

---

# The Routledge Handbook of the Senses in the Ancient Near East

*Edited by Kiersten Neumann and Allison Thomason*

First published 2022

ISBN: 978-0-367-23528-4 (hbk)

ISBN: 978-1-032-06566-3 (pbk)

ISBN: 978-0-429-28020-7 (ebk)

20

## **The smells of eternity**

Aromatic oils and resins in the  
Phoenician mortuary record

*Helen Dixon*

---

(CC BY-NC-ND 4.0)

DOI: 10.4324/9780429280207-25

The funder for this chapter is East Carolina University.

 **Routledge**  
Taylor & Francis Group  
LONDON AND NEW YORK

# The smells of eternity

## Aromatic oils and resins in the Phoenician mortuary record

*Helen Dixon*

---

### Introduction

Our own scholarly engagement with death in the ancient world is embedded in and intertwined with the objects and iconography of burial—the tomb or grave itself and its embellishments, a variety of grave goods, perhaps the skeletal or cremated remains of the dead. We know rationally that this picture is incomplete, but rarely confront just how inadequate it is: of course the primary experience of an ancient burial for those participating in it would have been sensory and emotional—ancient funerals were body-centred events, enriched by poignant memories, in which those objects that become the whole story for us (e.g., the shape of the sarcophagus, the jewellery on the body), play only a supporting or even minor role for the family members in attendance. Those studies that have attempted in-depth analysis of the experiential elements of the ancient Mediterranean funeral or burial event might focus on the sounds of professional mourners or funeral musicians (e.g., Garcia-Ventura and López-Bertran 2013) on the one hand, or grave-side feasting on the other, exploring commensality and the last shared meal with loved ones (e.g., Hamilakis 1998; López-Bertran 2019: 148–149). Sight and touch within an ancient burial are perhaps more self-evident experiences to contemporary academics, while sound and taste provide more vivid, if uncomfortable, texture to our narratives. But exploring the smells of death and burial likely strikes many readers as a crude or even repulsive subject.

With other scholars working in this marginalised arena (e.g., Classen et al. 1994; Skeates 2010; Avery 2013), I argue that as with most deeply held memories, a tapestry of smells—some unintended and some curated or added—likely formed a significant core component of the experience of burial in the first-millennium ancient Mediterranean world. To investigate this notion in more detail, this study surveys the aromatic substances associated with burial and preservation of the dead in the Phoenician<sup>1</sup> city states of the Iron Age central coastal Levant (modern coastal Syria, Lebanon, and northern Israel/Palestine), focusing on the second half of the first millennium BCE, from the Iron Age III or Persian period forward. A review of archaeological and textual evidence, along with comparanda and context from the wider Mediterranean world, will be provided to establish the range of smells and substances that were associated with mortuary practice at this time. It is particularly notable that the oleo-resins (referring to plant resin held in solution with oil, or a particularly oily resin) in use in the burial record overlap to some

degree with aromatics used in everyday life—in perfumes, religious practice, and other uses of scented oils.

## Death and the sense of smell

A fuller investigation of sensory experience in the ancient Mediterranean world supports not only a more accurate narrative of the events and rituals of the past, but also enhances our ability to visualise life in other times and places. One of the more compelling reconstructions of the experience of a tomb might be Hamilakis' narration (2013a: 132, 134), inviting the reader to enter a tholos tomb from Bronze Age Crete:

A dead person is carried to a circular, stone-built, most probably vaulted tholos tomb from a nearby village, along with objects, some belonging—or perhaps relating—to the dead (sealstones, figurines, stone vases), many—perhaps most—brought especially for the funerary ceremonies. As you enter the dark, humid spaces of the tomb through the only opening (its small and low entrance), in some cases having to crawl in and even pull the corpse from inside, you are in a different world. You are disoriented, but only temporarily. Darkness, lack of space for movement, and, above all perhaps, the strong odour of decomposing flesh, amplified by the enclosed, hemispherical space, transports you to a realm both spatially and temporally distinct, and markedly different from that of the everyday. Yet, you have been here before. The smell is familiar; the flickering light of the lamp aids the recognition of the micro-regions of the tomb. In some cases, you can even recognize distinctive objects, peculiar stone and clay vessels, and the odd sealstone, metal dagger, or marble figuring. You recall persons long dead, you start making associations; you connect bones, skulls, and objects with times, places, living humans.

The picture Hamilakis paints is vivid—using the second-person direct address, and mentioning no other living beings, the narration creates the feeling of being in a video game, being able to explore the space and objects unencumbered by ritual events. Smell is evoked as a significant component of the experience, but only in terms of the smell of the body itself—“the strong odour of decomposing flesh”—and the meaning that particular smell would have for someone who would have attended many burial events before. While the scent of the dead body is not described as simply repulsive or “bad,” it is evoked as a single-note mnemonic perfume, the only notable smell in the space.

Certainly, two specific compounds known as cadaverine ( $\text{H}_2\text{N}[\text{CH}_2]_5\text{NH}_2$ ) and putrescine ( $\text{H}_2\text{N}[\text{CH}_2]_4\text{NH}_2$ ) mark the olfactory landscape wherever dead humans or animals can be found, whether that be at funerals or a butcher's shop (Bartosiewicz 2003: 186). The common human reaction to be revulsed by these compounds is thought to have developed through selection pressures to protect humans from certain diseases (Bartosiewicz 2003: 175–176), and perhaps to have motivated codified religious taboos surrounding corpse handling. To a contemporary audience who may have had little experience of these smells, their presence likely forms one of the most notable details of the imagining, and it is understandably exoticised in some descriptions of burial. But understanding the meaning of these and other smells present during burial requires a more nuanced picture of smell in the ancient Mediterranean world. While the semantics of some smell reactions could be said to be evolutionarily hard-wired, many others are culturally relative: what constitutes desirable scents, but also what smells are appropriate for what occasions, and what other data can be conveyed through specific olfactory features (Bartosiewicz 2003: 175–176).<sup>2</sup> Even a seemingly straightforward application of scent, like perfuming the body,

can be motivated by several different desires, and culturally constrained in terms of what smells are expected according to gender norms, when this type of adornment is appropriate, and for what audiences (Classen et al. 1994: 126–129).

What little we know about the meaning of scents in the ancient world indicates that the sense of smell was one that carried valuable information—about what was good and bad, ripe and rotten, even true or false, pure or dangerous. Smell is, after all, the only way to know many foods and liquids have begun to rot or ferment. Throughout the Mediterranean, and particularly in religious contexts, smell should be recognised as “a medium that both physicalizes and de-physicalizes,” as Clements (2014: 46–47) put it, “bringing with it an indeterminacy that transcends boundaries, permeates bodily limits, and effects a unity of perceiver and perceived, a taking ‘over by otherness’, or an atmosphere of something shared” (see also Classen 1993: 20–21; 2006). Texts within the Hebrew Bible emphasise the smell of sacrifice as the force that attracts divine attention, and the uniqueness of scent and smoke in their ability to travel from earth to the heavens. An array of imagery associated with Yahweh’s nose, power to smell out intention, and other olfactory associations are at play in the Hebrew texts, often obscured by modern English translations—an obfuscation that may have begun already in the third century BCE Septuagint translation (Ritchie 2000).<sup>3</sup> The extensive long-distance trade in incense from the beginnings of urban habitation speaks for itself in terms of the importance of scent as a dimension of marking the sacred.

The intentional inclusion of desirable scents in religious ritual might be thought to attract and invite deities and worshippers alike. A secondary benefit of strong smells during a religious ritual is their universal accessibility to any participant or attendee; in a large public ceremony with extensive crowds, being able to see or hear the proceedings will be limited by one’s location and faculties, while being able to smell the incense or burning of a sacrifice may be possible for anyone in attendance.

Another complicating dimension of the human sense of smell is that it is attenuated to changes in scent—scents are processed relative to a baseline that adjusts according to one’s surroundings. When the human sense of smell is compared to that of dogs, for example, this is the central distinction: dogs continuously process scent information, while our sense of smell is more selective. We can quickly become accustomed to strong, complex, and even initially disgusting scentscapes, as workers in industrial-scale animal farming can attest (Bartosiewicz 2003: 188). As Bartosiewicz (2003: 188) writes, “it is worth distinguishing between acute or dynamic smells (that carry new information and influence human decisions) and chronic or static smells (a constant and unavoidable part of the cultural landscape).” Rather than thinking in terms of where perfume, incense, or scented oils are or are not in play, we may do better to think about the vast variation in these substances that would have been present in the olfactory landscapes we are exploring.<sup>4</sup>

With these preliminary observations in mind, I would like to explore smelling and scents in one specific cultural context within the first millennium BCE Mediterranean world, and through the evidence from burials as one type of religious ritual.

## The Phoenician evidence

The evidence for scents relating to death and burial in the central coastal Levant during the second half of the first millennium BCE could be characterised as tantalisingly slim. But the inscriptions, artefacts, and burials that contain information about scents used when burying the dead may be contextualised through a complex web of data from diverse bodies of evidence. While scholarly attention to this data has long been minimal (notable exceptions include Carreras Rossell’s 2010

study on unguents, cosmetics, and perfumes in the Phoenician and Punic culture sphere), impressive preliminary work by López-Bertran (2019: 147–149) on what she characterises as “trees, perfumes and flavours: taste and smell in funerary rites” went far in demonstrating the viability of explorations of these under-studied senses in the archaeology of the central coastal Levant. Here, I assemble linguistic and textual data in conjunction with material culture that indicates the range of aromatics in use during burial in the second half of the first millennium BCE.

### *Smelling in Phoenician?*

First, the problem of the paucity of Phoenician-language texts (and therefore linguistic data) should be addressed. While thousands of inscriptions from the first millennium BCE in various dialects of Phoenician and Punic have come to light, they constitute a skewed corpus, mostly consisting of personal names and fuller mortuary or votive inscriptions that are highly formulaic in nature. Some of the most intensely debated issues in the reconstruction of Phoenician history and religion (e.g., the problem of Punic child sacrifice and the use of the so-called *tophet* sites) arise from the ambiguous nature of recurring noun phrases within this corpus. The relative lack of long texts or inscriptions in the birthplace of the *'abjad* has long been explained by the reliance on organic writing media that has been lost to the humid and unfavourable coastal conditions of the region. But recent scholarship has begun to explore the idea of an intentional avoidance of lengthy, centralised text production within these city states in the Iron Age II–III periods (c. 1000–300 BCE; Quinn 2018). In any event, our extant Phoenician vocabulary is limited both in scale and in contextual depth.

Handicapped as we are in surveying Phoenician thinking and writing about scent, the potential or circumstantial evidence we do have is intriguing. My best guess is that the Phoenician verb “to smell” was related to the classical Hebrew hollow root R-Ḥ. It is perhaps not surprising that in that Northwest Semitic language, the concept of “scent” is related to that of “breath” or even “soul” (Hebrew *nah*), since smelling requires the movement of air through the nasal passages (where molecules are absorbed into the nasal mucosa, in which olfactory neurons are embedded).

One candidate for preservation of this R-Ḥ root in Phoenician or Punic might be found in the obscure title of a cultic functionary, which has been heavily debated among scholars for more than 100 years. Sixteen Phoenician, Punic, or Neo-Punic inscriptions (Appendix A, nos. 1–16) dated from the fourth through second centuries BCE attest this title: *mqm 'lm mtrh 'štrny*, in which the third word-unit (*mtrh*, as commonly divided<sup>5</sup>) may (or may not!) relate to a Phoenician verb R-Ḥ, “to smell.” Another 12 inscriptions contain the first two elements of this title (*mqm 'lm*), either with no modifier (Appendix A, nos. 17–25<sup>6</sup>) or, in three examples (nos. 27–29), with another ambiguous and debated term, making clarification through semantic parallels difficult. In fact, no part of this title has gone without linguistic debate. A selective summary of interpretive proposals is given in Table 20.1.

Like many other noun phrases in the Phoenician and Punic corpora, this title only occurs in epigraphic contexts, modifying male personal names in votive or funerary context; the cultic title does not appear in any narrative texts that might offer clues as to what this religious office entailed. Nearly all the interpretations conclude that *mqm* should be understood as deriving from the hollow root Q-M, with a semantic range including “to rise,” “to establish,” or “to go up.” Similarly, most scholars agree that *'lm* likely refers to one or more deities, although the nature of this construct phrase (and its relationship with the next phrase or concept) is less clear. The full collection of 28 inscriptions containing the phrase *mqm 'lm* indicates that this initial *mqm 'lm* unit can stand alone or with at least three modifying clauses, probably each indicating different cultic officials.<sup>7</sup>

Table 20.1 Select interpretations of the Phoenician, Punic, and Neo-Punic title *mqm 'lm mtrḥ 'štrny*

Source	<i>mqm 'lm</i>	<i>mtrḥ 'štrny</i>
Berger 1912	The <i>meqim</i> [~ <i>antistes</i> , a title associated with the cult of Mithras] of the god	Mitraḥastarni = Mithra [husband] of Astronoë [an androgynous deity]
Honeyman 1940	Establisher of gods/ordainer of things religious [~επιμελητής]	bridegroom/consort/husband/spouse of Aštar of Nineveh
Hoftijzer and Jongeling 1995: II, 710, 1002–1003	The one who raises the god	[uncertain cultic function]
Krahmalkov 2000	Awakener of the dead [ <i>mt</i> ] god	by the scent of 'štrny [likely a version of the goddess Astarte/Astronoë]
Zamora 2017 <sup>8</sup>	The raiser/resurrected of the deity	<i>astroneal</i> husband [referring to the goddess Astarte/Astronoë]

The final column of Table 20.1 shows that scholarly interpretation of *mtrḥ 'štrny* has ranged from a deity name in apposition with 'lm, a construct phrase in apposition to the (mortal) *mqm 'lm*, or an adverbial phrase indicating means (and referring to a specific ritual role). All see 'štrny as derived from the name of a goddess; many scholars assume this spelling indicates it should be vocalised as the Greek Astronoë, attested in the Late Antique writings of Damascius (458–550 CE). In fragment 348 of his *Life of Isidore*, Damascius tells the story of Astronoë, a Phoenician goddess, who resurrects and divinises the mortal Asklepios (or Asklepios–Herakles, often understood as Ešmun–Milqart; Krahmalkov 2000: 309, 390). Although this Greek text (preserved only in fragments) is quite late, it may reinforce the religious or mythic context for the ritual specialist in broad outline.

This leaves us with the potentially relevant term in question: *mtrḥ*. Zamora (2017) adopts Honeyman's suggestion that the term should be understood as derived from the root TRḤ (otherwise unattested in Phoenician, Punic, or classical Hebrew, but derived from Akkadian *terḥatu*, “to marry,” and appearing in Ugaritic) and indicating that the person bearing the title *mqm 'lm* is to be understood as the ritual husband or consort of the goddess. This is appealing to those interested in finding support for Near Eastern rituals that involved sacred marriages, or symbolic sexual congress with deities. But Krahmalkov's (2000: 309) translation, largely overlooked, deserves revisiting.

Krahmalkov proposed that this male cultic functionary should be understood as something like the “awakener of the dead god with the scent of [the goddess] 'štrny.” Evoking an unnamed dying-and-rising god, this interpretation parses the ritual title as *mqm 'lm mt rḥ 'štrny*, with *m[w]t* modifying 'lm: the “dead god.” The idea that a god could be awoken from death (or resurrected) with the scent of another is intriguing, and perhaps a bit uncomfortable for the modern reader. But I welcome this proposal as a corrective to the tendency in Near Eastern scholarship to avoid, overlook, or euphemise sensory experience (especially that connected with smell) in the ancient sources we seek to understand.

Ritchie (2000) offers an in-depth exploration of this phenomenon in English-language translation of the Hebrew Bible; his work provides an illuminating discussion of how the root R-Ḥ or *ryḥ*, when used in the Hebrew biblical texts to refer to Yahweh or human response to the deity, likely referred to scent or smelling in all cases, but over time was treated as metaphorical or edited out entirely through generations of translators uncomfortable with anthropomorphisms. He points out that while phrasing like “I [Yahweh] will not smell in your solemn assemblies”

(Amos 5:21) was present in the 1611 English King James Version, by the nineteenth century English-language translators grew uncomfortable with the implication that Yahweh had a nose and that smell carried weight or information valuable in the religious sphere (with some notable exceptions; Ritchie 2000: 70). This is what Ritchie (2000: 71) calls the “olfaction avoidance syndrome,” a phenomenon he traces through Western scholarship drawing support from the observations of critical scholars like Foucault and Said.<sup>9</sup>

Along these lines, Krahmalkov also suggests translating the Phoenician verb *srḥ* in the Piel/D-Stem (attested only once, in *KAI* 10, the Yehawmilk stele) as “to make stink” a sensual, concrete rendering of “to render offensive,” as opposed to the more common translation “to destroy.”<sup>10</sup> Through this interpretive lens, curse formulae threaten disruptors of tombs and votive dedications with being made smelly by divine agents! Similar expressions of sensorial disgust are well documented in east Semitic dialects (de Zorzi 2019), and Ritchie’s point about the modern scholar’s resistance to references to olfaction is still operative. In rethinking the Phoenician linguistic evidence for vocabulary related to the root R-Ḥ, it seems possible that the inhabitants of the central coastal Levant, like their southern neighbours, thought of scent as deeply connected to the divine realm. Smell was a vector that could (possibly) resurrect the divine, and mark mere mortals as criminal, ripe for exile from their human communities (see also Chapter 29, this volume).

Whether or not you are convinced by these tenuous linguistic hypotheses, we are on surer footing with Phoenician epigraphic references to the odiferous substances themselves. A handful of extant Phoenician or Punic vocabulary words begin to outline for us the manufacture of, trade in, and use of fragrant substances:

- *lbnh* (attested in the construct form *lbnṯ*) = frankincense (Tomback 1978: 156; Krahmalkov 2000: 253); incense altar (Krahmalkov 2000: 253).
- *qtrt* = incense (Tomback 1978: 287–288; Krahmalkov 2000: 426); perfume (Hoftijzer and Jongeling 1995: II, 1007); *mkr ’qtrt* = incense seller (Tomback 1978: 177; Krahmalkov 2000: 282).
- *rqḥ* (attested in the noun forms *hrqḥ*, *rq’*, and *mrqḥ*) = perfumer (Tomback 1978: 306–307; Hoftijzer and Jongeling 1995: II, 1083); ointment (Tomback 1978: 306–307).
- *šmn* = oil (Tomback 1978: 323; Hoftijzer and Jongeling 1995: II, 1163; Krahmalkov 2000: 470).

These four terms are those well agreed upon, though others have been proposed (e.g., Delcor 1983; Février 1955). Still, these terms do not provide clear- or narrow-enough contexts to aid our understanding of the use of aromatic substances during burial or connected in other ways with the treatment of the dead. To investigate how specific resins or other fragrant materials were used to prepare dead bodies or adorn the tomb, we must turn to a fuller investigation of the available textual data.

### *Buried in myrrh and bdellium*

The most significant Phoenician inscription for our purposes refers explicitly to the use of scented substances in the burial of an elite person, that of the late sixth- to early fifth-century BCE unknown king of Byblos (Figure 20.1).<sup>11</sup> The inscription was found on a fragment of a (likely rectangular) marble sarcophagus; only a 56 by 43 centimetres marble fragment survives, found reused in the courtyard of the crusader castle at Byblos and preserved in the Beirut National Museum (inv. no. 26780). Traces of seven lines of Phoenician characters are visible, but

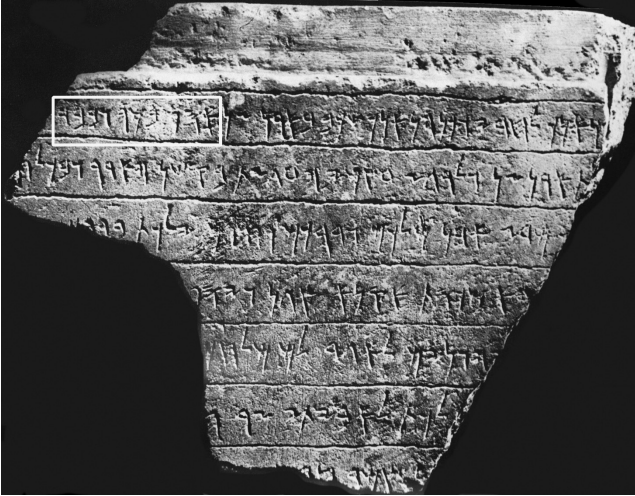


Figure 20.1 Inscribed marble sarcophagus fragment of an unknown king of Byblos, with a box indicating the phrase “prepared in myrrh and bdellium,” describing the burial preparations for the king’s body). Beirut National Museum (26780).

Source: After Starcky 1969: pl. 1.

the first three lines are the most legible. Cross’ 1979 transcription of these lines of the inscription follows (emphasis added):

- i. [’nk (PN and titulary) škb b’rn] zn ’nk lhdy wkn hn ’nk škb b’rn zn **’sp bmr wbdll[h**
- ii. w’m kl ’dm ybqš lpth ’lt ’rn zn wrgz ‘šmy h’gzt bqšn h’dr wkl dr [bn ’lm
- iii. lk prs] wmdy ’dn mlkm wdrkm {wdrkm} ylkt brbm[

Informed by previous translators’ discussions (Starcky 1969; Cross 1979: 41), I read:

- i. I [PN and titulary] lie in this sarcophagus—I alone, here! Behold, I lie in this sarcophagus, **prepared in myrrh and bdellium** [...].
- ii. [...] and if anyone tries to open this sarcophagus or to disturb my remaining bones, find him, [Ba’al] ’Addir, and with all the assembly of the gods [...].
- iii. [...] king of the Persians and the Medes, lord of kingdoms and dominions {and dominions}. I walked among the great [...].

This mortuary inscription, written in the first person from the perspective of the deceased, specifies that the body of the unnamed king was prepared through some type of treatment with two gum resins, myrrh and bdellium. The specific significance of these aromatic products will be explored below, but the fact that they are articulated by name is already notable. Whoever commissioned this inscription wished to emphasise the importance of leaving the burial undisturbed and underscores the lack of valuable burial goods in the sarcophagus (“I alone”) by way of deterrent. This context is clear in light of other Phoenician-language royal inscriptions from the Iron Age III period (c. 500–300 BCE) Levant, which emphasise leaving the burial undisturbed, and call on the gods to ensure punishment for anyone who opens the tomb.<sup>12</sup> But what does it mean to be “prepared in myrrh and bdellium”?



The Phoenician phrase *'sp b-* is likely being used here in an idiomatic sense specific to human remains. While *'sp* is often translated as “gathered” (see Hoftijzer and Jongeling 1995: I, 89 for the inscriptional corpus), it is clear from later Punic contexts as well as classical Hebrew comparanda (e.g., Jer. 8:2 and 25:33) that the verb is used of bones and corpses that are being collected, arranged, or prepared for burial (Krahmalkov 2000: 66; Brown 1906: 62; thus, Starcky 1969: 262). Since both myrrh and bdellium were used in perfumes, medicines, and as incense (see below), the process translated here as being “prepared in” these two ingredients for burial could be interpreted in several different ways:

- Oils containing these resins might have been used to soak cloth strips or a shroud applied to the body.
- Oils containing these resins might have been poured directly over the body.
- Thicker unguents containing these resins might have been rubbed into or layered on top of the body.
- The solid resins (in droplets or chunks) might have been poured over the body or included with it inside the sarcophagus.
- The solid resins—or oils, unguents, or poultices containing them—might have been stuffed inside the body cavities.
- Smoke from the burned resins could have been released over the body or perhaps trapped inside the sarcophagus.<sup>13</sup>

There is literary support from classical authors for several of these methods being in use in the ancient Mediterranean, though we cannot confirm what preparation this king of Byblos underwent without any physical remains. Still, it seems likely that the two resins were named in the text of the inscription (a) because of their high value and recognisable status as expensive aromatics, (b) because of their appropriateness in a mortuary setting,<sup>14</sup> and possibly (c) because they were thought to aid the preservation of the body, in addition to enhancing its smell.

Since the late nineteenth-century excavation of the royal necropolis at Sidon, the possibility that royal or elite dead from culturally Phoenician city-states were mummified has been an intriguing hypothesis. Early accounts described sarcophagi opened to reveal perfectly preserved bodies, which unfortunately quickly decayed upon exposure to the air; the body of King Tabnit of Sidon was a notable exception in that some soft tissue still survives on the underside of the remains, on display in Istanbul (for the initial accounts, see Hamdi Bey and Reinach 1892: 101–103; Torrey 1902: 168–169; Jessup 1910: 507). Indirect evidence of mummification (including the use of linen wrappings and unknown resinous substances) was also reported in more recent excavations at Arwad (Elayi and Haykal 1996: 121). Finally, a mummified body wrapped in linen was excavated in the modern excavations at the Sidon royal tombs (Ghadban 1998: 147). While it is now clear that the people of the first-millennium BCE central coastal Levant did not perform elaborate mummification as we might expect based on Egyptian exemplars (no removal of organs or filling of body cavities as far as we know), it seems probable that the Sidonian royal family practised some form of mummification (Sader 2019: 228–229), and it is possible that some components of elite inhumation elsewhere in the central coastal Levant (and its diaspora communities) also involved behaviours intended to conserve, protect, and even preserve the body of the dead exactly as it had been arranged in the burial vessel.

In practice, it is likely that corpses were rubbed with scented oil as part of preparing the body before burial, as they were in other Mediterranean contexts. Other oleo-resins may have

been added over top or even used to fill the sarcophagus as funds allowed. Resins or other oily substances have often been mentioned in reports of Phoenician and Punic sarcophagi, often in conjunction with the remains of textiles where the substances can be especially notable, though testing has been limited (e.g., in the case the fifth-century BCE anthropoid sarcophagi from Cadiz containing the burial of a woman; Alfero Giner 1983: 286, n. 9).

If the primary purpose of the myrrh and bdellium used in the burial of the unknown king from Byblos was preservative, a secondary effect would of course have been their effect upon the senses of the living. The scents coming from the body or sarcophagus of an inhumation burial would have mingled with many other smells during the funeral procession and burial act. As López-Bertran (2019: 148) put it, “the material culture connected to smell features prominently in all cemeteries: incense-burners, perfume bottles, bowls, oil-lamps and alabastra suggest that ‘odorous rituals’ were held in cemeteries and inside the funerary chambers.” Phoenician mortuary practices are famously diverse: adult members of society could be inhumed in a variety of settings, cremated in whole or in part, and it seems (e.g., at the cemetery at Khaldeh) both inhumed and cremated individuals could be buried in the same tomb (Dixon 2013 495–519). One element uniting these varied burial practices is a concern for the olfactory landscape, evinced by the use of oleo-resins in the treatment of inhumed bodies as discussed above, aromatic woods among more practical fuel choices on funeral pyres (López-Bertran 2019: 147–148, and see below), and the ubiquity of small vessels with narrow necks or mouths in all types of burials—the unguentaria, alabastra, amphoriskoi, and other juglets thought to contain scented oils or unguents (Carreras Rossell 2010).

Other ephemeral elements are more difficult to reconstruct; incense was probably used as part of funeral processions, and we often find incense altars inside elite rock-cut or built tombs indicating these smells may have continued throughout rituals conducted at the final resting place of the dead. Further evidence for the use of incense includes the small stone altars from the Palermo cemetery or depicted on stelae (Spatafora 2010: 30), as well as one particularly notable double-plate incense burner from the sixth-century BCE so-called bishop’s house monumental tomb in Cadiz (López-Bertran 2019: 148).<sup>15</sup>

The specific oleo-resins and other aromatics used in burial contexts in the central coastal Levant were likely a mix of locally available and imported substances. There are explicit references to Phoenician merchants involved in the spice trade in later periods. For example, Arrian, writing in the second century CE, mentions Phoenicians who accompany Alexander the Great to Gadosia/Balouchistan (in modern Iran, Afghanistan, and Pakistan) for myrrh and spikenard (*Anabasis* 6.22). Archaeological evidence confirms that the inhabitants of the central coastal Levant were involved in the raw material acquisition, production, and trade of perfumes and aromatics in the Hellenistic and Roman periods (Frangié-Joly 2016). On the one hand, these materials could be construed as widely available throughout the Mediterranean world—they often appear as ingredients in perfumes, are mentioned in literary and scientific texts, and are well known by reputation in our available sources. On the other hand, current research indicates that these resins, oils, and aromatic woods would have been highly prized and very expensive materials in all periods. Royalty, temples, and religious cults throughout the ancient Mediterranean would have provided a steady and competitive market for the high-end raw materials, which were accessible only to those who could afford them, and therefore likely reserved for important occasions. Finally, it is notable that within the full repertoire of expensive smells, plants, resins, and oils, only a handful of these substances seem to have been selected by the inhabitants of the central Levantine coast for use in burial contexts, as far as our evidence currently suggests.

*Aromatics in Phoenician mortuary contexts*

Myrrh (*Commiphora myrrha*): Phoenician *mr*; Akkadian *murru*; Hebrew *môr*; Greek *σμύρνα*

A highly prized and expensive resin, myrrh has a woody, musky scent that to the modern palette can smell medicinal. It is possible that even its etymology reflects a slightly “bitter” (e.g., Hbr *mr*) perception among its earliest harvesters and traders.

The myrrh and bdellium mentioned on the late sixth- or early fifth-century BCE inscribed sarcophagus of the unknown king from Byblos (Figure 20.1) are resins from closely related species: “Twenty-nine species of scraggy, thorny trees of the genus *Commiphora* (formerly *Balsamodendron*), native to East Africa, Arabia and India produce oleo-gum-resins known in antiquity (and today) by the names balm, balsam, bdellium, myrrh and *staktê*” (van Alfen 2002: 37). The myrrh in question probably comes from the *Commiphora gileadensis* species, known to have been grown in the southern Levant. Unfortunately, this is the only appearance of the term in the Phoenician or Punic corpus, though it appears a handful of times in other Northwest Semitic inscriptions (Hoftijzer and Jongeling 1995: II, 682). The use of myrrh in this elite burial from the Levant is perhaps replicated in the contemporaneous tombs at Carthage, where remains of myrrh resin were found (Bénichou-Safar 1982: 270–271).

If we broaden our search to Greek historiographic and botanical works, more context surrounding its mortuary uses is available. Myrrh appears in several accounts as connected with the preparation of the human body for burial. Herodotus (c. 484–425 BCE), whose account of Egyptian mummification methods has proved generally consistent with even Predynastic mummy preparations (see Jones et al. 2014), describes the body of the Egyptian deceased undergoing the most expensive form of preservation as being filled with ground myrrh (*σμύρνα*) and cassia (*κάσια*, along with “other spices, except frankincense”) before it spends 70 days desiccating (*Historiae* II.86.5). Four hundred years after Herodotus, Diodorus Siculus (writing c. 60–30 BCE) also discusses Egyptian mummification, mentioning cedar oil (*κεδρία*), myrrh (*σμύρνα*), cinnamon (*κιννάμωμον*), and other spices as used to prepare the body over the course of thirty days (*Bibliotheca Historica* I.91.5). Closer to home but even later chronologically, the author of the gospel of John (John 19:39–40; dated c. 90–110 CE) also mentions myrrh (actually *μίγμα σμύρνης καὶ ἄλως*, “a mixture of myrrh and aloes”) as being used in conjunction with linen to wrap the body of Jesus after his crucifixion.

Of course, myrrh was also a well-known ingredient in perfumes. Esther 2:12 mentions a (perhaps exaggerated) treatment for women at the Achaemenid royal court that involved “six months with oil of myrrh and six with perfumes and cosmetics” (NRSV).<sup>16</sup> The *stakte* or *stacte* mentioned above was a Hellenistic and Roman myrrh-based perfume of the highest quality, prized by Seleucid kings and mentioned by several ancient historians (Frangié-Joly 2016: 38–40). Theophrastus (c. 371–287 BCE) discusses around 20 notable fragrant plants or compounds in his work *On Odours*. Approximately half of these are native to the Mediterranean, with the other half from South and East Asia. Myrrh is among those given the most attention in the work, alongside frankincense, balsam, and two types of cinnamon. Of particular note is his description of the production of myrrh as a scented oil (*de Odoribus* 14–35), indicating its circulation in solid, liquid, and combustible forms. Finally, Roman and Late Antique sources indicate that myrrh was among the 20 most costly aromatics available; according to the Diocletian edict on maximum prices (301 CE), the only aromatic more valuable was Saffron (Zohar and Lev 2013:16).<sup>17</sup>

**Bdellium or bdellium (*Commiphora mukul*):** Phoenician *bdlh*; Akkadian *guhlu*<sup>18</sup> / *budulhu*; Hebrew *bedolah*; Greek βδέλλιον<sup>19</sup>

Bdellium was also used in perfumes, medicines, and as incense throughout the Hellenistic and Roman periods. As mentioned above, bdellium or guggul is an aromatic gum resin very similar to myrrh, probably from the *Commiphora wightii* tree.<sup>20</sup> The Hebrew term *bedolah* is used in Genesis 2:12 (LXX: ἄνθραξ) and Numbers 11:7, where manna is compared to bdellium for somewhat opaque reasons.<sup>21</sup> Like myrrh, bdellium resin was one of the most expensive aromatics available in the Roman and Late Antique periods, though Diocletian's edict (301 CE) prices it at 11–175 dinar per libra (to myrrh's 600 dinar per libra; Zohar and Lev 2013: 16).

While it might be tempting to look at bdellium as a kind of off-brand or imitative myrrh, the fact that it is named alongside its cousin in the above-mentioned sixth- or fifth-century BCE Phoenician mortuary inscription indicates that the resin was valuable in its own right in the central coastal Levant during the mid-first millennium BCE. Their smells are quite distinct; bdellium can be described both as sweeter and stronger than the fragrance of myrrh (sometimes even as peppery).

**Cedar (*Cedrus libani*):** Phoenician ʿš (?), Akkadian *erēnu*, Hebrew ʿeren/ʿerez, Greek κέδρος

Though not explicitly referenced in any extant mortuary inscription from the central coastal Levant, cedar in various preparations may well have been used in conjunction with burial. Of course, cedar trees have long been associated with Phoenician culture and Lebanon in particular, and were celebrated throughout the ancient Mediterranean world for their sacred significance (Brown 1969; Chaney and Basbous 1978).<sup>22</sup> Both cedar oil and resin have long been produced in the central coastal Levant, and were used for a variety of purposes.<sup>23</sup>

Several ancient authors mention cedar-derived products as part of embalming or burial in Egypt in the first millennium BCE. As mentioned above, Herodotus' (II.87) discussion of fifth-century BCE Egyptian mummification methods lists specific ingredients used by embalmers, including a passage describing the injection of cedar oil into the body cavity, much like the cedar oil discussed by Diodorus Siculus (*Bibliotheca Historica* 1.91.5). All the ingredients mentioned together in this latter text are described as “such spices as have the faculty not only of preserving it for a long time but also of giving it a fragrant odour” (Diodorus Siculus 1933: 312–313). Pliny describes Egyptian corpses as being steeped or bathed in *cedrium* or cedar resin to embalm them.<sup>24</sup> Evidence from Late Period (712–323 BCE) Egyptian mummies indicates cedar sawdust was used in the mummification process, validating these Greek literary accounts.<sup>25</sup>

The preservative properties of cedar were noticed outside of Egypt as well. Vitruvius, writing c. 30–15 BCE, discusses both the oil and wood as having this protective quality (Brown 1969: 156; translating *De architectura* 2.9.13):

As resin comes from cypress and pine, from cedar there comes what is called cedar-oil. When objects like books are rubbed with it, they are unharmed by worms and rot. [...] The statue of Diana in the temple of Ephesus is of this kind of wood; also the ceiling beams [*lacunaria*], both there and in other famous temples, are made of it because of its durability.

Pliny's encyclopaedic *Naturalis Historia* offers the fullest treatment of the cedar and its reputation as being able to slow or stop decay, though his account is in part dependent on the work of Vitruvius. Book 13, chapter 11 is devoted to the cedar tree, explicitly connecting some of

its varieties to “Phoenicia.” Pliny adds, “From it is obtained the resin held in the highest favour, while its actual timber lasts for ever, and consequently it has been the regular practice to use it even for making statues of the gods” (Pliny 1945: 128–131). The idea that the cedar’s timber lasts forever might be hyperbole, but the general principle is articulated elsewhere by Pliny (16.218) thus: “broadly speaking it can at all events be said that those woods have the most outstanding durability which have the most agreeable scent” (Pliny 1945: 528–529). Book 24 is devoted to the uses of forest trees, in which sections 17–19 address medical remedies derived from the cedar tree and its pitch or oleo-resin (*cedria*), with a memorable note about its use in burial: “[Cedar] preserves dead bodies uncorrupted by time, but causes living ones to decay—a strange inconsistency, to rob the living of their life and to give a quasi-life to the dead! It also makes clothes decay and kills animal life” (Pliny 1956: 16–17).

### Other aromatic woods

Other aromatic woods have been recovered in both inhumation and cremation burials from the first-millennium BCE central coastal Levant. The burial of the late sixth- to early fifth-century BCE King Tabnit of Sidon in his famous re-inscribed anthropoid sarcophagus (Figure 20.2)<sup>26</sup> saw the king’s mummy or semi-preserved corpse tied down to a wooden plank the length of the body, no doubt intentionally selected for its royal role. Several other sarcophagical burials in the same necropolis produced similar wooden planks, perforated by holes. All these were identified by the nineteenth-century excavators as made from sycamore wood (Hamdy Bey and Reinach 1892: 147).<sup>27</sup> It is unclear on what basis this identification was made, and to my knowledge this has not been confirmed by more recent scholarship.<sup>28</sup> But if these purpose-made wooden corpse platforms were indeed made from sycamore, this term might (even in modern times) refer either to the *Platanus orientalis* or *Ficus sycomorus*, both of which are native to the region, large enough



Figure 20.2 Anthropoid amphibolite sarcophagus of King Tabnit of Sidon (c. 525–475 BCE), containing his mummified remains. Istanbul, Topkapi Palace Archaeological Museum 800.

Source: Image courtesy of Art Resource.

to support a body, and known for their longevity and associations with the afterlife in the ancient world (e.g., Assman 2005: 129, 180).

At the adult cremation cemetery excavated at Tyre al-Bass, cremations seem to have been conducted at an unknown location inside or near the excavated area.<sup>29</sup> Ash from the funeral pyres was then gathered and buried in urns, sometimes accompanied by a small number of burial goods, remnants of a meal, or marked by an inscribed stele. In some cases, burial of these urns was accompanied by small fires set inside the trenches, likely as part of a ritual conducted before closing the grave. Charcoal testing confirmed a broad range of coastal species of wood: the aromatic olive leaves, as well as olive, pine, fig, poplar, and lime branches were found among quick-burning kindling (like reeds and tamarisk) and sustaining, longer-burning woods (white oak and *Celtis australis*; Aubert 2004: 31, 34, 38, 48, 61).

In the Punic sphere, similar phenomena may be posited—charcoal from oak (*Quercus ibex* or *suber*) and juniper (*Juniperus macrocarpa*) were detected among cremation burials at Monte Sirai, Sicily; oak, wild plum, and almond branches at the necropolis in Palermo, Italy; and *Pinus halepensis* and *Prunus domestica* in the necropolis of Puig des Molins, Spain (see bibliography in Guirguis 2011: 3, n. 9).

### Other oleo-resins and scented oils

More evidence from the tombs at Carthage indicates that some bodies (probably of priests or other elites) were subsumed in what have been termed “resin baths,” in one instance forming a smooth-surfaced resinous bubble-filled layer at the bottom of a sarcophagus, encasing the skeletal remains (Bénichou-Safar 1978: 137). Late twentieth-century testing determined these were likely composed primarily of the oleo-resin of the *Pistacia terebinthus*, or Chio terebinth, though some of the resins were probably perfumed with aromatic plants or other additives.

Most scholars agree that perfumed oils were often part of the burial rituals in tombs of the first-millennium central coastal Levant. Olive, sesame, linseed/flax, and almond oils were used as liquid carriers for other scented additives or spices, and animal fat could be used for thicker scented or medicated unguents (Carreras Rossell 2010: 16). Molecular traces of essential oils from aromatic plants such as jasmine<sup>30</sup> were found in sediment tested from a sixth-century BCE monumental tomb in Cadiz (e.g., the so-called “bishop’s house” tomb), suggesting the body was anointed or dressed in scented animal fat and perfumed oil (Domínguez Bella et al. 2011: 317).

Another intriguing later literary source records a mythological mortuary story connected with the central coastal Levant. Plutarch’s retelling or appropriation<sup>31</sup> of the Egyptian myth of Isis and Osiris in *Moralia* (written c. 100 CE) gives a version of Isis’ treatment of a “pillar,” made from wood that had grown from the place where a chest containing Osiris’ body had washed ashore (Plutarch, *Moralia, De Isis et Osiris* 16; 1936: 41–43):

Then the goddess disclosed herself [to the queen of Byblos, Ashtart/Astarte] and asked for the pillar which served to support the roof [of the palace]. She removed it with the greatest ease and cut away the wood of the heather which surrounded the chest [containing Osiris’ corpse]; then, when she had wrapped up the wood in a linen cloth and had poured perfume [μύρον] upon it, she entrusted it to the care of the kings; and even to this day the people of Byblos venerate this wood [ξύλον] which is preserved in the shrine of Isis.<sup>32</sup>

This account is all the more remarkable for our purposes given its setting in Byblos (modern Gbeil, Lebanon), and the fact that it seems to illustrate the treatment of a corpse through the proxy of the wood or chest that encased the body of the god. The treatment of the wood—wrapped

in linen with a perfumed oil or unguent poured over it—offers an intriguing parallel to the Persian-period physical remains discussed above.

Lipids testing and other chemical analysis is our best hope for refining our understanding of the specific aromatic ingredients used in Levantine burials and the larger Phoenician and Punic cultural beliefs about what smells were appropriate for sending the dead into their next phase of existence. Studies of Roman period cosmetics or perfumes (e.g., Perez-Arantegui et al. 1996; Ribechini et al. 2008) helped develop many of the technologies useful in testing fatty acids, residues, and other chemical traces from ceramic, stone, and glass juglets or bottles, as well as larger samples from sarcophagi as they become available.<sup>33</sup>

### Smells of life, smells of death

So, what were the “smells of eternity” in the first-millennium BCE central coastal Levant? When I first presented parts of this research at the 2016 Annual Meeting of the American Society of Overseas Research (ASOR), I tried to evoke these perfumes of the dead by passing bottles containing towels soaked in the essential oils of myrrh and bdellium around the room, for audience members to smell. Of course, smelling each in succession, isolated from other smells, was reductive and disjointed (fun for a conference, but hardly a sensory reconstruction). I learned subsequently that it is possible to purchase synthetic cadaverine and putrescine, which, when layered with the aromatic resin scents, might have made a more accurate olfactory landscape to simulate the smell when anointing the body, processing to the grave, or standing in the tomb. But this would also be an anachronistic construct. One might apply Hamilakis’ (2013b: 413–414) critique—I made “the implicit assumption that what the researchers experience, often for the first time, would loosely correspond to the experiences of past people, forgetting thus that these past sensorial experiences would have been infused with people’s memories, memories that would have shaped that sensorial experience.”

Certainly, “funereal odours in general, whatever their source, help mark the rites of death as extraordinary occurrences, olfactory ruptures in the varying sensory patterns of day-to-day life” (Classen et al. 1994: 150). But the fact that the oleo-resins that show up in mortuary contexts overlap with and duplicate those that appear in other ritual and social contexts in the first-millennium BCE Levant lies at the crux of the matter. Like many types of objects, these substances are subject to multiple cultural contexts and social registers (Blakely 2017: 2) and might have been specifically selected to imbue the transitional rituals involving the corpse with mnemonic references to the deceased in life. The smell of eternity, infusing the tomb, might have, in turn, evoked the incense of a religious festival, a high-end perfume worn to a special feast, or a favourite ointment of the deceased person’s cosmetic regimen. These familiar smells would have taken on new meaning and resonance in the presence of the smells of decay, or the specific sequence of the stoking of a funeral pyre’s flames.

Of all the senses, smell is most directly evocative of memory (Ritchie 2000: 65). The mortuary rites evinced in the Phoenician epigraphic, literary, and archaeological record discussed above were the product of collective remembering, generated through sensory interactions and embodied performances. As Hamilakis (2013b: 413) put it: “Through sensorial experiences, ‘mnemonic records’ are produced: Memories are generated in the bodies of the participants, creating complex and rather messy sensory stratigraphies. These memories are re-collected through repetition and citation, but every such recollection reshuffles these messy mnemonic stratigraphies.” Each funeral was likely unique, fragranced by combinations of scents specific to that family, place, or ritual community, though drawing from a limited palate of appropriate and symbolic aromatic substances: myrrh, bdellium, cedar, sycamore, almond, terebinth, along with

other woods, resins, incense, and perfumes lost to us today. Some families with lavish resources may have incorporated large quantities of myrrh (the most expensive of these options as far as we know), while others might have used valuable oleo-resins more sparingly when they could get any at all. Whatever the final bouquet, the “boundary-crossing nature of smell” (Classen et al. 1994: 123) in these various Levantine mortuary settings would have evoked at the same time the mortal and divine spheres, the living and deceased, and would have aided the transition into the permanent, undisturbed resting place of the ideal Phoenician tomb.

*Appendix A. Phoenician, Punic, and Neo-Punic inscriptions containing the religious title *mqm 'lm* and variants*

	<i>Inscription number (current location) [Select bibliography]</i>	<i>Provenance; date (genre)</i>	<i>Attested title</i>
1	<i>CIS I 260</i> (Louvre) [Zamora 2017: 70]	Utica, Tunisia; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
2	<i>CIS I 261</i> (Avignon) [Zamora 2017: 70]	Carthage, Tunisia; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
3	<i>CIS I 3351</i> [Zamora 2017: 70]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
4	<i>CIS I 3352</i> [Zamora 2017: 71]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
5	<i>CIS I 4864</i> [Zamora 2017: 71]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
6	<i>CIS I 4865</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
7	<i>CIS I 4866</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm '[]m mtrḥ 'štrny</i>
8	<i>CIS I 4867</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
9	<i>CIS I 4868</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
10	<i>CIS I 4869</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm '[]m mtrḥ 'št[rn]y</i>
11	<i>CIS I 4870</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
12	<i>CIS I 4871</i> [Zamora 2017: 72]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
13	<i>CIS I 5903</i> [Zamora 2017: 73]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm mtrḥ 'štrny</i>
14	<i>CIS I 5950; RÉŠ 553; KAI 93</i> [Bénichou-Safar 1982: 209, n. 12; Zamora 2017: 74]	Hill next to the necropolis of Santa Monica, Carthage; 4th–2nd c. BCE? (funerary)	<i>mqm 'lm mtrḥ 'štrny</i>
15	<i>CIS I 5979; RÉŠ 554</i> [Bénichou-Safar 1982: 214–15, n. 41; Zamora 2017: 74–75]	Hill next to the necropolis of Santa Monica, Carthage; 4th–2nd c. BCE? (funerary)	<i>mqm 'lm mtrḥ 'štrny</i>
16	<i>KAI 44; TSSI 3 39</i> [Fraser 1970, 32–34; Zamora 2017: 68]	Rhodes; 2nd c. BCE (Greek bilingual; votive)	<i>mqm 'lm mtrḥ 'štrny</i>

(continued)



## Appendix A. Cont.

	<i>Inscription number (current location) [Select bibliography]</i>	<i>Provenance; date (genre)</i>	<i>Attested title</i>
17	Larnax tes Lapethou 3 [Honeyman 1938; Zamora 2017: 68]	Larnax tes Lapethou, Cyprus; 4th c. BCE (votive)	<i>mqm 'lm</i>
18	KAI 70 (Avignon) [Zamora 2017: 76]	Carthage; late 3rd c. BCE (funerary)	<i>m̄q̄[m] 'l[m]</i>
19	CIS I 227 (Bibliothèque Nationale de France) [Zamora 2017: 69]	Carthage; 3rd–2nd c. BCE (votive)	<i>mqm 'lm</i>
20	CIS I 262 [Zamora 2017: 70]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm</i>
21	CIS I 377 [Zamora 2017: 70]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm</i>
22	CIS I 3788 [Zamora 2017: 71]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm</i>
23	CIS I 4863 [Zamora 2017: 71]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm</i>
24	CIS I 5953; <i>RÉS</i> 537; KAI 90 (Carthage National Museum) [Zamora 2017: 74]	Hill next to the necropolis of Santa Monica, Carthage; 3rd–2nd c. BCE? (funerary)	<i>mqm 'lm</i>
25	CIS I 6000 [Bénichou-Safar 1982: 230–231, n. 84; Zamora 2017: 75–76]	Hill next to the necropolis of Santa Monica, Carthage; 3rd–2nd c. BCE? (funerary)	<i>mqm 'lm</i>
26	Tripolitana I = Gesenius 1837: 213– 217; <i>IRT</i> 349a, bilingual with <i>CIL</i> 8.7 (British Museum) [Lipinski 1970: 37; Zamora 2017: 76 n. 71]	Leptis Magna, Libya	<i>hmqm 'lm</i> [this may be a variant of the noun <i>mqm</i> , “place”]
27	CIS I 4872 [Zamora 2017: 73 and n. 55]	Carthage; 3rd–2nd c. BCE? (votive)	<i>mqm 'lm bš'rm</i>
28	CIS I 5980 [Bénichou-Safar 1982: 199ff., 215, n. 42; Zamora 2017: 75]	Likely from the <i>secteur des rabs</i> , Carthage; 3rd–2nd c. BCE? (funerary)	<i>mqm 'lm mlt</i>
29	KAI 161 [Zamora 2017: 76–77]	Cherchel, Algeria; late 2nd c. BCE (votive/funerary)	<i>myqm 'lm skr kbd</i>

## Notes

1. Using the term “Phoenician” to describe the cultural affiliation of the peoples or city-states of the central coastal Levant has long been recognised as an anachronistic application of a later Greek term to the heterogeneous Iron Age realities, and recent studies (most notably Quinn 2018) have further pressed this point, stressing the lack of any homogeneous emic identification among the populations of coastal Syria, Lebanon, and northern Israel until as late as the Roman period. While these critiques have been useful in encouraging re-examination of the evidence and more careful scholarly characterisations, I stand with Sader (2019) in concluding that the term “Phoenician” is still useful as an etic cultural label where the Phoenician language and script are employed, specific ceramic and architectural technologies and choices are utilised, and a range of religious behaviours and beliefs (including a varied but relatively stable polytheistic pantheon) are evident in the material record.

2. For instance, infants do not instinctively find the smell of human excrement repulsive and must be culturally conditioned to react with disgust. For an ancient example, see Draycott's (2014: 68) analysis of Pliny's anecdotal discussion of differences in scent-cultivation between Roman and Sabaei customs. Additional examples in Classen et al. 1994: 124–125.
3. The book of Exodus draws some interesting lines around the use of specific incense, however, limiting the use of certain incense only to worship in the temple (Exod. 30:37–38), and carefully prescribing (or circumscribing) the type Yahweh prefers (Exod. 30:9; Houtman 1992: 462–463), alongside a similarly restricted formula for anointing oil (Exod. 30.22–33). These Yahwistic parameters around exclusivity in the olfactory realm seem unique in the wider Mediterranean world as far as I am aware. Ritchie suggests this might be connected to the fact that biblical authors stress the importance of remembering Yahweh (emphasising the connection between smell and memory), which is intriguing (Ritchie 2000: 62). The smell of Yahweh himself is explored in de Boer 1972.
4. Middeke-Conlin (2014: 24) evokes this omnipresence in his excellent diachronic study of aromatics at Larsa: "We can say ... that aromatics were present in all sectors of the economy and society of the Kingdom of Larsa ... Lower qualities of perfumed oil and basic resins and incense were both available and were accessible to the average person, while higher qualities of perfumed oils were certainly used by the wealthier strata of society, the temples, and the palace. They were used in food preparation, medicine, incense, and perfumes for conspicuous consumption by the elites and, at a lower quality, perhaps by the average individual. In the temple aromatics were used as incense and perfumed oils to anoint individuals and things, in sacrifices, libations, and on various feast days. Gifts or disbursements of perfumed oils were made by the temple and perhaps the palace to favoured functionaries and visiting dignitaries."
5. Of course, epigraphic Phoenician, Punic, and Neo-Punic are written continuously, with few examples containing any form of word divider, and those applied inconsistently. The very act of transcribing these inscriptions therefore involves a degree of interpretive parsing.
6. Appendix A, no. 26 is another possible variant, but may also represent a homonym for *mqm*; see Zamora 2017: 76, n. 71.
7. It is unclear whether the phrase *mqm 'lm*, when it appears in 11 instances without modification, should be understood as a complete religious title or an abbreviation of a fuller title. Given the broad geographical and chronological parameters of the epigraphic attestations, it is likely these two possibilities are not mutually exclusive.
8. Zamora's work is, as far as I am aware, the most recent study of this title. His publication does not acknowledge Krahmalkov's interpretation, but otherwise offers a useful bibliography (see especially n. 11), to be used along with that in Hoftijzer and Jongeling 1995.
9. Ritchie (2000: 72) tracks this avoidance in other linguistic or literary realms as well: "In European languages there is considerable evidence that much olfactory language fell into disuse in the middle of the nineteenth century. The term 'nosegay' disappeared from English dictionaries at this time, as well as the term 'to nose' used as a verb with the meaning of 'to discern'. It has been noted by Peter Gay that when Thomas Carlyle's *Journey to Germany, Autumn 1858* was edited by his nephew, the word 'see' was substituted for the word 'smell' in a phrase concerning the eagerness of a waiting crowd to 'smell the Prince of Prussia'. English olfactory language has become impoverished in the modern era, while most other domains of the language, particularly those having to do with science and technology, have greatly increased in volume and complexity."
10. Both interpretations are made on the basis of later comparanda: Krahmalkov (2000: 348) argues on the basis of Neo-Hebrew usage, while the translation "to destroy" results from privileging later attestations of Syriac vocabulary related to the root SRḤ (Smith 1957 [1903]: 390–391).
11. The inscription was dated on the basis of palaeographic comparanda and political context (see Cross 1979: 40, n. 1 for a brief history of the early analysis).
12. E.g., the Tabnit sarcophagus (Figure 20.2 and discussion below) includes the line: "do not, do not open my cover and disturb me, for no silver is gathered with me [and] no gold is gathered with me or any kind of riches. I alone am lying in this sarcophagus" (translation by the author).
13. There is intriguing evidence from later manuscript sources about the use of incense in medical recipes and procedures, beginning with Dioscorides' *De materia medica* (c. 40–90 CE) and continuing throughout Late Antique and Medieval manuscript sources. See, e.g., Burridge 2020 (especially her summary of previous scholarship on medical applications of incense, perfume, and oils).
14. A surprisingly high proportion of the admittedly small number of Phoenician Levantine mortuary inscriptions describe the contents of the sarcophagus or adornment of the body.

15. The Cadiz incense burner: “Located in a sand pit, a first layer of sand keeps the resin from sticking to the clay surface, and then there is a second layer of resin on the charcoal” (López-Bertran 2019: 148, citing Gener Basallote et al. 2014: 144, fig. 20).
16. For an excellent discussion of these terms and their potential cultic context in the MT, see Rogland 2019: 110–111 and notes. Most commentaries on Esther interpret this verse to mean the women were lotioned, rubbed, or anointed with myrrh oil, and then “fumigated” with scented oil, incense, or perfumes (see, e.g., Day 2005: 50–51; Bechtel 2001: 32; Berlin 2001: 27, among many others). Many cite Albright’s (1974) work comparing archaeologically recovered incense burners with ethnographic practices involving women squatting over smoking aromatics, with a draped gown or robe containing the smoke, such that their skin and clothing absorbs the fragrant smell of the incense.
17. Pliny the Elder (c. 23–79 CE) gives the price of myrrh at the equivalent of 3–50 dinar per libra (*Historia Naturalis* 12.70), while the Diocletian edict on maximum prices (301 CE) gives a maximum price of 600 dinar per libra. Not all the aromatics listed in the Diocletian edict include explicit prices. For the full list of 20 aromatics, see Zohar and Lev 2013:16.
18. Potts et al. 1996 convincingly summarises the arguments for this identification.
19. Though the term does not appear in Greek until the third century BCE (van Alfen 2002: 41).
20. Bdellium was first associated with the species *Commiphora wightii* in Medieval Arabic treatises (see Dalby 2000: 109). This plant is sometimes called “Indian myrrh.” There are recurring attempts to rethink the identification of these resins in ancient sources; bdellium understood as bissabol or scented myrrh is discussed in Thulin and Claeson 1991: 488–489.
21. Josephus *Antiquitates* 3.28 clarifies that the spice is intended in the passage in Numbers 11, though the LXX understands the term as a valuable stone (κρυστάλλου) (Feliks 2007).
22. While Egyptian and other Near Eastern texts celebrate the Levantine or Lebanese cedar by name, it is notable that another cedar species (*Cedrus atlantica*) still grows in hilly regions of North Africa and may well have been utilised in place of the more expensive import (Asensi Amorós and Vozenin-Serra 1998: 231).
23. Note the following description of oleo-resin harvesting published in 1969: “*Cedrus libani* is occasionally used as a source of resin in Lebanon. The stubs of the lower limbs are removed and placed on a flat rock cut with a channel. Another flat rock pierced with a series of holes is placed on the stubs and a fire is then placed on this. The heat penetrating through the perforated upper stone drives the resin from the wood and causes it to drip into the channels which lead it to a collecting vessel. Shepherds are said to add a few drops of this material to the drinking water of goats which stimulates their thirst and feeding” (C. George, in Brown 1969: 155).
24. Using the verb *perfundo*: *hoc in Syria cedrium vocatur, cui tanta vis est, ut in Aegypto corpora hominum defunctorum perfusa eo servantur* (*Naturalis Historia* 16.52).
25. Though observations that sawdust mixed with resin had been found in the abdominal cavities of Egyptian mummies had been made already in the early twentieth century, the species of the wood pieces was only confirmed in the 1990s (Asensi Amorós and Vozenin-Serra 1998).
26. The Tabnit sarcophagus (Istanbul Archaeology Museum no. 800; *RÉS* 1202; *KAI* 13; *TSSI* 3 27) was found in 1887 by Osman Hamdy Bey during the excavation of a shaft tomb at the ‘Ayya Necropolis near Sidon. It was probably originally made of amphibolite in Saqqara or Giza, Egypt. The dating of the burial of King Tabnit is debated, dated variously between 525 and 460 BCE.
27. Reportedly, an 1887 eyewitness to the opening of a sarcophagus from Sidon described it thus: “A plank of sycamore, the wood used in Egypt for the cases of mummies, covers the bottom of the sarcophagus. Small holes are bored all round it towards the edge, through which no doubt strings were passed to retain the body in its place upon the plank. To judge by what remains of the bandages and bones, the body must have been very imperfectly mummified” (Rawlinson 1889: 304; quoting an unnamed eyewitness from *al-Bachir*, June 8, 1887, Beirut).
28. When last I visited, two of the wooden planks were on display at the Topkapı Palace Archaeological Museum in Istanbul without descriptive label. An additional board is still to be found under the mummy of King Tabnit, though no identification of the wood is made on the labels of that display either. As far as I am aware, no conservation work or study has been undertaken on the mummy of Tabnit since it was first installed in the gallery. Note that renovation in several gallery spaces was undertaken in 2019 and was not completed at the time of writing.
29. At the sixth–fifth centuries BCE cemetery site at Monte Sirai, Sardinia, excavators have unearthed the *ustrinum*, where funeral pyres were supervised, not far from the grave area (Piga et al. 2010: 154).
30. In addition to the methyl dihydrojasmonate or hedione found in jasmine, caryophyllene was also detected. Caryophyllene is a molecule present in plants as diverse as *Cinnamun tamala* (cinnamon), *Piper*

- nigrum* (pepper), *Origanum dictanum* (oregano), and *Cannabis sativa* (cannabis) (Domínguez Bella et al. 2011: 317). López-Bertran notes that pepper and cinnamon both have preservative properties and are used in the anointing oil described in Exod. 30:20–25 (López-Bertran 2019: 148).
31. See Richter 2001 for an excellent analysis of Plutarch's use of the myth, as well as bibliography on consensus opinion that it represents "a relatively accurate account of the cultic practices associated with Isis in the Pharaonic period" (Richter 2001: 192).
  32. For discussion of possible cults of such sacred trees in Sidon and Tyre, see Na'aman 2006.
  33. A particularly useful comparison for our purposes may be found in the analysis of the contents of the second-century BCE Egyptian alabaster unguentarium found in an Etruscan burial in Chiusi (Colombini et al. 2008).

## Bibliography

- Albright, W. F. 1974. "The Lachish Cosmetic Burner and Esther 2:12," in H. N. Bream, R. D. Heim, and C. A. Moore, eds., *Old Testament Studies in Honor of Jacob M. Myers*. Philadelphia: Temple University Press, 25–32.
- Alfero Giner, C. 1983. "Fragmentos textiles del sarcófago atropomorfo femenino de Cadiz," in *Homenaje al Prof. Martín Almagro Basch II*. Madrid: Ministerio de Cultura, 281–289.
- Asensi Amorós, V., and C. Vozenin-Serra. 1998. "New Evidence for the Use of Cedar Sawdust for Embalming by Ancient Egyptians." *JEA* 84: 228–231.
- Assmann, J. 2005. *Death and Salvation in Ancient Egypt*. Ithaca. Trans. D. Lorton. Ithaca: Cornell University Press.
- Aubet, M. E. 2004. "The Iron Age Cemetery." *Bulletin d'archéologie et d'architecture libanaises (BAAL), Hors-Série I: The Phoenician Cemetery of Tyre al-Bass: Excavations 1997–1999* 9–62.
- Avery, E. 2013. "A Whiff of Mortality: The Smells of Death in Roman and Byzantine Beth She'an-Scythopolis," in J. Day, ed., *Making Senses of the Past: Toward a Sensory Archaeology*. Occasional Paper 40. Carbondale: Center for Archaeological Investigation, Southern Illinois University Press, 266–285.
- Bartosiewicz, L. 2003. "'There's Something Rotten in the State ...': Bad Smells in Antiquity." *European Journal of Archaeology* 6 (2): 175–195.
- Bechtel, C. M. 2001. *Esther. Interpretation: A Bible Commentary for Teaching and Preaching*. Louisville: Westminster John Knox Press.
- Bénichou-Safar, H. 1978. "Les 'bains' de résine dans les tombes Puniques de Carthage." *Karthago* 18: 133–138.
- Bénichou-Safar, H. 1982. *Les Tombes Puniques de Carthage. Topographie, Structures, Inscriptions et Rites Funéraires*. Paris: C.N.R.S.
- Berger, P. 1912 "Le culte de Mithra a Carthage." *Revue de l'histoire des religions* 65: 1–15.
- Berlin, A. 2001. *The JPS Bible Commentary: Esther*. Philadelphia: The Jewish Publication Society.
- Blakely, S. 2017. "Object, Image, and Text: Materiality and Ritual Practice in the Ancient Mediterranean," in S. Blakeley, ed., *Gods, Objects, and Ritual Practice*. Atlanta: Lockwood Press, 1–16.
- Brown, F. 1906. *The Brown – Driver – Briggs – Gesenius Hebrew and English Lexicon with an appendix containing the Biblical Aramaic*. Oxford: Oxford University Press.
- Brown, J. P. 1969. *The Lebanon and Phoenicia: Ancient Texts Illustrating their Physical Geography and Native Industries. Vol. 1: The Physical Setting and the Forest*. Beirut: American University of Beirut.
- Burridge, C. 2020. "Incense in Medicine: An Early Medieval Perspective." *Early Medieval Europe* 28 (2): 219–255.
- Carreras Rossell, T. 2010. "Ungüentos y perfumes en el mundo Fenicio y Púnico," in J. Hernández and B. Costa, eds., *Aspectos suntuarios del mundo Fenicio-Púnico en la Península Ibérica, XXIV Jornadas de Arqueología Fenicio-Púnica (Eivissa, 2009)*. Ibiza: Treballs del Museu Arqueològic d'Eivissa i Formentera, 9–22.
- Chaney, W. R., and M. Basbous. 1978. "The Cedars of Lebanon: Witnesses of History." *Economic Botany* 32 (2): 118–123.
- Classen, C. 1993. *Worlds of Sense: Exploring the Senses in History and Across Cultures*. London: Routledge.
- Classen, C. 2006. "The Breath of God: Sacred Histories of Scent," in J. Drobnick, ed., *The Smell Culture Reader*. Oxford: Berg, 375–390.
- Classen, C., D. Howes, and A. Synnott. 1994. *Aroma: The Cultural History of Smell*. London: Routledge.
- Clements, A. 2014. "Divine Scents and Presence," in M. Bradley, ed., *Smell and the Ancient Senses*. New York: Routledge, 46–59.

- Colombini, M. P., G. Giachi, M. Iozzo, and E. Ribechini. 2008. "An Etruscan Ointment from Chiusi (Tuscany, Italy): Its Chemical Characterization." *Journal of Archaeological Science* 36: 1488–1495.
- Cross, F. M. 1979. "A Recently Published Phoenician Inscription of the Persian Period from Byblos." *Israel Exploration Journal* 29 (1): 40–44.
- Dalby, A. 2000. *Dangerous Tastes: The Story of Spices*. Berkeley: University of California Press.
- Day, L. M. 2005. *Abingdon Old Testament Commentaries: Esther*. Nashville: Abingdon Press.
- de Boer, P. A. H. 1972. "An Aspect of Sacrifice: II. God's Fragrance," in *Studies in the Religion of Ancient Israel*. Vetus Testamentum Supplement Series 23. Leiden: Brill, 37–47.
- de Zorzi, N. 2019. "'Rude Remarks Not Fit to Smell': Negative Value Judgments Relating to Sensory Perceptions in Ancient Mesopotamia," in A. Schellenberg and T. Krüger, eds., *Sounding Sensory Profiles in the Ancient Near East*. Atlanta: SBL Press, 217–252.
- Delcor, M. 1983. "A propos du sens de *špr* dans le tarif sacrificiel de Marseille (*CIS I*, 165, 12): Parfum d'origine végétale ou parfum d'origine animale?" *Semitica* 33: 33–39.
- Diodorus Siculus. 1933. *Library of History, Volume I: Books 1–2.34*. Trans. C. H. Oldfather. LCL 279. Cambridge, MA: Harvard University Press.
- Dixon, H. 2013. "Phoenician Mortuary Practice in the Iron Age I–III (ca. 1200 – ca. 300 B.C.E.) Central Coastal Levant." Ph.D. Dissertation, University of Michigan.
- Domínguez Bella, S., R. J. March, J. M. Gener, and J. Martínez. 2011. "Análisis de restos orgánicos de la tumba púnica de la Casa del Obispo, Cádiz. Reconstruyendo la memoria fenicia en el Occidente del Mediterráneo," in J. C. Domínguez Perez, ed., *Gadir y el Círculo del estrecho revisados. Propuestas de la arqueología desde un enfoque social*. Cádiz: Universidad de Cádiz, Monografías Historia y Arte, 307–319.
- Draycott, J. 2014 "Smelling Trees, Flowers and Herbs in the Ancient World," in M. Bradley, ed., *Smell and the Ancient Senses*. New York: Routledge, 60–73.
- Elayi, J., and M. R. Haykal. 1996. *Nouvelles découvertes sur les usages funéraires de Phéniciens d'Anvad*. Paris: Gabalda.
- Feliks, J. 2007. "Bdellium," in F. Skolnik, ed., *Encyclopedia Judaica*. Second Edition, Volume 3. New York: Macmillan Reference, 234.
- Février, J. G. 1955. "Le vocabulaire sacrificiel punique." *Journal Asiatique* 243: 49–63.
- Frangé-Joly, D. 2016. "Perfumes, Aromatics, and Purple Dye: Phoenician Trade and Production in the Greco-Roman Period." *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 4 (1): 36–56.
- Fraser, P. M. 1970. "Greek-Phoenician Bilingual Inscriptions from Rhodes." *The Annual of the British School at Athens* 65: 31–36.
- García-Ventura, A., and M. López-Bertran. 2013. "Music and Death: Razors, Stelae and Divinities in the Punic Mediterranean," in R. Jiménez, R. Till, and M. Howell, eds., *Music & Ritual: Bridging Material & Living Cultures*. Publications of the ICTM Study Group on Music Archaeology 1. Berlin: Ekho Verlag, 93–115.
- Gener Basallote, J.–M., G. Jurado Fresnadillo, J.–M. Pajuelo Sáez, and M. Torres Ortiz. 2014. "El proceso de sacralización del espacio en *Gadir*: El yacimiento de la casa del obispo (Cádiz). Parte 1," in M. Botto, ed., *Los Fenicios en la Bahía de Cádiz: Nuevas investigaciones*. Collezione di Studi Fenici 46. Pisa: Fabrizio Serra Editore, 123–155.
- Genesisius, G. 1837. *Scripturae Linguaeque Phoeniciae Monumenta, Pars Prima*. Leipzig: Regiae Academiae Litterarum Borussicae et Regiae Societati Asiaticae Magnae Britanniae et Hiberniae.
- Ghadban, C. 1998. "La nécropole d'époque perse de Magharat Tabloun à Sidon," in V. Matoian, ed., *Liban, l'autre rive*. Paris: Institut du monde arabe.
- Guirguis, M. 2011. "Gli spazi della morte a Monte Sirai (Carbonia – Sardegna). Rituali e ideologie funerary nella necropoli fenicia e punica (scavi 2005–2010)." *The Journal of Fasti Online*: 1–32. [www.fastionline.org/docs/FOLDER-it-2011-230.pdf](http://www.fastionline.org/docs/FOLDER-it-2011-230.pdf).
- Hamdy Bey, O., and T. Reinach. 1892. *Une nécropole royale a Sidon. Fouilles de Hamdy Bey*. Paris: Ernest Leroux.
- Hamilakis, Y. 1998. "Eating the Dead: Mortuary Feasting and the Politics of Memory in the Aegean Bronze Age Societies," in K. Branigan, ed., *Cemetery and Society in the Aegean Bronze Age*. Sheffield: Sheffield Academic Press, 115–132.
- Hamilakis, Y. 2013a. "Sensorial Necro-Politics: The Mortuary Mnemoscapes of Bronze Age Crete," in *Archaeology and the Senses: Human Experience, Memory, and Affect*. New York: Cambridge University Press, 129–160.
- Hamilakis, Y. 2013b. "Afterword: Eleven Theses on the Archaeology of the Senses," in J. Day, ed., *Making Senses of the Past: Toward a Sensory Archaeology*. Occasional Paper 40. Carbondale: Center for Archaeological Investigation, Southern Illinois University Press, 409–419.

- Hoftijzer, J., and K. Jongeling. 1995. *Dictionary of the North-West Semitic Inscriptions*. 2 Volumes. New York: Brill.
- Honeyman, A. M. 1938. "Larnax tēs Lapēthou: A Third Phoenician Inscription." *Le Muséon* 51: 285–298.
- Honeyman, A. M. 1940. "The Phoenician Title מִתְרַח עֲשֵׂתֵרֵי." *Revue de l'histoire des religions* 121: 5–17.
- Houtman, C. 1992. "On the Function of the Holy Incense Exodus XXX 34–8) and the Sacred Anointing Oil (Exodus XXX 22–33)." *Vetus Testamentum* 42 (4): 458–465.
- Jessup, H. H. 1910. *Fifty-Three Years in Syria, Volume 2*. New York: Fleming H. Revell Company.
- Jones, J., T. F. G. Higham, R. Oldfield, T. P. O'Connor, and S. A. Buckley. 2014. "Evidence for Prehistoric Origins of Egyptian Mummification in Late Neolithic Burials." *PLoS ONE* 9 (8): e103608. <https://doi.org/10.1371/journal.pone.0103608>.
- Krahmalkov, C. R. 2000. *Phoenician-Punic Dictionary*. Orientalia Lovaniensia Analecta 90; Studia Phoenicia XV. Leuven: Peeters.
- Lipinski, E. 1970. "Le fête de l'ensevelissement et de la resurrection de Melqart," in A. Finet, ed., *Actes de la XVIIe Rencontre Assyriologique Internationale. Université libre de Bruxelles, 30 juin – 4 juillet 1969*. Ham-sur-Heure, Belgium: Comité belge de recherches en Mésopotamie, 30–58.
- López-Bertran, M. 2019 "Sensing Death among the Phoenicians and the Punic (900–200 BC)," in G. Papantoniou, C. Morris, and A. Vionis, eds., *Unlocking Sacred Landscapes: Spatial Analysis of Ritual and Cult in the Mediterranean*. Nicosia: Astrom Editions, 139–153.
- Middeke-Conlin, R. 2014. "The Scents of Larsa: A Study of the Aromatics Industry in an Old Babylonian Kingdom." Université Paris Diderot. *Cuneiform Digital Library Journal*, March 24.
- Na'aman, N. 2006. "On Temples and Sacred Trees in Tyre and Sidon in the Late Eighth Century B.C.E." *Rivista di Studi Fenici* 34 (1): 39–47.
- Pérez-Arategui, J., J. Ángel Paz-Peralta, and E. Ortiz-Palomar. 1996. "Analysis of the Products Contained in Two Roman Glass *Unguentaria* from the Colony of *Celsa* (Spain)." *Journal of Archaeological Sciences* 23: 649–655.
- Piga, G., M. Guirguis, P. Bartoloni. A. Malgosa, and S. Enzo. 2010. "A Funerary Rite Study of the Phoenician-Punic Necropolis of Mount Sirai (Sardinia, Italy)." *International Journal of Osteoarchaeology* 20: 144–157.
- Pliny. 1945. *Natural History, Volume IV: Books 12–16*. Trans. H. Rackham. LCL 370. Cambridge, MA: Harvard University Press.
- Pliny. 1956. *Natural History, Volume VII: Books 24–27*. Trans. W. H. S. Jones and A. C. Andrews. LCL 393. Cambridge, MA: Harvard University Press.
- Plutarch. 1936. *Moralia, Volume V: Isis and Osiris. The E at Delphi. The Oracles at Delphi No Longer Given in Verse. The Obsolescence of Oracles*. Trans. F. C. Babbitt. LCL 306. Cambridge, MA: Harvard University Press.
- Potts, D. T., A. Parpola, S. Parpola, and J. Tidmarsh. 1996. "Guḥlu and Guggulu," in A. A. Ambros and M. Kohbach, eds., *Wiener Zeitschrift für die Kunde des Morgenlandes* 86: 291–305.
- Quinn, J. C. 2018. *In Search of the Phoenicians*. Princeton: Princeton University Press.
- Rawlinson, G. 1889. *Phoenicia: History of a Civilization*. London: Longmans, Green and Co.
- Ribechini, E., F. Modugno, M. Perla Colombini, and R. P. Evershed. 2008. "Gas Chromatographic and Mass Spectrometric Investigations of Organic Residues from Roman Glass *Unguentaria*." *Journal of Chromatography A* 1183: 158–169.
- Richter, D. S. 2001. "Plutarch on Isis and Osiris: Text, Cult, and Cultural Appropriation." *Transactions of the American Philological Association* 131: 191–216.
- Ritchie, I. D. 2000. "The Nose Knows: Bodily Knowing in Isaiah 11.3." *Journal for the Study of the Old Testament* 87: 59–73.
- Rogland, M. 2019 "The Cult of Esther: Temple and Priestly Imagery in the Book of Esther." *Journal for the Study of the Old Testament* 44 (1): 99–114.
- Sader, H. 2019. *The History and Archaeology of Phoenicia*. Atlanta: SBL Press.
- Skeates, R. 2010. *An Archaeology of the Senses: Prehistoric Malta*. Oxford: Oxford University Press.
- Smith, J. P. 1957 [1903]. *A Compendious Syriac Dictionary founded upon the Thesaurus Syriacus of R. Payne Smith*. Oxford: Oxford University Press.
- Spatafora, F. 2010. "Ritualità e simbolismo nella necropoli punica di Palermo," in R. Dolce, ed., *Atti della Giornata di Studi in Onore di Antonella Spano, Facoltà di Lettere e Filosofia 30 maggio 2008*. Palermo: Università degli Studi di Palermo Dipartimento di Beni Culturali Storico-Archeologici, Socio-Antropologici e Geografici, 23–31.
- Starcky, J. 1969. "Une inscription phénicienne de Byblos." *Mélanges de l'Université Saint-Joseph* 45 (15): 257–73.

- Thulin, M., and P. Claeson. 1991. "The Botanical Origin of Scented Myrrh (Bissabol or Habak Hadi)." *Economic Botany* 45 (4): 487–494.
- Tomback, R. S. 1978. *A Comparative Semitic Lexicon of the Phoenician and Punic Languages*. SBL Dissertation Series 32. Missoula: Scholars Press.
- Torrey, C. 1902. "A Phoenician Royal Inscription." *JAOS* 23: 156–173.
- van Alfen, P. G. 2002. "Pant'Agatha: Commodities in Levantine-Aegean Trade during the Persian Period, 6–4th c. B.C." Ph.D. Dissertation, University of Texas at Austin.
- Zamora, J. 2017. "The Miqim Elim: Epigraphic Evidence for a Specialist in the Phoenician-Punic Cult." *Rivista di Studi Fenici* 45: 65–85.
- Zohar, A., and E. Lev. 2013. "Trends in the Use of Perfumes and Incense in the Near East after the Muslim Conquests." *Journal of the Royal Asiatic Society*, Special Issue on Perfumery and Ritual in Asia 23 (1): 11–30.