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BUILDING A MINOAN LARNAX— TECHNIQUES AND GESTURES PRELIMINARY ANALYSIS



ABSTRACT: This paper investigates the fashioning stage of the Cretan *larnakes'* chaîne opératoire. *Larnakes* were clay sarcophagi, used on Crete from the Early to the Late Bronze Age to inhumate the dead. This funerary custom spread over time on Crete, reaching a peak at the end of the period, when *larnakes* were used across almost the whole island. Due to their significant duration of use and distribution, *larnakes* are considered fully part of the Minoan funerary landscape and have been, for this reason, abundantly investigated. However, questions regarding their production have always been put to one side and a specific study of their context of production is missing. To fill this lacuna, this paper examines the *larnakes'* manufacturing process by reconstructing the techniques and gestures employed by Minoan potters during the fashioning stage. It especially focuses on Late Bronze Age chest and bathtub *larnakes*, which are better documented.

KEYWORDS: *larnax*, *larnakes*, manufacturing process, techniques, chaîne opératoire.

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INTRODUCTION

Larnakes (plural of the Greek word “*larnax*”) are among the most significant objects used in Minoan funerary practices. These clay sarcophagi were used on Crete, from the beginning of the Early Bronze Age (EBA, 3rd millennium BC) to the end of the Late Bronze Age (LBA, end of the 2nd millennium BC), to bury the dead, and were found all over Crete in several types of funerary contexts throughout the period, such as caves and collective built tombs (circular tombs, house-tombs and chamber tombs).¹

Larnakes have characteristic morphological features, the most striking being their significant size and their complex, uncommon, shape. Usually composed of a body and a lid, they can be square-shaped or ellipsoidal. Used throughout the Bronze Age period, their morphological features evolved over time; during the EBA elongated ellipsoidal *larnakes* were used at Pyrgos Cave,² while some square-shaped and oval short ones were used in the Archanes Phourni cemetery until the MBA.³ Oval, almost circular, *larnakes* were used

1 Funerary caves were used mainly during the EBA, circular tombs (Messara) and house-tombs from the EBA to the Middle Bronze Age (MBA). Chamber tombs appeared in the LBA and were used until the end of the period.

2 XANTHOUIDES 1918.

3 SAKELLARAKI, SAKELLARAKI 1997.

in Knossian cemeteries during the beginning of the LBA.⁴ During the end of the LBA, this funerary practice reached its climax and two specific and standardised forms of *larnakes*, known as the chest-shaped *larnax* and the bathtub-shaped *larnax*, were used all over Crete.⁵ The first one comprises a chest-shaped body and a gabled or flat lid, while the second one has an ellipsoidal flared body, and is rarely found with a lid.⁶

The longevity of *larnakes* shows that they were very characteristic objects of Minoan culture and fully part of the Minoan funerary landscape. Moreover, it underlies the existence of a long-term craft tradition. Indeed, *larnakes* were produced over more than 2000 years in Crete, and although scholars have been examining issues related to their origin and the iconographical symbolism of their decoration, questions regarding their production have often been neglected.⁷ How were *larnakes* built? Which techniques, tools and gestures were employed for their manufacture? What were the different stages of the manufacturing process, from the manipulation of the paste to the final shape?

This paper focuses on LBA chest and bathtub *larnakes*, which provide more data with regard to technology.⁸ It will focus on the technological study of 28 Late Minoan III⁹ chest and bathtub *larnakes*. First I will describe and analyse the physical attributes observed within the scope of the macroscopic study; I will then discuss preliminary hypotheses related to the fashioning stage of the *chaîne opératoire*.

METHODOLOGY

This article summarises the preliminary results of a study of 28 *larnakes* dated to the LBA (second half of the 2nd millennium BC).¹⁰ These 28 *larnakes* (16 chest *larnakes* and 12 bathtub *larnakes*) come from several Bronze Age cemeteries in western (Chania, Dramia), central (e.g., Ligortynos, Knossos, Tylissos,

Archanes Phourni), and eastern Crete (e.g., Mochlos, Pachyammos, Palaikastro, Sitia).¹¹

A direct macroscopic study was carried out on these *larnakes* in order to identify the primary and secondary forming techniques used during their manufacture. A microscopic analysis¹² of their surface, using a microscope camera, was undertaken to observe the surface finishing techniques. This technological study aimed to reconstruct their *chaîne opératoire* specifically related to the fashioning stage, that is the sequence of “operations which transform the clay paste into a hollow form, being described in terms of technique, methods, gestures, and tools”.¹³ Specific physical attributes, such as marks, patterns of fractures or variations in wall thickness, for instance, were observed, recorded and compared with reference sources, such as pottery technology studies¹⁴ and ethnographic works.¹⁵ The surface texture and finishing were also observed and analysed with the naked eye and a microscope camera, in order to reconstruct the secondary forming and finishing operations. However, several difficulties regarding the conditions in which the study took place must be highlighted. In particular, access constraints within museum exhibitions prevented the direct observation of the internal surfaces of the chest, lid or base on some examples. Moreover, the macroscopic analysis was performed on complete and restored objects, so that the internal structure of the clay fabric could not be studied. The following observations and results must therefore be considered as preliminary.

Finally, the direct analysis was reinforced by the expertise of professional potters,¹⁶ as well as personal experiments. The latter consisted of building four chest *larnakes*' bodies using different forming techniques (especially slab-building and coiling). This was aimed at developing a better understanding of the manufacturing processes of each forming technique.

4 FORSDYKE 1926–1927; COOK, BOARDMAN 1954; ALBERTI 2013.
5 Chest and bathtub *larnakes* were mainly used in central and eastern Crete. Very few examples are reported from western Crete: see the bathtub specimen from Chania (NINIΟΥ-KINDELI 1983, 360) and the chest specimen from Dramia (KANTA 1980, 237).
6 Two bathtub *larnakes* from Gra Lygia (Arapi Skala) were found in connection with a flat rectangular lid (APOSTOLAKOU 1998).
7 N. Merousis (2014–2018), in a recent article, investigates the *larnakes*' manufacture and provides hypotheses for reconstructing their *chaîne opératoire*.
8 Bathtub and chest *larnakes*, due to their wide distribution and painted decoration, are more well-known than the examples from previous periods, and are often more accessible in museums.
9 Late Minoan (LM) III period (1420/1410–1075/1050 BC) comprises LM IIIA1 (1420/1410–1390/1370 BC), LM IIIA2 (1390/1370–1330/1315 BC), LM IIIB (1330/1315–1200/1190 BC)

and LM IIIC (1200/1190–1075/1050 BC). See MANNING 2010, 23, tab. 2.2.

10 This work is the result of several campaigns of study carried out at the Louvre Museum (2017), the Archaeological Museum of Heraklion (2018), the Archaeological Museum of Chania and the Archaeological Museum of Sitia (2019). I would like to thank the archaeologists and curators who allowed this study.

11 See the catalogue included at the end of this paper.

12 Using a low magnification (x50).

13 ROUX 2016b, 3.

14 RYE 1981; RICE 1987; ROUX 2016a.

15 GOSSELAIN 2002; LIVINGSTONE SMITH 2007.

16 I would like to thank Mr G. Dalamvelas, Mrs M. Dalamvelas and Mr D. Didier, from the Cretan village of Margaritès, for having welcomed me into their workshops and having shared their knowledge with me.

THE MACROSCOPIC ANALYSIS: THE CHEST-SHAPED LARNAKES

THE BASES

Only six chest *larnakes*' bases could be observed in the course of the macroscopic analysis (Cat. nos. 3, 4, 6, 16, 26 and 27).

These bases have irregular and randomly patterned fractures or seams, running along their centres. A long linear fracture, following the orientation of the long sides, is also often visible along the edge. The same type of fracture, or crack, also occurs along the area where the base meets the walls. When visible, the lower side of the base shows an irregular topography and micro-topography, characterised by a 'hollow and bumps' structure and a rough surface.

This suggests the base was formed in two distinct stages; the first step consisted of the formation of the central section, formed using big lumps of clay (non-preformed elements) joined by pressing them together. The irregular fractures or seams indicate the boundaries between these lumps.¹⁷ The central section of the base was probably formed directly on the ground, its lower surface thus adopting the irregularities of the soil. The second step would have been the addition of a border, probably formed using a large coil, which ran around the circumference of the central section. This border gave the final shape to the base and was also the support for the bottom level of the walls. The latter was joined directly onto the base, causing, on some examples, a long linear fracture at the intersection between the base and walls.

On several of the analysed *larnakes* (Cat. nos. 1, 4, 7, 8, 9, 17, 26 and 27), a raised strip or band runs around the external face of the lower walls. Fractures along its upper and lower surfaces, as well as on its core, frequently occur. This suggests that such raised bands were an added element, formed with a coil or little pieces of soft clay, stuck onto the walls. It gained its final shape after smoothing operations with a wet tool (probably wet fingers).

THE FEET

Ten chest *larnakes* were provided with feet.¹⁸ The feet have either a cubic shape (Cat. nos. 2, 4, 5, 6, 8, 9 and 20) or a 'gamma' shape composed of two perpendicular slabs (Cat. nos. 3, 7 and 26).

Cubic feet often display a rough surface on their internal sides. Some evidence of vertical scraping can sometimes be observed in these areas. In contrast, the external surfaces are usually smooth. On several examples, a vertical crack, or a discontinuous join void, occurs along the line of the external sides of the feet (about one centimetre away from the external sides). The 'gamma' feet of the *larnax* from Ligortynos (Cat. no. 3),¹⁹ show vertical voids and cracks on their internal sides, which seem to indicate the boundaries of the different elements used to build this specific shape. As with cubic feet, a vertical crack, or join void, also occurs along the line of their external sides.

In every instance, a horizontal crack or fracture is observed in the area where the feet meet the base. Moreover, several examples are characterised by a specific technological feature: on the lower side of the base, the area surrounding the feet forms some kind of 'protuberance', as if another layer of clay was added in this location. In the case of the *larnax* from Ligortynos, these 'protuberance' areas sometimes have small circular depressions that could be fingermarks.

Cubic and 'gamma' feet seem to have been formed with different techniques. Cubic feet were likely made by modelling a lump or a big coil. The feet were then roughly shaped by scraping, in order to provide them with angles. In the case of the *larnax* from Ligortynos, it seems that 'gamma' feet were made of several joined elements: an initial coil formed the central part, and two other flattened coils, or slabs, were joined to it, in order to form the perpendicular sides. This configuration is likely to have caused the vertical cracks and join voids visible on the internal sides.

The feet were joined to the lower surface of the base, following the axes of the corners. They were likely placed when the clay was still soft, in order to adhere to the base's surface. The 'protuberance' areas, visible around the feet on several examples, could be interpreted as an added layer of soft clay, allowing the feet to stick better to the base. Finally, a subsequent layer of clay was added on the external surfaces of the feet, when the raised frames (see below) were formed. The shaping of the raised frames thus began at the feet, and was then continued from the bottom to the top of the chest.

¹⁷ The seams are especially visible on the lower surface of the bases, which were not regularised.

¹⁸ One *larnax* from Ligortynos, one *larnax* from Sfaka and three *larnakes* from Mochlos are footless (Cat. nos. 1, 14, 15, 16 and 17); the bottom of the base rests directly on the floor.

¹⁹ 'Gamma' feet could only be observed well on one example from Ligortynos (Cat. no. 3).

THE WALLS

On several examples, the observation of the internal surfaces of the walls was impossible because the lids of these *larnakes* were in place (Cat. nos. 2, 5, 7, 8, 9, 14, 15, 17 and 20). Nonetheless, the macroscopic analysis revealed that all the chest *larnakes* studied show physical attributes that are linked to the use of joined elements to build the walls. These attributes are long horizontal and superimposed fractures, rhythmic (repeated and regular) corrugations, and/or horizontal and superimposed join voids.

This suggests that the walls were built using successive levels of joined elements, from the bottom to the top. The four walls of the chest were raised together, as is suggested by the repetition in the location of the horizontal joins on all four sides.

For some of the analysed examples, it was possible to pursue further investigations into the nature of the joined elements: some chest *larnakes* indeed show a very specific pattern of fractures, characterised by long linear ones combined with vertical or diagonal ones (Cat. nos. 6, 8 and 26; Fig. 1). On some examples, only superimposed linear fractures occur, but these are characterised by a strong regularity in their spacing (Cat. nos. 7 and 9; Fig. 2). In every instance, these *larnakes* show a great evenness in their walls as well as a specific surface finish: smooth, with non-plastic material usually embedded in the wall. Moreover, very little evidence regarding the use of secondary forming techniques, such as scraping, have been observed. Another significant technological feature relates to the corners of these *larnakes*; when the internal surface is visible, it often shows vertical and linear fractures, occurring along the corners. The general external morphology of the corners is also very even, forming almost 90° angles.

These physical attributes can be connected to the use of slab-building. The walls of these *larnakes* are composed of several levels of slabs, each level formed by rectangular or square-shaped slabs, joined one next to the other. These levels of slabs were superimposed in order to increase the height of the walls. The junctions between the joined slabs are either vertical or diagonal. This specific configuration is likely to have caused the horizontal and vertical/oblique fractures visible on some examples. It is also likely that the slabs were applied in a plastic condition in order to enhance the junctions' adhesion.

Certain other examples, even though they do not show the same pattern of fractures, were also probably shaped by slab-building. The strong regularity between the horizontal fractures, observed on the walls of these *larnakes*, suggests the use of preformed

and standardised elements, such as slabs, to build the chest. However, the absence of vertical or diagonal fractures must be considered. It is possible that the vertical junctions between the joined slabs on these *larnakes* were stronger and more resilient. Another hypothesis is that these *larnakes* were not built using levels of appended slabs, but using big strips of clay the same length as the walls.

The marked evenness and smooth surface could be the result of the pre-forming of slabs, by pressing or flattening. When joined together to build the walls, the slabs would already have had an even surface, so that scraping or regularising operations were unnecessary. Another explanation is the hypothetical use of an external support during the course of manufacture (see below).



Fig. 1. External wall of an LBA chest larnax from Archanes Phourni (Cat. no. 8), showing the pattern of fractures characteristic of slab-built walls (photograph by author).

Slab-built chest *larnakes*' corners were directly shaped in the course of the manufacture of the body: slabs were stuck together perpendicularly. Such a forming technique leads to fragility along the vertical joint between the walls, causing vertical fractures along the corners. It allows, however, the corners to be provided with a generally sharp and angular morphology, without subsequent secondary forming techniques (scraping or trimming). The hypothetical use of an external support (see below) could also explain their very angular profile.

In contrast, some *larnakes* show a very different type of physical attribute (Cat. nos. 1, 4, 14, 15 and 16). The general topography of these chests is



Fig. 2. An LBA chest larnax from Palaikastro (Cat. no. 9), with a detail of the external wall showing the patterning of fractures characteristic of walls built of preformed slabs (photographs by author).



Fig. 3. An LBA chest larnax from Gazi (Cat. no. 4), with a detail of the rhythmic corrugations on the internal wall characteristic of coil-built walls (photographs by author).

characterised by rhythmic corrugations (Fig. 3). In general, long horizontal linear fractures do not appear on these examples, and horizontal junctions are indicated by discontinuous join voids. On some *larnakes*, step-like fractures can occur. Technological features for the use of secondary forming techniques, such as scraping, are also frequently visible. Abundant elongated fingermarks, revealing that the potter tried to even the inner face of the walls by combing the clay with his hand, have been observed, for instance, on the example shown in Figure 3. Furthermore, these *larnakes* often show an irregular surface, where smooth areas alternate with rough ones. The corners are usually characterised by an irregular profile and width. On some examples, the lower section of the corners sticks out further than the bottom of the walls, forming a circular protruding area (Cat. nos. 15 and 16).

Finally, evidence for regularising operations, such as scraping or trimming, are frequently noticeable along the corners.

I suggest that these physical attributes can be linked to the use of coil-building. The walls of these examples were raised using large coils, several appended coils likely forming one horizontal level. The rhythmic corrugations indicate the joining operations between the successive levels of coils. Scraping operations were systematically needed in order to draw out the coils and regularise the joins. Evidence of scraping operations on *larnakes'* walls could be a very important and valuable criterion to distinguish between slab-building and coil-building, the latter technique requiring a greater amount of secondary forming work. It is also noticeable that the long linear and horizontal fractures, often observed on the previously discussed examples,

rarely occur on these. Coil-building seems to allow the formation of better junctions between the superimposed elements; in contrast to slabs, coils can be easily deformed (*e.g.*, by pinching, drawing, scraping, *etc.*) in order to be more strongly joined together.

The corners of these *larnakes* were shaped during the building of the body; scraping and trimming operations were performed along the external and internal corners in order to give them a sharp profile. On a few examples (Cat. nos. 15 and 16), it is likely that large coils or lumps of clay were stuck, in a vertical axis, along the joins between the four walls, then re-shaped by scraping and trimming in order to form the corners.

Eleven *larnakes*²⁰ (Cat. nos. 3, 4, 7, 8, 9, 14, 15, 16, 17, 26 and 27) were provided with raised frames. These raised frames are added elements, shaped with little pieces of soft clay stuck on the corners of the *larnakes*, and defined by scraping and smoothing operations with a wet tool (hand or cloth). The shaping of raised frames began from the external surfaces of the feet, if any, and continued to the top of the chests.

THE RIMS

Chest *larnakes* have either a protruding circular (Cat. nos. 4, 5, 14, 15, 16 and 26) or rectangular rim (Cat. nos. 1, 7 and 20), a raised external band (Cat. nos. 2, 3, 7, 8 and 27), like the one found on the lower part of the walls just above the base, or a projecting flat rim (Cat. no. 9).

The large circular or rectangular protruding rims are often characterised by variations in profile and thickness. When the internal wall faces are visible, a discontinuous join void can be seen on the upper surface, indicating the junction between the walls and rim. Bulges of paste can also be observed on some examples, in the area where the lower surface of the rim joins the external surface of the walls. Evidence of regularising or finishing operations, such as scraping or smoothing, are also visible.

These rims are likely to have been formed with the addition of a large coil on the upper surface of the walls. The coil was placed and joined in order to extend outward beyond the walls of the chest. The lower surface of the coil was joined to the external surface of the walls, creating some bulges of paste on certain examples. An additional layer of moist clay could also have

been added, in some instances, in order to hide this external junction (Cat. nos. 1 and 4). The rims were then shaped by scraping and wet smoothing, the final profile (circular or rectangular), depending on the extent of the regularising and finishing operations.

The raised external bands were likely shaped using the same methods as the ones used to form the lower raised bands: coils or little pieces of soft clay stuck on the walls, and subsequent smoothing operations. The extremities of the band were joined to the raised frames using smoothing operations.

Few technological attributes have been recognised with regard to the manufacture of flat rims, since they are only associated with one *larnax* of the *corpus* under study. This flat rim is also characterised by variations in its profile and thickness. Horizontal fractures can occur along the junction between the lower surface of the rim and the external surface of the walls.

The forming process of the flat protruding rims is difficult to reconstruct at this stage. They could have been built using leather-hard slabs, perpendicularly joined to the upper surface of the walls. Such a process could have caused the horizontal fractures visible between the rim and walls.

THE USE OF A SUPPORT?

To conclude the macroscopic analysis of chest *larnakes*' bodies, a specific question must still be considered: was a support needed during the shaping of chest *larnakes*' bodies? This question was raised within the scope of an interview with potters²¹ from the Cretan village of Margaritès, and is especially applicable to the slab-built technique. Indeed, if we consider that some *larnakes* were built with slabs, it must also be assumed that the slabs were in a very plastic condition, to allow for joining them together. However several technological constraints must be taken into account. Slabs of soft clay cannot be used to build such a large vessel, without collapsing on their own or under the weight of the clay added afterwards. To reconcile the use of plastic slabs with the significant size of chest *larnakes*' bodies, the use of a support during manufacture can be hypothesised.

Regarding the type and nature of such a support, it may have been external, holding up the *larnax*'s walls from the outside, in order to allow its removal after the clay had retracted through drying. Regarding

20 One *larnax* from Ligortynos (Cat. no. 2) has incised frames, while the other from the same site (Cat. no. 1), as well as one *larnax* from Kavrochori (Cat. no. 5), one *larnax* from Knossos

(Cat. no. 6) and one *larnax* from Petras Papoura (Cat. no. 20), do not have any frames.

21 Mr G. Dalamvelas and Mrs M. Dalamvelas.



Fig. 4. An LBA chest larnax from Skafa (Cat. no. 14), with a detail of the external wall of its gabled lid showing technological features associated with a coil-built construction technique (photographs by author).

the material, it can be assumed that wood or clay might have been used. The support could have been complete, composed of four individual walls in order to be easily withdrawn after the manufacturing process, or composed of several parts assembled during the forming process, then dismantled.

However physical traces of this support are lacking on the *larnakes* examined. Indeed, none of the technological indications usually connected to moulding, such as imprints on the external wall faces or traces of a parting agent (sand or dry powdered clay), have been observed so far. It is nevertheless possible that such traces might have been obscured by subsequent treatments, such as smoothing and painting.

THE LIDS

Two different kinds of lids are associated with the chest *larnakes* examined: flat (Cat. no. 1) and gabled (Cat. nos. 2, 5, 7, 8, 9, 14, 15, 17 and 20). The first is usually composed of two clay slabs and provided with handles on the upper side. The second is provided with four sides, two large and two small, that join together at the top, and is usually capped by a clay beam.

The inner surface of the only flat lid that has been observed during this macroscopic analysis has rounded seams that seem to indicate the junctions between some curved elements, as well as fingermarks and even a palm handprint. The lid is separated, along the middle, into two parts.

This lid demonstrates physical attributes linked to a technique based on joined elements: it was shaped using large lumps of clay pressed together. The

fingermarks and the palm handprint indicate pressing operations on the paste, likely in a mould or a simple former. The lid was then cut along the middle, when the clay was in a leather-hard condition, in order to divide it into two parts.

The gabled lids' manufacturing process is more difficult to reconstruct.²² Several lids have either superimposed horizontal fractures (Cat. nos. 8, 15 and 17), or rhythmic corrugations (Cat. no. 5), or both (Cat. nos. 9 and 14) on their walls. The lid of the *larnax* from Sfaka (Cat. no. 14; Fig. 4) shows three linear horizontal fractures associated with four rhythmic corrugations, sometimes combined with horizontal discontinuous join voids, outlining quite regular layers, each five to six centimetres in height. The internal lid surface of one *larnax* from Mochlos (Cat. no. 15) could be observed. It is marked by elongated fingermarks, vertically orientated; the upper internal surface is characterised by a very rough surface, showing irregular seams and bulges.

These physical attributes suggest that gabled lids were formed with a technique based on joined elements. The technological features observed on the lid from Sfaka suggest that the walls were built in successive levels of coils, likely drawn out in order to increase their height (to five to six centimetres). The long linear fractures could be the results of multiple partial drying phases, allowing the walls to strengthen before the addition of the subsequent levels. Furthermore, it can be inferred, from examining the internal surface of the example from Mochlos, that the lids were progressively raised, from the bottom to the top: the internal surface

²² This is mainly due to difficult study conditions. The internal surface of most of the lids from the *larnakes* in the study corpus

have not been examined due to access constraints at museum exhibitions.

was scraped during building, likely with the fingers; the lid was then closed at the top by using lumps of clay, joined one next to the other. At that point, the potter could not access the internal part of the lid any longer, explaining why the outlines of these lumps are still very visible.

Finally, it is probable that gabled lids were directly erected on the top of the *larnakes*' bodies. The lower surface of the lid often displays a convex print matching the shape of the rim of the body. In that case, the potter must have waited for the body to dry or become leather-hard, before shaping the lid directly upon it. In that respect, the lid was perfectly matched with the body, in terms of both length and width. It is thus likely that each lid fitted a single body.

THE SURFACE FINISHING OPERATIONS

The external surfaces of chests and lids usually show evidence of wet smoothing, with a characteristic surface of little ridges and partially covered non-plastic material. Given the profile and orientation of the ridges, it seems that smoothing operations were performed with a soft and wet tool, such as the hand or a cloth.

All chest *larnakes*, with the exception of one *larnax* from Mochlos (Cat. no. 17) were slipped and painted on the external faces of their walls. The slip and paintings were applied also on the raised frames, if applicable, and on the rims and the external surfaces of the feet. The same surface finishing operations were performed on the lids.²³ A white slip was used for *larnakes* from Palaikastro, Mochlos, Sfaka, Petras Papoura and Dramia (Cat. nos. 9, 14, 15, 16, 20 and 27). A beige to yellow slip was used for *larnakes* from Ligortynos, Archanes Phourni, Kavrochori and Knossos (Cat. nos. 1, 2, 3, 5, 6 and 8). The painted decoration varies from brown to red. This colour variation seems to be related to the firing process.

THE MACROSCOPIC ANALYSIS: THE BATHTUB LARNAKES

THE BASES

Few technological features have been observed on the bases of bathtub *larnakes*.²⁴ Bases are usually characterised by a generally flat profile, although the surface can adopt a light 'hollows and bumps' morphology.

On some examples, a seemingly random pattern of fractures occurs, some of them with a rounded profile (Cat. nos. 21, 23, 24 and 28). Moreover, a linear fracture is often visible along the junction between the base and the lower part of the wall. On some examples, evidence for secondary forming techniques, such as scraping, occur on the internal surface, specifically near the edges and, sometimes, close to the centre.

The bases do not seem to have been formed with joined elements, such as coils or slabs. The presence of curved fractures and 'hollows and bumps' surfaces could rather suggest the use of rounded lumps of clay pressed and joined together. The wall was built directly onto the bases, as is indicated by recurrent horizontal fractures occurring in the area where the base meets the wall. Some scraping operations were performed on the internal surface of the edges, to regularise them and perhaps to hide the junction between the base and the wall.

On all examples, with the exception of one *larnax* from Chania and one *larnax* from Episkopi (Cat. nos. 13 and 28), a raised strip or band runs around the external surface of the lower wall. Fractures along its upper or lower surface, as well as on its core, occur frequently. This band also usually shows evidence of smoothing operations. As was the case for chest *larnakes*, this external band was an added element. It was likely formed with a coil stuck on the wall, and gained its final shape through smoothing operations using a wet tool (probably wet fingers).

THE WALLS

All the bathtub *larnakes* examined are characterised by rhythmic corrugations, often associated with horizontal discontinuous join voids (Figs. 5 and 6).²⁵ Sometimes the junctions are marked by over-thicknesses, which include visible traces of the paste and the spreading actions through which the paste was used to effect the join (Fig. 6). In several cases the corrugations, especially those unusually protrusive, have been scraped with a tool in a vertical or diagonal direction.

These physical attributes are linked to coil-building. Rhythmic corrugations and join voids mark the junctions between the joined coils. The over-thicknesses, visible on one example from Mochlos (Cat. no. 19), indicate that the clay paste was spread and pressed in

23 With the exception of one example from Mochlos (Cat. no. 15); in this instance, the lid was left unslipped and unpainted.

24 Only the internal surface of the bases could be observed, due to access constraints at museum exhibitions.

25 One *larnax* from Sitia also displays numerous superimposed horizontal fractures that could demonstrate the presence of horizontal junctions (Cat. no. 21).

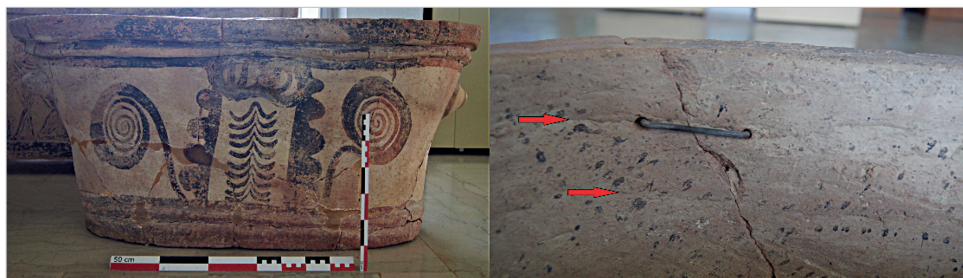


Fig. 5. An LBA bathtub larnax from Katsambas (Cat. no. 23), with a detail of its internal wall showing the rhythmic corrugations and join voids characteristic of coil-building (photographs by author).



Fig. 6. An LBA bathtub larnax from Mochlos (Cat. no. 19), with a detail of its internal wall showing the rhythmic corrugations and over-thicknesses characteristic of coil-building (photographs by author).

order to join the coils. Scraping operations were performed on the outer and inner faces of the bathtub, in order to increase the height of the coils and regularise the surfaces. The four walls were gradually raised together, from the bottom to the top, as is indicated by the repetition in the location of the horizontal joins, on all four sides. Often, eight to nine levels of large coils can be distinguished, each probably composed of several adjoining coils.

THE RIMS

Most of the bathtub *larnakes* have morphologically similar rims, with a protruding rectangular to circular profile. One *larnax* from Sitia (Cat. no. 21) has a projecting flat rim.

The protruding circular to rectangular rims are characterised by variations in their width and profile. On the upper surface of the rim, roughly along the middle, longitudinal cracks or discontinuous join voids are visible on several *larnakes*. Bulges of paste, or cracks, can also be observed on some examples, in the area where the lower surface of the rim meets the external wall faces. Finally, evidence of scraping and

smoothing operations are noticeable on the upper, external and lower surfaces of the rims.

This suggests that the protruding rims were formed using added elements, such as coils. It is likely that the rims were made in two steps: first, a large coil was joined to the upper surface of the wall (using several appended coils in order to cover the whole circumference) to form the main section of the rim; one or two other coils were then adjoining to its outer edge, and pressed against it, to form the external protrusion. This configuration is likely to have caused the longitudinal cracks or join voids on the upper surface of several bathtub *larnakes*' rims. In the area where the lower surface of the rim meets the wall, a subsequent layer of clay or a coil seems to have been added in order to hide, and maybe also reinforce, the junction, causing bulges of paste on several examples. The rims were then shaped by scraping with a tool and smoothing with a wet cloth or hand.

As was the case for the chest *larnakes*, the manufacturing process for the projecting flat rims is more difficult to reconstruct, and few technological features occur. These rims also show variations in their width

and profile. On the example from Sitia, longitudinal fractures can be observed on the upper surface of the rim, close to its inner edge. Step-like fractures also occur on the top surface.

Could flat projecting rims have been built using slabs, joined to the upper portion of the wall perpendicularly? Another manufacturing process similar to the one used for projecting rims can also be considered, but with more coils adjoined to form the external protrusion (two to three coils?), and substantial pressing operations in order to flatten the coils out.

THE SURFACE FINISHING OPERATIONS

The external and internal faces of bathtub *larnakes* usually show evidence of wet smoothing, with a characteristic surface showing little ridges and partially covered non-plastic material. Given the profile and orientation of the ridges, it seems that smoothing operations were performed with a soft wet tool, such as the hand or a cloth.

Both the external and internal faces of bathtub *larnakes* were slipped and painted, with the exception of one *larnax* from Palaikastro (Cat. no. 10), which was only slipped on its outer wall face. Slip and painted decoration were also applied on the upper and external surfaces of the rim, and, sometimes, on the internal surface of the base (Cat. nos. 10, 11, 18 and 19). A white to beige slip was used for *larnakes* from Palaikastro, Mochlos, Katsambas, Sitia, Piskokefalo and Pachyammos, as well as two *larnakes* of unknown provenance (Cat. nos. 10, 12, 18, 19, 21, 22 and 23), and a yellow to beige slip for the *larnax* from Chania (Cat. no. 28).

It can be observed that more attention was paid to the inner face of bathtub *larnakes* than that of chest *larnakes*: it was usually smoothed, slipped and painted. This difference in surface finishing treatment could be related to the fact that the interiors of bathtub *larnakes* were supposed to be seen. This could perhaps explain why these examples are almost never found in connection with a lid.

THE RESULTS OF THE TECHNOLOGICAL STUDY

In this section, I will describe the main results from the macroscopic analysis (see above), regarding the fashioning stage in the *chaîne opératoire* of LM III chest and bathtub *larnakes*. The sequence of steps related to the manufacturing process is followed, each

step being briefly described in terms of techniques, gestures and tools. Optional stages in the *chaîne opératoire* are marked as such.

Due to study constraints and the small number of examples analysed, these results are preliminary and require further investigation.

THE CHAÎNE OPÉRATOIRE FOR THE FASHIONING STAGE OF CHEST-SHAPED LARNAKES

FORMING OF THE BASE

The central section of the base is formed with lumps of clay joined by pressing them together using the hands. It is likely that the base is shaped directly on the ground. A large coil is added and joined around the central section to create the border and give the final shape to the base.

FORMING OF THE FEET (OPTIONAL)

- Cubic feet: the feet are modelled out of a lump of clay or a large coil. Scraping operations with a rib-type tool are performed.
- ‘Gamma’ feet: the feet are formed with one central coil to which are joined two coils or slabs, perpendicularly.

JUNCTION BETWEEN THE FEET AND BASE (OPTIONAL)

The feet are stuck under the base, along the axes of the corners. An additional layer of soft clay can be added, under the base, to make the process of joining the feet and the base easier. This layer is stuck and pressed under the base with hands and fingers.

Comment: several questions must be considered regarding the ways and means through which the feet were joined to the base: was the base soft or leather-hard at this stage? Did the base rest directly on the ground, or was it lifted at this point? Several hypotheses can be proposed:

- the base was first formed on the ground, dried until it reached a leather-hard condition and was then lifted in order to add the feet;
- the base was directly formed upon a raised platform²⁶ and the feet added immediately after, while the base was still in a plastic condition;
- the base was formed on the ground and cavities, directly dug into the soil, allowed the feet to be joined to the base.

²⁶ This raised platform could simply have been created by excavating the ground around the *larnax* base, or built with clay or wood.

JUNCTION BETWEEN BASE AND WALLS

The first level of the walls is joined directly onto the base, by sticking it onto the upper surface of its border.

ADDITION OF A RAISED EXTERNAL BAND (OPTIONAL)

A raised strip is added, around the lower part of the chest, in the area where the base meets the external face of the walls. It is formed with a thin coil, or little pieces of soft clay, stuck on the walls, and shaped by smoothing with a wet tool, likely the hand or a cloth.

FORMING OF THE WALLS

- **Slab-building:** the walls are formed with successive levels of rectangular-shaped joined slabs. The slabs are preformed, likely by pressing them on a flat surface or by flattening them with a rolling pin-type tool, and maybe cut out with a blade. They are stuck and joined, one next to the other, by pressing their edges together with the hands. A variation of this technique could consist of using large strips of clay, as long as the walls. The corners are formed during the manufacture of the body, by sticking the slabs together perpendicularly.

Comment: it is possible that an external support was used during the forming of the walls in order to support the slabs or strips, and to prevent the walls from collapsing. The support was removed for the formation of the raised frames, if any, and the rims.

- **Coil-building:** the walls are formed with successive levels of joined coils. Coils are joined, one next to the other, by pressing and scraping them with the hands or a scraping tool. They are drawn out with the fingers and scraped with the fingers, or with a rib-type tool, in a vertical or oblique direction. The corners are formed in the course of manufacture, using scraping operations with the hands or a rib-type tool. Another variation consists of adding a coil or superimposed lumps of clay along the vertical junctions between the four walls, in a vertical axis, and shaping them by scraping.

SMOOTHING OPERATIONS ON THE EXTERNAL WALL FACES

Smoothing operations are likely performed during the walls' manufacture, with wet hands or a wet cloth. They are performed on the chest's external wall faces.²⁷

ADDITION OF RAISED FRAMES (OPTIONAL)

Raised frames are formed by sticking pieces of soft clay on the external surface of the corners, and shaping them by scraping with the fingers or a rib-type tool, and smoothing with wet hands or a cloth. This additional layer of clay is first stuck on the external surface of the feet, and then progressively added from the bottom to the top of the corners.

FORMING OF THE RIM

- **Circular or rectangular protruding rim:** a coil is added and joined to the upper surface of the walls. It is shaped by scraping, with a rib-type tool, and smoothing with wet hands or a wet cloth. The junction between the rim and the external wall faces is often hidden with an additional layer of moist clay.
- **Raised band:** a thin coil or little pieces of moist clay are stuck on the upper external face of the chest, and shaped by smoothing with a wet tool, likely the hands or a cloth.
- **Flat projecting rim:** leather-hard slabs are joined to the upper portion of the walls, perpendicularly?

FORMING OF THE LID

- **Flat lid:** the lid is formed with large lumps of clay stuck together, likely in a mould or in a simple former. It is cut along the middle, in order to be separated into two parts.
- **Gabled lid:** the lid is formed with successive levels of joined elements, likely coils. The walls are raised from the bottom to the top. The internal surface is scraped with the fingers, or with a tool, in order to draw out the joined elements. Regular partial drying phases are probably performed in order to allow the walls to strengthen. The lid is then closed at the top with lumps of clay joined next to each other.

Comment: the gabled lids are likely formed and erected directly upon the chests. This configuration allows the lids to match perfectly with the chests.

SMOOTHING OPERATIONS ON THE EXTERNAL FACES OF THE LID

Smoothing operations were likely performed during the manufacture of the lid, with wet hands or a wet cloth. They were performed on the lid's external wall faces.

²⁷ However, few chest *larnakes*' internal wall faces could be studied, so that there is, at this stage, very little information regarding the surface finishing.

DRYING OF THE CHEST AND LID

The *larnax* is then left to dry, the lid likely still resting upon the chest.

Comment: It is likely that *larnakes* required a long time to dry, given the thickness of the walls (two to three centimetres).²⁸

APPLICATION OF THE SLIP ON THE EXTERNAL WALL AND LID FACES (OPTIONAL)

The external wall faces of the chest and lid are slipped using a soft tool such as a cloth.

APPLICATION OF PAINTED DECORATION ON THE EXTERNAL WALL AND LID FACES (OPTIONAL)

Painted decoration is applied to the external wall faces of the chest and lid. The paint used is usually monochrome.²⁹

Comment: little information is known regarding the type of tool used to paint the walls.³⁰

THE CHAÎNE OPÉRATOIRE FOR THE FASHIONING STAGE OF BATHTUB LARNAKES

FORMING OF THE BASE

The base is formed with large lumps of clay joined and pressed together. The internal surface can be scraped with a rib-type tool.

JUNCTION BETWEEN BASE AND WALL

The first level of the wall is joined directly onto the base, by sticking it onto the upper surface of the base's circumference. The base's internal surface in the vicinity of this seam is scraped with a rib-type tool, in order to hide the junction.

ADDITION OF A RAISED BAND (OPTIONAL)

A raised strip is added around the lower part of the bathtub, in the area where the base meets the walls. It is likely formed with a coil, stuck on the wall, and shaped by smoothing with a wet tool, such as a hand or cloth.

FORMING OF THE WALL

The wall is formed by coil-building. It is gradually raised with successive levels of joined coils, each of which is positioned progressively further outwards than the

preceding layer, in order to give the bathtub a flared profile. Coils are drawn out with the hands, and scraping operations are performed on the outer and inner faces of the wall to increase its height and regularise the surface.

SMOOTHING OPERATIONS ON THE EXTERNAL AND INTERNAL WALL FACES

Smoothing operations are likely performed during the manufacture of the wall, with wet hands or a wet cloth. They are performed on both the *larnax*'s external and internal wall faces.

FORMING OF THE RIM

- Protruding circular to rectangular rim: a large coil is joined to the upper surface of the wall to form the main section of the rim. One or two other coils are laterally adjoined to the first one and pressed against it in order to form the externally protruding area. A subsequent layer of moist clay is added to hide the external junction between the rim and the wall.
- Flat projecting rim: leather-hard slabs are joined to the upper portion of the wall perpendicularly. Alternatively, it can also be hypothesised that a similar process as the one used for the protruding rims is performed, but with more coils laterally adjoined to the main section and substantial pressing and stretching operations.

DRYING OF THE BATHTUB LARNAX

The bathtub is left to dry.

Comment: It is likely that *larnakes* required a long time to dry, given the thickness of the wall (two to three centimetres).³¹

APPLICATION OF THE SLIP ON THE EXTERNAL WALL FACE

The external face of the wall of the bathtub *larnax* is slipped using a soft tool such as a cloth.

APPLICATION OF THE SLIP ON THE INTERNAL WALL FACE (OPTIONAL)

The internal face of the wall of the bathtub *larnax* is slipped using a soft tool such as a cloth.

28 Mr G. Dalamvelas, a potter from the Cretan village of Margaritès, considers that the drying process of a *larnax* could have lasted one to two weeks.

29 Only one chest *larnax*, in the study *corpus*, displays polychromatic painted decoration with red and blue to green paints (Cat. no. 27).

30 It is likely some kind of paintbrush made of vegetal fibres or animal hair was used.

31 See n. 28.

APPLICATION OF THE SLIP ON THE INTERNAL SURFACE OF THE BASE (OPTIONAL)

The internal surface of the bathtub *larnax*'s base is slipped using a soft tool such as a cloth.

APPLICATION OF PAINTED DECORATION ON THE EXTERNAL AND INTERNAL WALL FACES

Painted decoration is applied on the external and internal wall faces of bathtub *larnakes*. The paint used is usually monochrome.

Comment: little information is known regarding the type of tool that could have been used to paint the walls.³²

SYNTHESIS AND DISCUSSION

The preliminary results of this analysis allow us to consider the different stages of the chest and bathtub *larnakes*' *chaînes opératoires* that constitute their fashioning phase, from the forming of the base to the surface finishing operations, ending with the drying process.

Both chest and bathtub *larnakes* were built with a technique based on joined elements: their walls were raised in successive, superimposed levels of joined elements (coils or slabs), from the bottom to the top. Several factors, however distinguish the two *chaînes opératoires*; in the case of the chest *larnakes*, the addition of feet or raised elements such as frames led to substantial additional stages in the manufacturing process, as well as the requirement for specific techniques and methods (making the join between the base and feet, the potential lifting of the base, the preparation and addition of moist clay on the walls, *etc.*). The possible use of slab-building, likely in conjunction with the use of an external support, to build some chest *larnakes* (see below), also constitutes a very diagnostic criterion to distinguish between the two shapes and their related techniques. Moreover, the forming of the lid also follows its own manufacturing process (flat lid formed with lumps of clay joined and pressed, likely in a mould; gabled lid formed with successive levels of joined elements, until the lid is closed at the top with adjoined lumps of clay), that requires distinctive techniques and methods. It may be hypothesised that these differences within the fashioning stage of the *chaînes opératoires* for chest and bathtub *larnakes* imply the existence of two specific groups of craftsmen, in charge of the production of either one shape or the other.

However, several differences also occur in the *chaînes opératoires* of the chest *larnakes* examined. The most striking is the possible use of slab-building to raise the walls of some examples (Cat. nos. 6, 8, 9 and 26), instead of coil-building (Cat. nos. 1, 4, 14, 15 and 16). The use of slab-building indeed leads to a very distinctive *chaîne opératoire* characterised by its own techniques (preforming of slabs, seams between adjoined slabs), gestures (pressing the edges of the slabs together without deforming them), tools (potential use of an external support) and, thus, craftsmanship. Other forms of variation also occur, such as the optional addition of feet, within the forming processes for the feet (cubic feet formed from a lump or a coil and shaped by scraping, 'gamma' feet formed using joined elements) or in the forming process of the rim (a protruding rim formed with joined coils shaped by scraping and smoothing, a flat rim formed with joined slabs...). Important variations in the fashioning stage of the *chaîne opératoire* for chest *larnakes* thus occur, and distinct forming techniques were probably used to build the same shape. These differences could be associated with the existence of several workshops in LBA Crete with separate crafting traditions. It is, however, difficult at this stage to determine the number, location and geographic boundaries of these workshops. The study of more items and a comparison of technological data with morphological, stylistic and petrographical data are needed.

The fashioning stage of the bathtub *larnakes*' *chaîne opératoire* is, in contrast, more homogeneous, and the primary and secondary forming techniques used are very similar: coil-building, scraping and smoothing operations on the inner and outer wall faces, with the rim usually formed using a main coil to which are laterally adjoined one or two additional coils. This implies the existence of a technical tradition, shared by *larnax* makers during the LBA in eastern and central Crete.

CONCLUSIONS

The preliminary results from the LBA *larnakes*' technological study presented here reveal that there were recognisably different ways to make a *larnax*. These differences within the fashioning stage of the *chaîne opératoire* are likely connected to the existence of distinct groups of craftsmen and workshops in LBA Crete. It is, however, premature to speculate on the

³² See n. 30.

number, nature and locations of these workshops, and further studies, taking into account complementary data (technological, morphological, stylistic and petrographical), must be undertaken.

Substantial technological and petrographical studies are currently being conducted to complete this analysis. A technological analysis of a wider study *corpus* is in progress, taking into account several further chest and bathtub *larnakes* from western, central and eastern Crete. Moreover, this analysis also includes fragments of *larnakes*, allowing us to propose

a more detailed description of the techniques used and a better reconstruction of the different stages of the manufacturing process. An experimental project, in collaboration with traditional potters from Margaritès—Mr G. Dalamvelas, Mrs M. Dalamvelas and Mr D. Didier—is currently ongoing; it aims to reproduce a LBA chest *larnax*, and considers the whole *chaîne opératoire*, from the clay supply to the firing. Such a project will help to reconstruct the chest *larnakes*' manufacturing process, and deepen our comprehension of the technical abilities required.

CATALOGUE

Abbreviations

H. height; L. length; W. width

- 1) Ligortynos (Louvre Museum CA 922): L. 125 cm, W. 46 cm, H. 50 cm. Chest *larnax* without feet, flat lid.
Chronology: LM IIIA1/2.
Bibliography: D'AGATA 2015, figs. 8 I.8–9.
- 2) Ligortynos (Louvre Museum CA 921): L. 105 cm, W. 42 cm, H. without lid 88 cm. Chest *larnax* with four feet, gabled lid.
Chronology: LM IIIA2/B.
Bibliography: RUTKOWSKI 1966, tabs. XI 1–2, XII 1–3; D'AGATA 2015, fig. 7.
- 3) Ligortynos (Louvre Museum CA 923): L. 105 cm, W. 53 cm, H. 69 cm. Chest *larnax* with four feet, no lid.
Chronology: LM IIIA2/B.
Bibliography: D'AGATA 2015, fig. 8 I.10.
- 4) Gazi (Heraklion Museum Π18985) (Fig. 3): L. 90 cm, W. 37 cm, H. 68 cm. Chest *larnax* with four feet, no lid.
Chronology: LM IIIB.
Bibliography: ALEXIOU 1972, figs. 24 α–β.
- 5) Kavrochori (Heraklion Museum): L. 102 cm, W. 47 cm, H. without lid 66 cm, H. with lid 104 cm. Chest *larnax* with four feet, gabled lid.
Chronology: LM IIIA2/B.
Bibliography: MEROUSIS 2013, fig. 10b.
- 6) Knossos (Heraklion Museum Π18195): L. 104 cm, W. 44 cm, H. without lid 66 cm. Chest *larnax* with four feet, no lid.
Chronology: LM IIIA2.
Bibliography: MORGAN 1987, figs. 1–10.
- 7) Giofyrakia (Heraklion Museum Π12027): L. 94 cm, W. 42 cm, H. without lid 79 cm, H. with lid 115 cm. Chest *larnax* with four feet, gabled lid.
Chronology: LM IIIA.
Bibliography: MEROUSIS 2013, fig. 12b.
- 8) Archanes Phourni (Heraklion Museum Π33412) (Fig. 1): L. 128 cm, W. 54 cm, H. without lid 80 cm, H. with lid 100 cm. Chest *larnax* with four feet, gabled lid.
Chronology: LM IIIB.
Bibliography: SAKELLARAKI, SAKELLARAKI 1997, fig. 120.
- 9) Palaikastro (Heraklion Museum Π1619) (Fig. 2): L. 120 cm, W. 44 cm, H. without lid 67 cm, H. with lid 100 cm. Chest *larnax* with four feet, gabled lid.
Chronology: LM IIIA2.
Bibliography: BOSANQUET 1901–1902, pls. XVIII–XIX.
- 10) Palaikastro (Heraklion Museum Π7396): L. 68 cm, W. 38 cm, H. 43 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA2.
Bibliography: BOSANQUET, DAWKINS 1923, pl. XXXIV.
- 11) Pachyammos (Heraklion Museum Π3689): L. 74 cm, W. 45 cm, H. 46 cm. Bathtub *larnax* without lid.
Chronology: LM IIIB.
Bibliography: BOYD HAWES *et al.* 1908, pls. 10, 44.
- 12) Pachyammos (Heraklion Museum Π9499): L. 82 cm, W. 34 cm, H. 49 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA2/B.
Bibliography: KANTA 1980, pls. 56, 3–4, 52, 4.
- 13) Episkopi Ierapetra (Heraklion Museum Π7624): L. 63 cm, W. 39 cm, H. 38 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA2/B.
Bibliography: RUTKOWSKI 1966, pls. XXV, 1–3.

- 14) Sfaka (Sitia Museum ΜΣ9987) (Fig. 4): L. 102 cm, W. 38 cm, H. without lid 35 cm, H. with lid 60 cm. Chest *larnax* without feet, gabled lid.
Chronology: LM IIIA1.
Bibliography: KANTA 1980, pl. 66, 6.
- 15) Mochlos (Sitia Museum ΜΣ11340): L. 120 cm, W. 43 cm, H. without lid 46 cm, H. with lid 74 cm. Chest *larnax* without feet, gabled lid.
Chronology: LM IIIA1/2.
Bibliography: SOLES, DAVARAS 2008, pl. 20b.
- 16) Mochlos (Sitia Museum ΜΣ9947): L. 135 cm, W. 48 cm, H. without lid 53 cm. Chest *larnax* without feet, no lid.
Chronology: LM IIIA1/2.
Bibliography: SOLES, DAVARAS 2008, pls. 18 a–b.
- 17) Mochlos (Sitia Museum): L. 119 cm, W. 46 cm, H. without lid 55 cm, H. with lid 85 cm. Chest *larnax* without feet, gabled lid.
Chronology: LM IIIA2.
Bibliography: SOLES, DAVARAS 2008, pl. 28 a–b.
- 18) Mochlos (Sitia Museum ΜΣ12033): L. 75 cm, W. 35 cm, H. 54 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA1/2.
Bibliography: SOLES, DAVARAS 2008, pl. 22 c.
- 19) Mochlos (Sitia Museum ΜΣ11370) (Fig. 6): L. 78 cm, W. 44 cm, H. 52 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA2/B.
Bibliography: SOLES, DAVARAS 2008, pls. 17 b–c.
- 20) Petras Papoura (Sitia Museum ΜΣ3530): L. 106 cm, W. 48 cm, H. without lid 75 cm, H. with lid 104 cm. Chest *larnax* with four feet, gabled lid.
Chronology: LM IIIA2/B.
Bibliography: TSIPOPOULOU, VAGNETTI 1995, figs. 99–101.
- 21) Sitia (Sitia Museum ΜΣ10005): L. 82 cm, W. 38 cm, H. 48 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA2/B.
Bibliography: TSIPOPOULOU, VAGNETTI 1997, pl. CLXXX b.
- 22) Piskokefalo (Sitia Museum): L. 91 cm, W. 37 cm, H. 41 cm. Bathtub *larnax* without lid.
Chronology: LM IIIC.
Bibliography: TSIPOPOULOU, VAGNETTI 1997, pl. CLXXXII.
- 23) Katsambas (Sitia Museum ΜΣ7874) (Fig. 5): L. 85 cm, W. 45 cm, H. 48 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA/B.
Bibliography: KANTA 1980, pl. 71, 10.
- 24) Unknown (Sitia Museum ΜΣ9883): L. 96 cm, W. 48 cm, H. 46 cm. Bathtub *larnax* without lid.
Chronology: LM IIIC.
Bibliography: TSIPOPOULOU, VAGNETTI 1997, pls. CLXXXVII c–d
- 25) Unknown (Sitia Museum): L. 85 cm, W. 40 cm, H. 47 cm. Bathtub *larnax* without lid.
Chronology: LM IIIA/C.
Bibliography: TSIPOPOULOU, VAGNETTI 1997, pl. CLXXXVIII.
- 26) Unknown (Sitia Museum ΜΣ9986): unknown measurements. Chest *larnax* with four feet, no lid.
Chronology: LM IIIA/C.
Unpublished.
- 27) Dramia (Chania Museum Π1187): L. 109 cm, W. 40 cm, H. without lid 65 cm. Chest *larnax* with six feet, no lid.
Chronology: LM IIIA2.
Unpublished.
- 28) Chania (Chania Museum Π6068): L. 61 cm, W. 37 cm, H. 46 cm. Bathtub *larnax* without lid.
Chronology: LM IIIB.
Bibliography: NINIΟΥ-KINDELΙ 1983, fig. 157 γ; ANDREADAKI-VLASAKI 1997, pl. IIIb.

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