components of the Clava tradition (including ring cairns and kerb cairns), all were passage graves and as such they were ascribed to the Neolithic period.

This is where comparison became important. The ground plans of the monuments were compared in some detail, but in order to date them more exactly they were matched with better known structures in

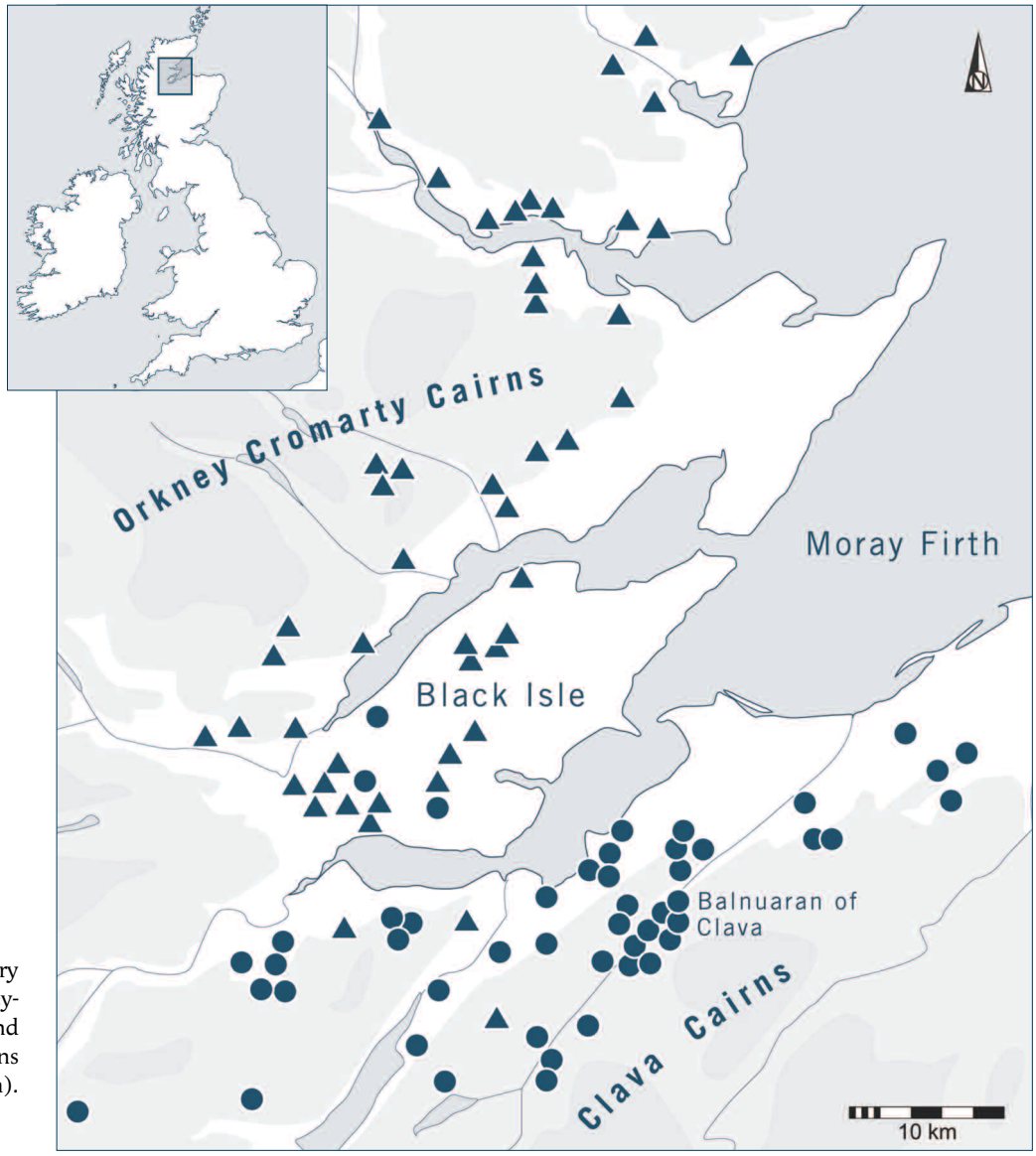

Fig. 1 – The complementary distributions of Orkney-Cromarty tombs and Clava Cairns (Drawing: A. Watson).

other regions. Some of those links were plausible: the long cairns were likened to earthen mounds elsewhere in Britain; the round cairns recalled the features of well-known structures in Ireland – but unfortunately the process did not end there. Clava Cairns were also dated by analogy with monuments in Brittany and Iberia, and specifically with sites in southeast Spain, an enormous distance away. Other parallels were claimed in Denmark. Similarly, Orkney-Cromarty cairns were compared with examples in western France and the Iberian Peninsula (Daniel & Powell 1949).

Those links were emphasized for several reasons. They helped to map the adoption of Neolithic architecture along the coastline of Europe but, just as important, they allowed researchers to construct a chronological framework. Successive accounts of Scottish monuments offered a wide range of possibilities. Perhaps the Clava passage graves were the earliest because they seemed closest to Mediterranean prototypes (Daniel & Powell 1949). Alternatively, circular monuments in the Orkney-Cromarty tradition might predate the others because a few of them were built into later long cairns. Structures belonging to both groups could have been inspired by passage tombs in Ireland. In turn, Clava Cairns might have been the precursors of similar monuments in Scandinavia. There were radiocarbon dates for Orkney-Cromarty cairns which fell in the 4th millennium BC (Davidson & Henshall 1991: 83-84; Henshall & Ritchie 1995: 74-76, 2001: 123-125), but none for Clava passage graves. The same problem arose with the artefacts found. Structures north of the Moray Firth produced Neolithic ceramics as well as later artefacts, but the Clava Cairns lacked any useful associations. Faced with such limited evidence, most authorities concluded that the two traditions had coexisted.

There were good reasons for uncertainty, but for a while the similarities seemed to outweigh the differences between these types. Both groups of passage graves were organized in a similar way. Each was associated with a round mound or cairn and had a central chamber spanned by a corbelled roof. In the Orkney-Cromarty cairns, the passage was interrupted by thresholds, a feature absent in the Clava Cairns (**Fig. 2**).

There were some complications which made comparison more difficult. Unlike their northern neighbours, the Clava passage graves were surrounded by freestanding stone circles (Burl 2000: 235-242), and a small number of Orkney-Cromarty round cairns were eventually incorporated into long cairns (Henshall & Ritchie 2001: 104-108). Just as those long cairns could be compared with sites elsewhere in Scotland, a second group of Clava Cairns resem-

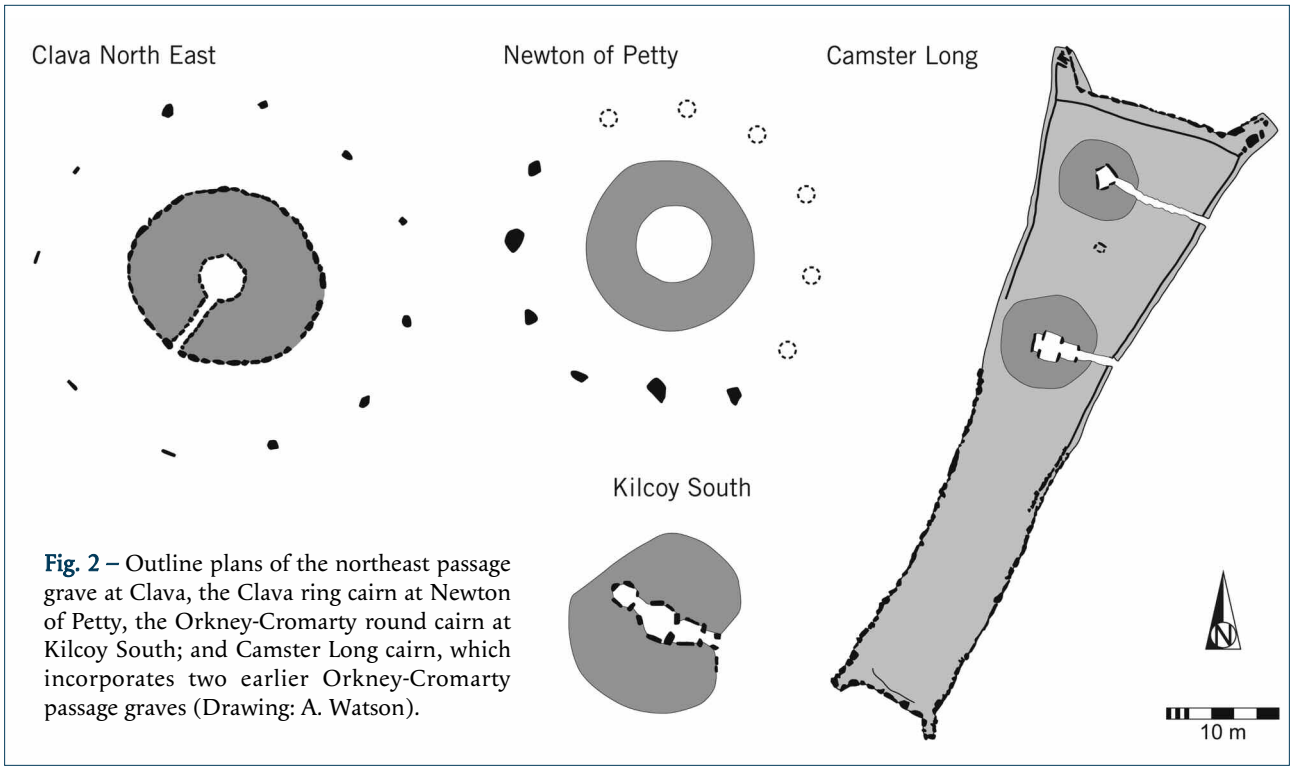

Fig. 2 – Outline plans of the northeast passage grave at Clava, the Clava ring cairn at Newton of Petty, the Orkney-Cromarty round cairn at Kilcoy South; and Camster Long cairn, which incorporates two earlier Orkney-Cromarty passage graves (Drawing: A. Watson).

bled structures in a neighbouring region to the east where a ring of monoliths surrounded an open enclosure defined by a rubble wall. Such structures, called 'ring cairns', seem to lack an entrance and were never roofed (Henshall 1963: 24-27; Burl 2000: 215-239). None of the comparisons made the evidence any easier to understand but it remained the general view that all these elements were of Neolithic date.

Twenty-five years ago, most researchers were happy to accept this interpretation and followed it in planning their work. The original idea was to re-excavate the type site at Clava to look for radiocarbon samples which would not have been collected during Stuart Piggott's project in the 1950s (Piggott 1956). New surveys were organized to investigate the siting of both types of cairn, and these were supplemented by field walking to identify where people had lived at the time when the tombs were built. These methods were completely straightforward and were influenced by other projects, especially Colin Renfrew's book Investigations in Orkney (Renfrew 1979).

3. Dating evidence

The first results came as a shock. It was accepted that Orkney-Cromarty cairns dated from the Neolithic period, with an emphasis on the 4th millennium BC, but excavation at Clava itself showed that both kinds of monument there – two passage graves and a ring cairn – were built a thousand years later (Bradley 2000: 160-161). Subsequent work at stone circles had the same outcome (Bradley 2005: 47-49; Bradley & Clarke 2016: 20-21). None of the monuments was Neolithic; they were associated with radiocarbon dates in the Chalcolithic and even the Early Bronze Age. Comparisons of the conventional kind had been misleading.

It was necessary to reconsider the premises on which the traditional scheme was based. Three features seemed more important than originally supposed. The Orkney-Cromarty cairns shared their circular ground plans with the Clava passage graves south of the Moray Firth, but the latter were retained by kerbstones while the the former normally used drystone walls. The orientations of the passages differed even more fundamentally. The earlier Orkney-Cromarty monuments faced the rising sun but the later Clava Cairn structures were orientated towards the southwest (Scott 2016). At the Clava type-site, both the passage graves were aligned on the midwinter sunset. The same orientation has been identified in other cases.

4. Structural sequences: the evidence of Orkney Cromarty Cairns

To the north of the Moray Firth, the construction and use of passage graves followed a complex sequence (Henshall & Ritchie 1995: 37-62, 2001: 56-75). Most of the circular cairns were bounded by walls. The passage and chamber were defined by orthostats, and the chamber itself seems to have been spanned by a corbelled roof. The rear wall was generally the most conspicuous feature (**Fig. 3**). At some monuments there are indications of successive floors. The simple ground plans of these monuments can be completely deceptive, and it is known that some structures were expanded and rebuilt. Detailed surveys have identified internal walls or kerbs, and in some cases the position of the chamber does not conform to the overall plan of the monument suggesting that the cairn could have been modified whilst the site remained in use. It seems likely that many of the Orkney-Cromarty round cairns on the Scottish mainland were multi-period structures. This has been confirmed by excavation.

Fig. 3 – Corbelled chamber at Garrywhin Orkney-Cromarty passage grave (Photo: R. Bradley).

The sequence of construction was even more complex when the remains of older buildings were incorporated into monuments of a different form. The clearest evidence comes from sites where round cairns were preserved within the fabric of long cairns. The best example is at Camster where two passage graves in a small cemetery were masked by a monument of this type (**Fig. 4**; Masters 1997). This development was a particular feature of northernmost Scotland rather than the area close to the Moray Firth. The link between these two kinds of structure is particularly clear where well preserved long cairns feature chambers and passages exactly like those associated with circular monuments. Both groups could have been employed over a lengthy period and the few dates connected with their construction and use extend between 3800 and 3100 BC (Davidson & Henshall 1991: 83-84; Henshall & Ritchie 1995: 74-76, 2001: 123-125).

5. The monuments in three dimensions: the evidence of Clava Cairns

In retrospect, most comparisons between the monuments on either side of the Moray Firth were based on site plans, the first of which had been available for a century or more. In the case of the Clava Cairns, these analyses overlooked a vital detail: the surveys represented the monuments in two dimensions; different issues arise when they are considered in elevation.

The later Clava monuments were quite unlike those in the Orkney-Cromarty tradition. In common with the local ring cairns, almost all the features of Clava passage graves were graded by height, with the lowest elements to the northeast and the highest towards the southwest (**Fig. 5**; Bradley 2000: 44-47). The tallest uprights were set on either side of the entrance. It is sometimes claimed that this is a specific characteristic of sites in the north of Scotland, but that is incorrect. Close to the east coast, a graded ring of monoliths was erected in about 3000 BC and inside a nearby earthwork at Balfarg a circle of upright posts followed the same convention. This was associated with Late Neolithic pottery and with radiocarbon dates between about 2900 and 2700 BC (Gibson 2010; Copper *et al.* 2018). A much better-known example is the sarsen horseshoe at Stonehenge which increases in height towards the position of the midwinter sunset, and is dated to

Fig. 4 – Orkney-Cromarty passage grave at Camster with Camster Long cairn in the background (Photo: R. Bradley).

Fig. 5 – The northeast passage grave and stone circle at Clava (Photo: R. Bradley).

between 2620 and 2480 BC (Darvill *et al.* 2012). These dates are earlier than those for the Clava Cairns and suggest that their forms were influenced by architectural devices that originated before the Bell Beaker period.

These characteristics of Clava passage graves were emphasized in several ways. There were two such structures in the main cemetery at Clava, one of them aligned on the other. They shared exactly the same orientations and dimensions. Like the individual passage graves, the axis of the cemetery was directed towards the midwinter sunset. The main contrast between the chambered cairns was in their use of raw materials (Bradley 2000: 126-129, 215-216). Where the sun set towards the southwest there was a preference for red stone, but at the other end of the surviving row of monuments, lighter colours were preferred, especially rocks containing quartz. Here, the backs of these structures faced the sunrise. These distinctions were shared between the rings of standing stones and the kerbs of different monuments. They even extended to the rubble spread over the surface of the cairns, so that the southwestern passage grave was covered by more red boulders than its counterpart to the northeast. The fabric of the well-preserved passage graves at Clava emphasised the same features. The ring of

Fig. 6 – The orthostats supporting the corbelled chamber of the southwest passage grave at Clava (Photo: R. Bradley).

standing stones was built from locally available materials and individual monoliths were often matched with the nearest kerbstones according to their colours, textures, or shapes. If this circle was graded by height, so was the kerb itself. Even more surprising, the same convention applied to the foundation course in both chambers, which was lowest towards the northeast and increased in height towards the passage (**Fig. 6**; Bradley 2000: 44-45). The same feature is found at another well-preserved

monument of this type, Corrimony, where it was executed much more crudely (Piggott 1956: 174-184).

Excavation has established a distinctive construction sequence for the Clava passage graves (Bradley 2000: 160-168). The initial structure was built of glacial erratics and supported a corbelled chamber whose wall included similar material. It rested on a graded foundation of orthostats which led to structural problems so that sandstone slabs were introduced as levelling courses. A low entrance passage was spanned by lintels and the whole structure was masked by a spread of boulders that could have been collected on the site. These cairns appear to be supported by kerbstones set upright in the ground, but this is deceptive as they may not have been bedded in sockets and could simply have sunk under their own weight. Like the other components, the kerbstones were graded by height so that the entrances of both passage graves were flanked by massive uprights, while smaller slabs were propped against the cairn on the opposite side of the monument (Bradley 2000: 69). As a result, the mass of rubble was not properly supported. Once the material settled, the kerb might be pushed over, as happened at Corrimony (Piggott 1956: 174-184), but at Clava the builders avoided this problem by constructing a rubble platform against the edge of the kerb. This provided a kind of buttress, pinning the orthostats in place, but continued across the entrance, impeding access to the interior and masking the lower part of a lavishly decorated kerbstone (**Fig. 7**; Bradley 2000: 162-165).

The structural sequence at Clava is important for two reasons. The first is that the material of the cairn would have settled in a very few years, meaning that the kerb had to be supported – and the passage closed – after a very short interval. Where did the stone circle fit into the sequence? It is obvious that it bounded the outer edge of the platform and excavation showed that the monoliths were embedded in this feature so both structures must have been built together (Bradley 2000: 71-82). This means that the standing stones were erected after the tombs were built and probably when they were closed. Unlike Orkney-Cromarty cairns, such monuments had remarkably short histories.

6. Deposits of human remains in both traditions

Such short periods of use may be consistent with the deposits of human remains in the chambers. Again, there is a contrast between the two traditions. To the

Fig. 7 – The external platform buttressing the kerb of the southwest passage grave at Clava (Photo: R. Bradley).

north of the Moray Firth, the Orkney-Cromarty passage graves contained deposits of human bones (Henshall & Ritchie 1995: 50-59, 2001: 71-75). They had obviously been disturbed or rearranged and some were associated with layers of ash. Not many bodies remained intact but a few other groups of human remains retained their articulation. Early accounts emphasize the small size of the surviving fragments, although skulls do seem to have been preserved. There were sites where the bones had been exposed to fire, but little to suggest a cremation rite. Accounts of the first excavations suggest that there were successive deposits within the chambers and that some of the remains were placed on settings of slabs and others were buried underneath them.

Further settings of slabs closed a few of the chambers or passages. In some monuments, the interior was filled with rubble and the entrance was blocked using similar material. On the other hand, finds of Late Neolithic, Chalcolithic and Early Bronze Age artefacts – predominantly pottery and worked stone – show that the interiors of certain structures remained accessible, although they could have been exposed when the roof collapsed (Bradley 2000: 227-231; Wilkin 2016). Elsewhere, the chambers remained intact into recent centuries.

The evidence from the Clava passage graves is completely different. When they were investigated in the 1950s it seemed that the dominant mortuary rite was cremation (Piggott 1956) but radiocarbon dating has shown that the burnt bones were secondary deposits (Bradley 2000: 221-223). The only primary burial was an inhumation identified as a body stain (Piggott 1956: 182-183, 200-207).

There is an obvious contrast between the representation of the dead in both traditions of architecture, and this may well reflect the sequences on individual sites. Orkney-Cromarty cairns were associated with significant quantities of human bone. They may have been deposited over a protracted period, and that could be why the deposits were so disturbed. In certain cases, there are signs that they were placed there in sequence, but far more important is the evidence provided by the cairns themselves. Some had been modified or rebuilt and a few had been incorporated into larger structures. It is not clear when their chambers and passages were closed since people were able to leave artefacts in them a millennium after the original monuments were constructed.

Clava passage graves, on the other hand, seem to have been erected, visited and closed over a short period and there is evidence that the passages were blocked not long after the cairns were built. From then onwards, their main feature was the ring of stones that surrounded them. Again, people managed to re-visit the chambers during a later phase, but the evidence from Corrimony, whose kerb collapsed soon after it was built, suggests that they were the burial places of very few people and possibly only a single individual.

7. The monuments in the landscape: evidence from both traditions

The wider settings of these monuments illustrate other contrasts. The earlier Orkney-Cromarty cairns were commonly located in similar positions to one another, just outside areas of more productive land and sometimes overlooking them (Phillips 2002). It was important that the monuments should be illuminated by the morning sun, but there is little to suggest that any one time of year was especially significant. The forms of a small number of cairns might also have been influenced by the character of the local geology. The clearest example is at Camster, where an impressive long cairn shared the proportions of glacial moraines in the vicinity (**Fig. 8**).

The most striking feature was the siting of Orkney-Cromarty cairns in relation to prehistoric settlements. This has been difficult to investigate, but on the Black Isle, on the north shore of the Moray Firth, a programme of field walking took place in the 1990s, which confirmed what had long been suspected: the densest concentrations of worked flint and quartz were downslope from the chambered tombs and provided evidence of sustained occupation on the lower ground (Phillips 2002: 272-94). There were few, if any, artefacts closer to the monuments. It seems that the dead were kept apart from the living.

Clava Cairns are found in completely different settings. Here, the topography is less abrupt and there is more cultivated land. Almost all the monuments are associated with river valleys or

Fig. 8 – Glacial moraine resembling the profile of the nearby cairn of Camster Long cairn (Photo: R. Bradley).

basins. The most striking feature of these structures is their southwestern orientation facing the setting sun, which contrasts with that of Orkney-Cromarty monuments. Seven Clava passage graves are directed towards the midwinter solstice (Scott 2016: table 1).

In Northern Britain, the same alignment is a feature of other monuments between the Late Neolithic and the Middle Bronze Age. It influenced the positioning of enclosures, stone circles, and mounds (Bradley 2019: 193-199), but nowhere is it more clearly demonstrated than by the siting of Clava Cairns. Where they are associated with river valleys their distribution is confined to those sections running southwest; elsewhere they are absent (Phillips in Bradley 2000: 175-178). Although the sunset could be seen from other locations, this axis was of paramount importance. It is not surprising that it was also acknowledged by the grading of material forming the structures themselves.

The siting of Clava Cairns in modern farmland made them ideal targets for field walking. This revealed that the principal concentrations of worked flint and quartz were in the immediate vicinity of the monuments, with significantly fewer on higher ground or in the areas between them. In contrast to the Orkney-Cromarty tradition, the dead were kept close to the living and there was no obvious separation between the passage graves and settlement sites (Watson & Bradley in Bradley 2000: 185-216). Two observations support this argument. The cairns at the type-site at Clava were built on land with evidence of cultivation (Hoaen in Bradley 2000: 111-113), and a timber house containing Late Neolithic pottery was buried beneath a cairn on the edge of the Moray Firth (Simpson 1996).

8. Discussion: the diversity of megalithic architecture

Do these examples mean that megalithic architecture was so diverse that it loses its distinctive identity? Certain points can be taken for granted. As the term 'megalith' implies, both groups of structures were built of very large stones: so large, in fact, that their remains survive today. The Orkney-Cromarty monuments resemble architecture in other parts of the Europe, but the Clava Cairns, which were constructed long afterwards, are altogether exceptional and are more closely related to ring cairns and stone circles. That even applies to the passage graves in this tradition. At the same time, the people who built them must have been

conversant with more ancient constructions since equivalent sites on the opposite shore of the Moray Firth include Chalcolithic and Early Bronze Age artefacts. A recent study of the Beaker pottery associated with older monuments in Scotland concluded that it was more like the material found in settlements than the vessels buried with the dead (Wilkin 2016). It may, instead, have been used to serve food and drink, suggesting that ceremonies could have taken place at the monuments.

The area where the Clava Cairns were erected was almost devoid of older monuments, even though Neolithic artefacts have been found in some quantity. It follows that these unusually late megaliths were the first to be constructed there. They were a new development in a long-inhabited area. Clava passage graves were built where Orkney-Cromarty cairns would have been familiar in a neighbouring area but further to the east, monuments of the same kind had never been built. It is obvious where the people who constructed the Clava Cairns looked for inspiration. To the north they must have been aware of derelict chambered tombs, but elsewhere there were the first graded stone circles with their emphasis on the setting sun. Both kinds of architecture were associated with important ideas about the world, but these structures were very different from one another. In the new cairns at Clava their features were combined.

9. The past in the past

This account has said something about when Clava Cairns originated and the ways in which they were built but has not discussed the reasons why it happened in the first place. Combining the dating evidence with a detailed account of their architecture takes the discussion further.

Clava passage graves were built where there were local models to follow, but they were invented at a time when the inhabitants of northern Scotland were caught up in new developments. One was the appearance of Bell Beakers and another was the introduction of the first metalwork which was brought from Ireland. Now there were new ways of treating the dead, who were buried in barrows or flat cemeteries and accompanied by distinctive artefacts (Curtis & Wilkin 2019). The important point is that collective deposits like those associated with Orkney-Cromarty cairns no longer had the same significance. Recent studies of ancient DNA suggest that Britain was settled by people from continental Europe (Bradley 2019: 154-155). Before that time, during the Late Neolithic period, the principal networks had been more restricted. They extended along the North Sea coast and between Ireland and the west of the country (Bradley *et al.* 2016).

Although the available dates leave much to be desired, it seems clear that the Clava tradition developed in the late 3rd millennium BC at a point when the local inhabitants would have been exposed to unfamiliar people, practices and beliefs. In other parts of Britain enormous monuments were built. For the most part they were aggrandized versions of structures of kinds that already existed in these areas. This horizon of monument construction can hardly be attributed to newcomers who would have been unfamiliar with such styles of architecture, but the appearance of strangers could have led to a reassertion of traditional ideas. It resulted in the reuse of older monuments for burials and deposits of artefacts.

The Clava Cairns were located in a pivotal position in relation to wider networks. They were linked to the North Sea coast by the Moray Firth, but they were also connected to Ireland along an overland route leading between the east and west coasts of Scotland. These links are clearly emphasized by styles of pottery and metalwork. At the same time, these particular monuments were at the edge of the region which experienced most of the new developments. South of the Moray Firth there are numerous Beaker and Early Bronze Age graves (Curtis & Wilkin 2019). To its north their distribution thins out, although Orkney-Cromarty tombs were revisited during this period (Bradley 2000: 221-224; Wilkin 2016).

If the Clava Cairns were built at a time when much was new, their distinctive structures made an explicit reference to the past. Neolithic structures became the focus for renewed attention. Even though their antiquity was unknown, they could have represented a specifically local connection with the past. That was true of chambered tombs, but the

same applied to graded circles, although they had developed more recently.

Of course, people did not think in terms of architectural blueprints like the measured surveys on which typologies are based. Nor is it likely that the forms of these monuments were explicitly compared with one another. It is clear that even the oldest passage tombs were accessible even if they were in poor condition, since datable artefacts were deposited inside them. People would have been aware of the basic configuration of structures with a link to the past. Perhaps this experience influenced the development of Clava passage graves. Their creation could have been a re-assertion of tradition at a time when the stability of society was threatened.

The argument applies to the passage tombs rather than the ring cairns commonly found with them, but the distinctive structure of those latter monuments provides another clue (**Fig. 9**). They were freestanding enclosures and never had a roof. Their inner and outer kerbs were graded by height and again they were enclosed by standing stones. They conformed to a tradition which was more evident in areas further east (Burl 2000: 215-239). At the same time their distinctive configuration was determined by the connection between their architecture and the setting sun.

When the inhabitants of the inner Moray Firth wished to stress their links with a past that they could never have known, they had their experience of local passage tombs to draw on – not because of a special interest in the best ways of building them but because it conformed to some notion of their history. Instead of aligning these structures on the rising sun, now they were directed towards the sunset. This led to difficulties in reconciling the structural requirements of a corbelled monument with the configuration of a graded circle. That is why so many Clava passage graves were structurally unstable.

By combining these two conceptions the builders took certain risks. The chambers of the passage graves were supported on an uneven foundation: like the other elements the orthostats on which they rested were graded according to height. Similarly, the appearance of the kerb resembled a ring of monoliths and was higher and more massive on one side of the circuit than the other. That introduced further problems. Perhaps the people who built Clava passage graves had no experience of constructing a monument of this kind and these buildings

Fig. 9 – Interior of the ring cairn in the megalithic cemetery at Clava (Photo: R.Bradley).

represent an awkward synthesis of two very different kinds of architecture (**Fig. 10**). It is possible that such structures were never meant to remain intact for long. Perhaps they were contrived for the moment and with no idea of a future in mind.

If these arguments have any merit, they suggest that there really was a relationship between Orkney-Cromarty monuments (which are accepted as classic passage tombs) and the late and eccentric copies represented by Clava Cairns. For that reason, both groups can be admitted to the corpus of megalithic architecture, but they were towards opposite ends of a continuum. They did not conform to a single style, and the later structures were a unique improvisation made under particular circumstances. They represent an invented tradition rather than one that had been rediscovered. That is why it is less troubling that they should be associated with a new mortuary rite, and located in different parts of the landscape from the older tombs.

If the later monuments were unusual, so were the circumstances in which they were devised, but that situation may not have been unique. David Clarke (2007) has drawn attention to the large number of prehistoric monuments in Scotland which were reused during the first millennium AD. Standing stones could be decorated with motifs shared with metalwork; cemeteries developed alongside other examples; and two settings of monoliths erected in the Bronze Age were associated with a hoard of silver artefacts, and so was a ring cairn or round barrow.

Clarke interprets the reuse of ancient structures as an expression of regional identities in reaction to change. Communities emphasized their links to the past by returning to local kinds of monuments, no matter how little they knew of their original roles. He interprets this development as an assertion of pagan beliefs in response to the spread of Christianity. This response may be similar to that which encouraged people to build Clava Cairns in an archaic style of architecture.

There is even a link between these separate developments. In 1994, excavation on the type-site at Clava encountered a cremation burial beside

Fig. 10 – The northeast passage grave and stone circle at Clava (Photo: R. Bradley).

the central ring cairn. It was deposited beneath a setting of slabs between AD 560 and AD 890 (Bradley 2000: 56-59). If a thousand years separated the construction of Orkney-Cromarty tombs from that of Clava passage graves, in this case the interval was more than twice as long. Such extended histories limit the comparisons on which studies of megaliths depend.

Acknowledgments

I must thank the organizers for inviting me to speak at the conference and for their understanding when family illness prevented me from attending. I am especially grateful to Chris Scarre for giving this paper in my absence. I must thank Aaron Watson for drawing Figures 1 and 2 and Aaron and Ronnie Scott who revisited these monuments with me before the article was written.

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Chris SCARRE, Luc LAPORTE

Megaliths from north and northwest France, Britain and Ireland

Abstract: The megalithic monuments of northern France, Britain and Ireland drew upon a diversity of materials, including stone, timber, earth, turf, and unbaked clay, to create a series of structures that were themselves often highly mutable, subject to additions and modifications over periods extending across several centuries. Northern and western France saw an early development of Neolithic monumentality in the long mounds which appeared during the second quarter of the 5th millennium BC. In northwest France, these were progressively combined with different, though contemporary, forms of burial chamber and surrounding structures. Those chambers were first dug into the subsoil but, after 4300 BC, mainly stood above ground. The arrangement of the megalithic blocks in these chambered tombs can be compared with that of the stone rows for which this region of France is especially famous. Unilinear models cannot fully account for the sequence and diversity of chambered tombs, and some supposedly later types, such as *dolmens angevins*, may indeed be partly contemporary with the passage tombs. The first Neolithic monuments of Britain (early 4th millennium BC) drew culturally on their north French antecedents but did not copy them exactly; the concepts and features of megalithic monumentality introduced from the continent were transformed to create new insular traditions. Neolithic societies of western Britain and Ireland developed specific types of funerary monument (portal dolmens, court cairns) followed, towards the end of the 4th millennium BC, by a florescence of megalithic art in the passage tombs of the Boyne Valley in Ireland. Late 4th millennium megalithic traditions in northern France followed a very different pattern with the appearance of gallery graves (*allées sépulcrales, sépultures à entrée latérale*) their elongated chambers perhaps modelled on contemporary house forms. These tomb types continued to be built into the 3rd millennium BC but find no strict parallel in Britain or Ireland, where the primary focus switched instead to ceremonial monuments including stone circles and henges.

Keywords: *megaliths, Neolithic, France, United Kingdom, Ireland*

Among the regions of the world with megalithic monuments, northern France, Britain and Ireland hold a particularly prominent place. It is here that some of the most famous of all megalithic monuments are to be found: Carnac in Brittany, Newgrange in Ireland, Stonehenge in southern England. Northwest Europe was also one of the first regions of the world in which megalithic monuments were studied, surveyed and excavated. Indeed, two of the first recorded excavations of megalithic tombs took place, by coincidence, in the same year in successive months, led by the poet Titia Brongersma at Great Hunebed D27 at Borger in June 1685, and by landowner Robert le Prévôt at Cocherel in Normandy in July (Bakker 2010: 54-56; Schnapp 1996: 268-289). Both interventions resulted in the recovery of human skeletal remains and helped underpin the argument that these were burial places. It was not only tombs that became the subject of scholarly interest. In the 1660s, the English antiquarian John Aubrey had produced the first measured plans of the stone circles of Avebury and Stonehenge. Thus, by the end of the 17th century, the rich and diverse character of the megalithic monuments of northern France, Britain, and Ireland was already recognized, including both burial monuments and standing stones in various configurations.

Subsequent research and fieldwork have provided remarkable insights into the character and chronology of these monuments and the societies by and for whom they were constructed. We know that they range in time across a period of three or more millennia, and in size and sophistication from modest individual standing stones and 'boulder burials' to the chambered tombs of the Boyne Valley, the stone rows of southern Brittany, and the stone circles of Britain. Two other features must also be underlined. First, we are increasingly aware that many of these monuments achieved their final form through a process of addition and modification; they were not necessarily built to a pre-determined design. This discovery is partly the outcome of improving excavation techniques, which have also shown that the mounds and banks associated with many megalithic structures were not unstructured dumps of material but were carefully designed and built, with their own internal architecture. And second, although the focus of this paper is 'megalithic' monuments, the use of large stone blocks is only a part of a wider practice involving other materials. The role of earth, turf, chalk and rubble in forming banks and cairns has long been recognized; dry stone was used alongside or instead of megalithic blocks. The importance of timber has also been increasingly brought to the fore since the middle of the 20th century through excavation and the examination of aerial photographs. One recent survey of Scottish Neolithic timber monuments suggested that there may originally have been as many as there were stone or megalithic examples (Millican 2016). To these materials we must now also add unbaked clay, recently discovered in a Middle Neolithic settlement context at Lillemer in northwest France (Laporte *et al.* 2015a).

The scale of Neolithic construction with walls of unbaked clay, or turf blocks, is still difficult to evaluate. Such structures are often hard to identify, and they remained for many years undetected in continental Europe (Laporte & Bocoum 2019: 402). They are particularly liable to degrade, in contrast to structures of stone, and leave few traces of a cut feature, unlike those of wood. In addition to those that have long been known in Britain and Ireland, they are scattered along the whole of the Atlantic façade of Europe, not only in Brittany but also north of the Gironde estuary (Sainte-Lheurine: Burnez & Louboutin 1999; Burnez *et al.* 2003), in the Basque Country and Galicia (Chousa Novo 1: Bóveda & Vilaseco 2015), and in southern Portugal (Anta Grande de Zambujeiro). In Normandy, notably at Fleury-sur-Orne, recent rescue excavations have highlighted the role of such hitherto unknown structures of unbaked clay. They offer an origin for certain architectural forms that, during the 5th millennium, came to be exclusively manifested in stone (Ghesquière *et al.* 2019). Around the edges of the Golfe du Morbihan it is possible that earth walls of this kind could have structured the impressive masses of hydromorphic clay that contribute so substantially to the monumentality of the Tumulus de Saint-Michel or Le Moustoir (Galles 1862, 1864; Cassen 2009). It might also help to explain the presence within such monumental massifs of several megalithic chambers devoid of any other

The clay binder: a link between megalithic funerary architecture and monumental non-megalithic architecture based on examples from Champagne (France)

Vincent DESBROSSE, Julia WATTEZ

The use of clay-based binder is demonstrated in some European megaliths. Examples are rare, but they confirm this use in a vast area stretching from Denmark (Dehn & Hansen 2006: 44-46) to the Iberian Peninsula (Kunst & Arnold 2011; Laporte *et al.* 2014: 477-478). No case had previously been reported in the Champagne region (**Fig. 1**).

In 2009, the discovery of clay binder in a single building at Pont-sur-Seine led us to investigate this subject. The clay binder had been used in the foundations of the largest building, dated to the Late Neolithic (3500-3000 BC; Desbrosse 2018) (**Fig. 2**). The undisturbed fills have shown that its main use was to bind sandstone blocks (**Figs. 3** and **4**). The layout showed mastery of this technique, however

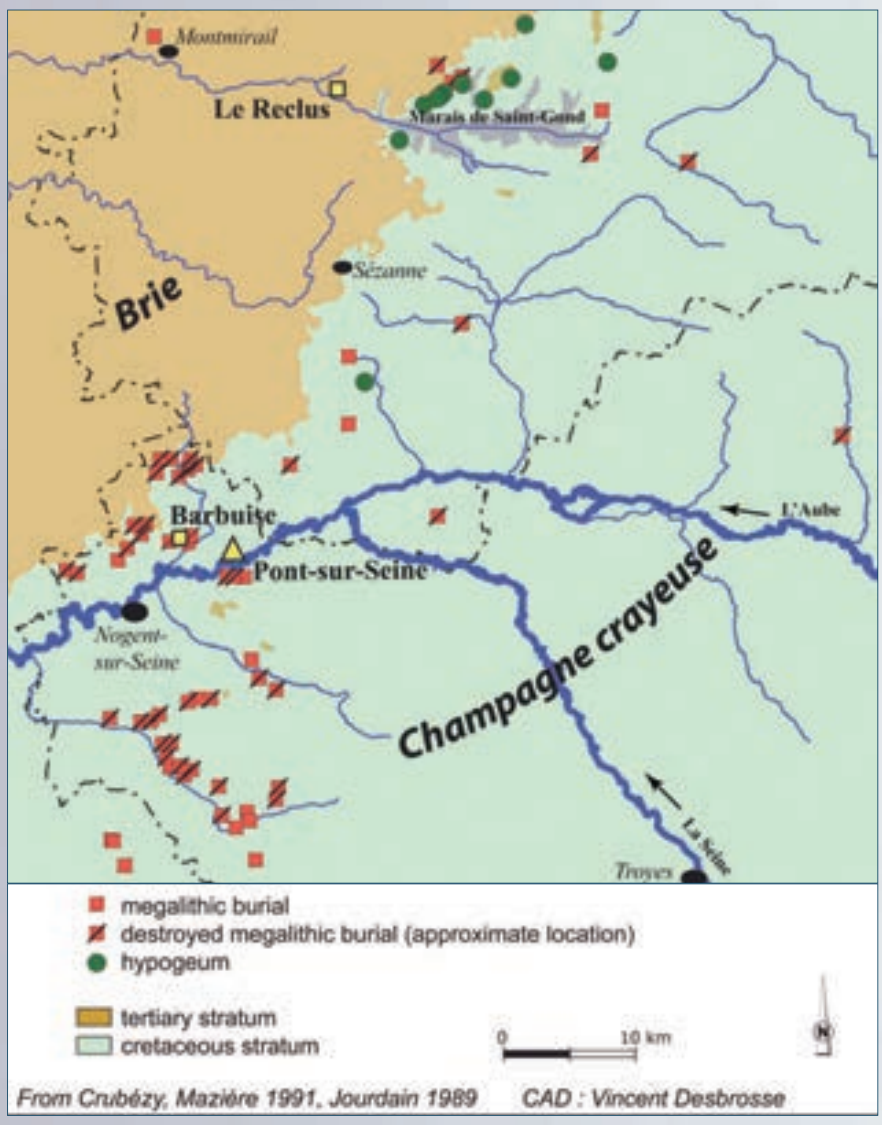


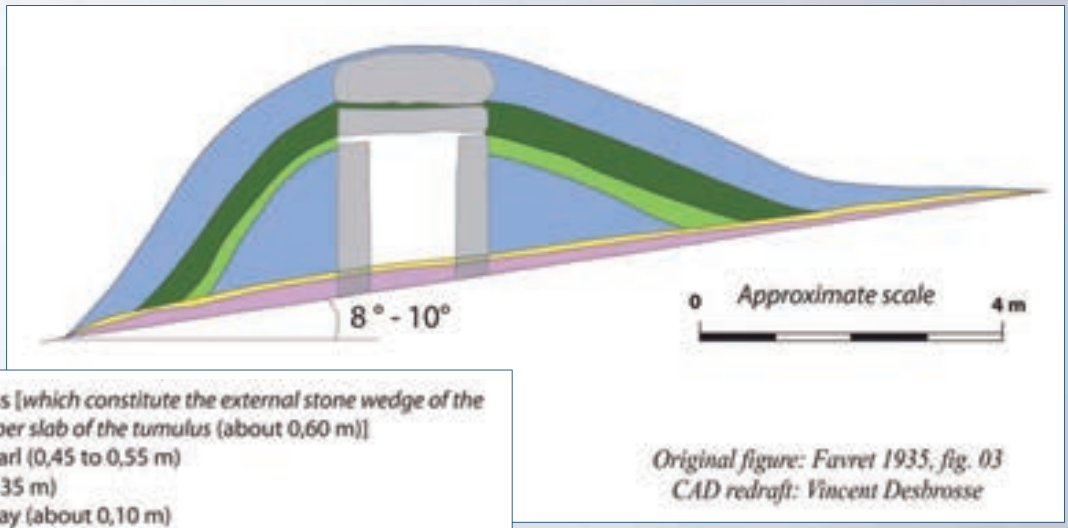
Fig. 1 – Location of collective burials (DAO : V. Desbrosse).

Fig. 2 – Vertical photograph of building 27 showing trenches yielding yellow ochre clay (Photo: f.canon@vertical-photo.com, Inrap).

Fig. 3 – Section of structure 1810 (Photo: A. Gadaut, Inrap).

Fig. 4 – Section through the foundations of the entrance threshold 2023 (Photo: V. Desbrosse, Inrap).

Fig. 5 – Section of the passage grave of Le Reclus (commune of Bannay).



its use has not been identified at other domestic sites in the region. Settlements from this period being little known, our research turned towards funerary architecture. Documentation of dolmens is patchy and often old, but the use of yellow clay is nevertheless confirmed in the construction of two megalithic monuments located within a radius of 40 km around Pont-sur-Seine.

1. Passage grave of Reclus, Bannay (Marne) (Fig. 5)

When, in November 1931, the Abbot Favret excavated the passage grave of Reclus near the village of Bannay (Marne), this tomb had not been subject to any intervention since its abandonment during the Neolithic. The megalithic passage is built within an rectangular grave mound. The cross-section excavated inside the monument revealed that '*the builders had first established a strong bed of lime, 40 to 60 cm or more in thickness, covered by a 10 cm thick layer of pale-yellow clay. On top of and in part inside this base, they raised the monument*' (Favret 1935: 10). Inside the chamber, '*in part in the pale-yellow clay had been set a pavement made of slabs gathered from the rough limestone formations nearby*' (Favret 1935: 14).

2. Dolmen des Grèves de Frécul, Barbuise (Aube) (Fig. 6)

In 1963, the extension of a gravel quarry in the Sine Valley, led André Lemoine to undertake the excavation of the Dolmen des Grèves de Frécul. It was very damaged: the chamber, marked by three surviving orthostats, no longer contained any bones and the previous explorations had destroyed most of its floor. However, around the edges was still preserved '*a paving made of small jointed slabs laid on a course layer of clayish earth, 2 to 3 cm thick*' (Gordien *et al.* 1964: 9). The excavations undertaken around the megalithic blocks within a 6 m radius revealed no extension of this layer beyond the chamber. Yet, the former presence of a mound could be assumed from several indications: the topography, a stone kerb and the arrangement, in a circle, of six Iron Age graves.

3. Conclusion

The technical mastery evidenced in the foundations of Haut de Launoy led us to believe that this could not be a unique example and, indeed, the archaeological record offers two parallels within a 35 km radius. The visual determination (yellow clay) is identical in each case and this material is always associated with stones. Those monuments have different architectures, but they have in common the fact that they do not rest upon chalky substrate (shingle at Barbuise and silt at Reclus), which probably called for a specific preparation of the foundations. Collective burials in chalk usually have no pavement (e.g., the passage tomb of Hayettes in Congy or hypogea), with some exceptions (e.g., the dolmen of the Pavois in Saint-Nicolas-la-Chapelle, but without clay binder). However, the presence of binder only in the foundations may be due to taphonomic bias, and we cannot exclude the possibility that the binder might also have been used in the tomb elevations. The colour selected, and the custom itself, might be cultural markers, since their use does not seem to be widespread in the Paris Basin.

Translated from French
by Marie-Lou Lanier

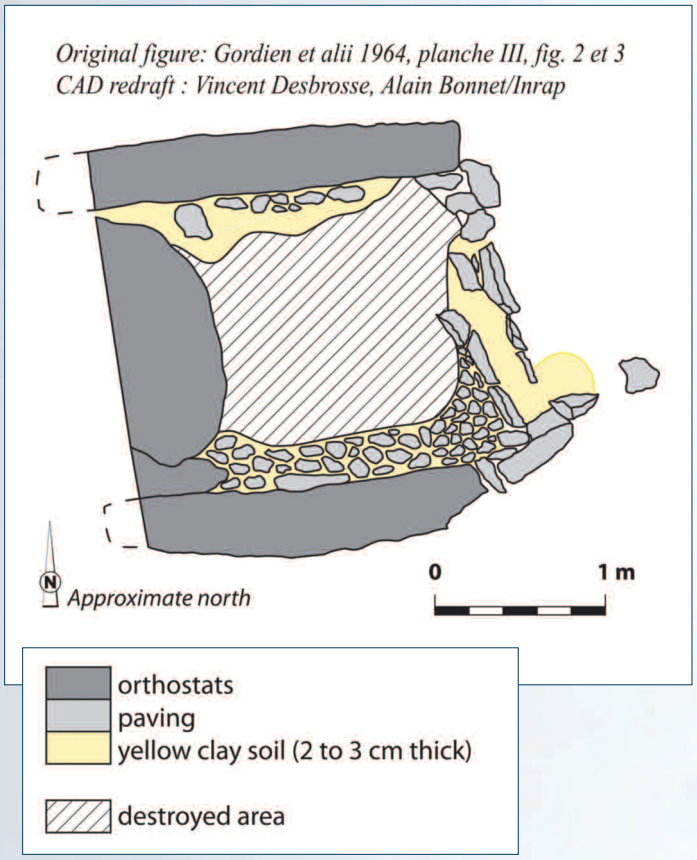


Fig. 6 – Floor plan of the dolmen of Les Grèves de Frécul (commune of Barbuise).

surrounding structure, progressively incorporated within a large single monument through a process of accretion attested in numerous structures of stone elsewhere (**Fig. 1**).

In western France, megalithic structures in a wide diversity of forms were built at different times from at least the second half of the 5th millennium BC to the beginning of the Bronze Age. Few other regions of Europe present such diversity over such a long period, spanning around 3000 years. The origin of the phenomenon, through the combination of multiple elements, is discussed in Chapter 54 of this volume (Laporte & Bueno Ramírez, p. 1173). The basic models were in place by the final third of the 5th millennium BC, between around 4400-4300 cal BC and 3800-3700 cal BC. The beginning of the 4th millennium was marked by a reduction in the construction of funerary monuments, although it is not always possible to identify at what moment activity ceased at each individual site. A second cycle of monument construction was initiated in the final third of the 4th millennium, in around 3300 cal BC. Beyond these broad outlines, detailed chronologies of the kind established for southern Britain are still not available for western France. Above all, the degree of transformation that each site experienced throughout the Neolithic must not be underestimated (Laporte 2010, 2011, 2012).

The diversity and duration of early monument forms in western France contrasts with the range of architectural traditions directly or indirectly linked to the Neolithic transition in Britain and Ireland, in the centuries following 3800 BC. The first megalithic monuments of northern France are substantially earlier than those of Britain and Ireland. In northern and western France, they developed in the centuries following the appearance of the first farming communities, the long mounds an echo, perhaps, of the long houses of those first farmers (of the late Bandkeramik and Villeneuve-Saint-Germain cultural groups; Laporte *et al.* 2018), along with boulder graves, square stone cists or boxes, as well as circular funerary huts converted into stone, and megalithic elements that could have been partly inspired by the stony landscapes of the Armorican peninsula. In western France there may also have been a contribution from the early Neolithic of southern France, and perhaps from certain Mesolithic traditions. In Britain and Ireland, by contrast, megalithic architecture is associated with the very first farming communities, falling within a century or so of the Mesolithic-Neolithic transition in several regions. The concept of megalithic architecture, along with specific features such as the passage tomb, the long mound, and perhaps the transepted chamber form, may have been borrowed from traditions already developed in northwest France during previous centuries (Scarre & Laporte 2021).

Combined and associated with the presence (or absence) of a covered entrance structure (portico or passage, either permanent or temporary), these different elements ultimately generated a series of standard features. These are easily identifiable in the arrangement of the blocks that form the framework of the funerary chambers in which the dead were henceforth deposited, not below ground but on the same level as the daily activities of the living (Joussaume 2003, 2016). It is the ruins of these monuments that form the basis of the entire descriptive vocabulary associated with them, and of the system of classification still in use today in

Fig. 1 – Section through the Tumulus de Moustoir, at Carnac (Morbihan). Watercolour by R. Pocard-Keviler du Cozlier, following excavations by René Galles (1864).

France, Great Britain and Ireland (Joussaume 1985; Scarre 2011). In western France, the form of each individual monument is very often the result of a complex history specific to that site and does not always allow the form of the monument to be deduced from the architecture of the burial chambers. That is still more true when one includes the landscape modifications, often extensive in scale, that accompanied the construction of above-ground structures. These frequently (though not exclusively) took the form of cut features that might also serve as quarries, and in some cases a series of quarries corresponding to a succession of separate architectural projects (Laporte 2013).

Among the most widespread of the early monument traditions was the passage tomb. Stone-built chambers (either dry-stone or megalithic) accessed by narrow passages and roofed either by capstones or corbelled vaults are found from the Gironde estuary to the Caen plain (Burnez 1976; Joussaume & Pautreau 1990; Giot *et al.* 1998). They typically contain only a limited number of inhumations (in their primary phase of use) with little accompanying archaeological material. This practice of multiple successive inhumations contrasts markedly with the large-scale collective inhumations, sometimes incorporating the remains of hundreds of individuals, found in later periods of the Neolithic in northern and western France (Chambon 2003). In some passage tombs, as at Ernes/Condé-sur-Ifs in Normandy, successive burials are laid out to respect previous inhumations, with little disturbance or mixing of skeletal elements (Dron *et al.* 2016). South of the Loire river in the same period, the passage tombs of Prissé-la-Charrière (Deux-Sèvres) contained a similarly restricted number of individuals, some of them placed in a sitting position with their back against the chamber wall. They exhibit successive manipulations, perhaps including the removal of certain skeletal elements, and a funerary practice much closer to that covered by the term 'collective burial' in the later phases of the Neolithic (Soler *et al.* 2004). Progress in palaeogenetic analysis indicates direct or indirect family links between the individuals (generally of all ages and both sexes) buried in each chamber, as might be expected had the chambers initially been intended for several members of a single clan or lineage (Gallay 2006; Fowler *et al.* 2022; Cheronet *et al.*, this volume, p. 1260). Whether each chamber had originally been constructed for a single individual, who was later joined by others, remains more difficult to determine. In every case, the number of bodies is very much smaller than the number of people who would have been involved in the building of these structures.

The distribution of passage tombs in Brittany is predominantly coastal, but reaches high densities extending inland around the edges of the Armorican Massif, notably in the Jurassic limestone landscapes of the Paris and Aquitainian basins. The distribution of passage tombs is complementary to that of the *dolmens à portique* in the Loire Valley (the *dolmens angevins*) and corresponds generally with that of the other types of site of the same period (enclosures, mines, settlements, etc.). This distribution of *dolmens à portique* and passage tombs is very different from that of the megalithic tombs of the later Neolithic, which are distributed in a much more random way across the whole of the Armorican Massif and the Paris basin, and are much rarer between the Loire and the Gironde (Kerdivel 2009). Passage tombs are also found to the north of the Massif central, between the Loire and the Seine in Burgundy, for example, where several groups of standing stones are present. Also contemporary with the passage tombs may be the chambered tombs with an entrance but no covered access, sometimes referred to as *dolmens simples.* These were for many years attributed only to the end of the Neolithic, but in the western foothills of the Massif central, for example in the Seuil du Poitou, some have yielded material belonging to the same period as the passage tombs, for example the dolmen of Bois Neuf or the dolmen des Goudours in the Creuse area (Joussaume *et al.* 2002, 2008).

Although more difficult to date, the settings of standing stones are also clustered in particular areas, for example in the Cholet area of the northern Vendée, around the edges of the Golfe du Morbihan, or in the Crozon peninsula. In Brittany, scarcely more than 15% of these settings include more than three stones, but these account for almost 85% of all the single free-standing standing stones individually recorded (Laporte *et al.* 2015b). The Carnac align-

aDNA and kinship in French Atlantic façade megalithic monuments

Olivia CHERONET, Daniel FERNANDES, Iñigo OLALDE, Nadin ROHLAND, Ludovic SOLER, Jean-Paul CROS, Jean-Marc LARGE, Chris SCARRE, Roger JOUSSAUME, David REICH, Luc LAPORTE, Ron PINHASI

1. Introduction

From the mid 5th millenium BC, the Neolithic people of western France began to build megalithic burial monuments. Numerous individuals were often deposited within single monuments. This practice spread across the continent and megaliths can be encountered in landscapes from Iberia to Scandinavia and beyond. Despite their ubiquity, the question remains of **who were the people selected for burial within megalithic monuments?** As a consequence of the high logistical cost associated with their construction, it could be suggested that these constructions were the resting places of the elite members of the community. Furthermore, individual structures may have been reserved for the remains of individuals from the same groups (i.e., families, lineages or clans).

Recent advances in our ability to obtain and analyse whole genome aDNA data now enable us to shed some light on this question. By obtaining genetic data from the skeletons found in the monuments, it is possible to determine their relatedness. A previous study on megaliths from the British Isles and Scandinavia was able to detect familial relationships between individuals buried in the same monuments (Sánchez-Quinto *et al.* 2019), however a recent study of French megaliths found scarce evidence of kinship within monuments (Rivollat *et al.* 2020). By contrast, extreme levels of inbreeding and kinship between individuals in Irish monuments has led Cassidy *et al.* (2020) to strengthen the suggestion that megalithic monuments were the burial places of the elite.

In this study, we sampled a large number of individuals from three Middle and Late Neolithic megalithic monuments from the French Atlantic façade (**Fig. 1**). Nine individuals were sampled from Bougon's tumulus F0. This Middle Neolithic structure with ^{14}C dates ranging from 4700-4000 BCE is one of a group of five tumuli containing the remains of hundreds of individuals. A further 33 individuals were sampled from the Middle Neolithic Champ-

Fig. 1 – Location map of megalithic sites studied.

Châlon tumulus B, from each of its two chambers, B1 [dated to 4336-4005 BCE (OxA-9097)] and B2 [3973-3787 BCE (OxA-9595)]. Finally, 22 individuals were sampled from the Late Neolithic monument of the Pierre-Virante in Xanton-Chassenon. Using these samples, we have attempted to identify familial relationships within each of the monuments.

2. Methods and results

DNA samples were taken from petrous bones or teeth. These were then extracted and Next Generation Sequencing libraries were prepared following standard aDNA protocols, followed by a human DNA enrichment procedure and next generation sequencing. After a preliminary assessment of the data to remove samples with insufficient quality or visible modern contamination, they were subjected to a first set of relatedness analyses (Kennett *et al.* 2017). Relatedness was then re-analysed using a more sensitive method in the case of low-coverage aDNA data (Fernandes *et al.* 2017).

We obtained successful data for nine individuals from Bougon F0 (100% success rate), 21 from Xanton-Chassenon (95% success rate) and 19 from Champ-Châlon (56% success rate). The first set of relatedness analyses uncovered familial relationships in each of these three sites. The second, more sensitive, method confirmed these relationships. By combining this information with the detected mitochondrial and Y-chromosome haplogroups, we constructed the hypothetical pedigrees presented in **Figure 2**.

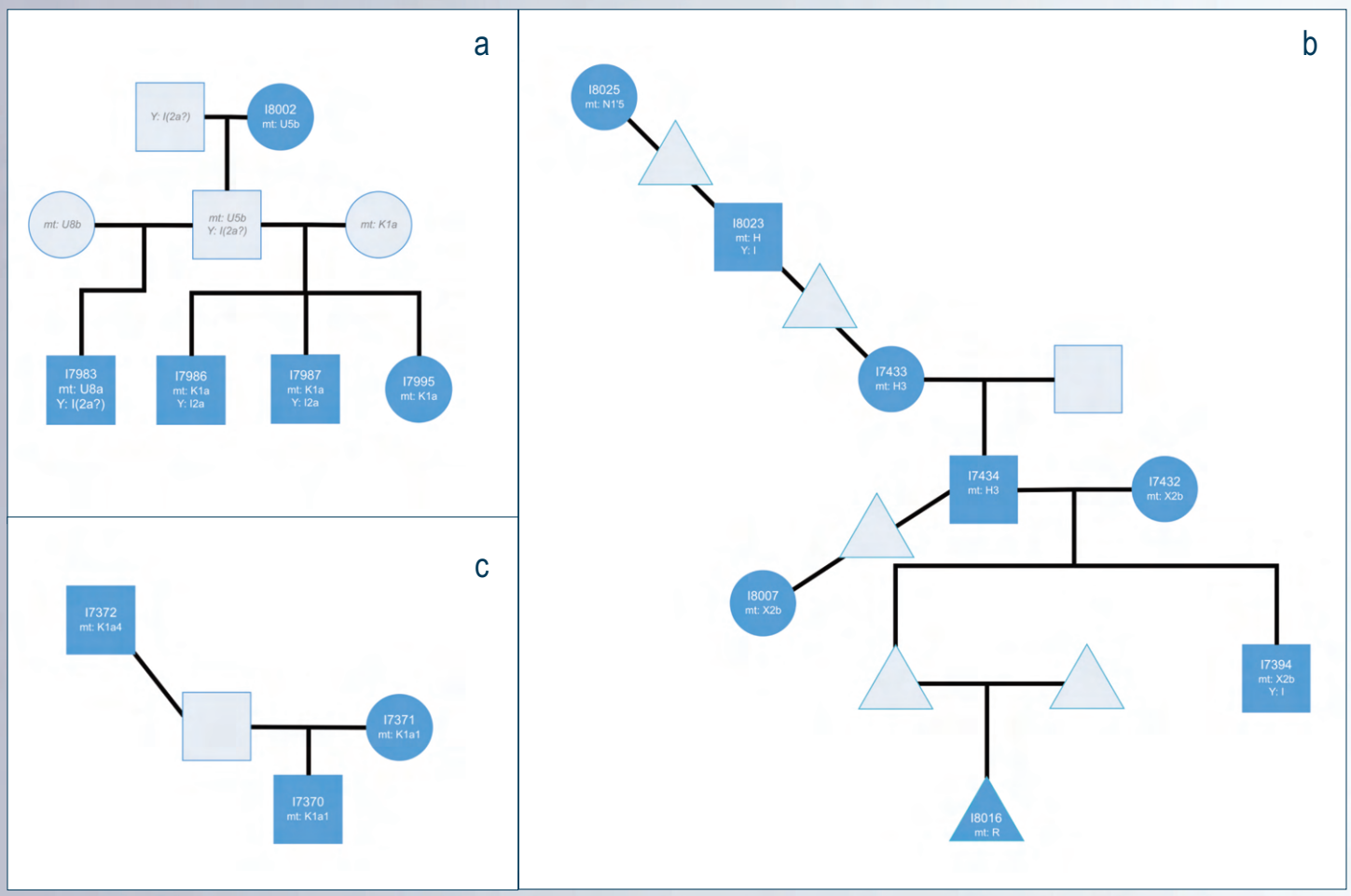


Fig. 2 – Hypothetical pedigrees of individuals sampled: (a) at Bougon F0 (Deux-Sèvres), and (b-c) at Champ-Châlon B (Charente-Maritime).

3. Discussion

The genomic analyses presented here have revealed the presence of multiple generations from the same family in these three Neolithic megaliths. In addition to the previously published work by Sánchez-Quinto *et al.* (2019), this strengthens the argument that these structures were built to house the remains of specific lineages. Nevertheless, in the three studied structures we also found numerous individuals with no apparent familial ties. This may be the result of the presence of genuine non-relatives, or a sign of the limits of the methods presently available to us.

Interestingly, patterns were slightly different in the Xanton-Chassenon monument which, unlike the other two sites sampled, is from the Late Neolithic. In contrast to the two Middle Neolithic structures, where over 50% of individuals sampled showed some level of kinship, only 2 out of 21 individuals were found to be related in the later monument. Whether this is a site-specific pattern or a wider cultural trend associated with the Late Neolithic remains open to speculation and requires ^{14}C date confirmation. Champ-Châlon offered an interesting case with many individuals represented, found in two distinct burial chambers. However, the two family groups identified were spread across both chambers, suggesting the greater importance of the monument than the structures within, or intermarriages between families/groups.

These analyses are preliminary. Although the pedigrees presented are possible, they are not the only way to explain the relationships uncovered. The relationships here are the most cautious and do not include events of inbreeding, which may well have taken place. Precise radiocarbon dating of the related individuals may help further refine these patterns. Furthermore, the sites of Bougon and Champ-Châlon contain a number of other funerary structures, which, if sampled, may reveal further levels of complexity in the familial relationships of their residents.

ments and the partially submerged enclosures of Er Lannic are the most famous examples (**Fig. 2**). Recent studies of the Morbihan *département* reveal the existence of recurrent similarities in the way the stones are arranged within these settings. This applies whether they stand in rows in the open air or along the passage and chamber walls of passage tombs (Gouézin 2017). A row of standing stones has been exposed at the base of the eastern façade of the Barnenez long cairn in Finistère, which displays a structure similar to that of the standing stones along the walls of two of the eleven passage tombs enclosed within this cairn. At the foot of this eastern façade are large stones laid on the ground and covered by a bank; the stones would otherwise have been used to roof a passage (Laporte *et al.* 2017). On the island of Hoedic, the excavation of several alignments has shown the multiple remodellings to which these open-air settings of standing stones were subject throughout the Neolithic (Large & Mens 2008; Large 2015). Further, while some standing stones, such as the large orthogneiss stelae of the golfe du Morbihan, are frequently found re-used in passage tombs, other settings were established on the ruins of older megalithic burial monuments (as at Le Manio and Château Bû; Bailloud *et al.* 1995; Briard *et al.* 1995).

In western and northern France, the term 'passage tomb' covers a diverse set of architectures without close parallel in Britain and Ireland, or northern Europe more generally. Some chambers of entirely dry-stone construction above ground and buried under a mound enclose a space similar to that of a silo: a grain store for the dead (Laporte *et al.* 2011: 299). Others built solely of large blocks of stone take the form of a large cist (**Fig. 3**). Between these two extremes, numerous other forms are found which vary in the provision of an access. In Brittany, as well as in Normandy and on the plains of west-central France, there exist small circular cairns tightly wrapped around a circular chamber accessed via a very short passage. Some of these were later incorporated into much larger and more complex monuments, sometimes including several burial chambers (Scarre *et al.* 2003; Joussaume & Laporte 2006). These circular chambers are generally roofed

Fig. 2 – a. The stone alignments of Kerzerho at Erdeven (Morbihan); b. The menhir of Champs Dolent at Dol-de-Bretagne (Ille-et-Vilaine) (Photos: L. Laporte).

Fig. 3 – '*Tombes à couloir*' within the monument of Barnenez, some roofed by a capstone, others by a corbelled vault (a: Archives du Laboratoire Archéosciences; b: after Giot 1987; c: photo: L. Laporte).

Fig. 4 – The *dolmen angevin* of La Madeleine at Gennes (Maine-et-Loire) (Photo: L. Laporte).

by a corbelled vault, since they are built in dry stonework, in contrast to the polygonal chambered tombs whose edges are defined by vertical stabs. In structural terms, the *dolmens angevins* present almost the complete opposite, being constructed of enormous stone slabs that form a quadrangular chamber, entered through a narrow trilithon porch in the centre of one of the short sides of the cairn which closely wraps around the megalithic structure (**Fig. 4**; Gruet 1967; Joussaume *et al.* 1994). The small circular monuments are generally attributed to the second half of the 5th millennium BC, or even earlier according to some specialists, whereas the *dolmens angevins* may belong, rather, to the first half of the 4th millennium BC. Unlike the types of tomb already referred to, *dolmens angevins* are almost always isolated and were never incorporated into later larger monuments.

An 'evolutionist' model would derive the *dolmens angevins* from the passage tombs, but this would be thrown into question if some of the passage tombs with quadrangular chambers proved to have been initially furnished with a short lateral passage similar to the axial portico of the *dolmens angevins*. The question is particularly relevant in the case of the *dolmens angoumoisins* where the passage has been lengthened in several stages, along with enlargement of the mound that encloses them (Ard *et al.* 2016). The *dolmens angoumoisins* in the north of the Aquitainian basin are characterized by finely worked chamber orthostats, surmounted by a heavy capstone. Like most monuments with a rectangular chamber accessed by a lateral passage (forming a 'T', 'p' or 'q' plan) they are generally enclosed by a circular or quadrangular cairn. The earlier of the two quadrangular chambers of monument B at Champ-Châlon in Charente-Maritime was originally situated within a circular cairn (Joussaume 2006). The second was enclosed within a quadrangular cairn which incorporated the earlier structure. At least one of the two quadrangular chambers in monument B at Bougon in Deux-Sèvres originally had a circular plan (Mohen & Scarre 2002). It is not impossible that the elongated form of the small cairn resulted here from the modification of an oval cairn with twin chambers, like the twin-chambered cairn whose plan has been revealed at La Bruyère du Hamel in Normandy. In its initial form, the monument of Pey de Fontaine in Vendée likewise had two chambers apparently constructed at the same time but enclosed, in this case, within a quadrangular cairn (Joussaume 1999).

Examples of such modifications are very numerous and diverse. At Trédion in the Morbihan, one of the side walls of the chamber and passage echoes the form of the external envelope of a small cairn which had previously enclosed a large trapezoidal cist containing a ceramic vessel of Castellic type. Such transformations cannot be described as simply a phenomenon of accretion. At Petit Mont on the Arzon peninsula in the Morbihan, for example, the walls of one of the chambers had collapsed at an early stage, perhaps even before the first burials were deposited. The rebuilding of the chamber involved a complete reconstruction programme, culminating in the building of dry-stone walls over the lower parts of the fractured orthostats, which were left in place (Lecornec 1994; Laporte 2010). There is evidence at other sites of the partial dismantling of monumental structures that were then reconstructed in a new architectural project very different from that which preceded it. In some cases, the use of the burial spaces can be dated, but it is very rare to find monuments for which *ante quem* and *post quem* can be established to provide an absolute chronology for each of these events. In order to fill these gaps, other types of argument must be employed, which are valid in themselves but do not always offer the precision that would today be desired.

It was, again, an 'evolutionist' reasoning, combined with formal resemblances to the more precisely dated transepted chambers of the Cotswold-Severn monuments in England, that led to monuments with transepted chambers on the south coast of Brittany being dated to the first half of the 4th millennium BC (Laporte & Tinévez 2004; Scarre & Laporte, in press). These were considered more complex and more elaborate than passage tombs with simple circular or rectangular chambers. Indeed, the monument of Quélarn in Finistère illustrates that sequence: the transepted chambers were added to either side of a long quadrangular monument already furnished with three rectangular and compartmented chambers. All the passages open on the same side of the structure regardless of the different phases. That is the usual pattern. On the other hand, the passages

of the 12 circular chambers contained within the monument of La Hogue at Fontenay-le-Marmion in Normandy, open in radiating fashion all around the outer kerb of the cairn (Joussaume & Laporte 2006). At Barnenez in northern Brittany, recent analysis of the dry stonework indicates that the monument probably originated as a series of separate individual or paired chambers, ultimately combined into a single long mound that was 72 m long, up to 25 m wide, and 8 m high (Cousseau 2016). At Prissé-la-Charrière, extensive excavation of the 100 m-long mound, incorporating two passage tombs, has demonstrated that one of these tombs initially stood alone within its own circular cairn. The second, by contrast, was added as an integral part of the long mound that was later built to cover both the circular cairn and an earlier rectangular monument to the west (Laporte *et al.* 2002; Laporte *et al.* 2021).

The sequence at Prissé illustrates a feature that is shared with the early passage graves of southern and eastern Britain, and that was indeed also present in the *tumulus carnacéens* of southern Brittany: the tension between linear and circular forms. At Prissé and Barnenez, individual circular cairns were later incorporated within long linear mounds. Circular chambered cairns also appear (from 19th century excavation reports) to have been the primary elements in the Carnac mounds of the Tumulus de Saint-Michel and Le Moustoir (Galles 1862; Galles & Mauricet 1864; Le Rouzic 1932). In Britain, likewise, circular structures have been found, or suspected, within a number of long mounds: at Notgrove in Gloucestershire, for example, or Ty Isaf in south Wales (Clifford 1937; Grimes 1939). The evidence is not always clear, however: although the circular cairn at Notgrove does appear to have been an independent structural element, at Ty Isaf, the kerb of the circular structure was tied into that of the Cotswold-Severn long mound within which it is situated. At Camster in northern Scotland, two passage tombs may each originally have stood within its own circular mound before the long mound enclosing them was built (Masters 1997). Whether they were indeed designed to be free-standing structures, however, or merely structural stages within the larger project, remains unclear.

Long mounds were a prominent feature of eastern Britain during the middle decades of the 4th millennium BC. They are conventionally divided into chambered and unchambered categories, the former notably the Cotswold-Severn tombs with megalithic chambers either on the axis of the mound or opening from the longer sides; the latter with timber structures. Such timber structures typically take the form of an elongated mortuary container, in which multiple inhumations were deposited, often during a relatively restricted period. At Wayland's Smithy, for example, Bayesian modelling by Alasdair Whittle and his team suggests that the 14 individuals may have been deposited in less than 15 years, during the earlier decades of the 36th century BC. A few decades later, an oval mound was added; then some 75 years after that, the monument was enlarged and remodelled to take the form of a Cotswold-Severn long mound with an axial megalithic chamber (Whittle *et al.* 2007a). Detailed chronological sequences such as this, made available by relatively large numbers of dates on securely contextualised samples (ideally the human remains themselves), have demonstrated that the short period of funerary use demonstrated for Wayland's Smithy is replicated at other earlier Neolithic long mounds, reminding us that megalithic monuments, once built, were enduring features of the landscape, but that the initial burial activity may have been relatively short-lived, in the order of one or two individual lifetimes (Whittle *et al.* 2007b).

Timber structures were a feature of many long mounds, whether in the form of burial container or as an edging or façade. The classic example is the Fussell's Lodge long mound in central southern Britain, where the trapezoidal long mound was edged by a continuous bedding trench, in which were found the impressions of the bases of timber posts measuring 0.40-0.45 m in diameter (Ashbee 1966). More massive timber posts (split oak tree trunks) dominated the narrow mortuary space on the axis of the broader end of the mound, although as at Wayland's Smithy, and in contrast to the megalithic chambered long mounds, this burial space would have been inaccessible once the mound was built. Hence timber and megalithic burial structures were not copies of the same concept in different materials, but imply different mortuary practices. In Scotland, too, timber monuments were an important element in early Neolithic monument traditions. They include timber mortuary enclosures

– with continuous timber palisades but no mound – and timber cursus monuments, defined by paired rows of posts. They measured some 15-45 m across and extended over 100 m across the landscape. Radiocarbon dates suggest the first of these were built in around 3700 BC, within a century or so of the Neolithic transition in Scotland (Millican 2016).

Further west, in the lands bordering the Irish Sea, different traditions of megalithic funerary monument are encountered in these middle centuries of the 4th millennium BC. One of these is the portal tomb, found in Ireland, Cornwall and Wales, with a box-like megalithic chamber covered by a large and impressive capstone. The name derives from the porch-like feature at one end of the chamber, where a pair of uprights flank a vertical door-like slab. There has been some discussion as to whether these are primarily funerary monuments, or monuments with funerary associations, although it should be noted that excavations at Poulnabrone in western Ireland in the 1980s recovered the remains of at least 36 individuals (Lynch 2014). The presence of portal tombs on both sides of the Irish Sea underlines the significance of maritime connections in the spread and distribution of Neolithic monument traditions. This is also illustrated by flows of raw materials such as Group VI axes of Cumbrian Langdale tuff and Group IX axes of Tievebulliagh porcellanite, and by other tomb types of the mid 4th millennium. The Clyde cairns of southwest Scotland and the court tombs of the northern half of Ireland (Sheridan 2004) are both characterized by box-like chambers, often divided into segments by vertical slabs (though in some cases these may be the result of successive additions), and without any visible entrance. These compartments must have been accessed from above, by the removal of the roof or the lifting of the capstone.

Court cairns and Clyde cairns were at one stage assigned to a single 'Clyde-Carlingford' group but are now regarded as separate, although closely related, forms. One key distinction is the form of the mound or cairn in which they were incorporated. In Scotland, elongated or trapezoidal cairns are the usual form, with inwardly curved entrance façades sometimes enhanced by thin pillar-like columns (**Fig. 5**). In Ireland, conversely, the deep, inwardly curved entrance façades are sometimes extended to form an enclosed courtyard, with a narrow entrance passage facing towards the chamber (as for example

Fig. 5 – The Clyde tomb of Cairnholy in southwest Scotland, showing the concave façade with tall monolithic pillars (Photo: C. Scarre).

at Creevykeel) or, more unusually, with chambers at both ends of the court, and a lateral entrance into the court itself. These may be multi-phase structures. An interesting feature of the Clyde cairns is evidence that the final form of chamber and cairn, which appears relatively standardized at first sight, was achieved through a process of convergence. Their original forms were much more diverse, but the addition of a trapezoidal cairn and curved forecourt gave them a greater sense of conformity to an accepted model (Cummings 2016).

The 'history' of Neolithic monuments in Britain and Ireland during the 4th and 3rd millennium BC, following this initial period of trans-Channel contact, is one of diversity and regional innovation. Leaving aside the causewayed enclosures that are a feature of the 37th to 34th centuries BC and may also be derived from continental models (Whittle *et al.* 2011), the middle centuries of the 4th millennium BC also saw the construction of the long cursus monuments with parallel embankments. The longest of these, the Dorset cursus, extends over almost 10 km, with chalk banks flanked by ditches (Barrett *et al.* 1991: 36-58). Various interpretations have been offered for these structures, with most focusing on a ceremonial function as processional ways. They recall the stone rows of southern Brittany, where a similar interpretation has been proposed, although the Breton examples are difficult to date and differ significantly from cursus monuments in form and materials. Cursus monuments are occasionally associated with megalithic standing stones, although contemporaneity is difficult to establish. An example is found at Rudston in eastern England, where four cursus monuments running at right angles to each other converge around the tallest standing stone in England, the 8.2 m-tall Rudston monolith. Other standing stones may be of equally early date, such as the impressive stone row at Boroughbridge in the same region, with stones 5.5 m, 6.7 m and 6.9 m high (Burl 1991).

In the Irish Sea province and northern Scotland, the late 4th millennium is the period of the developed passage tombs. The largest and most striking examples are those of the Boyne Valley, notably Knowth and Newgrange, with their corbel-vaulted chambers and extensive repertoires of megalithic art. At Newgrange, a 15 m-long passage leads to the central chamber, of cruciform plan, covered by a corbelled vault rising 6 m above the chamber floor (**Fig. 6**).

Fig. 6 – The corbelled vault covering the central chamber at Newgrange, Ireland (Photo: C. Scarre).

This is impressive in itself, but the sophistication of the construction is even greater when account is taken of the roof box over the chamber entrance allowing a narrow beam of sunlight at dawn in midwinter to penetrate the full length of the passage, illuminating the rear of the chamber. Around the base of the mound (85 m in diameter) is a kerb of 97 greywacke slabs, 31 of them bearing pecked and engraved designs, with lozenges, chevrons, zigzags, circles and spirals the commonest motifs. There are further decorated slabs in the passage and chamber, and over 200 more at the neighbouring tomb of Knowth (O'Kelly 1982; Eogan 1986, 2017; Hensey 2015).

The scale and elaboration of these structures marks this as a place of special importance, part of a wider network of social and sacred power extending far beyond Ireland. Connections have long been suggested between the megalithic art of the Boyne Valley tombs and that of southern Brittany, at sites such as Gavrinis (e.g., O'Sullivan 1997), but there are differences in motifs and chronology, the Boyne Valley tombs being dated to *ca.* 3200 BC (although some of the decorated slabs appear to have derived from earlier structures; Eogan 1998) and radiocarbon dates from Gavrinis falling in the period 4100-3800 BC (Cassen *et al.* 2014). Still more distant contacts have also been suggested: a decorated bone pin from Knowth may have come from Portugal (Eogan 1979).

Much clearer are connections with Wales and Scotland, notably with the Orkney Islands. The Neolithic monument sequence in Orkney includes chambered tombs, standing stones and stone circles, alongside remains of houses, both of timber and dry-stone construction, that allow comparison between domestic and funerary architecture.

The two principal types of Orkney chambered tomb are the 'stalled cairns', with long elongated chambers divided into segments either side of a central corridor by thin vertical slabs; and passage tombs of the 'Maeshowe' type, with a square or rectangular central chamber and smaller side chambers (Davidson & Henshall 1989). Both can be architecturally sophisticated: the chamber of the stalled cairn at Midhowe is 23.4 m long divided into 12 compartments, with stone shelves surviving in some of these (Fig. 7); the Maeshowe type site has a long passage and impressive central chamber built of regularly coursed Orkney sandstone, massive corner monoliths with distinctive truncated-oblique tops (others form the side walls of the passage), and a soaring

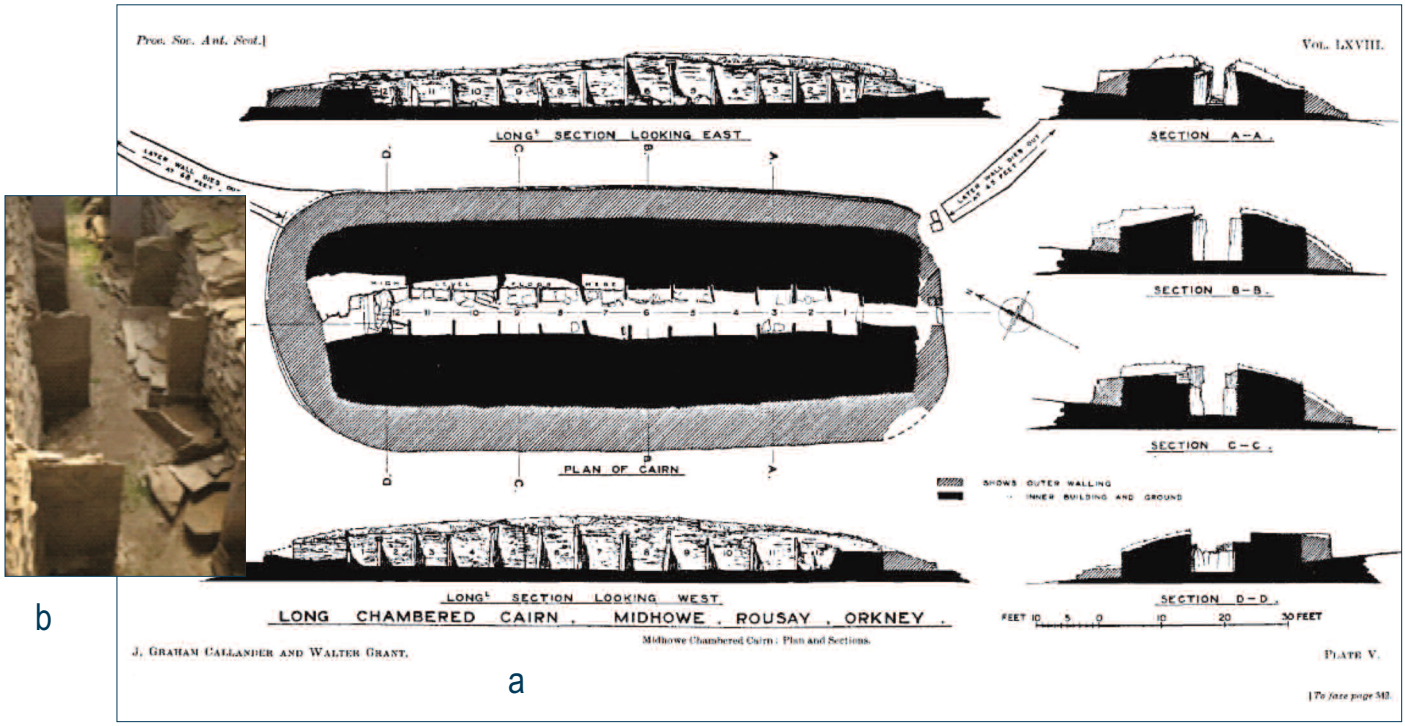


Fig. 7 – The stalled cairn at Midhowe on Orkney, showing the division of the interior into shelved compartments either side of a central corridor (Plan from Callander & Grant 1934, Plate V, © Society of Antiquaries of Scotland; photo (inset left): C. Scarre).

Secrets in the stones: examining the presence of stones with inclusions in the passage tombs of Atlantic Europe

Patricia KENNY

Stones with inclusions (SWI) are structural stones in megalithic monuments which contain geological inclusions, such as fossils, mineral veins, or rock clasts. Such stones have often attracted attention, with narratives developed to explain their creation (Balfour 1929; Mayor 2000, 2005). It seems plausible that prehistoric communities would also have created such narratives and this research investigates whether it is possible to infer traces of such narratives in the passage tombs of Ireland, Britain (Wales and Scotland) and France (Brittany). Others have noted and examined this phenomenon at sites across Europe (see Bradley & Phillips 2008; Cardoso & Boaventura 2011; Aranda Jiménez *et al.* 2017). This research aims to build on that work, determining whether SWI were deliberately chosen by passage tomb builders, identifying variations in SWI use across different regions, and considering how SWI are perceived by other societies to determine whether similar motivations were at play in the Neolithic.

1. Methodology

Data was collected using standard archaeological field observation techniques. Plans, photographs, and audio notes were made at each site. Inclusions were identified using the naked eye, and the lithology of each stone was recorded, drawing upon other geoarchaeological studies where available. Audio notes were transcribed and summarized to facilitate qualitative analysis. Statistical testing of these patterns is also planned, and a study of the geological setting of a subsample of tombs will be conducted before the completion of the project.

2. Results

The prevalence of SWI in each region reveals potential differences in the way they were treated (see Fig. 1). SWI are more common in Ireland and Britain than in Brittany. There are three potential reasons for this disparity. It may reflect the small proportion of tombs visited in Brittany, there may be fewer geological inclusions in the Breton bedrock, or it might reflect cultural differences in attitudes towards SWI.

Ireland (n=109)	Anglesey, Wales (n=5)	Orkney, Scotland (n=6)	Brittany, France (n=26)
86%	100%	83%	26%

Fig. 1 – Proportion of tombs visited where SWI were present.

2.1 Heterogeneity

SWI appear to be found in patterns within individual tombs (see Fig. 2), but these patterns are rarely replicated at other monuments. While the patterns at individual sites suggests the builders of the relevant tombs placed the stones deliberately, there is no discernible template overall.

2.2 Quartz veins and the left-hand side

At the Carrowkeel complex (western Ireland), only two tombs have quartz veins (see Fig. 3), both located on the left-hand side as one enters the structure. As it is rare for patterns to repeat themselves, even within complexes, this concentration of quartz

on the left-hand side was investigated at other sites. This revealed that, at cruciform monuments specifically, quartz veins tend to be placed on the left-hand side of the structure.

2.3 Referencing places

In some tombs, SWI seem to reflect and interact with the local terrain. Carrowkeel C, located in the Carrowkeel complex, is a prime example of this. The

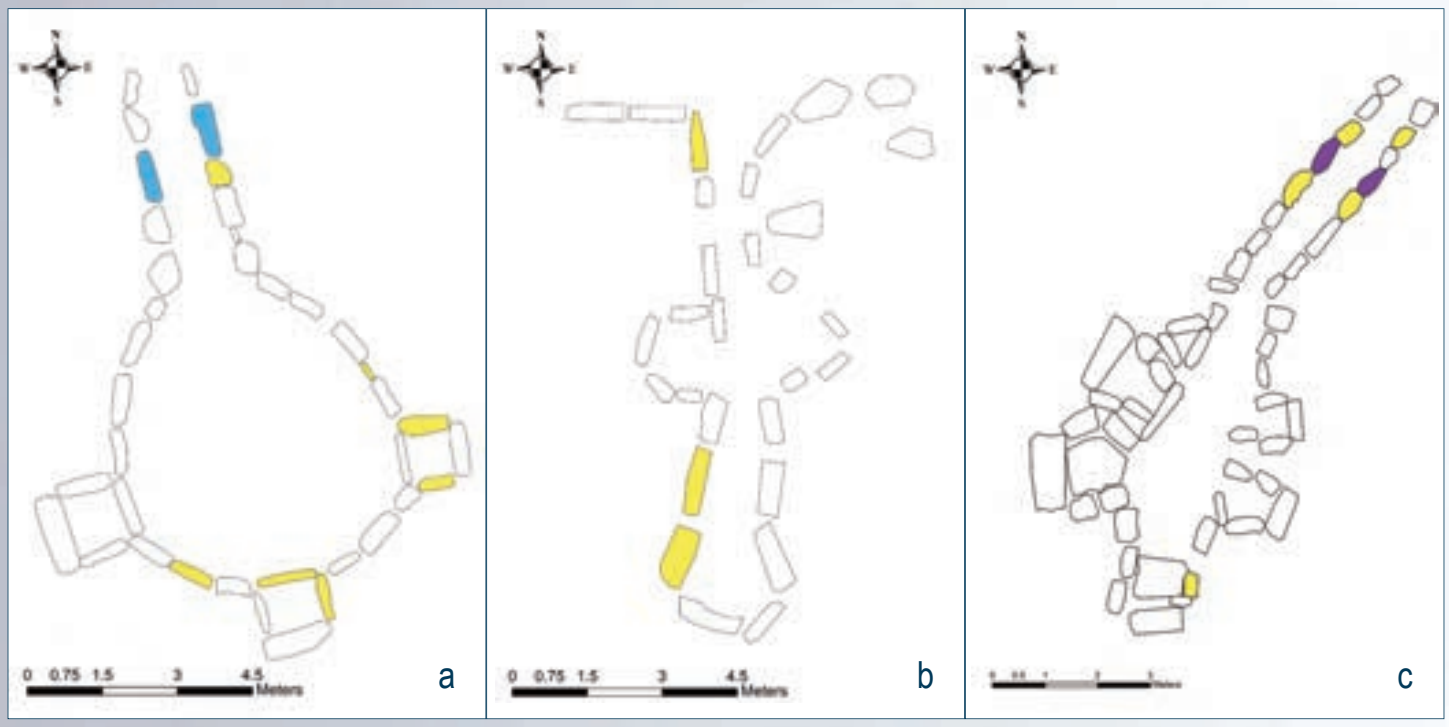


Fig. 2 – a. SWI in Fourknocks, eastern Ireland. Quartz veins (yellow) are concentrated on the left; fossils (blue) in the passage (After Hartnett 1957); b. SWI in Deerpark, southern Ireland. Quartz veins (yellow) found on the right. (After Ó Nualláin & Cody 1987); c. SWI in Seefin, eastern Ireland. Quartz veins (yellow) are focused around the megalithic art (purple) (After Macalister 1932).

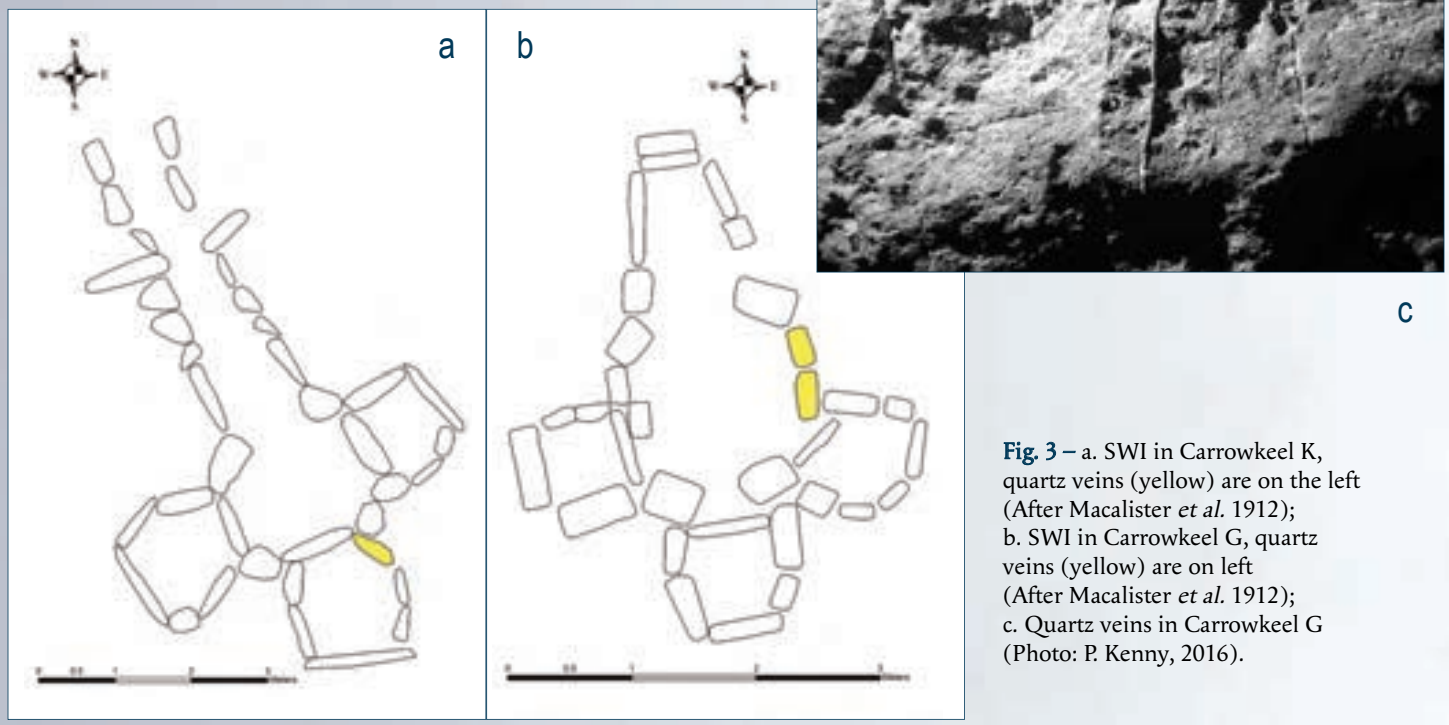


Fig. 3 – a. SWI in Carrowkeel K, quartz veins (yellow) are on the left (After Macalister *et al.* 1912); b. SWI in Carrowkeel G, quartz veins (yellow) are on left (After Macalister *et al.* 1912); c. Quartz veins in Carrowkeel G (Photo: P. Kenny, 2016).

northern part of the tomb has several large fossiliferous blocks (Fig. 4). Knocknarea is a prominent mountain located to the northwest, consisting of fossil-rich limestone. The placement of SWI within Carrowkeel C appears to reference this mountain. A similar architectural motif can be discerned at Bryn Celli Ddu (Anglesey) (Fig. 5), where three conglomerates in the northern part of the chamber appear to reference the source of conglomeratic rock to the northeast of the tomb.

At Loughcrew U (County Meath, Ireland), a different approach was taken. The kerb consists of two different lithologies – a fossiliferous limestone and a limestone rich in hollows. The kerbstone shown in Figure 6 is located at the back of the tomb, cut by the central axis of the chamber, and includes both of these lithologies. This is not an example of SWI per se but represents a similar concern with stone type and placement.

3. Conclusion

The results of this investigation suggest that narratives were attached to geological inclusions in the Neolithic period. However, this paper has only scratched the surface, and future research has the potential to shed more light on this fascinating aspect of human behaviour.

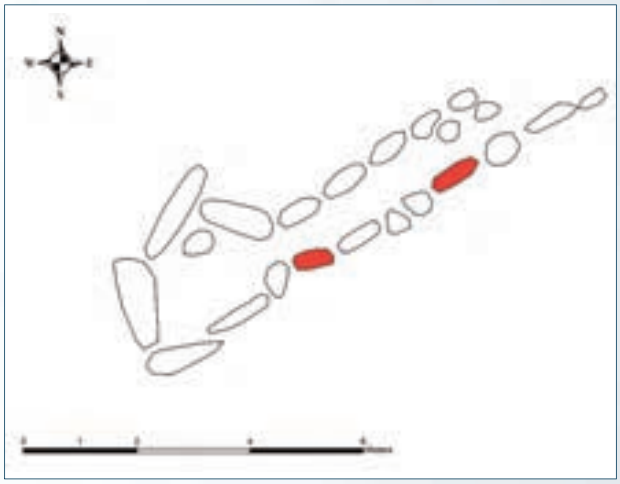


Fig. 4 – SWI in Bryn Celli Ddu, western Anglesey (Wales). Clasts (red) are found along the southern wall (After Lynch *et al.* 2000).

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Fig. 5 – Fossils in Carrowkeel C (Photo: P. Kenny, 2019).

Fig. 6 – Kerbstone at Loughcrew U, showing alternating beds of hollow-rich and fossiliferous stone (Photo: P. Kenny, 2018).

corbelled vault. The stalled cairns have been compared with dry-stone linear houses with vertical internal dividing slabs such as the two examples at Knap of Howar on the island of Papa Westray; the Maeshowe passage tomb has been compared with the houses of Skara Brae and Barnhouse, sharing with them the rectangular centralized ground plan with alcoves and projecting corners. A recent dating programme indicates that in both cases, the tomb types are earlier than the houses. Indeed, the Knap of Howar linear house, now dated to *ca.* 3300 BC, may have been derived from the stalled cairn – the house of the dead providing the model for the houses of the living – rather than vice versa (Richards *et al.* 2016).

Not far from Maeshowe in Orkney is the impressive stone circle of the Ring of Brodgar. Stone circles are a characteristic and very numerous British Neolithic (and Bronze Age) monument type, with estimates suggesting there are well over 1000 extant examples, from an original total of perhaps as many as 4000 (Burl 2000). They range from small settings a few metres across, to major monuments such as that at Brodgar, 103.7 m in diameter with 60 stones originally up to 4.5 m in height. The shapes of the stones at Brodgar reflect the local geology, several of them being thin parallel-sided blocks with obliquely truncated tops, though they are drawn from three different locations (Vestra Fiold, Staneyhill and Houton) at one of which (Vestra Fiold), excavation revealed a quarried monolith abandoned *in situ* (Richards *et al.* 2013). Other stone circles also display characteristic forms derived from the local geology: the glacially smoothed boulders of Long Meg and Her Daughters, in northwest England (more specifically the 'daughters', Long Meg itself having been cut out of a local river cliff: Frodsham 1996; **Fig. 8**); or the tall, thin gneiss pillars of Callanish in the Hebrides.

The stone circles have their own parallels in timber monuments, mostly today of course represented merely by patterns of postholes. They are found in areas where stone circles are absent, but in some cases, there is evidence that a timber circle preceded a stone circle in the same location. Dating evidence indicates that the timber circles were being built in the final centuries of the 4th millennium BC; the first stone circles may belong to the same period. The timber-stone connection achieves its most dramatic expression at Stonehenge in central southern

Fig. 8 – Long Meg and Her Daughters in northwest England. The red sandstone pillar of Long Meg (right) standing outside the stone circle of glacially rounded boulders (her 'Daughters') (Photo: C. Scarre).

England, where the tall sarsen trilithons and the lintelled circle reproduce features of carpentry manufacture, such as the mortice-and-tenon seating for the horizontal blocks, and the tongue-and-groove joints between the adjoining lintels (Gibson 2005).

These British monument forms of the late 4th millennium BC have no close parallels in northern France, where the construction of the final passage tombs *ca.* 3800 BC appears to be followed by a break of several centuries before a new cycle of chambered tomb appears in around 3400 BC (**Fig. 9**). These are characterized by long parallel-sided chambers, with entrances either at one end (sometimes with a porch or antechamber: commonly referred to as *allées couvertes* or *allées sépulcrales*), or in one of the long sides, accessed via a passage at right angles to the main chamber (*sépultures à entrée laterale*). In northwestern France, these tombs mark the renewal of megalithic tomb construction, but the prevalence of acidic soils makes the associated burial practices difficult to reconstruct (Giot *et al.* 1998). *Allées sépulcrales* are also found in the Paris basin and northwards towards the Channel coast, where chalk and limestone geology have allowed excellent preservation of human remains. Careful excavation and detailed analysis at sites such as La Chaussée-

Fig. 9 – *Allées couvertes*, with a short lateral passage (a) Le Mélus, Côtes-d'Armor, or an axial entrance (b) Liscuis II, Côtes-d'Armor (Photos: L. Laporte).

Tirancourt, Méréaucourt, and Bury have revealed complex and changing practices involving the deposition and manipulation of the remains of several hundred individuals (Masset 1997; Salanova *et al.* 2017).

As in Britain, there is combination and cross-over between different kinds of materials, and between domestic and funerary architecture. Some *allées sépulcrales* were of timber rather than megalithic construction; and similarities in funerary practice exist between *allées sépulcrales* and rock-cut *hypogées*, some 160 of which were cut into the soft chalk hillsides of the Marne *département*, to the east of Paris. The large and clustered concentration of hypogées may represent the successive creation of collective burial spaces by individual communities, since recent Bayesian modelling of radiocarbon dates for Les Mournouards II indicates that it may have been in use for burial for less than 100 years (Chambon *et al.* 2017). André Leroi-Gourhan proposed that internal arrangements of the burial space replicated those of contemporary houses of the living (Leroi-Gourhan *et al.* 1963). The cross-over with domestic architecture is also illustrated by the ground plans of large hall-like long houses that have been revealed in northern and western France in recent decades, and which date to the very end of the 4th millennium BC or the early centuries of the 3rd millennium – marginally later (on current evidence) than the funerary monuments. The most striking parallel is provided by the long houses with side wings, such as those at Pléchâtel in central Brittany, which reproduce elements of the ground plan of *sépultures à entrée latérale* such as Goërem at Gâvres (Laporte & Tinévez 2004). Hence there appears, in some instances, to have been a parallel conceptualization of space between the domestic and funerary domains, albeit in different materials.

The long rectangular burial chambers of Late Neolithic northern France share certain general characteristics with the late 4th millennium megalithic tombs of northern Europe that are classified as passage graves (*Ganggräber* in northern Germany, *Jaettestur* in Denmark, *Hunebedden* in the Netherlands). That includes, for example, the elongated parallel-sided chamber plan, although the classic north European passage tomb has an entrance passage placed in the middle of one of the long sides, a feature only rarely encountered in northern France. They are similar in date, however, and may nonetheless be part of a broad continental family of Late Neolithic long-chambered tombs. Whether or not that is so, they have no obvious parallels in Britain or Ireland. It is interesting in this regard to note that while some 40 square-butted flint axes of Scandinavian type have been found in Britain, only a handful are of the thin-butted type, associated with the TRB (the period of the North European megalithic tombs) and the majority are of the later, 3rd millennium thick-butted type (Walker 2018). Likewise, a possible connection between the *allées couvertes* of northern France and the wedge tombs of southern Ireland cannot be excluded but there is a significant chronological disjunction, the wedge tombs being in use from 2300 to 2000 BC (McLaughlin *et al.* 2016: 133). Interestingly, this is the period when copper metallurgy and Beaker pottery appear in Ireland, both indicating connections with continental Europe. The wedge tomb tradition may have been introduced through such contacts, although several centuries had elapsed since the newly built megalithic tombs had been constructed in northern France (O'Brien 2012). If the wedge tombs do owe anything to these connections, it must have been generic rather than specific; perhaps inspired by the Beaker-related reuse of *allées sépulcrales* such as those at Ville-ès-Nouaux in Jersey and Kerbors in northern Brittany.

Hence the late 4th and 3rd millennia BC witnessed divergent megalithic traditions on either side of the Channel, with *allées sépulcrales* and related tomb forms in northern France, whereas in terms of strictly megalithic construction, the principal British and Irish monuments were the passage tombs of the north and west and the stone circles and henges, and possibly many of the individual standing stones and stone rows, although those are very difficult to date securely. It is clear that standing stones and stone circles continued to be erected during the 2nd millennium BC, especially in western and northern Britain and in Ireland.

There is one final feature to consider, that has a bearing on the long development of the megalithic tradition. In northern France, Britain and Ireland, as in certain other regions of western and northern Europe, megalithic monuments (along with non-

megalithic structures) are often grouped in small cemeteries. Sometimes, however, they cluster together to form monument complexes of considerable scale and importance. The Carnac region of southern Brittany is among the most famous example, rising to prominence in the mid/late 5th millennium BC with the construction of the Carnac mounds and with spectacular stone rows extending over distances of a kilometre or more (Scarre 2011). Monument complexes become a significant feature of Britain and Ireland too, in the late 4th and 3rd millennium BC, with large, diverse and often unique monument forms occurring together around Maeshowe and Brodgar in Orkney, in the Boyne Valley in Ireland, and at Stonehenge and Avebury in southern Britain. At Avebury, there is a 350 m diameter henge with a circular ditch up to 10 m deep, with external bank, an internal circle of 98 standing stones and two smaller (but still sizeable) stone circles associated with two long avenues of paired standing stones (Gillings *et al.* 2008). Not far away are Silbury Hill, the largest prehistoric mound in western Europe (**Fig. 10**), and the extensive but rather earlier timber-post enclosures at West Kennet (Bayliss *et al.* 2017; Leary *et al.* 2013). Stonehenge also stands at the centre of a monument complex including the Durrington Walls henge, the Stonehenge cursus, and the Avenue linking Stonehenge itself with the River Avon some 2 km away. Recent analysis of stable isotopes of fauna from Durrington Walls has revealed how domestic animals were being brought to this site from different regions of Britain, often over long distances, some of the cattle, and even some of the pigs, possibly from as far as Scotland (Evans *et al.* 2019; Madgwick *et al.* 2019). This evidence reminds us that megalithic monuments were socially embedded constructs operating at a variety of different scales, from the local community to entire regions and beyond.

Acknowledgements

We are grateful to Mike Pitts for supplying the image of Silbury Hill (Fig. 10).

Fig. 10 – Silbury Hill at Avebury in southern England, the largest prehistoric mound in western Europe, showing the flooded quarry pit in the foreground (Photo: M. Pitts).

A study of 26 Irish prehistoric stone circles and their inbuilt sunrise calendars

Terence MEADEN

1. Introduction and previous work

In southwest Ireland, stone circles of the multiple type have two portal stones and a recumbent stone axially opposite. The number of perimeter stones vary from 7-17 and diameters varies from 4-17 m. In this study of stone circles, the locations of perimeter stones are explained in relation to an inbuilt Neolithic/Bronze Age calendar that functions between pairs of stones aligned with the rising sun. On specific dates of the year, spaced at intervals of 45-46 days and starting from 21 December, the shadow from a tall narrow stone on the eastern perimeter falls medially upon a broad recumbent stone in the west. Research at one stone circle (Drombeg) has been published previously (Meaden 2016, 2017). The present paper summarizes fieldwork on 26 stone circles of three types across Cork and Kerry. Many have been surveyed by Ó Nualláin (1984) and three, including Bohonagh and Drombeg, were excavated by Fahy (1959, 1961). Burl's (2000) opinion was that the monuments had '*nothing to do with the sun*', while Ruggles (1999: 97a) concluded that '*the builders were not concerned with the rising or setting positions of moon or sun*'. Neither researcher foresaw that most circles had been planned to function at sunrise and therefore the fieldwork should be done at this time, when certain pre-arranged stones are linked by shadows. Furthermore, recognizing that religion was important for Irish Bronze Age communities, O'Brien wrote: '*By the Middle Bronze Age worship of the sun was to the fore of religious beliefs in south-west Ireland. It is likely that the principal deity was a Sun-God, a forerunner of the great Dagda of Celtic mythology, whose worship now focused on new monument types that embraced solar symbolism. The use of stone-circle complex monuments was a development from the sun-worship beliefs expressed in the building of the wedge tombs. With the construction of stone circles, we see a marked strengthening of the solar cult …*' (O'Brien 2013: 198-199).

2. Aim

The aim of the study was to appraise, by fieldwork, the properties and working of the prehistoric calendar in terms of date recognition at different sites, and to assess what shadow-casting may have meant calendrically and symbolically for the early agriculturists for whom farming success mattered so much in their precarious climate-dependent world.

3. Methodology

The scientific method was followed, commencing with inspection and measurement to obtain reliable evidence and applying logical hypotheses and unbiased reasoning leading to testable theories. Aspects of the programme included the study of relevant solar movements, and the consideration of traditional symbolism and their meanings.

4. Results for three types of stone circles

Three types of stone circle were evaluated as follows.

Type 1 is typified by the 13-stone Bohonagh stone circle (**Fig. 1a**). A recumbent stone in the west receives shadows at sunrise from stones positioned between the northeast and southeast for the eight dates that recur at intervals of 45-46 days. Action at the quarter dates of 22 March and 21 September is demonstrated in sunrise photographs (**Fig. 1b, c**) in which the shadow of the tall narrow portal Stone 1 achieves optimal union, falling centrally on the recumbent Stone 7.

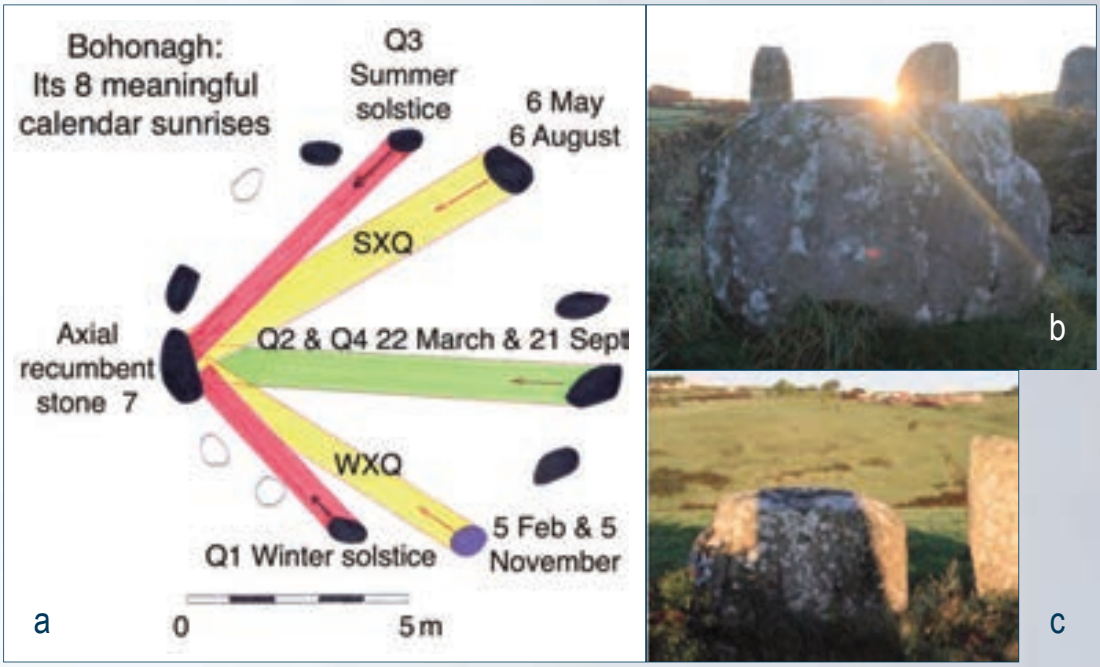

Fig. 1 – a. Bohonagh stone circle typifies Type-1 circles in which eight alignments to the rising sun are identified with the four quarter dates and the four cross-quarter dates of the year. At each of these dates a shadow links an easterly stone with the recumbent stone in the west; b. The start of sunrise for the quarter dates of 22 March and 21 September. The sun is shining past the two tall portal stones and onto the recumbent stone in the foreground; c. Soon after the sun's first gleams, the shadow of portal Stone 1 is central on the recumbent Stone 7 (Photos: T. Meaden).

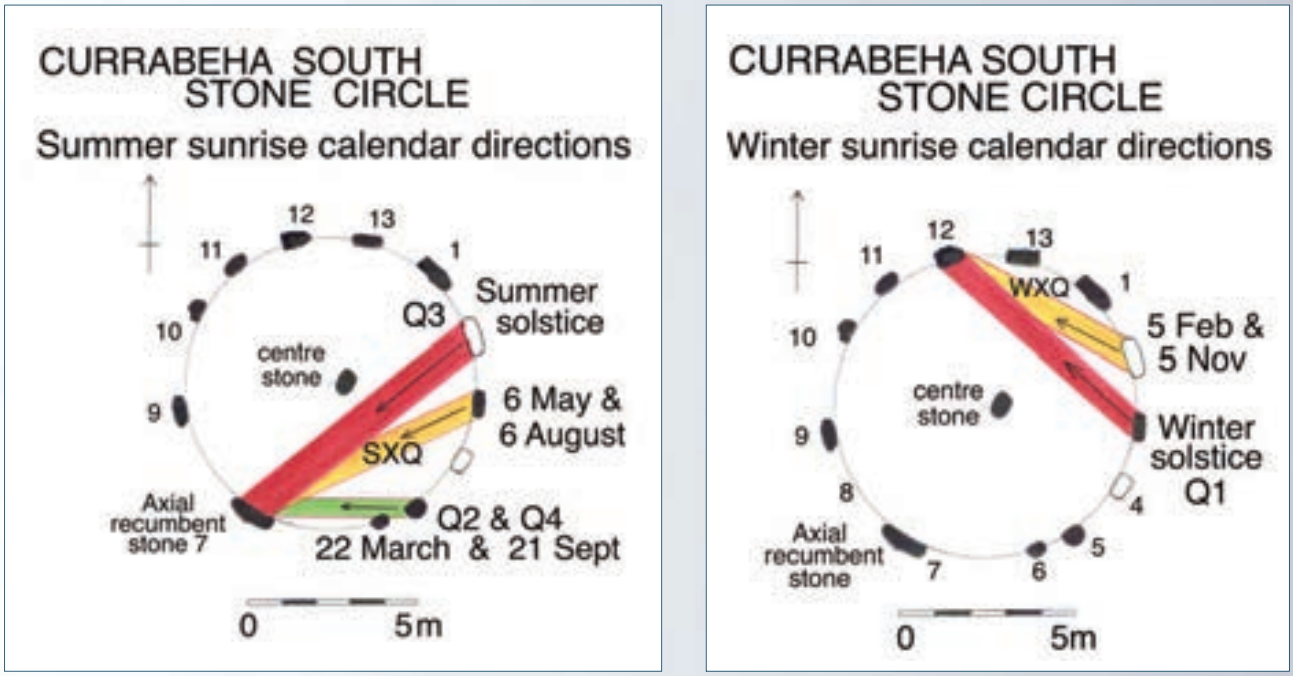

Fig. 2 – Currabeha stone circle typifies Type-2 circles in which the reception stone for shadows cast at sunrise is the recumbent Stone 7 for the summer dates and Stone 12 for the winter dates.

Type 2 is typified by the 13-stone Currabeha stone circle (Fig. 2) in which the recumbent Stone 7 is in the southwest instead of the west. Sunrise alignments leading to union by shadow with the recumbent are then only possible in the summer. Hence, for the winter sunrises a second target stone is necessary. At Currabeha this is Stone 12, which is a female-symbolic, rounded, egg-shaped stone (Fig. 3).

Type 3 circles were also planned as calendar date indicators and used Type-1 or Type-2 pairings for solar alignments, but shadows cast by stones at sunrise were few or absent due to the blocking effect of hills, mountains or nearby ridge horizons.

Why was it necessary to devise Type 2 circles at specific sites? Figure 4 provides an example. The site of Ardgroom Outward stone circle in Kerry was most likely chosen because from this site, at summer solstice the sun can be seen rising from between the paps, or 'breasts', of the twin hills in the northeast. Figure 4a demonstrates the author's prediction, and Figure 4b, acquired in June 2019, confirms it.

5. Meaningful carved symbols at Drombeg stone circle

An ithyphallus pecked on a tall narrow megalith at the Type 2 Drombeg stone circle (Fig. 5a) implies fertility imagery and that this stone is symbolically masculine, while the vulva on the horizontal top surface of the long broad stone (Fig. 5b) suggests that this recumbent stone may be symbolically female. At Drombeg the second shadow-recipient

Fig. 3 – For the winter half-year, the stone that receives the planned shadows (Stone 12) is round and egg-shaped (Photo: T. Meaden).

Fig. 4 – a. Prediction that from the stone circle at Ardgroom Outward the sun would rise from between the paps of the nearby mountain, both today and in the Bronze Age; b. Sunrise on 19 June 2019 at Ardgroom Outward stone circle (Photos: T. Meaden).

Fig. 5 – Drombeg stone circle: a. A male-symbolic carving near the top of the vertical face of a tall narrow portal stone; b. A female-symbolic carving on the flat horizontal top of the broad recumbent stone (Photos: T. Meaden).

stone is broad and lozenge-shaped (**Fig. 6**). According to the excavator, Fahy (1959: 5), this shape also symbolizes femininity, following the suggestions of Keiller & Piggott (1936: 420) summarized by Smith (1965: 197). Thus, aspects of a fertility religion are intimated as Fahy (1959: 5, 20-21) proposed. The lozenge stone is placed in the northwest to receive sunrise shadows in the winter half of the year from megaliths standing in the east and southeast.

Fig. 6 – Drombeg stone circle. On 19 March 2019 the sun rose in alignment with the pillar stone and the lozenge-shaped stone, and an ithyphallic shadow was cast upon the female-symbolic lozenge-shaped stone (Photo: T. Meaden).

6. Conclusion

The stones of these Irish circles were intelligently spaced to accord with the directions of sunrise for the eight major dates that divide the year, and thereby establish the basis of a Neolithic/Bronze Age calendar. The author has found similar results at other stone circles in Ireland, Scotland and England including Wessex and Cornwall. Through such symbolism aspects of date-dependent beliefs of the people's *modus vivendi* have been uncovered. The calendar functions during the minutes after sunrise when a shadow from a tall (male) stone on the eastern perimeter unites with a symbolically female stone in the west. This watchable union between 'male' and 'female' stones could have been witnessed by the entire community on the predicted calendar dates and may have had a meaning related to beliefs in a fertility religion.

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Jean GUILAINE

Mediterranean megalithism: a long-term history

Abstract: The megalithic monument types of the Mediterranean region are numerous, varied and diachronic. Their architecture gives rise to structures of very different types: passage tombs, gallery graves and related monuments, dolmens of various forms, hypogea with megalithic capstones, Andalusian and Portuguese *tholos* tombs, the Maltese temples, the Giants' tombs, the Balearic *navetas*, the tombs of the Maghreb, etc. Their purpose is generally funerary but can be also religious (Malta). Their chronology varies from case to case between the Middle Neolithic and the Iron Age (Maghreb). Approaches to their study must contextualize each of these phenomena in time, analyzing them within their particular chronological and cultural context, and must avoid combining them into a 'megalithic' concept devoid of any meaning.

Keywords: *cists, dolmens, gallery graves,* tholos*, anthropomorphic stelae, statues menhirs, Taulas, Mediterranean Sea*

A preliminary observation is essential before any further discussion: when it comes to Mediterranean megalithism, we must first define exactly what we are talking about. Dolmens, to consider just one aspect of the problem, take on diverse morphologies, especially in the Western Mediterranean: passage graves in Languedoc, Provence or Andalusia, Caussenard dolmens, Catalan alleys, Andalusian *tholos*, Arles hypogea with megalithic roofs, small Maltese or North African dolmens, etc. It is difficult to find common denominators between these varied structures. In addition, unique forms of sepulchral monuments developed on islands: the Giants' tombs of Sardinia, the *navetas* of the Balearic Islands. These geo-cultural specificities must be taken into account before any attempt at analysis. Another facet of megalithism, the standing stones, also exhibit a diversity of expressions: menhirs and alignments, menhir statues in Italy, the South of France and Spain, reinforced stelae in Corsica and the Iberian southwest, the *taulas* of Menorca, etc. Again, there is such a proliferation of forms that we must construct safeguards against any inclination towards inappropriate comparisons if we do not want to resort to a convenient but meaningless catch-all.

At least four criteria are indispensable to any approach: geography to identify regional variants, typology to separate schools of architecture, chronology to avoid anachronisms, and function to determine what societies intended and how they used these monuments, including anthropological, physical and cultural aspects. In view of the allotted space, I will limit myself to a general overview of these Mediterranean structures and try to set them within a timeframe and to discern the social nuances that they may reflect when documentation allows.

It seems fitting, by way of introduction, to raise a historiographic point. The history of research and concepts of megalithic tombs and, more generally, on Mediterranean collective tombs could be very schematically summarized in the following, necessarily simplified, manner:

- Second half of the 19th century: diffusionism in the manner of Arthur de Bonstetten against the polygenism of megalithism in the manner of Émile Cartailhac.

- First half of the 20th century: diffusionism of east Mediterranean origin (Childe and his 'megalithic missionaries') versus western autochthonism (Bosch-Gimpera: the Portuguese dolmens of the Beiras are due to populations derived from the Mesolithic substratum) (Childe 1949; Bosch-Gimpera 1967).

- Between 1950 and 1970: radiocarbon revolution in two stages (raw dates then calibrated dates). Disconnection of western megalithism from the Near Eastern sphere and proposal of several western hubs (five for Renfrew 1973).

- From 1970 onwards: growing number of anthropological studies in connection with a renewed field methodology in reaction to the hitherto dominant metric (craniological) anthropology. From then on, development of the observation of funerary gestures, palaeodemographic tests, management of graves and taphonomy, approaches to kinship (discrete characteristics, etc.). At the same time, in the wake of Anglo-Saxon neo-evolutionary theories, essays on social organizations (in fact, there were few on Mediterranean megalithism apart from Renfrew's work on Malta), but which subsequently gave rise to many debates, particularly in the Iberian Peninsula.

- From 2010 onwards: development of genetic studies, still rare in the Mediterranean megalithic sphere but which, more generally speaking, propose historical migrationist scenarios.

Given the extent of the chronological range from the 5th to the 1st millennia before our era, I propose to begin with an overall chrono-cultural framework. I will then address several aspects of an 'anthropological' nature.

1. Chrono-cultural framework

I have divided the evolution of Mediterranean megalithism into six phases, in a completely arbitrary manner. I will restrict myself to the central and Western Mediterranean, as Near Eastern necropolises will be discussed elsewhere in this publication by Steimer (Steimer 2004; Scheltema 2008). I will include tombs in hypogea in my discourse, which form a parallel and sometimes complementary process to dolmens.

1.1 First stage

This stage concerns the second half of the 5th millennium, *ca.* 4500-4000 BC and sometimes the first centuries of the 4th millennium. Two aspects, one confirmed, the other to be established, characterize this timeframe. The first is the rather general development of stone caissons, coffers or cists, for individual, or sometimes double burials (with rare cases of reuse). This first phase cannot be considered as megalithic, although the term 'dolmens' has sometimes been used to designate some of these monuments. In this stage, we can include the following:

- The caissons of Sardinia (Arzachena) and Corsica (Vascullaciu, Tivolaghiu), which can be described as 'proto-megalithic', arranged in the centre of a circle of blocks, which can incorporate stelae (**Fig. 1**). The first caissons are dated to the San Ciriaco facies, and the second to the Middle Neolithic (Guilaine 2006; Tramoni *et al.* 2017).

- Cists from the South of France, sometimes covered by a slight mound or inserted in a sheath of blocks (e.g., Caramany). These necropolises are generally associated with the southern Chasséen culture (**Fig. 1**). Towards the end of their evolution, they could take the form of large mounds with a peripheral low wall in the centre of which was a pit containing the burial. This was covered by a large slab topped by a (now lost) superstructure (e.g., Lattes). There may be dominant tombs, such as the grave under a large mound at Saint-Michel-du-Touch.

- Stone caissons in Catalonia, sometimes incorporated into large mounds with a front wall (e.g., Tavertet) with Montbolo pottery. There are also various cists with more modest mounds or even

Fig. 1 – Proto-megalithic caissons: a-c. Caramany cists (Roussillon); d. Pogiarella caisson (Photos: J. Guilaine and F. de Lanfranchi).

without any observed intumescence ('Solsonian' cists) (Molist *et al.* 2007).

- Cists or circular graves with dry-stone walls in southeastern Iberian, termed *Rundgräber* by V. & G. Leisner (Leisner & Leisner 1943).

From a social perspective, these well-identified necropolises reveal status distinctions between individuals. It seems that they often contain individuals who are rather well endowed with social signs in contrast to other known remains abandoned in the middle of the settlement, or even unceremoniously thrown into disused silos. Certain divisions thus appear in *Chasséen* society. However, these social cleavages do not attain the same degree as those characterizing the individuals buried in the Carnac tumuli.

The funerary goods found near the deceased are largely identical throughout the geographical area under consideration: pierced spheroids (Arzachena, Foce, Dela-Laiga, Sauzas), a bowl with spool-shaped handle from Li Muri, sharp or piercing arrows, flint blades, polished axes (including the omphacite axe from the Bisbal chest near Girona), and various ornaments (steatite in Sardinia, shell bracelets).

Also in the 5th millennium, the use of hypogeum tombs began to develop, still for individual burials, and the proto-hypogeum Bonu Ighinu of Cuccuru s'Arriu was constructed in Sardinia (**Fig. 2**). However, collective hypogea can also be found in the culture of Serra d'Alto, in the mid 5th millennium, in the southeast of the Italian peninsula (Cala Cizzo, Cala Colombo, Santa Barbara) (Whitehouse 1972).

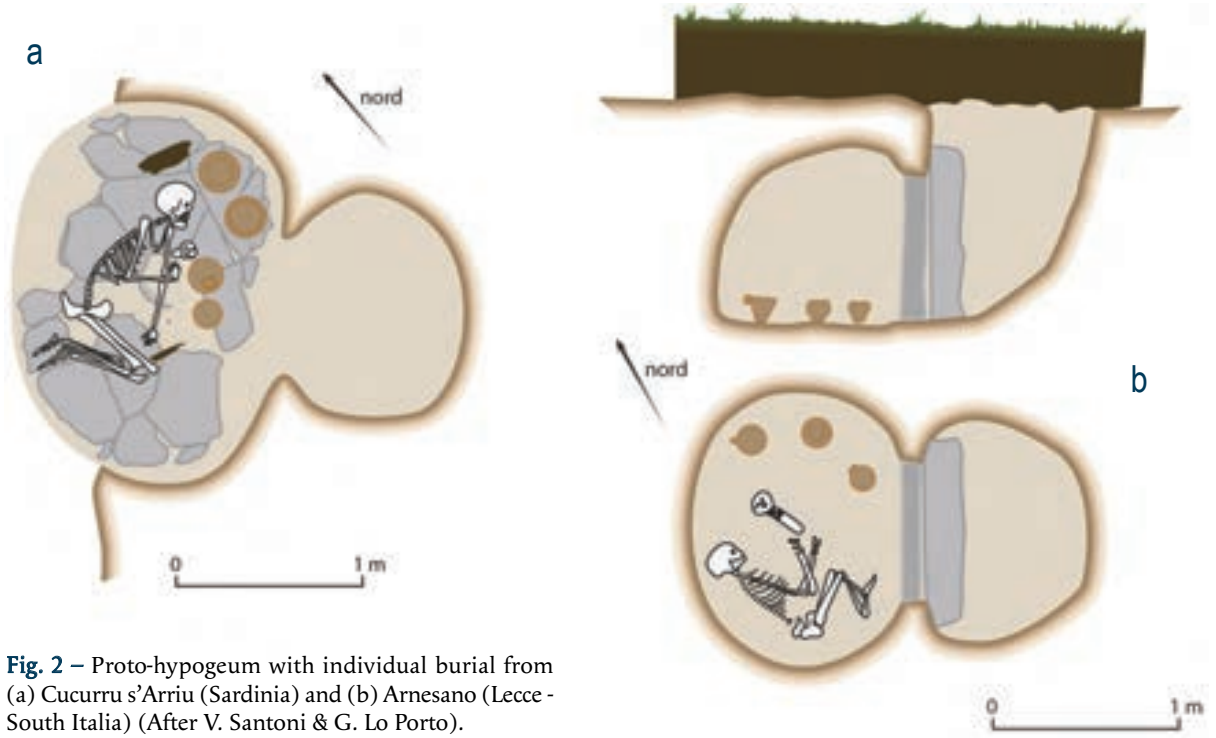

Fig. 2 – Proto-hypogeum with individual burial from (a) Cucurru s'Arriu (Sardinia) and (b) Arnesano (Lecce - South Italia) (After V. Santoni & G. Lo Porto).

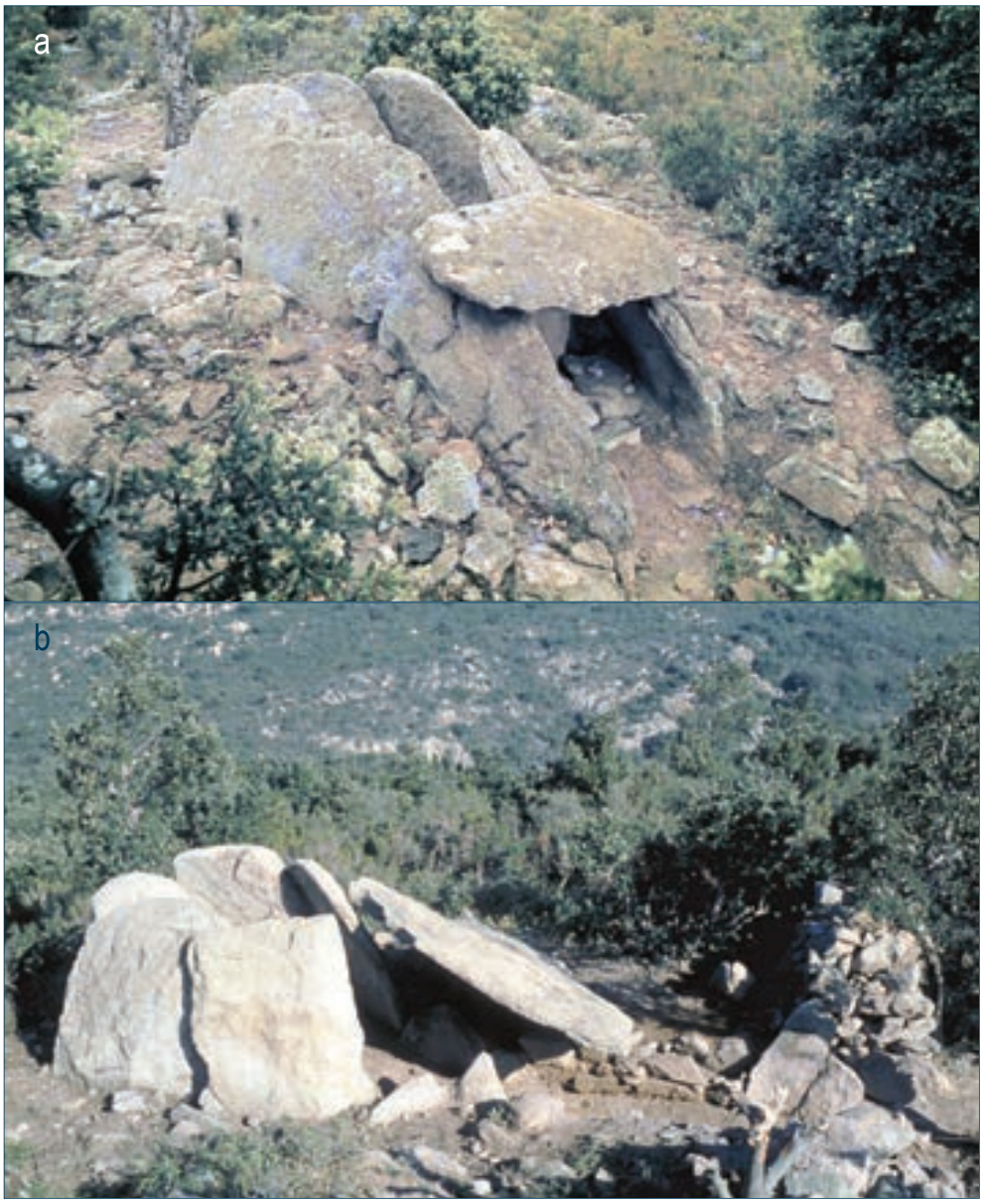

Fig. 3 – Catalonian ancient dolmens with corridor: a. Font del Roure; b. Arreganyats (Photos: J. Tarrús).

The practice of erecting stelae also began at this time: stelae accompanying Sardinian tombs, anthropomorphic stelae with shaped heads (e.g., Balchiria 2 in Corsica), while certain menhirs in the South of France with an apical rostrum (Lussan, Gard; Quissac, Hérault) are probably part of this tradition. The erection of stones or stelae is also a frequent gesture in the south Iberian region. An example is the circular monument that preceded the construction of the dolmen of Soto, which was partly built with the reused pillars of the original monument (Bueno Ramírez *et al.* 2018).

Another aspect of this first phase concerns the emergence, in a context dominated by cists with individual burials, of the first forms of dolmens. Here, we attribute to this term the double definition of 'aerial' monuments of considerable size and collective tombs. The only monuments with ^{14}C dates from the end of the 5th millennium are the vestibule dolmens of Monte Revincu (northern Corsica) (Leandri 2000, forthcoming). Another Corsican monument, Contra Maggiore in Casalabriva, (southern Corsica) also gave a date of 4300-4200 BC. If these dates are confirmed, this would mean that the appearance of the first megalithism would be roughly contemporaneous with the oldest dolmens of Armorica, in the heart of the Western Mediterranean. However, confirmation is required since the dates were not carried out on bone but on charcoal, with known erratic results. On the other hand, the grave goods from the dolmen of Celluccia in Corsica (polished axes, Li Muri type pearls) seem to confirm this early emergence (Leandri, forthcoming).

1.2 Second stage

We can roughly place the second stage in the first half of the 4th millennium or even until about 3400-3300 BC. This is a crucial stage because it marks the true development of various megalithic formulae in the Western Mediterranean with quite varied regional experiences. However, it is important to acknowledge that the chronological timing of these diverse manifestations sometimes remains rather random.

- In Catalonia, the dolmen sequence could begin with monuments with polygonal or trapezoidal chambers with short corridors, the best model being the dolmen of the Font del Roure in Espolla (**Fig. 3**). Two megaliths (Arreganyats and Tires Llargues) have given carbon dates on charcoal at around 4000-3800 BC (Tarrús 2002).

- In Sardinia, the monument of Motorra, with a circular chamber and short corridor, yielded some Ozieri culture pottery sherds (**Fig. 4**). That culture seems to have peaked between 4000 and 3500 BC (Lilliu 1966).

Fig. 4 – Sardinian ancient dolmen with corridor: Motorra and Masone Perdu (Photo: E. Atzeni).

- In the south of the Iberian Peninsula, the question is more complicated. There are known elongated monuments, generally V-shaped, with well-developed corridors. That of Alberite (Villamartin near Cádiz) yielded three dates on charcoal: 5320±90/BP (4345-3960 BC), 5110±140 BP (4245-3640 BC), 5020±70 BP (3970-3660 BC) (Ramos & Pacheco 1996). Based on ^{14}C dating, the construction of the exceptional monuments of Menga and Soto is estimated to be between 4000 and 3500 BC (Bueno Ramírez *et al.* 2018; García Sanjuán & Mora Molina 2018).

If we take into account the Armorican evolutionary model, leading from passage graves to 'gallery grave'-type elongated monuments, we must admit that these hybrid monuments between passage and gallery graves were preceded in Andalusia by more archaic forms, including some small corridor monuments such as those known in the Gorafe-Rio de Gor sector (Garcia Sánchez & Spanhi 1959) (**Fig. 5**).

The advent of dolmens in the South of France is not yet very clear. There are monuments that are buried or with very few 'overground' parts (cf. the necropolis of Ricome in Languedoc) with Late Neolithic (or Final Neolithic 1) Saint-Ponian type items, such as asymmetrical arrows, dating from between 3600 and 3300 BC. In the same way, a small underground sepulchral alley studied in Cabrials (Béziers), which contained about 20 individuals and typical Saint-Ponian objects could also be situated in the third quarter of the 4th millennium (Tchérémissinoff 2012).

This stage shows similarities with hypogea, for example, the artificial caves of the Ozieri culture in Sardinia with their sculptures or engravings of bucrania, or the Maltese hypogea from the Zebbug phase (small hypogeum near the Brochtorff circle, tombs of Ta Trapna). It corresponds approximately to the first generalized extension of collective burials. It is also the period during which the first Maltese cross monuments (e.g., Mgarr) were built and where the trapezoidal stelae of the Durance region, with herringbone decorations, were erected, dated at the site of Bessan (Vaucluse) to between 3800 and 3600 BC (Sauzade *et al.* 2018).

1.3 Third stage

A third stage, which lasted for roughly a millennium (3500-2500 BC), is the optimum period for West Mediterranean megalithism and, more generally, for collective tombs. It is characterized by differentiated architectural schools, sometimes with processes of internal evolution that remain to be specified. The most typical monuments developed during this stage. Among these, we can cite:

- Passage graves (**Fig. 6**), sometimes with an antechamber, from eastern Languedoc, generally attri-

Fig. 5 – 3500-2500 BC. The great megalithic and hypogeic complexes of the western Mediterranean (J. Guilaine).

Fig. 6 – Languedocian dolmens with corridor: a. Capucin; b. Lamalou (Hérault) (Photos: J. Coularou).

Fig. 7 – Long rectangular monument from Aude, Pépieux (Photos: J. Guilaine).

Fig. 8 – Catalonian long monument with peripheral megaliths: Cova d'en Daina (Photo: F. Lontcho).

buted to the Ferrières culture (3200-2900 BC), but some of which may have been built earlier (Chevalier 1984).

- The long rectangular or V-shaped monuments, in the Aude and Catalonia (**Figs. 7** and **8**). The oldest dates on human bones place these around 3300-3200 BC (St Eugène, Pépieux).

- The *tholos* of southern Iberia, present in the region from Almeria to the Bay of Lisbon, and among the most beautiful monuments in Mediterranean megalithism, for example la Pastora or the Cueva del Romeral (**Fig. 9**). We can assume that these tombs follow on chronologically from the development of the mega-sites characterizing the pre-Bell Beaker Chalcolithic of Andalusia between 3200 and 2500 BC. Thus, a certain chronological variation exists between the *tholos* of Valencina de la Concepción: structure PP4-10,042-10,049; the *tholos* of Montelirio (*ca.* 2800-2700 BC), and the more recent Cueva de la Pastora (García Sanjuán *et al.* 2016).

- The rare alley monuments of Sardinia (Corte Noa) (**Fig. 10**).

Also part of this stage are all the chambers of various sizes known in Corsica, Sardinia, and the 3000 Caussenard monuments distributed between the Rhone and Quercy (**Fig. 11**), some of which were erected before 3500 BC according to some ^{14}C dates (Chevalier 1984; Cicilloni 2009).

This great West Mediterranean dolmen movement is contemporaneous with another variety of collective tombs: hypogea, also characterized by diverse architectures: the giant hypogea of Malta (Hal Saflieni, Brochtorff circle), the hypogea of Arles-Fontvieille (**Fig. 12**), the small Rinaldone tombs of Tuscany, Umbria, Lazio, Gaudo in Campania, Andalusian and the Portuguese hypogea (Guilaine 2015). Let us recall that the hypogea of Arles are in fact hybrid monuments dug into the rock but with megalithic cover stones. A ^{14}C date for a bone object from the hypogeum of Castellet gave a date of *ca.* 3400 BC (information X. Margarit).

Fig. 9 – Andalousian *tholos*: El Romeral (Photos: B. Ruiz Gonzalez).

Fig. 10 – Sardinian long monument: Corte Noa (Photo: J. Guilaine).

Fig. 11 – 'Simple'dolmen from the Causses: a. Champvermeil; b. Tiergues (Photos: A. Aigoin).

Fig. 12 – Hypogea from Arles: a. La Source entrance; b. Bounias gallery (Photos: J. Guilaine).

Fig. 13 – Maltese temple: Ggantija (Photo: J. Guilaine).

This is also the period of a specific type of megalithism related to worship, known exclusively in Malta with sanctuaries having three, five and seven apses, and marked by two highpoints: the period of coral limestone temples (Ggantija, **Fig. 13**) and the period of soft limestone sanctuaries (Tarxian) (Evans 1971; Trump 2008; Malone *et al.* 2009).

Finally, this millennium is also characterized by various schools of anthropomorphic stelae or menhir statues (in Sardinia, Lunigiana, Sion-Aosta, Rouergue and Languedoc, and the Iberian Peninsula), among which a certain chronological order can be discerned.

1.4 Fourth stage

In around 2500 BC, a new phase of recession began for the megalithic phenomenon, lasting until the middle of the 2nd millennium BCE. In several areas of the Western Mediterranean, megalithic or hypogeic cultures went into decline while the Bell Beaker culture spread. In these regions, Bell Beaker populations adopted the funerary memories still attached to many of these monuments and created their own burials in or near existing tombs. Undoubtedly, this behaviour was no longer in keeping with the previous 'communal tomb' spirit but signified the reuse of a space traditionally dedicated to the deceased for the individualistic, personalized spirit of the Bell Beaker dogma.

Some relictual megaliths were, however, still constructed in some regions of the Western Mediterranean during the Final Chalcolithic or Early Bronze Age:

- The 'Catalan cists': small monuments under mounds with Early Bronze Age goods (Tarrús 2002).

- The dolmens of the Balearic Islands (Montplé, Roques Llises, Ca na Costa, Aigua Dolça), associated with Bell Beaker and Epi-Bell Beaker contexts (**Fig. 14**). An unusual variety of a circular tomb with a vestibule and triple facing, found for example at Ses Arenes de Baix, Son Olivares, and Alcaidus, is specific to Menorca (Guerrero Ayuso 2007).

Fig. 14 – Dolmen from Minorca (Balearic Islands) (Photo: J. Guilaine).

- The 'stone tables' of Malta: a type of simple dolmen, poorly dated (one example, Ta Hammut, has delivered early Bronze Age Tarxian Cemetery type remains) (Evans 1971).

- The dolmens or block tables of Puglia: also poorly dated monuments, but some elongated tombs (Chianca of Bisceglie or Giovinazzo) also contained Bronze Age remains.

1.5 Fifth stage

I have grouped two varieties of very original monuments in the fifth stage, which are mostly from the second half of the 2nd millennium and which are also collective tombs.These are part of the 'Giants' Tombs' in Sardinia: monuments formed by an elongated alley preceded by a forecourt delimited by a hemicycle (**Fig. 15**). The oldest monuments are built from pillars and megalithic slabs, with a carved door and low access hole (e.g., Li Lolghi, Capichera). A more recent version consists of buildings of very regular blocks, which are a form of jointed keystones. The Giants' Tombs are the burial vaults of the Nuragic population: built from 1500 BC onwards (Lilliu 1982; Perra 2013).

The navetas monuments of Menorca, built from large 'Cyclopean' blocks, are divided into two types. The first consists of a rectilinear façade, short corridor, rectangular gallery, with an apsidal end (e.g., Es Tudons, Rafal Rubi); this variety can have an internal storey. The second type, also with a narrow corridor, has an rectangular layout inserted into a round mound (e.g., Biniac, l'Argentina). These monuments were built from 1400 BC onwards but were used until the 9th century BC (Plantalamor 1991; Guerrero Ayuso 2007).

1.6 Sixth stage

A sixth stage includes the last megalithic monuments that can be attributed to the Iron Age: the small North African monuments sometimes grouped in necropolises containing several hundred units. Their chronology remained uncertain for a long time and Camps considered them 'protohistoric' without further information (Camps 1961). It seems that they were individual burials or that they contained very few deceased. One of these monuments in the Mididi sector (Tunisia), dolmen 102, contained the remains of two individuals dated to the middle of the 1st millennium BC (Marras *et al.* 2009). The Tunisian High Tell also contains complex megalithic monuments with several chambers, which were probably used for a long period.

The ceremonial enclosures of Menorca are another Mediterranean 'megalithic' Iron Age production. They are considered ritual areas and are dominated by the *taula*, very regularized stele on which a smaller slab rests horizontally (e.g., Torralba, Trepuco). These monuments are dated to the post-

Fig. 15 – Giants' Tombs from Li Lolghi (Sardinia) (Photo: J. Guilaine).

Fig. 16 – *Taula* from Torralba in its ceremonial enclosure (Minorca) (Photo: Complutum).

Talayotic period, between the 6th and 2nd centuries BC (**Fig. 16**).

This chrono-cultural framework thus shows the long period during which various megalithic formulas emerged and then disappeared over four millennia. We now need to shed light on the societies that erected these architectures. Here, we leave the factual domain to move into a more speculative arena. We will focus on a series of reflections based on archaeological documentation.

2. Megalithic societies

2.1 Proto-megalithism

The stage we have called 'proto-megalithism', i.e., the phase occurring during the 5th millennium, or even during the first centuries of the 4th, during which individual (or double) burials dominate, broadly speaking, for the Chasséen culture in the South of France reveals significant differences between individual monuments. In fact, it is possible to distinguish necropolises containing masculine but also feminine tombs endowed with abundant grave goods. We know of tombs under slabs with tumulus superstructures with a peripheral wall (e.g., Lattes). In the South of France, there is a real dichotomy between the deceased treated in this manner and another group of corpses – often women or girls (information M. Gandelin) – thrown with no deference at all into disused silos in the middle of settlements. Ongoing genetic research shows that male subjects may be related to each other whereas women come from diverse origins, so exogamy and virilocality are likely. The status of these apparently inferior women raises questions as to whether these partnerships came about as a result of peaceful marriage alliances or abductions during violent interventions (Gandelin *et al.* 2018).

There are also no megalithic necropolises characterized by rich funerary goods (e.g., Can Gambus), between 4000 and 3500 BC in the culture of Barcelonan tombs, but no monuments of comparable scale to the Carnac tumuli, for example, have ever been observed in the Mediterranean zone. Such a model of local 'kinglets' involving marked social differences is therefore not reproducible and seems to be limited to the Atlantic sphere. This observation shows the extent of regional disparities and casts

doubt on any globalizing model that would consider the Carnac mounds as a social reference for the Middle Neolithic.

2.2 Divergence

Disparities do exist in the Mediterranean area, more strictly speaking. In around 3800-3500 BC, i.e., in the chronological bracket of the recent Chasséen culture with individual tombs, some of the great V-shaped dolmens of Andalusia were built at the same time, particularly the most colossal, the Cueva de Menga, whose construction required the mobilization of many individuals and thus the intervention of a political authority. It is not known whether such a monument was erected in an unconstrained (even festive) social setting or, conversely, under the yoke of a tyrannical authority but in both cases the power of decision-making cannot be underestimated. Therefore, in the framework of the Western Mediterranean, between 4000 and 3500 BC, there is no single uniform model of society, but marked degrees of divergence.

2.3 From individual to group burial

An important threshold was thus crossed, in the first half of the 4th millennium, with the transition from individual tombs (or those with very few individuals) to collective tombs (cf. the Zebbug hypogea of Malta, dolmens of the southern Iberian Peninsula). The latter became widespread towards 3500 BC. This seems to imply that the significance of the individual gradually began to fade while the importance of the group was asserted through the development of vaults for family burials, or even individuals from a wider sphere. The investment in stone constructions reflects the concern to build a permanent display of ancestry, for at least several generations of users.

2.4 Dominant burials and accompanying persons

The accumulation of corpses in these 4th and 3rd millennia vaults does not exclude the possibility that the deceased admitted to these spaces may have been 'filtered'. The notion that these groups of corpses may suggest a phase of 'democratization' is not at all certain. In fact, there are dominant members in these societies with collective graves, as shown by examples in Italy (Guilaine 2017) and Iberia (García Sanjuán *et al.* 2018). It is often difficult to determine that these dominant burials were the result of the management of corpses. The multiple burials can be interpreted as accompanying persons: for example, a child associated with the tomb of Tursi in Matera, or the 'vedova' (widow) of the tomb of Ponte San Pietro in Ischia di Castro. There is no proof that collective tombs did not also contain accompanying individuals like, for example, the subjects grouped around the female individual UE-343 in the *tholos* of Montelirio in Valencina (García Sanjuán *et al.* 2018).

2.5 Multiple models

Several funerary models may exist in the same geographical zone. Thus, the large monuments of the Aude plain (e.g., Saint.-Eugene, Pépieux) seem to have contained the remains of the deceased, admitted to the 'community' tomb from a myriad of small settlements scattered all around. At the same time, on the Causses du Minervois (Les Lacs à Minerve, Hérault), or in the heart of the Corbières (la Clape à Laroque-de-Fa, Aude), the necropolises of small tombs appear to be more like family vaults. This suggests that two models coexisted in the same region. Such a pattern is known elsewhere. In Champagne, in the wetlands of Saint-Gond, hypogea grouped together in necropolises seem to have been family tombs, whereas, in the same area, there are also gallery graves with wider catchment.

2.6 Hierarchization

With regard to the process of hierarchization between communities, the example of the hypogea of Arles provides food for thought. In my opinion, la grotte des Fées (the cave of the Fairies) also known as Épée de Roland (Sword of Roland), one of the largest hypogea in the whole Mediterranean and built at the highest point of the Montagne de Cordes, is in a dominant position in terms of both its volume and its geographical position. It

overlooks other hypogea (Le Castellet, Bounias, La Source, the dolmen of Coutignargues), built lower down, which are smaller in size and which may be expressions of socially inferior (and subordinate?) segments of society (Guilaine 2015).

2.7 Social organization

It is clear that the megalithic or hypogeic societies of the Western Mediterranean cannot be reduced to a single model of social organization. In the South of France, compared with certain major earlier Chasséen sites, there was a marked distribution of communities across the landscape during the final Neolithic period, with rather small-sized settlements. Conversely, in the south of the Iberian Peninsula, the period is marked by the development of large settlements, surrounded by lines of ditches, sometimes associated with more defined sites with walled fortifications, or even simple open settlements. Among the known mega-sites are Valencina de la Concepción (450 ha), Marroquies Bajos (113 ha), Porto Torrao (100 ha), and la Pijotilla (80 ha). Regarding Valencina, the hypothesis of a kind of capital city at the head of a 'proto-state' has been proposed (Nocete 1989) – a bold assumption indeed. Managing the economy and the social functioning of such a site presupposes an elite, which the latest excavations of megalithic monuments have made clear, since the dominant figures could purchase exotic materials intended for their own use: elephant ivory from Africa or Asia, African ostrich eggs, and Sicilian amber; this is reminiscent of the 'kinglets' of Morbihan, several centuries earlier, with alpine jadeite or Andalusian variscite.

The funerary sphere reflects some of these social differences rather well. Firstly, in the hierarchy emphasized in some tombs in comparison to most of the others, which suggests strong competition. In Valencina itself, many funerary structures are rather small, while the proportions of some of the large *tholos* (e.g., structure 10.049, the *tholos* of Montelirio, the Pastora, Ontiveros) are among the largest Andalusian monuments (tumuli with diameters of 85-75 m, and an internal area of the tomb between 38 and 44 m long). A second indication of social differentiation is the obvious selection of the deceased in the tombs, as revealed by their funerary goods or clothing (e.g., the 'ivory merchant' in the cell of tomb 10.049, or the small group of deceased in the chamber of the *tholos* of Montelirio with numerous very finely made technical elements including combs and ivory plates, non-modified or decorated elephant tusks, ceremonial arrows, pieces of amber, rock crystal, etc.). These richly furnished individuals are the only ones that have been preserved. It is possible that the artisans of these pieces were specialists recruited from outside the region for their technical skills (Guilaine 2018).

2.8 The disappearance of megalithism

One question raised is the reason for the decline and disappearance of this great Mediterranean megalithism from 2500/2400 BC onwards. Two explanations are as follows.

a) In Malta it is acknowledged that the '4200 BP event' with its peak of aridity may have disrupted demographic growth as the population would have lacked water for consumption, farming or herding. Ecological awareness would have led to social protest. The dominant groups, masters of the liturgy, who ensured social cohesion through ceremonies conducted around the sanctuaries, were unable to satisfy economic needs, and were challenged and dismissed as the archipelago depopulated.

b) Throughout the great western arc of megalithism, the decline of cultures with collective burials seems to be linked to a disruptive element: the Bell Beaker phenomenon. Faced with lineage societies with a system of genealogical transmission based on biological kinship, the Bell Beakers overrode these rules, bringing more individualistic values (masculinity, warrior codes, use of alcoholic beverages, etc.). The local Neolithic populations had to adapt to the new codes and new rules of social life. There was thus a transition from a society based on kinship relationships to one whose members cast off these ties to construct new values. Symbolic affinities at the level of the individual thus overthrew societies based on transgenerational biological kinship.

2.9 Beyond the Bell Beakers

The individualistic Bell Beaker influx did not put an end to the tradition of collective tombs, which

sometimes continued during the Early Bronze Age or even beyond, often in hypogea or sepulchral caves, in several sectors of the Western Mediterranean. In this way, a resurgence of megalithism occurred in Sardinia towards the middle of the 2nd millennium with the Giants' Tombs, sepulchral alleys preceded by a forecourt delimited by a hemicycle. Sardinia was then divided into autonomous territories under the authority of fortified localities, complex nuraghes, the stone towers dominating smaller scale sites. These impressive buildings, managed by a sort of local 'aristocracy', correspond, in the funerary domain, to the Giants' Tombs – collective vaults with relatively homogeneous contents in terms of status, except for some subjects endowed with rare imports (prestigious pearls in glass or earthenware, Mycenaean ceramics). The image is one of an apparently less pyramidal society than that suggested, around the same period, by the Iberian culture of El Argar, which was not 'megalithic'.

3. Conclusion

These observations yield a rather contrasted impression. The development and blossoming of megalithism and its underground equivalent hypogeism, reached their peak in the Mediterranean in the 4th and 3rd millennia in societies with rather disparate political contours but which all had to deal with problems of demographic pressure. The importance of certain monuments (the Cueva de Menga in the first half of the 4th millennium, the Sword of Roland of Arles in the second half) suggests peaks of vertical structuring which may have involved coercion.

Three markers are decisive: the size and morphology of settlements; the monumentality and volume of the tombs; and the geography of the supply of materials and the technical level of the funerary equipment. These reflect the overall image of rather diverse situations. It is thus impossible to group together under the same model the Andalusian elites at the head of oversized sites, with monumental tombs and social markers in exotic materials, and the populations of the South of France with their restricted habitats, tombs of mostly limited scale and funerary goods made of materials of regional or barely extra-regional origin. It is all a question of scale, of categorization by levels, and future research should focus on this direction.

Translated from French
by Louise Byrne

The megalithic monument of Uzès (Gard, south of France)

Marie BOUCHET, Philippe CAYN, Christian SERVELLE

The discovery of the monument of Uzès occurred in 2017, during an archaeological evaluation prescribed by the state services and carried out by the National Institute of Preventive Archaeological Research (Inrap), upstream of a road infrastructure project (Bouchet & Ott 2018). Less than 2 km west of the town of Uzès (**Fig. 1**), in a sector now marked by a crossroads of five routes, the evaluation had revealed the presence of a megalithic structure dating from late prehistory. The layout appeared to be a structuring feature in the landscape, around which a Gallo-Roman and another, perhaps protohistoric, axis of movement were constructed. A building and cremation burials dating from the Roman High Empire were also found nearby. During the winter of 2018-2019, an excavation carried out by Inrap made it possible to explore an area of about 1000 m^2 around the megalith (Cayn *et al.* 2021). This revealed

Fig. 1 – Location map of the city of Uzès in the Gard (Computer graphics: F. Robin).

Fig. 2 – This general view highlights the considerable dimensions and probably circular shape of the monument (Photo: V. Lauras).

a vast enclosure of standing stones that extended well beyond the excavation area (**Fig. 2**).

The monument is located at the foot of a gentle slope, the substratum of which is made up of Miocene deposits. The megalithic complex, as it appears today, consists of 53 slabs distributed in a curving double alignment with an entrance that allows access to the centre of the enclosure (**Fig. 3**). If the full monument is circular, its diameter is estimated to be 76 m and it could include approximately 280 slabs.

The most significant alignment is 42 m long and consists of 39 monoliths arranged in a contiguous manner, with the exception of two menhirs which are spaced further apart. The stones were found vertically planted but mostly crumbled, and some were also broken *in situ* (**Fig. 4**). They all tilted towards the inside of the circle with one exception.

Over a section of 8.5 m, a second alignment of eight monoliths extends parallel to the first, against its northern face (**Fig. 5**). Most of these remain vertical but are broken at the apex. One entire 3.80 m-high

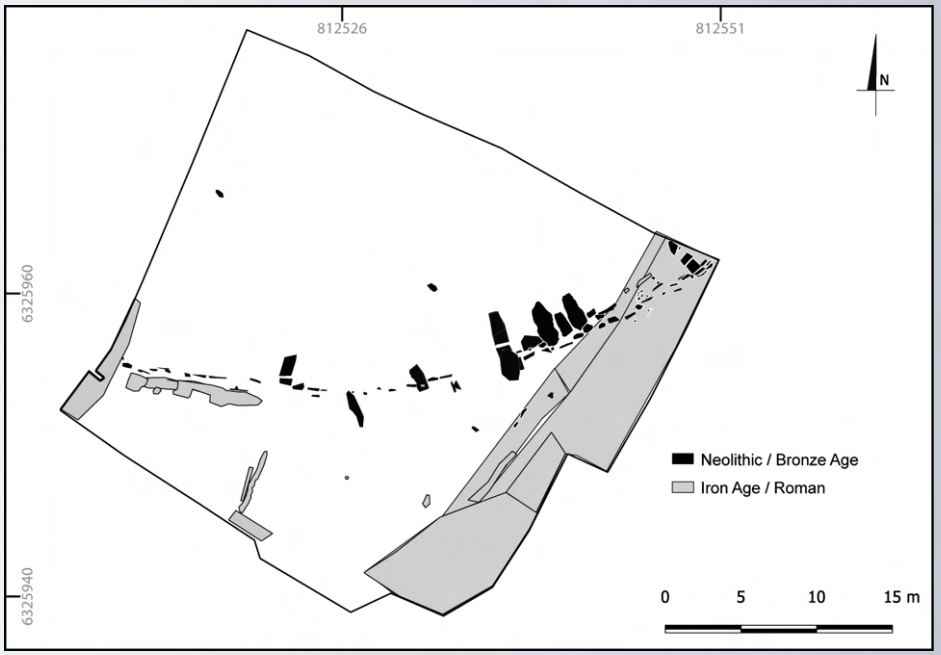

Fig. 3 – In its eastern part, the monument has a double alignment. In the small alignment, the average height of the monoliths is 2 m, the width is 1.12 m and the thickness is 0.19 m. In the large, curved alignment, the average height of the menhirs is 1.17 m, the width is 0.86 m and the thickness is 0.15 m [Topographical survey: A. Farge, SIG; M. Bouchet, EPSG 2154 (Lambert 93)].

Fig. 4 – A few monoliths are chipped or broken and fallen. On the right, the stratigraphic section shows the level of the ancient road, which includes slabs removed from the monument (Photo: J.-L. Aurand).

Fig. 5 – Detail of the second alignment with two menhirs and a statue-menhir meticulously laid flat (right) and the 3.80 m monolith broken in two (left) (Photo: M. Bouchet, E. Conrad).

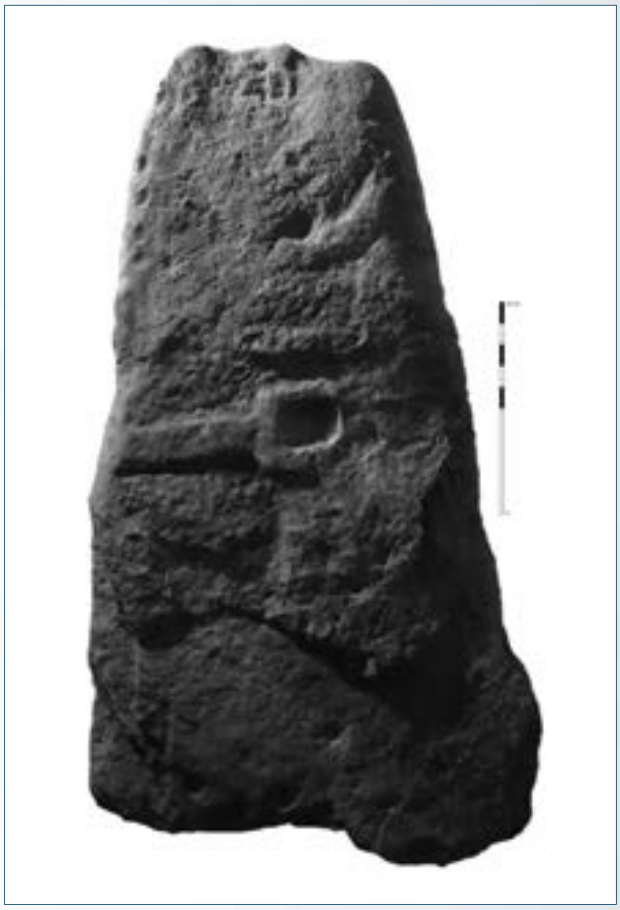

Fig. 6 – In grazing light, details are visible on the statue-menhir: his face, arms and shoulders, a belt with a buckle, an object, cup marks and ribbed sides (Photo: M. Bouchet).

menhir was excavated in two parts: the base was still in its installation pit while the upper part lay flat on the ground level, inside the circle. Finally, two large stones framing a statue-menhir were all intentionally arranged flat on the ground surface (**Fig. 6**).

In the southeastern part of the large alignment, there is a gap of 3.2 m. On each side, six monoliths are placed towards the south, implanted either perpendicular or obliquely to the centre of the monument (**Fig. 7**).

The morphology of the stones is highly variable. Those recorded indicate that the monument consists in blocks ranging from 0.75-3.80 m in height (**Fig. 8**). The raw material used in the manufacture of the monoliths relate, for the most part, to various facies belonging to the three geological formations of molasse of Miocene age, mainly Lower Burdigalian sandstone molasse and Upper Burdigalian limestone molasse. Only one element is Cretaceous limestone with Urgonian facies.

The stones of the small alignment show many traces of shaping (roughly hewn and staking), of artificial cup marks; the only anthropomorphic representation includes a cup mark (cf. **Fig. 6**). Although most of the slabs in the large alignment are poorly worked (rough surfaces, simple, rough-hewn), some nevertheless show evidence of careful treatment.

Fig. 7 – The interruption of the main alignment could indicate the existence of an access to the inside of the monument at this location (Photo: C. Pallier).

There is, for example, a series of 12 cup marks, some with a hammering crown and kerf, a series of removals around a deep natural cup with hammering or staking, and the presence of a large notch on one slab that may have originated in another funerary monument.

The dating of the monument was challenging throughout the excavation given that this type of monument is very rare in the region and, indeed, in the whole of France (Briard 2000). Few artefacts were discovered in association with the site. Furthermore, the structures discovered inside the circle – two small arrangements – did not provide precise chronological clues. On the outside, the remains are, stratigraphically, more recent. On the other hand, although the statue-menhir has features specific to the region, it nevertheless fits well within the known corpus of Late Neolithic statues (Jallot 1987; Laporte *et al.* 2011; Maillé 2011). This does not, however allow the dating of the monument, especially as it was found in a secondary position (deliberately lowered). Rare samples of charcoal and animal bones from the channel where the slabs were laid and from the monument's installation levels have produced three radiocarbon dates. Within these initial results, two dates from different contexts indicate a similar chronological range that would place the construction of the monument during the Final Bronze Age, i.e., between 1100 and 900 BC. Two new dates, however, carried out using the OSL method, allow new discussions on the history of the monument. The first date, from beneath a lowered slab, is from the Final Bronze Age, but the second, from a hole where the slabs were laid, is from the Final Neolithic period.

The stone circles erected in Occitania are poorly documented, as indeed, are those in the rest of France, so this discovery could provide new knowledge. An in-depth study is currently underway, and a geophysical surveying project is envisaged on the neighbouring plot. The objectives are to reconstruct the entire layout of the monument, observe any developments within its history and perhaps make it possible to clarify its purpose.

Fig. 8 – The monoliths are placed in an installation trench and wedged by small stones or slab fragments (Photo: M. Bouchet).

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Megalithism *versus* cyclopeism: the case of prehistoric Menorca (Balearic Islands, Spain)

Abstract: The island of Menorca (Balearic Islands, Spain) is home to a large quantity of archaeological sites, most of them dating back to the prehistory of the island (*ca.* 2200-123 BC). This paper deals with the terminology used when describing the prehistoric monuments of the island, which are all usually referred to as megalithic due to the use of large stone blocks for their construction. Although there are megalithic remains on Menorca, erected by the first settlers from the Late Copper Age, the remaining monuments constructed during the Bronze and Iron Ages, despite also being monumental and made up of large stones, were built using the cyclopean technique and should therefore be referred to as 'cyclopean' instead of 'megalithic'. The present work aims to elucidate the differences between megalithic and cyclopean constructions, showing both types found on the island. Whereas megalithic remains are inherited from traditions found on the continent, from where the first settlers arrived, the later cyclopean architecture represents a new and original expression in Menorca, some of which are unique in the world, as can be seen in the structures known as *navetas*, cercles and *taulas*.

Keywords: *Menorca, megalithism, cyclopeism, Pretalayotic, Talayotic*

1. Introduction: the prehistory of Menorca

Menorca is one of the four main islands that form the Balearic archipelago, along with Mallorca, Ibiza and Formentera (**Fig. 1**). Mallorca and Menorca were occupied permanently from the second half of the 3rd millennium BC (Gili *et al.* 2006) and Menorca from *ca.* 2200 BC. The prehistory of Menorca is divided in two main periods: the Pretalayotic and the Talayotic.

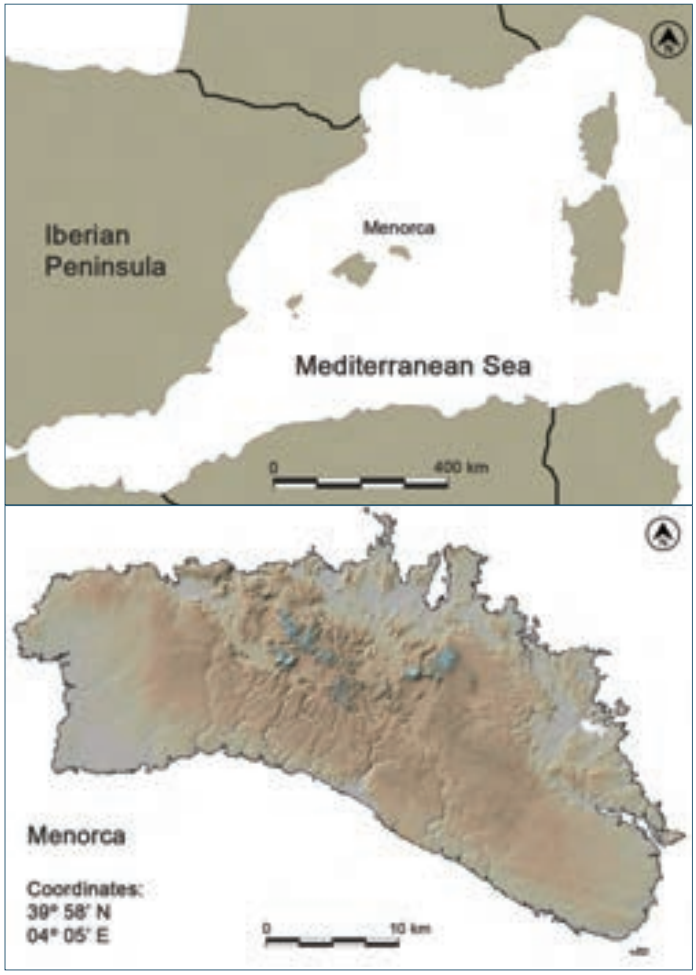

Fig. 1 – Location of the island of Menorca.

1.1 The Pretalayotic period

The Pretalayotic period covers the Late Copper Age and much of the Bronze Age and is divided into two phases, the First Settlers (*ca.* 2200-1600 BC) and the Dwelling-*naveta*-settlements (1600-1200 BC). Although little information is available from the first phase, including the origin of the settlers [(1)], the initial date has been provided by the skeletal remains found in the megalithic tombs at Biniai Nou (Plantalamor & Marquès 2001). These settlers would have carried with them their traditional construction techniques bringing the megalithic tradition to the island, as can be seen in the funerary monuments they erected in Menorca, such as dolmens and para-dolmens. However, it is from the second phase (1600-1200 BC) that the first permanent settlements appeared on the island. These consisted of several dwellings grouped together and sometimes protected by an outer wall (Anglada *et al.* 2017). The dwelling-*navetas* after which the period is named were houses occupied by family units, and consisted of elongated apse-shaped buildings built from large stone blocks using the cyclopean technique to form their walls, while their roofs could be made of either stone slabs or thatch and clay. In this second phase, the funerary megalithic structures of dolmens and para-dolmens were abandoned, and new, non-megalithic spaces were used to bury the deceased.

1.2 The Talayotic period

In approximately 1200 BC, a great change took place on the island. Dwelling-*naveta* settlements were abandoned and new ones were formed. Unlike the former settlements, these new villages had a public monumental structure known as a *talayot*, which gives the name to the period. These massive, truncated cone-shaped towers were the main buildings of the early Talayotic period (1200-500 BC). Radiocarbon dating has revealed the date of their construction to be *ca.* 1200-1100 BC (Anglada *et al.* 2011). Little is known about their function, as few have been excavated despite more

(1) Due to some traits, such as the southwest to west orientation of dolmens and some pottery productions, which can be found in the southeast of France and Catalonia, it is suggested that the first inhabitants of Mallorca and Menorca, or at least some of them, arrived to the islands from those regions.

than 350 examples having been preserved on the island. They could have served various purposes, such as control of the hinterland of the settlements, as a means of communication from their tops, or as symbols of the prestige and power of the community who built them.

The Late Talayotic (500-123 BC) is a period characterized by an increase in commercial relationships with foreign cultures, specifically with the Punics in Ibiza (a Punic colony at the time), with whom they traded, resulting in a large quantity of products arriving in Menorca.

Despite continued use of natural caves and funerary *navetas* at the beginning of the Talayotic period, in the Late Talayotic period, rock-cut tombs or hypogea became the most widespread type of funerary space.

The cyclopean technique was present in all constructions of the period, and new types of buildings were erected that were related to domestic, religious and defensive activities. Dwellings, which are named *cercles* (circles in Catalan) and hypostyle rooms were the main domestic structures of the period. Contemporary to these dwellings, settlements had religious buildings where rituals were held in honour of the deities worshipped by the society. These sanctuaries are known as *taula* enclosures, since their central monument is a *taula* (table in Catalan), a T-shaped structure made up of two large stone slabs.

2. The architecture of prehistoric Menorca

During the two main periods of the prehistory of Menorca, monuments of different uses were erected, all of which had one aspect in common: the use of large stone blocks fitted together without any type of mortar or other binding material. From the arrival of the first settlers who built the oldest tombs, until the late Iron Age and the construction of circular dwellings and *taula* sanctuaries, the prehistoric structures of Menorca were built with large stones, and were therefore monumental.

While all these monuments are frequently referred to as 'megalithic', the island has very few examples of megaliths in contrast to the large number of structures built using the cyclopean technique. However, the public, and sometimes also the scientific literature, refer to all as 'megalithic', defining the prehistory of Menorca as one of the best examples of 'megalithism' in the Mediterranean.

2.1 Megalithism *versus* cyclopeism

The megalithic technique constructed spaces delimited by large flat orthostats placed vertically, set in the ground at a certain depth. Where these orthostats form a structure, this may be covered by slabs placed in a horizontal position. The orthostats, either isolated or in groups (*menhirs*) or used to build a structure (*dolmens*), are uneven and roughly squared and rest vertically, without the juxtaposition of other stones to form a structure.

By contrast, the cyclopean structures present double-faced walls with large, roughly squared stones with a fill between them. The cyclopean technique has a greater range of constructive solutions than the megalithic, allowing the construction of a wider variety of buildings. Each technique has chronological and functional connotations which cannot be ignored when dealing with the prehistoric structures of this island. While the megalithic phenomenon occurs between the Neolithic and the Early Bronze Age and can be found in many locations in western Europe, both Mediterranean and Atlantic, the cyclopean technique began in the Bronze Age, as can be seen in Mycenean constructions and also in the Western Mediterranean in Sardinia, Corsica and the Balearics. In terms of function, while the megalithic monuments are mostly related to ceremonial or funerary uses, cyclopean structures were used for various purposes, such as domestic, defensive, religious and also funerary.

Whereas the megalithic remains of Menorca are inherited from continental traditions brought by the first settlers, the cyclopean architecture of the Bronze and Iron Ages was a new and original expression, some examples of which are unique in the world, as can be seen in the buildings known as *navetas* (funerary structures), cercles (circular dwellings) and *taulas* (enclosures) (Ferrer *et al.*, in press).

The megalithic monuments of Menorca are exclusively funerary structures: dolmens, of which only eight have been located (De Nicolás *et al.*, in press), and para-dolmens (see below). Only five para-dolmens have been documented although there

were probably more; identification is difficult due to their poor state of preservation. As will be seen in the following sections, all the remaining prehistoric monuments of Menorca are cyclopean, and the first such structures on the island clearly evolved from the megaliths that preceded them.

2.2 The megalithic monuments of Menorca

A para-dolmen is a small artificial cave whose entrance is made up of several stone slabs that form a short corridor, which is covered by capstones and closed by a façade. It is clearly a megalithic construction since the flat stones forming the sides and façade of the corridor are placed in a single row in a vertical position resting on bedrock. The best known examples of this type of tomb, at Biniai Nou, are known as monuments 1 and 2 (Plantalamor & Marquès 2001). The ^{14}C dating of skeletal remains from these monuments prove that they are the oldest tombs on the island, the first inhumations taking place in around 2000 BC; the people buried inside the Biniai Nou para-dolmens belonged to the first communities who settled in Menorca (**Fig. 2**).

The first generations of the inhabitants of Menorca also built and used dolmens to bury their deceased. These constructions and their southwest-westward orientation, as mentioned above, could be indicative of the first settlers being from Languedoc or northern Catalonia, areas with very similar dolmens. As is typical of these megalithic funerary monuments, they are constructed from several stone slabs placed vertically to form the rectangular burial chamber, the slab of the façade presenting a hole through which the corpses were placed inside. This chamber is preceded by a short corridor also formed by vertical stone slabs and covered by horizontal slabs; the monument was originally covered by a tumulus. The most representative example is the Ses Roques Llises dolmen in the southeast of the island, in the municipality of Alaior. This dolmen is surrounded by a circular structure, whose function may have been to contain or delimit the tumulus. The ^{14}C dating of the bones from another monument, the

Fig. 2 – One of the para-dolmens at Biniai Nou (Photo: C. Bravo).

Montpler dolmen, also in the southeast of the island, yielded dates of between *ca.* 1750 and 1250 BC (Plantalamor & Marquès 2003: 325-326), which points to the use of these monuments in the Late Copper Age and Early Bronze Age (**Fig. 3**).

2.3 The cyclopean monuments of Menorca

The Pretalayotic period

From the Bronze Age and throughout the rest of Menorcan prehistory, all monuments were built using cyclopean technique, with megalithism abandoned. However, the move from megalithism to cyclopeism should not be considered as an abrupt change, as the first cyclopean buildings are, without any doubt, descended from their megalithic predecessors.

The transition can be clearly seen in a new type of collective tomb that was built in the Bronze Age and used during the first half of the Pretalayotic period: the triple-walled tombs which, like the dolmens, are usually southwest-west oriented, and best exemplified by the sites of Son Olivaret (Plantalamor *et al.* 2008) and the Ses Arenes de Baix. These circular monuments have a thick wall comprising three concentric rows of stones with a fill of rubble between them. Like the dolmens, they have a single entrance in their façade and a burial chamber, although in this case it is oval in shape. In plan view, both dolmens and triple-walled tombs appear quite similar due to the somewhat circular layout of both (the outer circular layout of the Ses Roques Llises dolmen is given by the circular structure that surrounds it), with a central burial chamber accessed by a short corridor. However, the triple-walled tombs are more monumental than the dolmens due to the thickness of their walls.

The other significant prehistoric burial monument of Menorca is the funerary *naveta*. Navetas d'Es Tudons is the most typical, as well as the most monumental and most famous. Funerary *navetas* could be an evolution of the triple-walled tombs since they also include spaces delimited by a wall

Fig. 3 – Dolmen at Ses Roques Llises (Photo: C. Bravo).

enclosing the burial chamber, access to which is via a small corridor preceded by a short entrance in the façade. Even though the Navetas d'Es Tudons has a horse-shoe shaped layout with a somewhat concave façade, others are circular in layout, reminiscent of the triple-walled tombs (**Fig. 4**).

However, the innovation of *navetas*, being constructed with the cyclopean technique by means of large two-faced walls to form their sides, is the internal space, which is divided into two levels: the ground level, which was the burial chamber where the deceased were placed on the ground along with their grave-goods, and the upper level, where skeletal remains from the first level were placed once they were decomposed. Access to the upper level was possible by means of a vertical conduit in the corridor. The two levels were separated by flat stone slabs, which were also used for the roof.

The dwelling *navetas* mentioned in previous sections share the same layout as the funerary *navetas*, but their function was domestic.

Fig. 5 – Internal view of a dwelling *naveta* at the Pretalayotic settlement of Son Mercer de Baix. Noter the polylithic columns supporting a stone roof (Photo: C. Bravo).

Fig. 4 – *Naveta* d'Es Tudons (Photo: C. Bravo).

The Talayotic period

The cyclopean technique reached its maximum expression in this period with the construction of a vast variety of structures of different uses, many within the new settlements of the Talayotic period (*ca.* 1200-500 BC). *Talayots* are truncated, cone-shaped towers that can also be found on the island of Mallorca, although significant differences can be identified between Mallorcan and Menorcan examples. While Mallorcan *talayots* present a rather standardized pattern, having circular or square-shaped layouts, all with an interior chamber at ground level, Menorcan *talayots* are generally larger and do not follow a unique pattern. Most are solid, even though some also have internal chambers; some solid examples have internal conduits or outer steps leading to the upper platform (**Fig. 6**).

The use of the cyclopean technique made possible the construction of large structures, which could reach up to 10 m in height. With the building of these massive cyclopean buildings, the landscape of Menorca became monumentalized; the structures could be seen from afar and sometimes even from settlement to settlement, becoming markers in the territory.

Other cyclopean constructions date mostly to the Late Talayotic period (*ca.* 500-123 BC). One of the most significant and enigmatic monument types of this period, and of prehistoric Menorca in general, are the *taula* enclosures; the sanctuaries of the Talayotic settlements. A *taula* enclosure is a horse-shoe shaped building presenting the typical cyclopean double-faced wall with a fill in the middle and a unique entrance at the centre of its façade. The most important element is the *taula* monument, a large freestanding T-shaped structure set roughly at the centre of the building. These large monuments can reach up to 5 m high and consist of a vertical slab, sometimes placed inside a groove or just standing on the bedrock, with a capital placed on the top. Other architectural elements inside the sanctuary include pilasters which either adjoin the internal face of the walls or are embedded into them (**Fig. 7**).

Even though some might consider the *taula* monument to be a megalithic element, for it is a large, standing structure, it can never be thought of as an isolated piece, since it is set inside a building and is one of several elements that form the cyclopean sanctuary (**Fig. 8**).

The domestic dwellings found in these Talayotic settlements also date from this period and are called *cercles*. They also present outer double-faced walls composed of large roughly squared ashlars (worked stone blocks). Their internal arrangement usually consists of a central patio surrounded by five rooms, separated from each other by single-faced walls. Whereas the patio was open, the rooms had a roof made of wooden beams supporting a mixture of thatch and clay. These houses usually had an outer courtyard beyond the façade, also enclosed by a

Fig. 6 – General view of the large *talayot* at the Talayotic settlement of Cornia Nou (Photo: C. Bravo).

Fig. 7 – *Taula* enclosure at the Talayotic settlement of Torralba d'en Salort (Photo: C. Bravo).

Fig. 8 – Façade of the circular dwelling 'Cartailhac circle' at the Talayotic settlement of Torre d'en Galmés (Photo: C. Bravo).

cyclopean wall. Other domestic structures include hypostyle rooms, which were possibly used as storage areas. These are found both in association with circular dwellings and in isolation. Inside them is a set of columns and pilasters that support a roof made of large stone slabs (**Fig. 9**).

The final cyclopean structures from this period are the defensive walls that surround Talayotic settlements. These could consist of either a wall encircling the village or stretches of walls abutting the rear of circular dwellings. They are double-faced with a fill in the middle. In their outer face, they have a foundation block upon which large blocks rest in a vertical position, on top of which horizontal courses were added (**Fig. 10**).

3. Conclusions

The architecture of prehistoric Menorca has a constant feature throughout its approximately 2000 year duration; large stones were used in all constructions that were built during this time. However, only the very first structures can be considered megalithic (**Fig. 11**). All other prehistoric buildings, both in the Bronze and the Iron Ages, were built using the cyclopean technique. This made it possible for builders to erect a wider variety of constructions, which could be larger and much more complex, with the introduction of double-faced walls to give consistency to the whole structure. In some structures they used upper stone courses, gradually curving inwards until they almost met at the top, usually finished by placing horizontal slabs to close the space, and other architectural elements such as columns and pilasters were used to support roofs of various kinds. The cyclopean technique enabled these communities to create not only very monumental structures, specially from the Talayotic period onwards, but also to build monuments which are unique in the world, such as the *taula* sanctuaries, funerary *navetas* and circular houses.

Both megalithism and cyclopeism create monumental structures and share a common language that transmits permanence, and the use of large stone blocks has made it possible for many of these Menorcan monuments to survive to the present. In the words of Holtorf (1997: 45), "*what makes monuments 'monumental' is their permanence and scale, their constant visibility*", and that is exactly what both megalithic and cyclopean structures do, despite the many differences between them with regard to technique, chronology and typology of buildings, as is clearly seen in the case of Menorca.

Fig. 9 – Internal view of the hypostyle room at Torralba d'en Salort (Photo: C. Bravo).

Fig. 10 – Outer wall at the Talayotic settlement of Son Catlar (Photo: C. Bravo).

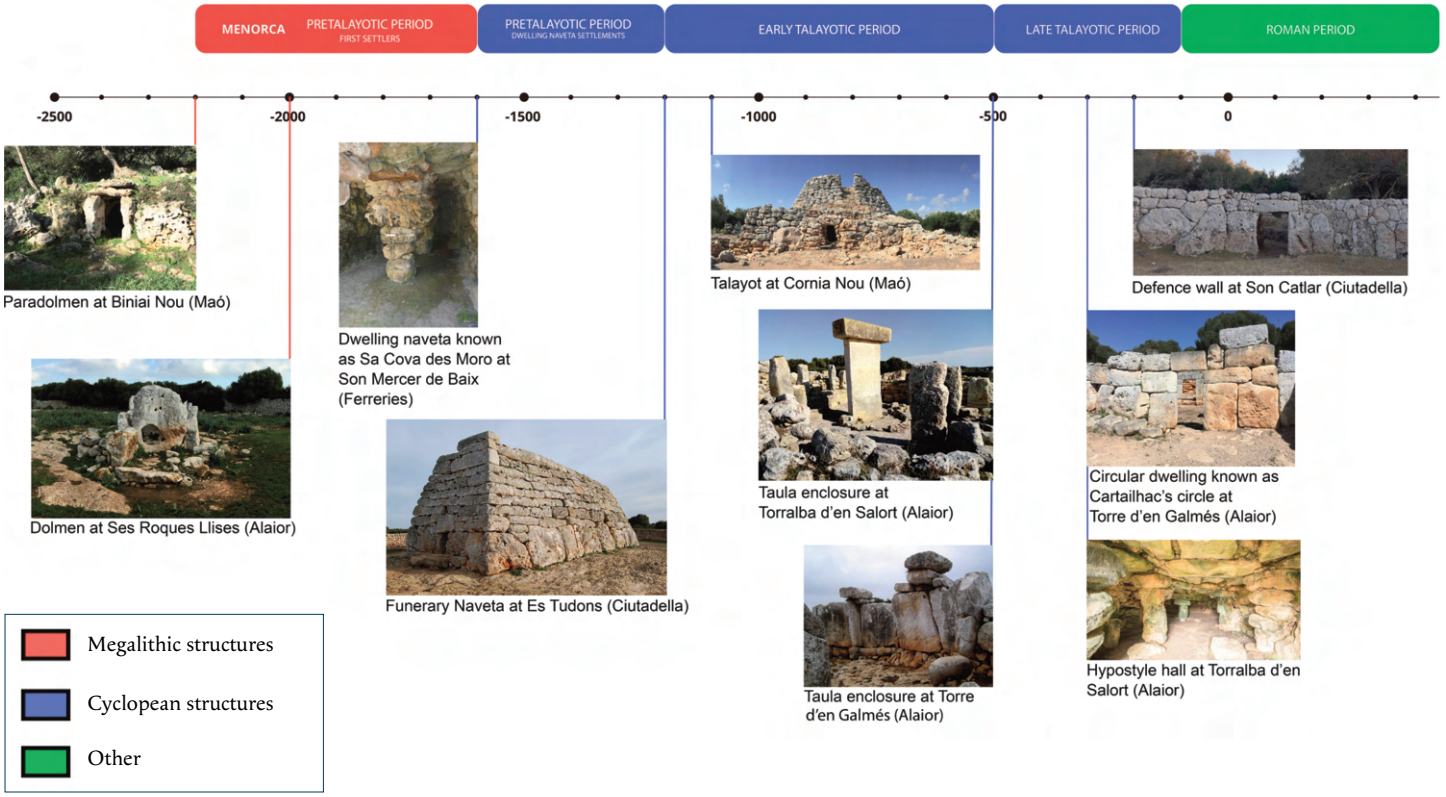

Fig. 11 – Timeline of the prehistory of Menorca and its main megalithic and cyclopean constructions.

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Marco António ANDRADE, Rui MATALOTO,
André PEREIRA

Small is Beautiful (1): Early megalithism and the first funerary architectures in south-central Portugal (southwestern Iberia)

Abstract: During the 1930s, Manuel Heleno conducted excavations in about 300 megalithic tombs located in the hinge region between the theoretical Mesolithic territories and the western sector of the megalithic group of Central Alentejo. The significative concentration of small simple tombs in the border zone between these two regions led him to consider that this would be one of the potential places of origin for the emergence of funerary megalithism in southwestern Iberia. This phenomenon, he believed, stemmed from the local Mesolithic communities, with a 'wave of advance' from the coast to the inland, showing an apparent linear evolution from simple to complex monuments that was reflected in their geographic distribution. New research in the innermost areas of Alentejo, carried out mainly since the 1990s, has since shown that these simple tombs also occur in the hinterland. Based on recent excavations conducted in small tombs in this region, the authors undertook an integrated overview of grave goods, architectures and available absolute dates. This suggests that the construction and the first use of these small tombs occurred only during the height of the Middle Neolithic local chrono-zone (first half to mid-4th millennium BCE), coeval with the use of karstic cavities and with the construction and use of the first hypogea, and also contemporary, in their final phase (in the second half of the 4th millennium BCE), with the first monuments having differentiated chambers and corridors.

Keywords: *funerary megalithism, small simple tombs, origin and development, Middle Neolithic, north-central Alentejo, south-central Portugal, southwestern Iberia*

(1) Borrowed from the book *Small is Beautiful: a Study of Economics as if People Mattered*, a collection of essays on economic and environmental sustainability by E.F. Schumacher, first published in 1973 by Blond & Briggs (London); the expression is used in terms of economic management, in contrast to the expression 'bigger is better'.

1. Research background

During his search for the original megalith and its relationship with the Late Mesolithic shell middens of the Tagus Valley (in the region of Muge), Manuel Heleno, former director of the Portuguese Archaeological Museum, conducted excavation works during the 1930s in about 300 megalithic tombs located in the western sector of Central Alentejo, mainly in the areas of Coruche-Montemor and Mora-Arraiolos, in the zone between the theoretical Mesolithic territories and the extensive megalithic group of Alentejo (Heleno 1956; Machado 1964; Fabião 1999; Rocha 2005; Cardoso 2013; Boaventura *et al.* 2014-2015; Mataloto *et al.* 2016-2017).

This area was deliberately chosen to fulfil Heleno's main objective: the clarification of the origins of megalithism on the Atlantic façade, given that, according to Heleno, the works carried out by Vergílio Correia some years earlier in the area of Pavia (Mora) (Correia 1921) were not enlightening in this respect. Of the 300 excavated monuments in this region, nearly half correspond to a type of tomb that is traditionally attributed to the early stages of the megalithic phenomenon: small simple tombs without a corridor, of the so-called 'proto-megalithic' type. The selection of this area, and those type of monuments, demonstrates a clear investment and channelling of efforts by Heleno in his attempt to resolve the issue (Rocha 2005; Mataloto *et al.* 2016-2017).

The significative concentration of these small simple tombs led Heleno to consider that this area would potentially be a place of emergence for funerary megalithism in southwestern Iberia, stemming from the local Mesolithic communities, a hypothesis based on the apparent similarities between the geometric armatures collected in the shell middens of Muge and those found in the small tombs. He

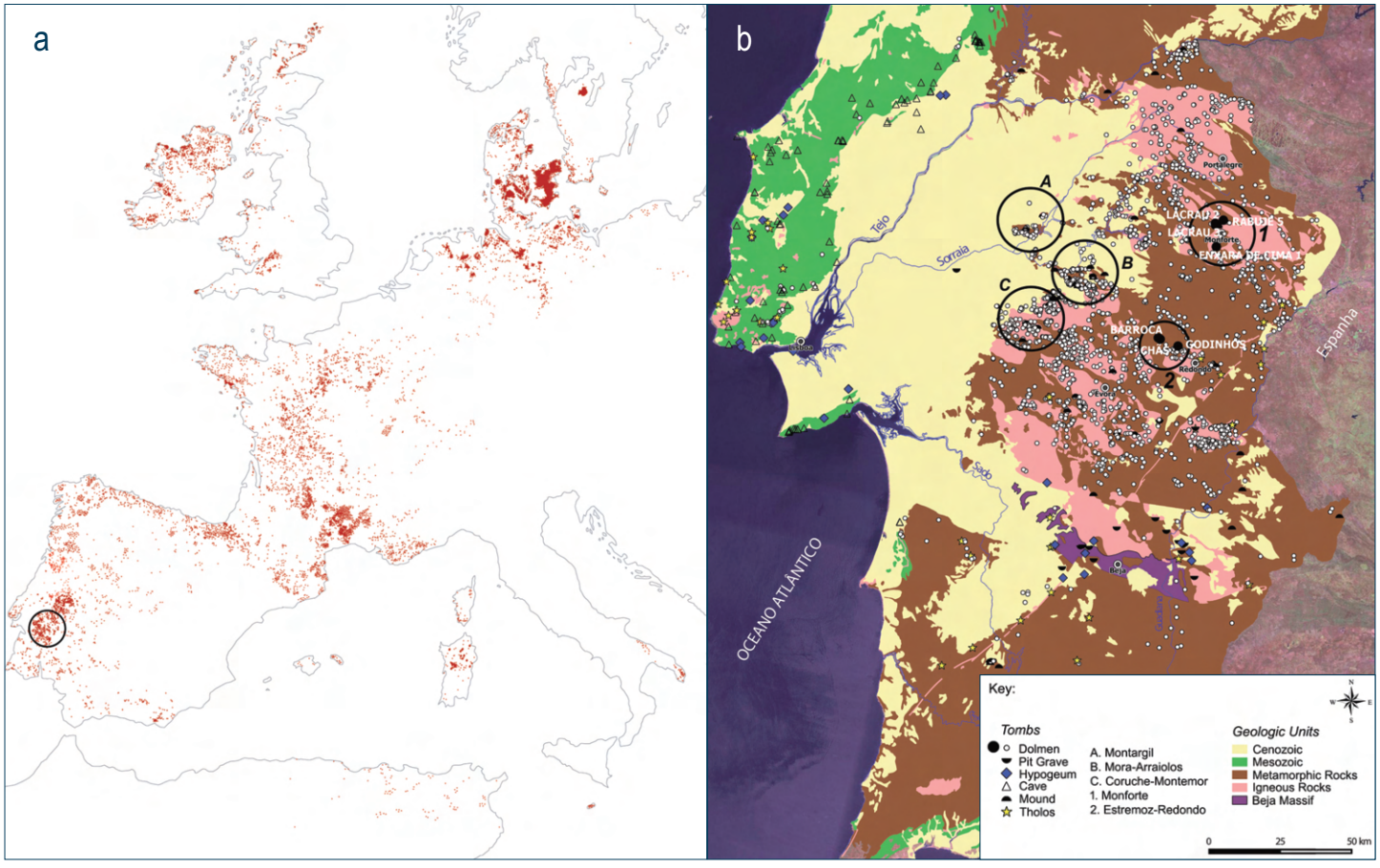

Fig. 1 – a. The study area in the context of European megalithism (after Laporte & Bueno Ramírez 2015: 229, fig. 22.1); b. Distribution of megalithic tombs in south-central Portugal (prepared under the MEGAGEO project), showing the clusters of small simple tombs in the areas of Montargil (A), Mora-Arraiolos (B) and Coruche-Montemor (C), and their geographical relationship with the small simple tombs in the areas of Monforte (1) and Estremoz-Redondo-Vila Viçosa (2).

postulated a 'wave of advance' from the coast to the inland – an area where larger monuments with a differentiated chamber and corridor (i.e., passage graves) were mostly known (**Fig. 1**). According to Heleno, this indicated a linear evolution from simple to complex monuments that was reflected geographically – assuming the megalithism of Alentejo to be an eminently local phenomenon, openly contradicting the thesis of an eastern origin proposed by Childe and Daniel (Cardoso 2013).

Vera Leisner was partly in agreement with this idea. In her work (together with Georg Leisner) in the areas of Reguengos de Monsaraz and Montargil (Leisner & Leisner 1951, 1953), she also advocated an evolution from the local Mesolithic communities to the Neolithic megalithic communities (whose first architectural manifestations were small, simple tombs, with a limited range of votive assemblages Leisner & Leisner 1956). This interpretation was based on the geographical proximity of the Late Mesolithic shell middens of the Tagus and Sado rivers and the western limits of the megalithic group of Alentejo, where the main clusters of small tombs were found. Leisner stressed, however, that a chronological continuity between shell middens and the first megalithic monuments could not be confirmed (Leisner 1966, 1983).

These ideas remained in use until quite recently, still in agreement with Heleno's circumstantial interpretations, although he later stressed that a linear evolution scheme could not be strictly followed, as it used an approach that matched architectures with votive assemblages. From the 1980s onwards, with the development of post-processualist methodological models, alternative interpretations have been proposed: some call for the total reversal of the simple-complex evolutionary sequence, almost an 'involution'; others recognize the contemporaneity of several architectural solutions, admitting the cultural and chronological coexistence of both simple and complex monuments (Kalb 1981, 1989; Jorge 1983-1984, 1986a-b; Bueno Ramírez 1989, 1994; Parreira 1996; Calado 2003; Bueno Ramírez *et al.* 2004). However, as the work conducted by Heleno was not 'scientifically' recognized (due to the lack of usable published results and restricted access to his field notes), these small simple tombs were generally regarded as 'isolated' occurrences in the landscape of Alentejo, which was otherwise dominated by medium to large passage graves (Kalb 1981, 1989).

2. At the dawn of a new millennium

Since the 1990s, and during the first decade of the 21st century, greater investment in fieldwork (excavation and archaeological surveying), either in the context of academic studies and research projects or heritage and archaeological surveys with a more general scope (such as municipal archaeological inventories), allowed the exponential extension of the range of analysis of the megalithic phenomenon in Alentejo. This added new data to the already colossal monographic study of Georg and Vera Leisner (particularly concerning southwestern Iberia), the 1959 and 1965 *Megalithgräber* volumes (Leisner & Leisner 1959; Leisner 1965).

One of the most important consequences of these new works was to draw attention to a reality somehow overlooked both by Heleno and the Leisners: non-funerary megalithism. In fact, although outlined since the 1970s with the works of José Pires Gonçalves (1970, 1975, 1976) and Henrique Leonor Pina (1971, 1976), the importance of menhirs and cromlechs in the megalithic landscape of Alentejo was only fully highlighted from the 1980s onwards with the works of Mário Varela Gomes (1983, 1994, 1997), Monteiro & Gomes (1981) and Manuel Calado (2001, 2004, 2015). For Calado particularly, the earliest manifestations of those monuments could be related to the first Early Neolithic communities occupying this region, probably in chronological and cultural sequence with the Mesolithic communities (based on their special concentration in the western area of Alentejo, as well as in the apparent coincidence between the 'arrangement' of standing stones within certain cromlechs and the 'arrangement' of burials in the Late Mesolithic shell middens). They would thus predate (and anticipate) the first funerary megalithic architectures, already framed in an advanced phase of the Middle Neolithic local chrono-zone (Rocha 1999; Calado 2001, 2004).

Another 'breakthrough' was the rigorous documentation of most of the already registered megalithic tombs (in terms of precise location and architectural features), as well as the identification of new ones

Fig. 2 – Aspects of the small simple tombs: Enxara de Cima 1, Lacrau 3, Rabuje 5, Chãs 1, Godinhos, Barroca and Almagreira 1 (the latter in process of excavation) (Photos: R. Boaventura and R. Mataloto).

– especially in areas less thoroughly covered in previous studies. Further, the recovery of Heleno's field notes allowed the accurate recognition of the scope and results of his work, highlighting the concentration of small monuments on the western edge of Alentejo (Rocha 2005; Gonçalves & Andrade 2014-2015, 2020; Mataloto *et al.* 2017). In turn, new surveys in more interior areas allowed the identification of a significant number of new monuments, especially the small simple tombs, which appeared to be valid components of megalithic clusters, sometimes spatially related to larger, later monuments. This demonstrated that the previously documented distribution, concentrated exclusively in bordering areas, although significant, is due to the limitations of the research rather than to specific historical processes (Mataloto *et al.* 2017).

It is now possible to defend the presence of these first megalithic communities in the inland areas of Alentejo, contrary to the apparent linear geographical evolution proposed by Heleno, and to some extent corroborated by the Leisners with their work in Reguengos de Monsaraz, where small simple tombs are scarce (Leisner & Leisner 1951; Gonçalves 1992, 1999; Gonçalves & Sousa 1997, 2000), thus delimiting new centres and new peripheries at the dawn of the megalithic phenomenon in south-western Iberia.

3. New centres or new peripheries?

One of the inner regions of Alentejo in which these new works allowed a significant advance was that framed by the municipalities of Monforte, Estremoz, Redondo and Vila Viçosa – around the Ossa mountain range, in the transition area between Central Alentejo and North Alentejo (two regions with a their own cultural identity as regards megalithism; Andrade 2009, 2013; Andrade *et al.* 2018). The research projects *COMONPH – Prehistoric Communities in the Region of Monforte, MEGAGEO – Moving Megaliths in the Neolithic* (directed by Rui Boaventura), *MEFAGRONT – Megalithism and Megalithic Communities in the area of Ribeira Grande*, and *GEOM-RS – Geometries of the Megalithic Territories in the Left Bank of Ribeira da Seda* (directed by Marco António Andrade), as well as archaeological surveys in the municipalities of Redondo and Vila Viçosa (directed by Manuel Calado and Rui Mataloto), allowed not only the identification of new sets of small simple monuments but also their excavation using appropriate current methodologies. The tombs of Enxara de Cima 1, Lacrau 2, Lacrau 3 and Rabuje 5 (Monforte), Godinhos and Chãs 1 (Redondo), Barroca (Estremoz) and Almagreira 1 (Vila Viçosa) were excavated in this context (Boaventura 2006; Mataloto *et al.* 2015, 2017) (**Figs. 2** to **4**).

Enxara de Cima 1

This tomb is composed of a small east-facing, sub-rectangular chamber enclosed by a mound of about 10 m in diameter, associated with another small tomb, Enxara de Cima 2, located a few hundred metres away on the same ridgeline. Excavation work revealed the absence of archaeological materials (apart from a few dubious quartz flakes), but the precise architecture of the tomb was defined, including the extent of the access area (marked by a kind of portal, it being effectively an open tomb) and the identification of a paved base level formed by large amphibolic shale slabs.

Lacrau 2 and 3

These two small simple tombs are associated with a larger monument, the passage grave of Lacrau 1. To date, Lacrau 2 has only been subjected to surface stripping to clarify its layout; it may eventually correspond to a small sub-rectangular chamber (only the north side uprights are preserved). Lacrau 3 is a small, possibly open sub-circular chamber ('horseshoe-shaped'?), with the capstone fractured and collapsed into the chamber. Excavation showed that the tomb had already been disturbed; only an unretouched flint blade (but with obvious use-wear traces) was collected, similar to those normally found in this type of tomb.

Rabuje 5

The tomb of Rabuje 5 is part of a large megalithic cluster composed of several monuments of different architectural typologies. It consists of a small sub-rectangular east-facing chamber, to which a corridor,

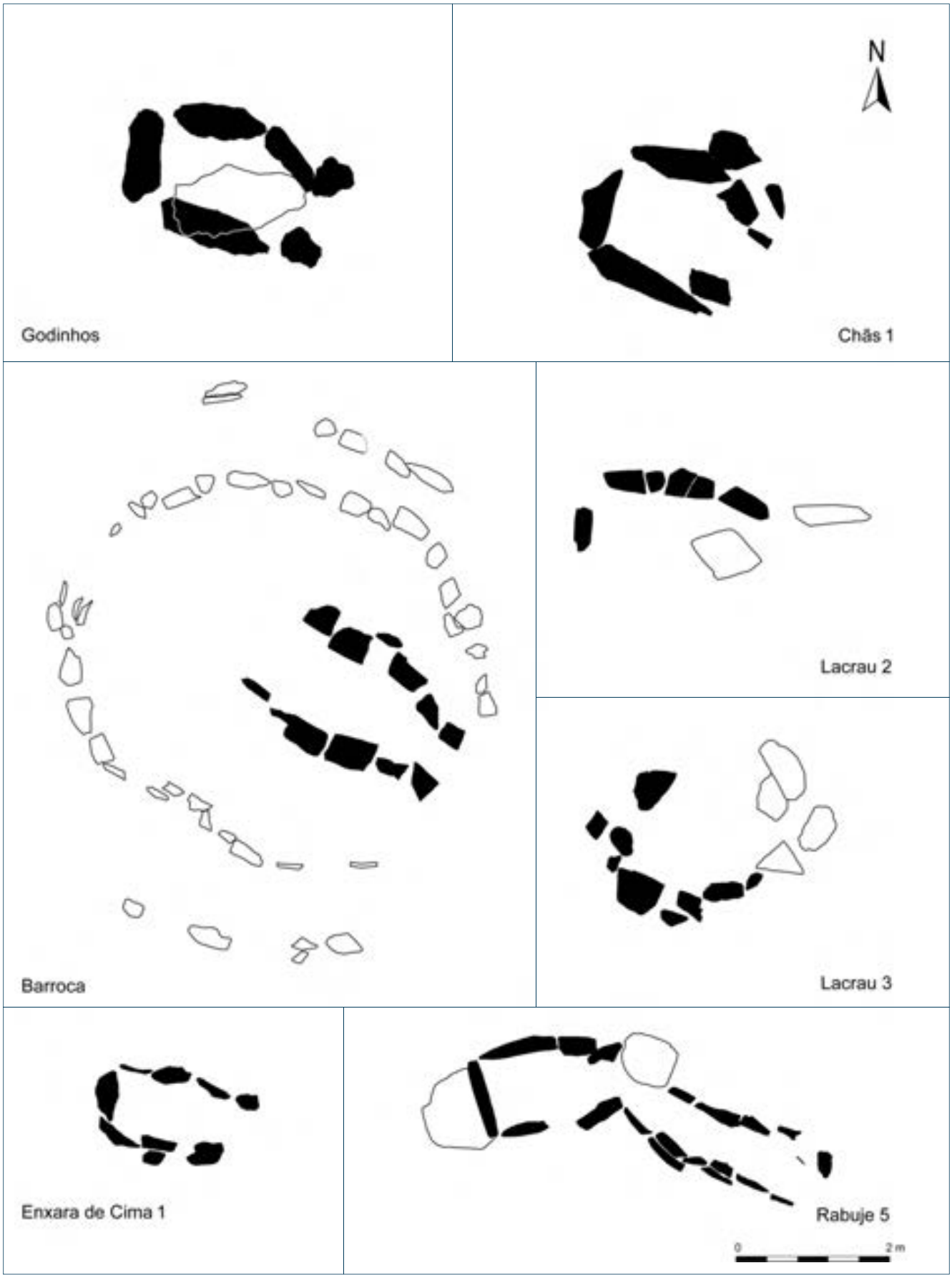

Fig. 3 – Schematic layout plans of the small simple tombs: Godinhos, Chãs 1, Barroca, Lacrau 2, Lacrau 3, Enxara de Cima 1 and Rabuje 5.

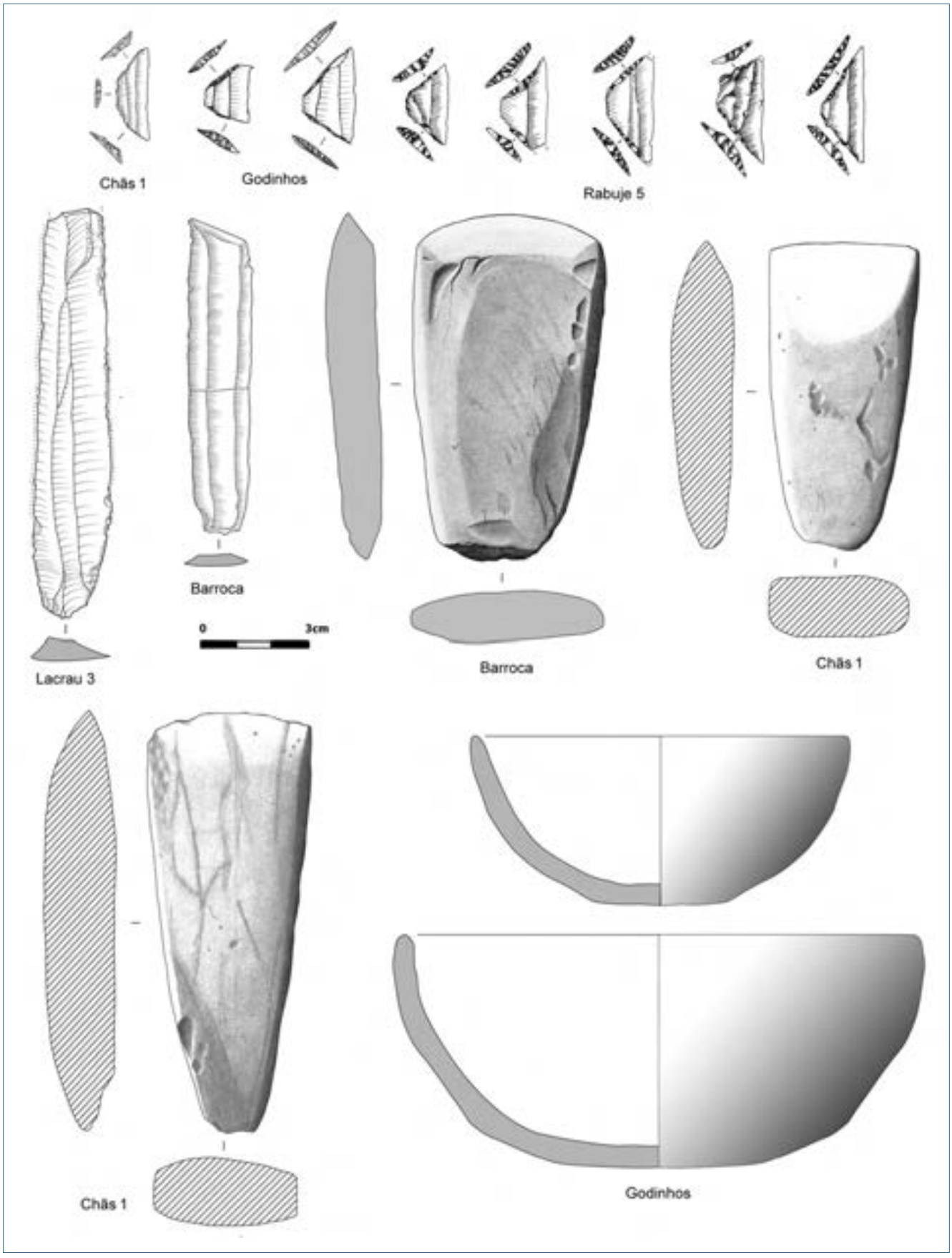

Fig. 4 – Examples of the archaeological material composing the grave goods found in the small simple tombs: geometric armatures (Chãs 1, Godinhos and Rabuje 5), small unretouched blades (Lacrau 3 and Barroca), adzes (Barroca and Chãs 1), and hemispherical bowls (Godinhos) (Drawings: Fernanda Sousa, Inês Conde, Diana Nukushina and Rui Mataloto).

oriented towards the southeast, seems to have been added later. Traces remain of the chamber's backrest ring and a possible peripheral ring (containing the mound) of about 8 m in diameter. The votive assemblage is mainly characterized by flint and quartz bladelets and geometric armatures (mostly trapezoids), as well as polished stone artefacts collected exclusively outside the tomb, at the edge of the mound structure. With no significant morphological differences between the materials collected in the chamber and those collected in the corridor, it is reasonable to assume that the addition of the corridor occurred shortly after the construction and first use of the chamber, somewhere around the mid 4th millennium BCE. This hypothesis is validated by a radiocarbon date obtained from a charred sample of *Arbustus unedo* collected under a collapsed upright in the corridor-chamber transition of 3630-3345 cal BCE 2σ (Beta-191133: 4650±50 BP).

Godinhos

This small tomb consists of a sub-rectangular chamber with the entrance indicated by two pillars forming a southeast-facing portal, within a mound of about 8 m diameter; the capstone is displaced, collapsed into the chamber. The tomb overlooks an important access route to the Ossa mountain range, being the last monument to be found when ascending from the lowlands of Redondo (or the first, if descending from the hills of Ossa). The votive assemblage comprises geometric armatures (trapezoids) and a polished stone axe, with the introduction of pottery (two plain hemispherical bowls), indicating a putative chronology in the second half of the 4th millennium BCE. A second episode of use was also identified, dating from the late 3rd millennium BCE.

Chãs 1

This small tomb with a sub-circular chamber ('horseshoe-shaped'), is open to the southeast (the access area is indicated by two slabs forming a portal). The remains of the chamber's backrest ring are preserved, with a kerb of about 10 m in diameter (the mound being possibly constituted only by earth). The tomb is associated, being on the same natural routeway, with the tombs of Chãs 2 (poorly preserved) and Barroca (below), the latter located in the neighbouring municipality of Estremoz. The grave goods include polished stone artefacts (two adzes and an axe) and geometric armatures (trapezoids).

Barroca

This small tomb with an elongated southeast-facing chamber (headstone not preserved) is part of a complex, oval-shaped mound consisting of stone blocks framed by a peripheral ring formed by two concentric rows of vertically embedded slabs. Also preserved is a small closing wall sealing off the access to the funerary chamber. The grave goods comprise polished stone artefacts (an axe and an adze) and a small unretouched flint blade. The tomb is located, as mentioned, on the same routeway as the two tombs of Chãs, in the municipality of Redondo.

Almagreira 1

The excavation of this tomb is not yet complete, so the observations presented are preliminary. It is a simple tomb composed of a small, east–west oriented elliptical chamber, enclosed in a slightly pronounced mound. As observed at Rabuje 5, there was a second construction phase involving the addition of a small rectangular chamber on the west side. The exact timing of this addition cannot yet be accurately stated as no materials had yet been collected to allow a chronological attribution.

4. Early megalithism in context

These recent studies, extending Heleno's spectrum of analysis, show that the initial image of a 'proto-megalithic' group concentrated at the borders of the Mesolithic territories could be illusory, as the small tombs also occur in the interior regions of Alentejo, without direct chronological connection with the local Mesolithic communities – nor even with the very first Early Neolithic communities (currently also known in more interior areas of Alentejo, such as those occupied in the Mesolithic, changing that first paradigm of a mainly coastal occupation during the 6th and 5th millennia BCE). Notably, there is an obvious chronological gap between the communities of the Late Mesolithic/Early Neolithic and those

who built and used the first funerary architectures, now attributable to a moment of affirmation and consolidation for the Middle Neolithic communities.

Even if we assume that the megalithic phenomenon may have a more coastal 'origin', replicating the steps of the neolithization processes that occurred about a millennium earlier in southwestern Iberia, it rapidly spread into inland areas, showing a broader distribution than that proposed by Heleno and Leisner. Indeed, the current data point to stages of emergence and development scattered throughout the 4th millennium BCE, possibly with origins in the later stages of the evolved Early Neolithic (Guilaine 1996; Silva 1997; Silva & Soares 1983; Soares & Silva 2000), extending throughout the Middle Neolithic until its consolidation during the Late Neolithic/Early Chalcolithic (with the construction of complex monuments with differentiated chambers and corridors, as well as *tholoi*, and the introduction of other items in the votive sets, such as engraved schist plaques and bifacial lithic points).

The votive sets collected in these small tombs confirm this hypothesis, comprising polished stone artefacts (especially axes with sub-circular cross-section), small unretouched flint blades extracted by indirect percussion and geometric armatures (mainly trapezoids) produced using these same small blades. Pottery is rare or absent; when present, it reveals episodes of use dating to the second half of the 4th millennium BCE. The low number of artefacts within votive sets, as well as the size of the tombs themselves, suggests that they would be intended for individuals or single family burials – the latter hypothesis suggested by the effectively open access to many tombs (Mataloto *et al.* 2017).

The few absolute dates available for the small tombs in south-central Portugal allow us to propose only an optimal use centred in the mid 4th millennium BCE, being contemporary, in their last phase, with the first monuments having a differentiated chamber and corridor, in the second half of the 4th millennium BCE (**Fig. 5**).

In south-central Portugal, the use of these first megalithic tombs seems to be coeval with the use of karst cavities for funerary purposes and the construction and use of another type of burial structures: hypogea (Mataloto *et al.* 2017). Both natural and artificial caves have similar votive sets to the small simple tombs, distinguished only by the presence of *Glycymeris* shell bracelets, not present in the small megalithic tombs (and present, for instance, in the natural caves of Lugar do Canto, Algar do Bom Santo, Algar do Barrão and Escoural, in the Alentejo region, and in the hypogea of Sobreira de Cima and Barrada (Araújo & Lejeune 1995; Carvalho *et al.* 2003; Barradas *et al.* 2013; Valera 2013; Carvalho 2014; Carvalho & Cardoso 2015). The radiocarbon dates obtained for these contexts are in line with those obtained for the small megalithic tombs – statistically overlapping their use, extending throughout the whole 4th millennium BCE, with the introduction of pottery in the final third of this millennium (as shown by the example of the Escoural cave).

5. Final remarks

This new assessment of available evidence, including the new radiocarbon dating on human bone samples, has allowed us to outline an 'evolutionary' scenario for the megalithism of south-central Portugal, governed by its own regional patterns, extending from the first half of the 4th millennium to the mid 3rd millennium BCE, between the local chrono-cultures of the Middle Neolithic and the Early/Middle Chalcolithic (Boaventura 2009, 2011; Boaventura & Mataloto 2013; Boaventura *et al.* 2013; Rocha 2005; Rocha & Duarte 2009; Carvalho & Rocha 2016; Mataloto *et al.* 2017). Even if we assume it has its own identity in the context of pan-European megalithism (based on the architectural features of the monuments and certain 'original' components of their votive sets), this is not necessarily an autonomous group, being in some way concomitant with what is known in other Iberian (and even extra-Iberian) areas (Guilaine 1999; Scarre *et al.* 2003; Furholt & Müller 2011; Thomas 2012).

Given the currently available data, a simple evolutionary scheme is less applicable to the new reality. These new studies have shown that these simple tombs, of small size with poorly diversified votive sets, also occur in the hinterland, spatially coexisting with later and more culturally evolved monuments, contradicting the linear evolutionary paths proposed

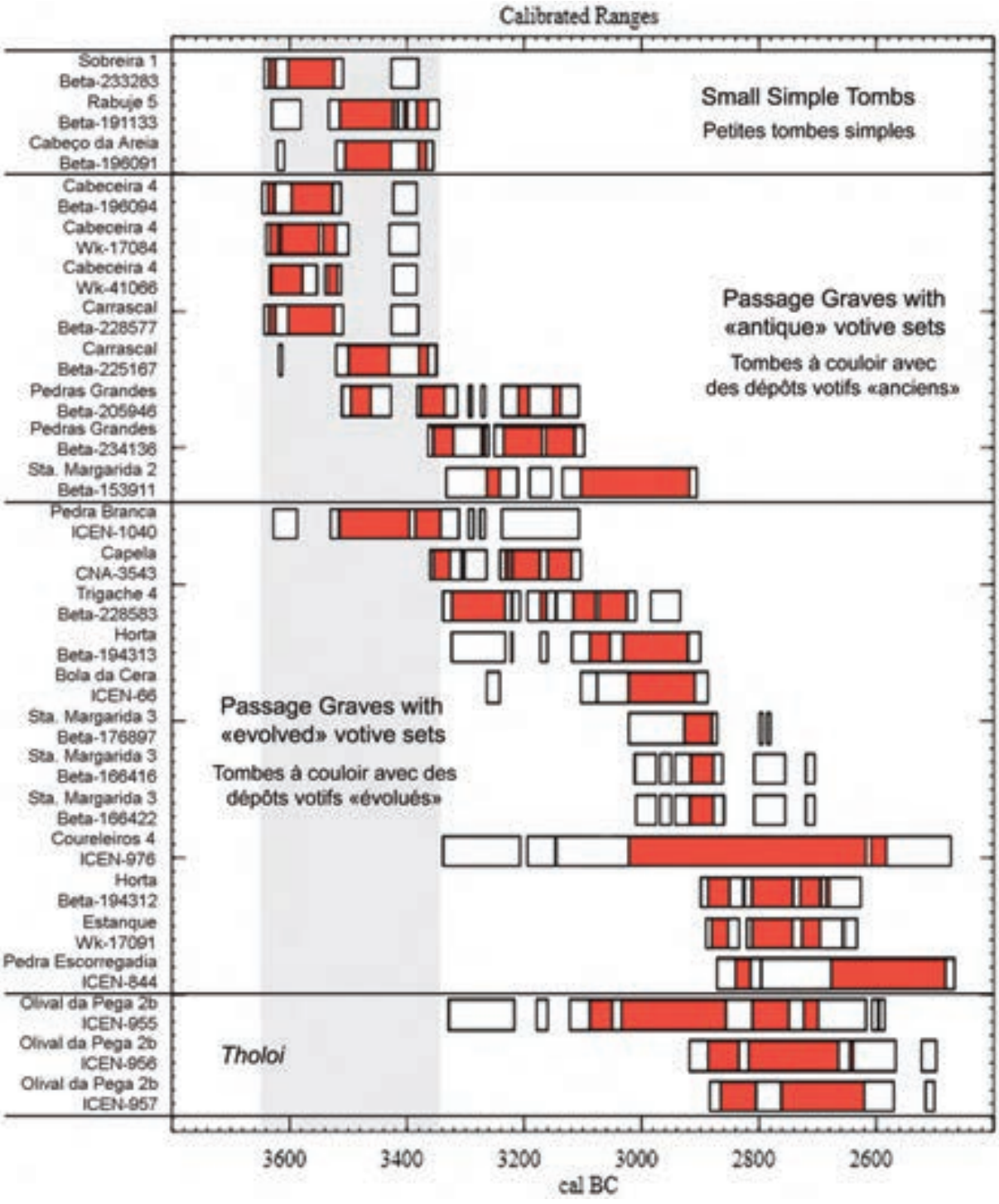

Fig. 5 – Radiocarbon dates for orthostatic megalithic tombs in south-central Portugal, distinguishing small simple tombs, passage graves with 'antique' votive sets (polished stone tools and geometric armatures), passage graves with 'evolved' votive sets (votive plaques and arrowheads) and *tholoi*. The grey bar indicates the optimal use spectrum for small simple tombs; the use of karst cavities and the construction and use of the first hypogea fall in this time-span. Dates were calibrated in 2017 (2σ result with 95,4% probability), compiled in Mataloto *et al.* 2017.

by Heleno and Leisner (Mataloto *et al.* 2017). Even accepting that some substitution of architectural models had occurred, this would not have been as linear nor as chronologically detailed as assumed (based on Heleno's historical-culturalist interpretations); in fact, rather than an instantaneous substitution, it seems that there was a gradual replacement, considerably expanded in time, from simple to complex tombs, with the coexistence of different architectures continuing into the height of the 4th millennium BCE (Middle Neolithic local chrono-zone).

The funerary use of natural and artificial caves must also be considered. With no apparent chronological and cultural differences, it seems that the choice/use of a particular type of structure (natural or built) was largely dependent on the availability of constructional supports. The funerary practices of the ancient peasant communities of south-central Portugal seem to unfold into multiple variants: orthostatic megalithism is just one of several available solutions, and was a multi-faceted phenomenon balanced by its own dynamics.

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Megalithic art: Funeral scenarios in western Neolithic Europe

Abstract: New developments in the study of European megaliths focus on two aspects: the extension of the decorated sites to continental, Northern European and Mediterranean areas; and the documentation of paintings beyond the Viseu complex in northern Portugal. Our research studied painting with the aim of contributing scientific data to the understanding of funeral rituals, including the direct dating of pigments. Colour was used to design funeral scenes of great visual impact. Its presence in megalithic structures in Brittany, northern France, Germany, the Caucasian plains and the Mediterranean, suggests the extensive range of this elaborate ritual. The sequences and superimpositions of paintings and engravings present a new way to analyse phases of reuse, maintenance and closure of these constructions.

Keywords: *megaliths, funeral practices, pigment analytics, carbon 14, connectivity*

1. Introduction

The chronologies of megaliths and their decorations place them as the oldest funerary scenes of humanity, predating the pyramids, that previously held that distinction. During the era of open-air and movable stones, the walls of the megalithic monuments were embellished with engravings, paintings and sculptures as means of fixing oral histories in an indelible way. Several aspects have been used to characterize these decorations (technique, subject matter, spatial position, associations) but seldom has a comprehensive reading of all this evidence been considered in order to identify a system of the standardized forms intended to generate images with strong ideological and social value.

In the study described, we sought to detect patterns of ritual behaviour via painting, which provides unprecedented data on various themes (composition of the panels, superimposition of decorations, identification of forms), as well as the use and extent of networks (origin of the pigments, transmission of recipes), the transformations of megalithic architectures (reuse, maintenance) and chronology (direct ^{14}C dating). Painting is therefore a valuable element for providing scientific data on all these facets of the study of megaliths, and for defining the role of decoration in funeral rituals.

2. From the 19th to the 21st century: megalithic art research

At the end of the 19th century and during the first third of the 20th century, some of the most important decorated megaliths in Europe were studied. Two factors influenced their interpretation: first, evidence of an association between decoration and the great stone monuments, sometimes interpreted as temples or the tombs of important individuals (Coelho 1931; Coffey 1912; Obermaier

Fig. 1 – Megaliths with paintings in Europe. List of monuments mentioned in the text.
Painted megaliths sampled. Spain: Cabaleiros, Pedra da Moura, Anta Serramo, Arca da Piosa, Casa dos Mouros, Parxubeira, Cova da Moura, Casota do Páramo, Arca do Barbanza, Pedra Cuberta, Forno dos Mouros, Axeitos, Dombate, X Serra Motas, Mota Grande, Castiñeiras I, Chan de Arquiña, Casa dos Mouros, Chan Touciños, Meixoeiro, Monte dos Marxos, Coto dos Mouros, Agro da Pena, Os Muiños, Katillotxu V, Azután, Trincones, Lagunita III, Palacio III, Soto I, Pozuelo 3 & 4, Menga, Viera, Romeral, Alberite I and II, Gastor; **Portugal**: Eireira, Leira das Mamas, Leandro 5, Mamoa 3, Châ de Arcas; **France**: Chamber A, H and J of Barnenez, Goërem, Mont-Saint-Michel, Gavrinis, Petit-Mont, Dissignac, Mané Kerioné B, Mané Rutual, Beysan-Gargas, Bastidonne, Château Blanc, Bury, Les Ronces 21 - Villevenard; **UK**: Isle of Man, Ness of Brodgar, Skara Brae; **Sardinia**: Mandra Antine; Molia, grave VII; S. Andrea Priu; Tomba del Capo; Binzales/Ispiluncas, grave 2; Imirmichis; Iscannizzu; Su Littu; Corongiu; Sos Furrighesos; Monte Claro; **Italy**: Saint-Martin-de-Corléans; **Switzerland**: Alignment, Don Bosco; **Germany**: Züschen, Göhlitzsch, Döhlauer Heide; **Russia**: Novosvobódnaya dolmens.
Painted megaliths not sampled. Spain: Espiñaredo 10, 11, Lijó, Maus de Salas, Condesás, Penadaguia, Bares, Santa Mariña, El Moreco, Navalcán, Jaraíz de la Vera, Prado Castaño, *Tholos* de Herrera, *Tholos* de la Barca, Guandacil, Toniñuelo, La Coraja, Fuente de la Corcha, La Giganta, Los Millares, Los Gabrieles, Martin Gil, Los Delgados I, Casas de D. Pedro, Sima de la Curra, Montefrío, El Torno, Panoria, Cova d'Envaina, Penausen, Baradal, Santa Cruz; **Portugal**: Antelas, Arquinha da Moura, Lubagueira 4, Repilau, Fontao, Cunha Baixa, Juncais, Picoto Vasco, Tanque, Pedralta, Cimo de Vila, Barrosa, Juncal, Aliviada, Padrao, Portela do Pau, Zambujeiro, Anta da Nave do Padre Santo, Anta da Horta, Cabeçuda, Madorras, Cabeço da Anta; **France**: Barbehère, Lumé 1, Naou Peyros de Réaup-Lisse; **Switzerland**: Petit-Chasseur; **UK**: Déhus, Maes Howe, Cuween, Wideford Hill; **Ireland**: Loughcrew, Clave; **Sardinia**: Enas de Cannuja, Mesu'e Montes II, Su Murrone, Tanca Bullitas, Puttu Codinu; Monte Siseri di Putifigari; Domus IV di Pubusattile; **Sicily**; **Malta**: Hal Saflieni.

1924; Péquart & Le Rouzic 1927; Piggot 1935; Vasconcelos 1907, among others); and second, the positioning of the art within the framework of the countries that form the Atlantic arc, establishing links and cultural sequences to define a *koiné* or 'common language', a concept that was prevalent in the historicist archaeological interpretations in the first half of the 20th century (Breuil *et al.* 1959; Eogan & Byrne 1968; Herity 1974; Ó Ríordáin & De Valéra 1952; Pinto 1929; Shee Twohig 1997a).

Parietal painting was understood by researchers as a vehicle of Mediterranean Neolithic symbolism. Today, the 'schematic' style of painted art is well documented beyond the classic boundaries of these expressions. Both in Iberia – where the presence of schematic paintings in megalithic areas was

not initially accepted (Bueno Ramírez *et al.* 2006, 2012a; Rodriguez Rellán *et al.* 2019) – and in the rest of non-Mediterranean Europe (Defrasne *et al.* 2019; Goldhahn 2010; Lahelma 2006; Linderholm *et al.* 2015; Sognnes 1982, among others). The presence of schematic art increases as surveys are established to detect this type of evidence (Bueno Ramírez *et al.* 2016a).

The role of colour in the dolmens had been observed in terms of the contrasts between the raw materials of the grave goods, in the choice of the raw materials of the orthostats (Bradley 2000; Bueno Ramírez *et al.* 2015a: 60, 2015b; Bueno Ramírez & Balbín Behrmann 1997; Cassen 2000), and in the presence of artificial colour applications (Breuil & Macalister 1921; Card 2013: 18; Devignes 1996, 1998a-b; Le Quellec 2006; Powell 1960: 84). Pigment analyses have confirmed painting to be a component of megalithic decorations throughout Iberia as well as in Brittany and northern France, the Orkney Islands and Germany (Bueno Ramírez & Balbín Behrmann 2006; Bueno Ramírez *et al.* 2019a). The continental megaliths also show evidence of the use of varied resources to create funeral scenarios of high visual and emotional impact (Schunke 2013a; Trifonov *et al.* 2019). We also have data indicating greater connectivities than shown by other recent studies (Gronenborn *et al.* 2020; Kovalev 2011), and these links increase, especially during the 3rd millennium cal BC with the apogee of the Bell Beaker culture, confirming the diachrony of these funeral scenarios of late prehistory (Bueno Ramírez *et al.* 2007, 2016b).

The painted hypogea of Sardinia – around 70 examples (Melis 2009: 328) – are a sample of the potential that lies in the study of pictorial applications in the Mediterranean islands (Cultraro 2000; Demartis 1991; Loi 2006; Skeates 2010; Tanda *et al.* 2003; Usai *et al.* 2011), which has not yet been developed to the extent that it is possible for us to include them in a general map (**Fig. 1**).

The absence of anthropomorphic representations was part of the characterization of the Atlantic area (Thomas 2005) although mobile figurines are very common in Iberian megalithism, and pieces on pebble and possibly in wood could also have been created (Bueno Ramírez 2021; Jones 2013; Scarre 2020). However, a great majority of the megalithic slabs are anthropomorphized (Bueno Ramírez & Balbín Behrmann 2002; Bueno Ramírez *et al.* 2005a-b; Kohring 2013; Scarre 2008, 2009). The stelae and menhirs reused to build megaliths have representations of human images that are sometimes depicted with objects (Barroso *et al.* 2021; Bueno Ramírez *et al.* 2005a; Cassen 2009; Cassen & L'Helgouach 1992; Cassen *et al.* 2015; Large & Mens 2017; L'Helgouach 1983). This situation is not unique to Brittany. The documentation of open-air menhirs and stelae in Iberia (Calado 2002; Ferraz 2009; Cerrillo *et al.* 2019) has revealed the prominence of humanized stones depicted with axes and crooks; some of these stones were reused in the construction of megaliths. Many examples of such reuse can be detected on the roofs of the monuments, the supporting megaliths, and also the floors, as can be seen in Breton sites (Bueno Ramírez *et al.* 2015c, 2016c, 2018; Cardoso & Gradim 2009: fig. 8). The inventory of decorated stones grows as studies become more detailed in this regard (Bueno Ramírez & Balbín Behrmann 1992; Bueno Ramírez *et al.* 2005a, 2015d, 2018) (**Fig. 2**). Ancient, decorated stones recovered from Irish and British monuments point in the same direction (Robin 2010; Scarre & Dehn 2016). Therefore, the hypothesis of the absence of human representations in the megalithism of the Atlantic area needs to be more nuanced.

The detailed study of the external areas of monuments provides anthropomorphic references in the form of statuettes, stelae and menhirs (Bueno Ramírez *et al.* 2009a; Giot 1987; Little *et al.* 2019; Stout & Stout 2008 among others). Also in the external area are altars, terraces and offering wells (Bueno Ramírez *et al.* 2008, 2018; Demartis 1986; Klassen & Knoche 2019; Linares Catela 2011; Eogan 1986; Holst & Rasmussen 2013: 125; O'Sullivan *et al.* 2013), which must be integrated as a significant part of the rituality related to the use of the megaliths.

The area of the Alps offers the most extensive set of sites so far documented in Europe, where the reuse and construction of megaliths is based on the recovery of stelae. The Petit-Chasseur site provides unquestionable evidence of the symbiosis between stones and human images, with defined roles both inside and outside the structures (Harrison & Heyd 2007). We documented the first evidence of painting at this site on the classic series in 2018. We have

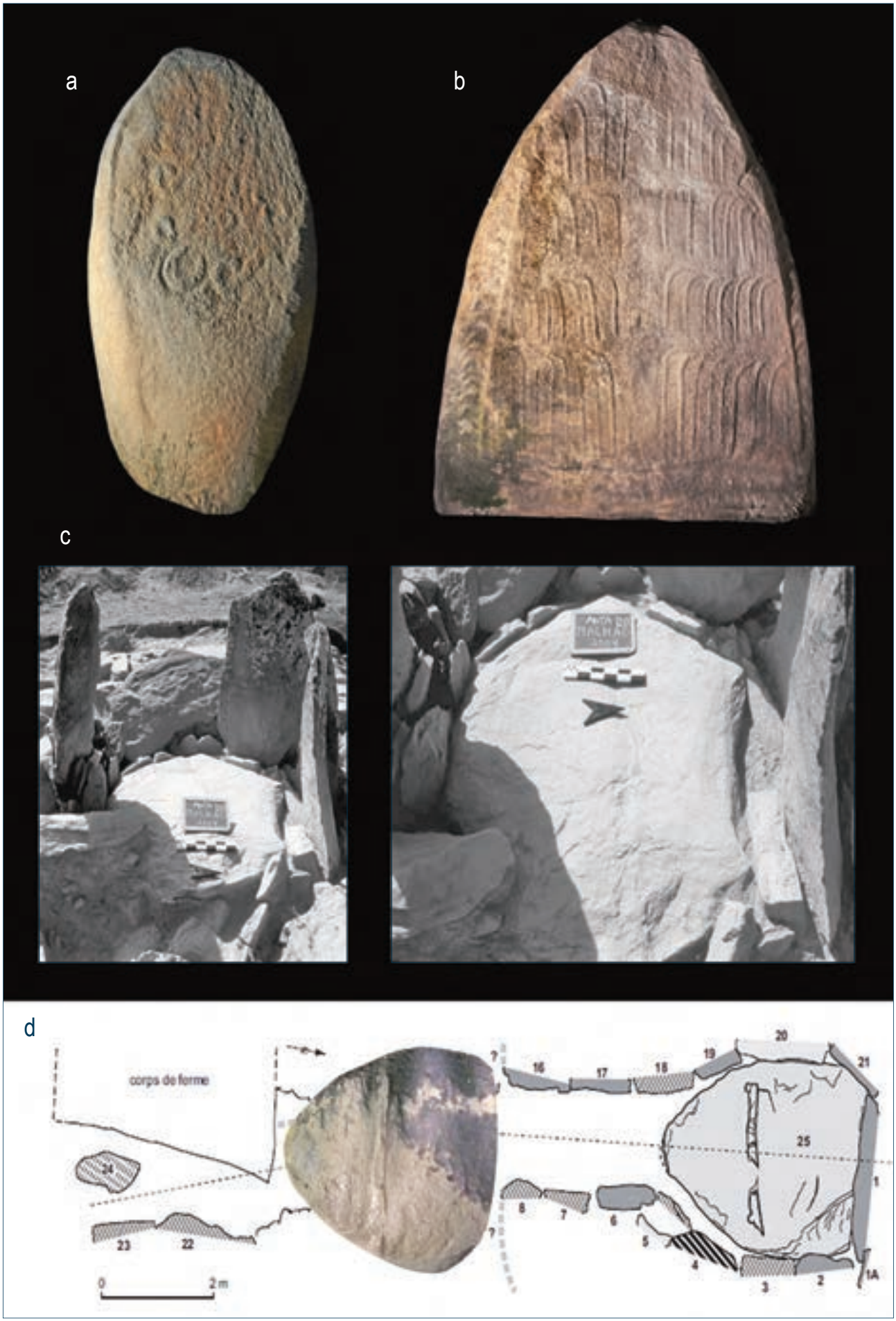

Fig. 2 – a. Almendres menhir in Evora, Portugal, with crook engravings; b. Frontal upright of Table des Marchands, Locmariaquer, France (Photos: R. de Balbín Behrmann). c. Reused stelae on the floor of the Anta do Malhâo, Alcoutim, Portugal (Photos from Cardoso & Gradim 2009); d. Plan of Mane Lud after Cassen 2007 with the stele on the floor (Photo: R. de Balbín Behrmann).

been able to confirm the presence of painting on the uprights of the Alignement des Amandiers and on the supports of Don Bosco's Dolmen nearby. To study the art, we applied our usual protocol: photographical study to identify paintings, and pigment analysis. Identical stelae from the Italian area of Saint-Martin-de-Corléans are also painted (Zidda 2018) as are some from the area of Ossimo (Fedele 2008), and the Spanish stele from Peñatú (Bueno Ramírez & Fernandez Miranda 1981).

On the continental plains, the influx of figurines into the everyday environment is well known (Hoffman 2020; Palaguta 2020), but they do not usually form part of the grave goods of megaliths, although some do have human images included on their orthostats (Powell 1960), as is also seen on megaliths in the Altaï Mountains in Russia (Kovalev 2012). The most recent cists are a good example of the symbiosis between the support stones and human figures accompanied by bows and arrows highlighted with paint (Schunke 2013a).

In the last few decades, the presence of Mediterranean and continental sites in the megalithic contexts of the Atlantic façade, together with more open approaches to European prehistory, have begun to disrupt classical interpretations of Atlantic megalithism and its most prominent symbolic expressions (Bueno Ramírez & Balbín Behrmann 2002; Bueno Ramírez *et al.* 2012b, 2015a, 2015d, 2019a-b; Laporte & Bueno Ramírez 2016; Robin 2017; Rodriguez Rellán *et al.* 2015; Schunke 2013b; Kovalev 2011).

3. Methodology, problems and results for megalithic painting scenarios

Painting is a technique with less potential for conservation than engraving and establishing protocols to identify the remains of pictorial applications has been a challenge for the study of prehistoric art, from the Palaeolithic to its most recent manifestations. The increase in the number of records of megalithic funerary decorations in Iberia is explained by the development of research programs in which archaeometry is a fundamental part. In addition to georeferenced documentation, i.e. photogrammetry and Reflectance Transformation Imaging (RTI), there are photographic studies for the detection of paint, and analytical studies for the characterization of pigments, such as X-ray diffraction (XRD) and Raman spectroscopy, and their possible ^{14}C dating (Bueno Ramírez *et al.* 2007, 2012b: 26, 2014, 2015a: 61, 2016b, 2018: 132-144, 2019a; Carrera & Fábregas 2002; Cassen *et al.* 2013; Cortón *et al.* 2012; Diaz Guardamino & Wheatley 2013; Hernanz *et al.* 2016, 2018; Hensey & Robin 2011; Jones 2013). Knowledge of decorated megaliths has significantly increased since the inventory of Shee Twohig (1981). This is true of the most classical areas, as well as in the European interior plains and the Mediterranean area (Anati & Gomes 2013; Felding 2018; Kovalev 2012; Robin 2016; Schunke 2013b; Trifonov *et al.* 2015).

We have shown that in Iberia there is a close relationship between engraving and painting, as part of a decorative system that tends towards scenes of great visual display. Both techniques have complementary or sequential roles, depending on the site. For this reason, a research programme dedicated to the search for paintings in the rest of the European megaliths should begin with monuments that contain engravings. Some engraving techniques are especially likely to have been painted: fine incisions, superficial pecking or deep engravings (Bueno Ramírez & Balbín Behrmann 2002; Bueno Ramírez *et al.* 2015a: 65; 2016a; Carrera 2008).

The data in the bibliography and those obtained after almost ten years of fieldwork in locations along the Atlantic façade and the continental zone, confirm that painting of megaliths extends beyond the 'isolated' nucleus of Viseu, in the north of Portugal (Shee Twohig 1981). The sites documented can be divided into two groups: megaliths in which pigments have been analysed and those in which it has not.

A large number of the painted Iberian megaliths have been analysed, together with those of the north and northwest of France (Brittany, Normandy, Bassin de Paris). These have been tested *in situ* and in the laboratory (Raman spectroscopy and XRD). Another group of sites, including Iberian, Italian, French, English, German and Russian megaliths, have been analysed in the laboratory by Raman spectroscopy of 1 mm micro-samples. Of the sites yet to be verified, there are several megaliths from classical areas from which it would be necessary to recover evidence and take samples. Series of

repainting, sequences of engravings and repainting, pigment recipes that identify phases, and direct dating open new pathways, not only of interpreting the megalithic ritual, but of dating these funerary contexts (**Fig. 3**).

It should be noted that the analyses do not come exclusively from the pigments applied to the supporting megaliths, but also from the colouring of floors, corpses, figurines and stelae, as well as ochre pencils and vessels containing pigments (Bueno Ramírez *et al.* 2016b, 2019a: 15, 2019b: 87; Carrera 2011; Childe 1931: 134; Darvill 2013; Darvill & Andrews 2014; D'Anna *et al.* 2015; Oliveira *et al.* 2017; Shee Twohig 1997b). The analyses therefore include a body of evidence that reinforces the hypothesis of a very elaborately designed funerary scenario in which the colours of the components involved were intentionally arranged.

As in Palaeolithic art and all the graphic versions we know of in prehistory, the colour red is the main element of these scenarios. Analyses have made it possible to identify both local and distant sources of the red pigment. Extraction is more difficult from some than from others (Levato 2016). Cinnabar, a rare, bright red dye was used in Iberia from the Early Neolithic. It was sourced from the mines of Almadén in Ciudad Real to the centre-east of the interior (Hunt *et al.* 2011; Rodriguez *et al.* 2020). In megaliths, it was used specifically on the interred bodies, ornaments and clothing, and on accompanying objects. Its use increased in the second half of the 4th millennium BC and the first half of the 3rd millennium BC, with the monument of Montelirio in Seville being an outstanding example (Bueno Ramírez *et al.* 2016b). Two areas with megaliths are important in relation to the use of cinnabar: the south of France, where it was used on stelae (D'Anna *et al.* 2015), and the Russian plains where it was used in kurgan burials (Trifonov *et al.* 2019). In neither case have the analyses established the origin of the cinnabar, but it is reasonable to assimilate the French examples with those in the Iberia (Bueno Ramírez *et al.* 2019b). The Russian examples are specific, local cultural responses (clothing and pottery) and have nearby sources of cinnabar.

As with other prestigious raw materials, there are cases of cinnabar 'emulation'. These copies simulate the vitrified red cinnabar, using very finely ground haematite (which shows great mastery), or by using other minerals with vitreous properties, e.g., the rutile (titanium oxide) that we have documented in the dolmen of Menga and on one of the stelae of the Alignement des Amandiers in Sion. The pigment is a reflector of natural or artificial light, helping to give visual strength to the funeral scenes. Other techniques, such as 'cameo', also seek these contrasts. Thus, a black base composed of a mixture of clay with ochre and manganese was applied to stelae in the area near Petit-Chasseur (Cheney *et al.* 2018). In the Aosta valley, mineral pigments of red, yellow, dark grey and black violet have been identified in the excavations of the Anvoia and Plassagrop stelae (Fedele 2008: 67). Red pigment is used on the stele of the Peña Tú shelter in northern Iberia, associated with a megalithic necropolis (Bueno Ramírez *et al.* 2010).

In Brittany, finely ground haematite is used as a colour filling for the deep engravings of Mané Kerioné B (Hernanz *et al.* 2016: Tab. 2), a technique also used on the engravings in the chamber of the Viera dolmen in Málaga (Bueno Ramírez *et al.* 2013). At Gavrinis in Brittany, red dye analysed by portable X-Ray Fluorescence showed traces of lead, but the researchers doubt its prehistoric chronology. The same is proposed by black colour dated in engravings at the same monument was identified as charcoal (Cassen *et al.* 2012: 181-183).

The mixture of cinnabar with haematite of local origin seems to be aimed at 'stretching' the amount of red pigment available for the burials. These mixtures have also been documented in necklace beads (Odriozola *et al.* 2017), pointing to another way of emulating the 'better' dyes. This type of colour copying has also been documented in the use of materials to coat stone beads to make them resemble amber (Odriozola *et al.* 2019).

In the decoration of the stone uprights, it has not been proven that red pigments were mixed, but rather that the oxides were used for the orthostats and the cinnabar was used for the human bones and small figures that could represent the dead or their ancestors (Bueno Ramírez *et al.* 2016b: 387). This hypothesis can be extended to statuettes from the South of France that were painted with cinnabar (D'Anna *et al.* 2015), while the use of oxides is

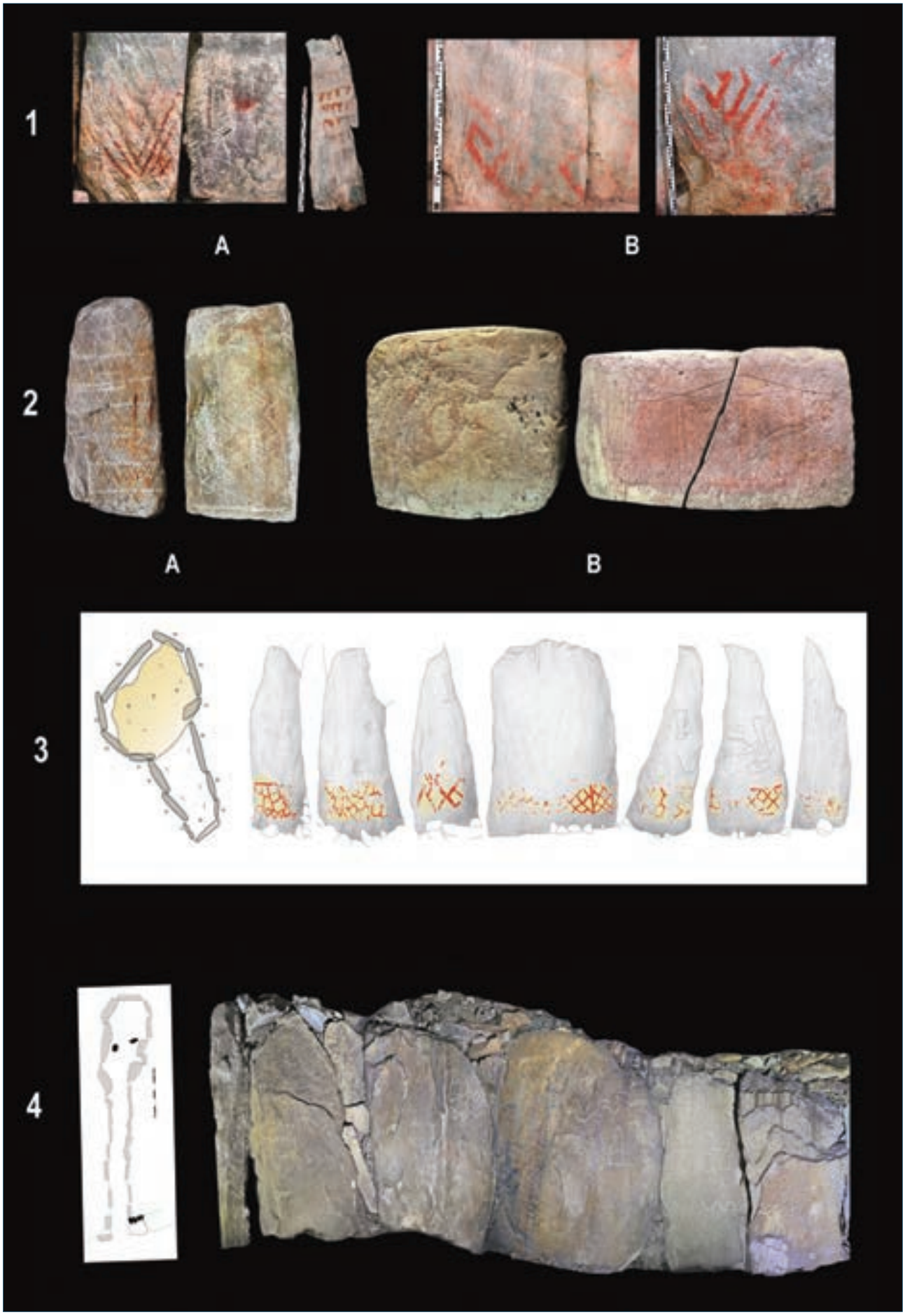

Fig. 3 – 1. A, B: Painted panels from two dolmens of the Altai Mountains, after Kovalev 2012: 123 and 130; 2. A: Two painted panels in the dolmen of Döhlauer, Germany; B: Two painted panels in the cist of Göhlitzsch, Halle Museum (Photos: R. de Balbín Behrmann); 3. Plan and drawing of decorated slabs of the dolmen of Dombate, Spain (After Bueno Ramírez *et al.* 2016c); 4. Plan and photogrammetric view of decorated slabs in chamber H of Barnenez tumulus, France (After Bueno Ramírez *et al.* 2015a).

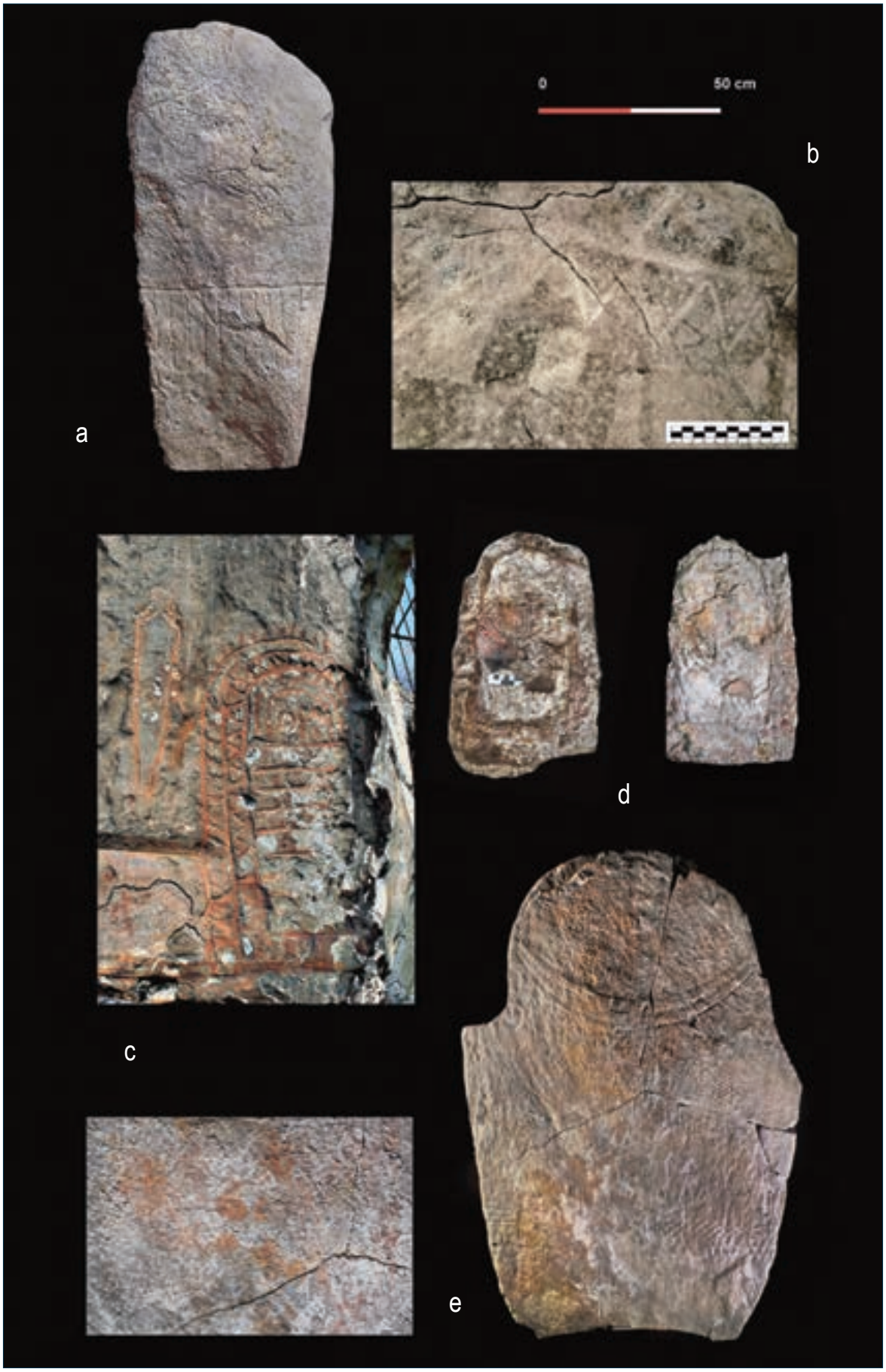

Fig. 4 – Examples of painted stelae: a. Stele 13 of the Saint-Martin-de-Corléans, Aosta, Italy, with traces of red-orange colour (After Zidda 2018: fig. 5); b. Detail of the black manganese painting on the stele 7 of the Saint-Martin-de-Corléans, Aosta, Italy (After Cheney *et al.* 2018: fig. 3); c. Stelae with red painting on the rock-shelter of Peña Tú, Asturias, Spain (Photo: R. de Balbín Behrmann); d. Clay stele of the chamber of Montelirio, Sevilla, Spain, with traces of white, red and black painting (After Bueno Ramírez *et al.* 2016b); e. Petit-Chasseur stele 15 with detail of the orange painting of triangles (Photos: R. de Balbín Behrmann).

indicated for the decoration of some megalithic uprights (Beyneix 2007). It cannot be ruled out that some walls were decorated with cinnabar, as indicated in earlier references, but this is not analytically tested (Bueno Ramírez *et al.* 2019b: 81). We suspect that, from the description of its bright red colour, the sanctuary of Monte d'Accodi (Melis 2009), was coloured with cinnabar or emulated cinnabar, and this could also be the case for some megalithic walls in Russia (Trifonov *et al.* 2015, 2019).

We have recently documented clay plasters mixed with limestone or gypsum and well-milled haematite. Once applied, these plasters were burnished to a shine very close to that of cinnabar. These preparations exist in the Dolmen de Soto in Huelva and in the megaliths of Menga and Viera in Málaga. In the latter, the plaster sometimes has components of coal that produce a greyish colour.

There is evidence for the use of white clays in Iberia and the UK (stone fragment NOB 11512 M9 from the walls of the Ness of Brodgar, Orkney, unpublished), as well as the European plains (Anati & Gomes 2013; Schunke 2013b; Trebesz 2013). Kaolonite was used as a base plaster on the surfaces of Spanish and Portuguese dolmens to make the decorations last longer; there is further evidence in Germany (Dölhauer). The floors of dolmens were also treated in the same way (Dombate, Spain; Olival da Pega 1, Vale do Carneiro 2, Portugal). Pigment comprising mixtures of calcite and sand are beginning to emerge in the data for southern Iberia (Bueno Ramírez *et al.* 2013), as well as the use of gypsum (Durrington Walls, UK), materials that are typical of ceramic applications (Czekaj-Zastawny *et al.* 2018).

The most common mode of application of megalithic pigments includes a significant portion of clay, some colorants being simply coloured clays (Carrera 2011). These can cover the whole surface, like the goethite (brown-coloured) clay of some orthostats of the A and J chambers of the Barnenez tumulus in France, or the clay coloured with haematite applied to the Bobadilla stele in Antequera (Málaga) (Bueno Ramírez *et al.* 2009b: 196) This type of preparation must have been relatively common, and its role must be tested in relation to certain engraving techniques with which it could create a similar contrast to that of the cameo technique documented in Palaeolithic art. A red or black background of artificial application was also be used for engraving by surface pecking or scraping. The dolmen of Mota Grande in the north of Portugal is a good example of this, as are some of the elements detected in Barnenez's H and A chambers (Álvarez Hernández *et al.*, in press; Bueno Ramírez *et al.* 2015a)

The material used for the coloured preparations could have had an almost plastic consistency, as can be deduced from the brush marks of orthostat 15 of Dolmen de Soto (Bueno Ramírez *et al.* 2018: 141). This would help to explain some of the decorations painted in the LBK houses of central Europe, which would have required such a consistency (Hoffman 2020).

The colour red is also the most widespread on statuettes and on the largest stelae. Examples of Iberian menhirs (Bueno Ramírez & Balbín Behrmann 1992) and statues-menhirs from the South of France (Hasler 1998; Maillé 2010) help to verify the role of painting on the groups of stelae in the Alps, as noted above, confirming the great potential for this line of research.

The manganese oxide black pigments are from local sources but sometimes allow us to trace a seam of origin, as was the case for the pyrochroite detected in one of the painting phases of the Barnenez H chambers in France (Bueno Ramírez *et al.* 2015a: 61).

4. Megalithic painting and 14carbon chronology

The novel approach of dating the black coal pigments of the European megaliths, initiated by Iberian teams, has now produced its first results for the megalithic sites of the Orkney Islands and France. Carbon black was sometimes applied directly as a single pigment but was also part of mixtures with haematite red. The Plasma Oxidation technique (Russ *et al.* 1990) has been useful to obtain direct dates from pigments in the charcoal paintings of Galician megaliths and from some French sites. It has also been possible to date Orkney pigments containing mixtures of haematite and carbon.

We dated pigment samples from two sources:

1. Coloured items that are part of megalithic deposits. The chronologies thus obtained have their best context in the site itself. This is the case of the dates for the stele of Bury in France, and the painted stones of structure 11 of the Ness of Brodgar (Bueno Ramírez *et al.* 2019a; Card *et al.* 2018; Salanova *et al.* 2018).

2. Pigment samples obtained from the walls of the monuments. The largest collection comes from dolmens in Galicia and northern Portugal. A date was also obtained from a hypogea in the Marne region of France (Armitage *et al.* 2020; Bueno Ramírez *et al.* 2019a; Carrera & Fábregas 2002; Steelman *et al.* 2005).

We are aware that the results presented here do not yet provide a statistically representative sample of the total ^{14}C data obtained by other means for European megalithism (Cruz 1995; Furholt & Müller 2011; Schulz Paulsson 2019). However, the comparison of chronological data for the funerary records and those for the paintings confirms the informative value of these chronologies and the work already advanced in Iberia (Bueno Ramírez *et al.* 2007).

In Iberia, older direct dates for paintings are close to those associated with some menhirs – interpreted as the oldest phase of Atlantic megalithic art (Oliveira 2016) – and to those obtained from certain megaliths in the northwest, i.e., 4700-4600 cal BC (Bueno Ramírez *et al.* 2016c). The early date of the carbon detected in the red colour applied to one of the orthostats forming the corridor in the Dolmen de Montelirio corridor in Castilleja de Guzmán, Sevilla points to a similar situation, although the deviation of this date from others obtained for the site explains why it was omitted from the synthesis of data obtained (Bayliss *et al.* 2016). In any case, the biography of the site reveals the possible reuse of orthostats from an earlier source. The fact that there were at least two phases of painting could corroborate that the date we mentioned is close to the first decoration of older megalithic pieces used for the uprights (Bueno Ramírez *et al.* 2016b: 385).

The peak use of the megaliths extends throughout the 4th millennium BC, and this is fully validated by the direct chronologies of painting. The continued construction and use of megaliths in the first half of the 3rd millennium BC raised some doubts among Iberian researchers, but the direct dates from human bones and the charcoal of the pigments on orthostats have confirmed this (Aranda & Lozano 2014; Boaventura 2011; Bueno Ramírez *et al.* 2004, 2005b, 2016b; Carrera & Fábregas 2002). There is also evidence of more later visits and depositions (Diaz Guardamino *et al.* 2015), which are sometimes related to episodes of decoration in the megaliths. This is the case of the stele that closes the use of the *tholos* of Palace III (Sevilla), decorated with a human image with a long dagger or sword. The excavation documented a final Bronze Age burial dated to the 9th century BC (García Sanjuán *et al.* 2019). The engraving on one of the orthostats of the Dolmen de Soto in Huelva, of an individual accompanied by a carp's-tongue sword and belt, is another example of a late use with a ^{14}C date in the 10th century BC (Barroso *et al.* 2020; Bueno Ramírez *et al.* 2018: 228).

Dates on pigments from other European megalithic sites could unlock a totally unexplored landscape. Since no pigment has ever been dated at these sites, there is no prior experience of the problems inherent in this type of analysis. Each situation is different, and this presents a major challenge for a new field of research. On the one hand, we know the problems of direct carbon dating from experience accumulated in Palaeolithic art (Pettitt *et al.* 2003), so the selection of the sample site and the 'cleaning' of the sample are basic procedures within the current state of our knowledge (Hernanz *et al.* 2018: 139). On the other hand, the use of small samples (necessary for conservation) results in lower statistical probabilities that are reflected in the deviation of the results and complicate interpretation (Armitage *et al.* 2020; Steelman *et al.* 2005). Finally, it is important to note that single dates do not constitute a reliable range, and it is among our objectives to continue the dating program at these sites (**Fig. 5**).

Until recently, no direct date for megalithic decorations in the UK was known. However, an engraved wooden post in Maerdy, Wales (Jones 2013), has now been directly dated to the 5th millennium BC. The decorations are very similar to those of the Gavrinis orthostats, with similar direct chronologies (Cassen *et al.* 2016) and to the monuments of

northern Iberia (Bueno Ramírez *et al.* 2015a). In addition, chronologies have been published for decorated antler mace heads from across the UK that place them in the second half of the 4th millennium BC (Jones & Diaz Guardamino 2019: 47). We can now add the 3rd millennium BC dates of the paintings on the wall of Structure 11 of the Ness of Brodgar, in the Orkney Islands (Bueno Ramírez *et al.* 2019a: Tab. 2), which coincide with dates obtained from the archaeological context of the site (Card *et al.* 2018).

Despite the presence of a significant number of engraved megaliths in Brittany, no programme for the detection of painting had been carried out there until very recently (Bueno Ramírez *et al.* 2012b; Hernanz *et al.* 2016). The results of the Raman

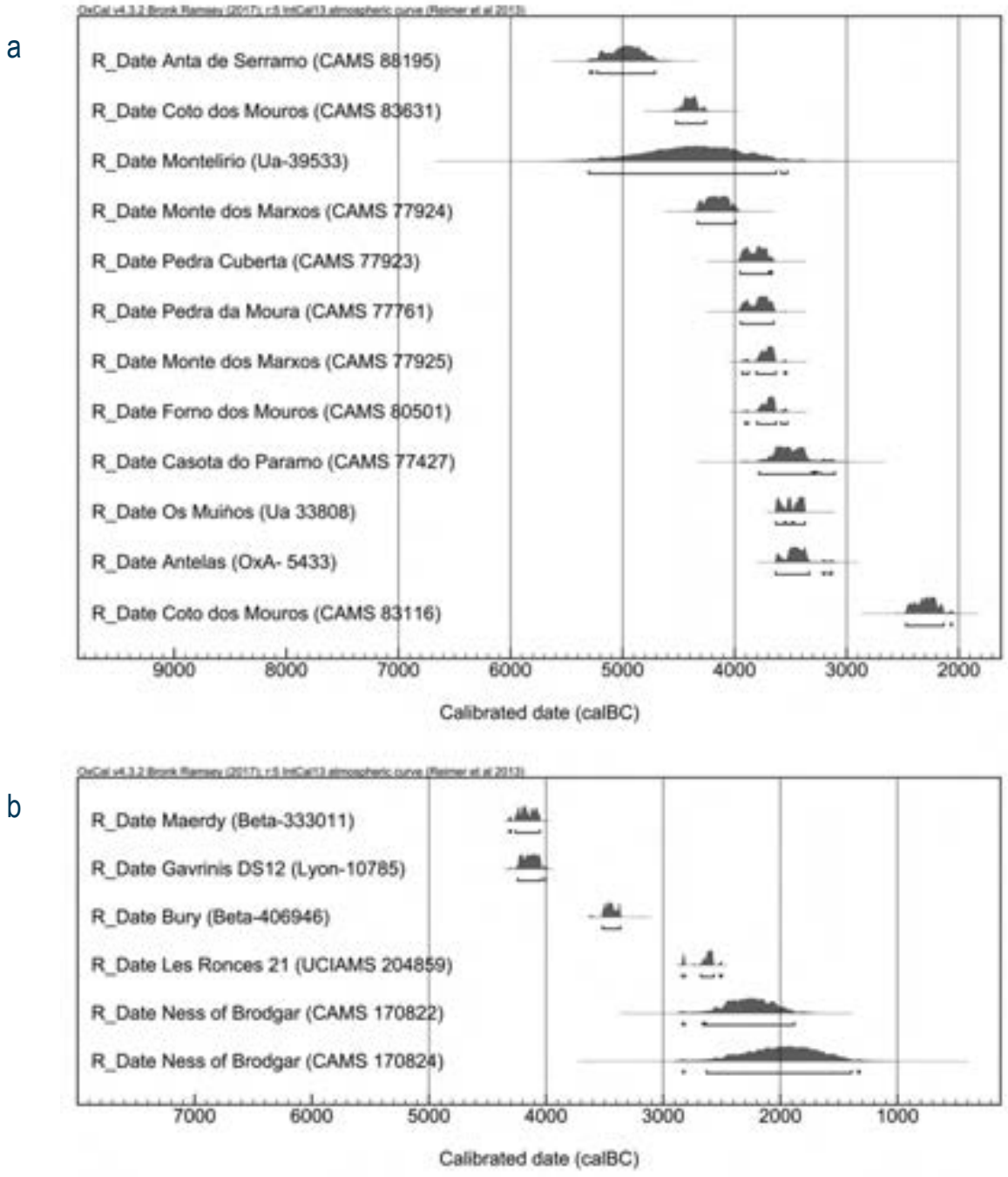

Fig. 5 – a. Calibrated ^{14}C dates of megalithic pigments in Iberia; b. Calibrated ^{14}C dates of megalithic decoration in French and British monuments. The radiocarbon date of Maerdy is included thanks to the generosity of Richard Scott Jones.

analyses in Tumulus Mont-Saint-Michel, Mané Kerioned B and Mané-Rutual confirm the role of haematite-based red pigment (Hernanz *et al.* 2016). Other sites, such as Kercado, Petit-Mont and Gavrinis point to possibilities; a date has been obtained from charcoal on one of the decorated pieces at Gavrinis (Cassen *et al.* 2016: 72).

We do not have direct dates for the paintings in some of the chambers at Barnenez, although this is one of the oldest examples of European megalithism. The chronology associated with the painted stele of l'Hirondelle confirms the antiquity of the use of painting in the megalithic period of northwestern France (Benéteau-Douillard 2012) and corroborates the direct date of the dolmen of Bury stele (Bueno Ramírez *et al.* 2019a). The important ^{14}C series that dates the occupations of the site indicates that the stele is the oldest piece, probably originating from a previous use.

Another important centre of decorated tombs in France is the Marne region with its hypogea, in which use of paint in reliefs of human images has been noted (Villes 1997), although the pigments have never been directly characterized or dated. We selected the paintings of Les Ronces 21, deposited at the Museum of Épernay, for their excellent conservation. The development of a cleaning protocol for varnish applied in the mid 20th century, followed by Plasma Oxidation treatment, provided four dates of different value. The resulting pooled date is 4075 ±20 BP, the calibration of which places it between the first and second half of the 3rd millennium BC (Armitage *et al.* 2020: 123). The hypothesis that the hypogea were used over a short period that did not extend into the 3rd millennium BC is quite widespread (Chambon *et al.* 2017; Edinborough *et al.* 2021), although some dates point to longer diachronies (Donat *et al.* 2014; Renard *et al.* 2014). The direct date of the Les Ronces 21 paintings makes their application one of the final events carried out in the burial chamber (**Fig. 6**).

Overall, the direct chronologies obtained on the organic constituents of the pigments confirm that painting was a well-known technique practiced by the builders of megaliths along the European Atlantic coast, from at least the 5th millennium BC in Brittany, the UK, and Iberia. The building of dolmens flourished throughout the 4th and 3rd millennium, and this coincides with the ^{14}C results on pigments from Iberian decoration (Bueno Ramírez *et al.* 2007), also confirmed in France and the British Isles. The direct dating of the stele from Bury to the 4th millennium BC and the dates of the black images of the Marne hypogea (Les Ronces 21), or those of the red and black pigments of the Ness of Brodgar (3rd millennium BC), can be added to the dates for the Iberian decorated dolmens. For the most recently decorated megaliths, the complex scenarios of painted and engraved walls increase notably, as exemplified by the *tholos* of Montelirio, which is one of the best documented (Bueno Ramírez *et al.* 2016b) (**Fig. 7**).

The great stelae of the Alps do not yet have direct chronologies, but they are associated with monuments dated between the 4th and 3rd millennia BC (Harrison & Heyd 2017). The dating of the archaeological context of the painted rock shelter of Rocher du Château (Defrasne *et al.* 2019) in the same territory, to the 5th millennium BC, offers an ancient reference for the use of rutile pigments, probably used in the stelae, providing a solid reference for the diachrony of use for this type of pigment in the area.

The chronologies for other decorated megaliths in the Mediterranean can be based only on the date of the use of the monuments, placing many in this same time frame (4th-3rd millennium BC). The remarkable group of hypogea (Domus de Janas) in Sardinia has an undoubted continuity into the 3rd millennium BC, and this is also the case with the most recent phases of the temples of Malta (Skeates 2010).

The dates for the apogee of megalithism are also applicable to some painted monuments in Germany (Anati & Gomes 2013; Müller 1996; Trebesz 2013; Schunke 2013a), as well as those of the Caucasian plains (Kovalev 2012; Trifonov *et al.* 2015), the chronology of which we can deduce from their contexts, as we do not have any direct dates associated with the painting at these specific sites.

Although much remains to be done in this field of direct dating of megalithic pigment dating on megaliths, it seems reasonable to accept that paint applications are part of a widespread method of decorating funeral spaces across Atlantic Europe.

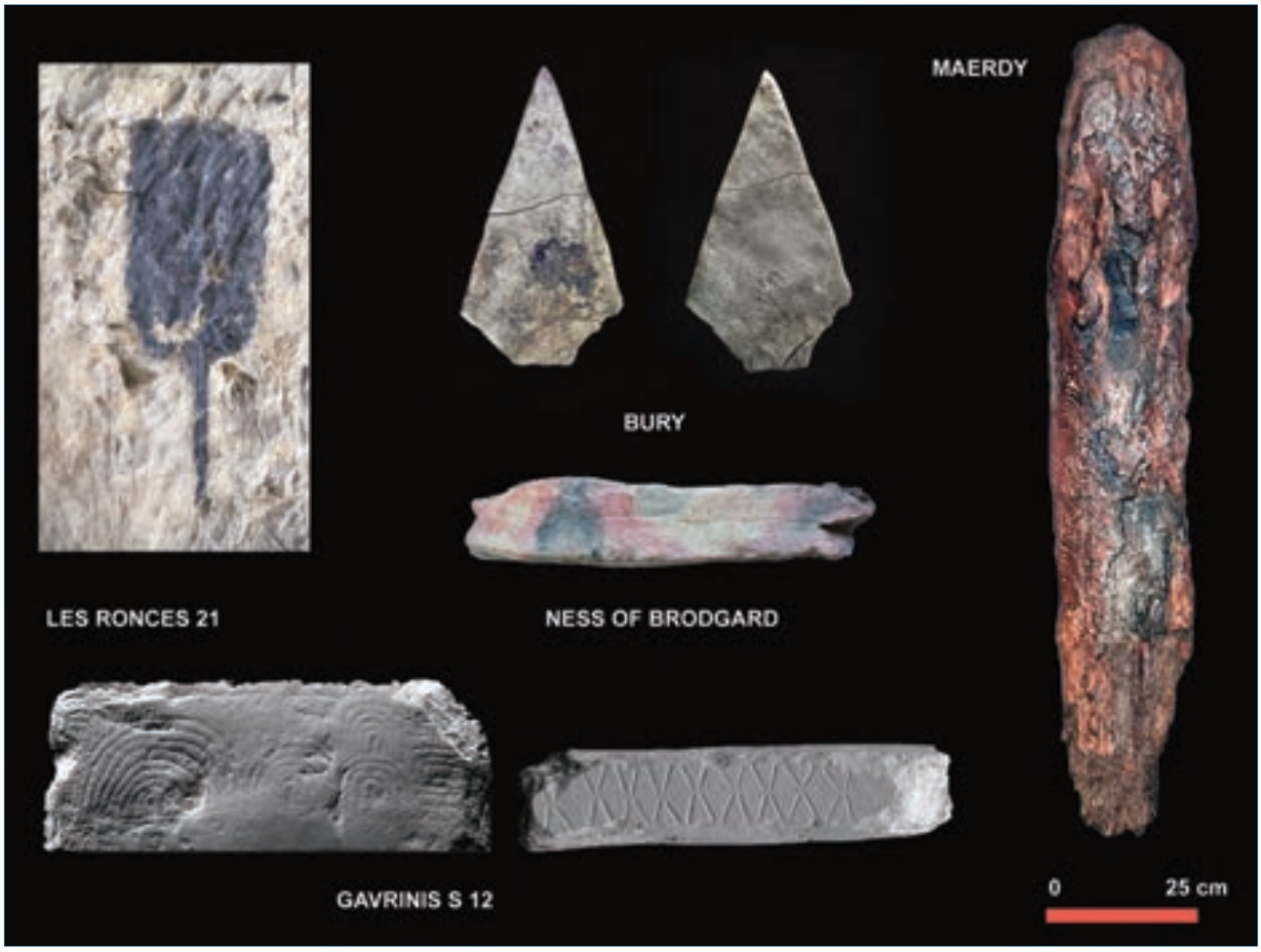

Fig. 6 – Decorated megalithic slabs with direct ^{14}C dates.

Fig. 7 – Montelirio, Seville, Spain: a funeral scene of the 3rd millennium cal BC. Above: a reconstruction view; below: sections with painted walls (Drawing and photos: after Bueno Ramírez *et al.* 2016b).

The walls and the objects, and even the corpses, received pigments of different colours that generated scenes with a strong visual impact.

5. Final Remarks

Megaliths are funerary buildings that fix oral memories of the past in stone, including through engraved, painted and sculpted images, in order to project them into the builders' present and future as a political statement of identity and social positioning. The painting ensures generalized parameters that define funerary scenes as organized symbolic expressions endowed with elements of a theatrical nature and with a strong visual and sensorial impact.

The widespread hypothesis of the absence of paint in the Atlantic records has gradually disappeared, as evidence (e.g., working tools, containers with pigments, figurines and ceramics) has acquired a level of empirical consistency. Similarly, the territories of the megalith builders also included sites with open-air paintings, indicating a wide knowledge of pictorial applications in Neolithic Europe.

The paint added to the engravings on the orthostats offers a more integrated interpretation of the decorations, defining geometric frames, complete themes or characterized by superimpositions. In short, it indicates a greater decorative complexity than was previously assumed. Chamber H at Barnenez's is perhaps one of the most significant examples. At least two phases of engraving and two phases of painting reveal a superimposition of events, the oldest of which includes pieces reused in the chamber, demonstrated by a new excavation which led to the documentation of ancient orthostat graves (Laporte *et al.* 2017).

The graphic painting and engraving events correspond with architectural episodes and maintenance phases that ensured the revival (in the case of Barnenez H, A and J, Monte dos Marxos, and Os Muiños) or transformation (of Antelas, Les Ronces 21, Soto, Barnenez H, Menga, Viera, Soto, Pozuelo) of monuments over hundreds of years. Sometimes the pictorial interventions hide previously engraved themes, as with many of the engravings of 'the thing' on the dolmens of the areas surrounding Dombate, or in Les Ronces 21 or Soto (Armitage *et al.* 2020; Bueno Ramírez *et al.* 2016a, 2018).

As well as providing insigt into the various maintenance and restoration interventions, the study of pigments also offers a novel system of dating the oldest phase of these sites: their final stage, in which notably persistent patterns are applied (Armitage *et al.* 2020; Bueno Ramírez *et al.* 2007, 2019a; Carrera 2008; Carrera & Fábregas 2002; Steelman *et al.* 2005).

The recovery and reuse of stones with past value has been interpreted as a pre-megalithic phase of open-air monuments (Calado 2002; Cassen 2009; L'Helgouach 1997). By gathering information from the dates of the painted decorations on fragmented stelae inserted in the dolmens, as well as chronologies of older-than-expected human bones, it is possible to provide data for the first constructions of megaliths (Bueno Ramírez *et al.* 2007, 2015c, 2016c, 2017a, 2018; Laporte 2010; Mohen & Scarre 2002). A 'hidden' phase dating to the 5th millennium is visible in the reused stones at Anta do Serramo and Gavrinis, and in the wooden post from Maerdy. The human bones with early dates could also come from these more ancient architectures (Blank *et al.* 2020). Their chronologies fit well with those already established for some Iberian and Breton menhirs, demonstrating that this early phase was characteristic of both open-air architecture and dolmens.

The dynamics of the movement of stones between the exterior (open air) and interior (the dolmens) is repeated as part of the system of the generation of new megaliths throughout the diachrony of these sites; the recovery of ancient pieces persists until the constructions of the 3rd millennium BC (Bueno Ramírez *et al.* 2016b, 2017a, 2018). In more recent architecture, partly contemporary to the development of individual burials associated with the Bell Beakers, the display of scenes is very elaborate. These collective burials follow highly regulated rules in which the walls and floors are decorated, as are the corpses, clothing and grave goods. Montelirio is a good example in Iberia, as are some of the spectacular Sardinian hypogea or the decorated cist burials on the continental plains. Similarly, the ceremonial sites such as the Alpine sites with stelae, the applications of painting at the temples of Malta and the Ness

of Brodgar are the clearest examples of spectacular handcrafted visual and theatrical displays at these emblematic sites of memory.

It is clear that each of these places hold very specific, unique records, but at times of maximum connectivity, as in the 3rd millennium BC, these elaborate formulae of complex scenarios must have been widely known throughout the continent. A similar situation is indicated by the materials of the funerary deposits. Between the 4th and 3rd millennia BC, Iberia's role as an intermediary of prestigious materials (amber, gold, ivory, cinnabar) is reflected in the funeral decorations, and a similar situation could be assumed for the role of the Atlantic and Alpine decorations.

The funeral scenarios of the European megaliths were formed from testimonies of the past: decorated or undecorated stones, recovered bones and pieces of anthropomorphic significance taken from older architectures (Bueno Ramírez 2021; Bueno Ramírez *et al.* 2016c, 2017a-b), constituting the basis of discourse of identity and power. Throughout their use they were never inert monuments, but – as the data evaluated here indicate – they reflected the different ways of transforming death into understandableclear messages through highly structured rituals.

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The data obtained are the result of research projects from the Government of Spain, in which our colleagues A. Hernanz and his team from the UNED, K. Steelman from the University of Texas and Ruth-Ann Armitage from the Eastern Michigan University, participated. We are grateful for the broad support of the colleagues who have generously contributed samples from megalithic sites and working toghether. Thanks to L. Laporte, P. Gouezin, F. Cousseau, F. Carrera, L. Salanova, E. Mens, E. Ghesquière, G. Benéteau, V. Ard, N. Card, A. Sheridan, A. Thomas, R. Martineau, J. Caninas, L. C. Gomes, L. Garcia-Sanjuán, J. A. Linares, C. Mora Molina, J. M. Gutierrez, J. L. Rocha, J. Oliveira, G. Aranda, M. Sanchez-Romero, A. Rodriguez-Casal, M. Besse, P. Y. Nicod, F. Mariethoz, M. Mottet, T. Steimer, G. Zidda, F. Schmitt, J. Verdonschot, H. Meller, M. Bartelheim, J. Muller, F. J. Santos, J. Perpetuo, R. Martinez-Sanchez, L. Briones, C. Odriozola, T. Schunke, A. Carvalho, A. Paz, X. Darriba, M. Rojo, C. Tejedor.

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English translation from spanish firstly edited by Leah Scott

Don Bosco: a new Final Neolithic megalithic cemetery at Sion (Valais-Switzerland)

Manuel MOTTET

1. Geographic location

The city of Sion is located in the Upper Rhone valley at the heart of the Valaisan Alps in Switzerland. The two distinctive hills, Valère and Tourbillon, which overlook the city, were settled as in the Early Neolithic in around 5300 BC (**Fig. 1**).

2. The discovery of the Don Bosco dolmen

Since 1999, investigations carried out at Don Bosco site 2 in Sion have mainly concerned the cemeteries dated to the Early Iron Age and the Early Middle Ages. In 2018, at the end of the excavation of the Hallstatt cemetery, a slab was discovered protruding from the ground (red circle, **Fig. 2**). It was much larger than the stones forming a ring around the tumuli or those in the stone circles surrounding the tombs. It was later revealed to be the southern upright slab (orthostat) of a dolmen, which was built 2 m below [(1)].

3. The dolmens of Sion

At the beginning of the 1960s, initial archaeological research carried out at the Petit-Chasseur site in Sion revealed the presence of a large cemetery grouping together about ten dolmens built between 2800 and

(1) The data from the excavation of the cemetery which are presented in this article have not yet been subjected to analysis. These studies will start in 2020 with the cleaning and restoration of the stelae. A monograph publication is planned.

Fig. 1 – Location map.

Fig. 2 – The southern upright slab protruding in the Hallstatt cemetery (Early Iron Age) (© ARIA).

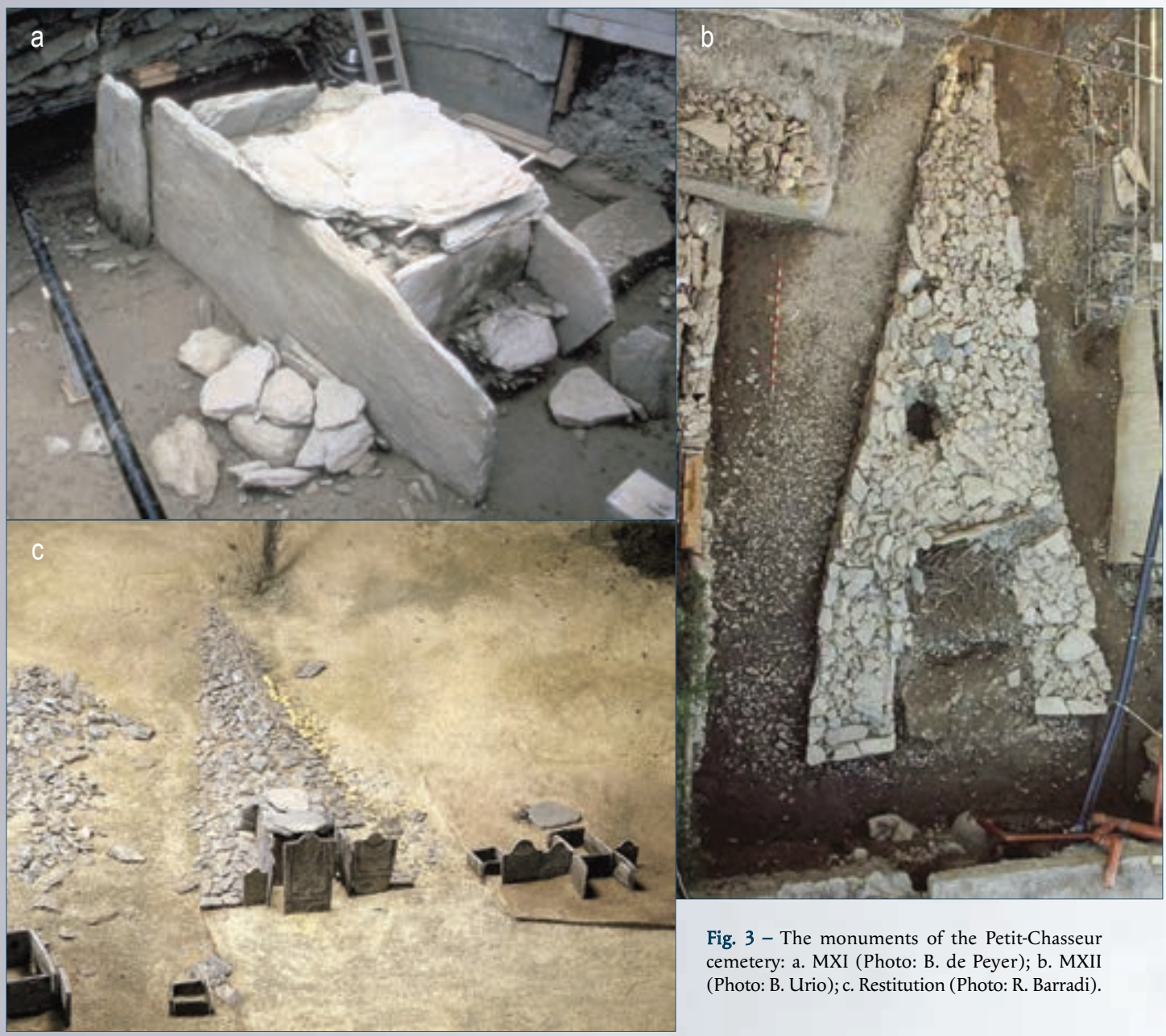

Fig. 3 – The monuments of the Petit-Chasseur cemetery: a. MXI (Photo: B. de Peyer); b. MXII (Photo: B. Urio); c. Restitution (Photo: R. Barradi).

2200 BC. In total, these monuments have yielded about 30 anthropomorphic stelae, most of which had been recut and re-used for building the monuments (Fig. 3c). In 1987, two additional monuments were discovered about 100 m to the east, on the alluvial fan of the Sionne River. One of these is the monument MXII (Fig. 3b), the earliest in the Petit-Chasseur cemetery, dated around 3000 BC. Its use ceased prior to the Bell Beaker period around 2500 BC. The burial was sealed and the orthostats removed and re-used for building (Bocksberger 1976, 1978; Gallay & Chaix 1984; Favre & Mottet 2011).

4. The remains

The Don Bosco site has yielded the remains of two dolmens. Only three slabs are left of the first monument (blue circle in Fig. 4), which was completely destroyed by the flooding of the Sionne River. The largest slab (4 tonnes) was an erratic block of meta-sandstone; the two others, which were smaller and lighter (1.5 tonne), were limestone. The second monument (red circle in Fig. 4) was partially destroyed, but a substantial part of the deposit in the burial chamber was fairly well preserved.

5. The ossuary

The excavation of the funerary chamber yielded the remains of some 30 individuals of all ages and both genders. The preservation conditions were poor because of erosion caused by the river flood, so there was a considerable lack of bones, more particularly of skulls. Many of the individuals, mainly young subjects, were deposited in a crouched position on their right side, with the head facing east (Fig. 5). The only dates so far available were obtained from the first burials and point to the end of the Bell Beaker period, around 2200 BC.

6. The grave goods

The grave goods (Fig. 6) can be compared to those recovered from the early Bell Beaker burials at Petit-Chasseur I (monuments MVI or MXI): a tubular-shaped copper bead, pottery sherds with combed decoration, triangular flint arrowheads with squared barbs or with tang and slant barbs, a circle segment made of flint (Fig. 6a), pendants made of perforated shells (Fig 6b), bone needles (Fig. 6c) and a pendant made of a bear canine tooth (Fig. 6d). These various objects make it possible to date this burial to about 2500 BC, i.e., to the beginning of the Bell Beaker period in Valais.

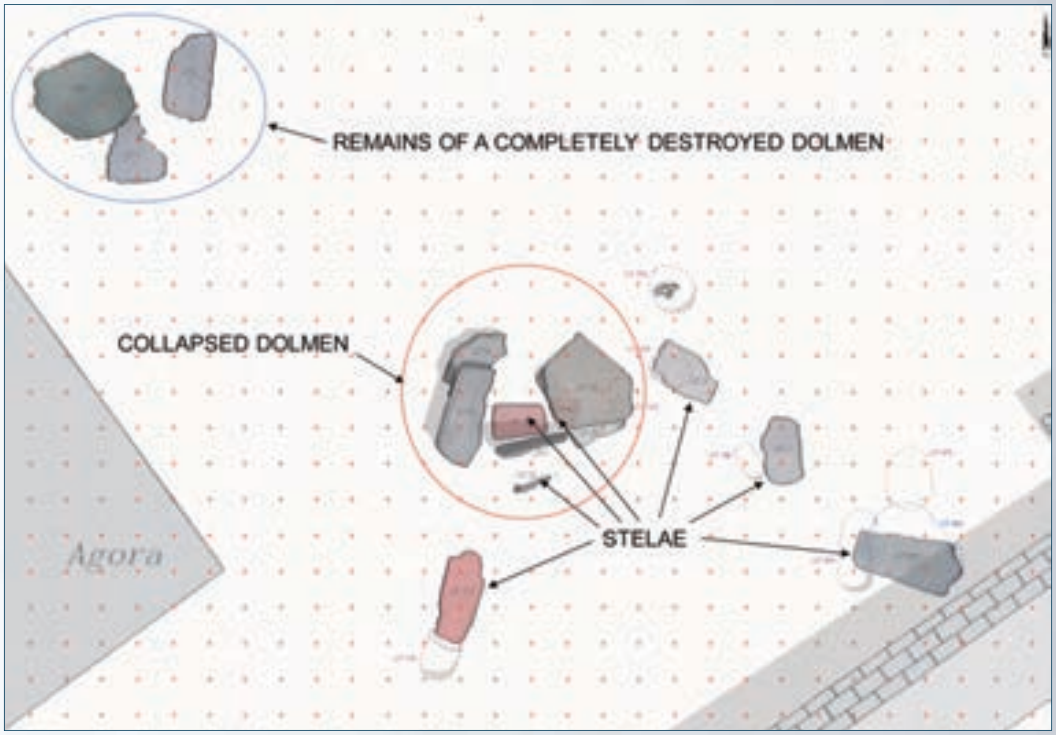

Fig. 4 – Plan view of the architectural remains of the Don Bosco cemetery (© ARIA – C. Bondi).

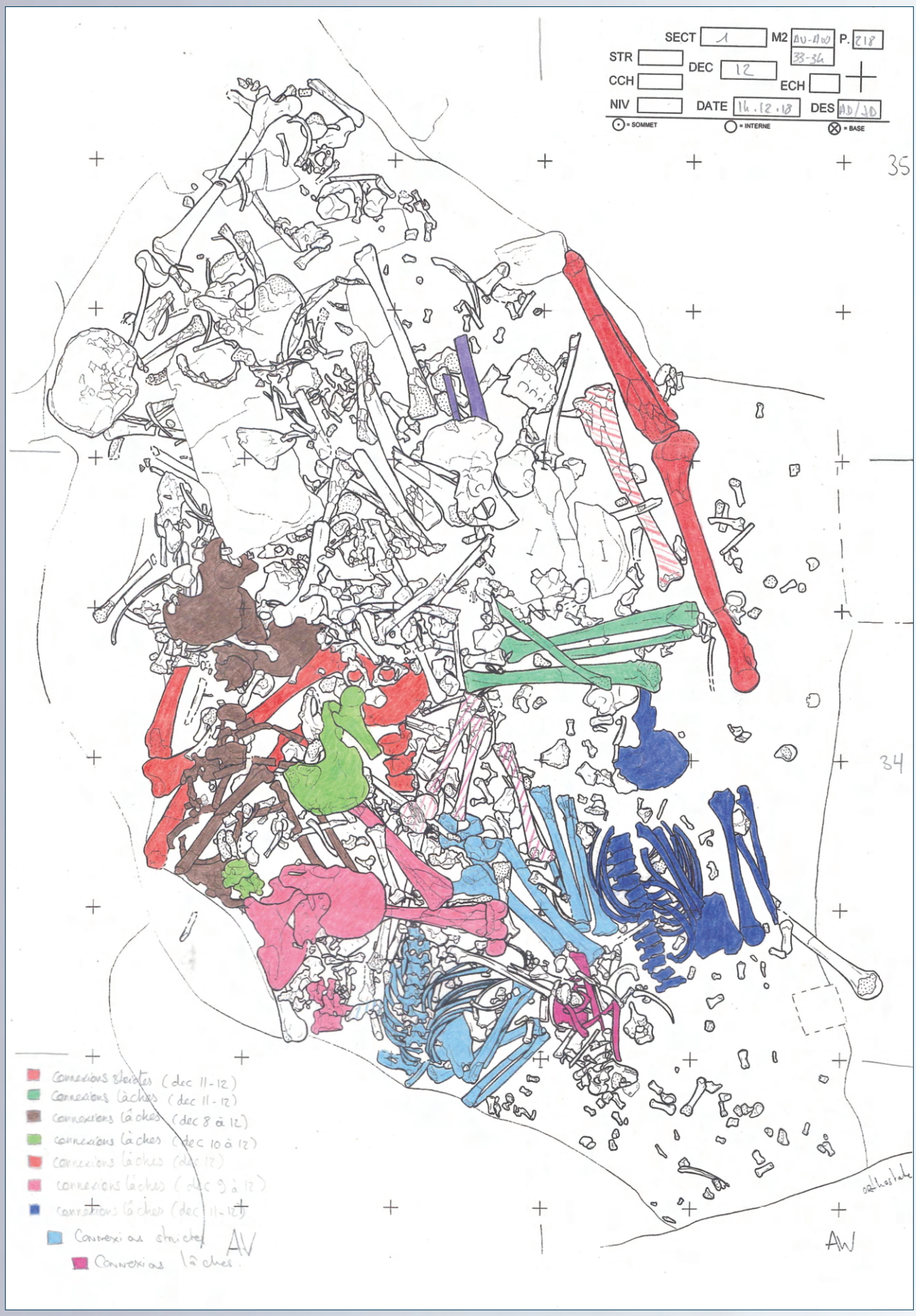

Fig. 5 – Field drawing of a level at the bottom of the ossuary, indicating the individuals by different colours (© ARIA).

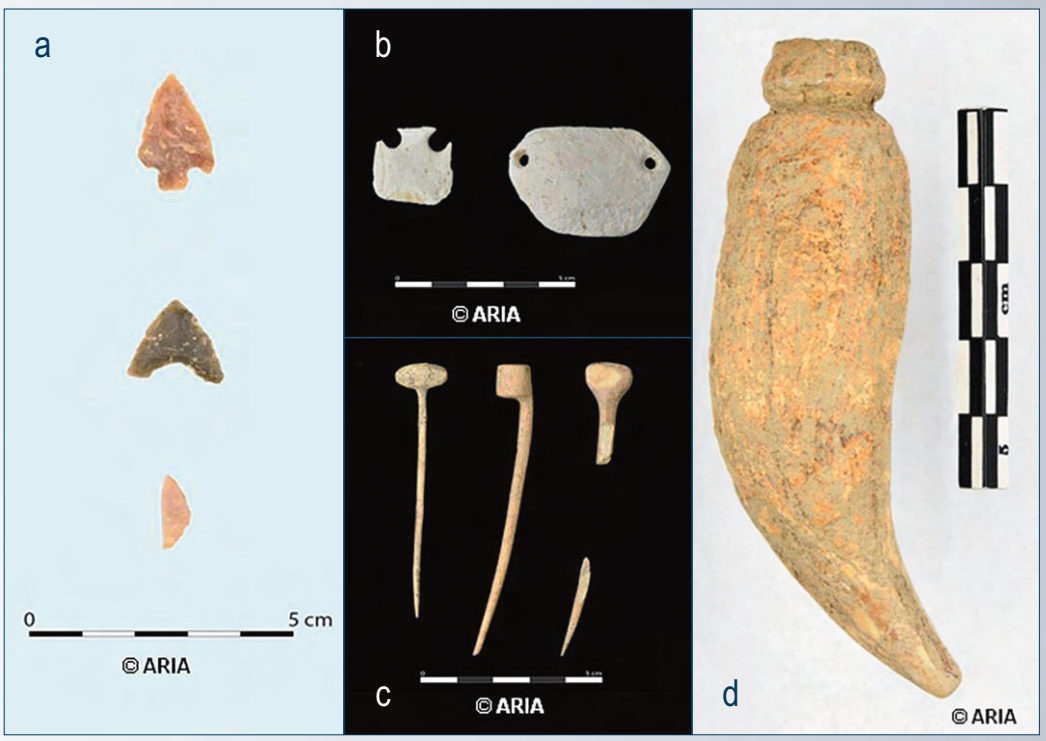

Fig. 6 – Grave goods (© ARIA).

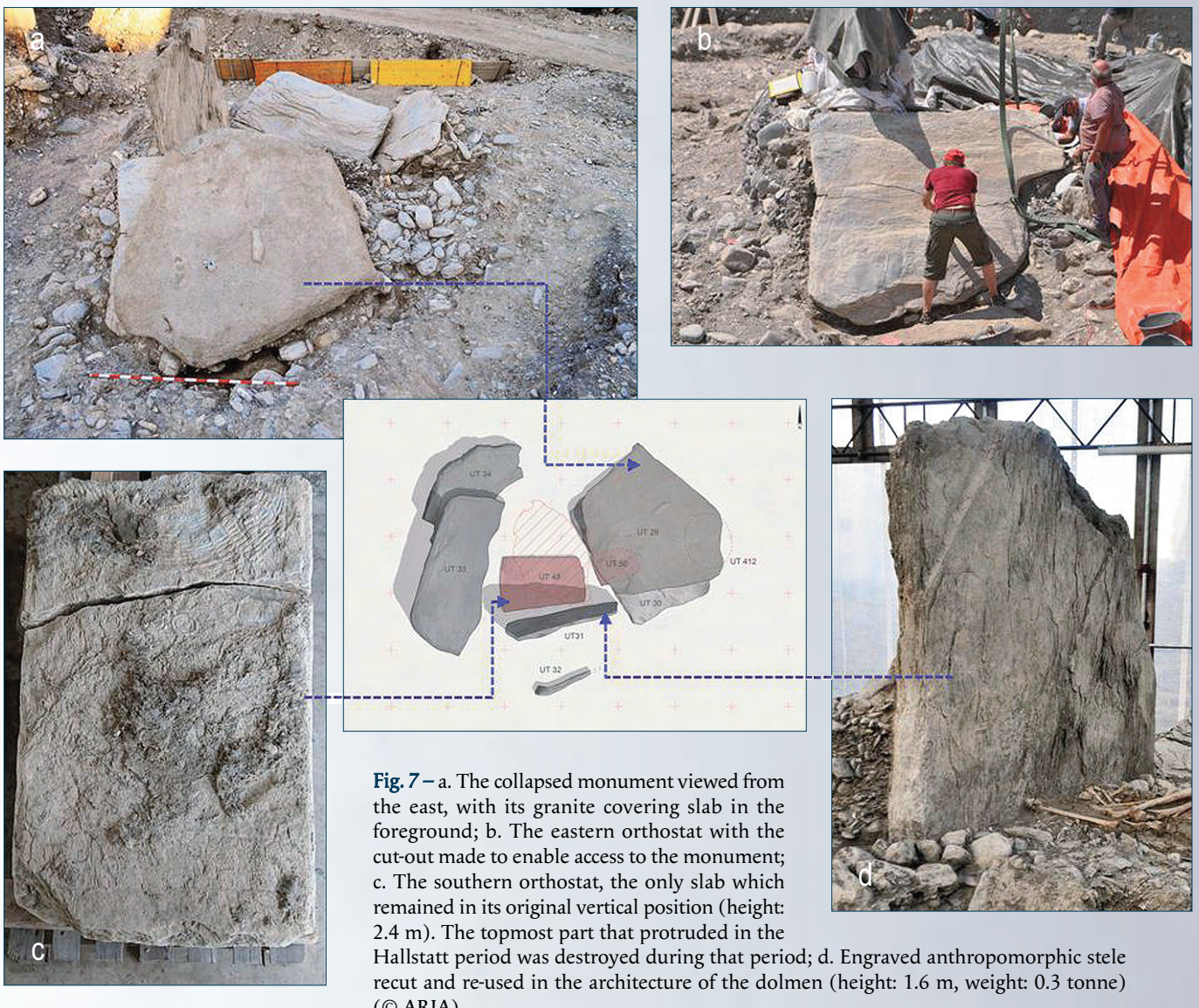

Fig. 7 – a. The collapsed monument viewed from the east, with its granite covering slab in the foreground; b. The eastern orthostat with the cut-out made to enable access to the monument; c. The southern orthostat, the only slab which remained in its original vertical position (height: 2.4 m). The topmost part that protruded in the Hallstatt period was destroyed during that period; d. Engraved anthropomorphic stele recut and re-used in the architecture of the dolmen (height: 1.6 m, weight: 0.3 tonne) (© ARIA).

7. The architecture

The rectangular cist, measuring 2 x 2.4 m was built from four large vertically-set limestone slabs (orthostats) overlaid by a massive slab of granite (Fig. 7) weighing about 4 tonnes. As is the case for the huge dolmens of Sion (MXII, MVI, MXI, MV and MI) the monument has a side entrance formed by a cut-out at the base of the eastern orthostat (Fig. 6). The whole construction leans against the southern orthostat (Fig. 7). Two engraved stelae were recut and re-used in the architecture (Fig. 7). By contrast to the earlier dolmens of Sion, MXII and MVI, this monument has no triangular dry-stone platform, but the burial cist is thought to be extended to the south by additional side slabs, as is the case for monument MXI to which it is most similar (Fig. 3a).

8. The stelae in the periphery of the monument

Several stelae were found in the vicinity of the monument. Two of these (Figs. 8 and 9), which are anthropomorphic, were deliberately pushed into pits. Other, apparently undecorated slabs were also located in the surroundings of the monument, collapsed next to their foundation ditch [2].

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Fig. 8 – Engraved anthropomorphic stele pushed face down on the floor in a northerly direction, with representation of arms, hands and necklaces of circular beads (height: 2.6 m, weight: 1 tonne) (© ARIA).

Fig. 9 – Anthropomorphic stele, pushed face down on the floor into a pit and lying in a southerly direction. Any decoration currently remains unrevealed (height: 3 m, weight: 3 tonnes) (© ARIA).

Part VIII: European Megaliths

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Part VIII: European Megaliths

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Conclusion

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Conclusion

There is hardly a continent or large region of the world that does not harbour at least a few megaliths. These very large stones, which may be merely erected towards the sky or assembled in structures that seem to defy even the most elementary laws of gravity, leave a long-lasting mark on the landscape. The stones were most often moved from their source, and the individuality of each one is usually preserved within the megalithic ruins observable today. The enormous weight and size of particular blocks is what first captures the imagination, yet many are part of much larger constructions that are not always directly visible to us. Other similar structures were sometimes built in the same periods and in the same area, but with smaller dimensions or smaller components, or even with different materials. All contribute to a shaping of the landscape, both vegetal and rocky, terrestrial and celestial. Leafing through the pages of these volumes, we are first struck by a diversity that is matched only by that of the builders of these structures and their corresponding societies at specific moments of history that were unique on each occasion. Never before has so much knowledge on this subject been brought together in a single work. This inevitably raises many questions to which it would be presumptuous to try to provide definitive answers. First, we sincerely thank all the authors who have provided so many high-quality and extraordinarily rich syntheses, each with an abundant bibliography and a systematic mention of the history of research in their region, which also makes it possible to situate the discourse of each author within the whole diversity of the corresponding academic contexts. The examples that we will now cite serve to illustrate, but cannot summarize, the richness of each contribution.

To date, no megaliths are known to have been erected by *Homo sapiens* in the earliest prehistoric times. The question of whether similar structures were built by the last hunter-gatherers remains unresolved. It is discussed from different angles through examples taken from the Atacama Desert in Chile and the Balkans in Europe, in the north of Australia, Japan, and at Göbekli Tepe in Turkey. In the Levant (at least in the PPNB), as well as later and more widely on the Atlantic coast of Europe (certainly from the 5th and perhaps the 6th millennia BCE), and perhaps also in the Peruvian Andes (in the so-called formative period), many megaliths are contemporaneous with the first developments in agriculture and livestock breeding. In China, and particularly in Manchuria (Hongshan culture), vast Neolithic funerary constructions make extensive use of stone without, however, mobilizing very large blocks. Throughout the world, an even greater number of megaliths were built by populations that practised metallurgy or knew how to use metals: from at least the 4th millennium BCE in the Near and Middle East, as well as a little further north in the Caucasus, and perhaps also a little further south in East Africa, then somewhat later in the Altai and in the steppes of Central and Eastern Asia. At about the same time, in the very north of Siberia in Russia, the decorated stelae of the nomadic pastoralists of the Okuniev

culture (2500-1800 BCE) present a surprising palimpsest of carved figures reminiscent of much older traditions present in the parietal art of the Upper Palaeolithic. From the second half of the 2nd millennium BCE onwards, and during the following millennium, a great many megaliths were built in peninsular India and in Korea, and on the island of Kyūshū. In Japan, the period during which Kofun were built (and during which religion began to take on the forms subsequently associated with Shintō in the archipelago) just preceded the advent of the State at the end of the 7th century CE, and subsequent historical times with myths recounting the immutable and majestic character attributed to stone and to rocks in the imagination of the elites. On the continent, the Book of Han already mentioned a curious custom of venerating very large stones among the Qiang, an exonym designating various populations in the southwest of China. In India, some megaliths bear inscriptions in an archaic form of Tamil-Brahmi script dated to the 4th century BCE, while Sangam literature and an early Tamil grammar treatise describe burial rituals involving the erection of a large stone or *nadukal*, with which the spirit of the dead had merged. However, large megalithic burials became much rarer with the advent of the first cities and rarer still with the emergence of the State (and even the first monetary exchanges).

The same pattern can be seen for the eastern Maghreb, where hundreds of thousands of funerary megaliths were erected in the Late Bronze Age and the Iron Age during the 1st millennium BCE. Near the shores of the Black Sea, the funerary megaliths of Thrace were used systematically during the Iron Age. Subsequently, the development of the great monotheistic religions seems to have brought an end to this practice, even in the high plateaux of the Himalayas, where megaliths are generally attributed to a period preceding the arrival of Buddhism. Independently, and on the other side of the world in the northern Andes, megalithic funerary monuments such as those of San Agustin were built mainly during the 1st millennium of our era. The very different monuments studied recently in the Amapa region of northern Brazil, however, belong to the first half of the 1st millennium BCE. In Panama, the burial mounds of a Coclé culture elite (700-1000 CE) are also sometimes associated with standing stones, while the latter delimit several ceremonial enclosures in Venezuela, and even ball courts on the island of Puerto Rico, in the southeast of the Dominican Republic, and in the British Virgin Islands, where they were still in use when the first Europeans arrived. In Peru, Bolivia and Ecuador, many *Huancas* are still honoured today. In northern Colombia, some of these stones weigh up to 30 tonnes. The chronological scope of the periods during which so many megaliths were built in the Caribbean and in South America, where this term is almost never used despite their number and diversity, will undoubtedly surprise many specialists. A comparable chronological range also applies to the different megaliths built successively in East Africa, notably in Ethiopia where it is still a very active practice, for example among the Konso, as well as among other populations in Southern Sudan. Some authors even suggest that the presence of numerous megaliths in the Eastern and Central Sahara is indirectly linked to ancient migrations of Nilo-Saharan-speaking nomadic pastoralists, who may well originate from those regions of eastern Africa, in an area where climatic variations were particularly pronounced during the recent Holocene. In West Africa, the megaliths of the Senegambian area seem to correspond to a much shorter episode of just a few hundred years, around the first centuries of the 2nd millennium of our era. In southern Nigeria, as in Cameroon, other standing stones marking small funerary monuments are erected in sacred woods or serve to delimit or even protect the locations of highly secret initiations. In Madagascar too, the construction of megaliths in the central highlands of the Imerina seems to date back no more than 500 years. In Androy in the south of the island, recourse to oral tradition (particularly that of the Afomarolahy) allows us to construct a historical

scenario with some elements of explanation. This still-existing megalithic tradition seems to have emerged in the middle of the 19th century in connection with territorial claims over disputed pastures, identity assertions within an expanding population, and the collapse of royal authority.

During the last two millennia, many megaliths were also built by societies without writing. Perhaps this is one of the reasons why they were so often studied by archaeologists specializing in prehistory or protohistory. We hope, or we would like to believe, that no one would ever again think of drawing a parallel between the rudimentary aspect of the stone blocks used and the 'primitive' character of the populations concerned, either in the past or in the present. Just 50 years ago in Europe, on the shores of the Mediterranean such reasoning attributed the *Antas* of the Portuguese Neolithic period to indigenous populations that had been influenced by a few settlers of Eastern origin who were responsible for the construction of more elaborate *Tholos* tombs, even though there was already archaeological evidence pointing to an inverse chronology, both there and in southern Spain. This pattern is not so different from that proposed today to explain the appearance of megalithic constructions in Java and Sumatra, contemporaneous with the great Hindu-Buddhist kingdoms of Sriwijaya, Majapahit and Malayu from the 7th century CE onwards. On the other hand, cities sometimes described as 'megalithic', such as Gunung Padang in northern Java, or Nan Madol in Pohnpei or Lelu in Kosrae, Micronesia, perhaps reflect the nature of locally available building materials. The use of megaliths later spread to the islands of Sumba, Flores, Nias, North Sumatra and Central Sulawesi, perhaps even after contacts with the first European merchants to whom our colleagues who study such social isolates – the 'last' megalith builders – may be more indebted than they imagine. In reality, this is an area where the vigour and extent of multiple maritime circulation routes are certainly much older. In central Sulawesi, northern Sumatra and Sumbawa Island, large monolithic jars have often been compared to those documented elsewhere in all their diversity, in northern Laos, Burma, and in northeast India. In the Bada Valley in Indonesia, charcoal collected around one of these stone jars dates from the second half of the 1st millennium BC, and the genomic analysis carried out on human bones associated with the jars suggests an affiliation with Austronesian populations. In northern India even today, most of the groups that erect megaliths, such as the Nagas, the Khasi, the Gonds and the Mundas, also speak some of the many Austronesian languages. Such actualist references are particularly valuable here, as in Indonesia or East Africa for example, for the development of theoretical models and for the many sociological or technical observations made at the time. Historic errors in research – i.e., the linking of megaliths and Dravidian populations too quickly (and for the wrong reasons) in central peninsular India – remind us to remain cautious, however, when it comes to associating such structures with large ethnic or linguistic entities.

On the other hand, let us also bear in mind that there was a time when the capacity of indigenous people to even build megaliths was questioned by several Europeans freshly arrived in Australia, based on the particularly crude character attributed to these populations. Yet the abundant bibliography accumulated by contributors for this region includes a site that could be considered to constitute the very essence of the term 'megalith' (even if smaller): a large, elongated stone held upright only by its own weight and a small wedge stone, in apparently precarious equilibrium on the bare bedrock of a granitic cliff on the seashore on the east coast of the continent. This stone was set up by aboriginal people with a totemistic ontology. Further north in the Solomon Islands in Melanesia, the construction of enclosures made of standing stones directly preceded the implementation

of the *Kula*, a long-distance exchange circuit for prestige goods (similar to that on the island of Yap in Micronesia), involving aragonite 'coin stones', or *Rai*, originating from the island of Palau, 450 km away, which took on a 'megalithic' form from the second half of the 19th century onwards. On the island of Retoka in Vanuatu, a modest stone erected above the tomb of Roy Mata in the 14th century CE indicates the location of what remains without doubt one of the most emblematic examples of 'accompanying deaths', so dear to Alain Testart. Further east, other megaliths accompany what was probably one of the last great explorations of the globe by human beings, along with the Polynesian marae, the Marquesas Islands, and as far as Easter Island where an imposing monolithic statuary rests on platforms with cyclopean structures. There, as on the shores of the Mediterranean and the Black Sea, and in Japan and the Andes, monolithic sculptures and cyclopean constructions tend to replace earlier megalithic constructions in vast sequences, each of which should certainly be studied in greater depth.

Regarding this last point however, several caveats cannot be ignored. In Europe, specifically in the British Isles, Richard Bradley [(1)] uses the example of the Clava and Orkney-Cromarty cairns, which have often been associated because they present what, at first sight, may appear to be architectural similarities, as well as distinct geographical distributions within the territory, although they were built a thousand years apart. What is the scientific relevance of continuing to study them together as 'megaliths'? The study of pottery or of lithic industries, just as of megalithic architecture, is not sufficient in itself, although each is the subject of specialized studies, meetings and dedicated books. The author recognizes that the highlighted confusion is also – or even primarily – due to imprecision in the nature of previous analyses. On the shores of the western Mediterranean, Jean Guilaine's conclusion is even more abrupt, when he divides the region's megalithic manifestations (diachronic, numerous and varied) into at least six stages, from the Middle Neolithic to the Iron Age, and tries to avoid federating them into a conceptual 'megalithic' whole, devoid of any meaning. The same author boasts no less than nine works on the subject, all of which use the term 'megalith', sometimes even in the title. It is true, however, that even though the notion of 'megalithic civilization' itself seems to have been definitively discarded, the spectres of somewhat over-hasty comparisons, as well as unbridled diffusionism, are perhaps not always totally absent from some of the contributions gathered here. Moreover, it would be wrong to consider the state of knowledge presented in this book as totally exhaustive, as some of the introductions to each part point out very honestly, as do some of the authors, for example those discussing Mauritania, Turkey and Pakistan. When radiocarbon dating is available, the implementation of sampling to provide some *ante-* and *post-quem* dates for each of the events affecting these inert constructions is often strategic (especially for those resulting from cumulative processes). The dating of superimposed sequences of paintings on the walls of a burial vault can contribute to this and, in the case of collective burials, the radiocarbon dating of each of the buried individuals can also lead to some surprises, as was the case for the gallery graves in Scandinavia. The question of the origin and chronology of each of these megalithic

(1) In this conclusion, only Richard Bradley, Jean Guilaine and Alain Gallay, whom we asked to give an introductory conference for the Rencontres in 2019, will be nominally cited, as well as Roger Joussaume who wrote the preface and to whom this volume is dedicated. The other authors will find some elements from their own contributions, but I hope will not be offended not to be systematically cited, as there are many of them and their chapters abound in instructive lessons. I would like to take this opportunity to thank Jean-Paul Cros, Jean-Marc Large, Laurent Nespoulous and Chris Scarre for their amicable and constructive comments on this text.

complexes, as well as their arrhythmia, is thus at the heart of many contributions, as is the geographical distribution of a heritage too often considered to be frozen for eternity but which is nevertheless fragile and subject to so much destruction (sometimes even before it has been studied) almost everywhere on the surface of the globe.

The question raised by the two authors mentioned above, and which runs through many other contributions to this book is, however, much broader: what is a megalith? At first glance, when leafing through these volumes, the reader will no doubt gain a strong impression of the striking commonality emerging from structures erected in very distant places and at very different times. Reading on, however, she or he will perhaps be equally surprised by their extreme diversity. For specialists who spend at least a small part of their lives studying these megaliths and take the variety of the precise contexts in which they are found as a reference, their path is more or less the opposite as they seek to identify common or recurrent elements within these diversities. Let us admit here again that the history of research has caused some collateral damage. In South Asia, for example, there are megaliths that were built before a megalithic period that corresponds to the Iron Age and includes many other funerary practices. Most stone burial cists built during this megalithic period in India are, however, rather modest in size, especially when compared to megalithic structures such as, for example, the passage graves of northern Europe. In the north of the country, however, there are also a few standing stones up to 9 m high, which were probably erected at a much later period than that described as 'megalithic'. The circular 'cairns' that make up nearly 90% of the megaliths in the province of Vidarbha have dimensions, morphologies and structures that are much closer to what is called a 'stone tumulus' in West Africa, than to any 'cairn' on the Atlantic coast of Europe. The same is true for a number of 'cairns' studied in Central or Eastern Asia, with or without a stone façade, more rarely with a masonary chamber, and sometimes even with an access corridor. The only feature that these have in common is that, on the surface, they appear as a simple pile of stones. The term 'dolmen' is not used in the same way in French as in English, nor in Denmark or East Asia. In southern Korea, for example, but also sometimes in Indonesia and in many other places, it designates what we would call a 'slab burial' in France, or a 'boulder grave' in Ireland. Here at least, the weight of the slab is perhaps not always unrelated to the widespread fear that the spirit of the dead will come to haunt the living. Questions of terminology are rarely agreed upon, and the weight of long-established academic traditions is so considerable that we will probably have to make do with them. For our part, however, we will try to favour, whenever possible, the use of local terms to designate each of these distinct groups of megaliths: *Che pin, Koindol, Tazunu, Namoratunga, Huancas* are names derived from local, national or regional languages, the translation of which is no more naïve than that of the term *menhir* ('standing stone') in Breton. Tall standing stones, erected for ceremonial or commemorative purposes, have often been contrasted with those assembled to delimit or seal off a space for the remains of the deceased. This overlooks the fact that there are also large stones placed where no human remains will ever be found even though they were erected as part of funerary activities, as is the case with the *Tana Toradja* of the Celebes Islands or the *Gewada* in Ethiopia. Conversely, the distinction between dolmens and menhirs, although relevant in Western Europe, may have introduced a bias in the perception of megaliths elsewhere in the world.

In the preface to this book, Roger Joussaume therefore insists on the mega prefix of the term 'megalithic', while recognizing that this is a very relative notion for which no wholly satisfactory numerical limit has ever been set. On this occasion, he cites as an example the

burial chamber of the great mound (*Kofun*) of Ishibutai in Nara, dated to the 7th century CE. Here, the use of very large blocks of stone (some individually weighing up to 77 tonnes) is based not only on the associated prestige or the materiality of the time-resistant stone, but rather on the power emanating from it. This architecture is, however, only very rarely called 'megalithic' by our Japanese colleagues, as it is part of a much wider diversity of structures in which the use of large stone blocks is not always the rule. The alternative, of course, would be to describe all the *Kofun* as megaliths, since they are all the result of the same system of thought. Similarly, should Arabia be considered a megalithic province due to its hundreds of thousands of tower tombs built mainly of dry stone, when the ruins of structures with the morphology of a 'dolmen' can be counted on the fingers of one hand? Here, the quandary is even more conspicuous since many similar constructions have traditionally been associated with studies of megaliths on the Atlantic side of Europe. Terms such as pre- or para-megalithism flourish, and are liable to add even more confusion, rather than clarifying the contours of the terminology. This tension is so perceptible that it is sometimes even displayed in the titles of certain contributions with, for example, the use of maxims such as 'small is beautiful'. For Alain Gallay, the verdict is unambiguous: it is impossible to isolate an architectural practice known as 'megalithic' from other architectural forms that do not include large stones. For many other authors, megaliths are only one particular form of monumentality among others, such as large, princely tumuli or some manifestations of rock art. This is not to deny, however, the existence of their own megalithic specificities which, on the contrary, are asserted in the very title of one of Gallay's works on 'megalithic societies'.

A few authors note that such a semantic shift does not solve anything since definitions of the notion of monumentality themselves often fluctuate and are just as reliant on the contexts in which it flourishes. This does not matter, since society is the sole subject of the study and the aim is to assert the pre-eminence of sociological or general anthropological models, which may or may not be compatible with the archaeological evidence. A great many contributions report on debates of this kind. Indeed, it is the collective effort made to transport and handle such large blocks of stone that first attracted attention. Yet this represents a lesser feat than that of building terraces on the slopes of a mountain, irrigating a plain, crossing vast deserts or sailing across large expanses of ocean. The act of building something big creates social ties, and this could also be one of its purposes. Whether this collective effort was achieved through wide-ranging group participation (for example, in societies with an egalitarian ideology) or through more coercive means (with the recurrent question of slavery) is often quite conjectural in the light of archaeological data alone. Moreover, from a technical point of view, the question of the possible use of animal traction is still not fully resolved, nor is the invention of the pulley and other force multipliers made of perishable materials. If they are not too constrained or imposed, such collective efforts are often marked by great celebrations, giving rise to an effervescence that has left its mark even on the minds of the founding fathers of modern sociology. Not that such celebrations are always strictly reserved for megalith construction but here, at least, the materiality of stone gives us a glimpse of the possibility of detecting some inequalities, notably in the distribution of power or wealth, for past societies.

The existence and storage of food surpluses, as well as the accumulation and redistribution of wealth, are at the heart of many discussions. Various examples, in Turkey, the Atacama Desert Chile, South Asia, the Polynesian islands, and Africa, suggest that such monumentalism cannot be reserved for stratified societies where elites would monopolize such wealth solely for their own eternal glory. Most of the papers are case studies but some,

especially those with the same actualist references on the island of Sumba, Indonesia, assume a comparatism either between two distant groups of the contemporary era or with past societies that also erected megaliths, at the other end of the world. The first approach highlights the economic capacities of the individual, or the group or clan to which he/she belongs, as a fundamental variable in the activities linked to the construction of megaliths, even in societies with an egalitarian ideology. The second insists rather on the instability of the system and the possible existence of distinct modes of organization in societies sometimes producing material goods – and therefore archaeological remains – that are sufficiently similar that they can be assimilated into a single material culture. Nevertheless, many authors agree that the construction of megaliths, in particular megalithic tombs, is a privileged means of expressing identities. These data are often cross-referenced with those that emerge from the means of subsistence of the group building the megaliths in a specific ecological environment that is itself largely stable over time. As with many other types of monuments, megaliths are often the work of peasant communities strongly anchored in a certain territory.

Consequently, some megalithic sepulchral chambers containing the bodies or bones of several individuals, from Manchuria to the Atlantic coast of Europe in the Neolithic period, and the Levant in the Early Bronze Age, are often interpreted as 'clan cists'. Examples of these can be observed today, such as those resulting from the wars in northern India. In Northern Europe during the Neolithic period the construction of megaliths appears to have a rather sudden onset, associated with the apogee of the construction of enclosed places reserved for ceremonial activities, and with the introduction of new agricultural techniques such as ploughing, manuring, and animal traction. Many other specific cases can be envisaged. Contemporary U'wa farming populations in Colombia take advantage of the vertical zoning of the vegetation on the sides of the mountains on which they live to practise seasonal transhumance, which is perhaps motivated by religious rather than genuinely economic considerations. Here, the ceremonial enclosures marked by standing stones are the sites of curious forms of exchange where trading partners never meet. Other megaliths were erected by pastoral societies who were even more mobile. For Tanzania, as for the Horn of Africa, the authors insist on possible expressions of monumentalities specific to groups of nomadic pastoralists, in the same way as the 'deer stones' of Mongolia reflect very specific modes of spatial representation. During the Iron Age in India, the association of the horse with communities that erected megaliths seems very significant in groups with a mixed economy practising craft specialization as well as pastoralism and marginal agriculture. Here, we are undeniably seeking to explore the foundations of the current system of social organization by castes.

At the chronological extremes, many researchers focus either on the existence of megalithic monumentalism associated with groups of hunter-gatherers – in Japan and Chile for example – or possible relationships between megalith-building groups and the first States with which they were contemporaneous. In Africa, this latter case is discussed for Sudan through its relationships with Pharaonic Egypt, for Ethiopia with the development of the Aksum civilization, and for the Garamantes of Fezzan with their links with the ancient Mediterranean. Such questions are just as relevant in the Near and Middle East, where many megaliths seem to have been erected by merchants ensuring commercial interactions with the urban populations of the coasts or the great rivers, and who thus played a major role in the composition of the first oriental civilizations. In Arabia, the idols that are still being stoned today first took the form of standing stones and so are rooted in a thousand-year-old tradition. Some authors even suggest that this model should be more widely

generalized; the affirmation of identity reflected in the construction of megaliths while reducing the risks associated with trade and encouraging an increase in wealth. Social, political and economic, but sometimes also religious dimensions are thus mobilized to try to explain what could have pushed so many human groups to invest in tasks that are, after all, rather arduous and not directly necessary for their biological survival. For other researchers, the very essence of megalithic practices is to be sought out in the intention of the builders, by considering all the characteristics of the constructions that stem from different ways of comprehending the world, time, space and the environment. The one point on which everyone seems to agree is the need to approach each of these megalithic architectures in their own geographical, historical, sociological, cultural, ecological, and environmental contexts. The absence or paucity of data pertaining to the habitat of the past societies who built such megaliths is a recurring complaint.

In southern Madagascar as in central Sulawesi, today in the narratives of the populations concerned the putrescible nature of almost everything that forms living beings, as well as domestic architecture, is explicitly set in opposition to the durability of the stone materials mobilized for the construction of monuments dedicated to the ancestors. This idea is also very evident in the history of research on megaliths in Europe during recent prehistory, as many (not all) megaliths are also funerary monuments and many were first approached as such. The study of sepulchral practices was not the main focus of this book although many chapters do, of course, refer to them. Many megaliths contain individual burials and sometimes a few cremated remains. For collective burials, it seems most appropriate to consider the observations of archaeologists. Actualist studies such as those carried out on the island of Sumba, for example, are extremely valuable in providing us with information on modes of recruitment for the individuals in the tomb. These can be usefully compared with the most recent and promising palaeogenomics results, which highlight the existence of biological kinship links between different occupants of the same megalithic tomb from as early as the 5th millennium BC on the Atlantic coast of Europe. It has long been known that biological and social relationships do not always coincide. Nor can the study of sepulchral practices ignore the complementarity that sometimes exists between megalithic practices, for example, those concerning the erection of large stones pointed towards the sky, those that involve creating an artificial cavity by assembling very large blocks, or those including the deposit of human bones in caves (natural or cut into the rock), for example in Portugal or in the region of Amapa in Brazil, to take only two very different cases. In the funerary vault, the presence of paintings and engravings is an integral part of the architectural project, as it is in the staging of sepulchral spaces hidden under imposing masses of earth, in San Agustín in the Andes, in the Pasemah valley in Indonesia, in Japan and Korea (with nearly 800 painted vaults mainly concentrated in the north of the island of Kyūshū), and also in Europe (in the Iberian Peninsula where they were first identified, in Brittany in the north of France, in Germany and, just as spectacularly, in the Caucasus). It is not uncommon to observe similar iconography on upright stelae or rock faces exposed to the open air, for example, in North Africa, in Northern Colombia or in the Caribbean.

Every monument is part of a landscape that it helps to shape and within which it is a powerful tool for the transmission of human memory. Contributions covering geographical areas as far apart as Easter Island in the middle of the Pacific, the Danube Gorge and Ireland, both in Europe, illustrate the existence of close links between rocky promontories and the megalithic constructions that they harbour, that derive from them, or that are associated with them. This link is expressed very explicitly in the first official chronicles in Japan and in the myth of the Pacha Mama in the Andes. The Polynesian examples also

provide an opportunity to recall that this landscape is not only a rocky base but also integrates a whole plant world which can itself be monumental. In Senegal, certain baobabs with mighty trunks harbouring the graves of griots (West African bards) in their hollows – and now classified as historical monuments – can also be mentioned in this sense. The sometimes very impressive character of these megaliths echoes a form of sacredness of the landscape that shelters them, that sometimes conceals them, or that they ostentatiously dominate. The celestial vault cannot be excluded from this landscape. Among the U'wa of Colombia, as in the Mongolian steppes, many standing stones explicitly provide a direct link between the subterranean and celestial worlds. The idea that certain circles of standing stones could have served as astronomical observatories, notably through the interplay of light and shadow also present in many other megalithic structures in Neolithic Europe, is deeply rooted in the history of this discipline. Through a new mastery of time, the establishment of the first agricultural calendars would thus echo that of the system of plant and animal reproduction which is at the very source of the first production economies. The idea is attractive, but not always easy to demonstrate. In Africa, such proposals were also intended to assert, with good reason, that such inventions could just as well have emerged long ago in human groups for too long stigmatized as 'primitive'. For the Namoratunga of Kenya, as in Egypt at the site of Nbata Playa, and for the megaliths of Senegal and Gambia, such hypotheses are scarcely confirmed by the most recent developments in research. We can point out that most of these structures are often composed of relatively small stones, only excessively lengthened by their shadow.

Indeed, although there can hardly be a megalith without a stone structure, this rapid overview shows us how many authors have intuitively integrated other parameters in defining the studied structures, in addition to the size of some of the blocks used. Of course, it is not surprising that there are no megaliths in the large alluvial basins of the Amazon nor in equatorial Africa, for example. On the other hand, the availability of suitable stone materials is not, in itself, sufficient to explain their presence. Similarly, it would be erroneous to think that all megaliths emerge from cultural environments that have always been familiar with this building material: Japan (unlike China and Korea) is primarily the domain of wooden architecture, in the same way that West Africa, for example, is the domain of earthen architecture. Somewhat like the choice to speak one language or another, which often carries distinct values, the use of one building material instead of another is never totally insignificant and cannot produce strictly homologous (although sometimes comparable) structures. In Europe, as in southern Sichuan and northern Yunnan in China, the fact that the stone blocks were placed on the ground walked on by the living, including for the construction of sepulchral spaces, is another explicit criterion taken into account. Even more often, the anthropomorphic character attributed to many standing slabs arises from a similar observation almost everywhere in the world. On closer examination, most of the authors have intuitively integrated another observation – without always formulating it explicitly – linked to the singular character of each of these stone blocks. The few material transformations – shaping or treating stone surfaces – have often been attributed to an economy of means and to the rather crude nature of the available technical knowledge. This argument no longer holds as, throughout the world, most megaliths were built during the Metal Ages. On the contrary, the ways in which blocks are assembled often emphasize and take advantage of the characteristics of each individual stone. This uniqueness recalls, of course, the individuality of every living being. In the Marquesas Islands, an observer walking around a stone will not say that the different viewpoints highlight it in different ways, but rather that the surface (of what seems to us to be frozen for eternity) then comes alive. In the Andes as well as in Africa,

in Indonesia and India, and in Polynesia and Korea, many recent populations speak of specific entities attached to the material envelope of each of these blocks. These entities are the true source of the power emanating from such structures and must be appeased by rituals. They may be the spirit of the ancestors or of a particular deceased person, but not necessarily. Such entities may also be associated with outcrops, natural boulder formations or erratic boulders, such as the *Iwakura* still honoured in Japan today. The study of the types of inclusion present in the rock, as proposed by one of the contributions to this book for megaliths in Ireland, also helps to highlight some of their staging elements. Often, the characteristics specific to each of these large stone blocks are sufficient in their current state to identify the specific entity to which they are linked, and these beings are sometimes also revealed by petroglyphs, as shown by examples detailed in this work in Puerto Rico and Nigeria. From these we gain understanding of the necessity to strictly limit any transformation of the material in order to respect the integrity of each individuality.

The structures incorporating these different entities can, however, be built with many other raw materials. There is nothing simple or 'natural' about megalithic architecture and the crude appearance of a few blocks, at least at first sight, cannot be extended to the whole construction. It is the whole that generates a representation, as some of our Indian colleagues have pointed out. This representation cannot be understood without calling upon all the diverse combinations of sometimes very different local architectural models that indirectly reflect distinct economic, social, political or religious contexts. It is hardly surprising that some researchers get lost when trying to include them all in a single phenomenon. All these examples are nonetheless necessary for the study of megaliths: the sculpted bifid wooden poles of the Nagas that recall the shape of the monoliths of Dimapur, India, and the calibrated rubble structures built in the likeness of mud bricks in Liangshan, China. The same applies to stone architecture. Although they have been listed as megaliths on the World Heritage List, and with no offence intended, the stone jars of Southeast Asia, monoliths with shafts completely shaped into a purely geometric form, are not really megaliths in the sense that we understand them here. Moreover, they are found in a context where burials in ceramic jars are particularly frequent in Burma, Laos and Vietnam. However, in northern Laos, the study of these large stone cylinders placed on the ground cannot be totally dissociated from burials in cylindrically shaped graves capped on the surface by large cover slabs, often associated with a line of standing stones. In Japan, in Indonesia, in the Levant, and more rarely on the Atlantic side of Europe, there are at least a few examples of sepulchral chambers composed of a monolithic container topped only by a heavy cover slab with a much more rudimentary appearance that no-one would think of dissociating from the much more numerous structures of the time that are more in keeping with the archetypal image that we have of a 'dolmen'. Apart from formal convergences (that we know from experience are often misleading) and a funereal function that would not be sufficient to define the structure, would the weight of the heavy slabs – all carefully squared and sometimes finely sculpted – of some of the most elaborate aristocratic tombs present on the island of Sumba be enough to include them in a study of megaliths if they did not correspond to regional traditions that most often use large (or smaller) barely shaped blocks? Would the single example of Stonehenge, erected as a symbol of human ingenuity with its large regular sarsen lintels assembled by means of tenons and mortises, have been described as a megalith if there were not also, in the British Isles as in Europe, several hundred thousand megalithic ruins of a much more rudimentary appearance? Conversely, should we totally exclude from this field of study the enormous blocks of stone (with sometimes rather irregular contours) that cover the

chamber of some of the largest Egyptian pyramids on the sole pretext that this is a much more evolved civilization? We know that this question has long occupied the mind of Roger Joussaume.

All the valuable contributions gathered in this book shed new light on a human behaviour that turns out to be much more widespread throughout the world than we could have imagined. Like the invention of livestock farming and agriculture, or writing, this more occasional behaviour and its resulting architectures correspond to a stage that is relatively focused in the chronology of human history. The durability of the materials used, the individuality preserved in each of the blocks, each one an entity in its own right, as well as the efforts made to mobilize these very large stones, sometimes to assemble them, and to erect them in a position that often seems to defy the laws of gravity, are some of the elements common to most of the structures described as megalithic. Each of these very large stones embodies, stores or, indeed, conceals information that does not always seem necessary to display. Some participate in the storage of the remains of the deceased, of ancestors, and thus become the place of a constantly reinvented memory. All of them structure the landscape through an ostentation which nevertheless sometimes remains well hidden. Few megaliths were erected by hunter-gatherers, although some were. There is hardly a continent in the world without at least a few megaliths, all of which were built during a relatively recent period in the history of Humankind, even though technically there was nothing to prevent them from being erected during an even earlier prehistoric period. Just like agriculture and animal husbandry, megaliths appeared independently in disjointed geographical areas and were often built by populations that did not know each other. This human behaviour, this practice, tends to be diluted or marginalized each time societies become structured into states with large urban centres, and when writing appears. It is almost as if these megaliths had been the substrate for early methods of transmitting knowledge, at a time of competing visions of the world. The proposal to integrate the archaeological data into a general anthropological approach that would combine ontology and the modes of exercising power, as presented in yet another chapter of this book, is particularly thought-provoking. Having avoided the simplistic comparatism and functionalism of the very first studies of megaliths, after countering the excesses of unbridled diffusionism so frequent in the works of the second half of the 19th century and again during colonial times in the first half of the 20th century, and without forgetting to look beyond the framework of the necessary regionalist studies that developed, with good reason, during the second half of the previous century, as we advance further into the 21st century, new avenues of research must now be invented.

In the end, the reticence sometimes expressed regarding the opportunity to consider megaliths as an object of scientific study is perhaps not so much due to past errors in the history of research, nor to theoretical debates turned a little by each researcher in the direction that suits him or her in the present, but rather attests to an implicit recognition of the major intrinsic stakes in such studies for the advancement of knowledge. As an object of study, a megalith is not so difficult to define and, in fact, we have already discreetly proposed a draft definition in the very first paragraph of this conclusion. *The large size of the mobilized stone blocks* is an important element but is obviously not a sufficient characterization. It therefore seemed pertinent to insist on two other points: megaliths are a *material construction*, most of the blocks having been lifted or moved in one way or another, which excludes, for example, simple piles of blocks for ritual purposes, the fruit of an immaterial construction. Further, *the singularity of some of these blocks* is at least partially preserved and often in the image of their shape when part of the outcrop,

which confers on the ruins of such structures the rudimentary aspect that so struck our predecessors, but also distinguishes them from monolithic sculptures or cyclopean structures. Such singularity is surely not unrelated to the individuality of every entity, like that of every human being. The value to the group of the individuality of each member tends, however, to be diluted in an urban environment, as with the emergence of the State, while a group too small in number could have difficulty gathering the necessary workforce to handle the largest and heaviest blocks. Perhaps we need not look much further to explain the relatively focused phenomenon of megalithism.

On the other hand, and as with so many other material productions, megaliths can be the subject of very varied studies, leading sometimes to very large fluctuations in the field of investigation. Throughout these pages, and throughout the 2019 meetings, we heard about the history of research (of megaliths), the history of techniques (architectural techniques, the techniques of placing funerary deposits and many other techniques of human production), the history of economy (sometimes in a Braudelian sense) and of social interactions (with something of a return to neo-evolutionist theories), the history of art (in its most general sense) and of religions (through funerary rites and distinct ontologies), and we were offered different ways of approaching the history of the interactions between human beings and their varied environments that have shaped the landscape. We heard about Archaeology, but also Sociology (mainly according to the French definition of this term), Anthropology (as understood by English-speaking authors), sometimes Philosophy (phenomenology, etc.), Linguistics and various studies of Human Biology. All schools of thought could be expressed freely, without introducing – as far as possible – that form of hierarchy that sometimes transforms so many scientific approaches into ideological debates. The act of solely considering megaliths through their monumentality is only one of these. I also hope that our colleagues, who come from all five continents, some from populations that still build megaliths today, will feel fully respected, as the diversity of the cultures in which they were nurtured enriches the exercise of reason. Depending on their approaches and contexts, which are always different, either locally or on different temporal and geographical scales, each contributor combines the study of structures partly composed of very large stones with that of contemporaneous developments, including masonry built with small stones, arranged in other ways or built from other material. None of the megaliths can be understood or explained without recourse to these extremely diversified examples, but we must always keep in mind the precise elements that led us to describe either a practice or a set of remains – when considered as a whole – as 'megalithic'.

Translated from French
by Louise Byrne

Megaliths of the World

Volume II

Résumés

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Partie V - Mégalithes de l'Asie centrale et orientale

p. 613-617 – Introduction par Laurent NESPOULOUS, Anke HEIN

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p. 619-639 – Des monuments dans les montagnes : les tombes mégalithiques de la Chine occidentale par Anke HEIN

Alors que les mégalithes d'Europe sont mondialement connus et que les dolmens de Corée, du Japon et de la Chine du Nord-Est ont fait l'objet d'une grande attention de la part des chercheurs, presque personne n'a jamais entendu parler des tombes en pierre de la Chine occidentale. Même les chercheurs qui s'intéressent aux tombes en pierre de cette région ont tendance à se concentrer sur les petites tombes à ciste en pierre situées sous terre qui sont communes dans une grande partie de la région frontalière chinoise. Cet article attire l'attention sur les structures funéraires en surface, faites de grandes pierres, que l'on trouve principalement dans le sud-ouest de la Chine et qui sont largement négligées. Les tombes mégalithiques du sud-ouest sont particulières à bien des égards, tant en Asie de l'Est que par rapport aux structures mégalithiques du monde entier. D'autres parties de l'Asie de l'Est (principalement la Chine du Nord-Est, la Corée, le Japon et certaines parties de la côte sud-est de la Chine) sont caractérisées par des dolmens, mais les dolmens n'apparaissent pas en Chine du Sud-Ouest. On y trouve des structures qui peuvent être décrites comme des tombes à couloir, des tumulus et des structures similaires aux *cistvaen* celtiques. Des structures semblables aux *cistvaen* apparaissent en divers endroits sur et le long de la bordure orientale du plateau tibétain, mais les plus grandes structures semblent être limitées dans leur distribution à la vallée de la rivière Anning et aux montagnes environnantes du sud du Sichuan et du nord du Yunnan. Cet article présente brièvement les tombes en pierre de l'ouest de la Chine en général et se concentre ensuite sur les seules structures mégalithiques que l'on peut trouver dans la région, les tombes mégalithiques du sud-ouest de la Chine. Cette région est extrêmement montagneuse et une végétation luxuriante obstrue la vue sur ces monuments. Le présent article mettra donc en évidence la distribution des tombes par rapport à leur environnement naturel et les unes par rapport aux autres, à la fois dans l'espace et en termes de modes d'utilisation, suggérant ainsi de possibles connexions ainsi que des différences entre elles.

Mots-clefs : *Mégalithes, interaction homme-environnement, Asie de l'Est, Chine du Sud-Ouest, Liangshan*

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p. 641-661 – Cairns et dolmens préhistoriques en Mandchourie (Chine)

par **Kazuo MIYAMOTO**

Les structures funéraires en pierre et les mégalithes de la Chine préhistorique sont présents en Mandchourie et dans le plateau tibétain oriental, comme le montre le célèbre modèle de la ceinture d'échange en forme de croissant proposé par Tong Enzheng. Cependant, ces systèmes funéraires ont été introduits et se sont développés différemment entre ces deux zones lors de la fondation de la culture septentrionale du Bronze. Des cairns ont été établis indépendamment en Mandchourie au Néolithique. Un type de "cairn" existait dans le district de Liaoxi pendant la période du Néolithique moyen (culture de Hongshan), vers 3500 avant notre ère. Un autre type de cairn était présent dans la péninsule de Liaodong pendant la période du Néolithique tardif (couche supérieure de Xiaozhushan), vers 2500 avant notre ère. Dans le premier cas, les objets funéraires en jade et la structure funéraire indiquent une stratification sociale développée, basée sur une agriculture fertile. En revanche, le second exemple montre une distribution des sépultures en cimetière et des tombes alignées distribuées selon un système de clan. Le système funéraire a changé dans les deux régions au cours de l'Âge du Bronze. Dans le district de Liaoxi, des cistes ou des sépultures en pierre et des chambres en pierre étaient utilisées au sein des cimetières. En revanche, des cistes en pierre étaient présentes dans le district de Liaodong et dans la péninsule coréenne du nord-ouest. On pense que des cistes en pierre enterrées ont été progressivement construites par la suite au-dessus du sol et seraient devenues des dolmens de type "à table de couverture". Cependant, les processus par lesquels les dolmens de type "à table de couverture" se sont développés diffèrent entre la péninsule et l'intérieur du Liaodong, bien qu'il s'agisse du même district. Des dolmens plus gros se sont développés à partir des dolmens de type "à table de couverture" qui existaient dans la péninsule du Liaodong et la péninsule coréenne du nord-ouest. Ces dolmens étaient situés au sommet des collines ou sur des frontières géographiques comme symbole du culte des ancêtres pour chaque groupe social. Il est probable que des os humains incinérés ont été placés dans les dolmens de type à table.

Mots-clefs : *Cairn, culture Hongshan, culture de la couche inférieure de Xiaozhushan, dolmen de type à table, tombe avec couverture en pierre*

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p. 663-680 – Dolmens et sociétés de la péninsule de Corée par **Daisuke NAKAMURA**

Depuis les régions du nord-est de la Chine jusqu'à l'île japonaise occidentale de Kyūshū, la présence et la distribution des dolmens (*goindol* en coréen) est bien connue. Dans le sud de la Corée, ces structures apparaissent dans le contexte de l'Âge du Bronze, qui commence par l'arrivée, au XIIIe siècle avant notre ère, depuis le nord-est de la Chine, d'une culture archéologique présentant des types nouveaux de poterie et d'industrie lithique. Les dolmens, mais également les réduits sépulcraux en pierre font leur apparition et se concentrent sur les reliefs dans la seconde moitié du Bronze ancien, à un moment où l'habitat lui-même prend une forme groupée. La présence de très grosses dalles de couverture est, certes, un fait commun à la totalité des dolmens de la péninsule, mais cette couverture peut être soutenue par un éventail assez diversifié de dispositifs. En outre, l'apparence extérieure de ces dispositifs varie en fonction des régions. Il est tout à fait clair que ce n'est pas un modèle unique qui s'est diffusé partout. Cette contribution s'attachera donc à présenter et organiser cette diversité tout en abordant les transformations que connurent les sociétés et leurs dispositifs funéraires.

Mots-clefs : *Péninsule de Corée, mégalithisme,* goindol*, dolmen, Âge du Bronze, stratification sociale*

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p. 681-688 – Dolmens de la péninsule coréenne : utilisation et conservation des dolmens à Hoseo (Corée du Sud) par Joon-ho SON

Grâce à une enquête sur le terrain, j'ai exploré l'état de conservation actuel et l'utilisation des dolmens dans la région de Hoseo en Corée du Sud. 57 dolmens sont inventoriés sur 13 sites et 49 dolmens non inventoriés sur 20 sites. Les résultats de l'enquête montrent que l'état de conservation des dolmens est assez bon. Cependant, c'est largement dû au fait que les dolmens sont faits de roche, et beaucoup sont laissés sans surveillance, avec peu de soins. En particulier, l'utilisation des dolmens pour l'enseignement public est inadéquat. La meilleure mesure serait de construire un parc à thème pouvant accueillir différents types de dolmens en un seul endroit. Des installations pratiques, une salle d'exposition d'artefacts, un centre d'éducation et une bibliothèque de recherche (avec des travaux et programmes expérimentaux réguliers) aideraient à attirer l'attention du public et à augmenter les visites. En outre, le parc à thème pourrait servir de centre de recherche.

Mots-clefs : *Dolmen, conservation, parc à thème, Hoseo, Corée du Sud*

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p. 689-708 – Les développements d'une culture des arts de la pierre dans la Corée ancienne par Takafumi YAMAMOTO

La culture de la période des proto-royaumes de Corée, aux alentours du début de notre ère, voit disparaître presque complètement, dans l'ensemble de la péninsule, tout emploi remarquable de la pierre comme matériau de construction. Un contexte semblable se poursuit jusqu'à la première phase de la période des Trois Royaumes. Néanmoins, se développe ensuite une période où prospèrent à nouveau les dispositifs en pierre. Cependant, dans cette nouvelle culture de l'utilisation de la pierre qui émerge plusieurs siècles à mille ans après, les techniques de transformation de la pierre et les formes qui lui sont données ont beaucoup progressé jusqu'à un haut niveau de technicité. La pierre y est alors clairement utilisée comme un matériau de construction et est devenue le vecteur d'expression d'une pensée religieuse et d'un ordre politique. Autrement dit, à la différence du contexte préhistorique où les mégalithes étaient utilisés sans transformation notable, avec le développement, dès la période des Trois Royaumes, des techniques de façonnage et de sculpture, la pierre est utilisée désormais comme un matériau façonné pour exprimer des formes et des types au sens précis. Cette contribution se demandera ainsi quels types de dispositifs et monuments en pierre apparurent durant la période des Trois Royaumes dans la péninsule coréenne. Il s'attachera principalement à en présenter des exemples "d'utilisation symbolique de la pierre", et à en étudier les évolutions et techniques autant au niveau national que régional.

Mots-clefs : *Corée, Antiquité, Paekche, Koguryo, Silla, Kaya, formation de l'État, monumentalisme, culture de l'utilisation de la pierre*

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p. 709-731 – Des contextes du mégalithisme dans l'archipel japonais au mégalithisme comme contexte : réflexions pour inventaire des premières sociétés sédentaires aux premières sociétés à État par Laurent NESPOULOUS

L'archéologie du Japon, telle qu'elle continue à se construire après 1945, s'élabore dans une grande autonomie par rapport aux archéologies occidentales ou coloniales, et formulera souvent son propre vocabulaire, ses propres questions. La question du mégalithisme ne s'est ainsi pas imposée en tant que telle. Il faut donc partir à sa recherche dans les différentes expressions matérielles qui pourraient en relever au fil de la Préhistoire et de la Protohistoire

de l'archipel. À des raisons autant historiques qu'épistémologiques à la relative absence d'un champ lexical du mégalithisme familier à l'archéologue européen, s'ajoute également des facteurs qui relèvent de la diversité chronoculturelle et régionale des sociétés de l'archipel depuis le début de l'Holocène. Les avancées de la recherche archéologique depuis plus d'un demi-siècle ont en effet clairement mis en évidence des phénomènes qui ne s'intègrent pas qu'exclusivement dans le contexte chronologique de la période Kofun et de ses chambres funéraires et qui, très légitimement, seraient à même de relancer une réflexion non seulement sur la nature du mégalithisme dans l'archipel, mais peut-être même au-delà. Avant-guerre, les périodes Jōmon (de l'extrême fin de la dernière glaciation au tout début du 1er millénaire avant notre ère) et Yayoi (des IXe-VIIIe siècles avant notre ère au milieu du IIIe siècle de notre ère), ainsi que la période Kofun (milieu IIIe siècle - début VIIe siècle) n'étaient qu'encore mal appréhendées tant sur le plan culturel que chronologique. Il est pourtant clair de nos jours que chacune de ces périodes, avec des temporalités différentes, et sans liens automatiques les unes avec les autres, a vu se dérouler des pratiques – pas toujours clairement associables, d'ailleurs, au domaine funéraire – qui pourraient s'avérer intéressantes à interroger avec la grille de lecture moderne d'une "question mégalithique". En cela, l'archipel japonais constitue une occasion pour faire encore davantage évoluer ce qu'il conviendrait d'entendre par mégalithisme dans le monde.

Mots-clefs : *Japon, mégalithisme, monumentalisme, période Jōmon, période Yayoi, période Kofun, néolithisation, chasseurs-cueilleurs, formation de l'État*

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p. 733-745 – Mégalithes préhistoriques et protohistoriques de l'archipel japonais par Yoshio KIKUCHI

Le Japon se caractérise par la présence d'un mégalithisme varié, appartenant à des horizons chronologiques que l'on qualifiera tantôt de préhistoriques pour les périodes Jōmon (du 14e millénaire au début du 1er millénaire avant notre ère) à Yayoi (du début du 1er millénaire avant notre ère au milieu du IIIe siècle de notre ère), tantôt de protohistoriques pour les périodes Yayoi et Kofun (du milieu du IIIe siècle au début du VIIe siècle de notre ère). Cette contribution entend relever un certain nombre de types de structures afin d'illustrer cette diversité, et d'expliquer leurs particularités au fil du temps et des cultures archéologiques qui se sont succédé.

Mots-clefs : *Période Jōmon, période Yayoi, période Kofun, mégalithe, monumentalité, pierre, relief, roc, tumulus, religion*

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p. 747-760 – Mégalithes ornés et complexes funéraires à l'Âge du Bronze et à l'Âge du Fer en Mongolie et en Sibérie méridionale par Jérôme MAGAIL, Yuri ESIN, Jamiyan-Ombo GANTULGA, Fabrice MONNA, Tanguy ROLLAND, Anne-Caroline ALLARD

La Mongolie et la Sibérie méridionale sont très riches en vestiges funéraires, cérémoniels et iconographiques des premières civilisations nomades de l'Âge du Bronze et de l'Âge du Fer. Une partie de ce patrimoine archéologique, en contexte cultuel et funéraire, pourrait être classée dans la catégorie des mégalithes. Parmi les plus anciens menhirs (2500-1800 avant notre ère), les stèles de la culture Okuniev se trouvent sur la majeure partie du territoire de la république de Khakassie. Les archéologues russes ont répertorié près de 600 monuments, dont le plus grand a été réemployé à l'Âge du Fer dans la grande tombe Tagar du site de Salbik.

D'autres mégalithes plus récents apparaissent à l'Âge du Bronze, principalement sur le territoire mongol, où environ 1 240 stèles ornées ont été dénombrées par l'Institut d'Archéologie d'Oulan-Bator. Une des stèles du site d'Ulan Tolgoï atteint près de 5 m de haut. À l'Âge du Bronze final, les populations de Haute-Asie ont érigé ces menhirs de granite, nommés "pierres à cerfs" en raison de leurs gravures de cerfs. Ce mégalithisme est associé à des complexes funéraires très codifiés, composés de tombes aristocratiques individuelles sous forme de grands tumuli entourés de centaines de tertres abritant chacun le dépôt d'une tête de cheval. La mission archéologique conjointe Mongolie-Monaco mène ses recherches dans la vallée du Haut Tamir, où se trouvent de nombreux vestiges de cette culture. Située au centre du pays, cette vallée comprend plus de 800 tombes, 115 stèles "pierres à cerfs" et un site d'art rupestre composé de plus d'un millier de pétroglyphes. Au début de l'Âge du Fer, la Sibérie méridionale connaît un nouveau type de structures mégalithiques qui sont des tumuli funéraires aristocratiques délimités par de grandes pierres levées et d'énormes dalles de soutènement. La tombe n° 1 de la nécropole royale de Salbik comporte une dalle de soutènement de 50 tonnes.

Mots-clefs : *Stèle ornée, pétroglyphes, menhir, Âge du Bronze, Âge du Fer, "pierre à cerfs", Tagar, Okuniev, Mongolie, Sibérie*

p. 761-766 – Pierre à cerfs de Tamchinsky : expérimentation pour la documentation d'objets mégalithiques par Vladislav KAZAKOV, Vasily KOVALEV, Kair ZHUMADILOV, Lyudmila LBOVA, Aleksandr SIMUKHIN

L'article décrit la méthodologie mise en œuvre pour documenter des stèles avec des images en relief en utilisant la photogrammétrie, à partir de l'exemple d'un objet expressif : la pierre à cerf Tamchinsky en Transbaïkalie. Une description complète du monument, comme des caractéristiques stylistiques des images figurées sur ses côtés sont présentées. Basée sur des méthodes numériques traditionnellement utilisées pour les relevés topographiques, une méthode de construction semi-automatique de dessins à partir d'images a été testée. Le principe de base de cette approche consiste à modéliser en 3D un objet à l'aide d'une photogrammétrie SfM, à créer un modèle DEM du relief des différents panneaux, et à appliquer de manière cohérente les algorithmes de détection SLRM et Canny Edge pour la mise en évidence des images.

Mots-clefs : *Pierres à cerf, modèle 3D, tracé digital, automatisation, art rupestre*

p. 767-789 – Traditions mégalithiques au début de l'Âge du Bronze dans l'Altaï mongol : le phénomène culturel Chemurchek (*Qie'muerqieke*) par Alexei KOVALEV

Guère au-delà de 2700-2600 ans avant notre ère, dans les contreforts occidentaux de l'Altaï mongol (territoires modernes du Xinjiang, de la Mongolie et du Kazakhstan), des constructions funéraires commencent à être érigées, sans références antérieures dans les steppes eurasiennes. Des inhumations collectives sont installées dans d'immenses coffres de pierre construits en dalles verticales. Les tombes étaient entourées de tumulus de pierre et de terre, se chevauchant comme une "peau d'oignon". Les mêmes coffres en pierre avec des sépultures collectives pouvaient être situés à l'intérieur de grands enclos rectangulaires en pierre. Un autre type de constructions funéraires était constitué de tombes entourées de murs avec un couloir orienté à l'est construits en pierre sèche. À l'est, des tombes collectives en coffres de pierre étaient accompagnées d'entrées rituelles – portails et menhirs anthropomorphes en pierre. La statue-menhir représentait une figure nue avec une crosse et

une arme, un pectoral autour du cou, souvent avec une rangée de festons triangulaires, un contour en saillie du visage, les yeux représentés par des cercles ou des disques saillants. À l'intérieur, les murs des coffres en pierre étaient décorés de motifs géométriques peints en ocre rouge, comprenant des rangées de festons triangulaires, une grille oblique, des losanges concentriques, des méandres. Des enclos rituels rectangulaires en pierre avec des stèles et des portails à l'est ont été découverts dans la région montagneuse la plus élevée de l'Altaï mongol. Sur les murs de ces clôtures, il y a des images de "divinités" avec des corps paraboliques et des antennes, mais sans tête. Apparemment, ce territoire avait une signification sacrée. Au cours des fouilles des clôtures rituelles, des plaques-idoles en ardoise gravée anthropomorphes ont été trouvées, similaires à celles de la péninsule Ibérique. Dans les structures funéraires, les découvertes les plus fréquentes sont des récipients en pierre et en terre. Certaines céramiques sont des récipients issus de traditions locales. Cependant, la plupart des récipients en argile et en pierre diffère fortement dans la forme et l'ornement des prototypes locaux : cette tradition de récipients en céramique/pierre est caractérisée par des pots sphéroïdaux, ellipsoïdaux, ainsi que des pots à fond plat, se rétrécissant légèrement à l'embouchure et à la base. Le type de décoration le plus courant ressemble à une ligne horizontale avec des festons triangulaires tendus sous le bord du vase. Toutes ces caractéristiques sont présentes dans le contexte des cultures mégalithiques d'Europe occidentale (ouest et sud de la France, péninsule Ibérique, îles Britanniques, Alpes occidentales) du 4e millénaire avant notre ère. Cela s'applique à l'architecture, à la sculpture, aux arts rupestres, aux dessins, ainsi qu'à la forme et à l'ornement des céramiques. À cet égard, l'ensemble de ces caractéristiques ("phénomène culturel de Chemurchek") que nous attribuons aux traditions mégalithiques ont pénétré dans le centre de l'Asie à la suite de migrations provenant du sud de la France et de la région alpine.

Mots-clefs : *Phénomène culturel Chemurchek (*Qie'muerqieke*), Néolithique final, Âge du Bronze ancien, Chine, Mongolie, Kazakhstan, Europe occidentale, architecture mégalithique, art mégalithique, statues-menhirs, plaques gravées, anthropomorphes paraboliques*

Partie VI - Mégalithes du Caucase à la péninsule arabique

p. 819-822 – Introduction par **Tara STEIMER-HERBET, Viktor TRIFONOV**

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p. 823-836 – À l'ombre des monolithes. Göbekli Tepe et la tradition monumentale du précéramique levantin par **Rémi HADAD**

La fouille récente, dans le sud-est de la Turquie, de Göbekli Tepe (fin du Xe - fin du IXe millénaire avant notre ère) a constitué un évènement majeur, non seulement pour la recherche sur le Néolithique levantin, mais pour l'archéologie préhistorique mondiale. En quelques années, porté par une véritable campagne de promotion touristique et par la caisse de résonance que constituent Internet et ses réseaux sociaux, le site a atteint une notoriété peu commune. Dans le même temps, parmi les archéologues, il est devenu le symbole d'un renversement de perspective déjà initié dans les théories de l'évolution sociale : datées d'une période qui précède la domestication, ses rotondes à piliers monolithiques confirmeraient que l'agriculture, loin de constituer la scène inaugurale de la "complexité" sociopolitique, en serait plutôt une conséquence. Dans un cas comme dans l'autre, toutefois, ces discours se contentent d'une compréhension très superficielle du site. L'effet visuel de ses cercles

mégalithiques, si surprenant soit-il, sert aujourd'hui surtout à illustrer le renouveau des grands récits évolutifs dans leurs versions les moins inventives et les plus conformistes. Non seulement cette image est trompeuse, mais elle renonce à informer les modalités concrètes de la "complexité" en question et du processus de néolithisation, au profit de l'actualisation de vieux mythes civilisateurs ou d'un simple effet de bascule sur un axe évolutif linéaire. Face à cette autonomisation du discours sur Göbekli Tepe, ce texte pose les bases contextuelles préalables à une reproblématisation plus fidèle à l'expérience que pouvaient en avoir ses habitants. À l'encontre de la monumentalisation contemporaine des ruines, qui les réduit à un faire-valoir iconographique de grands récits dissociés, la clef de leur interprétation résidera dans notre capacité à saisir le caractère contre-intuitif du monument dans son rapport au pouvoir et au temps.

Mots-clefs : *Proche-Orient, néolithisation, chasseurs-cueilleurs, organisation sociale, temporalité*

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p. 837-851 – Les mégalithes de l'Âge du Bronze dans le Caucase : trajectoire de développement de l'architecture et de la pratique funéraire par Victor TRIFONOV

L'article présente le phénomène mégalithique dans le Caucase à la lumière d'études de terrain récentes qui apportent de nouveaux éclairages sur la diversité déjà bien connue de ces monuments. Dans un contexte culturel et chronologique plus large et actualisé, les données suggèrent que la plupart des mégalithes caucasiens représentent une ligne unique de développement architectural local depuis au moins le dernier quart du quatrième millénaire avant notre ère. La construction de dolmens s'est poursuivie jusqu'à la deuxième moitié du deuxième millénaire avant notre ère, et leur utilisation jusqu'à la fin de ce millénaire. Dolmen est un mot générique qui englobe différents types de chambres funéraires mégalithiques avec dalle à hublot. En général, la chambre funéraire, l'antichambre et le cairn font partie intégrante de l'ensemble de la construction. Selon le statut social du défunt, ils varient considérablement en termes de style architectural, de technologie de construction et de qualité dans le même temps et la même région. Les constructeurs des mégalithes avaient à leur disposition un ensemble impressionnant de techniques de construction et de décoration. Une maçonnerie en pierre de taille, de fausses coupoles, des toitures plates et à pignon, la technique des joints à rainure et languette, le drainage, des formes développées de colonnes, des décorations en relief et des sculptures circulaires zoomorphes monumentales – cette liste des savoir-faire est incomplète. Les caractéristiques distinctives des dolmens caucasiens telles que les fondations en dalles, les murs et contreforts inclinés, le portail et le toit incliné sont une invention locale. La pratique funéraire mégalithique caucasienne est probablement enracinée dans la tradition locale qui consiste à construire des cryptes sur le sol pour les inhumations collectives en utilisant divers matériaux dont la pierre, le bois et l'argile. Étant donné que le phénomène mégalithique est plutôt régional, il n'y a pas de raison de chercher son origine hors du Caucase.

Mots-clefs : *Mégalithes, dolmens, Caucase, Âge du Bronze*

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p. 853-865 – Les dolmens des Balkans par Georgi NEKHRIZOV, Stanislav ILIEV

Dans la partie orientale de la péninsule balkanique, où l'Europe touche presque l'Asie, il existe un petit groupe de dolmens. Leur contexte géographique les place entre les dolmens d'Europe occidentale et ceux du Caucase. Les études précédentes situent leur origine et leur développement au début et dans la première moitié du 1er millénaire avant notre ère, ce qui

en fait les derniers représentants européens connus de ce type de monuments. Le présent travail est une tentative de présenter et d'analyser partiellement les données disponibles sur les dolmens dans les Balkans. Un tel examen des informations recueillies après plus de cent ans de recherches sur les dolmens en Europe du Sud-Est est tout à fait nécessaire. En écrivant les pages qui suivent, nous avons clairement conscience que nous parlons au nom de nombreux auteurs dont les opinions sur certaines questions diffèrent souvent. Nous devons également souligner que différentes constructions dans différentes zones géographiques ont été étudiées à un degré différent.

Mots-clefs : *Europe du Sud-Est, Balkans, Âge du Bronze ancien, Âge du Fer récent, dolmen, mégalithe, inhumation, tumulus, techniques de construction, constructeurs de dolmen*

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p. 867-886 – Au croisement des continents. Le mégalithisme en Turquie par **Bakiye YÜKMEN EDENS**

L'idée de mégalithisme a été introduite dans l'archéologie turque par la France dans les années 1930. Mais l'application du concept reste mal définie, et différents chercheurs peuvent identifier le même monument comme un dolmen, un tumulus ou un *kurgan*. Le choix des termes reflète souvent une différence d'approche de recherche plutôt qu'une différence de structure physique. La Turquie est communément décrite comme un pont géographique et culturel entre l'Europe et l'Asie. La Turquie est également au carrefour de trois traditions intellectuelles, orientées vers la Préhistoire de l'Europe occidentale, le monde classique et la Préhistoire des steppes (turques). Le concept de mégalithisme n'est lié qu'à la première de ces traditions. Le présent travail concernant des structures identifiées comme "mégalithiques" en Turquie peut aider à clarifier la confusion terminologique. Les structures appelées dolmens sont connues principalement dans trois régions distinctes situées aux confins de la Turquie, au nord-est (Kars), au sud (Euphrate-Cilicie) et au nord-ouest (Thrace). Les dolmens de cette dernière région sont datés de l'Âge du Fer, et ceux des deux autres régions ne sont pas bien datés. Les pierres érigées ("menhirs") en Turquie sont le plus souvent signalées en Thrace, mais elles existent occasionnellement dans d'autres parties du pays. Les cercles de pierres ("cromlech") figurent également dans la littérature archéologique de Turquie, mais ces structures restent incertaines quant à leur(s) nature(s).

Mots-clefs : *Mégalithisme, Turquie, Anatolie, dolmen, pierres érigées*

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p. 887-904 – Démêler les typologies et les chronologies du mégalithisme au Levant par **James FRASER**

Le Levant comprend le sud de la Turquie, la Syrie, le Liban, la Jordanie, Israël et les territoires palestiniens occupés. Ces paysages archéologiques bien étudiés contiennent une variété de structures hors sites qui incorporent des blocs mégalithiques de diverses manières. Pour les explorateurs du XIXe siècle, leurs caractéristiques rappelaient celles des monuments mégalithiques en Europe, et ils ont utilisé des termes européens tels que "cromlechs" et "dolmens" pour les classer. Ce faisant, les premiers érudits utilisant le même lexique ont utilisé l'hypothèse inhérente que les monuments mégalithiques en Europe dérivaient des mêmes origines culturelles que les mégalithes du Levant. Cette hypothèse a jeté une ombre sur le développement des études mégalithiques au Levant, et ses principes fondamentaux sous-tendent toujours des modèles qui envisagent un "phénomène mégalithique" qui s'étend des montagnes du Taurus à la côte yéménite aux 4e et 3e millénaires avant notre ère. En revanche, des approches récentes ont tenté de contextualiser les mégalithes dans les paysages culturels et topographiques locaux. Cependant, de telles études ont rencontré un succès

limité, s'embourbant dans des typologies de mégalithes mal définies qui ont obscurci plutôt que clarifié les limites entre les différentes traditions mégalithiques. En examinant en particulier les différentes approches des sépultures dolméniques, cet article décompose les hypothèses qui construisent le soi-disant "phénomène mégalithique" et suggère des approches taxonomiques et contextuelles alternatives qui pourraient nous conduire à de nouvelles bases théoriques.

Mots-clefs : *Dolmens, Âge du Bronze, Levant, pratiques funéraires, géologie*

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p. 905-920 – Cairns et tombes tours protohistoriques en Arabie sud-orientale (fin 4e - début 3e millénaire avant l'ère commune) par Olivia MUNOZ

Cet article propose une synthèse des connaissances sur les tombes tours ou tombes de type "Hafit", présentes par dizaines de milliers dans la péninsule d'Oman, au sud-est de la péninsule arabique, et qui sont communément attribuées au début de l'Âge du Bronze (fin 4e - début du 3e millénaire avant notre ère). Après une remise en contexte de ce qui apparaît être un phénomène funéraire de grande ampleur, l'histoire de la découverte de ces tombes et les orientations actuelles de la recherche sont brièvement exposées. Puis, le contexte chronoculturel de cette région est présenté avant l'exposé des traits qui caractérisent ces monuments funéraires. La présentation des données disponibles sur la localisation et la durée d'utilisation des nécropoles, l'architecture des tombes, les pratiques funéraires et les données biologiques des individus déposés au sein de ces sépultures est accompagnée, au fil du texte, d'un rappel des enjeux et perspectives qui nourrissent les recherches actuelles.

Mots-clefs : *Péninsule d'Oman, Arabie, tombes Hafit, tombes tours, cairns, Âge du Bronze ancien*

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p. 921-934 – Le mégalithisme au Moyen-Orient par Tara STEIMER-HERBET

Il y a 7 000 ans le Moyen-Orient voient l'émergence de nouveaux rites funéraires. De la simple inhumation en pleine terre, jarres ou ossuaires, les sociétés qui peuplent les montagnes du Akkar, le plateau du Jaulan, la vallée du Jourdain, al-'Ula et Khaybar, le Jawf, le Hadramawt et le Dhofar, pour ne citer que quelques régions particulièrement riches, ont choisi d'inhumer leurs morts à l'intérieur de tombeaux mégalithiques. Ces monuments connus sous le terme de dolmens ou de tombes tours sont des tombes monumentales en élévation formées d'une chambre de blocs mégalithiques plus ou moins régularisés qu'un tumulus peut recouvrir partiellement ou complètement. Les prospections systématiques récentes menées dans la région de Homs, dans le Leja, le Harra et à l'est de Jafr renouvellent l'image qu'on avait de la répartition des tombes mégalithiques dans le Levant. Jusque dans les années 2000, on pensait que les nécropoles de tombes mégalithiques se répartissaient sur une bande nord-sud qui suivait grossièrement le fossé du rift du milieu de la mer Morte jusqu'au niveau d'Alep, le long du Jourdain, du Litani et de l'Oronte. Or aujourd'hui, nous savons que les sociétés pratiquant le mégalithisme peuplaient des zones très différentes allant de régions boisées dans le Jaulan syrien à des zones très steppiques dans le désert du Sabatayn au Yémen. La condition de leur installation est la présence de ressources exploitables telles que des zones de pâturage, propices à la culture de l'olivier ou des figuiers, la présence de mines de silex, de lapis lazuli, d'obsidienne, de sel et bien entendu l'accès à de grandes dalles pour la construction de leurs tombeaux et parfois de leur habitat. Outre l'accès aux ressources, les sociétés à mégalithes semblent avoir privilégié les axes de communication favorisant les interactions commerciales avec les populations urbaines des côtes ou des grands

fleuves. Ces sociétés à mégalithes peu connues du public ont joué un rôle majeur dans la constitution des civilisations orientales.

Mots-clefs : *Bronze ancien, dolmen, tombe tour, pierre dressée, statue anthropomorphe, sanctuaire, art mégalithique, pastoralisme, biens, échanges*

Partie VII - Mégalithes en Afrique

p. 963-967 – Introduction par **Jean-Paul CROS, Luc LAPORTE**

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p. 968-984 – Mégalithes en Afrique : cadre général par **Alain GALLAY**

L'Afrique des mégalithes se trouve concentrée dans la moitié nord du continent. La plus grande diversité des architectures funéraires se trouve regroupée dans la bande sahélienne allant du Sénégal au Soudan et englobant également l'Éthiopie. Il est possible de corréler ces architectures avec la mosaïque linguistique, notamment avec les familles des phylums Niger-Congo, afro-asiatique et nilo-saharien qui semblent se refléter dans la structure génétique des populations. Les fluctuations climatiques de l'Holocène semblent avoir joué un rôle essentiel dans la diffusion de certaines populations pastorales dont les mouvements pourraient être corrélés avec des phases d'instabilité climatique. Au sud du continent, plusieurs régions restent à l'écart du phénomène mégalithique : sociétés royales de la zone forestière d'Afrique de l'Ouest, monde bantou, sociétés de chasseurs-cueilleurs San et d'éleveurs Khoïkhoï. Le mégalithisme est également influencé par certaines sociétés étatiques comme l'Égypte pharaonique et les États antiques du Maghreb et de Tripolitaine (Garamantes). Il disparaît avec la pénétration de l'islam.

Mots-clefs : *Afrique, mégalithisme, linguistique, Niger-Congo, afro-asiatique, nilo-saharien, climat holocène, génétique des populations, Maghreb, Sahara, Sahel, Éthiopie, Égypte, Soudan, Bantou*

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p. 985-1 000 – La Corne de l'Afrique : 5 millénaires de mégalithisme par **Jean-Paul CROS**

En dehors des grandes stèles axumites au nord du pays et les milliers de stèles, phalliques et autres, qui parsèment le sud de l'Éthiopie, la Corne de l'Afrique est peu citée pour son mégalithisme. Cet article a pour but de présenter certains sites moins connus, comme ceux qui occupent la région du Harar et du Mänz, ceux qui sont toujours en cours d'étude à Djibouti et dans le nord du Kenya, et ceux du Somaliland, où en dehors de relations anciennes et de la fouille d'un tumulus près du site à peintures de Laas Geel, tout reste à faire… Cette région est un véritable laboratoire pour étudier cette période cruciale où les chasseurs-cueilleurs sont passés à une économie de production. La diversité des écosystèmes et les grandes fluctuations climatiques de l'Holocène moyen ont joué sur ces groupes de manière différenciée et ont généré une mosaïque de situations que l'archéologie commence à bien mettre en évidence. Le monumentalisme et le mégalithisme en sont des composants qui apparaissent dans un contexte de pastoralisme et de sédentarité, au moins partielle, avec un important gradient temporel nord-sud. Ils permettent une meilleure lecture de ces périodes pour lesquelles l'invisibilité archéologique est majeure dans beaucoup de domaines.

Mots-clefs : *Corne de l'Afrique, stèles, pierres dressées, monumentalisme, mégalithisme, pastoralisme, sédentarité, comparatisme*

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p. 1 001-1 021 – Les "sites à piliers" du Néolithique pastoral du nord-ouest du Kenya par Elisabeth HILDEBRAND, Katherine M. GRILLO

Dans le nord-ouest du Kenya, au moins sept sites mégalithiques et monumentaux se trouvent près des rives anciennes du lac Turkana. Les archéologues utilisent le terme "sites à piliers" pour désigner des endroits contenant des morceaux de basalte en colonne pouvant atteindre 2 m de hauteur, ou des morceaux de grès plus petits placés dans des plateformes construites pouvant atteindre 30 m de diamètre. Certains sites possèdent des cairns et des cercles de pierres supplémentaires. Des recherches récentes menées par l'équipe de la *Later Prehistory of West Turkana* (LPWT) ont permis de clarifier la chronologie et les contextes de la création des sites à piliers. La construction et l'utilisation des "sites à piliers" ont commencé il y a environ 5 000-4 000 ans, au moment où les premiers pasteurs d'Afrique orientale sont arrivés dans le nord-ouest du Kenya, dans un paysage qui abritait déjà des communautés de pêcheurs-chasseurs-cueilleurs. À cette époque, le lac Turkana se rétrécissait de façon spectaculaire à la fin de la période humide africaine. La plupart des sites à piliers ont servi de cimetières : les fouilles du site à piliers de Lothagam nord, par exemple, ont révélé une cavité funéraire de plus de 100 m^2 contenant un minimum estimé de 580 sépultures. Dans ce chapitre, nous synthétisons les recherches sur tous les sites à piliers connus autour du lac Turkana, avec une attention particulière aux sites que LPWT a étudiés sur la rive ouest du lac. Nous explorons les implications de nouvelles dates pour les débats (tenus depuis de nombreuses années) sur la possible signification archéoastronomique des sites, et nous renouvelons la discussion sur les piliers eux-mêmes : nous examinons l'emplacement des sources de piliers mégalithiques, le transport nécessaire pour déplacer les piliers de la source à l'installation, et les implications sur leur distribution spatiale au sein de ces sites. Nous passons également en revue les éventuels antécédents régionaux et les descendants de cette tradition, et observons que le mégalithisme dans le nord-ouest du Kenya était un phénomène isolé dans le temps et dans l'espace. Pourquoi les anciens pasteurs ont-ils construit ces sites ? Nous avons précédemment avancé l'idée que la construction des sites à piliers a pu servir à créer des points de repère fixes socialement symboliques pour les bergers dans un paysage physique dynamique. De même, les processus de construction et d'utilisation peuvent avoir contribué à solidifier les réseaux sociaux à une époque de changements environnementaux et sociaux radicaux. Nous discutons également d'autres possibilités, et soulignons que les interprétations de la monumentalité au sein des sociétés pastorales mobiles doivent dépendre de la contextualisation des données locales et régionales plutôt que du recyclage de modèles développés ailleurs pour les populations agricoles sédentaires.

Mots-clefs : *Archéologie funéraire, archéoastronomie, monumentalité, pastoralisme, Afrique, Kenya*

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p. 1 023-1 032 – Mégalithes à Madagascar par Mike PARKER PEARSON

Madagascar, située dans l'océan Indien au large de la côte est de l'Afrique, a une tradition vivante de construction de mégalithes qui remonte à au moins 500 ans. Connue sous le nom d'"île des ancêtres", Madagascar est célèbre pour ses tombeaux en pierre et ses pierres dressées. La pierre, avec ses propriétés de permanence et d'endurance, a été traditionnellement réservée aux ancêtres tandis que les maisons des vivants étaient construites en matériaux périssables – une tradition qui n'a commencé à s'éroder qu'avec l'arrivée des

missionnaires chrétiens dans les années 1870. Parmi les nombreuses pratiques mortuaires variées et régionales de Madagascar, les monuments mégalithiques sont mieux documentés et plus spectaculaires dans les hautes terres du centre et dans l'extrême sud. Dans les hautes terres, les pierres dressées ont été érigées pour diverses raisons en plus de la commémoration des morts, mais dans le sud, elles sont presque entièrement commémoratives des ancêtres. Le plus remarquable à cet égard est la tradition mégalithique de groupes ethniques tels que les Tandroy qui incorporent des pierres dressées dans la structure de leurs tombeaux en pierre, une pratique qui a commencé il y a environ 150 ans.

Mots-clefs : *Mégalithes, Madagascar, tombeaux, pierres dressées, pratiques mortuaires, ancêtres, mémorialisation*

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p. 1 033-1 049 – Mégalithes du Nigéria : l'empreinte d'anciennes civilisations

par **Abu Solomon EDET, Abubakar SULE SANI**

Dans la recherche archéologique africaine, l'ancienneté de l'occupation humaine au Nigeria reste toujours l'un des aspects importants parmi les questions non résolues. La façon la plus sûre de vérifier l'occupation humaine dans toutes les régions du monde, à tout moment de la Préhistoire, est d'après Charles T. Keally : "*de chercher des artefacts incontestables, dans un contexte géologique primaire incontestable avec des dates absolues incontestables*". Beaucoup de civilisations nigérianes ont été révélées par des fouilles au cours des cinquante dernières années, mais les mégalithes préhistoriques sont rarement étudiés. Les récents résultats dans le domaine de la recherche transdisciplinaire effectuée sur le patrimoine rupestre ancien du Nigeria, ont apporté des preuves solides qui semblent suggérer que les peuples anciens nigérians avaient de curieux mégalithes : résultats qui ont rendu perplexes les premiers anthropologues et historiens. En l'absence d'informations adéquates en ce qui concerne de telles recherches, cette communication cherche a développer une nouvelle approche théorique : l'interprétation culturelle anthropologique de la preuve tangible, pour voir si ces preuves donnent une image crédible à propos des premiers hommes et de leurs modes de vie au Nigeria. Le Nigeria possède des centaines de mégalithes sacrés qui attirent les touristes. Cette étude cherche à clarifier et à comprendre l'information disponible sur les mégalithes nigérians, considérés pertinents dans le développement et l'évolution de l'histoire des mégalithes. Certains furent documentés par Charles Patridge, P. A. Talbot et Philip Allison, puis par "*The Valleys of the Niger Archaeological Research*" dans les années 1990, et plus récemment par le "*Nigerian Rock Art Network*" en collaboration avec "*Trust for African Rock Art*" (TARA, Nairobi) et "*The Factum Foundation for Digital Technology in Conservation*" (Espagne). Cette communication parle de l'existence, des routes, de la distribution et des fonctions des mégalithes dans certaines parties du Nigeria. Les monolithes de la Cross River jettent la lumière sur le concept de perception et sur le rôle que jouent les monolithes dans les cultes funéraires des ancêtres.

Mots-clefs : *Mégalithes, Monolithes Bakor, site, enquête, perception, interprétation, préservation*

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p. 1 051-1 070 – Mégalithes du Sénégal et de Gambie dans leur contexte régional

par **Luc LAPORTE, Hamady BOCOUM, Adrien DELVOYE, Jean-Paul CROS, Selim DJOUAD, Matar NDIAYE, Aziz BALLOUCHE, Pierre LAMOTTE, Mathilde STERN, Abdoulaye NDIAYE, Laurent QUESNEL**

Les mégalithes sénégambiens se caractérisent par la présence de pierres dressées, dites frontales, érigées à l'est de monuments funéraires dont les ruines prennent des formes variées

dans le paysage : ils correspondent aux vestiges, parfois scellés sous une masse tumulaire, de plateformes mesurant 3 à 11 m de diamètre et bordées de pierres dressées ou de murettes en pierre sèche. Aujourd'hui encore, chez les Bassari, de telles plateformes en pierre supportent une toiture – elles symbolisent la maison du mort – et recouvrent une fosse sépulcrale au fond élargi qui accueille le corps du défunt. D'autres pierres ont été dressées à l'est de plus vastes fosses sépulcrales, au comblement tumulaire, qui furent comparées aux structures funéraires contemporaines des Sereer. Les pratiques sépulcrales associées à ces monuments mégalithiques sont également variées : sépultures individuelles ou plurielles, exposition de corps sur le sol recouvert par le dispositif monumental, dépôts secondaires d'ossements humains sous des formes diverses (dont dépôts de couffins en matière végétale contenant des restes humains, parfois en position primaire), voire quelques mentions de crémations. L'état des connaissances sur cette question, profondément renouvelé depuis une dizaine d'années, sera abordé dans le cadre beaucoup plus vaste des pratiques funéraires attestées depuis plus de deux millénaires en Afrique de l'Ouest : d'autres plateformes funéraires bordées de pierres dressées sont attestées au Libéria, en Sierra Leone, comme en Guinée forestière. Quelques pierres dressées associées à d'autres formes tumulaires sont également présentes jusque dans le delta du Niger, au Mali. Peu à peu, les mégalithes du Sénégal et de la Gambie retrouvent ainsi la place qui fut toujours la leur sur le sol du continent africain.

Mots-clefs : *Mégalithes, Afrique de l'Ouest, Sénégal, Gambie*

p. 1 071-1 075 – Architectures en terre et mégalithismes : l'exemple du monument de Soto (Sénégal) par Adrien DELVOYE, Khady THIAW, Marylise ONFRAY, Matar NDIAYE, Philippe GOUÉZIN, Abdoulaye NDIAYE, Vivien MATHÉ, Tioro BA, Christian CAMERLYNCK, Sire NDIAYE, Adrien CAMUS, Philippe BOULINGUIEZ, Leonor ROCHA, Pierre LAMOTTE, Aziz BALLOUCHE, Hamady BOCOUM, Luc LAPORTE

Depuis 2015, les recherches archéologiques menées sur le site de Soto (région de Kaffrine, Sénégal - L. Laporte et H. Bocoum, dir.) offrent un regard nouveau sur des structures tumulaires à vocation funéraire jusqu'ici très peu étudiées : les *mbaanar*. Parmi la diversité que recouvre ce terme, nombre de monuments apparaissent dans le paysage comme de légers tertres d'une hauteur souvent inférieure à 50 centimètres. Seuls quelques rares exemplaires de ce type présentent une pierre frontale, implantée à l'est. À Soto, la pierre à tenon centrale initialement érigée à cet emplacement fut extraite en 1964 afin d'intégrer différentes institutions muséales. Elle est aujourd'hui exposée au Musée du Quai Branly (Paris, France). D'autres éléments constitutifs du monument furent soulignés par les prospections géophysiques récemment menées à Soto. Il s'agit notamment d'une "anomalie argileuse" centrale, ceinturée d'un fossé périphérique discontinu et de quelques structures en creux. Des décapages extensifs ultérieurs permirent de dégager l'intégralité d'une architecture monumentale en terre crue de forme ovalaire, d'environ 25 m de diamètre pour au moins 1,5 m de hauteur, construite au centre d'une grande fosse circulaire et entourée de plusieurs fossés périphériques. Une étude géoarchéologique en cours amènera à préciser le savoir-faire technique nécessaire à la construction d'un tel monument, comme le probable processus de sa ruine. Le cœur du dispositif pourrait abriter les niveaux sépulcraux. Peu à peu, ce travail pluridisciplinaire contribue ainsi à rectifier l'image erronée d'un patrimoine jugé à tort sur sa simple apparence de surface, et engage à une attention plus attentive vis-à-vis des architectures en terre.

Mots-clefs : *Architecture en terre, monumentalisme, funéraire, mégalithisme, Sénégal*

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p. 1 076-1 093 – Monumentalismes et rites funéraires du Sahara central et oriental par Alain GALLAY

La présentation suit la chronologie des styles de l'art rupestre du Sahara central, Hoggar, Tassili, Akukas et Messak. Malgré ses imprécisions, cette séquence constitue la moins mauvaise référence pour ordonner, à large échelle, les informations disponibles sur l'évolution des rites funéraires, Sahara oriental et région de Nabta Playa mis à part. L'analyse est centrée sur l'histoire des populations appartenant aux deux phylums linguistiques présents, le phylum nilo-saharien et le phylum afro-asiatique regroupant les langues de la famille berbère et leurs relations avec les rituels funéraires. Toutes les tombes abritent des sépultures individuelles. Les recherches se sont développées essentiellement à partir des années 50 avec un pic dans les années 1990-2000. À partir des années 2010, l'insécurité affectant la zone a stoppé les recherches de terrain, mais favorisé les travaux de synthèse.

Mots-clefs : *Sahara, mégalithisme, art rupestre, Berbères, Touareg, Peul,* bazinas*, bovidés, Nabta Playa, Gobero, Garamantes, histoire de recherches*

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p. 1 094-1 110 – Monuments néolithiques à pierres levées du nord-ouest du Sahara par Robert VERNET

Dans le nord-ouest du Sahara, la plupart des innombrables "pierres levées" – terme aussi neutre que possible – semblent associées à des monuments funéraires. Mais ceux qui ont été décrits, et très rarement fouillés, sont si rares qu'il est difficile d'être plus précis. Ce type de structures à monolithes est présent dans l'ensemble de la région, de l'Atlantique à l'ouest du Sahara algérien et de l'Atlas saharien à l'Adrar de Mauritanie. La description de ces constructions ne peut être que sommaire, tant la diversité paraît leur principale caractéristique : pierre dressée, isolée ou en groupe ; monolithe fiché en terre ou érigé au sommet d'un tumulus ; monument, funéraire ou non, constitué uniquement de pierres dressées ; piliers gravés… Leur positionnement est souvent significatif. Tant que des travaux scientifiques n'auront pas été entrepris, on en restera cependant à des énumérations fondées sur des illustrations mal localisées et sans contexte, alors que celui-ci – qu'il soit géographique, historique, culturel ou archéologique – est remarquablement varié. L'âge, le plus souvent néolithique, est mal connu. L'usage de ce type de monument se prolonge d'ailleurs à l'époque historique, les nomades sahariens continuant parfois à dresser des pierres pour marquer les tombes. Au-delà des incertitudes, il est pourtant établi que le nord-ouest saharien au Néolithique et au début de l'Histoire présente une homogénéité certaine : cette immense région est alors dominée par des populations berbères, jusqu'au milieu de l'actuel millénaire.

Mots-clefs : *Pierre levée, monument funéraire, monolithe, Néolithique, nord-ouest saharien*

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p. 1 111-1 123 – Les nécropoles mégalithiques de l'est du Maghreb par Joan SANMARTÍ

L'étude des monuments mégalithiques du Maghreb oriental a commencé il y a plus de cent cinquante ans, mais a été interrompue dans la seconde moitié du XXe siècle. Certains projets récents dans le Haut Tell tunisien ont apporté des informations importantes qui nous permettent de reprendre la question. En particulier, elles ont permis de clarifier la diversité typologique de ces tombes, la structure spatiale des nécropoles et la chronologie de certains monuments. De cette façon, nous commençons à comprendre leur évolution dans le temps. Nous présentons un état de l'art qui, en plus de décrire les données, propose une interprétation de l'évolution des monuments mégalithiques liée au développement de la stratifica-

tion sociale et des inégalités institutionnalisées au premier millénaire avant notre ère. Plus précisément, nous soulevons la possibilité que les dolmens classiques, dont des centaines de milliers de spécimens sont connus, correspondent à une phase précoce de ce processus de stratification sociale, dans la première moitié du premier millénaire avant notre ère ; à cette époque, la totalité ou la plupart de la population semble avoir eu accès à l'inhumation dans des monuments de ce type. Cependant, des monuments complexes comme ceux d'Ellès ou de Makthar, beaucoup moins nombreux et datés des derniers siècles du premier millénaire avant notre ère, semblent correspondre à un nombre limité de groupes familiaux appartenant à l'élite. Dans cette dernière période, la polarisation progressive de la société a abouti à une limitation du droit d'être enterré dans les monuments funéraires ; il semble que les dolmens n'étaient plus construits ni utilisés régulièrement.

Mots-clefs : *Maghreb oriental, mégalitisme, Âge du Fer, évolution sociale, formation des États*

Partie VIII - Mégalithes en Europe

p. 1 149-1 152 – Introduction par **Chris SCARRE**

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p. 1 153-1 172 – Plus grand que nature : monumentalité du paysage et représentation non humaine à Lepenski Vir (Serbie) par **Dušan BORIĆ**

Avec le titre de la première publication en anglais concernant Lepenski Vir et la *Première Sculpture Monumentale d'Europe : New Discoveries at Lepenski Vir* – le fouilleur du site, Srejović (1972), a laissé entendre que Lepenski Vir était le premier endroit sur le sol européen où des œuvres d'art réalisées à partir d'un matériau durable (le grès) auraient pu acquérir une importance et des connotations monumentales. En reprenant les données, cet article examine l'écologie des relations entre humains et non-humains à Lepenski Vir comme sur les sites installés le long du fleuve et globalement contemporains, dans la région des gorges du Danube, au cours du Mésolithique et lors de la transition Mésolithique-Néolithique. Le développement et l'élaboration des relations entre le paysage spécifique et les êtres autres qu'humains ont pu donner naissance, dans ce cadre, à une tradition de blocs sculptés. On avance qu'en dehors du rôle probable mimétique, vivant et commémoratif des blocs de grès, l'ensemble du paysage et ses nombreux habitants ont pu suggérer une monumentalité, soulignée par leurs modes de relation consubstantiels.

Mots-clefs : *Lepenski Vir, gorges du Danube, œuvres d'art sur rochers, paysage, Mésolithique*

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p. 1 173-1 192 – Sur les rives atlantiques. De l'origine des mégalithes en Europe ? par **Luc LAPORTE, Primitiva BUENO RAMÍREZ**

Les mégalithes en Europe constituent l'une des plus anciennes manifestations de ce type dans le monde. Malgré une très grande diversité de formes sur tout le continent, la façade atlantique réunit pratiquement toutes celles correspondant aux plus anciens mégalithes. Toutefois, définir précisément les contours géographiques de ce que l'on entend par façade atlantique suppose également d'intégrer quelques zones plus continentales, en France comme dans la péninsule Ibérique. La question de l'origine de ces mégalithes a longtemps été débattue : elle se pose toutefois différemment suivant que l'on aborde le problème plutôt sous l'angle des tout premiers monuments en pierre, ou si l'on s'interroge plutôt sur l'idée

qui consiste à mobiliser de très grosses pierres pour créer une architecture, ou si l'on s'intéresse aux changements symboliques et sociaux associés à de nouvelles pratiques funéraires. La question des chronologies sera ici primordiale, sans passer sous silence le problème des réinstallations sur les mêmes sites avec des mégalithes remontés plus d'une fois.

Mots-clefs : *Mégalithes, Néolithique, France, Espagne, Portugal*

p. 1 193-1 197 – Pierres dressées à l'air libre et pierres dressées des espaces sépulcraux. Vers une convergence des dispositifs. L'exemple des mégalithes du département du Morbihan (France) par Philippe GOUÉZIN

La conceptualisation architecturale des mégalithismes a souvent fait l'objet d'études séparées, les espaces sépulcraux et les pierres debout servant de base à deux axes de recherche distincts. En fait, la complémentarité entre les espaces sépulcraux et les pierres debout n'a vraiment été proposée que récemment. Cependant, l'ingénierie des projets architecturaux liés au mégalithisme montre des points de convergence, à travers l'analyse des structures de pierres debout présentes à l'air libre, dans les zones sépulcrales et dans les tumulus. Cette intentionnalité des constructeurs reflète les liens étroits entre le monde perçu dans lequel ils vivaient et qu'ils exploitaient, et l'attention particulière qu'ils portaient à leurs morts. Avec un corpus important et actualisé des mégalithes du département du Morbihan, l'étude de la forme des structures architecturales a été une base essentielle pour comprendre le phénomène. Les résultats obtenus sont donc assez frappants en ce qui concerne les similitudes apparentes entre l'évolution des murs des sépultures et l'évolution des files de pierres debout en plein air. Ces similitudes permettent de proposer une transposition ou une inspiration (assemblages, formes et hauteurs) des structures de pierres debout construites en plein air à celles érigées dans les murs des sépultures.

Mots-clefs : *Mégalithes, pierres dressées, dolmens, convergence des dispositifs, bâtisseurs, France, Morbihan*

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p. 1 199-1 211 – Première monumentalité funéraire en Europe occidentale : la nécropole de Fleury-sur-Orne "Les Hauts de l'Orne" (Normandie, France) par Emmanuel GHESQUIÈRE, Philippe CHAMBON, David GIAZZON, Corinne THÉVENET, Aline THOMAS

La nécropole de Fleury-sur-Orne, reconnue depuis le début des années 90, a fait l'objet de plusieurs opérations limitées durant les 20 dernières années. En 2014, un important aménagement a entraîné la fouille de l'ensemble de la nécropole sur une surface de 21 hectares ; en 2016, une fouille complémentaire a concerné 4 hectares. Elles ont permis la fouille de 36 monuments de type Passy, matérialisés par des longs monuments élevés en terre et ceinturés par des fossés, destinés à l'origine à accueillir une unique sépulture. La majorité des sépultures renvoient à des archers, accompagnés de moutons sacrifiés pour les plus riches. Un des monuments présentait son tertre préservé entre deux puissants fossés, fossilisé par l'installation d'un chemin antique. Les datations de ces monuments renvoient à l'intervalle 4700-4250 cal BC à Fleury. L'élévation de structures monumentales funéraires individuelles, comme dans la vallée de l'Yonne, pourrait être mise en relation avec l'organisation sociétale qui s'impose quelques siècles après la phase de néolithisation pionnière dans la large frange littorale de l'Europe atlantique. Elle semble en tout cas répondre aux mêmes symboliques au niveau monumental comme au niveau des tombes.

Mots-clefs : *Monuments de type Passy, sépulture, moutons, nécropole, tertre*

p. 1 213-1 233 – Les débuts de la monumentalité en Europe du Nord par Johannes MÜLLER, Karl-Göran SJÖGREN

Dans le sud de la Scandinavie et le nord des plaines d'Europe centrale, les tombes mégalithiques sont principalement érigées entre 3600 et 3100 avant notre ère. Ces tombes collectives façonnent le paysage culturel des sociétés dites des "*Funnel Beaker*" anciennes et moyennes. Un "boom mégalithique" s'est produit avec l'introduction de nouvelles techniques agricoles telles que le labourage, la traction animale, le fumier et les ouvertures de terres. De récents projets de recherche ont considérablement accru nos connaissances concernant les constructeurs des architectures mégalithiques. À Falbygden, en Suède, et à Holstein, dans le nord de l'Allemagne, des projets nous renseignent sur les conditions environnementales, les pratiques économiques et les coutumes funéraires des constructeurs des tombes mégalithiques nordiques. Dans la péninsule de Cimbria, les fouilles ont permis de clarifier la relation entre les enceintes néolithiques et les mégalithes. Il semble que l'essor mégalithique soit lié à la fois aux innovations agricoles et à l'apogée des activités cérémonielles.

Mots-clefs : *Paysages mégalithiques, dolmens, "dolmen à couloir", enceintes,* Funnel Beaker

p. 1 234-1 237 – Vieux ossements ou premières tombes ? Un bref résumé des séquences funéraires mégalithiques dans le sud de la Suède basé sur des datations au radiocarbone par Malou BLANK

Les tombes mégalithiques font depuis longtemps l'objet de débats dans le domaine de la recherche archéologique, notamment en ce qui concerne leur apparition et leur utilisation dans différentes régions et à différentes époques. En Scandinavie, les tombes mégalithiques sont divisées en trois types principaux : les dolmens, les tombes à couloir et les tombes en galerie. Le modèle dominant utilisé par la plupart des archéologues suédois implique que les dolmens sont les constructions les plus anciennes, suivies par les tombes à couloir et les tombes en galerie sont les plus récentes. L'objectif principal de cette étude était d'étudier la durée des principales séquences d'inhumation dans les types de tombes mégalithiques classiques du sud de la Suède, en se concentrant sur les tombes en galerie moins étudiées. Cet article est un résumé d'une étude précédente basée sur 374 dates au radiocarbone effectuées sur des restes humains d'individus uniques trouvés dans 66 sépultures mégalithiques du sud de la Suède. En comparant les dates ^{14}C en fonction de la géographie et de la morphologie des tombes, les chronologies existantes des tombes mégalithiques sont évaluées et leur émergence et leur propagation sont prises en compte. Les résultats indiquent que les tombes mégalithiques ont été utilisées pour la première fois vers 3500-3300 cal. BC Les dolmens et les tombes à couloir ont été utilisés en même temps, bien que la proportion des premières dates confirme un début légèrement antérieur des dolmens. Une partie des tombes en galerie pourrait également avoir été construite et utilisée dans la première phase du Néolithique moyen en fonction des os humains et animaux et des objets datés au radiocarbone, bien que la ré-inhumation d'anciens os ne puisse être exclue. En outre, les types mégalithiques du Néolithique moyen semblent plus variés en termes de forme et de taille que ce qui avait été proposé précédemment.

Mots-clefs : *Tombes mégalithiques, datation au radiocarbone, sépultures, dolmens, tombes à couloir, tombes-galeries, sud de la Suède*

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p. 1 239-1 251 – Au-delà des comparaisons : la diversité des structures mégalithiques par Richard BRADLEY

La majorité des études sur les mégalithes se concentrent sur des monuments datant de périodes similaires, mais comparent aussi des structures datant d'un passé éloigné avec celles documentées dans le présent ethnographique. Souvent, les recherches portent sur des constructions situées dans des régions voisines et la manière dont elles ont été utilisées. Cet article décrit un projet qui visait à comparer deux groupes de monuments mégalithiques sur chaque rive d'un estuaire dans le nord de l'Écosse. On a longtemps cru que les deux groupes dataient du Néolithique car leurs distributions sur le territoire sont distinctes l'une de l'autre. Le travail sur le terrain a produit des preuves inattendues que l'un de ces groupes – les cairns de Clava – a été construit mille ans après les cairns de Orkney-Cromarty. Quel est alors l'intérêt scientifique de continuer à les étudier ensemble en tant que mégalithes ? Les ressemblances entre les structures des deux groupes ont causé beaucoup de confusion, mais comment en est-on arrivé là ? Cet article soutient que la tradition plus tardive représentait une tentative consciente de renouer des liens avec un passé lointain et peu compris à une époque où les normes de la tradition étaient menacées par l'introduction de la culture campaniforme amenée par de nouvelles personnes. Des monuments plus anciens étaient revisités et leur architecture distinctive était copiée par des constructions plus récentes. Cette séquence inhabituelle est comparée à la réutilisation de monuments préhistoriques dans la même région au cours d'une autre période de résistance : le premier millénaire de notre ère, lorsque les croyances locales ont été remises en question par la propagation du christianisme.

Mots-clefs : *Écosse du Nord, cairns de Clava, cairns de Orkney-Cromarty, chronologie, traditions inventées, culture campaniforme, réutilisation de monument*

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p. 1 253-1 276 – Mégalithes du nord et du nord-ouest de l'Europe : France, Grande-Bretagne et Irlande par Chris SCARRE, Luc LAPORTE

Les monuments mégalithiques du nord de la France, de la Grande-Bretagne et de l'Irlande ont puisé dans une diversité de matériaux, dont la pierre, le bois, la terre, le gazon et l'argile non cuite, pour créer une série de structures qui étaient elles-mêmes souvent très évolutives, sujettes à des ajouts et des modifications au fil des périodes s'étendant sur plusieurs siècles. Le nord et l'ouest de la France ont connu un développement précoce de la monumentalité néolithique dans les longs tumulus apparus au cours de la deuxième moitié du 5e millénaire avant notre ère. Dans le nord-ouest de la France, ils se sont progressivement combinés avec des formes de chambre funéraire et des structures environnantes différentes mais contemporaines. Ces chambres ont d'abord été creusées dans le sous-sol, mais, après 4300 avant notre ère, elles se tenaient principalement au-dessus du sol. La disposition des blocs mégalithiques dans ces tombes à chambres peut être comparée à celle des rangées de pierres pour lesquelles cette région de France est particulièrement célèbre. Les modèles unilinéaires ne peuvent pas pleinement tenir compte de la séquence et de la diversité des tombes à chambres, et certains types prétendument postérieurs, tels que les dolmens angevins, peuvent en effet être en partie contemporains des tombes à couloir. Les premiers monuments néolithiques de Grande-Bretagne (début du 4e millénaire avant notre ère) s'inspirent culturellement de leurs prédécesseurs du nord de la France mais ne les copient pas exactement ; les concepts et les caractéristiques de la monumentalité mégalithique introduite du continent ont été transformés pour créer de nouvelles traditions insulaires. Les sociétés néolithiques de l'ouest de la Grande-Bretagne et de l'Irlande ont développé des types spécifiques de monuments funéraires (dolmens à portail, cairns à cour), suivis vers la fin du 4e millénaire avant notre ère par une floraison d'art mégalithique dans les tombes à couloir

de la vallée de la Boyne en Irlande. Les traditions mégalithiques de la fin du 4e millénaire dans le nord de la France ont suivi un modèle très différent avec l'apparition d'allées couvertes (allées sépulcrales, sépultures à entrée latérale), leurs chambres allongées pouvant être modelées sur des formes de maison contemporaines. Ces types de tombes ont continué à être construits au 3e millénaire avant notre ère, mais ne trouvent pas de parallèle strict en Grande-Bretagne ou en Irlande, où l'objectif principal s'est plutôt tourné vers les monuments cérémoniels, notamment les cercles de pierres et les enceintes.

Mots-clefs : *Mégalithes, Néolithique, France, Grande-Bretagne, Irlande*

p. 1 255-1 257 – Le liant argileux : un trait d'union entre architecture funéraire mégalithique et architecture monumentale non mégalithique à partir d'exemples champenois (France) par Vincent DESBROSSE, Julia WATTEZ

L'utilisation d'un liant argileux a été mise en évidence dans quelques mégalithes européens. Les exemples sont peu nombreux, mais ils confirment cette utilisation dans une vaste zone, du Danemark à la péninsule Ibérique. Jusqu'à présent, un tel exemple n'avait jamais été observé en Champagne. En 2009, la découverte d'un liant d'argile dans un seul bâtiment à Pont-sur-Seine a conduit à nous pencher sur cette question. Le liant d'argile avait été utilisé dans les fondations du bâtiment le plus monumental, ce qui était discordant : il témoignait d'une utilisation maîtrisée tout en étant apparemment unique dans la région. La construction du Néolithique final étant peu connue, nos recherches se sont orientées vers l'architecture funéraire. La documentation sur les dolmens est inégale et souvent ancienne, mais l'utilisation de l'argile jaune est néanmoins confirmée dans la mise en place de plusieurs mégalithes situés dans un rayon de cinquante kilomètres autour de Pont-sur-Seine. Les problèmes de conservation étant d'une importance majeure dans ce type d'utilisation, cette technique témoigne probablement d'un usage beaucoup plus répandu.

Mots-clefs : *Liant d'argile, Champagne, architecture monumentale, Néolithique final*

p. 1 260-1 262 – ADN et parenté dans les monuments mégalithiques de la façade atlantique française par Olivia CHERONET, Daniel FERNANDES, Iñigo OLALDE, Nadin ROHLAND, Ludovic SOLER, Jean-Paul CROS, Jean-Marc LARGE, Chris SCARRE, Roger JOUSSAUME, David REICH, Luc LAPORTE, Ron PINHASI

Les tombes mégalithiques sont le lieu de sépulture commun de nombreux individus. Leurs fouilles ont souvent révélé de nombreux squelettes, souvent très mélangés, rendant difficile l'analyse indépendante des individus. Cependant, les récentes avancées dans les anciennes méthodes de récupération de l'ADN ont permis d'analyser des éléments squelettiques individuels, ce qui pourrait permettre de savoir qui a été inhumé dans ces monuments. La question importante concernant les tombes mégalithiques est de savoir pourquoi des groupes particuliers d'individus ont été inhumés ensemble dans des monuments distincts. Nous présentons ici les analyses préliminaires de trois monuments mégalithiques français néolithiques de la façade atlantique : Bougon Fo (n = 9), Champ-Châlon (n = 33), Xanton-Chassenon (n = 22). En séquençant le génome de plusieurs individus de chacun d'eux, il a été possible de retrouver certaines de leurs relations familiales. Dans chacun de ces monuments, des frères et sœurs et/ou des parents ont été retrouvés, ce qui suggère que la parenté a joué un rôle important dans la décision d'inhumer les individus dans le même monument. En outre, les méthodes d'analyse actuelles ne permettent de détecter que les proches parents, ce qui rend possible l'existence de liens familiaux avec les autres individus. De nouvelles analyses

génomiques permettront de replacer ces individus dans un contexte plus large, en identifiant plus précisément leur origine géographique.

Mots-clefs : *Paléogénomique, parenté, mégalithes, ouest de la France*

p. 1 270-1 272 – Des Secrets dans les Pierres : examen de la présence de pierres à inclusions dans les tombes à couloir de l'Europe atlantique par Patricia KENNY

Les tombes à couloir de l'Europe atlantique témoignent d'une société capable de réaliser des prouesses d'ingénierie et d'expression créative. Construits au cours du Néolithique, il semble plausible que ces monuments aient été construits en utilisant des tons soigneusement choisis et socialement significatifs. L'analyse des caractéristiques physiques de ces pierres, telles que leur nature et leur couleur, s'est avérée être une piste de recherche fructueuse, qui met en lumière les raisons culturelles qui sous-tendent le choix de ces pierres. Ce projet de recherche se concentre sur un aspect connexe, mais peu étudié, de ces monuments, à savoir les pierres présentant des inclusions géologiques. Les pierres avec inclusions géologiques (SWI) peuvent être définies comme des blocs avec des inclusions notables, telles que des fossiles, des veines minérales ou des clastes de roches. Elles sont souvent mentionnées dans les études sur les tombes à couloir et autres mégalithes, mais on ne sait pas encore si ces pierres étaient importantes dans l'Europe préhistorique. Les recherches menées par les archéologues, les anthropologues et les folkloristes ailleurs, suggèrent que de nombreuses sociétés accordaient une importance particulière à des caractéristiques géologiques inhabituelles, comme les fossiles. Ces recherches examinent si les peuples du Néolithique ont considéré des caractéristiques géologiques inhabituelles dans leur paysage comme importantes. Elles visent à mieux comprendre comment les peuples du Néolithique percevaient les aspects inhabituels de leur environnement naturel et les intégraient dans leurs monuments construits. S'appuyant sur des sites visités en Irlande, en Écosse et au pays de Galles du Nord au cours des deux dernières années, cet article présente les résultats préliminaires d'un projet de recherche en cours. Il présente les modèles d'utilisation des SWI découverts jusqu'à présent et examine brièvement les variations régionales. Il présente au lecteur certaines des preuves clés de l'importance du SWI, avant de souligner les domaines de recherche future, y compris le travail de terrain en Bretagne. Cette étude met l'accent sur un phénomène d'intérêt international, qui a le potentiel de mettre en lumière un aspect intrigant de la société préhistorique.

Mots-clefs : *Mégalithisme, Néolithique, Europe du Nord-Ouest, choix de la pierre, géoarchéologie*

p. 1 277-1 280 – Étude de 26 cercles de pierres préhistoriques en Irlande, et leur calendrier basé sur l'observation du lever du soleil par Terence MEADEN

Il s'agit d'études portant sur 26 cercles de pierre traditionnels du sud-ouest de l'Irlande, du type "pierre couchée", dont le nombre de pierres du périmètre varie de 7 à 17, avec un diamètre de 4 à 17 m. Ces découvertes sont le résultat de la redécouverte du mode de fonctionnement des planificateurs dans lequel les cercles de pierre fonctionnaient au lever du soleil en raison d'alignements intégrés, séquencés par des ombres portées, dont la communauté pouvait être témoin. Chaque cercle possède un grand mégalithe couché dans le quadrant sud-ouest. On constate que les pierres du périmètre sont intelligemment positionnées de telle sorte qu'au lever du soleil à huit dates de l'année – chacune à 45 ou

46 jours d'intervalle à partir du solstice d'hiver – les ombres d'une série de pierres symboliques masculines tombent sur la pierre couchée classée comme symboliquement féminine. Les mégalithes qui projettent l'ombre du secteur est sont hauts, étroits et à côtés droits. Les cercles occupent deux classes, comme l'illustrent Bohonagh et Drombeg. À Drombeg, une grande pierre d'ombre dispose d'un ithyphallus sculpté. Le mégalithe couché comporte une vulve sculptée sur sa surface plane supérieure. Le Bohonagh est typique des cercles dans lesquels la pierre du coucher qui attend à l'ouest reçoit les ombres du lever du soleil d'un arc de pierres situé entre le nord-est et le sud-est. Le Bohonagh sert donc de calendrier pour toute l'année. En revanche, Drombeg et Currabeha sont des cercles dans lesquels la pierre couchée se trouve au sud-ouest, ce qui signifie que cette pierre ne reçoit des ombres significatives qu'entre le nord-est et l'est, c'est-à-dire pour des dates choisies à l'avance pendant la moitié de l'été. Pour ces cercles, une deuxième pierre symbolique féminine est introduite, en forme de losange et placée au nord-ouest pour recevoir les ombres du lever du soleil des mégalithes entre l'est et le sud-est pendant la moitié de l'hiver. Ces découvertes établissent la base d'un calendrier du Néolithique et de l'Âge du Bronze, longtemps ignoré.

Mots-clefs : *Calendrier du Néolithique et de l'Âge du Bronze, ombre au lever du soleil, cercle de pierre*

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p. 1 281-1 296 – Le mégalithisme de la Méditerranée : une histoire dans la longue durée par Jean GUILAINE

Les expressions mégalithiques de la Méditerranée sont nombreuses, variées et diachroniques. Au plan architectural, elles donnent lieu à des édifices fort différents : dolmens à couloir, allées-couvertes ou monuments assimilables, dolmens de morphologies diverses, hypogées à toiture mégalithique, *tholos* andalouses et portugaises, temples de Malte, tombes de géants, *navetas* baléariques, tombes du Maghreb, etc. Leur fonction est généralement funéraire mais peut être aussi cultuelle (Malte). Leur chronologie varie, selon les cas, du Néolithique moyen à l'Âge du Fer (Maghreb). Leur approche impose de contextualiser dans le temps chacune de ces productions, de les analyser dans leur cadre chronoculturel propre, d'éviter de les fédérer dans un ensemble conceptuel "mégalithique" dénué de toute signification.

Mots-clefs : *Cistes, dolmens, allées mégalithiques,* tholos*, stèles anthropomorphes, statues-menhirs,* taulas*, Méditerranée*

p. 1 297-1 301 – Le monument mégalithique d'Uzès (Gard, sud de la France) par Marie BOUCHET, Philippe CAYN, Christian SERVELLE

À l'occasion d'un diagnostic archéologique réalisé par l'Inrap, un monument mégalithique a été découvert en 2017 dans le sud de la France à Uzès (région d'Occitanie). Durant l'hiver 2018-2019, la fouille réalisée par l'Inrap a permis d'explorer un terrain d'environ 1 000 m^2 autour du mégalithe. Elle a révélé un vaste arc de cercle de pierres verticales, implanté au pied du talus, qui s'étend bien au-delà de la zone de fouille. Cinquante-trois dalles, principalement en calcaire coquillier, ont été découvertes sur une longueur de 42 m. Le diamètre du cercle supposé est estimé à 76 m et pourrait comprendre environ deux cent quatre-vingts dalles. La plupart des monolithes sont effondrés, d'une hauteur moyenne de 1 m, mais certains, brisés sur place ou volontairement abaissés, atteignent près de 4 mètres de hauteur. Il existe également un passage permettant d'accéder au centre de l'enceinte. La partie orientale de cette entrée est composée d'une deuxième ligne de monolithes dans laquelle une statue-menhir a été trouvée en position horizontale. La construction est actuellement datée entre le Néolithique final et l'Âge du Bronze final.

Mots-clefs : *Languedoc, monument mégalithique, statue-menhir, menhir, cercle de pierres, alignement de pierres, Néolithique final, Âge du Bronze final*

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p. 1 303-1 312 – Mégalithisme *versus* cyclopéisme : le cas de Minorque préhistorique par Cristina BRAVO ASENSIO, Irene RIUDAVETS GONZÁLEZ

L'île de Minorque (îles Baléares, Espagne) abrite une grande quantité de sites archéologiques, dont la plupart remontent à la Préhistoire de l'île (2200-123 avant notre ère). Cet article traite de la terminologie utilisée pour décrire les monuments préhistoriques de cette île, qui sont tous généralement appelés mégalithiques en raison de l'utilisation de gros blocs de pierre pour leur construction. Même s'il y a des vestiges mégalithiques sur l'île, qui ont été érigés par les premiers colons de la fin de l'Âge du Cuivre, le reste des monuments construits sur l'île au cours des Âges du Bronze et du Fer, bien qu'ils soient également monumentaux et constitués aussi de grosses pierres, ont été bâtis en utilisant la technique cyclopéenne et, par conséquent, devraient être appelés cyclopéens au lieu de mégalithiques. Dans les pages suivantes, la distinction entre les deux termes sera effectuée et l'on indiquera les types de monuments mégalithiques et cyclopéens qui peuvent être trouvés sur l'île.
De cette façon, le présent travail vise à élucider les différences entre les constructions mégalithiques et cyclopéennes, en s'appuyant sur les types de monuments mégalithiques et cyclopéens qui peuvent être trouvés sur l'île. Comme nous le verrons, alors que les vestiges mégalithiques sont hérités des traditions présentes sur le continent, d'où les premiers colons sont arrivés, l'architecture cyclopéenne des Âges du Bronze et du Fer a fait place à des expressions nouvelles et originales à Minorque, dont certaines sont uniques dans le monde, comme on peut le constater avec les structures appelées "*navetas*", "cercles" et "*taulas*".

Mots-clefs : *Minorque, mégalithisme, cyclopéen, prétalayotique, talayotique*

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p. 1 313-1 323 – *Small is Beautiful* : le mégalithisme ancien et les premières architectures funéraires du centre-sud du Portugal (sud-ouest de la péninsule Ibérique) par Marco António ANDRADE, Rui MATALOTO, André PEREIRA

Au cours des années 1930, Manuel Heleno a réalisé des fouilles sur près de 300 tombes mégalithiques situées dans la région charnière entre les territoires mésolithiques théoriques et le secteur occidental du groupe mégalithique de l'Alentejo Central. La concentration significative des petites tombes simples dans les zones limitrophes de ces deux régions a conduit à l'envisager comme une des sources potentielles pour l'émergence du mégalithisme funéraire dans le sud-ouest de la péninsule Ibérique. Ainsi, le mégalithisme dériverait des communautés mésolithiques locales, et aurait été diffusé par une "vague" (de progression) de la côte vers l'intérieur – mise en évidence par une évolution linéaire, et apparemment, de monuments simples à monuments complexes avec une représentativité géographique. De nouveaux travaux dans les zones les plus reculées de l'Alentejo, effectués surtout après les années 1990, ont montré l'existence de ces tombes simples aussi à l'intérieur. Des fouilles récentes, menées dans des petites tombes situées dans cette région, ont permis aux auteurs d'effectuer un aperçu des ensembles votifs, des architectures et des dates absolues disponibles. Apparemment, la construction et la première utilisation de ces petites tombes n'ont eu lieu que pendant le plein Néolithique moyen (première moitié et vers le milieu du 4e millénaire avant notre ère), donc contemporaines de l'utilisation des cavités karstiques, et de la construction et de l'utilisation des premières grottes artificielles – et aussi contemporaines, dans leur dernier moment (seconde moitié du 4e millénaire avant notre ère), des premiers monuments à chambre et couloir différenciés.

Mots-clefs : *Mégalithisme funéraire, petites tombes simples, origine et développement, Néolithique moyen, centre-nord de l'Alentejo, sud-centre du Portugal, sud-ouest de la péninsule Ibérique*

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p. 1 325-1 339 – Art mégalithique : scénarios funéraires dans l'Europe néolithique par Primitiva BUENO RAMÍREZ, Rosa BARROSO BERMEJO, Rodrigo de BALBÍN BEHRMANN

De nouveaux développements dans l'étude des mégalithes européens se concentrent sur deux aspects : l'extension des sites décorés dans les zones continentales, nord-européennes et méditerranéennes ; et la documentation des peintures bien au-delà du seul complexe de Viseu dans le nord du Portugal. Nous avons concentré nos propres recherches sur l'étude de la peinture dans le but de fournir des données scientifiques à la connaissance des rituels funéraires, y compris pour ce qui concerne la datation directe des pigments. La couleur était utilisée pour concevoir une mise en scène des rituels funéraires ayant un grand impact visuel. Sa présence dans les mégalithes en Bretagne, en France du Nord, en Allemagne, dans les plaines caucasiennes et en Méditerranée, décline les paramètres étendus d'un rituel élaboré. Les séquences et superpositions de peintures et de gravures présentent une nouvelle façon d'analyser les phases de réutilisation, d'entretien et de fermeture de ces constructions.

Mots-clefs : *Mégalithes, pratiques funéraires, analyses de pigments, radiocarbone, connectivité*

p. 1 340-1 345 – Don Bosco : un nouveau cimetière mégalithique du Néolithique final à Sion (Valais - Suisse) par Manuel MOTTET

Trente ans après la découverte des dernières tombes mégalithiques, le dolmen MXII et le dolmen MXIII sur le site du Petit-Chasseur, un nouveau monument mégalithique du Néolithique final a été mis au jour dans le quartier de la Platta à Sion. Il est situé à environ un kilomètre à l'est des monuments précédemment découverts. Au même endroit, un cimetière de Hallstatt a été mis au jour sur le site de Don Bosco. La plus grande partie de la chambre funéraire a été préservée, même si le monument avait été partiellement détruit par la rivière Sionne. Le cimetière rectangulaire de 2 m sur 2,4 m a été construit à partir de quatre grandes dalles de calcaire (orthostates) posées verticalement et recouvertes d'une dalle de couverture massive en granit pesant environ quatre tonnes. Comme pour les immenses dolmens de Sion (MXII, MVI et MXI), le monument avait une entrée latérale 42 formée par une découpe à la base des orthostates orientaux. La fouille de la chambre funéraire a permis de retrouver 26 individus de tous âges. Ils étaient accompagnés de biens funéraires comparables à ceux trouvés dans les tombes du Bécher du site du Petit-Chasseur (dolmen MVI ou dolmen MXI) : perle de cuivre de forme tubulaire, tessons de poterie à décor peigné, pointes de flèches triangulaires en silex (à pédoncules carrés ou à pédoncules pointus et obliques), segments de cercles en silex, pendentif en canine d'ours, pendentifs en coquilles perforées et aiguilles en os. Ces différents objets permettent de dater cette inhumation d'environ 2500 avant notre ère, c'est-à-dire du début de la période du Campaniforme en Valais. Parallèlement au monument, plusieurs stèles anthropomorphes gravées ont été découvertes. Deux d'entre elles ont été trouvées à côté du monument, délibérément poussées dans des fosses. Deux autres stèles ont été découvertes dans le cimetière : l'absence de la tête indique qu'elles ont été recoupées pour être réutilisées dans la construction de l'architecture interne du monument. Dans les environs immédiats du monument, d'autres dalles, apparemment non décorées, ont été trouvées effondrées à côté de leurs fosses de fondation. Un autre élément important de cette découverte est la présence de plusieurs dalles horizontales, pesant

pour la plupart plus d'une tonne, à quelques dizaines de mètres au nord-ouest du dolmen dans le même niveau. Ces restes indiquent la présence d'un autre monument mégalithique complètement disloqué à proximité, correspondant à un second cimetière du Néolithique final dans cette partie nord de la ville de Sion.

Mots-clefs : *Néolithique final, Alpes, Petit-Chasseur, Don Bosco, dolmen, ossuaire, inhumations*

Megaliths of the World brings together the latest research on megalithic monuments throughout the world. Many of these sites are well known, others less familiar, yet equally deserving of close attention. Megalithic monuments in different regions of the world are far from being a single unified phenomenon, having varied chronologies, and diverse origins, but they all share a certain family resemblance through their common characteristic: the deployment of large stones. No fewer than 150 researchers have contributed 72 articles and inserts, providing a vital region-by region account of the megalithic monuments in their specialist areas, and the current state of knowledge.

The insights offered in these volumes emphasize the particular character and significance of these apparently inanimate stones. The use of such large blocks must surely have been an expression of power or prestige, yet the size and materiality of the stones themselves opens up new perspectives into the meaning and symbolism of these monuments, the places from which the blocks were derived, and the way they were manipulated and shaped.

Megaliths of the World takes the reader on a fascinating journey, offering new insights through encounters with megaliths and megalithic traditions that will often be new and unfamiliar. Highlighting salient themes, it provides a compendium of detailed information that will be vital to anyone interested in the phenomenon of megalithic monumentality.

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