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IN THE SHADOW OF EMPIRES: THE CIRCULATION OF CALCITE VESSELS BETWEEN EGYPT AND THE LEVANT DURING THE 1ST MILLENNIUM BCE

Andrea Squitieri*

Abstract: This paper examines the circulation of calcite vessels between Egypt and the Levant from the 10th century BCE to the end of the Persian era. It begins with a brief discussion of the terminology, geological sources, and production sites associated with these vessels. The analysis then focuses on their circulation during two distinct periods. The first period, spanning from the 10th to the mid-8th century BCE, saw the exchange of large calcite jars – often inscribed with royal inscriptions – primarily as royal gifts between Egypt and the Levant. In contrast, the second period, beginning in the 7th century BCE, witnessed the widespread distribution of small, portable calcite alabastra, driven by the intensification of trade across the Mediterranean and Near East. Based on this evidence, I will argue that the circulation of calcite vessels in the first period was primarily shaped by gift exchange practices, while the second period marked a transition to a market-oriented framework, which also spurred local production of calcite bowls in the Levant. This shift can be linked to the rise of large territorial empires in the broader Near East.

Keywords: Calcite Vessels; Alabastra; Mediterranean Trade; Egypt; Levant.

1. Introduction

This paper examines the circulation of calcite vessels between Egypt and the Levant from the 10th century BCE to the end of the Persian period. The reconstruction of this circulation is primarily based on morphological analysis derived from both published sources and direct study of materials held in museum collections.[1] These observations also serve to identify vessels possibly produced locally within the Levant, as well as to recognize heirlooms – calcite vessels found in contexts younger than the period of their manufacture. Given the emergence and consolidation of large territorial empires (Neo-Assyrian, Neo-Babylonian, and Achaemenid) during the period under study, the conclusion will explore how these empires influenced the production and distribution of calcite vessels across the region.

2. Terminology and Geological Sources

Calcite is a mineral composed of calcium carbonate ($CaCO_3$), available in various colors, including white, yellow, red, and green. It is the primary component of rocks such as travertine, limestone, and marble.[2] In antiquity, Egypt was home to some of the most renowned calcite deposits, where the calcite often exhibits

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1 In particular: British Museum, London (sites: Al Mina, Lachish, Nimrud); UCL Institute of Archaeology, London (sites: Tell Jemmeh, Tell el-Far'ah South); Petrie Museum, London (sites: various sites including Memphis and Kafr Ammar); Ashmolean Museum, Oxford (sites: Nimrud, Deve Höyük); Vorderasiatisches Museum, Berlin (site: Assur, Tell Halaf); Israel Antiquities Authority, Jerusalem (sites: Askhelon, Ekron, Gath); Rockefeller Museum, Jerusalem (site: Akhziv).

2 Anthony *et al.* 2003, "calcite".

https://doi.org/10.19282/rsf.52.2024.04

a distinctive yellow color with white bands. [3] Egyptian calcite can be described as a «well-crystallized form of rearranged limestone found in the immediate environment».[4] In older archaeological literature and many museum collections, this material is frequently referred to as "Egyptian alabaster" or simply "alabaster." [5] However, the term alabaster is geologically used to describe a variety of gypsum – a yellowish-white, soft rock that, unlike calcite, can be scratched with a fingernail.[6] The confusion arises from the fact that true alabaster can exhibit colored banding similar to that of Egyptian calcite, though it lacks the latter's shiny appearance. The term travertine has also been proposed.[7]

In Egypt, calcite quarries with tool marks that can be dated to the 1st millennium BCE are found at Wadi Sannur near Beni Suef and El Qawatir east of Minia, both in the Eastern Desert.[8] In the Levant, calcite deposits exist in Syria (near Damascus), Jordan (near Amman), and Israel (near Jerusalem).[9] Additionally, calcite deposits are present in Yemen, where local production of calcite vessels is well-attested during the 1st millennium BCE.[10] However, for the purposes of this paper, it is important to note that the extent to which Levantine calcite deposits were exploited during the period under discussion remains unclear. The calcite from the deposit near Jerusalem is superficially very similar to Egyptian calcite, but no Iron Age or Persian period material has been found in the vicinity of these deposits to indicate their exploitation during this time.[11] Conversely, their use during the Roman period has been confirmed, and recent chemical analysis has successfully demonstrated that the calcite from these deposits has a different chemical signature from that of Egyptian calcite.[12] Similarly, chemical analysis of Bronze Age calcite vessels from Crete revealed distinct chemical signatures between local and Egyptian calcite sources.[13] These findings are promising, as they suggest that analytical methods could help determine the origins of specific calcite vessels. However, such analyses face several challenges, including the limited availability of suitable geological samples and the destructive nature of sampling on archaeological items. Until these analyses become more widespread, we must rely on morphological observations to reconstruct the circulation of calcite vessels between the Levant and Egypt and to identify potential Levantine productions.

3. Techniques and Places of Manufacture

The richest evidence for the production of calcite vessels during the 1st millennium BCE comes from Memphis in Egypt (Fig. 1). During the Late Period (664-332 BCE),[14] Memphis hosted a calcite vessel workshop in which several uncomplete pieces and waste of production were found which helped reconstruct the stages of production (Fig. 2).[15] Based on this evidence, we can infer that the first stage entailed bringing the rough-

3 Klemm – Klemm 2008, p. 147.

4 Klemm – Klemm 2008, p. 147.

5 von Bissing 1904; Petrie 1937.

6 Anthony *et al.* 2003, "gypsum"; Harrell – Broekmans – Godfrey-Smith 2007.

7 Harrell 1990; Aston 1994; Harrell – Broekmans – Godfrey-Smith 2007; Bevan 2007

8 Klemm – Klemm 2008, p. 155.

9 Köster 2012; Frumkin *et al.* 2014.

10 Weiss *et al.* 2009.

11 Frumkin *et al.* 2014, p. 757.

12 Amir *et al.* 2022.

13 Testa – Lilyquist 2011.

14 For the Egyptian periodisations used throughout this paper, I relied on Shaw 2003.

15 Engelbach 1915, p. 33, pl. LX.

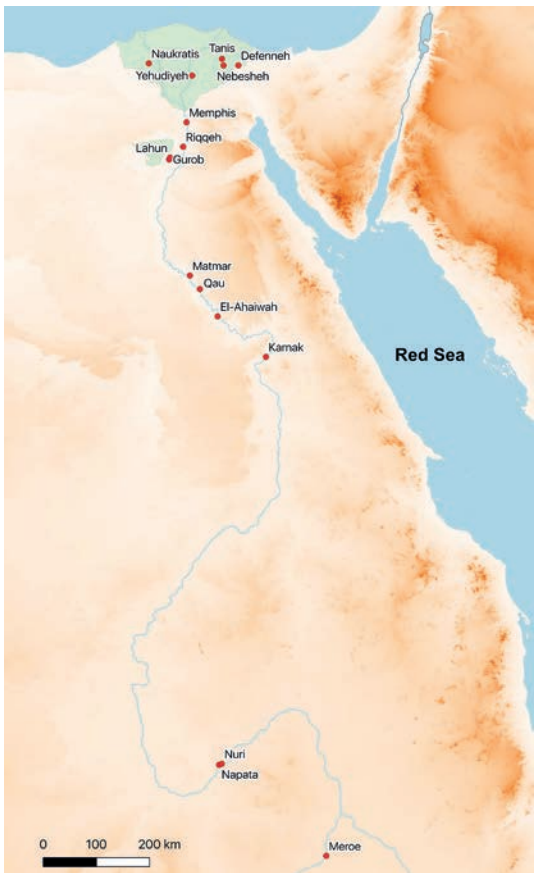

Fig. 1. Map of Egypt and Nubia with the sites mentioned in the text (prepared by the author).

Fig. 2. Two unfinished calcite vessels from the workshop of Memphis, Late Period (664-332 BCE) (Courtesy of the Petrie Museum, UCL).

outs to the workshop from the quarry;[16] subsequently they were roughly cut to shape, probably by means of chisels and scrapers,[17] leaving the surface still rough. Then the most delicate part of the entire process followed, namely the creation of a cavity through drilling. A high number of drill cores was found at Memphis suggesting the use of a tubular drill to create first a cylindrical cavity. These drill cores are a typical waste of production of the use of a tubular drill, whose use was largely attested also in older periods.[18]

Though never reported in the archaeological record, it is possible that copper tubes were force-fitted to a drill made of a wooden shaft having at the opposite end one or two weights to increase pressure.[19] Once the drill core was removed from the cavity, perhaps by means of chisels, the following step entailed the widening of the cavity. Through experimental evidence, Stocks demonstrated that to enlarge the cylindrical cavity a stone borer was used with a shape narrowing at midpoint, hence the name of figure-of-eight stone.[20] This borer was attached to a drill shaft with a forked end and used with rotary motion to enlarge the cavity. Such figure-of-eight stones have been reported in Egypt at Hierakonpolis as well as in Mesopotamia during the Bronze Age.[21] Their use was effective in creating vessels with a bulbous body typical of the Pre-Dynastic period to at least the Third Intermediate Period; however, to what extent these borers were still in use in the Late Period and even later during the Persian and Graeco-Roman periods is not clear. Interestingly, no such a borer has been reported in the Memphis workshop. In this respect, it is worth to mention a broken alabastron of the Graeco-Roman period from Kafr Ammar and held in the Petrie Museum (accession number UC41664), which shows in the interior a series of regular grooves and ridges of different sizes that

16 Engelbach 1915, pl. LX.40.

17 Engelbach 1915, pl. LX.41.

18 Stocks 2003, p. 116; Petrie 1917, p. 45.

19 Stocks 2003, pp. 139-169.

20 Stocks 2003, pp. 139-169.

21 Stocks 2003, pp. 139-169; Quibell – Green 1902.

Fig. 3. Fragment of calcite vessel from Kafr Ammar with tool marks, held in the Petrie Museum, UCL (accession number UC41664) (Courtesy of the Petrie Museum, UCL).

are unparalleled in the previous periods (Fig. 3). These marks would suggest the use of a different technique than the figure-of-eight borer, and can be compared with an alabastron of the Hellenistic period found at Uruk, in southern Mesopotamia.[22] Hence, it is possible that a technological change may have happened during the course of the 1st millennium BCE in the manufacture of calcite vessels, which perhaps already started with the time of the 26th dynasty.[23] Drill cores were also found in Naukratis.[24] During the late 26th and early 27th dynasties, this site hosted a workshop for the production of calcite vessels.[25] Waste of production in the form of drill-cores and unfinished vases had been reused in the pavement of the Temple of Apollo, indicating that the workshop must have been close to this structure.[26]

While the existence of calcite workshops in Egypt is well-documented, direct evidence for such workshops in the Levant from the 10th century BCE to the end of the Persian era is currently lacking. Morphological analyses to be presented below would suggest Levantine production of calcite bowls from the 7th century BCE through the Persian period; however, direct archaeological evidence of such production, in the form of production waste and unfinished items, remains elusive. One could hypothesize that such workshops were situated in off-site locations near calcite deposits, leaving minimal traces in urban settings. Alternatively, it's conceivable that the production of Levantine calcite bowls was not intensive enough to leave distinct imprints in the archaeological record and possibly occurred alongside other small craft productions in similar settings. While morphological analysis indicates the presence of Levantine workshops, their exact locations and organizational structures remain unclear.

4. Calcite Vessels from the 10th to the mid-8th Century BCE

4.1. *Egypt*

The calcite vessel repertoire of the 21st and 22nd dynasties (1090-745 BCE) derives from the last developments of the New Kingdom. Many of the New Kingdom shapes disappeared, while others continued into the Third Intermediate Period, in parallel to new shapes that emerged in this period. Several calcite vessels were found at the site of El-Ahaiwah (north of Girga, Upper Egypt) in common graves dated to the 20th-22nd dynasties.[27] These comprise dishes and bowls with a round base, plain or with lug handles, beakers with convex walls, cups with pedestal, and kohl pots.[28] All these vessels continue the latter New Kingdom tradition and perhaps at least some of them came from older graves that had been robbed in antiquity. Some vessels do appear that imitate even Old Kingdom shapes, such a shouldered ovoid jar from Tomb 572 (Cem-

22 Wartke 2003.

23 Squitieri 2017, pp. 115-116.

24 Masson 2014.

25 Masson 2014.

26 Masson 2014, figs. 1, 5.

27 Reisner 1900-1901.

28 Aston 1994, nn. 172, 200, 207, 209, 210. Many of these vessels are held in the "Phoebe A. Hearst Museum of Anthropology" in California. They can be visualised in the online museum catalogue at https://portal.hearstmuseum.berkeley.edu/.

etery 500).[29] Continuing the New Kingdom tradition is also the pedestal amphora of the so-called "Canaanite type" found at Tanis in the tomb of the 21st dynasty pharaoh Psusennes.[30]

New shapes are attested with the 22nd dynasty. A globular jar with handles and a globular jar with flaring rim can be found in Lahun, in the grave group 651, dated to Sheshonq I (946-925 BCE), which do not have parallels in the previous period,[31] unlike a flat base beaker and a dish with lug handles from the same grave group which continue the earlier tradition.[32] An additional shape which is introduced with the 22nd dynasty is a type of flat-shouldered amphora with a pointed base. An example of this jar appears in the royal burial of Takhelot II (841-816 BCE) at Tanis, bearing an inscription for the pharaoh Osorkon I (925-890 BCE)[33] (Fig. 4). Flat-shouldered jars continue to be attested after the time of the 22nd dynasty, with 8th century BCE examples coming from Nubia (El Kurru, tomb Ku53; see Tab. 1) and 7th century BCE examples from Lahun (tomb group 609).[34] Their shape clearly derives from similar pottery jars widely used for transport in the 1st millennium BCE Mediterranean, and often referred to as "Phoenician jars".[35] The imitation in stone of shapes commonly manufactured in other media, such as pottery, is not a new phenomenon of the Third Intermediate Period. This is frequently attested also during the New Kingdom, when many Egyptian calcite vessels derive their shapes from both Levantine and Aegean models.[36] One example is the calcite amphora with pedestal found in Psusennes' tomb, mentioned above, coming from the New Kingdom repertoire. Such a phenomenon shows the openness of the Egyptian workshops to experiment with new shapes, thus it does not necessarily point to an external origin of these imitations. The chronological distribution of calcite vessels continues with examples coming from graves that can only be generically dated to the Third Intermediate Period, without a further chronological distinction. These are the graves from Matmar,[37] Nebesheh[38] and Riqqeh,[39] where round bottom bowls, dishes with lug handles, ovoid jars with flaring rim and pointed bottom, ovoid jars with handles and, finally, beakers were found.

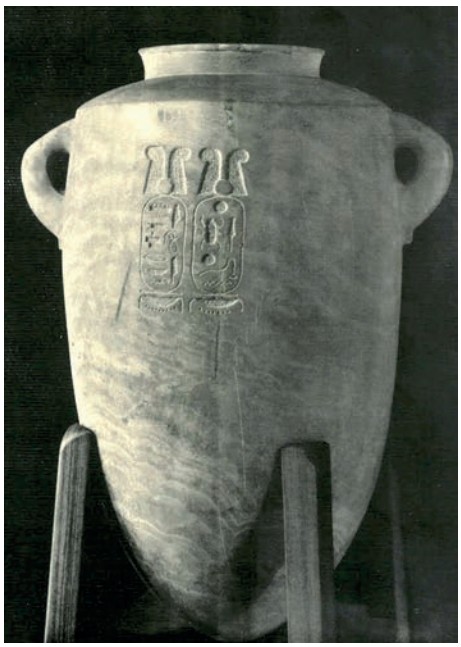

Fig. 4. Flat-shouldered amphora inscribed for Osorkon I, from Tanis (after Montet 1947, pl. 46).

In conclusion, the evidence available from the period spanning the 10th century to the mid-8th century BCE, that is from the 21st dynasty to the start of the 25th, seems to suggest that alongside the con-

29 Cfr. "Phoebe A. Hearst Museum of Anthropology" online catalogue at https://portal.hearstmuseum.berkeley.edu/, museum number 6-18566. Cf. also Aston 1994, n. 83.

30 Montet 1951, pl. 62; Aston 1994, n. 181.

31 Petrie 1932, pl. 55.20, 55.22.

32 Petrie – Brunton – Murray 1923, pl. 55.24-25.

33 Montet 1947, pl. 46.

34 Petrie – Brunton – Murray 1923, pl. 67.40; Aston 1994, n. 221.

35 Regev 2004.

36 Sparks 2007.

37 Brunton 1948, pl. 57.6-8-9-10-12.

38 Petrie – Brunton – Murray 1923, pl. 1.27.

39 Englebach 1915, pl. 14.S59, 14.S64.

tinuation of the late New Kingdom tradition, two new shapes were introduced, namely the globular jar with handles and the flat-shouldered jar, both continuing also into later periods.

4.2. *The Levant*

During the 10th century BCE, the Egyptian calcite vessels reported from Megiddo and Yokne'am (both in northern Israel) are heirlooms from the Bronze Age, hence they do not necessarily indicate contemporary contacts with Egypt.[40] The situation changed in the 9th century BCE, when two Egyptian flat-shouldered jars reached Samaria, capital of the Kingdom of Israel. As mentioned above, this shape had been introduced in Egypt at the time of the 22nd dynasty. In Samaria, one such jar was found to the north of the casemate wall (area Q), from a secondary context;[41] the other was found in sector S7, and it bears an inscription for pharaoh Osorkon II (875-837 BCE).[42] According to the excavators, it was found below the floor of the "Osorkon House", which was built in the 6th century BCE in the courtyard of the Palace of Ahab (871-852 BCE).[43] It came from a layer in which other Egyptian items were found, along with the so-called "Israelite" pottery (by which the excavators meant pottery of the 9th-8th centuries BCE), as well as inscribed ostraca.[44] As we have seen above, a flat-shouldered jar is attested in Tanis, in the royal burial of Takhelot II (841-816 BCE), inscribed for pharaoh Osorkon I (925-890 BCE). Therefore, the shape and the inscription of the Samaria jar and its archaeological context would point to the arrival of this inscribed jar in Samaria sometime during the 9th century BCE. It is possible that the both jars were sent to king of Samaria Ahab as a gift to reinforce diplomatic relations between Egypt and the Kingdom of Israel against the expansionist moves of Assyria. This practice would have followed a long-lasting tradition of exchanging precious vessels as diplomatic gifts, which had its roots in the Late Bronze Age.[45]

The Samaria jars were not the only Egyptian calcite vessels that reached the Levant during the 9th-8th centuries BCE. Others can be identified, which, however, were found in later contexts. A group of nine large calcite alabastra and amphorae from Assur, which were found together in the Old Palace,[46] may indicate the presence of such vessels in Phoenicia. Two of these vessels can be safely dated to the Late Bronze Age because of their distinctive shapes, while the others belong to the typical Third Intermediate Period repertoire.[47] Moreover, six out of nine vessels bear 7th century BCE royal cuneiform inscriptions for the Assyrian kings. Two of these inscriptions inform us that the vessels were collected by King Esarhaddon from Sidon during his military campaigns in 677 BCE.[48] Therefore, it can be suggested that the vessels with typical Third Intermediate Period shapes had reached Phoenicia, perhaps as royal gifts, sometime during the 9th century BCE, and were subsequently brought to Assur as a war booty.

An unprovenanced large calcite amphora held in the Beirut Museum,[49] which resembles some of the Assur group's amphorae, had also possibly reached Phoenicia sometime in the 9th century BCE. Another hint for the presence of large calcite vessels in Phoenicia at the time of the Egyptian 21st-22nd dynasties comes from

40 Squitieri 2017, pp. 142-143.

41 Crowfoot – Crowfoot – Kenyon 1957, fig. 119.6.

42 Reisner – Fisher – Lyon 1924, fig. 205.

43 Reisner – Fisher – Lyon 1924, p. 76.

44 Reisner – Fisher – Lyon 1924, p. 76.

45 Bevan 2007, pp. 23-25; Sparks 2003.

46 Preusser 1955, fig. 3.

47 Squitieri 2017, p. 144; Onasch 2010.

48 Onasch 2010.

49 Oggiano 2010.

Nimrud. Four large calcite vessels were retrieved in the North-West Palace of Nimrud,[50] whose shapes belong to the time of the 22nd Egyptian dynasty. One elongated large vessel among them bears an unintelligible Egyptian hieroglyphic inscription, which suggests that this vessel had reached Assyria through Phoenicia, because false hieroglyphs can also be found on other Phoenician crafts.[51] Unlike the Assur vessels, it is not clear when the Nimrud vessels reached this site, but it is possible that they were also part of the war booty that the Assyrians collected in Phoenicia in the 8th-7th centuries BCE. The arrival of calcite vessels as a part of war booty from the Levant to Assyria after the 9th century BCE, when Assyria represented the major political entity, was not an isolated case. Both texts and archaeology attest the presence in the Assyrian citadels of several items, in particular ivory plaques and metal vessels, which were either collected as booty by the Assyrian army during the Levantine military campaigns or reached Assyria as part of the regularly tribute that many Levantine states had to pay to the Assyrian king. A famous example is represented by the ivory plaques coming from different Levantine workshops, which had been stored in the rooms of Fort Shalmaneser in Nimrud.[52] This practice is also explicitly mentioned in one of Sargon II's texts, dated to the late 8th century BCE, where the king mentions a "treasure house" (*bīt nakkamtu*) located in the North-West Palace of Nimrud, where the booty he had collected from Carchemish, consisting of silver and gold, was stored.[53]

Finally, more evidence for the presence of Egyptian vessels in Phoenicia comes from the Laurita necropolis, located near the Phoenician colony of Almuñecar, in southern Spain. The necropolis, dated to the late 8th century BCE, yielded several Egyptian calcite vessels used as funerary urns, three of which bear the cartouches of pharaohs Osorkon II (875-837 BCE), Sheshonq III (837-798? BCE) and Takelot II (841-812 BCE), all of the 22nd dynasty.[54] The presence of royal inscriptions suggests that these vessels had likely reached Phoenicia as royal gifts sometime during the 9th century BCE and were subsequently brought to Spain during the colonisation process.[55] The evidence from Assur, Nimrud and Almuñecar, combined with the Samaria jars, indicates that Egyptian vessels did reach the Levant, and in particular Phoenicia and the Kingdom of Israel, sometime in the course of the 9th century BCE. The main characteristics of these vessels is that they had large dimensions, were sometimes inscribed, and they had possibly been transported to the Levant as royal gifts from Egypt.

5. Calcite Vessels from the mid-8th Century bce to the Beginning of the Persian Era

5.1. *Egypt*

A new phase for the calcite vessel industry starts with the 25th dynasty (747-656 BCE), when new shapes are introduced. This phenomenon was possibly accompanied by a change in manufacturing techniques, though this is difficult to demonstrate. The most important new shape is the alabastron (pl. alabastra), which appears in the Nubian necropolises in the mid-8th century BCE. Alabastra derive their name from the Greek word *alábastron* (also *alábastos*), which according to some authors may have come from the Egyptian word meaning the "vase of the goddess of Bubastis";[56] however, the origin of the name can also be connected to the place where calcite was quarried.[57] Alabastra are characterised by a rounded bottom, a baggy or more

50 Mallowan 1966, pp. 169-70, figs. 103-104.

51 Frankfort 1996, pp. 321-322.

52 Herrmann 1992, p. 2.

53 Luckenbill 1927, p. 73.

54 Pellicer Catalán 2007, pp. 47-53.

55 López Castro 2006.

56 Amyx 1958; Bissing 1939, p. 132; Richter – Milne 1935; Roosevelt 2008.

57 Bissing 1939, pp. 132-133.

Fig. 5. a-b: Two alabastra from the 26th dynasty; c: an alabastron of the Roman period (Courtesy of the Petrie Museum, UCL).

elongated body, a flaring neck and a wide rim. They tend not to exceed a height of about 20 cm, hence they differ in size from the larger Egyptian calcite vessels of the 22nd dynasty. By the time of the 26th dynasty and onwards, alabastra came to dominate the calcite vessel repertoire.

In Egypt, alabastra are attested in the palace of Apries in Memphis,[58] at Defenneh,[59] Yehudiyeh[60] and Riqqeh.[61] Two examples are also attested in the temple of Karnak (*Quartier des prêtres*), which can be dated to the mid or late 6th century BCE.[62] Alabastra seem to have enjoyed in Egypt more popularity than other types of calcite vessels, a phenomenon which is well documented at the site of Naukratis, in the Egyptian delta. This site, founded in the late 7th century BCE, is characterised by the blending of Mediterranean cultural stimuli with the local Egyptian tradition.[63] Most of the alabastra coming from Naukratis seem to date to the late 7th-6th centuries BCE, though later examples belonging to the Ptolemaic-Roman period may also be present.[64] Interestingly, only small alabastra are attested in Naukratis, while large calcite jars exceeding 20 cm in height are not present (unlike in Nubia, as shown below). Calcite vessels differing from alabastra were also found in Naukratis, though in a lower number. Some of them are inspired by pottery shapes like the squat lekythos imitating a common Greek pottery type,[65] a carinated dish and a tray with ledge rim possibly imitating late Saite-Persian pottery.[66] These calcite imitations of common pottery shapes suggest that local artisans may have experimented with shapes inspired by other media. Nevertheless, not all calcite vessels from Naukratis must have been local. Two squat jars with small knob handles are attested, whose place of origin may be South Arabia where this type of vessels originated.[67] Similar jars are also attested in Alexandria, Memphis and Tanis,[68] all possibly dating to the Persian-Hellenistic periods.[69]

58 Petrie 1909, pl. 16.

59 See examples held in the Boston Museum Fine Art, accession numbers 87.715-6-7.

60 Petrie 1906, p. 19, pl. 20a.

61 Englebach 1915, pl. 19.2.

62 Masson 2007a, p. 612; Masson 2007b.

63 Villing *et al.* 2014.

64 Masson 2014, fig. 6.

65 Masson 2014, fig. 8.

66 Masson 2014, p. 6, fig. 9.

67 Masson 2014, p. 6; Hassell 1997.

68 See Masson 2014, p. 6 for references.

69 Petrie (Petrie 1937, pl. 26.922-3) listed two unprovenanced squat jars as belonging to the Third Intermediate Period; however, given their distribution outside Egypt, it seems safe to date these jars to the Persian-Hellenistic period (Squitieri 2017, pp. 89-90).

Finally, it is worth mentioning the large calcite vessels found by Petrie in the Palace of Apries (589-570 BCE) at Memphis. Although, as we have seen, small sized alabastra dominated the repertoire of calcite vessels of the 26th dynasty, two larger jars (H = 30 cm) with bag-shaped bodies were found in this palace, one of them featuring wider shoulders than the other, and perforated handles with lappets below.[70] These large vessels indicate that the production of large calcite jars, though reduced, was not totally discontinued with the 26th dynasty, a trend that can be observed also among the Nubian graves discussed below. Calcite vessels other than alabastra continued to be attested in Egypt. Beakers and round bottom bowls continuing the 21st-22nd dynasty tradition are attested at Qau, from graves of the 25th dynasty,[71] and in 7th century BCE graves at Lahun, along with a flat shouldered jar.[72] Ovoid jars with handles also appear in 7th century BCE graves of Lahun which are not attested before this period,[73] some of which resembles very closely the alabastron shape.[74]

5.2. *Nubia*

The royal burials of El Kurru, Nuri and Meroe,[75] dating from the mid-8th century BCE to the end of the 1st millennium BCE, provided a rich sequence of stone vessels (see Tab. 1). In these graves, calcite vessels by far dominate the stone vessel repertoire, following a trend already observed in Egypt since the New Kingdom. In the graves of El Kurru and Meroe, dated to the second half of the 8th century BCE, both small alabastra and large calcite jars appear in the graves Ku55, Ku15, Ku52 (El Kurru) and W493, W611 and W630 (Meroe). They have a baggy body, pierced or unpierced knob-handles and in one case (Grave Ku15) they show lug-lappets, that are triangular raised extensions under the knobs. The evidence from these graves shows that the alabastron shape with baggy body was already well attested in the second half of the 8th century BCE, in both smaller (H < 20 cm) and taller versions (H > 20 cm). In the 7th and 6th centuries BCE, alabastra with more elongated proportions appear in large size (H > 20 cm), as evidenced by graves Ku4 (El Kurru), and Nu3, Nu8, Nu24, Nu42 and Nu5 (Nuri). In grave Nu7 of the late 6th century BCE, the first elongated alabastra in small size (H < 20 cm) appear. Judging from this evidence, alabastra with elongated proportions started to appear in sizes taller than 20 cm already in the 7th century BCE, whereas they appear in a smaller size in the late 6th century BCE, only to become more popular into the following century. It should be noted that baggy alabastra both in small and large size continue to be attested in the graves of Nuri during the 7th and 6th centuries BCE.

Though alabastra constitute a large group of vessels retrieved from the Nubian graves, many other shapes in calcite are also attested. Jars with pointed bases, globular jars and open bowls do not have parallels outside Nubia, and can be considered as expressions of the originality of the local workshops. Calcite vessels imitating other media are also present, such as an inscribed jug imitating a Phoenician style juglet from El Kurru grave Ku4 (690-664 BCE). Some authors have considered this jug a possible Mediterranean or a Phoenician production;[76] however, the well-attested presence in the Nubian graves of original calcite vessels along with vessels imitating other media (see, e.g., the lotus flower jar from grave Ku72) does point to the creativity of local workshops and their openness in experimenting with new shapes. Finally, it is

70 Petrie 1937, pl. 37.958-959.

71 Aston 1994, n. 210.

72 Petrie – Brunton – Murray 1923, pls. 46.26, 46.28, 67.40. Lahun graves 618, 759 and 609 are dated by B. Aston to the 7th century BCE (Aston 1994).

73 Aston 1994, nn. 217-218; Petrie – Brunton – Murray 1923, pl. 67.

74 Aston 1994, n. 218.

75 Dunham 1950; 1955; 1957; 1963.

76 Oggiano 2010.

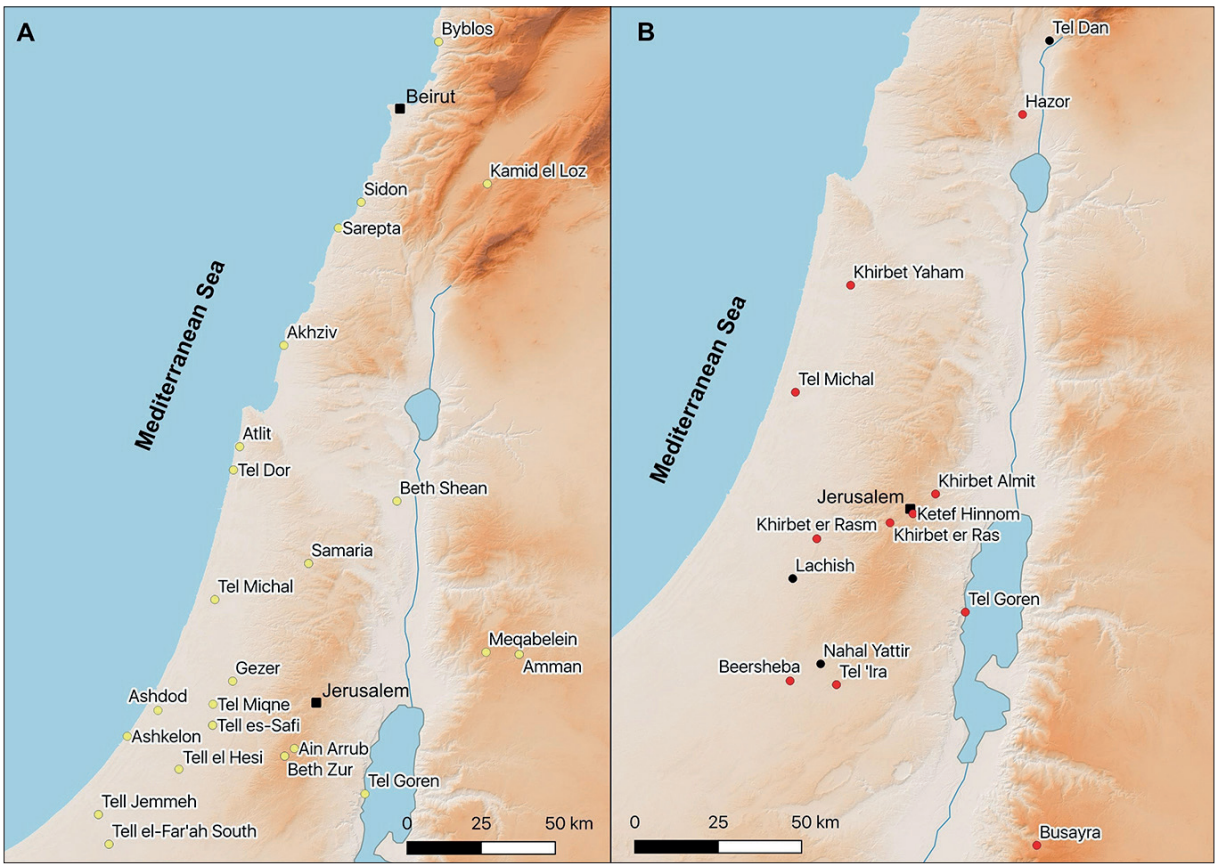

Fig. 6. a: Distribution of Egyptian alabastra in the Southern Levant during the 7th century BCE and the Persian period; b: Distribution of non-Egyptian calcite vessels in the Southern Levant during the 7th century BCE and the Persian period (red dots); Distribution of Arabian calcite vessels in the Southern Levant during the Persian period (black dots). (Data source: Squitieri 2017, pp. 141-154, see also Tab. 2).

worth mentioning the presence in the Nubian graves of shapes attested in older periods (see graves Ku53, Nu35, Nu36 and W609): it is not clear whether these are imitations or actual antiques that were reused in these graves.

5.3. *The Levant*

After the mid-8th century BCE, and in particular during the 7th century BCE, calcite alabastra became popular in the Levant. Examples from primary contexts come from Ashkelon, Ashdod, Tel Miqne-Ekron, Akhziv, Tel Goren, Meqabelein and Amman, in the Southern Levant; and, in the Northern Levant, Sarepta, Carchemish, Sultantepe and Ziyaret Tepe[77] (see Tab. 2 and Fig. 6a). It is important to highlight the alabastra coming from these sites do not exceed c. 20 cm in height, which makes them easily portable items. Interestingly, larger calcite jars, as those spreading during the 9th-8th centuries BCE were not found in primary contexts of the 7th century BCE.

77 For the calcite vessels from Ziyaret Tepe (ZT numbers 9150 and 23314), refer to the online excavation database accessible at http://www3.uakron.edu/ziyaret/ (accessed in May 2020).

The presence of calcite alabastra in the market area of Ashkelon, where they were found along with other traded items,[78] may indicate that these items reached Levant during the 7th century BCE mainly through trade, unlike the large alabastra of Almuñecar and Assur, which had reached their final destinations via other mechanisms. The popularity of calcite alabastra derived mainly from their suitability as containers for precious substances such as perfumes.[79] Greek and New Testament sources also mention the use of alabastra as precious containers for myrrh and other unguents.[80] Based on evidence from the Hellenistic period, it is also possible that alabastra were used to contain and transport spices and kohl.[81] In addition to their use as containers, the aesthetic qualities of the Egyptian calcite, with its coloured banding and shiny look, may have also played a role in conferring these objects an added value. Their presence in burials (e.g., Akhziv, Meqabelein, Amman) may indicate that these items were considered valuable items, which were kept as *aegyptiaca* because of the connection to Egypt that their raw material implied. The popularity of calcite alabastra also stimulated imitations in several other materials, such as gypsum, pottery, glass and silver, across the Mediterranean and the Near East from the 7th century BCE onwards.[82]

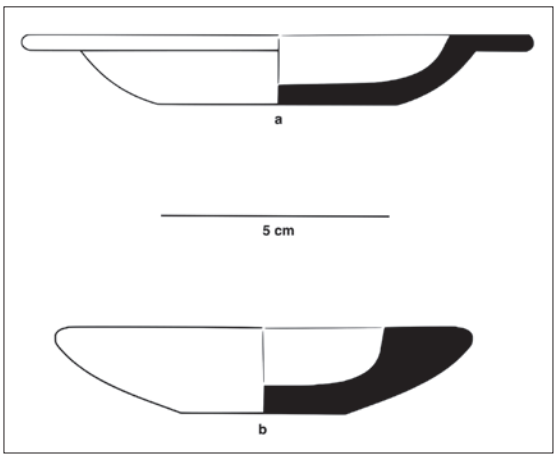

Fig. 7. a: Calcite ledge-rim bowl from Al Mina; b: Topped-up rim bowl from Deve Höyük (after Squitieri 2017, figs. 5.10, 5.15).

During the 7th century BCE it is also possible to find calcite vessels in the Levant whose origin, based on morphological observations, cannot be tracked back to Egypt (Fig. 7). These are bowls whose diameter does not exceed 10-15 cm, with a flat base, a shallow cavity and a wide topped-up rim. They can be found in 7th century BCE levels at Tel 'Ira, Ashdod, Khirbet er-Ras, Hazor and Meqabelein (see Table 2). The only known example from the Northern Levant comes from Deve Höyük (Fig. 7b). They are made of a yellow and translucent calcite which does resemble the Egyptian counterpart; however, similar bowls cannot be found in Egypt. It is possible, therefore, that these they were produced locally, given that their distribution seems to concentrate in the Southern Levant. Their production might not have left a distinctive type of waste such as drill cores, since their shallow cavity could have been easily carved (rather than drilled) with stone or iron tools. Interestingly, there is no evidence for a Levantine production during the 7th century BCE of closed calcite vessels (such as alabastra) which would require drilling techniques to hollow-out their interior cavity. Drilling techniques applied to calcite vessels seem to be still restricted to Egypt at this time, thus continuing a trend that was already observed in the study of the Bronze Age calcite vessels from the Levant.[83]

78 Press 2011; Stager *et al.* 2011, pp. 31-49.

79 Masson 2014; Bissing 1939; Roosevelt 2008.

80 *Histories, III, 20; Natural Histories, IX, 35, 113; Luke 7, 37.*

81 Squitieri 2017, pp. 82-84.

82 Squitieri 2017, pp. 82-84; Roosevelt 2008.

83 Sparks 2007, p. 193.

6. Calcite Vessels during the Persian Period

6.1. *Egyptian Calcite Vessels in the Levant*

During the Persian period (539-332 BCE), Egyptian calcite alabastra continue to be attested in the Levant (Tab. 2 and Fig. 6a). An Egyptian origin for these items seems to be still viable if one considers that the workshops of Naukratis and Memphis were likely active at this time, and Egyptian products could easily be marketed within the sphere of influence of the Persian Empire. In some cases, Persian period alabastra are equipped with so-called lug-lappets, that is triangular raised extensions continuing under the lugs, which must have had an aesthetic function. Though this characteristic can be observed before the Persian period in Nubia (see graves Ku15 of El Kurru and Nu28 of Nuri) and in the Levant (tomb of Adoni Nuri, Amman) (Table 2),[84] it becomes more widespread with the Persian era. Another characteristic that can be observed on some Persian period alabastra is a flat ring located just below the rim. One such example is depicted on a relief from Darius' Treasury in Persepolis.[85] In the Levant, one example of this type is attested at Tell Michal, dating to the Persian period.[86] However, two such alabastra found at Persepolis were part of a composite calcite vessel bearing the cartouche of the 26th dynasty pharaoh Amasis (570-526 BCE).[87] This vessel, which possibly reached Persepolis after the Persian conquest of Egypt, shows the ring-rim characteristic originated in Egypt already in the 6th century BCE. In Nubia, however, this variant is not attested. The rig rim feature will continue to be attested also during the Hellenistic period.[88]

The increased presence of alabastra across the Persian Levant is not a phenomenon confined to this area. Several calcite and other media alabastra are now attested from the Mediterranean up to Central Asia,[89] following a trend that had started in the 7th century BCE. We have seen that with the 7th century BCE inscribed calcite jars exceeding 20 cm in height had disappeared from the Levant. However, with the Persian period, larger inscribed calcite jars reappear again. These are baggy or cylindrical large jars, with an alabastron-like rim, whose place of production was most likely Egypt because one such example comes from the Palace of Apries (589-570 BCE), pre-dating the Persian conquests (see above).[90] Outside Egypt, these vessels are attested at Heliopolis in Lebanon, with an inscription for Artaxerxes, and at Sepphoris in the Galilee (north Israel). Other examples are from Halicarnassus, in western Anatolia, inscribed for Xerxes I,[91] Amathus in Cyprus,[92] Babylon, inscribed for Xerxes I[93] and Susa, inscribed for Xerxes I.[94] More inscribed examples are published in Posener (1936), though in most cases they lack a secure archaeological provenance. These inscribed jars did not spread as much as the alabastra, which suggests that they were not traded items. Shaw suggested that these vessels were sent from Egypt to Persia as a part of the tribute that Egypt was due to pay to the Persian king.[95] It is also possible that these were royal gifts that the Persian kings sent to their satraps to reinforce their loyalty. In any case, their limited distribution betrays a use restricted to a small portion of society.

84 Squitieri 2017, p. 83.
85 Schmidt 1957, pl. 149.
86 Squitieri 2017, p. 83.
87 Schmidt 1957, pl. 47.7a-d.
88 Aston 1994, n. 230; Masson 2014, fig. 6.
89 Squitieri 2017, pp. 82-84; Bonora 2019.
90 Petrie 1937, pl. 37.959.
91 Searight – Reade – Finkel 2008, fig. 15.269.
92 Gjerstad 1935, pl. 29.
93 Searight – Reade – Finkel 2008, fig. 16.270.
94 Searight – Reade – Finkel 2008, fig. 16.272.
95 Shaw 2010, p. 115.

6.2. *Non-Egyptian Calcite Vessels in the Levant*

As also observed during the 7th century BCE, some calcite vessels can be found in the Persian Levant whose origin may not have been Egypt (Fig. 6b). The already mentioned topped-up rim bowls continue to be attested in the Southern Levant during the Persian period, with one only example from the Northern Levant, in the cemetery of Deve Höyük (Tab. 2). As mentioned above, due to their distribution, these bowls may have been a product of the southern Levantine workshops. Another possible non-Egyptian type of vessel is represented by calcite ledge-rimmed bowls, having a characteristic ledge rim and a shallow cavity (Fig. 7a). These bowls are mostly attested in the Southern Levant (Tab. 2). Although one example from Khirbet er-Ras already appeared in the 7th century BCE, they seem to the be characteristic of the Persian period. Outside the Levant, Persian period ledge-rimmed bowls appear at Persepolis, Nippur and possibly Babylon.[96] Their origin is not clear. They do not seem to appear in Egypt before the Roman period. A possible place of origin, if we exclude the Levant itself, could be South Arabia, where calcite deposits were present and a local calcite vessel industry had already developed during the 1st millennium BCE.[97] Such bowls are attested at Mleiha (UAE) and at Raybun XV cemetery (Yemen); however, they seem to come from contexts that post-date the Levantine examples.[98] Hence, based on current evidence, ledge-rimmed bowls may also be a production of the Levantine workshops. Non-Egyptian calcite vessels present in the Levant and having a likely South Arabian origin are squat jars with flat base and curved walls, as well as squat jars with long neck and everted rim.[99] These vessels were most likely used to contain aromatics imported from South Arabia into the Levant.

7. Conclusions: The Calcite Vessel Industry in the Shadow of Empires

In the course of the 1st millennium BCE, the emergence of large territorial empires in the wider Near East, extending their influence to Egypt and the Mediterranean, facilitated the blending of diverse cultural stimuli and the establishment of an extensive trade network spanning from the Western Mediterranean to South Arabia and Central Asia.[100] These long-distance trade connections significantly influenced the production and circulation of calcite vessels.

Prior to the 7th century BCE, calcite vessels – typically large, inscribed jars – circulated primarily as royal gifts, as evidenced by finds at sites such as Assur, Nimrud, Samaria, and Almuñecar. These vessels reached the Levant in the 9th to early 8th centuries BCE, after which they were either transported as war booty (as seen in Assur and Nimrud) or arrived as part of colonization efforts (evident in Almuñecar). The Samaria jars, discovered in their primary context, probably reached this site directly from Egypt as diplomatic gifts. During this period, large calcite jars were also prevalent in Egypt.

However, from the mid-8th century BCE onward, particularly in the 7th century BCE, there was a noticeable shift: smaller Egyptian calcite alabastra became widespread in the Levant, while large calcite jars no longer seem to have been imported, despite their continued production in Nubia. The increasing popularity of alabastra aligns with the intensification of the Near Eastern and Mediterranean trade networks under the Neo-Assyrian, Neo-Babylonian, and Persian empires. Egyptian alabastra, valued for containing precious substances like perfumes and aromatics, as well as for their material's inherent value as aegyptiaca, circulated primarily as traded goods rather than royal gifts, marking a departure from the earlier practice associated with large calcite jars.

96 Searight – Reade – Finkel 2008, p. 61, n. 441.

97 Hassell 1997; Phillips – Simpson 2018.

98 Mouton 1997, fig. 1.1-2; Sedov 2005, p. 136.

99 Squitieri 2017, pp. 152-154.

100 Cline – Graham 2011, pp. 33-101.

The link between long-distance trade and calcite vessels is further underscored by the appearance of South Arabian calcite jars in the Levant during the Persian period, which also contained perfumes and aromatics. This suggests that the expansive trade network favored the spread of small, portable calcite vessels – Egyptian alabastra and South Arabian squat jars – across the region. The popularity of these vessels in the Levant may have stimulated local production of calcite bowls, particularly in the Southern Levant from the 7th century BCE onwards. However, these locally produced bowls were likely intended for domestic use rather than for export, and thus did not compete directly with imported Egyptian and South Arabian products.

In conclusion, the intensification of trade networks, fostered by the large territorial empires of the 1st millennium BCE, significantly impacted the calcite vessel industry and the circulation of these items. This period saw a paradigm shift from gift exchange to market exchange and likely contributed to the emergence of local calcite bowl production in the Levant.

Period	Date (BC)	Cemetery	Grave	Calcite vessels	Remarks
1	760-751	El Kurru	Ku8	Jar fragment with flaring neck (alabastron?); open bowl with everted walls and flat base.	Not attested outside Egypt.
2	751-716	El Kurru	Ku7	3 open bowls with straight walls; 1 globular vessel with short everted rim and pierced handles.	Not found outside Egypt.
2	751-716	El Kurru	Ku22	Small ovoid vessel with no neck, H. 6 cm.	Possible parallel from Nimrud, but with handles. See Searight *et al.* 2008, n. 304.
2	751-716	El Kurru	Ku53	Globular vase with tall neck and pierced handles; Open bowl with straight walls; Flat-shouldered jar, H. 30 cm.	The torpedo jar is attested in Assur and Almeñecar. This shape comes from the 22nd dynasty.
2	751-716	El Kurru	Ku54	Globular jar with a tall narrow neck made separately.	Not attested outside Egypt.
2	751-716	El Kurru	Ku55	Large baggy alabastron, H. 72 cm with pierced hanles; Baggy alabastron with pierced handles, H. 20 cm.	The large alabastron similar to Almeñecar, type 3. The other alabastron has a typical alabastron shape.
3	716-701	El Kurru	Ku15	3 baggy alabastra: 1) H. 14 cm with lugs-lappets; 2) H. 18 cm with pierced handles; 3) is a fragment of the upper part with pierced handles.	
3	716-701	El Kurru	Ku52	Alabastron with baggy body, H. 10 and pierced handles; alabastron with baggy body, H. 18 cm and pierced handles; ovoid jar, H. 30 cm with two handles and tall neck; Alabastron H. 22 cm, with pierced handles.	The ovoid jar is similar to those from Almeñecar, type 4, but the propotions are slightly off.
4	701-690	El Kurru	Ku72	Lotus flower vase, pointed base jar, pilgrim flask with dummy handles, globular jar, H. 12, with large mouth; alabastron, H. 15 cm, with pierced handles.	The first two are not attested outside Egypt. The globular jar is a small version of more ancient similar vases. This is the period of Sennacherib king of Assyria, when two globular alabastra from Assyria are attested, of which one inscribed for Sennacherib and the other from Nineveh (Searight *et al.* 2008, nos. 61 and 97).
5	690-664	El Kurru	Ku4	Alabastron with elongated body, lug lappets and inscribed, H. 26 cm; a Phoenician-style juglet, inscribed.	See example from Nimrud with false inscription: Mallowan 1966, fig. 103.
6	664-653	El Kurru	Ku5	Globular jar, H. 10 cm, short neck and thick walls.	Not found outside Egypt.
6	664-653	El Kurru	Ku6	Fragment of a short neck vessel with shoulder and pierced handle.	Not found outside Egypt.
6	664-653	El Kurru	Ku16	Upper fragment of alabastron, H. 14 cm, in origin taller than 20 cm. Inscribed.	Possibly same type as large baggy alabastra from Almeñecar and Assur.

5	690-664	Nuri	Nu1	Ovoid alabastron, with short neck, perforated handles with lappets, H. 40 cm; same shape H. 24 cm in black stone; same shape but with knob handles, H. 25 cm; neckless vessel with rounded bottom, H. 20 cm.	The first three are very similar to those from Almeñecar. The last is not attested outside Egypt.
5	690-664	Nuri	Nu35	Old fashioned vessels.	
5	690-664	Nuri	Nu36	Old fashioned vessels.	
7	653-643	Nuri	Nu53	Baggy alabastron, H. 20 cm.	
	653-643	Nuri	Nu75	Upper fragment of a baggy (?) large alabastron with knob handles, H. > 20 cm.	The shape resembles two inscribed vases maybe from Nineveh held in the British Museum (Searight *et al.* nos. 62 and 63) whose inscriptions do not contain king's names.
8	643-623	Nuri	Nu3	Large baggy alabastron with pierced handles, H. 40, elongated alabastron, H. 45 cm with solid handles, alabastron, H. 24 cm with no handles, baggy alabastron, H. 16 cm with solid handles, 2 alabastra, H. 10 cm with solid handles, globular jars with short neck, H. 30 cm.	1) It is very similar to examples from Old Palace of Assur; 2) see Almeñecar, type 6; Assur and Nimrud; 6) similar to Almeñecar, type 5.
9	623-593	Nuri	Nu6	Globular jar with short neck, expanded body and pierced handles.	Not attested in the levant.
	623-593	Nuri	Nu21	Tall ovoid jar with thick walls, no neck and flat base, H. 35 cm.	Not attested in the Levant.
	623-593	Nuri	Nu23	Baggy large alabastron, H. 30 cm, with pierced handles.	Similar to Almeñecar, type 6.
10	593-568	Nuri	Nu8	15 large baggy alabstra H. between 20 and 35 cm, some with golden leaf decoration, all with knob handles, elongated large alabastron with knob handles, H. 40 cm, 2 vases with pointed base, globular body and stright neck, H. 12 cm, open bowl, H. 18 cm.	The elongated alabastron is similar to Almeñecar, type 6. The globular vases and the open bowl have no parallels in the Levant.
10	593-568	Nuri	Nu24	Large elongated alabastron, H. 40 cm with knob handles	
10	593-568	Nuri	Nu27	Neckless jar with pierced handles at the rim level, rounded bottom, H. 24 cm, ovoid alabastron and baggy alabastron each H 10 cm with knob handles.	1) not attested in the Levant.
10	593-568	Nuri	N42	4 alabastra with knob handles, H. 20 cm, with more elongated proportions.	
11	568-553	Nuri	Nu28	Alabastron, H. 10 cm with baggy body and lug lappets.	
11	568-553	Nuri	Nu54	3 alabastra, H. 10 cm with baggy body and knob handles.	
12	553-538	Nuri	Nu5	Large elongated alabastron, H. 25 cm with knob handles; baggy alabastron, H. 20 cm with inscription (another one identical but in marble).	
12	553-538	Nuri	Nu26	Large globular jar, H. 60 cm, with short neck and pierced handles, fragment of alabastron with knob handles.	The large jar is not attested in the Levant.
12	553-538	Nuri	Nu45	Baggy alabstron, H. 10 cm, with knob handles, rim borken, baggy alabastron with broken rim, H. 10 cm.	
13	538-533	Nuri	Nu18	Pointed base vase with very short neck and everted rim; baggy alabastron with knob handles.	The pointed base vase is not attested in the Levant.
14	533-513	Nuri	Nu10	Neckless vases with rounded bottom, H. 16 cm.	Not attested in the levant.
15	513-503	Nuri	Nu7	3 elongated alabastra with knob handles, H. between 15 and 20 cm.	

15	513-503	Nuri	Nu30	Baggy alabastron with lug-lappets, H. 20 cm.	
16	503-478	Nuri	Nu2	Neckless jar with handles at the rim level, H. 25 cm.	Not attested in the Levant.
17	478-458	Nuri	Nu4	4 Neckless jars with handles at the rim level, H. 25 cm.	
18	458-453	Nuri	Nu49	Elongated alabastron with lug lappets, H 18. Rim is flat and everted.	
19	453-423	Nuri	Nu31 and 32	2 neckless jars.	
21	418-398	Nuri	Nu12	2 elongated alabastra with lug lappets and flat everted rim.	
23	397-362	Nuri	Nu44	Elongated alabastron with lug lappets and flat everted rim, H. 20 cm.	
26	328-308	Nuri	Nu15	5 alabastra < H 20 all with knob handles. One has baggy body and flaring neck, the others have more elongated proportions with flat everted rim.	
26	328-308	Nuri	Nu56	1 Elongated alabastron with lug lappets, H 16 cm. Rim is flat and everted.	
2--5	751-664	Meroe	W493	Baggy alabastron, H. 14 cm with knob handles	
	751-664	Meroe	W611	Pointed base jar with upper part missing H. 14 cm.	Not attested outside Egypt.
	751-664	Meroe	W630	Baggy alabastron with knob handles, H. 12 cm	
2--6	751-653	Meroe	W662	Twin globular jars connected by one side, H. 4 cm.	Not attested outside Egypt.
4--5	701-664	Meroe	W609	Baggy alabastron, H. 6 cm with knob handles, globular alabastron, H 4.5 cm with knob handles, globular jar with wide mouth and short neck and pierced handles, H. 15.5 cm, large alabastron with elongated shape and pierced handles, H. 23 cm.	The globular alabstron is similar to the example at the British Museum inscribed for Sennacherib (see above). Globular jar: similar to Lahun 651 of the 22nd dynasty;
4--5	701-664	Meroe	W643	Pilgrim flask with lentoid secton, two loop handles at the rim, baggy alabastron wiht pierced handles, H. 12.75 cm, globular alabastron with knob handles, H. 6.75, elongated alabastron with knob handles, H. 17 cm, baggy alabastron with knob handles, H 12.6 cm, globular alabastron with knob handles, H 13.5 cm, elongated alabastron with knob handles, H. 17.7 cm, baggy alabastron with knob handles H 12.6 cm, globular alabastron with separately made neck, H 11.75 cm, this technique not attested in the Levant.	The baggy alabastra have parallales in the British Museum inscribed for Sennacherib (see above).
4--6	701-653	Meroe	W671	Baggy alabastron knob handle, H. 6.5 cm, elongated alabastron with knob handles, H. 5.7 cm, baggy alabastron with knob handles, H. 7 cm, globular alabastron with knob handles, H 5 cm.	

Tab. 1. Calcite vessels from the graves of El Kurru, Nuri and Meroe in Nubia, see Dunham 1950; 1955; 1957; 1963. For the Almuñecar types, see Pellicer Catalán 2007, fig. 56.

EGYPTIAN CALCITE VESSELS IN THE LEVANT				LEVANTINE CALCITE VESSELS		
Site	Shape	Variant	Chronology	Site	Shape	Chronology
Al Mina	Alabastron	Without lugs	Iron Age III - Persian	Ashdod	Topped-up rim bowl	Iron Age III
Ashdod	Alabastron	Without lugs	Iron Age III	Hazor	Topped-up rim bowl	Iron Age III
Beth-Zur	Alabastron	Without lugs	Iron Age III - Persian	Khirbet er Ras	Topped-up rim bowl	Iron Age III
Carchemish	Alabastron	Without lugs	Iron Age III	Meqabelein	Topped-up rim bowl	Iron Age III
Sarepta	Alabastron	Without lugs	Iron Age III	Tell 'Ira	Topped-up rim bowl	Iron Age III
Tell es-Safi	Alabastron	Without lugs	Iron Age III - Persian	Samaria	Topped-up rim bowl	Iron Age III - Persian
Al Mina	Alabastron	Without lugs	Persian	Deve Höyük	Topped-up rim bowl	Persian
Hacinebi	Alabastron	With oval lugs	Persian	Khirbet Almit	Topped-up rim bowl	Persian
Tell el Hesi	Alabastron	Without lugs	Persian	Khirbet Yaham	Topped-up rim bowl	Persian
Tell Michal	Alabastron	Without lugs	Persian	Lachish	Topped-up rim bowl	Persian
				Samaria	Topped-up rim bowl	Persian ?
Akhziv	Alabastron	With oval lugs	Iron Age III	Tel Goren	Topped-up rim bowl	Persian
Ashkelon	Alabastron	With oval lugs	Iron Age III	Tell 'Ira	Topped-up rim bowl	Persian - Hellenistic
Meqabelein	Alabastron	With oval lugs	Iron Age III	Tell Fara South	Topped-up rim bowl	Persian
Sultantepe	Alabastron	With oval lugs	Iron Age III	Tell Jemmeh	Topped-up rim bowl	Persian
Tel Goren	Alabastron	With oval lugs	Iron Age III	Tell Michal	Topped-up rim bowl	Persian
Tel Miqne/ Ekron	Alabastron	With oval lugs	Iron Age III			
Ziyaret Tepe	Alabastron	With oval lugs	Iron Age III	Khirbet er Ras	Ledge-rimmed bowl	Iron Age III
Samaria	Alabastron	With oval lugs	Iron Age III - Persian	Ketef Hinnom	Ledge-rimmed bowl	Iron Age III - Persian
Tell Fara South	Alabastron	With oval lugs	Iron Age III - Persian	Al Mina	Ledge-rimmed bowl	Persian
Tell Jemmeh	Alabastron	With oval lugs	Iron Age III - Persian	Beersheba	Ledge-rimmed bowl	Persian
Al Mina	Alabastron	With oval lugs	Persian	Busayra	Ledge-rimmed bowl	Persian
Amman	Alabastron	With oval lugs	Persian	Byblos	Ledge-rimmed bowl	Persian
Beth Shean	Alabastron	With oval lugs	Persian	Lachish	Ledge-rimmed bowl	Persian
Byblos	Alabastron	With oval lugs	Persian	Neirab	Ledge-rimmed bowl	Persian
Kamid el loz	Alabastron	With oval lugs	Persian	Samaria	Ledge-rimmed bowl	Persian ?
Neirab	Alabastron	With oval lugs	Persian	Tel Goren	Ledge-rimmed bowl	Persian
Sidon	Alabastron	With oval lugs	Persian	Tell Michal	Ledge-rimmed bowl	Persian
Tel Dor	Alabastron	With oval lugs	Persian	Khirbet er-Rasm	Ledge-rimmed bowl	Persian - Hellenistic
Tell el Mazar	Alabastron	With oval lugs	Persian			
				ARABIAN STONE VESSELS IN THE LEVANT		
Amman	Alabastron	With lug-lappets	Iron Age III	Site	Shape	Chronology
Ain Arrub	Alabastron	With lug-lappets	Persian	Al Mina	Squat jar	Persian
Atlit	Alabastron	With lug-lappets	Persian	Lachish	Squat jar stopper	Persian
Deve Höyük	Alabastron	With lug-lappets	Persian	Lachish	Tripod bowl	Persian
Gezer	Alabastron	With lug-lappets	Persian	Nahal Yattir	Squat jar	Persian
Ras Shamra	Alabastron	With lug-lappets	Persian	Tel Dan	Squat jar	Persian ?
				Hama	Squat jar	Hellenistic

Tab. 2. List of Egyptian and non-Egyptian calcite vessels in the Levant dated to the 7th century BCE (= Iron Age III) and the Persian period. For references, see Squitieri 2017, Appendix A, cat. nn. 1226-1346. In addition: Tel Miqne/Ekron (Gitin – Dothan – Garfinkel 2017, fig. 9.3.3), Hacınebi (Stein 2014) and Ziyaret Tepe (online excavation database accessible at http://www3.uakron.edu/ziyaret/, accessed in May 2020).

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