

# THE SYRIAC WORLD



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CHAPTER TWENTY-SIX

SYRIAC MEDICINE



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# CHAPTER TWENTY-SIX

## SYRIAC MEDICINE

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### INTRODUCTION<sup>1</sup>

The field of Syriac medicine is perhaps one of the least investigated and explored domains within Syriac intellectual culture. Yet owing to its decisive role during the late antique period for the transfer of Greek medical knowledge to the Islamic world, it should occupy a very special position, and the results of its study are appealing to both Classicists and historians of Greek and Islamic medicine. The study of Syriac medicine deals predominantly with medical literature, but also with theory and practice as they evolved over centuries within changing social and historical contexts (the surveys available differ in perspective and scope: Gignoux 2001a; Habbi 2001; Muraviev 2014; Pormann and Savage-Smith 2007: 17–21; Strohmaier 1994; on the Syriac scholarly milieu more broadly: Debié 2014).

Descriptions of Syriac medicine normally focus upon the relevant literary and social activity of Syriac Christians in the period between the sixth and the ninth centuries. However, this timeframe should not be taken to imply that before and after that period medical scholarship was non-existent, but rather that it was during those four centuries that the actual literary production in Syriac was carried out. What unites scholars of different ethnic backgrounds (Aramean, Iranian, Arab, and others) is the common literary medium, the Syriac language. Just as anywhere else in Roman Empire, the Aramaic-speaking Christians, some of whom were bilingual although living largely in the Hellenised territories, must have had medical practitioners among them. Thus it was not from a vacuum that the study of medicine, as well as an appreciation of Greek medical lore, entered the milieu of the Syriac Christians. The period that postdates the ninth century is better known to us, but by that time the literary output had become predominantly Arabic, and both scholars and physicians, albeit retaining (however, not always) their Christian faith, worked already within a different paradigm, that of Islamic medicine, when the scholars of various religious denominations could peacefully participate in a common discourse. The names of Sābūr ibn Sahl (d. 869), Abū al-Faraj ‘Abd Allāh Ibn al-Ṭayyib (d. 1048), Ibn Buṭlān (d. 1066), Ibn Jazlah (d. 1100), Ibn al-Tilmīdh (d. 1165), Ibn Muṭrān (d. 1190), Ibn al-Quff (d. 1286), and the ibn Bokhtīshū‘ family, may be related as the names of those who exerted

the most significant impact. Some of the works of these authors occupied a prominent position in Islamic medicine and enjoyed widespread popularity (the details about their works can be found in Ullmann 1970).

A key factor that determined the development, significance, and impact of Syriac medicine was the permanent absence of a state system. The Syriac Christians always formed a minority while living in different, often confrontational, states of the Near and Middle East. Such political divisions did not restrain the flow and circulation of texts and knowledge, and thus it should come as no surprise that a text composed or translated somewhere in what is today Syria might, via ecclesiastical networks, reach such distant regions as Iran, the Persian Gulf, and India (Takahashi 2014). That eastwards vector may help to explain the penetration and dissemination of Greek medicine in the Middle East and beyond, but one should not forget that the Syriac Christians were undoubtedly also the vehicle that transmitted local medical traditions. Whereas the former process has been more thoroughly explored, the latter one has generally been neglected in scholarship due to the lack of sources. However, finding new texts and investigating existing ones more thoroughly will bring us to a better understanding of the integration and fusion of different medical traditions implemented by the Syriac Christians and the actual role they played in the formation of Islamic medicine, well known for its heterogeneous character (Pormann and Savage-Smith 2007: 35–6). For instance, one of the earliest Islamic medical encyclopaedias, the *Paradise of Wisdom* of ‘Alī ibn Sahl Rabban al-Ṭabarī, an East Syriac physician from Merw who late in his life converted to Islam (d. soon after 855), introduces in addition to the Greek sources also the principles of Indian medicine (Meyerhof 1931; Siggel 1950); slightly later al-Rāzī made a good use of the Syriac, Persian, and Indian sources in his *Comprehensive Book* (Kahl 2015).

## A STANDARD HISTORICAL NARRATIVE

Any presentation of the history of Syriac medicine cannot fail to mention the two main periods that are closely associated respectively with the key figures of Sergius of Rēsh‘aynā (d. 536) and Ḥunayn ibn Ishāq (d. 873 or 877) (see, for example, Strohmaier 1998: 145–7). The rationale for such a framework lies in the distinctive features that marked those periods. Thus, Sergius was instrumental in bringing Greek medicine into the milieu of Aramaic-speaking Christians. The transfer was successfully implemented thanks to the introduction of the study of medicine into the school curriculum after the model of the Alexandrian tradition. The Hellenised eastern provinces of the Roman Empire had for centuries sustained the social institutions of medical practice, hence the science of medicine was not a foreign import in late antiquity and had long been pursued especially among the Greek-speaking population. Besides, early Syriac literature is notable for its particular attention to medical imagery, for example in the works of Ephrem of Nisibis. Be that as it may, Sergius’s achievement consists not only in the translation of the standard Greek texts into Syriac, but also (and perhaps even more importantly) in the creation of the medical lexicon that made possible further medical scholarship in Syriac (Bhayro 2005). The extraordinary translation activity of Ḥunayn, his disciples and successors, came into being not due to the internal development of medicine within the Syriac milieu but rather because of the increasing

interest in medicine within the Caliphs' courts (Gutas 1998). Despite the different historical context of his era, the tasks he implemented were basically the same as those faced by Sergius, namely the creation of the Arabic lexicon and the translation of Greek works into Arabic (on noticeable patterns in the two translation movements, see Freudenthal and Glasner 2014). Although the achievements of Ḥunayn have often been acclaimed, a closer study of contemporary accounts offers us the opportunity to hear other voices, not always so positive, concerning his reputation as a physician and a scholar (Olsson 2016).

## THE STATE OF RESEARCH

Syriac medical literature once constituted a vast corpus of texts from which, regrettably enough, only mere fragments have come down to us. The first Syriac medical texts that reached Europe in the middle of the nineteenth century came from the famous library of the monastery of Deir al-Surian in Egypt. Other medical manuscripts were acquired in a similar way by collectors and scholars in the Near East at the end of that century and the first quarter of the twentieth. Relying on available manuscripts, scholars readily occupied themselves with their study (e.g. Schleifer undertook the mammoth task of identifying all the Galenic quotations in the *Syriac Book of Medicines*) and publication (Sachau 1870; Merx 1885; Pognon 1903; Budge 1913). This scholarly enthusiasm gradually began to wane, and some texts remained neglected. Beginning in the 1970s, the study of Syriac medicine took its second breath with such scholars as Rainer Degen and Philippe Gignoux. Whereas the former was planning to launch a publication series of all Syriac medical works (Degen 1972) which unfortunately never came to fruition, the latter was keenly interested in exploring connections between Syriac medicine and the Iranian tradition, as well as in pharmacology (Gignoux 2001b).

The beginning of the new millennium was marked by the appearance of a new generation of scholars. The studies of Siam Bhayro and Peter E. Pormann paid special attention to such previously under-researched aspects as medical nomenclature (Bhayro 2005) and translation techniques (Pormann 2012); Grigory Kessel made a preliminary study of the medical sources that had not been available to earlier researchers (Kessel 2012a; Kessel 2017a). The broader significance of Syriac medicine contributed positively to gaining the support of financial bodies. At the time of writing, three large-scale projects deal directly with Syriac medicine. One of these, 'The Syriac Galen Palimpsest: Galen's On Simple Drugs and the Recovery of Lost Texts through Sophisticated Imaging Techniques' (funded by the UK Arts and Humanities Research Council, and led by P.E. Pormann) aims at an in-depth study of the Syriac Galen Palimpsest (see below), applying cutting-edge multi-spectral imaging technologies to reveal the erased text. Another, 'From Babylon to Baghdad: Toward a History of the Herbal in the Near East' (funded by the European Research Council, and led by Robert Hawley), intends to produce an edition of the Syriac and Arabic version of Ḥunayn's medical compilation *On the Medicinal Properties of Foodstuffs*. The third, entitled 'Transmission of Classical Scientific and Philosophical Literature from Greek into Syriac and Arabic' (funded by the European Research Council and led by G. Kessel) sets out to create a trilingual, Greek-Syriac-Arabic, digital corpus of scientific literature to foster a close study of the historical development of scientific vocabulary and translation techniques.

## SCHOOL SETTING

The origins of Syriac medicine must be traced in the context of the medical tradition as practised and studied in late ancient Alexandria (Iskandar 1976). It is now widely accepted that Sergius of Rēsh ‘aynā’s contribution to the field of philosophy cannot be detached from the commentary tradition of the Neoplatonic school in Alexandria (see ch. 25). The same pattern can be safely applied to his contribution to medicine. Moreover, Sergius himself exemplifies the Alexandrian type of scholar who combines Aristotelian philosophy and Galenic medicine. Both in his selection of texts to be translated and their interpretation he is heavily dependent on Alexandrian models (Hugonnard-Roche 1997).

Although our present knowledge of the curriculum, as well as of the educational procedures of the Syriac schools in general and of the School of Nisibis in particular, is far from presenting a complete picture (Becker 2006), what seems indisputable is that from the sixth century, the study of medicine became one of the disciplines taught at Nisibis as well as at other East Syriac centres of learning (see, for example, the canons of the School of Nisibis). One can observe that beginning from the sixth century, some sorts of hospices or infirmaries (referred to as *xenodocheia*) began to be attached to the schools. Some of these institutions were established by direct intervention of the ruling Sasanian shah. For example, the *Chronicle* of Pseudo-Zachariah of Mytilene reports how shah Khosrow I (531–579) established one *xenodocheion* (Zachariah 12.7; Greatrex et al. 2011: 455), apparently at the instigation of the Christian physicians present at his court (centuries later, the Christian physicians would come to advocate for their co-religionists before the ‘Abbasid Caliphs).

The school of Nisibis and its curriculum established an educational model that with some modifications persisted at least until the ninth century and shaped the intellectual climate. Thus many of the philosophical and psychological issues raised in the letters of catholicos Timothy I (such as providence, free will, nature of the soul, etc.) cannot be understood apart from the school tradition (Berti 2009, 2013, 2015). Moreover, Timothy I himself records that he paid for the foundation of a hospital (referred to as *xenodocheion* and *bīmāristān*) in Baghdad.

Medical practice was not foreign to East Syriac monasteries. Despite scant evidence, available accounts indicate that various medical treatments were familiar and performed by the monks. Thus, we know that in the monastery of Rabban Shabūr (located in Khuzistan) the use of cupping was quite common. One important source in this regard, Ibn Buṭlān’s *Medical Manual for the Use of Monks and Country People*, has received absolutely no attention so far (the text is available in Jadon 1968).

## TRANSLATIONS FROM GREEK

In considering translations from Greek, one needs to bear in mind that Syriac medicine, as we know it, derives from the late antique medical tradition, particularly as it existed in Alexandria. This should explain two important traits of Syriac medicine, especially in its earliest period. First, the works that happened to be translated into Syriac were those in circulation during the late antique period and, to be more precise, that were employed and produced in Alexandria (cf. the so-called ‘the first rule of thumb in Graeco-Arabic studies’ as presented in Gutas 1994).

Second, the study of medicine in the Syriac milieu was predominantly associated with the activity of schools and therefore it had to a large extent a ‘scholastic’ character.

It is hardly possible to enumerate the Greek works that were translated into Syriac, since most of the evidence comes from secondary sources that one can only rarely verify. However, based on more trustworthy sources (such as Ḥunayn’s personal account of his translations of Galen’s works [Bergsträsser 1925, but now available in a new edition and English translation, Lamoreaux 2016]), one can postulate that by the ninth century virtually the entire corpus of Galen’s medical works extant in that period was available in Syriac (Degen 1981; Strohmaier 1994; Kessel 2016b). Thus, if Sergius must have translated two dozens of Galen’s works (and nearly the whole of the Alexandrian canon of the sixteen books of Galen), Ḥunayn is credited with nearly a hundred. Besides Galen, the medical encyclopaedias of Oribasius, Aetius of Amida, Alexander of Tralles, and Paul of Aegina were also translated into Syriac, although mostly during the second period, that of the eighth to ninth centuries. Such encyclopaedias, themselves based on multiple sources, were in later times the only source of information, and many citations from lesser-known authors in fact derive from them. Given the close connection with the late antique Alexandrian medical tradition, one should assume that many of the medical works of the Alexandrian scholars and physicians were rendered into Syriac. Indeed, the scant available evidence attests to the availability of such material in Syriac beginning from the time of Sergius (who might have personally translated some of them) up until Ḥunayn (the later Syriac authors would have relied on Arabic versions rather than on Syriac). Christian anthropological treatises that contain much medical information, such as *On the Nature of Man* by Nemesius of Emesa (ca. 400) and *On the Making of Man* by Gregory of Nyssa (d. 394), were also rendered into Syriac (Zonta 1991 provides the identified excerpts of the former; the latter is preserved in full).

The very first Syriac medical texts to be edited were the extant fragments from the two treatises of Galen, *On the Properties of Foodstuffs* and the *Art of Medicine*. The age of the codex British Library Add. 17156, its translation techniques and the rendering of scientific vocabulary, suggest that both texts were translated by Sergius of Rēsh‘aynā. Although the manuscript at present features just small parts of both of Galen’s texts, it is likely that in its original form the codex contained both of them in their complete form. According to a recent study, the Syriac version of Galen’s *On the Properties of Foodstuffs* is an accurate translation that displays its translator’s creative approach towards the Greek text (Wilkins and Bhayro 2013).

One of the most well-known Syriac medical translations is a version of Hippocrates’s *Aphorisms* (Figure 26.1), one of the most essential works in the history of medicine (edition and French translation: Pognon 1903). It has so far received considerably more attention than any other comparable work. The editor of the text, Henri Pognon (who acquired the unique manuscript in Aleppo in 1899) criticised the Syriac translation for being too literal and utterly unsatisfactory from the point of view of standard Syriac grammar, and he therefore assumed that it must have been produced in the earliest, pre-Islamic period of Syriac medicine, and maybe even by Sergius. The opposite opinion was expressed by Rainer Degen, who cautiously argued, based predominantly on indirect evidence, in favour of Ḥunayn’s authorship (Degen 1978). It was Degen’s opinion that became widely accepted and received additional support (Brock 1993; Overwien 2015). However, fresh in-depth studies have cast grave

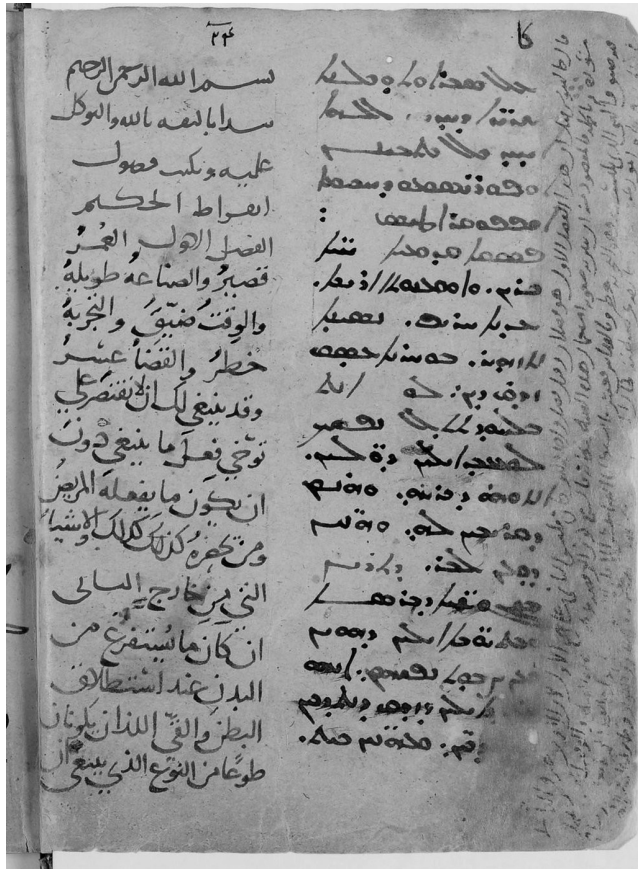


Figure 26.1 The beginning of the Syriac and Arabic versions of Hippocrates's Aphorisms (BNF arabe 6734, fol. 29v., dated 1205)

Source: © Bibliothèque nationale de France

doubt upon this widely accepted conviction and made it possible to dissociate the Syriac version from Hunayn, whilst attributing it to an earlier period of Syriac medical scholarship in the eighth century (Mimura 2017a, 2017b; Barry 2018).

Last but not least to be mentioned is the development of translation techniques. A widespread opinion about a customary dichotomy of free versus literal approaches cannot be any longer considered as self-evident. A. McCollum recently advanced a plea for its revision (McCollum 2015).

## ORIGINAL WORKS

It is difficult to offer even an estimate of how much of the medical literature composed in Syriac is lost to us. There must have been a plentiful supply of texts, many of which were not merely treatises dealing with particular diseases and other medical issues but comprehensive encyclopaedias and handbooks (among them also revisions and adaptations of earlier works). Just a few treatises have survived in their complete

form, whereas we know many more only in fragments. Besides these complete and fragmentary witnesses, another type of evidence for the study of Syriac medicine may be found in the texts belonging to the Islamic medical tradition. Many works originally composed in Syriac were eventually translated into Arabic, and thereby penetrated into Arabic medical treatises (Ullmann 1970: 100–3). Occasionally Syriac texts appear also in Hebrew versions (e.g. Bos and Langermann 2009), but we know next to nothing about that trajectory of the history of Syriac medicine.

A remarkable survivor among the original works is the *Questions on Medicine for Students*, one of the most influential medical treatises of the entire Middle Ages. It was begun by Ḥunayn ibn Iṣḥāq and completed by his nephew Ḥubaysh, who indubitably stuck to the teaching of his master (even though the larger part of the treatise was written by Ḥubaysh, traditionally it is Ḥunayn who is credited as its author). This work serves as an introduction to medicine and occupied a prominent position thanks to its question-and-answer format, not only in the Islamic world (in its Arabic version), but also in the Latin West (in at least two Latin translations that were made by Constantine the African and Mark of Toledo). The work aims to offer a digest of fundamental aspects of medicine and deals *inter alia* with such subjects as aetiology and symptoms of diseases, therapy, and diet. A number of Syriac manuscripts are extant, the oldest being Vat. sir. 192 (Figure 26.2), which contains the Syriac and Arabic texts in parallel columns and which dates to the beginning of the second millennium of the Common Era. The Syriac text was recently edited (Wilson and Dinkha 2010), although the edition must be used with caution (Kessel 2012c). The availability of the Syriac original easily lends itself to a detailed study of the treatise, particularly its sources and transmission history. It has been revealed that the work heavily depends on the literary output of the late antique Alexandrian medical school (Jacquart and Palmieri 1996). That conclusion needs to be verified based on a thorough source-critical analysis of the treatise. The very nature of a compilation that is based on other sources effectively blurs the line between translation and original work. The same is true for many other texts that cannot be qualified as translations in the strict sense. The loss of most of the primary sources employed (in this case, the Alexandrian medical treatises) makes it all the more difficult to evaluate properly the evidence of some Syriac sources. This point is of utmost significance for students of Greek medicine who are looking for witnesses to particular Greek texts (see, for instance, the valuable observations in Bhayro 2013).

As far as we know, Ḥunayn was eager to produce compilations. In addition to the introductory *Questions on Medicine* and a pharmacological compilation (see below), one further work, very modest in size compared to the other, may go back to Ḥunayn, entitled *Medical Questions Taken from the Works of Galen* (the text remains unedited).

Until now, it has been widely accepted that the largest medical text that has come down to us is the so-called *Syriac Book of Medicines*, discovered and later edited by E.A.W. Budge (Budge 1913). The title given by Budge suggests that what we are dealing with is a single homogeneous treatise. Many scholars have accepted that assumption, perhaps too naively. However, despite the somewhat misleading title, the ancient manuscript (dated by Budge to the twelfth century) found in a private collection in Alkosh, as well as a number of its extant apographs, contain three texts that are not genetically related. The first text deals extensively with therapy according to Galenic



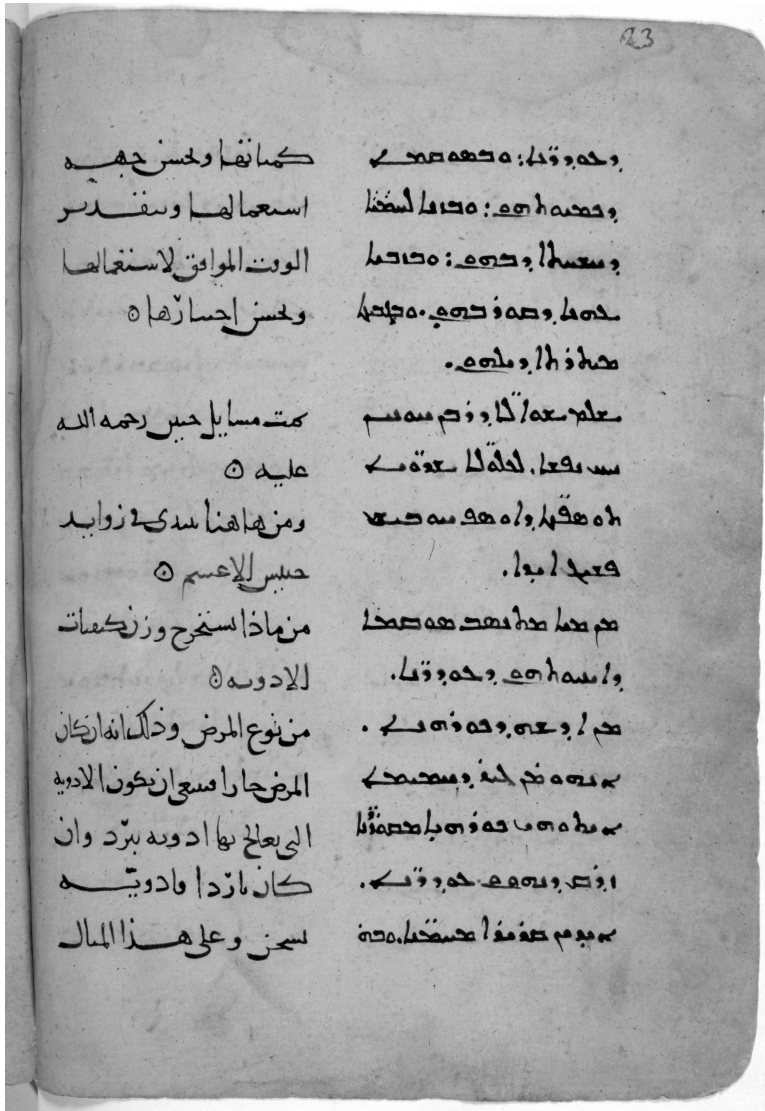


Figure 26.2 Hunayn, *Questions on Medicine for Students* (Vat. sir. 192, f.129v). A passage in the middle of the page explains that after Hunayn's death the work was continued by Hubaysh

Source: © Biblioteca Apostolica Vaticana

medicine and following, in the presentation of diseases, the principle 'from tip to toe'. The second text describes the relationship of the planets and the signs of the zodiac with human health. The third work provides a multitude of recipes, some of which are based on natural properties of certain substances, whereas others rely on their magical power (see also below, under 'Folk-medicine'). There is a widespread opinion among scholars that the texts published by Budge belong to one and the same work. However, since the second (astrological) and third (folk-medicine) texts are attested

elsewhere in various forms and combinations, the presumed integrity of Budge's texts requires urgent revision and reconsideration.

As far as the 'Galenic' part is concerned, it has been established that it is essentially a compilation of two of Galen's works, *On the Affected Parts* and *On the Composition of Drugs According to Places in the Body*. However, as Bhayro argues, the compilation was accomplished not through the mechanical combination of different sources but creatively, by means of abridgement, reorganisation of the Hellenistic medical lore, and incorporation of indigenous Mesopotamian medicine (Bhayro 2013, 2015; a fragment edited in Fiori 2017 shows interesting parallels to the *Syriac Book of Medicines*).

Two further substantial medical texts deserve a mention, although, unlike the texts introduced earlier, they have neither been edited nor studied thoroughly. By a quirk of fate, both manuscripts are damaged and are missing any decisive information about their authors and titles. They are preserved in the patriarchal library of the Syriac Orthodox Church near Damascus.

The older manuscript (Syrian Orthodox Patriarchate 12/25) contains a commentary on book six of the Hippocratic *Epidemics* and hence was called the *Syriac Epidemics* (Kessel 2012a, 2012b). Both in form and content, the *Syriac Epidemics* definitely belongs to the late Alexandrian medical tradition that flourished from the fifth to seventh centuries. Available evidence suggests that during that period, Alexandria boasted a number of scholars whose commentaries shaped the framework of mediaeval medicine in East and West. Although many dozens of texts were produced within that movement, only a handful survived.

Preliminary research demonstrates that the *Syriac Epidemics* is remarkably similar to a source used in the commentary on the sixth book of the *Epidemics* by John of Alexandria, who is known to us through a number of preserved texts. Since we know that John drew principally on the works of the Alexandrian iatrosophist Gesius, it seems likely that Gesius is also the author of the Greek text that was translated into Syriac. However, there is also reason to think that the *Syriac Epidemics* may be an original text, produced by a Syriac-speaking scholar relying on the commentary of Gesius.

Being produced sometime in eighth-century Persian Khuzistan (the city of Susa is mentioned in the colophon), the manuscript of the *Syriac Epidemics* is a unique document revealing intensive activity in the study of medicine in a region whose actual medical history is shrouded in mystery. Curiously, three Greek words jotted on the final leaf of the manuscript at about the same time as the main text persuasively testify to the spread and persistence of the knowledge of the Greek language in the region up until the eighth century, and thereby call into question the conventional point of view according to which the knowledge of Greek should have died out by that time.

The other Damascus manuscript (Syrian Orthodox Patriarchate 6/1) was copied in 1224 CE in Mosul and contains a medical encyclopaedia that will certainly occupy a prominent position among extant Syriac medical sources. The opening of the manuscript is missing but a preliminary study of the text suggests that it is a medical handbook (*Kunnāshā*) of ʾĪšō' bar ʾAlī, a ninth-century physician and student of Ḥunayn ibn Ishāq (Kessel 2017a). The seven books of the handbook appear to follow the model of Paul of Aegina's *Pragmateia* in both composition and content. The *Kunnāshā* covers all the standard subjects of the medical manuals: regimen and materia medica, symptoms and treatment of diseases (presented *mutatis mutandis* following the principle 'from tip to toe'), fevers, and poisons. The actual significance of the handbook in the history

of Syriac and Arabic medicine is yet to be assessed, but there can be no doubt that it is a pivotal source that documents the development of Syriac medicine over a period of four centuries, at the time when it was establishing a foundation for the nascent science of medicine in Arabic.

Besides the extant witnesses to the Syriac texts, some texts have come down to us in their Arabic versions, and the great majority of those are attested solely as quotations. The œuvre of an East Syriac scholar Yūḥannā ibn Sarābiyūn (9th c.) may serve as a good example of the former. Ibn Sarābiyūn composed a medical compendium (*Kunnāshā*) in seven books which is lost in its Syriac original but does survive in Arabic, Latin, and Hebrew translations. Modelling his encyclopaedia after that of Paul of Aegina, Ibn Sarābiyūn deals with diseases ‘from tip to toe’, poisons, fevers, and recipes (Pormann 2004a, 2004b).

The *Comprehensive Book* of Abū Bakr Muḥammad ibn Zakarīyā’ al-Rāzī (ca. 865–925 or 935) shows that Islamic scholars were well aware of, had access to, and made use of Syriac medical sources (Kahl 2015). In total, al-Rāzī provides citations from seven sources and the vast majority of those derive from the compendium of Yūḥannā ibn Sarābiyūn (194 quotations), a certain Shem’ōn (74 quotations, whose author should not be confused with the seventh-century monastic author Shem’ōn d-Ṭaybūtēh), an unidentified source referred to as ‘Hūzāyē’ which must have been a medical compendium produced in Khuzistan (228 quotations), a compendium of Ġūrġīs ibn Ġibrīl ibn Bokhtīshū’ (68 quotations), and to a lesser extent from an unknown medical compendium of Shlēmōn (19 quotations), Job of Edessa’s *Book on Urine* (three), and the *Book on Dropsy* by Sergius of Rēsh’aynā (just one quotation). With the exception of the compendium of Yūḥannā ibn Sarābiyūn, none of the works is known to have survived either in Syriac or in Arabic translation. Hence, unquestionably the text of the *Comprehensive Book* must be used (with due caution to his handling of the sources) as an essential witness in the study of Syriac medical literature.

As mentioned earlier, from the ninth century onwards Syriac medical scholars and physicians preferred using Arabic to Syriac. This transformation may be what stands behind the dramatic loss of Syriac medical manuscripts (Watt 2014 argues that it was indeed the principal reason and did not occur because the Syriac versions served only as a utilitarian means for the production of Arabic translations). However, even with the switch to Arabic, there were both authors and readers who were interested in nurturing medical literary production in Syriac. A fine example of this contradictory period is offered by Barhebraeus (d. 1286), a maphrian of the Syrian Orthodox Church, who was not only a polymath and one of the best representatives of the so-called Syriac renaissance, but also a professional physician, who pursued his medical practice, for example, at the famous Nūrī hospital in Damascus and at the Mongol court as one of Hulagu’s physicians (Micheau 2008). On the one hand, there is only a slight chance that any of some eight known works of Barhebraeus that deal with medicine was written in Syriac; in general, they pertain to Islamic medicine with little appreciation for original Syriac works (see, for instance, a provisional assessment of the recently discovered commentary on Hippocrates’s *Prognostics* in Joose 2013). These include a partial (reportedly, Barhebraeus died in the course of that work) Syriac translation of the *Canon* of Abū ‘Alī Ibn Sīnā; an abridgment of Dioscorides’s *On Medical Substances*; a

commentary on Hippocrates's *Aphorisms* and *Prognostics*; an abridgment of a pharmaceutical work of al-Ghāfiqī (12th c.); and an epitome of Ḥunayn's *Questions on Medicine* (Takahashi and Yaguchi 2017 clearly show the way in which Barhebraeus produced the abridgments). On the other hand, while working in Syriac on his theological summa, *Candelabrum of the Sanctuary*, Barhebraeus deemed worthy of inclusion special sections dealing with the medicinal properties of plants and stones, as well as the anatomy of the human body. It has been suggested that the ultimate sources that Barhebraeus drew upon might well have been Dioscorides's *On Medical Substances* and Galen's *On the Powers of Simple Drugs* and *On the Utility of the Parts*, although the immediate sources cannot be pinpointed straightforwardly and may vary from the original sources to later compilations (a Pseudo-Aristotelian treatise *On Plants* that was possibly written by Nicolaus of Damascus [first century BCE]) and Islamic encyclopaedic works (for example, the *Eastern Discussions* of Fakr al-Dīn al-Rāzī [1149–1209]). This case vividly represents the complexity of texts from this period.

### FOLK-MEDICINE

Besides scholarly treatises, there is also a tradition of so-called folk-medicine that goes back in some of its parts to incantations from Late Antiquity and even from the Assyrian period (al-Jeloo 2012). The texts contain not only recipes, but also divinations, forecasts, charms, and amulets that were employed to guard against illnesses, demons, the evil eye, and other afflictions (Hunter 2009). They can usually be found either in pocket-sized book form or as a scroll and often bear the title *spar sammānē* (*Book of Medicines*). The contents of each book and scroll is individual, and it is unlikely that they ever had a fixed composition. It seems that, due to their connection with magic, such texts were not approved by the ecclesiastical authorities and most likely were condemned to destruction. However, wherever canonical discipline was less strict, the books of charms seem to have been copied and used rather freely even by priests and monks (in the East Syriac community in Turfan around the ninth–tenth centuries (Maróth 1984), and the East Syriac community in Hakkari region, from eighteenth to early twentieth centuries). Occasionally we find charms among the pharmacological recipes (the most notable example being the Syriac *Book of Medicines* that features an extensive section of more than 200 recipes and amulets). The texts under consideration reflect a blend of different cultures and traditions that were once active in the Mesopotamian region. The tradition of Greek medicine is echoed as well.

### MEDICAL THEORY

The system of humoral pathology going back to Hippocrates and Galen but refined and systematised during Late Antiquity formed the backbone of Syriac medicine. In this theory, the body is thought to be made up of four humours: blood, phlegm, yellow bile, and black bile. Each humour was associated with two of the primary qualities (hot, cold, dry, and moist), one of the four seasons, and a mixture (sanguine, phlegmatic, choleric, and melancholic). An excess of the humours was considered harmful and therefore needed to be counterbalanced through diet, or removed through such measures as bloodletting or purging (Pormann and Sagave-Smith 2007).

While highlighting the centrality of the humoural pathology, one should not neglect that as far as the available sources allow us to tell, the Syriac physicians were open and perceptive also to other influences. Particularly, a study of the impact of Persian and Indian medical and pharmacological traditions remains a desideratum (for some observations, see Hawley 2016).

## HOSPITALS

Syriac medicine is perhaps most remembered for the fact that twelve members of the Bokhtīshū‘ family served the caliphs as private physicians (from 765 when Ġūrġīs ibn Bokhtīshū‘ was summoned to Baghdad to treat Caliph al-Manšūr, until 1058, when the last representative of the dynasty, ‘Ubaydallāh ibn Ġibrīl ibn Bokhtīshū‘, died; see fig 26.4). Hailing originally from Gondēshāpūr, the family rose to great prominence in Baghdad and was involved in hospital medicine during ‘Abbāsīd times. Older scholarship, relying on the late account of a historian al-Qifṭī (d. 1248), had a conviction that the foundation of the first hospital (the standard Arabic term *bīmāristān* is of Persian origin and appears also in Syriac sources, e.g. in a letter of Timothy I) in Baghdad during the reign of Caliph Hārūn al-Rashīd (786–809) was directly related to the presence of a medical school and a hospital in Gondēshāpūr, founded by Shāpūr I, which was the true oasis of the Greek medical tradition. Although this narrative is now often considered mythical, construed in order to support the Bokhtīshū‘’s primacy, it may still contain some trustworthy elements (Dols 1987; Abele 2008). For example, there must have been a *xenodocheion* (attached to the school, as in Nisibis) that may have accumulated particular authority in medicine before it was transformed into a more substantial institution for the provision of medical care. In general, at least from the seventh century, the Khuzistan region was indisputably an important area for the study of medicine, right up until the early Islamic period with many centres of scholarly and clinical activity. A unique piece of material evidence that comes from the region is the manuscript of the *Syriac Epidemics* (see above) that apparently was produced around the turn of the eighth century for a commissioner residing in Susa.

It ought to be mentioned here that special attention to the study of medicine as it emerged and developed in Khuzistan may have been determined by the strong presence of a Greek-speaking population that had been deported to the area as captives (Jullien 2006). That connection, however, requires further examination.

We hear about Syriac physicians of various denominations (Melkite, Syrian Orthodox, and East Syriac) also from other evidence. Especially well documented is the period of the Crusades (Eddé 1995; Pahlitzsch 2004; Nasrallah 1974). The Latin and Arabic chronicles left many accounts that can be used to reconstruct a network of physicians that traversed state borders during the wars. Moreover, Syriac physicians served as court physicians also for Chinese (Tang dynasty) and Mongol rulers (Shu 2007; Dmitriev 2005).

## PHARMACOLOGY

Dioscorides’s treatise *On Medical Substances* as well as Galen’s *On the Powers of Simple Drugs*, the two chief Greek works on pharmacology, were both available in Syriac, although only the latter has reached us (for a survey see Bhayro and Hawley 2014). Some vestiges of the former in the translation of Ḥunayn are present in the *Lexicon* of

Bar Bahlül (10th cent.), whereas for the latter we have at our disposal two manuscript witnesses (a study on Aramaic nomenclature of medicinal plants, Löw 1861, is still worth consulting). The one, British Library Add. 14661, contains Sergius of Rēsh‘aynā’s Syriac translation of books 6–8 of *On the Powers of Simple Drugs*, which provide a catalogue of drugs and their healing properties, and deal with herbs and plants in particular (Figure 26.3). Although the text has not been edited (save for a fragment published in Merx 1885), an ongoing study of the other witness, the so-called Syriac Galen Palimpsest, will hopefully provide us with a long-awaited edition. For the present it is possible to argue that in its original form the Syriac Galen Palimpsest (the original medical manuscript can be dated to the ninth century) may have contained the whole of Galen’s treatise, although only about a half of it was re-used in the eleventh century on the Black Mountain near Antioch to produce the liturgical text which constitutes the upper text of the palimpsest (Bhayro, Hawley, Kessel and Pormann 2013; Hawley 2014; Kessel

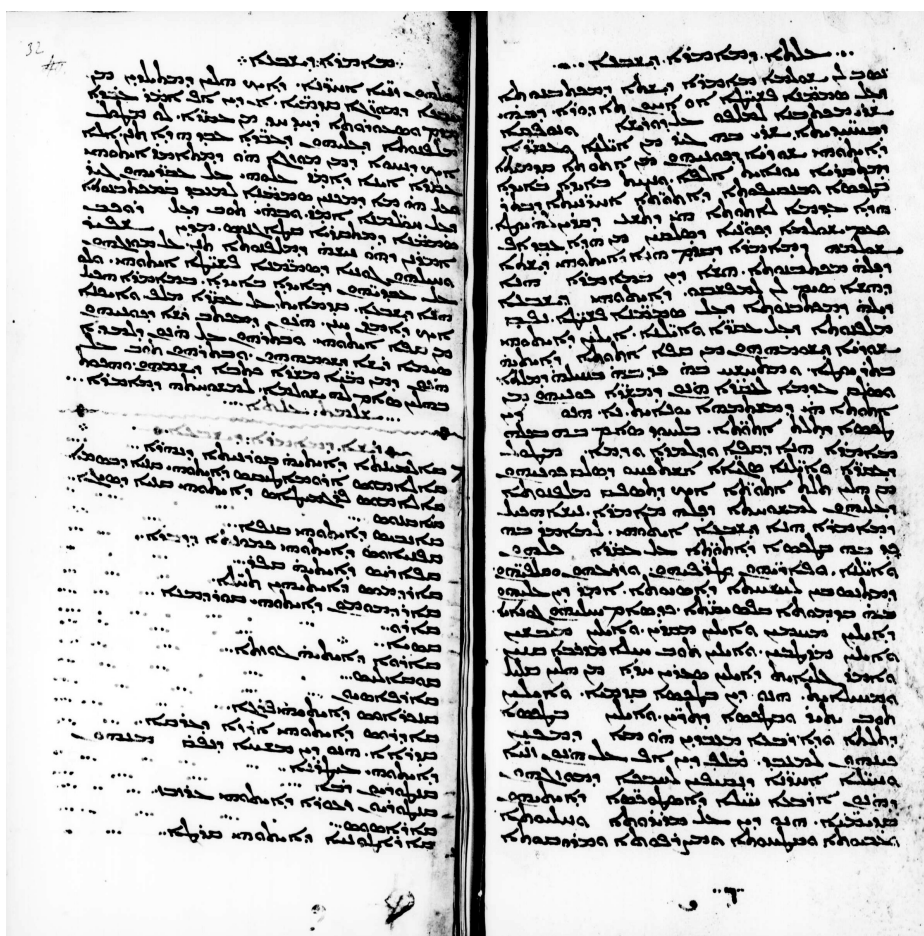


Figure 26.3 Galen, *On Simple Drugs* (BL Add. 14661, f.32v–33r). Final part of book six and the beginning of the list of the drugs treated in book seven

Source: © The British Library Board

2016a). Those two treatises could have served as resources for the pharmaceutical word lists that are attested both independently and within other works (one such word list was found in the Cairo Geniza: Bhayro 2012, 2014, 2017a; Müller-Kessler 2017).

Many other texts dealing with pharmacology were once available in Syriac and of those only a handful have survived (a ninth-century fragment containing pharmacological recipes was recently edited, Fiori 2017). For example, Ḥunayn's compilation *On the Medicinal Properties of Foodstuffs* proves to be a source of immense significance as its author draws heavily on the works of Dioscorides, Galen, Hippocrates, Rufus of Ephesus, and others (Hawley 2008, 2010). There are also anonymous pharmacopoeia (one of those edited by Budge as a part of the Syriac *Book of Medicines*, on which see above) containing multiple recipes that, as shown by Gignoux, offer unique material into the study of pharmacological nomenclature in Syriac (Gignoux 1998, 1998/99). The lexicon of pharmacological terms compiled by Gignoux 2011 contains some seven hundred entries that reveal connections not only to Greek pharmacological lore but also to the Persian, Arabic, and Sanskrit medical traditions.

## IMPACT

It would be too far-fetched to try to assess the full impact of Syriac medicine while most of the sources remain unedited and under-studied. Nevertheless, a few broad strokes may be painted. Its major contribution consists in the transmission of Greek medicine to the East (Dols 1989; for more on the background of the transmission, see Bhayro 2017b). On the one hand, Greek scientific texts were made available in a Semitic idiom through the creation of special scientific vocabulary and translation techniques (Daiber 1986). On the other hand, the open attitudes of Syriac scholars and physicians allowed them to integrate creatively Greek and other (Mesopotamian, Persian, Indian) traditions, to institutionalise the study of medicine (schools), and to organise the distribution of medical care (hospitals, infirmaries).

A broad appreciation towards medicine can easily be traced throughout the entire history of Syriac Christianity, leaving a substantial impact on many aspects of its intellectual culture as well as day-to-day life. One may come across medical allusions, references to medical theories, and a minute knowledge of anatomy and physiology in such unexpected genres as hagiography (e.g. the life of Mar Qardagh, Bruns 2008), poetry (e.g. a poem *Man as Microcosm* by Giwargis Warda, Gignoux 1999), biblical exegesis (Reinink 2003), and monastic theology (Kessel 2011, 2015). Voices occasionally raised against medicine indirectly demonstrate the widespread presence of medical theory and practice within the society and culture (see, for example, what the eighth-century monastic author Joseph Ḥazzāyā has to say on that subject, Kessel 2015: 147).

Fulfilling their missionary goals, Syriac Christians did not fail to transmit Greek medical lore even to such distant lands as China. For instance, there is a New Persian fragment of pharmacological content copied in Syriac script that was found among the Turfan manuscripts (Sims-Williams 2011) as well as Syriac glosses in the description of medicinal plants preserved in the ninth-century *Yōuyáng Zázǔ* (a Chinese miscellany of legends, accounts, tales, and notes on plants, Santos 2010) and a fragment in Uighur (Zieme 2007; Takahashi 2014). A particularly notable impact was left in Cilician Armenia where the translations of Syriac medical works were carried out (Vardanyan 1982; Vardanian 1999). It remains, however, questionable to what extent

Syriac Christians contributed to the transmission of Greek medicine to other traditions. Thus, although it has been suggested that the transmission of Greek medicine to Persian Iran (as documented in *Dēnkard* and *Bundabishn*) was mediated by Syriac Christians (Delaini 2013), other channels cannot be excluded (see e.g. the case of the presence of Galenic medicine in Tibet, Yoeli-Tlalim 2012).

It is not unusual to find in Islamic medical sources, particularly those dealing with pharmacological nomenclature, references to their Syriac equivalents for the sake of facilitating the identification of particular drugs (Khan 2008; Käs 2010). Likewise, the recipes regularly mention substances employing words of Syriac origin (the proportion, however, of such works is always minute and insignificant).

Finally, the proliferation of medicine among Syriac Christians laid a foundation for the subsequent thriving of medical science in the Islamic milieu. Many medical works were composed by Christians in Arabic and some of those were well known, were widely copied, and reached Europe in Latin translation. A Latin translation of Yūḥannā ibn Sarābiyūn's compendium was earlier mentioned in passing. It is, however, the Latin version of Ḥunayn's *Questions* that dominated the manuals that served as introductions to medicine. Under the title *Isagoge Ioannitii ad Tegni Galieni*, the text was included in the *Articella* (a collection of texts that was used as a basis for medical training) which from around 1250 played a pivotal role within the curriculum of the emerging universities and was widely read and commented upon up until the sixteenth century. Of no less importance was the *Maintenance of Health* of the eleventh-century East Syriac physician and theologian Ibn Buṭlān, a synopsis of hygiene that enjoyed great popularity in Europe where it was known first in Latin translation (*Tacuinus sanitatis*) and later on become available in multiple vernacular versions; the text was also available in an abridged version and was enriched with picturesque illuminations of daily life. The work has a comprehensive character and tries to take into consideration all causes of sickness and health (the so-called six non-natural causes) with their variations, while the bulk of the book deals with foodstuffs.

## DESIDERATA

It goes without saying that all the Syriac texts dealing with medicine deserve to be studied and edited. However, any comprehensive plan appears to be premature, as we do not know exactly which texts are extant. Therefore, one of the most urgent tasks is the preparation of a comprehensive inventory of all extant medical works and their manuscript copies. The pioneer contribution of Rainer Degen, who once set out to list all the texts and manuscript witnesses (Degen 1972), is outdated and needs to be revised. There has never been a better moment for compiling such an inventory because, thanks to digitalisation campaigns (for example, the multiple imaging projects run by the Hill Museum & Manuscript Library in different parts of the Middle East), thousands of previously unstudied manuscripts have become available in recent years that had previously been closed off to researchers. The sheer number of manuscripts can, however, be illusory. Among thousands of new manuscripts, texts with secular content are always exceptionally rare (e.g. Kessel 2017b).

The presence of medical texts hidden beneath palimpsests was known to scholars already in the nineteenth century (for example, in the British Library, Add. 14486, 14490 and 17127), but it is only very recently that the development of multi-spectral imaging



technologies has begun to be applied to such cultural artefacts. The ongoing ‘Syriac Galen Palimpsest Project’ will hopefully provide a powerful impetus for the study of other medical palimpsests, the number of which known to us is growing thanks to digitisation projects (a previously unknown pharmacological fragment was recently identified by the author in one palimpsest preserved at the monastery of St Catherine, Sinai).

Another important direction for research is a study of quotations from the Syriac medical sources as found in Arabic medical treatises. Such quotations constitute unique evidence for otherwise lost works. Thus, for example, the Syriac quotations in the *Comprehensive Book* of al-Rāzī have been recently gathered, compiled and translated by Oliver Kahl (2015). Although the authorities al-Rāzī relied upon have long been known, this is the first time that the Syriac as well as the Persian and Sanskrit sources have become conveniently available. Other Arabic medical sources obviously deserve to be explored in a similar way. Additionally, prosopographical evidence about translators preserved in Arabic historiographical works, among which *The Best Accounts of the Classes of Physicians* of Ibn Abī Uṣāibi‘a (d. 1270) is the most prominent, likewise needs to be explored thoroughly and critically (for a survey of the principal translators see Overwien 2014).

Arabic translations often assert that they are based not directly on Greek originals but rather on Syriac intermediaries. Due to a lack of comparative material, scholars usually prefer to remain cautious and to doubt such statements. With more Syriac medical material to hand, it ought to become feasible to clarify the role played by the Syriac translations in the production of the Arabic ones. No small amount of confusion surrounds the so-called *Alexandrian summaries* of Galen’s works preserved in Arabic. The question about their origin is not yet settled. And the two main possibilities (either that it was first produced in Greek and then translated into Arabic, or that it was prepared originally in Arabic) have now become entangled with the identified presence of some Syriac elements and parallels (see, for instance, Bos and Langermann 2015).

Next, one cannot achieve any appropriate degree of comprehension of a scientific work unless there is a clear understanding of the specialised vocabulary. Although some lexicographic research on Syriac pharmacological vocabulary has been done (Bhayro 2005; Gignoux 2011), the domains of anatomy, nosology, and therapy lie untapped (see Ford 2002 as a sample of the difficulties that such a study can present).

The proliferation of the medical sciences in the Syriac milieu, as well as the deep appreciation in which they are held by non-specialists, may be traced in texts that do not themselves deal specifically with medical issues (see the studies of alchemical texts in Martelli 2010 and Martelli 2017). In this respect Syriac lexicographic treatises deserve the most urgent attention (see, for instance, a ground-breaking study of the *Lexicon* of Bar Bahlūl in Pormann 2004a and now also Barry 2018).

Based on the research carried out thus far, it is becoming increasingly clear that Syriac medicine cannot be considered in isolation. Rather it is necessary to contextualise it while exploring its relationship to a number of adjacent medical traditions, such as the Alexandrian, Persian, and Islamic. It is through detailed comparative philological, historical, and sociological study that we shall be able to appreciate the actual contribution of generations of Syriac medical scholars and physicians. All in all, the history of Syriac medicine is yet to be written, and we may only guess what a proper study will bring about. What holds true is that the history of Syriac medicine belongs firmly within the more general history of science and medicine, even though a chapter about it can at present only be roughly mapped out.



**Figure 26.4** *Book on the Characteristics of Animals* (BL Or. 2784, f.2v). The contents of the breviary derive from the works of pseudo-Aristotle and 'Ubaydallāh ibn Gibril ibn 'Ubaydallāh ibn Bokhtīshū' (d. 1058) who is tentatively to be identified as the individual depicted

Source: © The British Library Board

## NOTE

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