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2023



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VOLUME 101

SCUOLA ARCHEOLOGICA ITALIANA DI ATENE

2023

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*THE MIND OF AN OCTOPUS.*  
AN LM IIIB CEREMONIAL STORAGE JAR  
FROM HAGIA TRIADA AND THE THEORETICAL VALUE  
OF MYCENAEAN CAPACITY MEASURES\*

SANTO PRIVITERA

**Riassunto.** Quattro giare da stoccaggio spiccano per forma e decorazione dipinta tra i pochi vasi interi provenienti dallo strato di abbandono TM IIIB di Haghia Triada a Creta. Oltre alla funzione, essi possono essere considerati come un'ulteriore prova del ruolo politico di primo piano che questo sito rivestì tanto alle dipendenze di Cnosso, quanto all'indomani della distruzione di quest'ultima. Una di queste giare, in particolare, è un *unicum* per la presenza di nove tratti di vernice paralleli, dipinti tra due fasce al di sotto dell'orlo, che possono essere interpretati come un dispositivo di conto e misura del contenuto. Grazie all'ausilio di software di calcolo recentemente sviluppati, è possibile proporre una stima precisa della capacità del vaso; il confronto con i testi in Lineare B, inoltre, permette di identificare le nove unità di misura con quella definita da Chadwick come S/T, pari a litri 9.6. Il vaso di Haghia Triada sembra indicare che tale unità fosse in realtà leggermente più piccola (tra litri 9.15 e 9.4), ma molto vicina a quella di litri 9.3, originariamente identificata da Chadwick.

**Περίληψη.** Τέσσερα αποθηκευτικά αγγεία ξεχωρίζουν ως προς το σχήμα και τη ζωγραφική τους διακόσμηση μεταξύ των λιγοστών ακέραιων αγγείων που προέρχονται από το στρώμα εγκατάληψης ΥΜ ΙΙΙΒ της Αγίας Τριάδας στην Κρήτη. Πλέον της χρηστικής λειτουργίας, αυτά θα μπορούσαν να θεωρηθούν ως απόδειξη του σημαντικού πολιτικού ρόλου που κατείχε η Αγία Τριάδα ως εξαρτώμενη από τη Κνωσό, αλλά και την επομένη της καταστροφής της τελευταίας. Ένα από αυτά τα αγγεία, ειδικότερα, αποτελεί *unicum* γιατί παρουσιάζει εννέα παράλληλες πινελιές χρώματος, κάτω από το χείλος, που θα μπορούσαν να ερμηνευθούν ως ένα μέσο υπολογισμού και μέτρησης του περιεχομένου. Με τη βοήθεια προσφάτως ανεπτυγμένων λογισμικών, είναι δυνατός ο ακριβέστερος υπολογισμός της χωρητικότητας του αγγείου και μαζί με τις σχετικές αναφορές στα κείμενα της Γραμμικής Β, επιτρέπει την ταύτιση των εννέα μονάδων μέτρησης με αυτή που όρισε ο Chadwick ως S ή T, ίση με 9.6 lt. Το αγγείο της Αγίας Τριάδας υποδεικνύει πως αυτή η μονάδα θα ήταν ελαφρώς μικρότερη (μεταξύ των 9.15 και 9.4 λίτρων), αλλά πάντα πολύ κοντά σε εκείνη των 9.3 lt, αρχικώς υπολογισμένη από τον Chadwick.

**Abstract.** Four decorated storage jars, unearthed in the early excavations at Hagia Triada on Crete, stand out as to both shape and decoration amongst the few entire vessels belonging to the LM IIIB abandonment context of this site. Besides their practical function, such vessels indirectly attest to the first-level political role that this site played as a sanctuary-town in Final Palatial Crete, first within the borders of the state run by Knossos and then in the period following the latter's collapse. One of these vessels, in particular, is characterized by the presence of a group of nine brushstrokes beneath its rim that cannot be interpreted as a motif and most plausibly represents a counting/measuring device. By drawing on recently developed software-based methods of calculation, the capacity of this vessel can be precisely estimated; at the same time, the Linear B evidence related to the Mycenaean capacity measures is reassessed in light of Chadwick's identification of a unit, called S or T, equal to litres 9.6. The storage jar from Hagia Triada enables one to put forward that the unit was slightly lower (between litres 9.15 and 9.40), substantially confirming the accuracy of Chadwick's reasoning and making it possible to support his original assumption that the value of the highest Mycenaean capacity measure was ca. litres 9.3.

## INTRODUCTION. HAGIA TRIADA IN LATE MINOAN IIIB

Hagia Triada boasts one of the most monumental built environments of Crete and indeed the Bronze Age Aegean. It is widely accepted that the site played an important role for quite a few centuries in south central Crete (MM IIIB through LM IIIB, ca. 1650-1200 BCE), taking advantage of the apparent political eclipse of the nearby site of Phaistos<sup>1</sup>. Even so, the exploration of the latest inhabitation layers

\* This article forms part of the research project *STORATLAS: Building Up an Archaeological Atlas of Agricultural Storage*, which I am currently carrying out at the Department of History and Cultures, Alma Mater Studiorum – University of Bologna, Italy, under the supervision of prof. Nicolò Marchetti. The research is implemented within the framework of the Action “Young Researchers – Seal of Excellence” and is co-financed by the European Union and the Italian Ministry of University

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<sup>1</sup> Calendrical dates used in this article follow the traditional “low” Aegean chronology, as summarized by WARREN 2010; see most recently WIENER 2022. REHAK-YOUNGER 2001 first used the label “Final

disappointed the first Italian archaeologists, as only a few floor assemblages, consisting mostly of storage jars, were identified during Federico Halbherr's excavations (1902-1914)<sup>2</sup>. The digging methods employed at the beginning of the 20<sup>th</sup> c., which involved a heavy selection of the finds before they were eventually handed over to the museums, were long considered responsible for this state of affairs, but the stratified fills retrieved after the resumption of fieldwork by Vincenzo La Rosa (1977) made it clear that many spaces were indeed empty, because the site was being progressively abandoned at the end of LM IIIB<sup>3</sup>. This phase has recently fuelled much scholarly debate, being still ill-known in several regards, such as ceramic phasing, topographic issues, and social and political reconstructions<sup>4</sup>.

The dearth of movable finds deeply affects our general understanding of LM IIIB Hagia Triada. Drawing upon Amos Rapoport's theoretical framework on the relationship between people and the built environment, the evidence from the site is manifestly biased towards fixed features (*e.g.*, benches or raised platforms, types of paving, or wall paintings) rather than semi-fixed and non-fixed features (*e.g.*, furniture, artefacts and tools of various material, perishable containers, and botanical finds)<sup>5</sup>. Against such a backdrop, the functional interpretation of both roofed and open spaces needs to mostly rely on the architecture. Following a meticulous investigation into the field-books of the earliest excavators<sup>6</sup>, and a series of excavation reports that focused on the identification of the building sequence at the site, two major studies were recently produced that scrutinized two sectors of the LM III settlement, namely, the Hill of Hagios Georgios to the S<sup>7</sup> and the so-called Villaggio to the N (Fig. 1)<sup>8</sup>. As a result, it is safe to affirm that, notwithstanding a few lacunae brought about by the uncertain character of so-called "legacy data", we have a much clearer idea today of Hagia Triada during its last two centuries of continuous inhabitation.

By the beginning of LM IIIB, Hagia Triada apparently reached its maximum extension, namely, ca. m<sup>2</sup> 7500, remaining thus quite small. Accordingly, the low number of burials at the cemetery has been interpreted as a clue of the presence of quite a limited population<sup>9</sup>. The area of the site notwithstanding, it is the character of the buildings that marks Hagia Triada out as anything but a small village. First, the limited space devoted to clearly domestic buildings characterizes it, most oddly, as a "houseless town"; then again, the large area occupied by ceremonial and cultic structures allows one to interpret it as a "sanctuary town", one run by a priestly group interested in collecting agricultural staples from the plain of the Messara<sup>10</sup>. The S sector was occupied by a large court (called by the first excavators Piazzale dei Sacelli) onto the N and E sides of which three ceremonial buildings opened, namely, Megaron ABCD, Stoa FG, and Shrine H<sup>11</sup>. The N sector, centred upon a large court named the Agora by the first excavators, encompassed about ten buildings by the beginning of LM IIIB. To the E and N, these substantially consist of large storerooms and silo complexes (Stoa del Mercato, Edificio Ovest and Edificio Nord-Ovest)<sup>12</sup>. The southern sector of the slope to the W of the Agora included the only domestic building at the site, namely, Casa VAP. The house included several staircases, storerooms and two large halls at ground floor level (one of which was decorated with wall paintings depicting processions and animal sacrifice). It has been interpreted as the residence of the group that administered the site both prior to and after the LM III destruction of the palace of Knossos<sup>13</sup>. Finally, a group of spaces on the strip of land adjoining the Casa VAP at the N (Buildings X, Y,

Palatial" in pointing out that both Linear B inscriptions on tablets discovered at Chania and Cretan inscribed stirrup jars hinted at the existence of writing and at least one palatial administration on the island through into early LM IIIB. Other scholars refer the same label to a shorter time-span, corresponding to the LM II-III A2 early phases, during which a Greek-speaking elite oversaw the Knossos palace. Terminological confusion is further amplified by the label Monopalatial, concurrently used for this latter period as well. Monopalatial exclusively pertains to the last Knossos palace, but Final Palatial is a more encompassing expression, that can be cogently employed, as originally proposed by Rehak and Younger, to refer to all functioning Cretan palatial administrations that used Linear B between LM II and LM IIIB.

<sup>2</sup> The early identification and history of the excavations are analytically dealt with by LA ROSA 2003; see also *Id.* 2010.

<sup>3</sup> *Id.* 1997; 2010. See most recently the general overview of LM IIIB by LANGOHR 2017a, particularly 23-25; CUCUZZA 2021, 229.

<sup>4</sup> See by the latest the contributions collected in LANGOHR 2017a.

<sup>5</sup> On this distinction see RAPOPORT 1990, 87-122; on Rapoport's theory, see MOORE 2000.

<sup>6</sup> Such an enquiry, which improved both the quality and quantity of the available data from the early excavations, was painstakingly carried out by La Rosa from the late 1970s on. While part of Paribeni's

fieldbooks, held in Luisa Banti's house, were lost during the 1966 Florence flood, most of the documents was traced back into the archives of the Italian School at Athens, the Academy of the Agiati at Rovereto (Halbherr's fieldbooks, lectures, sketches and photographs), and in the Vatican Library (Enrico Stefani's sketchbooks and notes): see LA ROSA 2003.

<sup>7</sup> CUCUZZA 2021.

<sup>8</sup> At Hagia Triada, the area dubbed Villaggio corresponds to the slope to the W of the so-called Agora and across from the Stoa del Mercato: PRIVITERA 2015, 5-10. Apart from a descriptive analysis of the structures, research also involved the application of formal methods, such as space syntax analysis, to buildings with a complex building history and plan: LETESSON-PRIVITERA 2016.

<sup>9</sup> On the extension of the settlement and evidence of the nearby tombs, see CUCUZZA 2021, 231-232. A small hamlet nearby, ca. km 1 S-W, could be attested to by a few tombs discovered next to the medieval church of Hagia Triada *Id.* 2003, 229 and 225.

<sup>10</sup> PRIVITERA 2011; 2016.

<sup>11</sup> On these buildings, see now CUCUZZA 2021, 156-162.

<sup>12</sup> On storage areas at Hagia Triada, see particularly PRIVITERA 2014.

<sup>13</sup> On the building sequence, finds, and functions of Casa VAP see *Id.* 2011; 2015, 35-83, and LETESSON-PRIVITERA 2016.



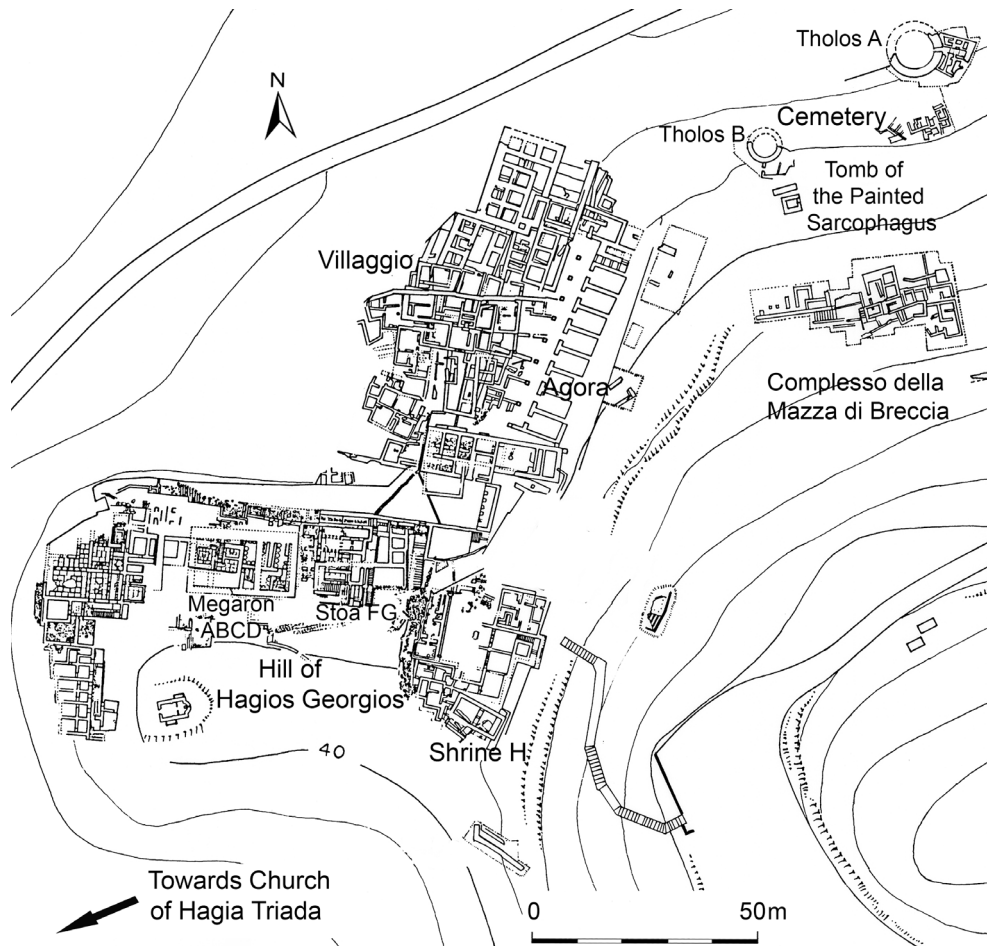


Fig. 1. General plan of Hagia Triada (after PRIVITERA 2015).

and Z) are akin to the Casa VAP in layout and masonry technique: they could have accordingly functioned as further domestic auxiliary spaces<sup>14</sup>. This article focuses specifically on some painted ceremonial storage jars retrieved in this sector of the Villaggio (Fig. 2).

#### THE CEREMONIAL STORAGE JARS FROM THE VILLAGGIO AT HAGIA TRIADA

Against the backdrop of the generalised abandonment of the site at the end of LM IIIB, the discovery of several storage jars in at least five spaces of the Villaggio is a confirmation of a well-known principle of behavioural archaeology<sup>15</sup>. Such containers (commonly referred to with the Greek word *pithoi*) are large vessels, difficult to transport; accordingly, their owners, being able to replace them with new ones, did not usually take them to the new locations where they moved<sup>16</sup>. Halbherr retrieved eleven storage jars in the central area of the Villaggio; he then singled out four of them that carried a painted decoration and had them handed over to the Archaeological Museum of Heraklion at the end of the excavations in 1914.

After several decades of neglect, beginning in the 1980s the storage jars from the final occupation of Hagia Triada have attracted scholarly interest from time to time. La Rosa recognised them in the storerooms of the Archaeological Museum of Heraklion and emphasized their importance in establishing the date of the

<sup>14</sup> PRIVITERA 2015, 85-95. The area of the cemetery, located ca. m 30 to the N-E of the Stoa del Mercato, yielded only a single burial that can be dated to LM IIIB: CUCUZZA 2003, 223; PRIVITERA 2016.

<sup>15</sup> Storage jars were reported inside spaces A, D, L-M, and O of Casa VAP, and inside Building Y. *Id.* 2015, 35-95. Most of those that remained *in situ*, like the earlier ones from the LM IB destruction layer, were unfortunately smashed into pieces at various times during the

20<sup>th</sup> c., and eventually disappeared. Fragments of five more storage jars are still visible (as of 2022) on the floors of rooms 1-3 and 7 of the Stoa del Mercato: PRIVITERA 2010, 112, fn. 84.

<sup>16</sup> See LAMOTTA-SCHIFFER 1999. On Minoan storage jars, retrieved by the thousands on Crete, see the general account and typology of CHRISTAKIS 2005.

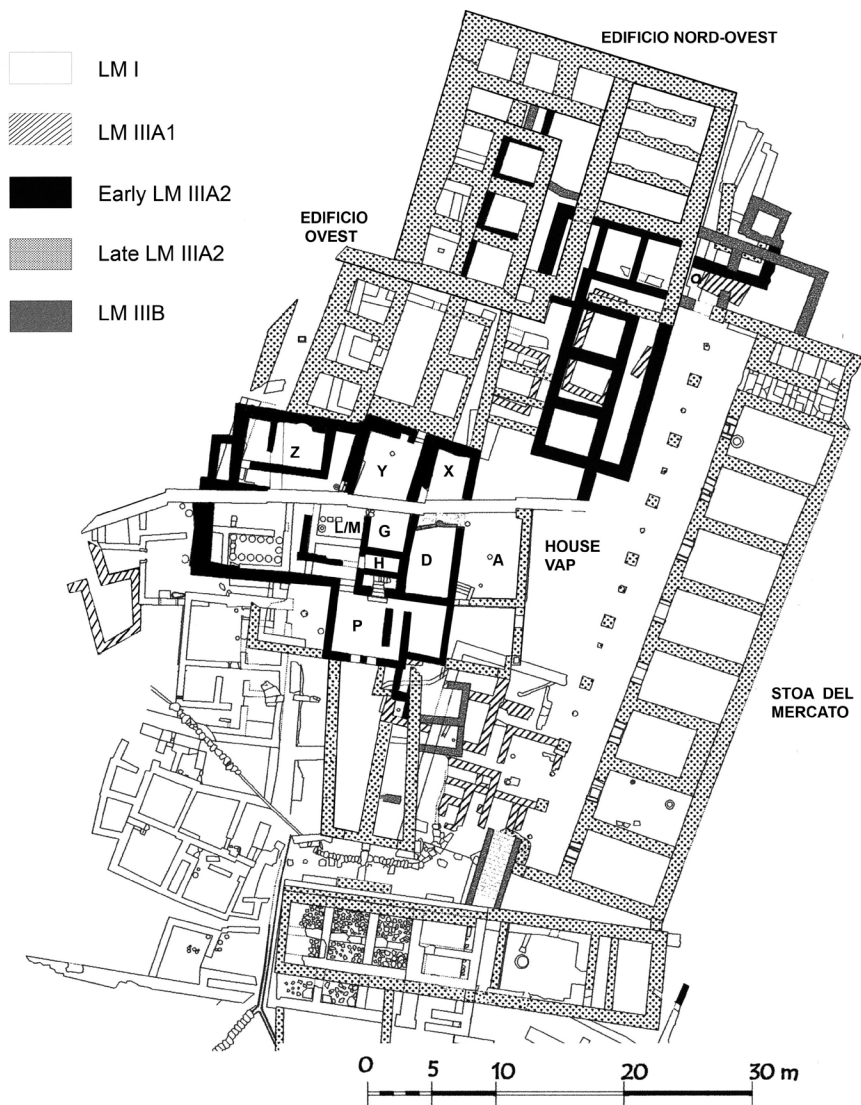


Fig. 2. Plan of the Villaggio at Hagia Triada, showing LM I-III B building phases and buildings mentioned in the text (courtesy of Centro di Archeologia Cretese, University of Catania).

abandonment of the site<sup>17</sup>. Mountjoy recalled them in reference to a collar-necked jar from the palace of Pylos that betrays a stylistic connection to Crete<sup>18</sup>. Following the identification of the respective findspots, the jars were eventually published in detail in 2015, that is well after a century since their excavation<sup>19</sup>.

Most recently, D'Agata observed that four jars from the site, that were discovered inside room L/M at Casa VAP and inside Building Y to the N of the latter, must have had a special ceremonial character<sup>20</sup>. The common features of these vessels are their refined fabric and elaborate painted decoration that distinguish them from common domestic storage jars. To shed new light on the social and political importance of Hagia Triada in LM IIIB, in this article I intend to focus on one of these jars, HTR 0397. I firstly review the detailed description of the jar's findspot (Building Y), suggesting that it functioned as an annex of the nearby Casa VAP; then, I highlight the importance of its shape and decoration within the context of local and regional pottery production and consumption; finally, I assess its capacity in the light of what we know of the volume measures for liquids used by the Mycenaeans.

<sup>17</sup> DI VITA *et alii* 1984, 180-181, fig. 270 (HTR 0397); LA ROSA 1987 (Nos. 6768 and 6769 at the Archaeological Museum of Heraklion, henceforth AMH). KANTA 1980, 29, fig. 13,8, firstly published AMH 6769, but referred it to the site of Katzambas.

<sup>18</sup> MOUNTJOY 1990, 259-260, fig. 16.

<sup>19</sup> PRIVITERA 2015, 59-60 and 90-91, pls. XXIII-XXIV and XXIX (on AMH 6768 and 6769, unearthed inside room L/M at Casa VAP); LA ROSA-PRIVITERA 2003 (HTR 0397, from Building Y).

<sup>20</sup> D'AGATA 2017, 293.

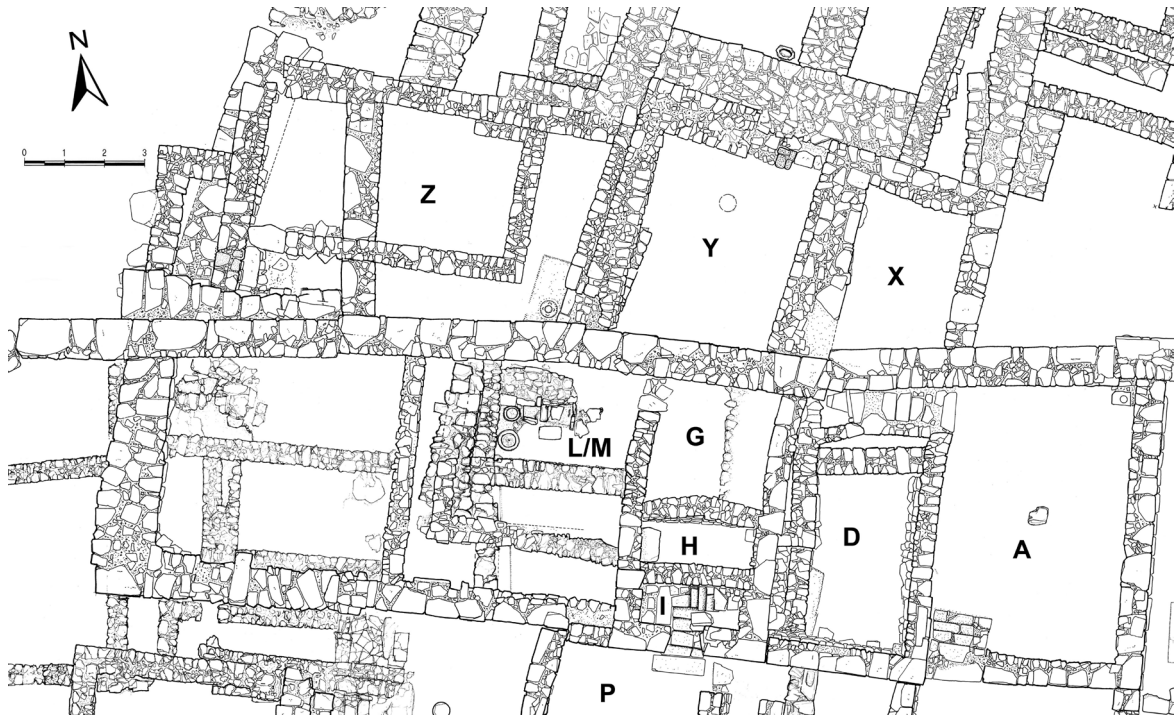


Fig. 3. Plan of the central sector of the Villaggio, including Buildings Y, X, and Z to the N, the Muraglione a Denti at the center, and spaces A, D, G, H, I, L/M, of the Casa dei Vani Aggiunti Progressivamente (VAP) (after PRIVITERA 2015).

#### FEATURING A STOREROOM'S WATERCOLOUR: A REAPPRAISAL OF BUILDING Y

The storage jar HTR 0397 was discovered inside what is currently called Building Y (Fig. 3)<sup>21</sup>. This is a roughly rectangular room and the central one in a sequence of three structures (labelled X, Y, and Z from E to W) built on two terraces across the Villaggio slope. They all adjoin to the N a massive, retaining Late Minoan I wall constructed of large blocks set in irregular courses, that was named Muraglione a Denti by the first excavators<sup>22</sup>. This long wall impeded circulation from N to S across the Villaggio, dividing it in two functionally independent sectors, and served as the N exterior wall of Casa VAP from LM IIIA2 early onwards.

Halbherr's notebooks offer a detailed description of the excavation inside Building Y. They mention the discovery of two superimposed floors: 1) a lower one just above the rock, furnished with a central round stone base for a pillar; and 2) an upper one made of beaten earth, placed ca. m 0.75 above the former. On the upper floor, four pithoi were lying in fragments, three in a row placed next to the W wall and one next to the N wall. At the time, the draughtsman of the Italian mission, Enrico Stefani, made a watercolour of the room (Fig. 4), which attests to the original conservation of the structures and enables one to distinguish the different pithoi that were placed on the top floor. However, only two of the four pithoi appearing on the watercolour were handed over to Heraklion at the conclusion of fieldwork in 1914. In the inventory compiled in that year, Halbherr recorded the vessels «found in the room of the Villaggio drawn in colour by Stefani», adding that both were characterized by a painted decoration, respectively a schematic octopus and groups of bands. The identification of one of them at Heraklion was made possible by La Rosa's rediscovery of Stefani's watercolour (1984) in the Vatican Library. The latter was eventually published along with jar HTR 0397 in the catalogue of the exhibition that celebrated the first century of the Italian exploration of Crete<sup>23</sup>.

In 2003, a new investigation inside Building Y made it clear that part of the room had been left unexcavated, while part of the N wall had undergone a partial collapse. Accordingly, a new stratigraphical

<sup>21</sup> The description of the building draws upon that in PRIVITERA 2015, 86-92.

PRIVITERA 2015, 7-9.

<sup>22</sup> See PUGLISI 2007; LA ROSA-PRIVITERA 2003, 756 and 764;

<sup>23</sup> DI VITA *et alii* 1984, 172, fig. 248.



Fig. 4. Enrico Stefani's watercolour representing the storage jars unearthed in 1911 on the upper floor of Building Y (after DI VITA *et alii* 1984).

sounding and a restoration of this wall were carried out<sup>24</sup>. The new fieldwork succeeded in clarifying several points. Firstly, the architectural survey of walls made it clear that Building Y was built earlier than nearby X and Z, at the beginning of LM IIIA2, as the walls of the latter pair abut against it. Secondly, the lower floor recorded by Halbherr was identified anew and attributed to an earlier structure destroyed in LM IB, while an intermediate floor, that Halbherr had not mentioned, was recognised as the original one of Building Y as it was laid beneath that with the storage jars. More importantly, it was possible to clarify the transformation over time of the circulatory pattern between units Y and Z, on the one hand, and the outdoor space to the N of Y, on the other. In addition to the N doorway reported in the early excavations and accordingly drawn by Stefani, one more passage-route was identified at the S-W corner of Y that originally enabled its direct communication with Building Z. Accordingly, in LM IIIA2, while remaining structurally independent buildings, Y and Z functioned as parts of a unitary complex. The second passage was later blocked, and the doorway on the N wall (possibly made narrower by this time) remained the only entrance of Y to the outside. Eventually, at a very late stage of LM IIIA2, or even at the transition with LM IIIB, the broad S exterior wall (1.40-1.80 thick) of the most recent local silo complex, Edificio Ovest, adjoined the N wall of Building Y, thereby blocking the N doorway of the latter<sup>25</sup>.

Building Y was turned into a doorless space during LM IIIB (Fig. 5). Indeed, a reappraisal of its accessibility can suggest a new functional interpretation of this space, challenging that it was an independent unit. Though not communicating with the ground floor of Casa VAP, it could have been easily accessible from the latter's upper floor through a trapdoor. If so, it should be stressed that room L/M of Casa VAP is placed immediately to the S of Y and that, like the latter, it was a storage area of domestic character; furthermore, one more storeroom (space D) was placed S of Y and next to the hall decorated with wall paintings (space A) that was placed in the E sector of the house<sup>26</sup>. A raised passageway leading to a staircase, adjoining the Muraglione a Denti in the N sector of space D, led directly from spaces A and D to somewhere on the upper floor (placed above space G) that could have been in direct communication with Y<sup>27</sup>. A further staircase, placed above

<sup>24</sup> LA ROSA-PRIVITERA 2003.

<sup>25</sup> On Edificio Ovest, see PRIVITERA 2015, 117-122, pls. XXVII and XXXIX.

<sup>26</sup> Three storage jars (now lost) were placed next to the S wall of space D: *ibid.*, 61.

<sup>27</sup> *Ibid.*, 43-46 and 62, and pl. VII.



Fig. 5. General view of Building Y, from NW (after PRIVITERA 2015).

spaces H and I, enabled communication between the room above space G and space P<sup>28</sup>; this would have been a further large hall placed in the S sector of the house. To sum up, it should be kept in mind that while the plan of the Villaggio exclusively documents walls and spaces at the ground floor level, the communication patterns across the Villaggio slope clearly also involved the upper floors. Building Y, placed at the innermost core of the Villaggio and seemingly inaccessible, could have acted as a safe storage area. It probably though functioned as an annex of Casa VAP, providing its ceremonial halls with supplementary storage space.

#### PAINTING OCTOPUSES IN LM IIIB HAGIA TRIADA: SHAPE AND DECORATION OF JAR HTR 0397

The storage jar HTR 0397 is a medium-sized vessel (H. m 0.75; diam. at rim m 0.53; diam. at the bottom m 0.24) (Figs. 6 and 7). It belongs to a late and seldom attested shape, recently included in Christakis' classification as form 117<sup>29</sup>, that was relatively easy to lift and turn on its side to be filled and emptied. It is a coil-made vase with an elongated bell-shaped profile. It has a flat projecting rim and two horizontal handles placed just below it<sup>30</sup>. A relief ring is placed below the rim, at the same height as the handles. The decoration, in a reddish-brown colour over a whitish slip, consists of two stylised octopuses, having the eyes rendered as concentric circles and four tentacles, one very small at the top and three longer below. The octopuses are framed above and below by groups of two horizontal bands. On one side, a group of nine parallel vertical brushstrokes (like drops) is painted between the bands. The upper side of the rim is decorated with multiple semicircles. The flat base of the vessel is entirely painted in brown; a subtle band is placed just above it. As already mentioned, Halbherr's list of the vases handed over to the Archaeological Museum of Heraklion informs us that this vessel was found along with a "twin" jar in shape and size (H. m 0.73; diam. at rim m 0.47, diam. at base m 0.265). The latter had a «simpler decoration: linear groups or bands run all around the body, whereas a sector of the upper part has vertical groups of waves or serpentine

<sup>28</sup> PRIVITERA 2015, 41-42, pl. V; space P has a monumental double passageway within what probably originally was the main facade of the House: *ibid.*, 48-49, pl. XIII.

<sup>29</sup> CHRISTAKIS 2005, 21, fig. 25.

<sup>30</sup> On HTR 0397, see DI VITA *et alii* 1984, 180-181, fig. 270; LA ROSA-PRIVITERA 2003, 737; PRIVITERA 2015, 91, pl. XXIX; D'AGATA 2017, 294, fig. 9.15.



Fig. 6. The pithoid jar HTR 0397 (after Di Vita *et alii* 1984).



Fig. 7. The pithoid jar HTR 0397 (drawing K. Theodoropoulou; after PRIVITERA 2015).



Fig. 8. The pithoid jar from Patrikies (after BONACASA 1967/68).

lines»<sup>31</sup>. Despite the lack of a photograph, it is hoped that this vessel as well will be traced one day in the storerooms of the Heraklion Museum.

For a certain time, the two pithoid jars from Building Y were considered the only specimens of the shape, evidently a local LM IIIB innovation. However, it is possible to point out a few more parallels. A third pithoid jar was found at Patrikies, mid-way between Hagia Triada and Phaistos (Fig. 8). While carrying a simpler painted decoration (three groups of horizontal bands above the base, at middle diameter and under the rim), this vessel, dated as well to LM IIIB, is once again coil-built and has the same size as the former two (H. m 0.77; diam. at rim m 0.53; max. diam. m 0.50; diam. at bottom m 0.27)<sup>32</sup>. Furthermore, thanks to La Rosa's archival research and excavations at Hagia Triada, it has been possible to trace the fragments of a further pithoid jar painted with an octopus, coming from space O of Casa VAP<sup>33</sup>, and to also retrieve the fragments of at least two further pithoid jars of comparable size from the ceramic dump (layer V) to the E of the Stoa del Mercato (Fig. 9). The octopus motif appears as well on both these last vessels<sup>34</sup>. Thus, it is safe to conclude that no less than five specimens of the same class, four of which bear an octopus motif, are attested at Hagia Triada, and a sixth one exists less than 1 km away at Patrikies. Given that the ceramic finds from the early excavations were highly selected, all these specimens show that Christakis' shape 117 was quite a fashionable, and highly standardized product of the local LM IIIB ceramic workshop.

The decoration of HTR 0397 also carries meaning. The octopus motif has a long tradition in Minoan pottery decoration, occurring, for example, on some of the most beautiful LM II Knossian Palace Style jars. The symbolic connotations of this marine invertebrate have been variously interpreted, especially on account of its varied occurrence on floor painting, *larnakes*, seal imagery and other artefacts<sup>35</sup>. It has been

<sup>31</sup> My translation. Original Italian text has: «L'altro ha una decorazione più semplice: gruppi o fasci lineari che corrono intorno al corpo ed una zona nella parte superiore contenente fasci, in senso verticale, di linee ondulate o serpentine. Il fondo è chiaro ma meno bello (più opaco) dell'altro vaso e la decorazione è di color bruno più pallido. Alt. 0,73; diam. alla bocca, 0,47 e alla base 0,265. Le anse poste più in basso del precedente e più solide». The entire passage is published in the documentary appendix in PRIVITERA 2015, 150.

<sup>32</sup> BONACASA 1967/68, 48, fig. 37, and 53-54 (description of the vessel). Bonacasa originally put forward a generic LM chronology; KANTATA 1980 recognised that the vessel is dated to LM IIIB.

<sup>33</sup> PRIVITERA 2015, 61, 124, fig. XLVIa.

<sup>34</sup> See LA ROSA 1977, 328-329, fig. 36.a; 1979/80, 52, fig. 2.a; D'AGATA 2017, 292-295, figs. 9.14-9.16, who reports further fragments of bases from pithoid jars of the same form and two possible parallels from Gournia (BOYD HAWES *et alii* 1908, 46, pl.X.12) and perhaps Khania (HALLAGER 2003, 224). A fragment of an LM IIIB vessel decorated with an octopus motif, interpreted either as a pithoid jar or a basin, was found at Gouves: CHATZI-VALLIANOU 2017, 130-131, fig. 5.36.

<sup>35</sup> See *e.g.* HILLER 1995; MARINATOS 1997; PETRAKIS 2011, 195-196; ALBERTI 2013; BLAKOLMER 2018, 122-123.



Fig. 9. The nine brushstrokes painted between the bands beneath the rim of the pithoid jar HTR 0397 (photo A.; © Hellenic Ministry of Culture).

suggested that the decoration of the pithoid jar from Building Y is reminiscent of its Knossian antecedents<sup>36</sup>; whatever the case, we should remember that octopuses were gaining renewed popularity on a wider Aegean scale during LM/LH IIIB (and later), appearing also on the floors of the Mycenaean *megara* at Pylos and Tiryns<sup>37</sup>. Therefore, apart from its possible ancestral meaning, one that could have been possibly brought up-to-date or renegotiated from time to time, the official connotation of the octopus as a renewed symbol of political power seems to have clearly emerged by this time on both a local and Aegean dimension. At Hagia Triada the octopus occurred as early as LM IIIA1 or LM IIIA2 early at the most official level on the lower floor of Shrine H, destroyed by a fire in LM IIIA2 or early LM IIIB<sup>38</sup>. Accordingly, the local popularity of this motif could rather be a reference to a local tradition, albeit indirectly having a remote Knossian link. The octopus' connection with containers and drinking vessels seems to be not only confirmed by its depiction on local storage jars, kylikes, amphorae and amphoroid kraters<sup>39</sup>, but also by its appearance on a group of transport stirrup jars (decorated with either the entire octopus or with its tentacles only) that were produced in south-central Crete, possibly in the Messara plain too<sup>40</sup>. Thus, it is feasible to suggest the idea that the octopus appearing on all these vessels could have functioned as a mark of authority, one that assured people of the origin and quality of their content, probably by virtue of both its more remote symbolic reading and more recent political connotations.

#### FROM DECORATION TO SIZE: CALCULATING THE CAPACITY OF JAR HTR 0397

In his description of HTR 0397, Halbherr highlighted the presence of a group of nine vertical, drop-like brushstrokes painted between the two horizontal bands above the octopus (Fig. 9)<sup>41</sup>. In 2012, a fresh study of this vessel confirmed that these were drawn starting from the top, causing a moderate spread of paint here and again next to the lower band as the brush was lifted<sup>42</sup>. The hypothesis was then envisaged that they could

<sup>36</sup> D'AGATA 2017, 292.

<sup>37</sup> See particularly DARCOUE 2005, 133-136; PETRAKIS 2011, 190-192.

<sup>38</sup> CUCUZZA 2021, 176 and 2014.

<sup>39</sup> D'AGATA 2017, 289-295, figs. 9.8-9.16. A ceremonial character can be safely attributed to the giant kylix on fig. 9.9 (diam. m 0.27), whose capacity, above litres 3.5, enables one to compare it to the earlier communal chalices: BORGNA 2004.

<sup>40</sup> DAY *et alii* 2011; HASKELL *et alii* 2011, 85; PRATT 2016, 45-46,

54-55; KNAPP-DEMESTICHA 2017, 83-84.

<sup>41</sup> See PRIVITERA 2015, 91, fn. 306, and 150.

<sup>42</sup> In *ibid.*, eight brushstrokes are mentioned, as the ninth to the right was originally dismissed as a small drop of paint. During a new survey of the vessel (for which I thank Orazio Palio, Dario Puglisi, and Simona Todaro) the outline of the ninth one was safely identified, as originally proposed by Halbherr. It is probable that some paint has flaked/eroded away since the discovery of the vessel.



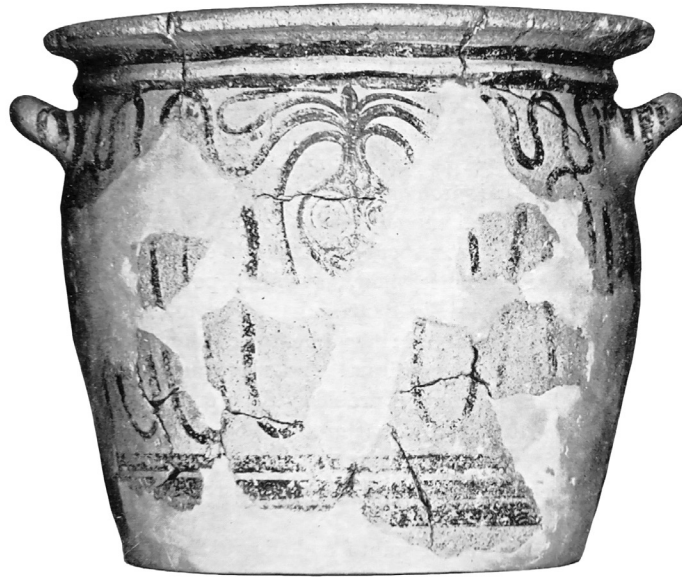


Fig. 10. The pithoid jar from the Stoa dell'Agora at Haghia Triada (after LA ROSA 1979/80).

represent a non-scribal counting device, corresponding to the vertical strokes incised in the Linear A and Linear B written records and there interpreted as numerals<sup>43</sup>. In fact, while groups of parallel lines of paint, repeated at intervals, are sometimes attested as a decorative motif, particularly on the upper side of the rims of vessels, in this case the group of brushstrokes is isolated and placed off-axis, with the first one starting from the left located just above the central line of the octopus' head. Moreover, such brushstrokes do not occur on the wider LM III corpus of ceramic vessels from Crete, thereby enabling one to dismiss the notion that they are a decorative motif. In such a view, it can be recalled that a "sibling vase" of HTR 0397, that lacks such brushstrokes, was discovered in the dump E of the Stoa del Mercato<sup>44</sup> (Fig. 10). In 2012, however, an imprecise measurement of the vessel's capacity resulted in a miscalculation and the eventual dismissing of the interpretation that they were linked to the vase's capacity<sup>45</sup>. The currently available softwares by which a vessel's capacity can be better calculated encouraged us to use the new scale drawing of HTR 0397 to make a new attempt. *Pot Utility* was initially used (© Jean-Paul Thalmann & Arcane, 2006), and then contrasted with the web-based application *Calculating Vessel Capacities*, made available and continually updated by the Université Libre de Bruxelles (<http://capacity.ulb.be>; © Synthèse et Analyse (LISA) and Centre de recherches archéologiques (CReA))<sup>46</sup>. While obtaining an exact calculation with *Pot Utility* depends on the number of attempts done, the preciseness of which varies with an operator's dexterity, *Calculating Vessel Capacities* functions by uploading the scale drawing and entering exact measurements on the web-based applet. Of course, a methodological caveat should be kept in mind here: namely that the capacities obtained by using such softwares assume that vessels correspond to regular solids and accordingly have geometric volumes. As a matter of fact, the diameter of a wheel-made vessel is not always a perfect circle from bottom to top, and the resulting calculations are always theoretical approximations. A recent application of both computer methods to a large quantity of vessels was successfully tested when compared against real calculations of their volumes, obtained by filling containers with water<sup>47</sup>. At the international workshop on capacity studies organized by the French School of Archaeology at Athens on 15<sup>th</sup> and 16<sup>th</sup> June, 2023<sup>48</sup>, moreover, Cydrisse Cateloy showed the results of a comparative survey of the capacity of about one hundred Canaanite jars, that

<sup>43</sup> VENTRIS-CHADWICK 1973, 53-54, 58-60; MELENA 2014, 152-153; MONTECCHI 2017, 11-12.

<sup>44</sup> This is pithoid jar 1.3.33: LA ROSA 1979/80, fig. 2; D'AGATA 2017, 295, fig. 9.16.

<sup>45</sup> See PRIVITERA 2015, 91, fn. 306.

<sup>46</sup> See on this topic, THALMANN 2007; ENGELS *et alii* 2009; PHIALON 2020, 198.

<sup>47</sup> See the considerations and concluding remarks in CATELOY 2019 and PHIALON 2020.

<sup>48</sup> The workshop, organized by M. Pomadère, C. Cateloy, and R. Webb, was particularly focused on using softwares to calculate the capacity of vessels. It was tellingly entitled *No Half Measures for Understanding Ancient Pots. Aims and Methods of Capacity Studies in the Mediterranean Bronze Age*.

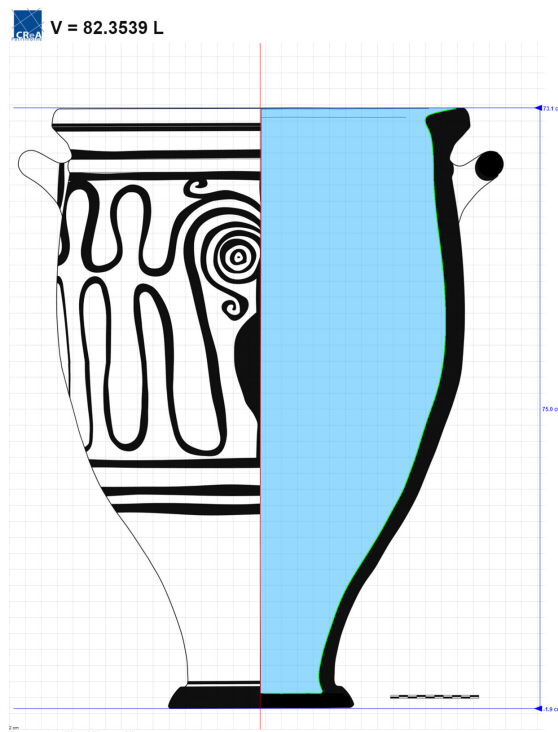


Fig. 11. The capacity of the pithoid jar HTR 0397 (el. A. after <https://capacity.ulb.be/>).

included both direct methods such as 1) filling them with water, 2) filling them with polystyrene beads, and indirect methods, based on softwares and applications such as 3) *Calculating Vessel Capacities*, 4) *Pot Utility*, 5) *AutoCAD* and 6) *Amphoralex*. The application *Calculating Vessel Capacities* showed up by far and away as the best indirect method of volume calculation. It matched in several cases the exact volume of a vessel filled with water; in other cases, the capacity estimated was imperceptibly or slightly lower than real, with a margin of error lower than 2.72%.

Filling with water the storage jar HTR 0397 is not possible, as the vessel has been mended from many fragments and a large section of its central part is missing on one side, corresponding to the body of the octopus opposite to that fully preserved. By employing *Pot Utility*, it was possible to establish that the capacity of HTR 0397 is ca. litres 81.50; with *Calculating Vessel Capacities*, it came out more precisely as litres 82.35 (Fig. 11). However, if we envisage a possible margin of error as high as 2.72%, the capacity of the vessel could reach litres 84.65 at best. By following the hypothesis that the nine brushstrokes correspond to the vertical strokes that indicate single units in the Bronze Age Aegean scripts, then each stroke here would correspond to a unit ranging between ca. litres 9.15 (with a capacity of litres 82.35) and litres 9.40 (with a capacity of litres 84.65).

Is the capacity of this jar in keeping with what we know of the Late Bronze Age Aegean capacity measures? While we do not know of vessels from contemporary Crete and the Greek mainland that bear inscribed or painted signs of capacity, in Neopalatial Crete three storage jars have been found – two at Knossos and one at Zakros – that bear inscriptions incised before firing<sup>49</sup>. These always include the logograms referring to the dry or liquid staples contained (figs, oil, and wine), followed by numerals. However, calculations based on these did not lead to coherent patterns or conclusions either on the capacity of the vessels or the absolute value of the Minoan volume units. One was compelled to suggest that the inscriptions do not describe the content of the *single* vase on which they are present, but probably refer to groups of vessels<sup>50</sup>. However, the case of HTR 0397 seems quite different. Like the Linear A inscriptions on the Neopalatial jars, the nine brushstrokes were painted before firing, but without a logogram describing a

<sup>49</sup> The inscriptions are KN Zb <27>, KN Zb 35 and ZA Zb 3: see recently MONTECCHI 2009, 45-46, with references to earlier studies. On signs painted on storage jars from Akrotiri, see

DOUMAS-CONSTANTINIDES 1990.

<sup>50</sup> MONTECCHI 2009, 46.

precise staple or product. Was this lack of definition intentional or not? And, given that the vessel was locally produced alongside other ones that had practically the same size and shape, do the strokes refer to the capacity of this storage jar only, or to each and every one? In other words: is HTR 0397 a measuring vessel? To ascertain if this vessel's capacity corresponds to a specific volume measure, it is necessary to discuss the Linear B evidence and the capacity studies devoted to standardised vessels, such as the transport amphorae and stirrup jars.

#### MYCENAEAN CAPACITY MEASURES: REASSESSING THE LINEAR B AND CERAMIC EVIDENCE

As is well known, a special set of capacity metrograms exists in Linear B, that includes two lesser ones common to both liquid and dry goods (\*110, christened Z, and \*111, christened V), and two larger ones that express the same absolute value but are used respectively for liquid (\*113, labelled S) and dry goods (\*112, labelled T)<sup>51</sup>. No special logogram corresponds to the highest unit, however, which is commonly recorded by using the logograms of the various staples, followed by numerals<sup>52</sup>. The ratio between these logograms was established long ago by Bennett: Z = a quarter of V, and V = a sixth of T or S. At the uppermost level, the system divides into two: a single dry unit (= 10 T) corresponding to 3.33 liquid units (3 S). As Ventris and Chadwick magisterially argued, Z clearly recalls the volume of a small cup and reminds us of the smallest capacity measure used in historical Greece, namely, the kotyle, the value of which could vary from region to region between litres 0.210 and litres 0.388, with most being litres 0.240-0.270. Moreover, four kotylai are equal to one *choenix*, that can be compared to V<sup>53</sup>. The exact value of a Mycenaean kotyle, however, is a matter of speculation, and has been variously calculated. Mostly this has been done by drawing on the pioneering work of M. Lang on the capacity of the hundreds of vessels found at Pylos<sup>54</sup>. While originally proposing that a kotyle was litres 0.5, Chadwick eventually had recourse to the results of Lang's study, according to which many vases from Pylos had a capacity of litres 1.6. In his opinion, then, if a kotyle corresponded to litres 0.388, the major Mycenaean unit would be ca. litres 93<sup>55</sup>; rounding the kotyle's value up to litres 0.4, would make the latter become litres 96<sup>56</sup>. Such a value, despite being theoretical, has been widely accepted, subsequently becoming a postulate. In fact, Chadwick was aware «that all values proposed are merely an attempt to establish an order of magnitude, and none should be regarded as an exact determination, which will probably remain impossible until a vessel is discovered which is clearly marked as a measure»<sup>57</sup>. One of the Linear B tablets that seem to indirectly confirm the correctness of Chadwick's reconstruction, PY Fr 1184, has been discussed several times<sup>58</sup>:

- .1 ko-ka-ro , a-pe-do-ke , e-ra<sub>3</sub>-wo , to-so  
 .2 e-u-me-de-i OLE+WE 18  
 .3 pa-ro , i-pe-se-wa , ka-ra-re-we 38  
 .4 *vacat*

The tablet records the consignment of 18 units of scented olive oil (ll. 1-2), and separately (l. 3), the presence of 38 vessels, usually identified as transport stirrup jars of a large size<sup>59</sup>. For most scholars, the latter are intended to be filled with the oil registered on the upper line. The absolute amount of a single unit of oil accordingly depends on the volume of a stirrup jar, that ranges between 12 l and 14 l. Accordingly, such a value is at least (38x12)/18, i.e., litres 25.3, and at best (38x14)/18, i.e., litres 29.5; a third of this unit

<sup>51</sup> These were originally established by BENNETT 1950; see VENTRIS-CHADWICK 1973, 55, 58-60, 393-394; CHADWICK 1976, 105-108; MELENA 2014, 156-157; DEL FREO 2016, 160-161.

<sup>52</sup> The latter has been occasionally identified with the logogram \*123 (AROM), but this is debated: MELENA 2014, 153-154. So far, no fraction logograms have been identified in Linear B.

<sup>53</sup> For these values, see PRICE *et alii* 2015.

<sup>54</sup> LANG 1964. Based on Lang's study, Chadwick lowered the theoretical values originally envisaged in the first edition of VENTRIS-CHADWICK 1973.

<sup>55</sup> CHADWICK 1976, 106.

<sup>56</sup> *Ibid.*, 107-108.

<sup>57</sup> VENTRIS-CHADWICK 1973, 394; see also CHADWICK 1976, 108:

«No final answer will be possible until a recognizable set of measuring vessels is found on the mainland».

<sup>58</sup> Translation has: «Kokalos consigned so much oil to Eumedes: 18 units with WE-unguent; at *i-pe-se-wa*'s (there are) 38 stirrup jars» (my translation). DUHOUX 2008, 310-311, provides a thorough commentary, with references to the earlier studies, and discussion of the Mycenaean name of the stirrup jars (*kblārēwes*), also recurring at Knossos and corresponding to logogram \*210; see also MELENA 2014, 148.

<sup>59</sup> SHELMEKDINE 1985, 146-147. The capacity of the largest stirrup jars calculated by Shelmerdine has been reassessed by Haskell and myself (by using capacity.ulb.be). They range between litres 12.9 and 13.4.

(S) would range between litres 8.4 and 9.8. Chadwick drew on a medium capacity of litres 13.6, arguing that S corresponded to litres 9.6 and the largest liquid measure accordingly was litres 28.8.

Against such a backdrop, it is possible to turn back to the interpretation of the pithoid jar HTR 0397. This vessel does not carry a Linear B inscription, and its nine painted brushstrokes can at best be interpreted as a non-scribal communication medium<sup>60</sup>. In fact, in Linear B inscriptions, the single units are usually arranged in vertical lines to save space when they are part of numerals higher than four<sup>61</sup>. Nonetheless, it is possible to put forward the notion that the capacity unit hinted at by the brushstrokes on it is S/T, and that it ranges between ca. litres 9.15 and 9.40. In the former case, the highest liquid standard would correspond to ca. litres 27.45 and the dry standard would be litres 91.5; accordingly, Z and V would respectively be equal to litres 0.381 and 1.525; in the latter case, the highest liquid standard would correspond to ca. litres 28.20 and the dry standard would be litres 94; accordingly, Z and V would respectively be equal to litres 0.391 and 1.567.

Tablet PY Fr 1184 records many stirrup jars. Several scholars have dealt with this ceramic typology in the last forty years, largely because of the occurrence of Linear B inscriptions painted before firing on a small percentage of them; they were being produced in Crete in LM IIIA2 and LM IIIB<sup>62</sup>. While the region of Chania seems to be the major production centre, the analysis of the different fabrics also identified non-inscribed stirrup jars produced in other areas, including the Messara in south-central Crete<sup>63</sup>. Stirrup jars were not the only transport containers, however. On an Aegean scale, it has been observed that their fate seems to have gone hand in hand with the collapse of the palaces, with amphorae rising in popularity again in LM IIIC<sup>64</sup>. Moreover, they were circulating alongside other transport vessels, such as the Levantine Canaanite Jars and the Egyptian Amphorae<sup>65</sup>. Other transport containers were produced as well in the Messara, namely, the short-necked amphorae discovered by the hundreds in the galleries of Building P at the harbour town of Kommos<sup>66</sup>.

Recent studies have particularly focused on the volumetric analysis and capacity measurements of various classes of transport containers<sup>67</sup>. At Kommos, Watrous calculated the capacity of a rare intact short-necked amphora (litres 9.3). Filling such a container to the top of the neck would make the liquid spill over; adopting a slightly lower capacity would substantially correspond to the unit resulting from the analysis of HTR 0397<sup>68</sup>. The fragmentary condition of the hundreds of specimens found at Kommos, however, prevents one from confirming such a proposal. As Demesticha recently observed, many attempts to detect the different standards and systems of measures have been undertaken; these usually divide the capacity of containers by standards recognised as working in a certain area and at a certain period. Even so, no attempt could reach any clear conclusion, as we can never tell how full a “full” vessel was deemed to be, and how thick any sealing layer might have been<sup>69</sup>. Rather, the bewildering size of transport vessels seems better to demonstrate that potters did not shape their vases to strictly comply with a standard norm.

Against such a backdrop, accepting that HTR 0397 is a measuring vessel can substantially improve our knowledge of the ancient Mycenaean volume measures. On the one hand it substantially confirms the validity of Chadwick’s reasoning and interpretation of tablet PY Fr 1184; on the other hand, however, it supports a slightly lower identification of the volume measures than that eventually supported by this scholar, but nearer to that originally hypothesized. In fact, if the value of S/T belongs in the 9.15-9.40 litres range, it can be reasonably concluded that the value of the major Mycenaean unit was very near to 93 litres, as Chadwick had originally envisaged. In such a view, the highest liquid standard would correspond to ca. litres 27.90; Z and V would respectively be equal to litres 0.3875 and 1.55:

| Measures | Z      | V    | S and T | Liquid Unit | Dry Unit |
|----------|--------|------|---------|-------------|----------|
| Litres   | 0.3875 | 1.55 | 9.3     | 3S = 27.90  | 10T = 93 |

<sup>60</sup> On non-scribal communication media’s importance to highlight measure in Minoan’s daily life see ALBERTI 2017.

<sup>61</sup> See DEL FREO 2016, 163. For an exception to the rule (six vertical strokes placed side by side), see *e.g.* TH Gp 161, where the scribe had no problem of space.

<sup>62</sup> The scholarly debate is summarized in HASKELL *et alii* 2011; more recently, see PRATT 2016 and KNAPP-DEMESTICHA 2017.

<sup>63</sup> See DAY *et alii* 2011; BEN SHLOMO *et alii* 2011 for specimens discovered in Israel.

<sup>64</sup> PRATT 2016.

<sup>65</sup> KNAPP-DEMESTICHA 2017, 46-70.

<sup>66</sup> RUTTER 2000; 2006, 583-584; DAY *et alii* 2011, 516-557, for a specimen from Knossos, and LANGOHR 2017b, 233, for another one from Sissi.

<sup>67</sup> See particularly PRATT 2016, 33, fig. 3; KNAPP-DEMESTICHA 2017, 172-184.

<sup>68</sup> WATROUS 1992, 135.

<sup>69</sup> KNAPP-DEMESTICHA 2017, 173. Consider the results of volume calculations on Cretan stirrup jars in BEN-SHLOMO *et alii* 2011, 334 (12-181).

## CONCLUSIONS. WHAT'S IN AN OCTOPUS' MIND? INTERPRETING HTR 0397 AS A MEASURING VESSEL

The above discussion cautions us that the Linear B records do not make it possible to exactly define the value of any of the Mycenaean capacity measures. On several occasions, Chadwick observed that the only solution to such a riddle would consist in identifying a measuring vessel<sup>70</sup>. In a brilliant article written in Chadwick's honour, E. Bennett seems to echo such a statement, observing that, as for ceramic vessels, "standard sizes need not coincide with standard measures"<sup>71</sup>: in other words, that the identification of an artefact functioning as a metrical "touchstone" was not determined by the number and spread of the specimens known, but by its official character. Thus, it remains feasible that a few transport stirrup jars that carry a painted inscription had such a status, but not every one that was produced and traded by private merchants<sup>72</sup>. It is interesting to observe that Bennett's considerations were prompted by the identification of a late 19<sup>th</sup> c. AD Balkan wooden container with an accompanying inscription describing it as a standard measure. This serves to remind us of the reasons why no comparable find has ever been found in Mycenaean or historical Greece: we unfortunately lack containers made of perishable materials, such as sacks, chests, wooden boxes, or troughs for fodder<sup>73</sup>. Both prior to sowing and after the harvest, these devices could be particularly useful to quantify the dry staples in storage, such as cereals, pulses, and spices. Once precisely calculated, one or more quantities of a dry staple could be also put inside a storage jar, in order to assess the latter's capacity and, in a few cases, to turn it into an official measuring vessel intended for liquids. Of course, several *a priori* requirements must be envisaged for such an operational sequence to be identified in the archaeological record. Firstly, agricultural storage should occur at an official level, that is, at a site that (1) provided facilities for storage in bulk, such as granaries, storerooms, or silos, and (2) was controlled by a public authority. Secondly, such an authority should control the production of storage containers (both of perishable material and ceramics), with pottery workshops specialized in producing quantities of standardized vessels. Thirdly, this same authority should provide dedicated storage spaces for such container/s, possibly distinguishing it/them somehow so that it/they could be understood as "official" in character. Eventually, such a container, like the wooden one of Bennett, should carry an indication of its capacity to remind people – such an act would indicate the existence of a standard measure.

Though not as self-evident as the wooden vessel published by Bennett, it can be reasonably argued that the wider context of pithoid jar HTR 0397 has all these prerequisites: Final Palatial Hagia Triada (along with nearby Kommos) (1) had an outstanding built environment partially devoted to agricultural storage *en masse*, (2) produced quantities of standardized small and medium-sized clay containers (the short-necked amphorae; the pithoid jars like HTR 0397), (3) showed a seemingly intense obsession for octopus and octopus-like decorated vessels, the largest of which (4) was painted with a group of brushstrokes arguably functioning as counting devices and (5) was safely stored in an almost inaccessible storeroom. In a wider perspective, a sanctuary-town such as Hagia Triada represented the political landscape against which all these activities were carried out, being also the center of an agrarian state in the western Mesara plain, whose rulers derived their authority – or claimed to do so – from the protection of their gods.

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<sup>70</sup> See *e.g.*, CHADWICK 1976, 108.

<sup>71</sup> BENNETT 1987, 93.

<sup>72</sup> We can wonder whether this could be the case of the transport stirrup jars inscribed with the word *wa-na-ka-te-ro* ("royal"): see HASKELL

*et alii* 2011, 91-108.

<sup>73</sup> Sacks used to store seeds have been documented: see *e.g.* WARDLE 1987, 326-329 (Assiros), and JONES 1995 (Glas).

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