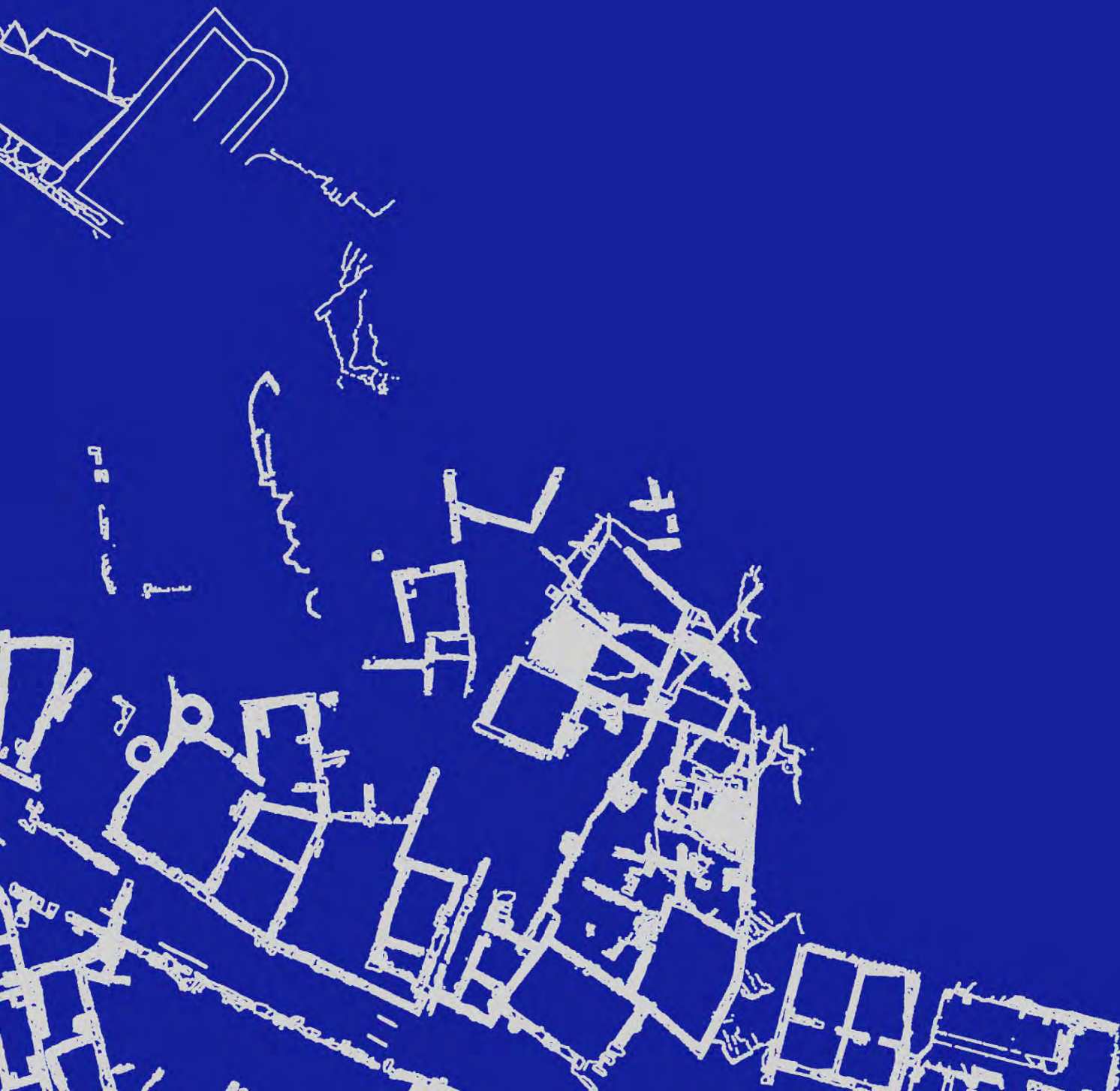


THORIKOS 10

Reports & Studies



THORIKOS 10 REPORTS AND STUDIES

(Thorikos 10)

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**THORIKOS 10
REPORTS AND STUDIES**

(Thorikos 10)

edited by Roald F. Docter

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Note to the second revised edition

As the first print run of TRS 10 (2011) neared the point of being sold out, it was decided to make a slightly modified reprint. Apart from some obvious typos, the main modifications concerned Fig. 4 in the contribution of Van Liefferinge, Stal and De Wulf, where the 2009 GPR prospection of the University of Liège had been misplaced (p. 9) and the sequence of catalogue numbers 21 and 22 in the contribution of Docter, Monsieur and van de Put (p. 82-83).

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Thorikos. The peninsula of A. Nikolaos as seen from near the top of the Velatouri Hill. Mycenaean (Late Helladic I/early Late Helladic II) tholos tomb no. III in the foreground, the island of Makronisi in the background, and the Dow Chemical plant in the middle (10.04.2007).

Introduction

Roald Docter

Ghent University has been involved in fieldwork in Thorikos for more than 50 years. In 1960, H. Mussche investigated the maritime fortifications on the A. Nikolaos peninsula as a Belgian member of the Ecole Française d'Athènes. Large-scale excavations started on 7th October 1963 with the participation of other Belgian Universities, principally the Université de Liège and the Université Libre de Bruxelles. After 23 campaigns, the excavations came to a temporary halt in 1990.¹

In 1997, a team of topographers of Ghent University under the *aegis* of the late M. Oikonomakou measured an area of approximately 7 km² in the valley between Lavrio and Plaka (De Wulf 2000; see also Van Liefferinge, Stal, De Wulf, this volume). In 2000, a short control excavation was conducted near the top of the Velatouri hill, again under the *aegis* of M. Oikonomakou (see Van Gelder, this volume). In 2006 and 2007, a small team of Ghent University undertook cleaning operations in the Theatre area and the Industrial Quarter, closely coordinated with the Greek archaeological and heritage authorities (see van de Put, Docter, this volume). Fieldwork in 2008 consisted of an intensive topographic survey on the lower slopes of the Velatouri Hill with a focus upon the Theatre area and the Industrial Quarter (see Van Liefferinge, Stal, De Wulf, this volume).² In 2009, two team members from Ghent University, L. Verdonck and G. Dierkens, executed a large-scale Ground Penetrating Radar (GPR) survey for the University of Liège, under the direction of R. Laffineur, on the south slopes of the Velatouri hill (see Van Liefferinge, Stal, De Wulf, this volume, p. 9, fig. 4). Since 2010, small-scale excavations are being conducted in a large cistern in the Industrial Quarter in the frame of a wider study on water management in the Laurion area (see Van Liefferinge *et al.*; Docter, Monsieur, van de Put; and Mortier, this volume).

From the start, the excavators took great care to make the results of their investigations accessible to the academic community as swiftly and extensively as possible. After a large preliminary article on the first, 1963 campaign in *l'Antiquité Classique* (Mussche *et al.* 1965), a series of preliminary reports was started (*Thorikos* I–IX).³ Also, a series of final reports was conceived, *Fouilles de Thorikos* (*FdTb*), in which three volumes have appeared to date: Labarbe 1977, Mussche 1998, and Vanhove

¹ For a *status quaestionis* on the earlier fieldwork in Thorikos, one may refer to Mussche 1998.

² The campaign lasted only six days, from 31 March to 5 April 2008. The team consisted of Roald Docter, Kim Van Liefferinge, Steven Hast, Cornelis Stal, Guy Dierkens and Thomas Pieters.

³ Please, note that *Thorikos* I (reporting on the first campaign) appeared only after the publication of *Thorikos* II and III.

2006. A few more are currently in preparation.⁴ At the same time a series of small volumes on miscellaneous subjects related to Thorikos and the wider Attic territory was devised, the *Miscellanea Graeca (MIGRA)*, in which nine volumes have been published since: Mussche, Spitaels, Goemaere-De Poerck 1975, Gale *et al.* 1979, Vlietinck 1981, Mountjoy 1981, Spitaels 1982, Blondé 1983, Gallant 1985, Devillers 1988, and Mussche 1994.

Since the fieldwork came to a temporary halt in 1990, some important articles on Thorikos and its territory have been published outside these three Thorikos series.⁵ With the start of new fieldwork in Thorikos in 2006, the need for a more focused and visible publication channel was felt again. After consulting several stakeholders,⁶ it was decided to continue the old series of preliminary reports, albeit with a slightly changed title that would do more justice to its intended contents. The numbering of the old series has been kept, however, and will be continued with this first new volume as number 10.

The new fieldwork in Thorikos by Ghent University has been guided by five main principles:

1. It should be set in the perspective of a better understanding of the old excavations;
2. It should go hand-in-hand with the study and publication of the results of old excavations (both finds and architectural remains);
3. It should be followed by swift dissemination of the scientific results, a.o. in the shape of extensive preliminary publications;
4. It should benefit from close collaboration with specialists from other disciplines and other national and international (Greek and other) partners, research institutes and universities; and
5. It should provide undergraduate and graduate students with training in excavation and field-walking methods and techniques as well as finds processing.

⁴ A.o. on the (Proto)Geometric pottery of Thorikos and Attica by K. Van Gelder and on the transport amphorae of Thorikos by P. Monsieure. With volume 3 (Vanhove 2006), the series has been taken over by Peeters Publishers in Leuven, who is also responsible for the distribution of the other Thorikos series.

⁵ One may mention e.g. Mountjoy 1995, Rehren *et al.* 1999, and Rehren, Vanhove, Mussche 2002. Also other coherent finds groups from Thorikos have been presented outside the three Thorikos series, e.g. the lekanai (Lüdorf 2000) and the beehives (Lüdorf 1998/1999).

⁶ H. Mussche, P. Peeters of Peeters Publishers in Leuven, and the members of the 'Belgian Centre for Archaeological Research in Greece' (BCAOG / CBRAG) association, besides the members of the newly formed Thorikos team (A. De Wulf, K. Van Gelder, G. Dierkens, W. van de Put, K. Van Liefferinge, T. Pieters and S. Mortier).

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The Thorikos Excavations 1963 – 2010 in Maps

Kim Van Liefferinge, Cornelis Stal, Alain De Wulf

Since 1963, the ancient site of Thorikos has been the subject of many research campaigns, which have produced a large amount of cartographic material. The results of these campaigns have been published extensively. Especially noteworthy are the preliminary reports (*Thorikos* I-IX), which include numerous manually drawn maps, generally focussing on particular *insulae* or other structures in Thorikos. In contrast, no high quality overview plans have previously been included (with the exception of the low-detailed situation plan shown on **Fig. 1**).

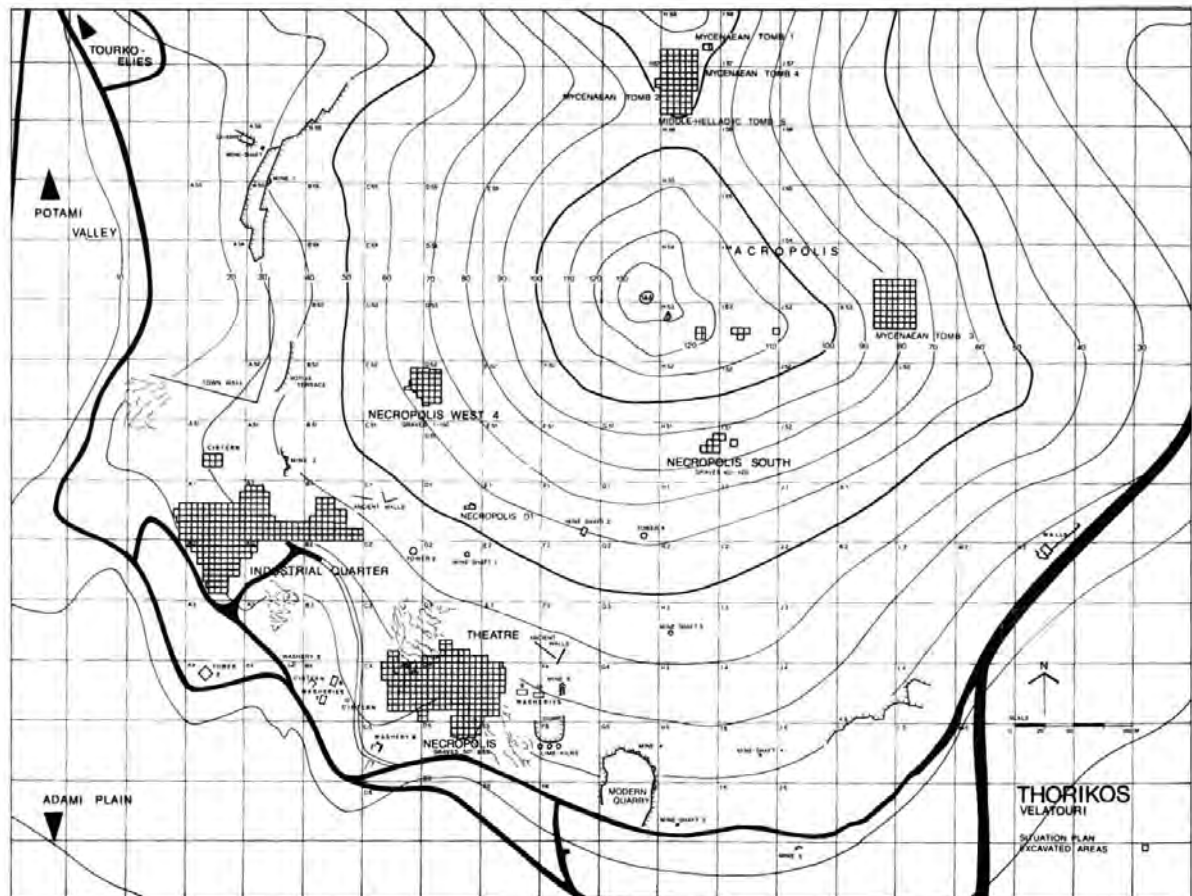


Fig. 1. Thorikos. Old situation plan of the excavations on the Velatouri Hill (version 1998).

The maps published by H. Mussche (1998), which had been prepared by D. Vanhove on the basis of earlier maps by many members of the Thorikos team,¹ were a

¹ One may mention the work of o.a. B. Christides, L. Van Damme-Renard, Cl. Zerck-Mulder, H. Gasche, J. Rawoens, M. Mouraux, A.M. Uyttendaele, A. Bellens, J. De Geyter, and especially L. Demeyer.

reasonable attempt to improve this situation, at least for particular zones such as the Industrial Quarter (**Figs. 2-3**). However, because of the far-reaching simplification of the archaeological structures, a considerable amount of detail and, hence, crucial information was lost in these maps.

Owing to this, the interpretation of the organisation of the archaeological remains was sometimes hard, especially for scholars who did not have immediate access to the excavation archives at Ghent University. After 1989, the excavation campaigns came to a temporary halt (but see Van Gelder, this volume) and attention was directed to the organisation of the inventories, material study and the creation of a database. During this phase, the need for proper maps and most of all, digitized material became increasingly pressing. Besides preservation issues that urgently needed to be considered, it was also essential to publish coherent and highly detailed cartographic material that could be a basis for future archaeological, geographical and geomorphological analyses.

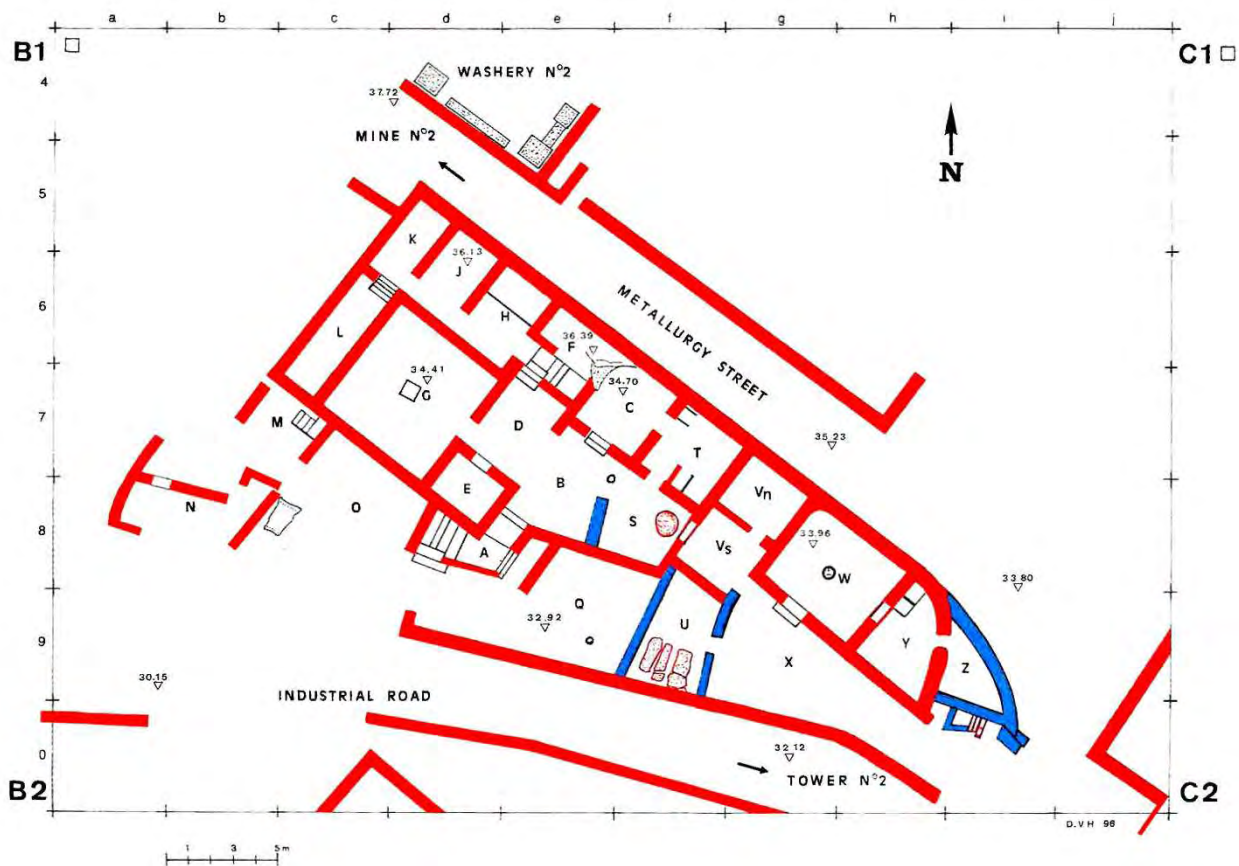
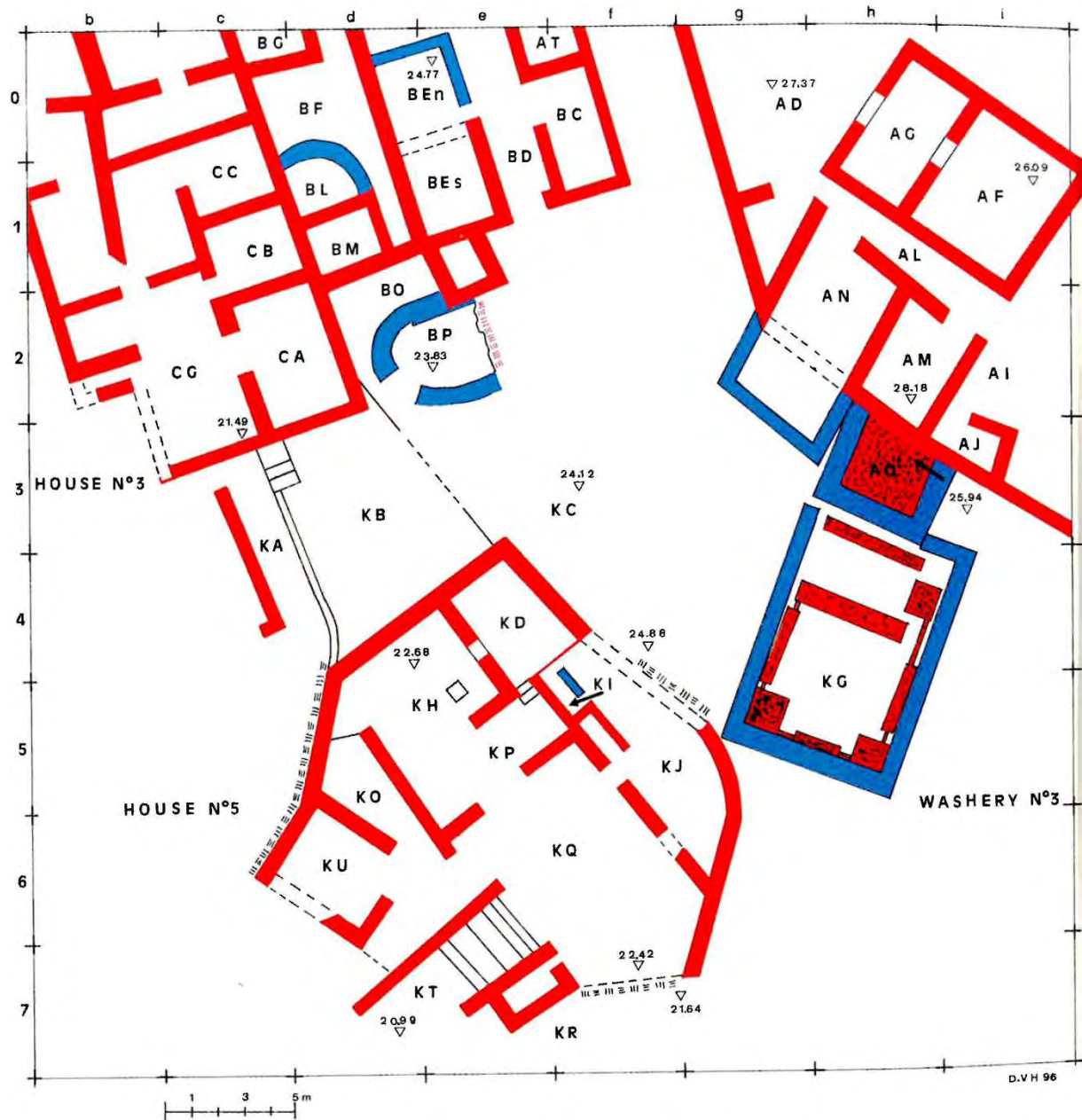


Fig. 2. Thorikos. Example of map published by H. Mussche (1998, 139, fig. 93: “Plan of house no. 1. Blue: structural alterations”).

In 2008, a topographic survey campaign was organised with a view to the systematization and digitizing of all available cartographical data. In order to fully understand how a systematic revision of the old Thorikos maps could be achieved, the history of topographical work at the site and its surroundings should be briefly outlined.



Initially, the topographic measurements of Thorikos were all aligned within a local reference system. This system was based on a materialized grid on the Velatouri hill, consisting of ‘macro-squares’ measuring 50m by 50m and containing more than 120 reinforced concrete numbered poles (marked A1, A2, *etc.*) to define the intersections; the old overview maps hence show the mentioned raster (see e.g. **Fig. 1**). With the absence of easily accessible absolute measurement devices and/or systems, this technique of compact local reference points proved reliable during the fieldwork for many decades. The mentioned macro-squares were subdivided into excavations units measuring 5m by 5m and all archaeological plans were drawn using this grid system as

a basis. Unfortunately, as a result of the unfavourable weather and environmental conditions and the lack of structural maintenance of the grid, many of the concrete poles are currently in a very bad condition. To overcome the ensuing geometric errors, the use of a (differential) global navigation satellite system ([d]GNSS) was introduced on site in 1997, enabling the measurement of points with absolute coordinates (De Wulf *et al.* 2000a; 2000b). The implementation of this measurement technique would leave the local concrete grid theoretically redundant from a technical point of view. Nevertheless, the utility of the grid is still of great importance for the fast local positioning of excavated remains and objects during and after excavation. Also in view of the archaeological survey of the Velatouri hill, which is envisaged for the near future (2012), the grid will still prove to be a useful tool.

After the introduction of absolute satellite positioning for academic purposes by Ghent University, three topographic survey campaigns have been conducted at Thorikos. The first campaign took place in September 1997 and resulted in a data set containing almost 55,753 points covering an area of approximately 7 km² in the valley between Lavrio and Plaka. These points were measured using two different GNSS (Global Navigation Satellite Systems), more precisely the Leica SR20 receiver with external antenna and the Pentax R-1200 systems. During this campaign, a reference station was installed on the roof of the building of the then ‘Belgian School’ (the ‘Kephala Melatron’). This building is located a few hundreds of meters southwest of the Thorikos site (see *Thorikos* VII, 6, fig. A; De Wulf *et al.* 2000a, 194, fig. 7). The point set has been processed during ‘post processing’, resulting in a series of points in a local system, WGS84 and UTM.

The second campaign was executed in October 2005 in collaboration with the University of Liège (R. Laffineur) and consisted of a detailed measurement on the northern flank of the Velatouri hill. The Leica SR20 GNSS system was used again, accompanied with a Pentax PCS-300 total station. 2322 detail points and the structures of the Bronze Age tombs on the northern mountain flank were measured and overlaid with a geophysical prospection of the same area. All measured points have also been transferred to the local coordinate system.

The available geo-archaeological data sets of the Thorikos area have been acquired between 1964 and 2010 and are linked with different reference systems. Next to the already mentioned local grid system, different other national, worldwide and local reference systems have been assigned to different data sets. The measuring and referencing of the local grid by (differential) GNSS enable the alignment of all archaeological objects and remains on site within one absolute reference system and increase the interchangeability of different data sets. However, to accomplish this streamlining, the quality of the materialized grid must be monitored.

During a third topographic survey campaign in April 2008, a Pentax R-325 N reflectorless total station was used to check the geometric quality of the concrete grid markers, next to a visual qualification of these poles. During the same campaign, preparatory work took place for archaeological research on the ancient water management of the area. Within this context, Cistern no. 1 in the northern part of the

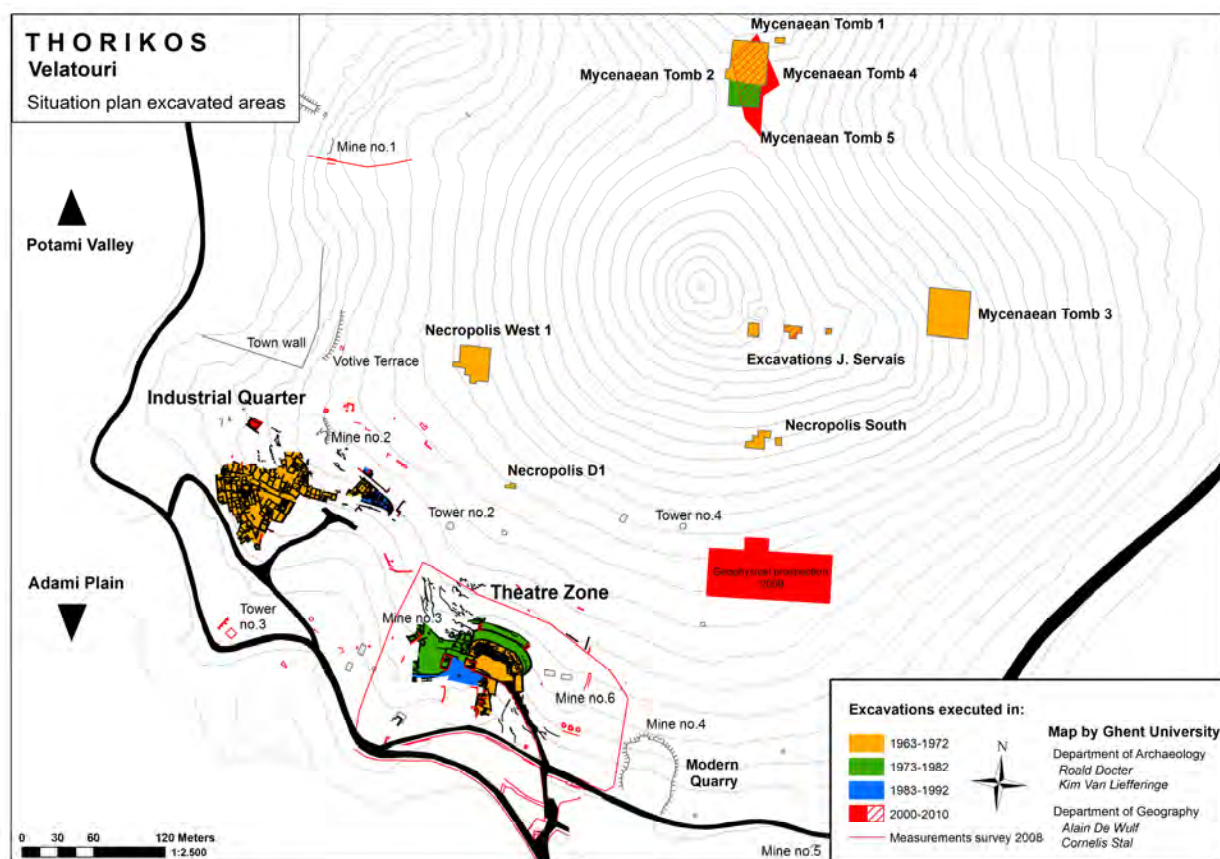


Fig. 4. Thorikos. Revised situation plan of the excavations and other fieldwork on the Velatouri hill (situation: 2010). Note that the zones marked ‘Excavations J. Servais’ have been revisited in 2000.

industrial area has been measured intensively (see Van Liefveringe *et al.*, this volume). Some of the principal structures in the Theatre Zone have been measured as well, but in this area the focus had been rather on modern structures, like roads and fences. All measurements were performed from free stations, where the position of the total station is based on the measurement of at least three grid poles. Each series of measurements contains a set of polar coordinates, processed by Octopus survey software. Rectangular coordinates of the measured objects are calculated by aligning the free stations with the reference point set of the grid poles. These calculations are executed in post processing, in order to perform a least squares adjustment of the data.

The latter topographic survey was necessary to allow the synchronization and digitizing of all available (manually drawn) archaeological maps. The plans were scanned, processed in Photoshop and accordingly vectorized and georeferenced in ArcGis. They contained the materialized grid, as well as highly detailed information about the site on single stone level in the case of architectural structures. By combining the data on these maps with the topographic survey results, verification and a visual geometric analysis was possible. It showed that all archaeological maps prepared over the past decennia were remarkably accurate.

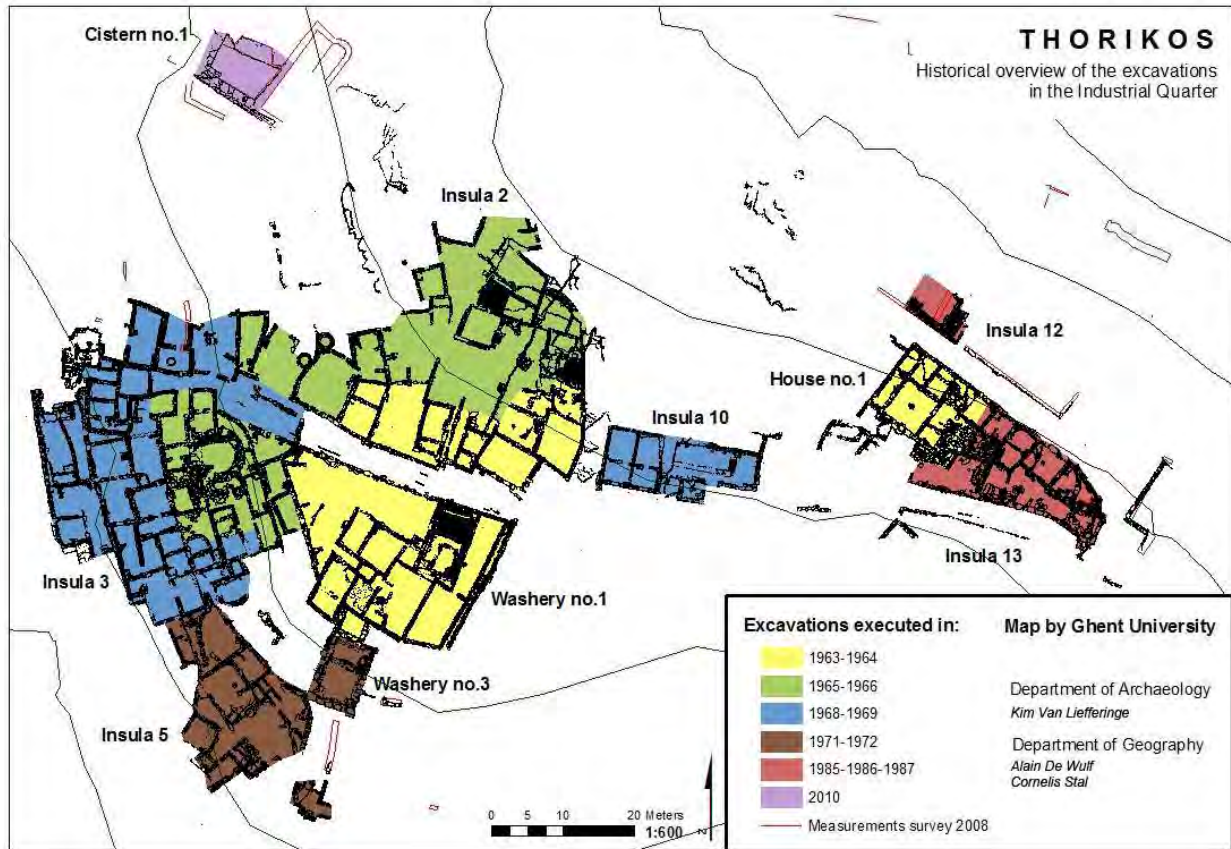


Fig. 5. Thorikos. Historical overview of the excavations in the Industrial Quarter (situation: 2010).

One of the most important results of these activities was the creation of a new overview map of the Velatouri hill, showing a situation plan of the excavations, which were executed from 1963 until 2011. Similar maps were prepared of the Industrial Quarter and the Theatre Zone (**Figs. 4-7**). Especially **Fig. 7** that shows the same *insula* as on **Fig. 2** nicely illustrates the potential of the plans in comparison. It should go without words that the composition of an overview map is to be considered as a work in progress. For now, only the Industrial Quarter and the Theatre Zone are incorporated in detail (see also Mortier, this volume, fig. 1). Other areas (among others the cemeteries) are temporarily indicated as on the old maps. The actual drawings of these zones will be digitized and included to the general plan in the near future.

Fig. 7. Thorikos. Industrial Quarter, House no. 1 (situation 2008).

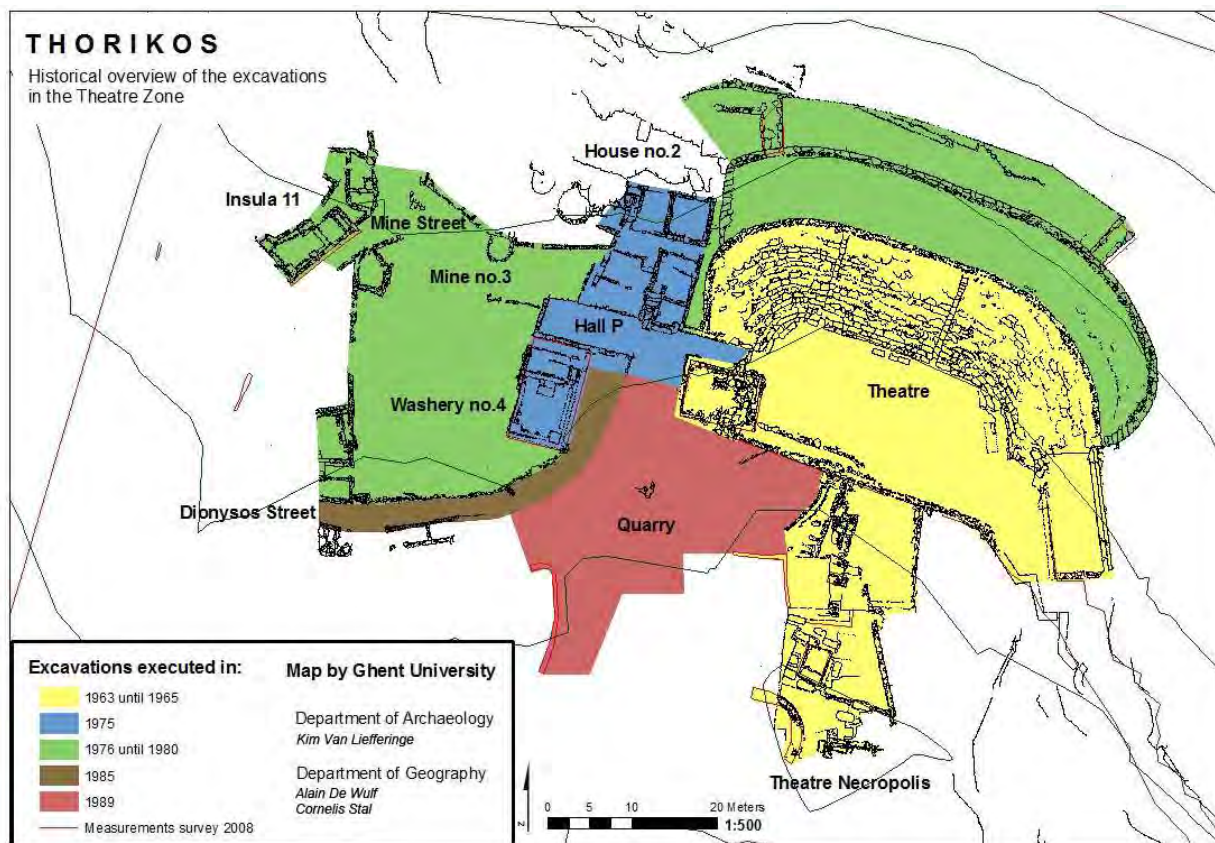
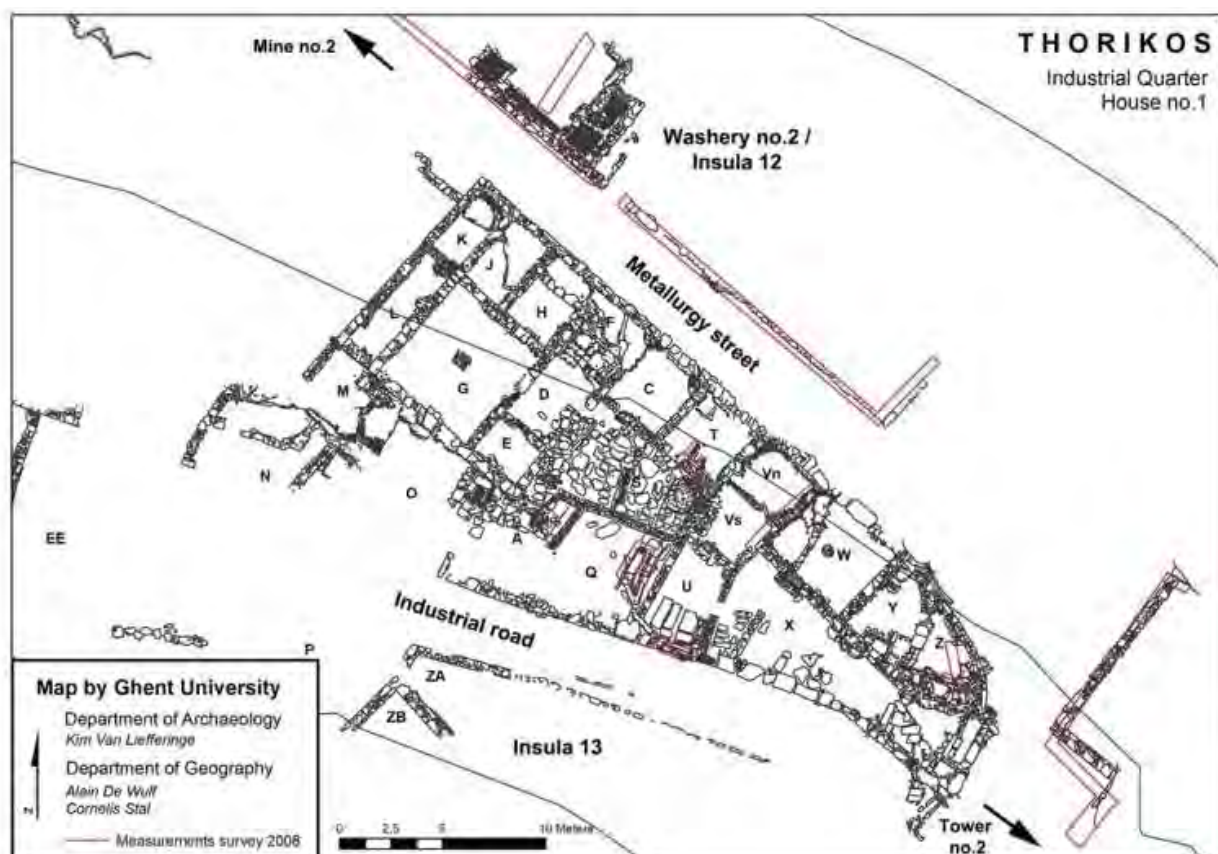


Fig. 6. Thorikos. Historical overview of the excavations in the Theater Zone (situation: 2010).



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Old Excavations near the Top of the Velatouri at Thorikos: a Revision

Koen Van Gelder

Three small excavations have been carried out by the late Jean Servais (University of Liège) in an area near the top of the Velatouri (**Fig. 1**), two in 1965 (in macro-square I53), one in 1968 (in H53).¹ Only the trenches opened in 1965 were published.² The excavator, whose main field of interest was the Bronze Age, was probably hoping to unearth remains of that period.

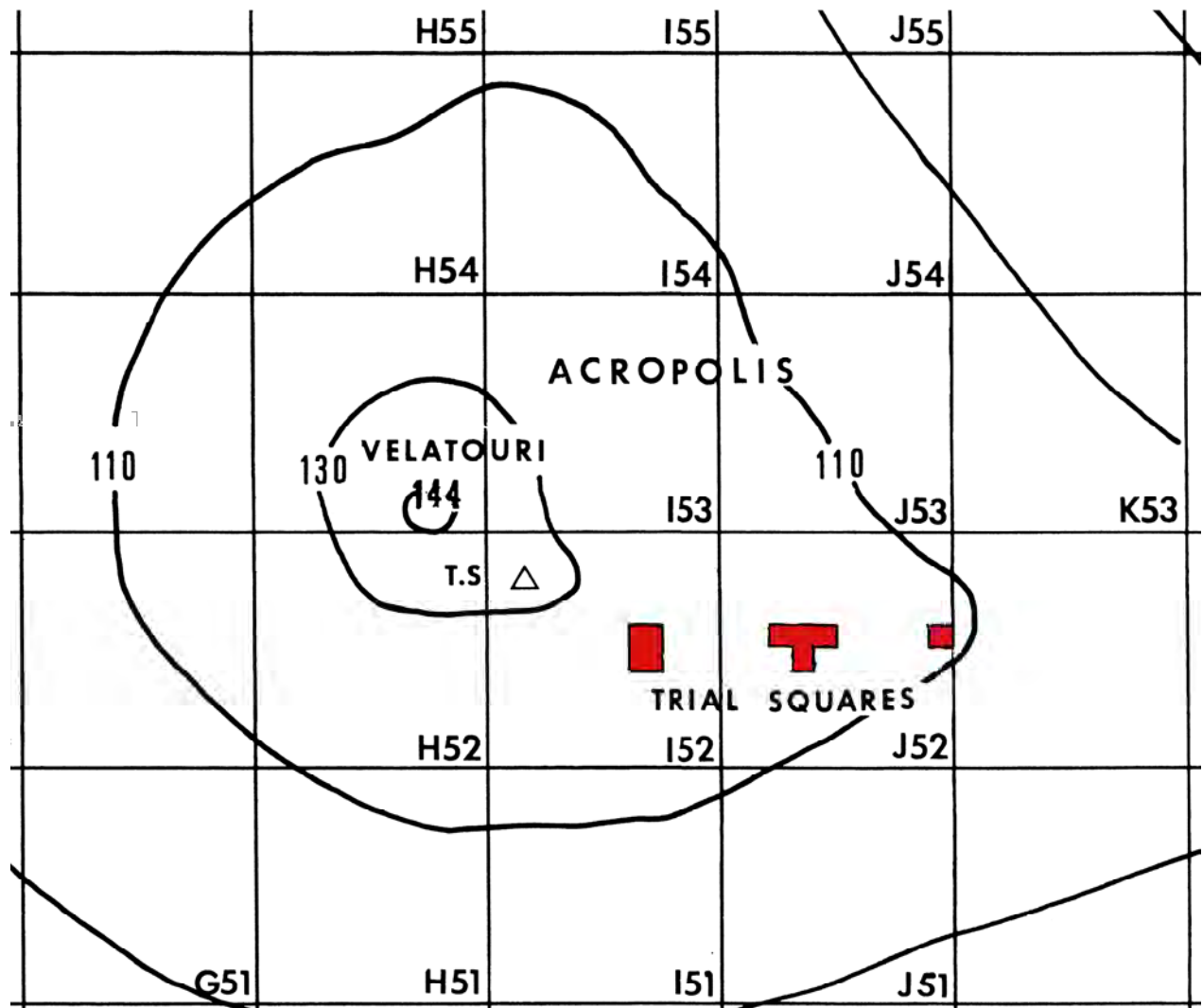


Fig. 1. Thorikos: map of the top of the Velatouri with indication of trial trenches (scale 1:2000).

¹ The macro-square numbers refer to the squares to their lower right.

² Servais 1967.

During my study of the Geometric pottery from Thorikos, I had access to the comprehensive diary of the 1965 excavations, the maps and photographs, and the labels of the finds of the excavation of 1968, and got a strong suspicion that the publication of the excavations of 1965 did not correspond with all observations. I examined the available information and was brought to a largely divergent interpretation. I then wished to get some clarifications in view of the final publication of the finds. Besides, apart from a brief mention, nothing had been published, after thirty years, about the trench opened in 1968, the year the round tholos³ was studied, and the excavator had passed away since.

Some verification was desirable or necessary to confirm, if possible, the new interpretation of the largest excavation of 1965, to look at the situation in the smaller trench excavated that year and to gain a better understanding of the excavation of 1968. By the courtesy of the Greek archaeological service and the financial support of a former student of Ghent University, this work could be done in September 2000.⁴ The available time was extremely limited, as the walls of the trenches had collapsed and a mass of mixed earth from the archaeological layers had fallen on top of the black layer of ashes caused by the fire of 1993. Activities were therefore limited to the strictly necessary. Attention was given mainly to the areas with Geometric or so-called *Subgeometric* material.⁵

The aim of this article, therefore, is threefold: the rendering of my doubts about the interpretation of the excavations in 1965, the report of the inspection of 2000 and — as well as possible — the publication of the excavation of 1968, together with the additional work of 2000 in that trench.

The central trench (1965)

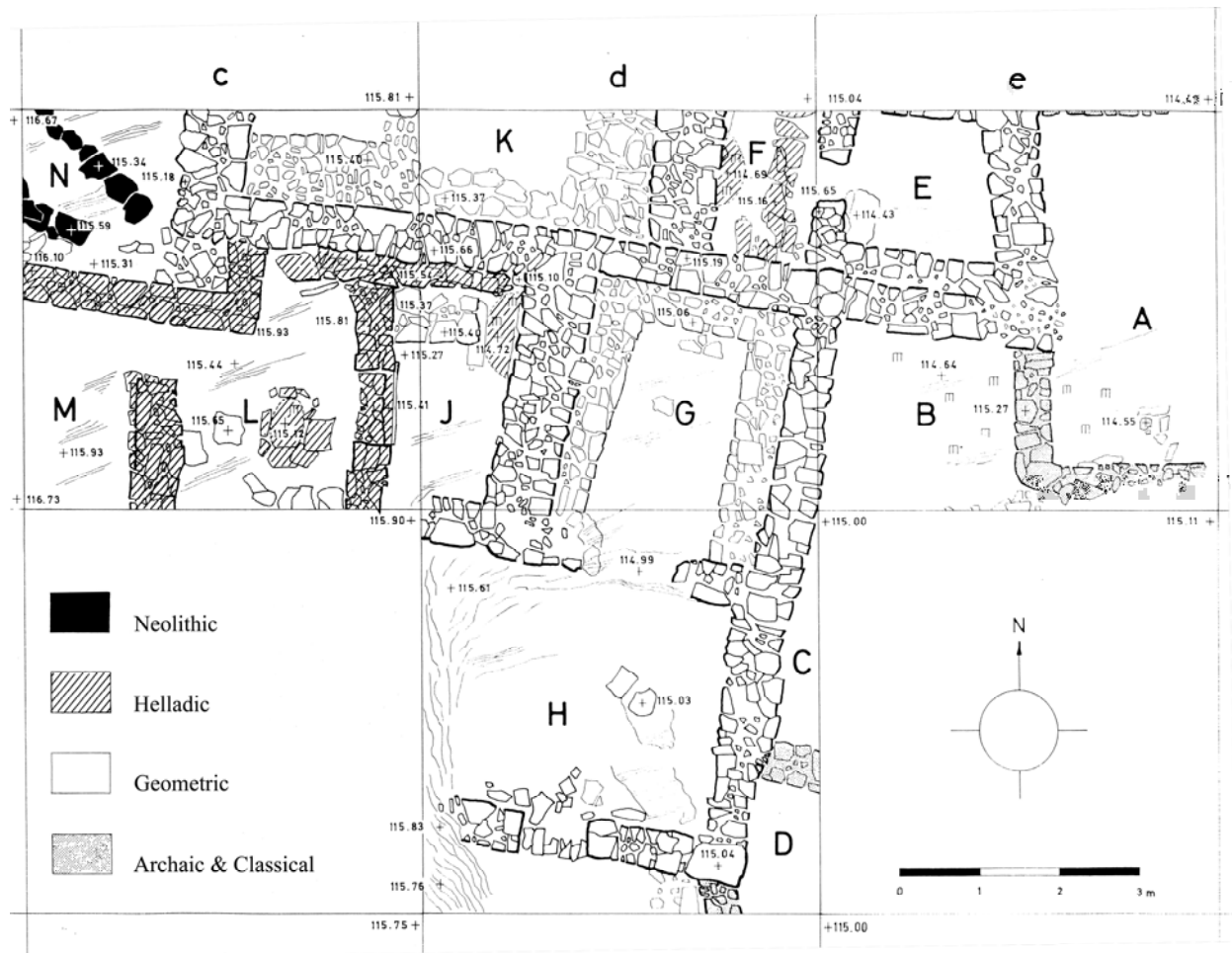
The excavation of 1965

These excavations were carried out from 27 September till 16 October 1965 and published by the excavator, J. Servais, in *Thorikos* III (Servais 1967, 9-27, 30 with map II; here **Fig. 2**). Four micro-squares, I53c5, d5, e5, and d6 (with the *constructions subgéométriques* E, F, G, H, J, K), had already been entirely excavated, which virtually excluded a new examination. So, in the year 2000, all hope was placed on the north side of K and F.

³ Servais 1971. Excavations in I53: 19-20.

⁴ Only two weeks were available. The Belgian staff consisted of the then director of the Belgian School, Mrs. D. Vanhove, and me. The work was carried out with the help of one foreman and one workman. It was supervised by Mrs. M. Oikonomakou and an employee of the museum of Lavrio, appointed by her. Assistance was rendered by the secretary of the School, Mrs. Toivanen. We are most grateful to the ephor at the time, Dr. G. Steinhauer. The finds were studied in 2001. At that time I was advised and assisted by Em. Prof. Dr. H. Mussche.

⁵ Nothing was done at the side of the Archaic rooms A, B, C and D, Servais 1967, 18; the Late Neolithic remains had been inspected before, Spitaels 1982.



The excavator summarized the situation the following way: “(...); *mais la couche subgéométrique elle-même n’a heureusement jamais subi de perturbation. On l’a retrouvée uniformément répandue dans les compartiments K, F, E, J, G et H: elle était faite d’une terre argileuse ocre brune, très compacte, dure et homogène, sans aucune variation de stratigraphie décelable depuis le haut jusqu’aux sols, formés eux-mêmes d’une seule épaisseur de terre battue particulièrement dure, riche en tessons, parfois tassée au-dessus d’un léger remblai plus meuble (contenant quelques tessons HM [Helladique moyenne, KVG]) (...). L’unité de cette couche d’habitation, très manifeste, (...).*”⁶ This text poses a problem: there is, *on the floors*, a *couche d’habitation* that reaches untill the preserved upper level of the walls. Further examination, from room to room and from ‘layer’ to ‘layer’ only raised more doubts. Moreover, five pages further the excavator presents another interpretation: “(...) *au contraire, l’épaisseur quasi uniforme de terre compacte — relativement peu mêlée de pierres mais spécialement riche en tessons dans sa partie inférieure — qui couvrirait les sols jusqu’à la crête généralement rectiligne des murs, cette couche épaisse et homogène pourrait bien être le résidu de parois et de cloisons en briques crues tombées en ruines puis dissoutes (...).*”⁷

On the base of the excavation documents it became clear that there was indeed a yellow or yellow-brown layer between the humus and the bedrock (*infra*). The conclusion that most sherds were found in its lower part is correct in E, not correct in G and H,⁸ and unverifiable in F, J, and K.

The next issue are the floors, which were not consistently mentioned. With the possible exception of a fragmentary floor in E, no floor is mentioned in the diary, nor are sherds from a floor registered. On different occasions the diary notes the absence of floors. All data about a possible excavation of the lowest level in K are lacking. On a photograph one can observe that a number of stones, also indicated on the map, rest on a fill. Floors were found in this trench: in B (Archaic) and in L (Middle Helladic).

The interpretation of the yellow layer as a habitation layer can hardly be maintained. It is too thick, and from the location of TC65.50 and some photographs can be deduced that, in places, it is even thicker than the preserved height of the walls. The conflicting interpretation as a collapse layer is not consistent with the rather homogeneous distribution of finds in this layer.

The remaining possibility is a fill, perhaps containing sherds and bricks that once belonged to the construction. This interpretation is supported (albeit not conclusively demonstrated) by the presence of a few sherds with a funerary character⁹ (**Fig. 3**: TC65.48d) and the fact that one sherd (TC65.46ad)¹⁰ could be joined with a fragment from the terrace of the eastern trench (TC65.1bn). TC65.44c could also be joined with TC65.1c, but the former may have been found in the humus.



Fig. 3. Rim TC65.48d of amphora or hydria with plastic snake. Scale *ca.* 2:1.

⁸ A relatively large number of sherds (62) was found at the bottom, but laying on top of the fill of the cavities of the rock, which also contained Middle Helladic material and obsidian, with no clear distinction recorded.

⁹ Two fragments with plastic snake in I53d6: TC65.44m, humus and beginning of yellow layer; TC65.48d (**Fig. 3**), H, northwest corner, *couche de démolition* → *sol*.

¹⁰ H, *niveau seuils*.

Finally we have to look at the date of fill and construction.

The fill contained, beside Late Geometric pottery, mainly 7th-century *Subgeometric* and Protocorinthian material. Nothing points to developing black-figure or to Black and White style (let alone black glaze). This layer thus can be dated to the Early Protoattic or early Middle Protoattic.¹¹

The excavator used two ceramic elements to date the construction, but neither could convince me:

1. TC65.50¹²

The fragments of this one-handled cup were, according to the publication, “*trouvés au sud de d6, bloqués sous quelques pierres éboulées qui obstruaient la porte ouvrant sur H.*”, which leads to the conclusion: “*Fournit donc un terminus post quem à l’abandon de la demeure*”.

In the inventory, however, this cup is mentioned as: “*I53d6 - H coin S.O. Eboulis obstruant la porte, sur crête des murs. -40*”, and the diary says: “*D108 A -40, dans la couche jaune, tout à fait au coin S.O. du carré et à l’extérieur du mur (donc au sud), et au-dessus de la crête des murs, skyphos presque complet, assez étroit et allongé de forme.*”¹³

2. TC65.34¹⁴

This sherd of an Early Protocorinthian skyphos is used to date the building. The report (p. 17) states: “*Trouvé en G, bloqué sous la banquette ouest, contre le rocher et le pied du mur. Fournit donc un terminus post quem à l’ensemble du bâtiment lui-même.*”

Again, this doesn’t seem entirely correct. The inventory gives a slightly different mention: “*tesson bloqué dans fond de la salle à banquettes*” and the diary mentions it as: “*Dans nettoyage du mur de fond de la salle aux banquettes: tesson subgéométrique (flanc de grand skyphos) pris dans la blocaille inférieur du mur. Daterait la construction?*”. Elsewhere the diary uses the word *blocaille* for the small stones between the wall and the ‘*banquette*’. In this *blocaille*, in the middle of the northern ‘*banquette*’, was found TC65.33 (label D040), nine sherds of the neck of an oinochoe. In any case TC65.34 was no more than TC65.33 found *under* the ‘*banquette*’ (which was of course not dismantled).

L, M and N, were probably outside the Iron Age building. The Late Neolithic material and most of the Middle Helladic remains were found there.¹⁵ In M and N a small amount of Geometric material was also unearthed. The stratigraphy was as follows:

- humus;
- dark grey debris (TC65.55);
- powdery black layer that passes over the Middle Helladic wall (TC65.56, and lower TC65.57);
- grey layer — only in N (TC65.59; end of grey layer, beginning of red: TC65.60;¹⁶ contact with red layer: TC65.62).

¹¹ The date, of course, of the earth, before it was used as a fill.

¹² Servais 1967, 17, fig. 7.

¹³ Underlining by the excavator. There might have been confusion with another find: “*Nettoyage de l’entrée. Tessons p.é. importants, bloqués entre les pierres d’éboulis qui encombrement la porte — Date la démolition.*”, but that one comes from the ‘door’ between G and H.

¹⁴ Servais 1967, 17, fig. 8.

¹⁵ Servais 1967, 20-27; see Spitaels 1982, 9-44.

¹⁶ For the ‘red layer’, see Spitaels 1982, 12.

Only a few fragments from these layers can be dated:

TC65.55 contains a fragment of a plate, Late Geometric – Subgeometric, a fragment of a one-handed cup, Late Geometric IIb – Early Subgeometric, and a fragment of a Late Protogeometric amphora.

TC65.56 and 57 contain a fragment of a kalathos, Late Geometric II, and a fragment of a louterion, Late Geometric Ib – Early Subgeometric.

From the grey layer I was able to assign dates to a few fragments. In TC65.59: a fragment of an oinochoe (**Fig. 4**), Early Geometric – Middle Geometric I, and a fragment of a skyphos, Middle Geometric I; in TC65.60: a fragment of an amphora (**Fig. 5**), Middle Geometric (I), a fragment of a skyphos, Middle Geometric I, and a fragment of an early skyphos, Early Geometric or Middle Geometric I; in TC65.62 a fragment of a (Late) Protogeometric cup (**Fig. 6**).

The material in the grey layer at the bottom is thus homogeneously older than the fill of the house and the material above it. Without eliminating the possibility of an earlier activity, it seems well possible that precisely this lowest layer outside the building represents its date of use.



Fig. 4. Fragment of Early Geometric – Middle Geometric I oinochoe TC65.59a. Scale *ca.* 1:1.



Fig. 5. Fragment of Middle Geometric (I) amphora TC65.60a. Scale *ca.* 1:1.



Fig. 6. Fragment of (Late) Protogeometric cup TC65.62c. Scale *ca.* 2:1.

The inspection in 2000

Although we knew in advance that the possibilities to check the old excavation were limited, the results of the inspection on 28 and 29 September 2000 were disappointing.

In room K appeared, after the removal of a considerable amount of earth and plants, the level of 1965. The situation was simple, but a bit confusing: the humus, mixed with stones, rests upon a yellow-brown layer, which stayed, in the southern part, clearly below the top of the southern wall of K. The stones that are drawn on the map in the southern part in K, rest *upon* this yellow-brown layer, which slopes down from the west to the centre. The north-south row of stones in K also rests largely upon the yellow-brown layer. The *moellons* in the northeast at the other hand were most likely covered by the yellow-brown layer.¹⁷ The distinction between the fallen stones at the bottom of the humus and the stones at the top of the yellow-brown layer is not always clear. Below the level that contains the stones the yellow-brown layer is hard; it contains schist in many places, but no sherds. If K was inside the building, this *could* be a floor, but this is obviously not the same yellow-brown layer once considered as a habitation layer, another time as a collapse layer.¹⁸

Between the stones in the upper part of the yellow-brown layer was found some Early Archaic material. The only sherd found at the top of the lower level without stones can be from the 8th or 7th century BCE. However, finds are scarce.

In the southern part was found a row of stones, probably traces of a wall, without any connection to the south wall of K (**Fig. 7**).¹⁹

The only definite conclusion is that the map of K is not incorrect, but misleading. As far as we could verify, no floor level is marked by a concentration of sherds (but maybe by fallen stones).

The examination of F yielded no results. In the north, in and immediately underneath the humus, are traces of later activities, no floor was found, a row of green stones, the Helladic wall on the map, is in fact slightly straighter than indicated on the drawing (**Fig. 8**).

The rejection of the conclusions of the excavator thus remains academic.

The eastern trench (1965)

The excavation of 1965

An isolated micro-square, I53j5, was excavated at the same time as the central trench (**Fig. 9**). The publication of this excavation was very brief,²⁰ but the documentation

¹⁷ As they were unearthed in 1965, we could only see the layer above it in the section.

¹⁸ And immediately the question arises whether such a hard layer at the base of the yellow-brown layer existed in other rooms as well.

¹⁹ Maybe with the north-south wall in F, Helladic on the map, but this could not be established.



Fig. 7. Central trench: K, facing south (2000).



Fig. 8. Central trench: F, northern bank (2000).

²⁰ Servais 1967, 27-30.

itself raised questions, especially about the situation of the Protogeometric and Early Geometric finds and the character of a breach in the southern terrace wall.

Beneath a thick layer of humus was in the northwestern part (P), a fill (*remblai de terrasse*), limited in the south by a wall. Nothing more is known about a circle of stones on the map under which was found a pit. The finds are not older than what was found (elsewhere) in the terrace fill (**Fig. 10**: TC65.2h).

South of the terrace wall, in Q, was discovered, on a lower level, a circular structure, filled with fired clay, red in the middle (**Fig. 11**). A number of sherds are said to have been found there (TC65.4a-i and TC65.5), but one of these, a neck of an amphora, was clearly found next to the construction, upside down, creating doubts about the situation of the entire group. All these sherds are early (Late Protogeometric/Early Geometric), unlike the finds from the fill, which are Late Geometric II/Early Archaic. On the level of the hearth the soil was greyish yellow, underneath the green schist appeared immediately.

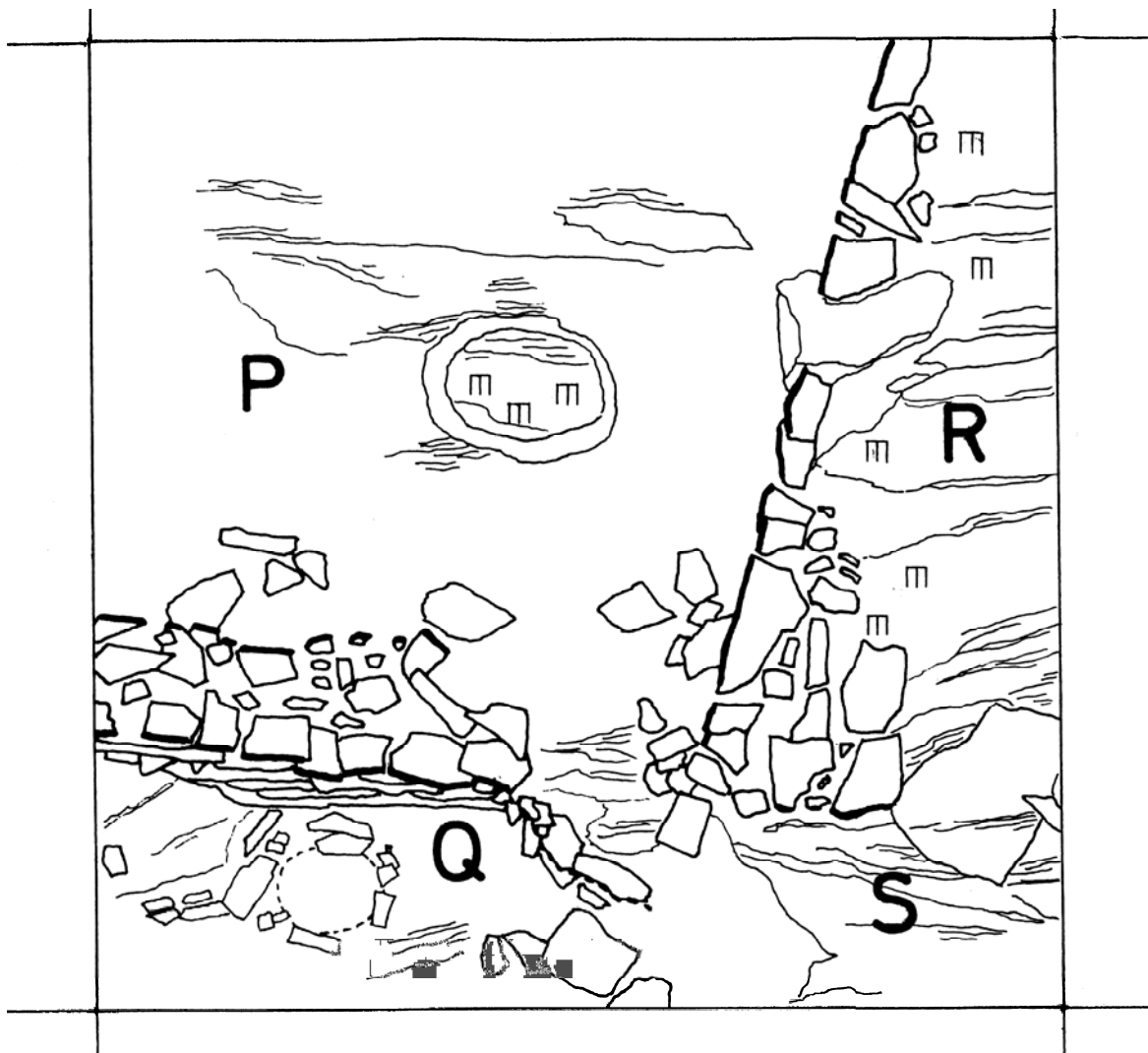


Fig. 9. Eastern trench (from original plan in Thorikos archive, Ghent). Scale *ca.* 1:50.



Fig. 10. Shoulder fragment of Proto-Attic oinochoe TC65.2h (pit in P). Scale: *ca.* 1:1.



Fig. 11. Hearth in Q, facing north with wall between Q and P in background (1965).

In the eastern part of the wall south of P was a '*brèche*' (*breach*), the debris of which separated Q from S. The material associated with that debris is Late Protogeometric and/or Early Geometric.²¹ It is difficult to believe that the only earlier material from the terrace happened to fall on the level where, more to the west, material from that same period was found. Yet this seems to be the interpretation of the excavator

²¹ TC65.3a-h, TC65.7a-b.

regarding TC65.3a.²² In the diary only one sherd was mentioned north of the supposed alignment. Another one was found further south, almost near the limit of the excavation. This was, in the eyes of the excavator, a clear proof of the shift of the fill when the breach was made.

S and R were separated by loose stones, which were removed. The sherds found between them were Early Geometric and Helladic.²³ The soil was different from that of the fill. The level under it is Helladic.

The inspection in 2000

A small excavation was executed from 18 till 22 September 2000. We started with the clearing of the southern part of j5, the cleaning of the sections in that part and the removal of the humus in the northern half of j6. During the clearing of j5 it quickly turned out that east of the 'breach' a yellowish brown layer was preserved underneath the loose stones there (**Fig. 12**). This must be a remainder of the original early layer, but it is not clear whether it was in situ or shifted.²⁴

This layer contained Bronze Age as well as Late Protogeometric/Early Geometric material:

TC00.33— fragment of rim and wall of a one-handled cup (**Fig. 13**)

Dm. rim 0.08, P.H. 0.0325, P.W. 0.0615.

Rather hard Attic fabric, 7.5YR7/4, dull dark greyish black glaze.

In- and outside glazed, one small reserved band near the top of the rim outside and a reserved band with vertical lines on the inside of the rim.

Date: Late Protogeometric/Early Geometric.

TC00.34 — wall fragment of a skyphos (?) (**Fig. 14**)

Attic fabric, 7.5YR7/4, dull greyish black to black glaze.

P.H. 0.042, P.W. 0.043, thickness 0.004-0.0045; reparation hole.

Inside glazed, on the outside a set of concentric circles (eight preserved), centre impressed, unglazed.

Date: Protogeometric.

TC00.35 — fragment of rim and wall of a one-handled cup (**Fig. 15**)

Rather hard Attic fabric, 10YR7.5/4, brown to black glaze of good quality.

Dm. rim *ca.* 0.10, P.H. *ca.* 0.055, P.W. *ca.* 0.065.

Inside and outside glazed, reserved line on the outside on the rim, maybe a reserved band on the inside.

Date: Late Protogeometric.

TC00.36 – Group: 9 fragments, probably all Bronze Age, and one shell.

Below was yellowish brown earth with a bit of schist, as was found elsewhere.

²² Servais 1967, 28.

²³ TC65.8a-c.

²⁴ It looked like melted down from the rock.



Fig. 12. Late Protogeometric/Early Geometric layer underneath loose stones (2000).



Fig. 13. Late Protogeometric/Early Geometric cup TC00.33. Scale *ca.* 1:1.



Fig. 14. Protogeometric skyphos (?) TC00.34. Scale: *ca.* 1:1.

Near the ‘breach’ and the hearth, parts of a floor were still in place. This floor consisted of two layers, the lowest harder, with some schist and sometimes a little more greyish than the upper one.²⁵ A bit of brown earth separated the floor from the bedrock. The same situation was found in a small part of j6 that was excavated until the bedrock. Only there finds could be associated with the floor. Nothing was found on the floor, but some sherds were conserved in the floor: two fragments of a pithos, one sherd of a krater with compass-drawn circles, and three other fragments, probably from the Bronze Age.²⁶

²⁵ The fragments are too small to define the exact nature of both layers.

²⁶ The finds came from the upper layer, not from the hardest.

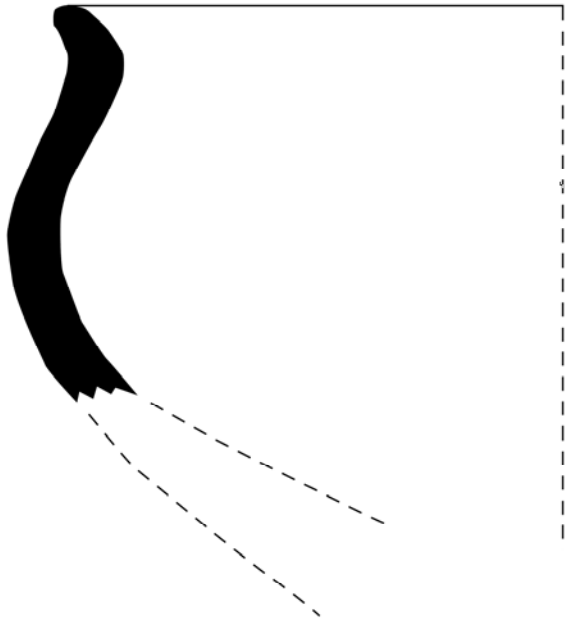


Fig. 15. Late Protogeometric cup TC00.35. Scale *ca.* 1:1.

TC00.38 — Fragment of a krater

Attic fabric, 7.5YR8/4, brown glaze on the outside, greyish black glaze on the interior.

P.H. 0.048, P.W. 0.0385, thickness 0.012-0.013.

Inside glazed, on the outside a set of concentric circles (eight preserved), traces of glaze near the fracture.

Date: Protogeometric or Geometric.

The circle of stones with red and black earth found in 1965, is beyond doubt a hearth. The stones of which it is made up are fitted into the lower, harder layer of the floor.

West of the hearth, against the east-west wall, the bedrock rises. Around this bump are placed upright stones to turn it into something useful (**Fig. 16**).

The fine greyish yellow earth, mentioned in 1965 on the level of the hearth, was not retraced in the sections or in the deep excavation in j6, but near the hearth was found some reddish earth. It is possible that the 'fine greyish yellow earth' indicated the floor, distinguished from the brown layer with stones above it. As in j6 however the stones reached the floor, and some smaller stones had penetrated it, whereas the stones of the hearth were upright, with the neck of an amphora upside down next to it, it seems possible that this part, against the raised bedrock and the east-west wall, was covered with earth at an earlier stage.

On the floor were found the imprint and traces of a large pottery fragment.²⁷

²⁷ At first the amphora neck found in 1965 came to mind, but the location didn't match.



Fig. 16. Rock to the west of the hearth, facing north (2000).



Fig. 17. Level of small stones in j6, facing west (2000).

In j5 the higher layers had of course already been removed. In the north was a fill beneath the humus; about the situation south of the terrace wall nothing is known. In the western section a layer with small stones is visible, mostly assimilated by the humus, but part of the brown layer below the humus at its bottom. In the north this brown layer bends, against the east-west wall (terrace wall), upwards. In the section, where this wall has one row lower preserved than elsewhere, the brown layer passes just over it. In the south section, the layer with small stones, there entirely part of the humus, is visible at the west end. Below is the already mentioned brown layer, with stones of various sizes and different density. A number of large stones are visible facing the 'breach'.

Although the problem with the Late Protogeometric/Early Geometric pottery in the 'breach' was largely solved by the discovery of the remains of a Late Protogeometric/Early Geometric layer, the old excavation was extended two meters in micro-square j6 (south of j5). At the border between j6 and i6, where the level of small stones was visible in the section, a wall was found, roughly north-south, that continues in i5 (west of j5). Eventually the whole surface of the brown layer turned out to be more or less marked by small stones, but not everywhere by a thick layer (**Fig. 17**). The excavated part is too small to determine whether the north-south wall in i5 and i6 is associated with this level (**Fig. 18**).

In the brown layer itself stones were found everywhere. This layer continued, where checked, until the bedrock. The large stones originate from one or more walls, but their presence is not the result of a collapse of the terrace wall: this is part of a larger levelling work; whether the damage to the wall has any connection with the levelling in the south, will probably never be established.

Within the layer with small stones was found material dating from the 7th to the 5th century BCE. The unexpected discovery of Classical pottery so close to the top of the Velatouri, was preceded by a find in the humus:

TC00.1 — base of a skyphos with graffito.
5YR6.5/6, black glaze.
Dm. *ca.* 0.075, P.H. 0.019
Date: *ca.* 480-450.
Published: Vanhove 2006, 24, no. 38, figs. 79-80.

This area is marked by a long period of human activity. Besides the Bronze Age finds, there are clear traces of activity in a period dated by Late Protogeometric/Early Geometric pottery (also found in the central trench); with these a hearth is associated, a floor and the remnant of an archaeological layer elsewhere in the square.²⁸ A fill with 7th-century material and new levelling works in the Classical period follow.

²⁸ The date of the finds approximately coincides with that of the finds from the Early Geometric building on the site of the later western cemetery, Bingen 1968, 81-86, Bingen 1967a, 26-34, Bingen 1967b, 31-38. In both cases one gets the impression of sudden abandonment.



Fig. 18. East-west wall in j5, north-south wall in i5, facing northwest (2000).

The western trench (1968)

This excavation was carried out between 6 and 13 May 1968, the last week of the excavations that year, in the micro-squares H53g5 and H53g6 and in the western half of H53h5 and H53h6 (**Fig. 19**). Only the objectives and a brief outline were published.²⁹ As visible on the map, the archaeological layers were not removed completely, in order to enable later verifications.

As the aim of the examination (22 to 28 September 2000) was not to remove doubts, but to gain an insight into the old excavation, the results of 1968 and 2000 are presented together. It has to be admitted, however, that the origin of the finds of 1968 is not in all cases certain;³⁰ when doubts remain, they are mentioned here.

²⁹ Servais 1967, 19-20.

³⁰ The rooms were marked after the excavation of 1968 and the designation of the rooms during that excavation was a bit inconsistent.

General

The height of the surface level is 123.98m at the northwest corner, sloping to 122.82m at the northeast corner, 122.46m at the southwest corner, and 121.71m at the southeast corner. A black layer of humus covered the preserved tops of the walls. The average thickness of it must have been 20 to 30 centimetres.³¹ At least in H53g6 there was, at the base of the humus, probably at about the height of the preserved tops of the walls, a layer of small stones (*lit de pierraille*). The humus contained, beside some Bronze Age material, Late Geometric IIa and Early Archaic material, but also the base of a black-figure lekythos (**Fig. 20**)³² and an early lamp (**Figs. 21-22**).

AA

AA lies considerably higher than the other rooms (**Fig. 23**).³³

Underneath the humus a layer of small stones was found, probably at about the height of the top of the north-south wall.³⁴ Below it was a yellow layer.³⁵ It cannot have been a thick one, especially in the south.³⁶ There is no mention of a floor. It is doubtful whether this space, of which northern and western walls would be outside the boundaries of the excavation, belonged to the building.

In AA are two cavities. An elongated one was filled with small stones and grey earth. Middle Helladic material was found in it. The wall between AA and AB runs over it.

In the northwestern corner is a more or less circular cavity, the bottom of which is more than 1.4 metre below the original surface level (*'bothros'*).³⁷ At the top was a black fire spot. It contained i.a. a complete Late Geometric Ib(/IIa) skyphos (TC68.192; **Figs. 24-25**) and fragments of a Late Geometric II *louterion* (TC68.193; **Fig. 26**), fragments of which were also found in the layer above the 'upper floor' in AF (TC68.153c, 173). Below it was a greyish black layer, with i.a. a fragment of an early Middle Geometric I skyphos (TC68.202; **Figs. 27-28**) and Helladic material.³⁸ Only Helladic material was found at the bottom (TC68.207).

³¹ The difference between the height of the surface level and the height of the walls (see map). It is unlikely, however, that all walls had been covered by it, since it is otherwise hard to explain why Servais would have chosen the position of the trench exactly here.

³² The lekythos has been attributed by W. van de Put to either the Class of Athens 581 (?) or to the Little Lion Class. In any case, the date is between 500 and 480 BCE.

³³ 123.21m in the south to 123.29m in the northeast. For comparison: preserved height wall between AA and AB: 123.22m, top column base in AD: 122.09m.

³⁴ Finds: Late Geometric and/or Early Archaic.

³⁵ Finds: TC68.161a unclear; both other finds are (Early-?) Archaic base fragments.

³⁶ Humus, layer of small stones and yellow layer together must have been about 30cm near the northeast corner, less at the south.

³⁷ H. 123.98m in the northwest corner, lowest point cavity 122.54m.

³⁸ The skyphos TC68.202 (*couche gris-noir partie inférieure*), the Helladic material in TC68.203 (*couche inférieure* → *rocher rouge*).

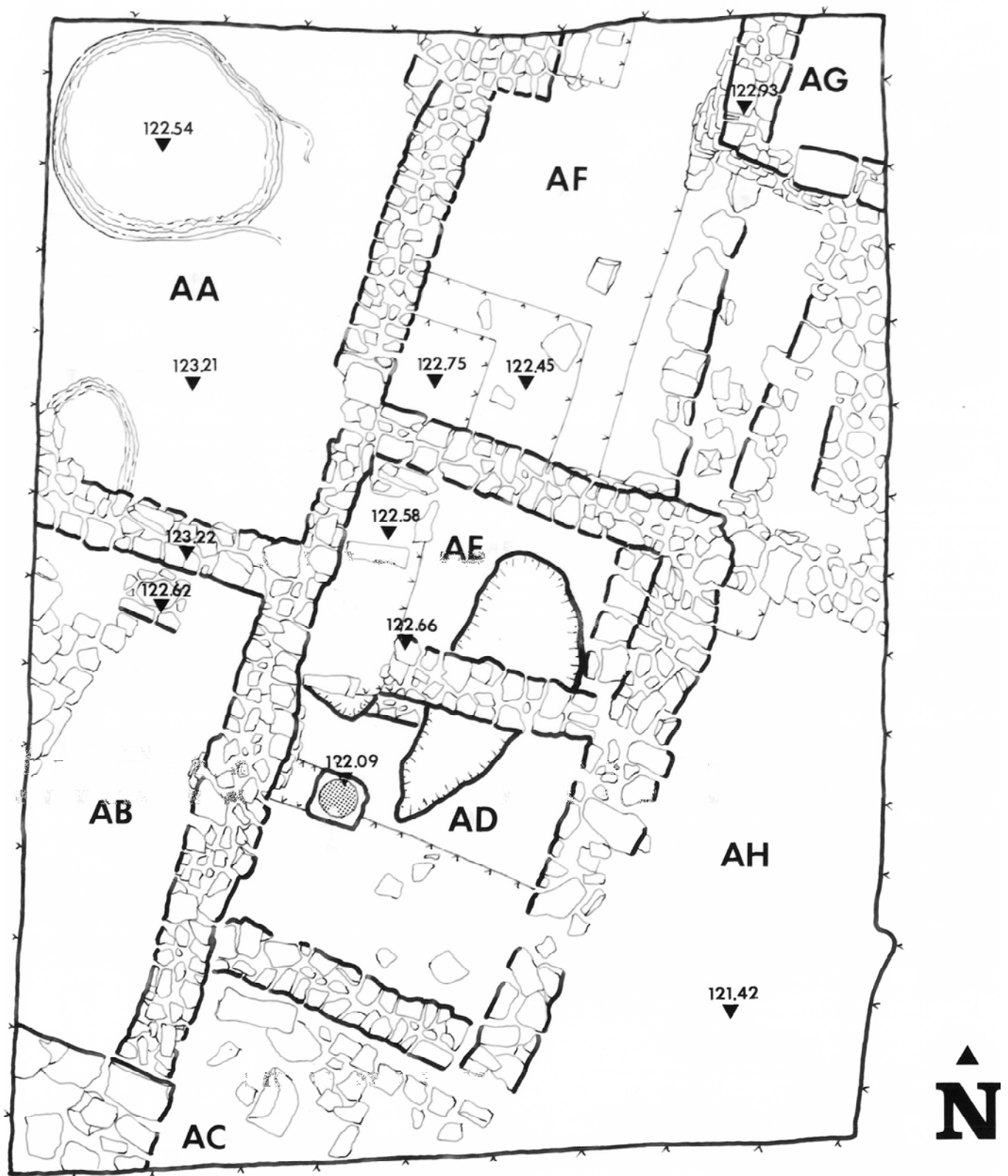


Fig. 19. Western trench. Scale *ca.* 1:65.



Fig. 20. Black-figure lekythos TC68.191 (500-480 BCE). Scale *ca.* 1:1.

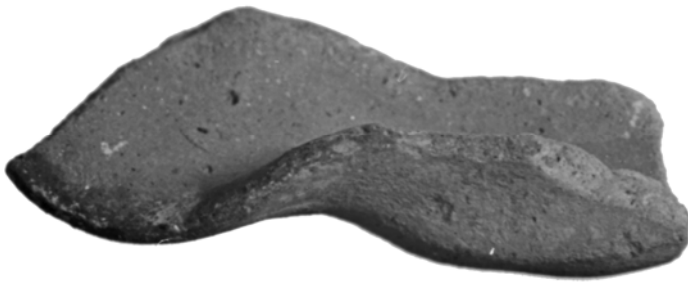


Fig. 21. Lamp TC68.127, top view. Scale *ca.* 1:1.



Fig. 22. Lamp TC68.127. Scale *ca.* 1:1.

TC68.192 — Skyphos, broken, almost complete (**Figs. 24-25**).

Attic fabric, *ca.* 7.5YR7/4. Brownish black glaze, worn off in places. H. 0.102-0.103, dm. rim 0.15-0.17, dm. base 0.073. Max. dm. about the same of dm. rim, at H. 0.055.

Inside glazed.

Date: Late Geometric Ib(IIa).

Published: Salliora-Oikonomakou 2007, 54, fig. 61; Docter *et al.* 2010, 46, fig. 16.

TC68.153c/173a-b/193 — three fragments (five sherds) of a spouted krater (louterion) (**Fig. 26**).

Attic fabric, 7.5YR7/4. Brown to black glaze, worn off in places. Dm. rim 0.21, P.H. max. 0.053. Rounded handles. Inside irregularly glazed. Row of dots on rim; top glazed. Line on junction. Next to the handle six vertical bands, at least six beside the spout, between is a lozenge chain above horizontal bands. Beneath the spout pending crosshatched triangles. Top of spout glazed, vertical bands on spout. Above and below the handle one band preserved.

Date: Late Geometric II.



Fig. 23. AA (in the left upper corner), facing north (1968).

TC68.202 — Fragment of rim and wall of a skyphos, one handle attachment partly preserved (**Figs. 27-28**). Hard Attic fabric, 7.5YR7/4. Brown to brownish black glaze. P.H. 0.062, P.W. 0.078, dm. rim 0.13.

Inside glazed. In any case groups of vertical bands on rim (rim inadequately cleaned).

Date: early Middle Geometric I.

AB

The data of 1968 are very limited: on level with the top of the big north-south wall was a layer of small stones, below a yellowish brown layer (fill?) with a lot of rubble. Finally some material was found on the bedrock.³⁹ In the layer of small stones was found mainly Geometric material. The oldest find is a shoulder fragment of a Late Protogeometric oinochoe decorated with semicircles (TC68.156). In the yellowish brown layer was found Late Geometric, but also Archaic material. On the bedrock was found a fragment of a lamp:

TC68.179 — Fragmentary lamp (**Figs. 29-30**).

H. 0.023.

Date: Archaic.

³⁹ The excavator noted: *Regroupe avec 240*, i.e. the finds from the yellowish brown layer, but in view of the finds of 2000 mentioned separately here.



Fig. 24. Late Geometric Ia (IIb) skyphos TC68.192, from AA. Scale *ca.* 1:2.

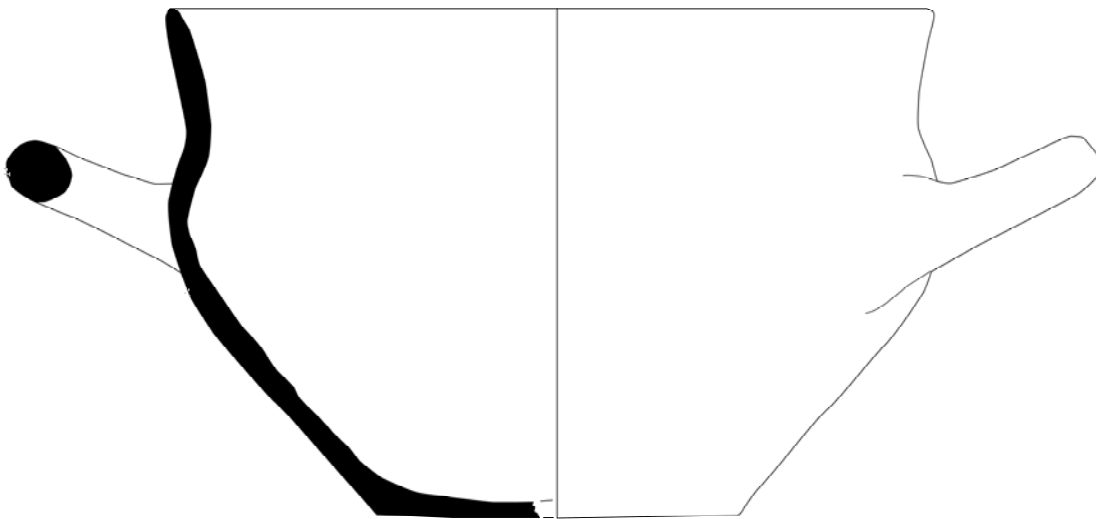


Fig. 25. Late Geometric Ia (IIb) skyphos TC68.192, from AA. Scale *ca.* 1:2.

Immediately after the clearing in 2000, it turned out that the ‘yellowish brown’ layer had not been removed everywhere. In the western bank appeared the mentioned layers: humus, a layer of stones, considerable larger ones than expected (the top of this layer is part of the humus, but not the entire layer), then the ‘yellowish brown’ layer, also containing stones (**Fig. 31**). The layer of stones contained big blocks of green schist; such blocks can still be found higher on the hill. The ‘yellowish brown’ is

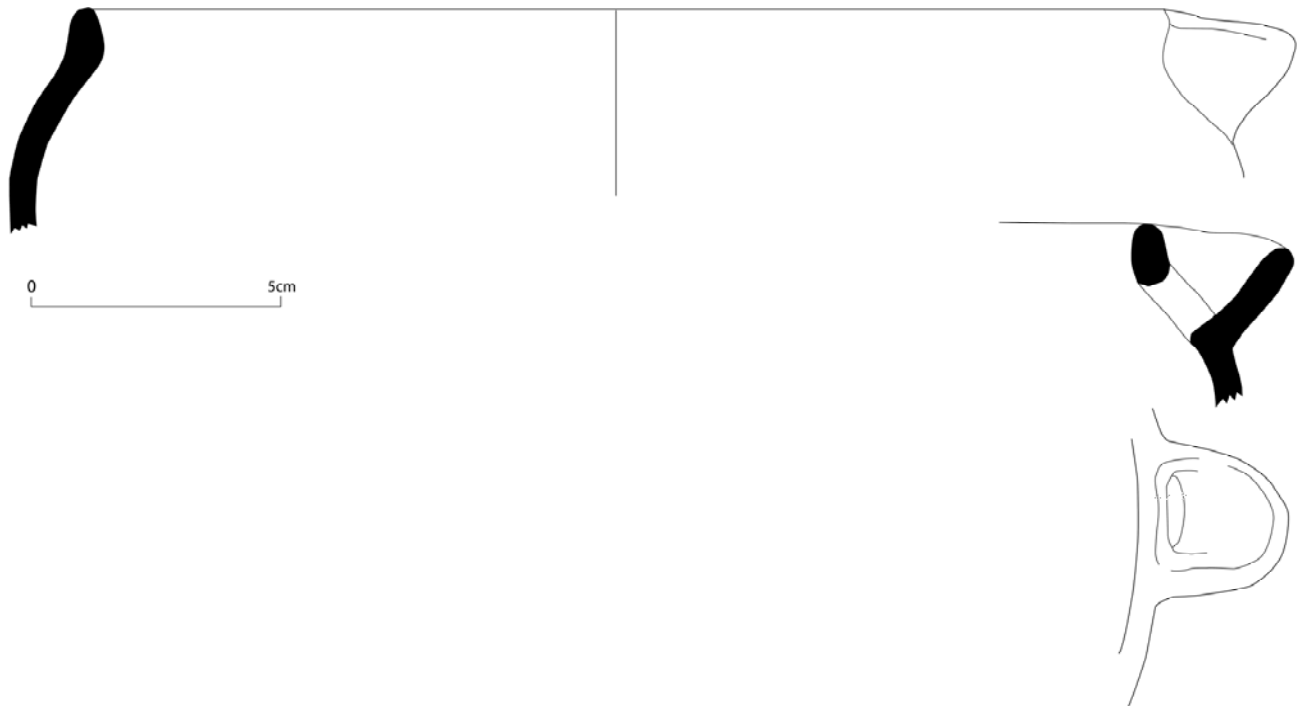
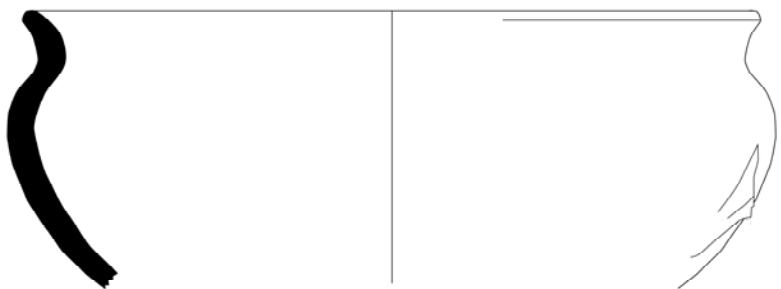


Fig. 26. Late Geometric II spouted krater TC68.153c/173a-b/193, from AA. Scale *ca.* 1:2.



Figs. 27-28. Early Middle Geometric I skyphos TC68.202, from AA. Scale *ca.* 1:2.



Fig. 29. Lamp TC68.179, top view. Scale *ca.* 1:1.



Fig. 30. Lamp TC68.179. Scale *ca.* 1:1.

in fact brown, unlike the fill elsewhere. In 1968 the excavation was left on an irregular floor level. The layer with stones yielded mainly Late Geometric material, but also some smaller sherds dating from the 7th to the 4th century BCE. For the brown layer the Archaic, more specific 7th-century, date is confirmed. In the western section appeared an oblique wall. This wall was indicated on the map from 1968, but looked like a line of loose stones. The wall probably goes with the floor. The stones drawn on the map in the northern part of the room are loose stones. The layer of stones covers the top of the wall, except where this wall is preserved on a lower level; there it is covered by the brown layer. Against this wall a smaller, lower, wall was built (support?). At the foot of it were found a spindle whorl and a fragment of a lamp:

TC00.23 — fragment of lamp.

P.H. 0.021, P.L. 0.068, P.W. 0.028. Unglazed, 7.5YR7/4. Overhanging rim, nozzle unbridged. Agora type 2b (*Agora* IV, 9-10).

Date: late 7th to late 6th century BCE.

In the upper part of the floor were found 7th-century sherds, on it were found fragments of lead, iron and a millstone.

AC

This is a vague space at the border of the excavation; there seems to be no division (anymore) between AC and AH. Two groups of sherds were probably found in AC, but were not kept. Another group came from AC *or* AD, but yielded no relevant information. A few sherds (one of them Archaic) were found directly underneath the humus.

Beneath the humus was a 'yellow' layer, then stones, called *dallage* by the excavator, then another layer. No work was done in AC in 2000.

AD

In AD, which apparently had a passage to AE, a base of a column was found (**Fig. 32**). South of it the last level had not been excavated in 1968; the level above it, between the base and the large north-south wall, was also left in place.

The upper layers of the entire micro-square were removed in 1968.⁴⁰ Once the top of the walls was reached, the distinction was made between the following layers in AD: the beginning of the yellow layer, immediately underneath the black layer; on the floor with the column base; fill (*remblai*) (?) underneath the floor with the column base; and

⁴⁰ There is some uncertainty about the upper layers: first the "*couche humique noire, au dessus du lit de pierraille*" was removed, then came "*Fin de la couche noire → affleurement des murs*". It is not sure if there was really a layer with small stones, or that the existence of this layer was assumed before the level where it should be was reached. The humus contains mainly Late Geometric material, the second group however, contains a black-figure fragment that, at first sight, must date to the early 6th century BCE.



Fig. 31. AB, west-side (2000).



Fig. 32. AD, column base, facing southwest (1968).

on the bedrock, under the last floor with *plaquettes* (small flat stones). The first group of sherds is largely Late Geometric with, as it seems, a few 7th-century sherds and two Corinthian ones that may be a little later. One of the sherds found on the floor with the column base is clearly later than Geometric, but cannot be dated precisely. The finds from the fill (?) below are mainly 7th century (without sure Geometric fragments), i.a. an incised Protocorinthian sherd and the body of a Subgeometric aryballos (TC68.170; **Figs. 33-34**). The material found in the lowest level cannot be dated.



Figs. 33-34. Subgeometric aryballos TC68.170. Scale *ca.* 1:2.

TC68.170 — One fragment of an aryballos, the largest part of the neck, the lip and the (band) handle lack (**Figs. 33-34**).

Fine Attic fabric, 10YR7/4. Brownish black to black glaze. P.H. 0.073, dm. base 0.053, max. dm. 0.078 (at H. 0.034). Underside bottom and inside unglazed.

Date: 7th century BCE.

It was nowhere explained what was meant by ‘last floor with *plaquettes*’. We only know that the fill (?) rested upon a level marked by a *plaque* on which a broken jar rested. In the level that was left in 1968, south of the column base, two or three flat stones were found. On the same level was a broken wall fragment. It is most likely that this lower level is precisely the layer left in 1968 in the southern part, about the same level with the covering of the foundation of the column base (**Fig. 35**).

A second level corresponds with the top of the column base. Above it were the yellow layer and the humus.

In the northwest corner was mentioned a level of the second smaller or lower wall (*2^e mur inférieur*), with fine grey earth. This is probably the small wall against the wall between AD and AE, between the two raisings of the bedrock in AD/AE. Anyway, this grey earth contained 7th-century material, i.a. a base of a Protocorinthian skyphos (kotyle) and a fragment of a skyphos with lines in added red and white.



Fig. 35. Column base, facing southwest (2000).



Fig. 36. AE, hearth, facing west (1968).

In 2000, it was ascertained that the upper level left in 1968 (fill?) was made up of soft brown earth and contained Geometric and Archaic (7th-century?) sherds. It also contained a large stone. The layer under it consisted of fine sand. In it were found sherds of the same kind and a fragment of a lamp.⁴¹ Between both layers was nothing that could have been used as a floor. The only floor then must have been at a higher level, upon the ‘fill’, the top of which was about 9cm below the top of the column base.

AE

In AE there was no activity in 2000. The 1968 excavation showed that, immediately below the black earth, at the height of the preserved top of the walls, there was a brown layer, extending down to a *dalle de foyer* (‘hearth tile’). The material is mainly Late Geometric, perhaps a bit later, with one clearly Archaic base of a skyphos. The hearth was in the northwestern corner of the place, the *dalle* probably was the flat stone lying in front (**Fig. 36**).

From the hearth itself came five sherds, of which only a rim fragment of a glazed Archaic skyphos (kotyle) with painted lines is of some importance (**Fig. 37**).

Finally, some sherds came from ‘below the floor’, with the mention *couche grise très meuble*, but it is not entirely clear whether they came from AE or AF.⁴² It concerns some sherds that yielded no relevant chronological information and one early fragment:

TC68.205a-b — Two sherds of the wall of an oinochoe or lekythos. Both sherds are burnt. P.H. 0.034 (a), 0.035 (b), P.W. 0.04 (a), 0.069 (b), thickness 0.006. The wall is glazed, with a reserved band with scribble in diluted glaze between two pairs of lines. Inside unglazed. Date: Late Protogeometric - Early Geometric.

AF

*AF*⁴³ is located partly in H53g5, partly in H53h5. It is open to the north, the opening being called “*porte*” (door) in 1968; it is adjacent to AG in the northeast, to AE in the south and to AA in the west, separated by the western wall of AD and AE or a wall in line with it. East of AF are two walls, the western one seems to continue in AE, the eastern one is better preserved, and at a higher level. The southwestern part was not entirely excavated in 1968. In that year two hearths were mentioned, but, as we will see, the inspection in 2000 showed otherwise. Even without this, the situation had already been a bit confusing.⁴⁴

⁴¹ TC00.40 unglazed, 7.5YR7/4, overhanging rim, unbridged nozzle. Type not in *Agora* IV.

⁴² The indication *Ensemble de la partie Est (autour du rocher)* pleads for an attribution to AE.

⁴³ Various names were given to this room in the documents from 1968, but the attribution of the finds is quite definite.

⁴⁴ On one of the file cards the hearths are mentioned in floors 2 and 3, on the others in floors 1 and 2.

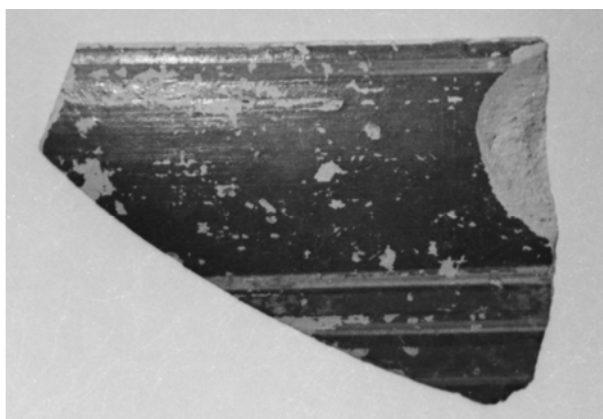


Fig. 37. Rim fragment of Archaic shphos (kotyle) TC68.154. Scale *ca.* 1:1.

At the start of the excavation the upper layers were removed down to a depth of 15 and 30cm below the preserved height of the walls. Underneath (or partly identical with) there is a brown layer, about which it was said that it ran until a *sol clair de niveau avec mur entre 1 et 2*. This is unclear; it could be on level with the top of the eastern part of the wall between AF and AE (based on photographs). From this layer came a few Late Geometric/Subgeometric (one Protocorinthian) sherds, and some fragments of the same louterion of which the beak was found in the ‘*bothros*’ in AA (*supra*).

In the following sequence of excavation, the labels mention, beneath the upper floor (said to be hard), a soft grey layer, a destruction layer on the entire surface of the room, and a grey destruction layer. Most sherds are Late Geometric/Subgeometric again, but some are clearly Archaic (rays, added red, added white, also two with rosettes, one of them with incisions, but from label D250, not explicitly mentioned to be found under the ‘floor’). Just above and upon the ‘lower floor’ a millstone and a number of sherds were found, including Late Geometric, but also older material. In the floor was found Late Geometric and older material, in the ‘hearth’ of the lower floor three fragments were found, one probably and two certainly Archaic. At this point the second ‘hearth’ is mentioned, as being no longer in the same spot in floor 2; “the hard layer runs over it”.

Underneath floor 1, and probably in AF, some material was found, but not kept. A photograph (**Fig. 38**) clearly shows the situation at the end of the excavation in 1968, with the note *sols et foyers superposés de AF, dans son coin SO*. The function of the block of stone, if there was any, on the 1968 photograph and still there in 2000, is unknown. On another photograph of 1968, taken from the east, one can see that the ‘lower hearth’ was dug out somewhat deeper (**Fig. 39**).⁴⁵ Some stones in the north *may* be remains of the hearth.

⁴⁵ And that the *tunnelling method* was used.



Fig. 38. AF, end of excavation, facing southwest (1968).



Fig. 39. AF, hearth, facing west (1968).



Fig. 40. AF, bricks, facing west (2000).



Fig. 41. AF, facing north (1968).

The layers partly left in 1968, were removed in 2000. It soon turned out that there was no distinction between both layers, and that the upper 'hearth' was in fact a pile of red, soft bricks or burnt mud bricks (**Fig. 40**).⁴⁶ A small number of sherds was found, mostly of 7th-century date.⁴⁷

The conclusion must be that there was only one floor, on which a millstone was found, and to which the hearth (?) belonged.⁴⁸ This floor dates most probably to the 7th century BCE. On top of it was a pile of bricks or mud bricks, probably belonging to the destruction or collapse layer found elsewhere.

The situation north of AF was not completely clear (**Fig. 41**). Four groups of material were registered: blocked in the demolition of the 'door'; beneath the floor on which the demolition rests (and left as evidence), hard grey layer; 'door', half width, between upper and lower floor; 'door', until layer of stones at the level of the lower floor. They do not necessarily represent four layers. There are only photographs taken at the end of the excavation. To the first group belong eleven sherds, one of them certainly Late Geometric or Subgeometric; the second group consists of eight sherds, one of them may be (Proto)Geometric; the finds from the third group however are all Bronze Age (Middle Bronze Age and Late Bronze Age according to J. Servais); from the fourth group only a base fragment was kept.

In 2000 the portion left in 1968, and a strip of 30cm of the northern side, were removed. Beneath the humus and at the top of the part left in 1968 is a layer, rather yellowish brown than grey, which contains stones, especially at the top. The material from the upper level is, with one possible exception, Bronze Age. The lower level is softer; all material is Bronze Age. This softer layer rests on an oblique level, sloping from east to west, harder again and containing stones in its eastern part (**Fig. 42**). A number of sherds found between and beneath the stones belongs to the Bronze Age. It is, on this small surface, not obvious whether the thin layer on the bedrock was a floor, or that the bedrock itself was the floor surface, but on and in this thin layer were found Bronze Age sherds, a pottery base and some bone fragments.

It thus turned out that the upper layer with stones contained mainly Bronze Age material and at least one later sherd, but that all beneath it is homogeneous Bronze Age. The 'blocking' of the 'door' north of AF has nothing to do with AF. The top of the upper layer that contains only Bronze Age material is situated about 0.5m above the level of the hearth. The nature of the Bronze Age layers may only be determined by excavations north of the trench combined with an overall study of the architectural

⁴⁶ The nature of the earlier mentioned 'hard layer' remains unknown.

⁴⁷ TC00.5. Some fragments may be Geometric; intrusions cannot entirely be ruled out, due to the way the hearth was excavated in 1968.

⁴⁸ We only dispose of photographs of the hearth, or rather its place, after its complete removal.



Fig. 42. North of AF, oblique layer, facing north (2000).



Fig. 43. North of AF, east wall (2000).

remains north of AF. I restrict myself to the publication of a photograph of the eastern wall of the 'door', which is clearly altered (**Fig. 43**).⁴⁹

Whether AF was a room, a courtyard or an open space adjacent to the Early Archaic building, it is unclear where the entrance(s) were.

AG

Only a corner of AG, in the northeast of H53h5, had been excavated. In 1968 the same grey layer as in the north of AF was found. No material was kept.

Area south of AG, east of AF

This area, in H53h5, is east of the two eastern walls of AF. Near the border of the excavation are stones, probably remains of a wall. In the south the area is separated from AH by another ruined structure, in line with the wall between AF and AE.

A part of the finds was not kept; it is not entirely sure whether the conserved material came from this area or from AF.

AH

AH occupies most of H53h6. The (supposed) eastern and southern parts are outside the excavated area. The southwestern corner lies in H53g6. It is separated from the unclear area at the north by the ruined wall; to the west are AD and AE, from which AH is separated by a north-west wall. There is no (more) division from AC. AH was called '*compartiment vide*', a black layer filled it down to the bedrock. AH was probably outside the construction. We do not know for sure that it was hedged.

Conclusion

The building that was partly excavated in 1968 dates to the 7th century BCE. It had only one habitation phase. The lamps, especially in AB, suggest an advanced stage of that century. At one place, in AE or AF, were found two Early Geometric or Late Protogeometric sherds, but they had nothing to do with the use of the building. In AE and AF (?) was a hearth, in AD a column base. In AB the floor level was recovered, with several utensils left or fallen upon it. AA was probably outside the building⁵⁰ and the Late Geometric skyphos found in a pit there, was unconnected to it. North of AF nearly all finds are of the Bronze Age.

⁴⁹ For the sake of completeness some heights: west wall of 'door', corner: 123.26m, east wall, second stone from the south: 122.93m, stone on top of the part left in 1968: 122.98, bedrock: 122.34m.

⁵⁰ Or might be an inner courtyard, if I'm underestimating the size of the building.

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A Lekythos found in House 1 at Thorikos (2007 campaign)

Winfred van de Put, Roald Docter

At the end of a cleaning campaign in the Industrial Quarter of Thorikos (**Fig. 1**),¹ a small black-figured lekythos was found between the earth and rubble in the west corner of room E, House 1 within *insula* 11. It is visible on two photographs taken on the 17th of April. On the first, taken just after the heavy overgrowth had been removed it is still stuck between the loose soil and rubble and had not yet been recognized as such (**Fig. 2**). On the second photo, taken after a final cleaning of the room surface, it had become fully loose and had moved slightly more to the corner.

This find must have entered the surface of room E after the conclusion of the excavations, since the stratigraphy of room E had already been fully explored till the bedrock in the first excavation campaign of 1963.² The layer corresponding to the construction of House 1 has been dated by the excavators to the last thirty years of the 5th century BCE (cf. **Fig. 3**).³

The lekythos body may have entered the present surface of room E in many ways and even from other parts of Thorikos and should, hence, be considered to be an unstratified surface find. Its presence within the architectural ensemble of Thorikos, which in this part of the site is not fenced off, touches upon a more structural phenomenon, namely the fact that even after the conclusion of the excavations, archaeological finds seem to turn up. We have noted this on several occasions during the two cleaning campaigns in Thorikos (2006-2007). One may postulate three possible explanations: in the first place it is possible that it was picked up by a visitor elsewhere on the site and left in room E at the close of his or her visit. The sherds encountered everywhere in Thorikos and on other Greek archaeological sites on top of walls can only in this way find a logical explanation. The lekythos presented here may also have come included in the dump material with which the floor level of room

¹ This short note is at the same time the only report on the two cleaning campaigns organized in Thorikos in 2006 and 2007 under the direction of Roald Docter. Between May 29 and June 3 2006, the Theatre area was cleaned and from April 10 to 18 2007 the Industrial Quarter. These campaigns were financially supported by the Belgian School at Athens. We would like to thank the secretary of the School, Mr. P. Iossif, as well as its then director, Dr. Christiane Tytgat, for their support. In Greece our thanks go Dr. I. Tsirigoti-Drakotou, the late Dr. M. Oikonomakou, Ms E. Andrikou, Dr. A. Giraud, as well as the staff of Lavrio Museum. We benefitted from the generous hospitality of the Technological Park in Lavrio; our thanks in this connection go especially to D. Papadopoulos and the then mayor of Lavrio, D. Loukas. Participants to the 2006 campaign were Roald Docter, Guy Dierkens, René van den Bichelaer and Lamia Fersi; in 2007 Roald Docter, Alan Sreat, Guy Dierkens and Thomas Pieters. The lekythos was studied by Winfred van de Put in 2011.

² Mussche 1968, 91; see also generally on House 1, Mussche 1998, 46-50, 139, fig. 93.

³ Mussche 1998, 48-49; Mussche 1968, 96 (initially dated to the last quarter of the 5th century BCE).



Fig. 1. Thorikos. Industrial Quarter, House 1, viewed to the northwest after cleaning campaign (17.04.2007).

E was raised after the conclusion of the excavation in 1963.⁴ It is, however, even possible that it once formed part of the rubble make-up of the walls forming room E. Its massive and compact shape may have caused it ending up in a cartload of stones with which the ancient masons built the walls. It is clear that the walls show some voids where rubble has been washed out over the last four decades, especially in the corner (**Fig. 2**). The earlier date of the small lekythos would not contradict this reasoning.

TC07.1 (surface find in room E, southwest corner, 17.04.2007), body and shoulder with transition to neck of black-figured cylindrical lekythos, broken off at transition to foot (**Figs. 4-5**).

Surface of reserved areas reddish yellow (5YR6/6). Surface heavily worn.

Diam. shoulder 4.1, PH 8.7.

Shape: tapering body, slightly concave nearing shoulder. Rays on shoulder. Two reserved lines at lower part of body. Chariot scene. 1. Possibly figure left of 2; patch of white and black with some incisions preserved. 2. Woman in chariot (?) to right, holding up arm. White of face preserved as encrustation; trace of white in arm. 3. Figure behind horse(s), too damaged to identify. Two (?) horses to right, trace of white of tail of one preserved. 4. Figure, wearing himation, sitting to left. Published: van de Put 2011, 182, 187, no. 6. Date and attribution: Haimon workshop, 470-460 BCE [WvdP].

⁴ The practice of using dump material from the excavation to raise (floor) levels is well attested in Thorikos. As the best example one may mention the reconstruction of the slope of the uppermost *koilon* of the Theatre in 1977, for which 500 m³ dump material from behind the *analemma* wall was used, Mussche 1998, 33.



Fig. 2. Thorikos. Industrial Quarter, House 1, west corner of room E during cleaning campaign (17.04.2007); arrow indicates position of lekythos.

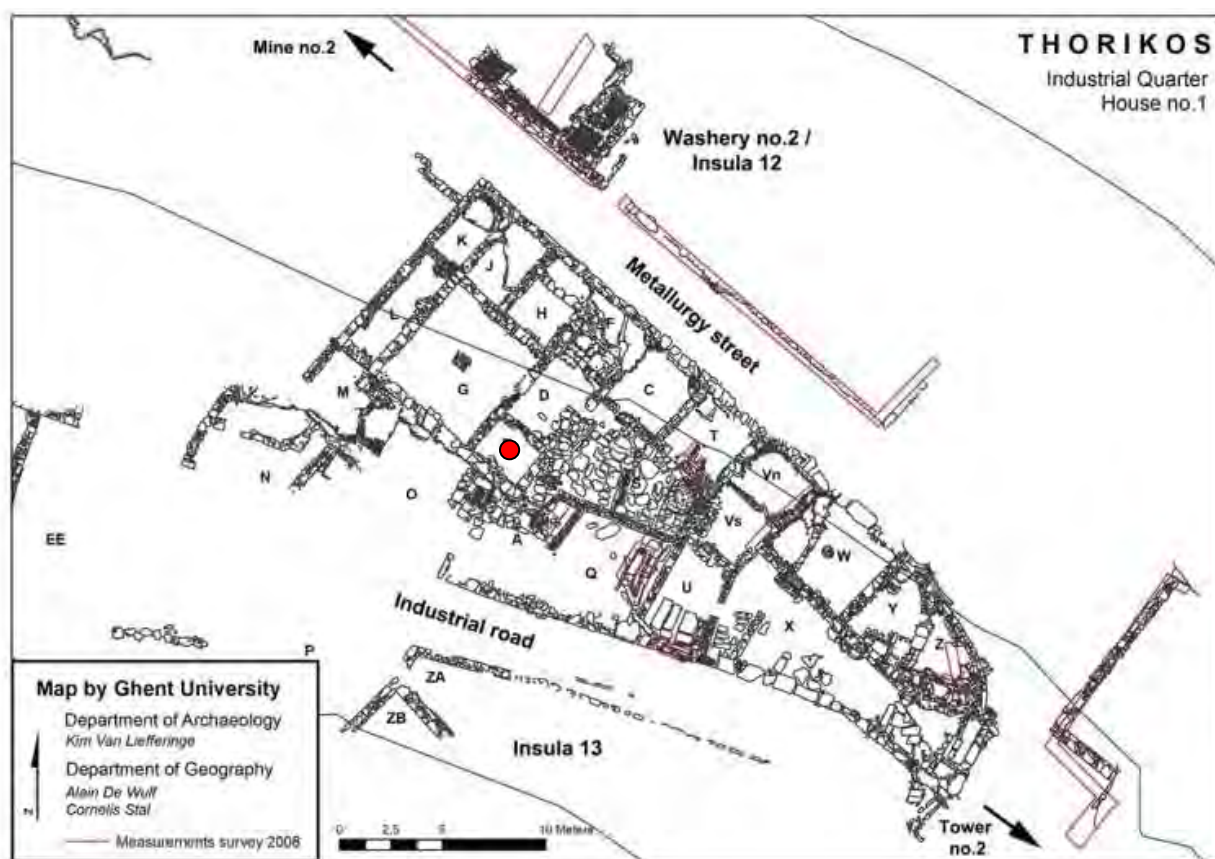


Fig. 3. Thorikos. Industrial Quarter, House no. 1 (situation 2008); the red dot indicates room E.



Fig. 4. Thorikos. Black-Figure lekythos TC07.1; Haimon Workshop. Left and central view.

Although the lekythos in its present (but probably also ancient) state lacks any specific aesthetic value, the fact that it originates in Thorikos is of some importance. In his recent dissertation, the first author discusses the lekythoi from the site, especially those from settlement contexts (van de Put 2011, defended in January 2012).

House 1 contained lekythoi conforming to the dating of the house by the excavators to the last thirty years of the 5th century BCE (see above; van de Put 2011, 182-183, 186-187). As a stray find, the present lekythos could originally have been a grave-gift, as many lekythoi from the 6th and 5th century BCE have been preserved as such (van de Put 2011, 200-202), also in Thorikos. The ‘goddess mounting or riding a chariot’ theme is ubiquitous on late black-figured lekythoi in the period 490-460 BCE, particularly in the mass production of the Haimon workshop of which the present lekythos is an example. It seems to elevate the marriage theme to a mythological level



Fig. 5. Thorikos. Black-Figure lekythos TC07.1; Haimon Workshop. right view and section (drawing RD, digitized by F. Gignac, Archéodesign, Montreal). Scale *ca* 1:1.

to reflect an important aspect of the life of the deceased, where the ‘goddess’ is interpreted as Ariadne (van de Put 2011, 121-123). A good parallel, in shape and decoration, is the bothros find TC63.1683, interpreted as ‘horse-race’ by M. Devillers (1988, 45, cat. 266), but the present lekythos seems unlikely to come from this votive deposit. The lekythos may well have been used domestically, as the house contexts of Thorikos indicate this function for a slightly later period, and the wells of the Athenian Agora for a slightly earlier. Unfortunately, we do not have a parallel for the theme in a domestic context. In the mining context of Thorikos, another secondary use of the shape may be suggested: that of handy container for lamp oil for use in the mines, to fuel the many lamps as inventoried by Blondé 1983. The find of a nicely decorated squat lekythos in what appears to be the kitchen of House 1 (TC86.37; van de Put 2011, 183, cat. 14) is an indication that (relatively) fine lekythoi were used secondarily for menial purposes.

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The Excavation of Cistern No. 1 at Thorikos (2010-2011 campaigns)

Kim Van Liefferinge, Roald Docter, Thomas Pieters, Floris van den Eijnde

Introduction (Figs. 1-2)

In 2010 and 2011, Ghent University carried out two short excavation campaigns focussing on Cistern no. 1, located in macro-square A'51 just above the Industrial Quarter.¹ The excavations were directed by Roald Docter and co-directed in the field by Kim Van Liefferinge. Given the early stage of the investigations, the report will limit itself to a presentation of the main raw data and some first preliminary conclusions and interpretations. It is backed by two reports on the finds from the cistern (see elsewhere in this volume), in line with the project's strategy to have a balanced input of effort and staff in the excavation and finds processing laboratory.² The results of this excavation are part of an ongoing PhD research by the first author on water management in the Laurion region. The first-hand acquisition of data during the excavations at Thorikos may allow for a better understanding of similar workshops dispersedly published from the wider Laurion.

Remarkably, little attention has been devoted to Cistern no. 1 and its direct surroundings. Nonetheless, this zone has great potential to improve our understanding of the rich and complex history of Thorikos. The area was shortly discussed by H. Mussche (1998, 56) under whose directorship Cistern no. 1 had also been prospected and mapped for the first time in 1965 (Figs. 3-4). In his description he mentioned the presence of three mining and ore processing complexes on the

¹ The 2010 campaign lasted only 11 working days in the field (between 17 and 28 May 2010). The campaign was financially supported by the Belgian School at Athens and research funds of Ghent University. The equally short 2011 campaign lasted 9 days in the field (between 17 and 28 July 2011) and was financed by research funds of Ghent University. We acknowledge an additional funding by Utrecht University, that allowed the participation of a small team from that University in 2011. We would like to thank the secretary of the School, Mr. P. Iossif, as well as its director, Dr. S. Soetens, for their support. In Greece our thanks go Dr. I. Tsigoti-Drakotou, Ms E. Andrikou and Ms D. Kai, Ms. M. Giota, as well as the staff of Lavrio Museum. The 2011 campaign could benefit from the generous hospitality of the Technological Park in Lavrio; our thanks in this connection go to D. Papadopoulos, A. Chadoumillis and the mayor of Lavrio, K. Levantis. In 2010 the following persons participated: Roald Docter, Kim Van Liefferinge, Thomas Pieters, Guy Dierkens, Winfred van de Put, Lissa Van Hecke, Evelien Vanderstraeten and Eftimos Kakavoyannis. In 2011 the team consisted of: Roald Docter, Kim Van Liefferinge, Thomas Pieters, Guy Dierkens, Winfred van de Put, Sophie Mortier, Koen Van Gelder, Floris van den Eijnde, Amber Brüsewitz, Dieuwke Becker, Eline Amsing, Roy Van Wijk and Vasiliki Ivrou.

² Since the analyses of the waterproof mortar and of the bone and shell finds has not yet been concluded, these data could not yet be included. The bone and shell retrieved during the campaigns are currently under investigation by Prof. L. Karali Giannakopoulou (National and Kapodistrian University of Athens) and her team and Dr. E. Yannouli.

lower slopes of the Velatouri hill (A-B-C; **Fig. 2**). Besides a central mine entrance, each complex consisted of several ore washeries, cisterns and living compounds for metallurgists, labourers and their families. Cistern no. 1 belonged to an elaborate complex organised around Mine entrance no. 2, a *kainotomia* at a level of about 40m. Four washeries (nos. 1, 2 3 and 12) and four cisterns are associated with this complex. Two of the cisterns were underground bottle-shaped water reservoirs meant for storing drinking water, the other two were industrial cisterns, employed to supply the ore washeries. Already in 1998, Mussche considered Cistern no. 1 to be 'Thorikos' largest water reservoir, having an estimated capacity of some 80m³.

Starting from this limited amount of information, the zone was prospected in April 2008 as part of a wider survey campaign, which aimed at digitizing and updating the old cartographic material of Thorikos in the archive at Ghent University (see elsewhere in this volume, pp. 5-14). In order to do so, all visible structures on the lower Velatouri, viz. in the Theatre Zone and the Industrial Quarter, were measured. In particular, the work conducted in the zone north of the Industrial Quarter proved to be worthwhile: a hitherto unknown structure, which in all likelihood can be identified as a cistern, was recorded approximately 16m to the north of Mine no. 2. Furthermore, several walls that stood in close connection to Cistern no. 1 were recorded, suggesting that the structure had been part of a larger workshop (**Figs. 1** and **5**, indicated in red). As of yet, however, no definitive interpretation of these remarkable structures has been made.

These observations clearly showed the potential of the area in addressing the unsolved question of water management in 'Thorikos', which had led to a fair degree of speculation in previous publications. In 1978, P. Spitaels wondered how the water supply had been arranged in *insula* 3 (Spitaels 1978, 44), and twenty years later Mussche stated in more general terms that Thorikos lacked the necessary cisterns to provide for a sufficient water supply for both washeries and personal needs of the inhabitants (Mussche 1998, 56). In order to enhance our understanding of this vital subject, it was decided to organize an excavation campaign focussing on these questions. In view of its large size in comparison to the other water reservoirs in Thorikos, Cistern no. 1 was chosen as the most promising point of departure.

Methodology

The fieldwork principally consisted of three parts:

1. Cleaning of the surroundings of the cistern. As already noted above, several structures were observed in the direct vicinity of the cistern; however, the poor visibility of the remains on the site prohibited a full understanding of these features. Removal of the overgrowth (mainly bushes and small trees, that had sprung up since 1965, see **Figs. 3-4**) was conducted during the first days of both campaigns;

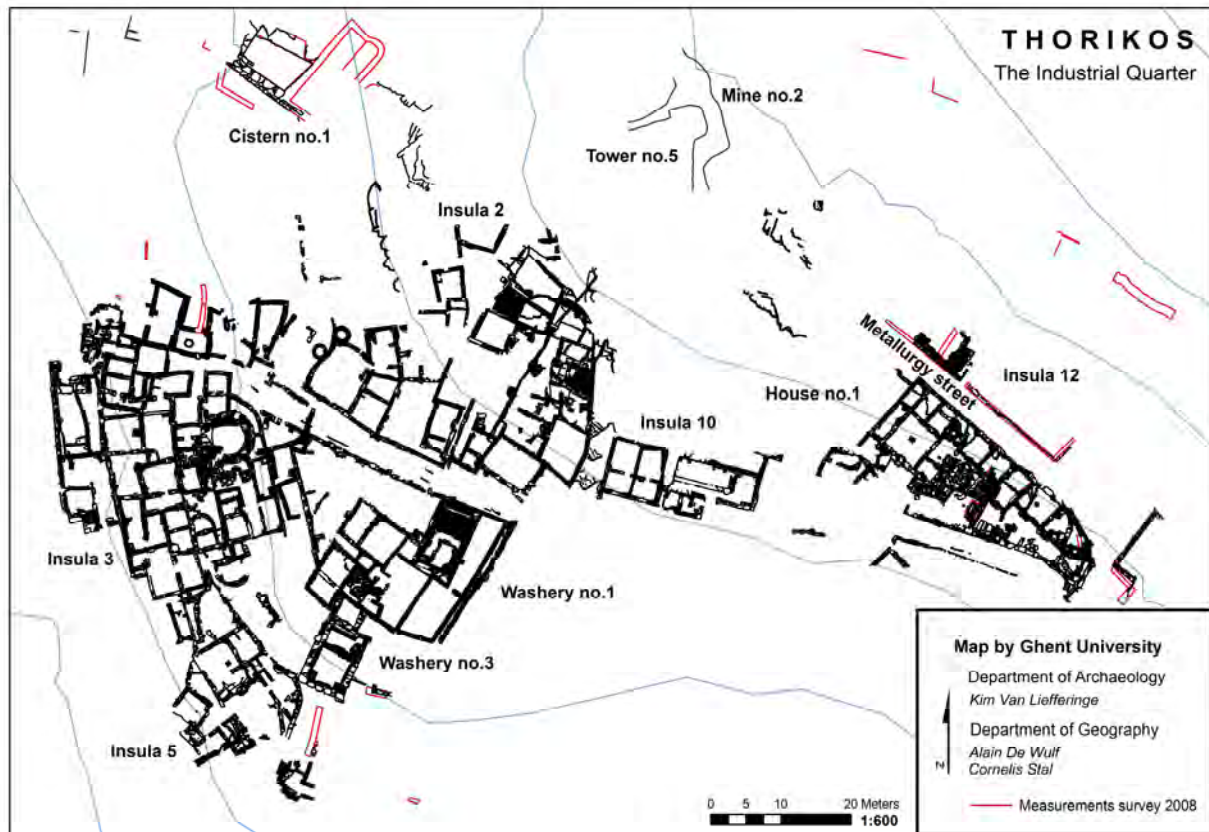


Fig. 1. Thorikos. Cistern no. 1 and the Industrial Quarter (in black: excavated and recorded remains 1963-1989; in red: remains recorded in 2008).

2. Excavation of the cistern's basin and architectural study. The main purpose of these activities was to establish the original capacity of the cistern and a *terminus ante quem* for its construction. The basin of the cistern was divided into five zones, A-E (**Fig. 5**). Although it proved impossible to finish the excavation of the entire structure, all five zones were at least partly investigated;
3. Registration and documentation of the artefacts and remains found during the excavation. This also included the precise drawing and measuring of the walls and other features, which have all been inserted into a GIS-system in order to facilitate the analysis of the data (see also **Figs. 1-2, 5, 11-12, 14, 16**).

Observations

Cistern no. 1: the structure

The main structure of the cistern has been relatively well-preserved, being partly cut into the bedrock and partly built up with ashlar masonry consisting of large, mostly rectangular blocks of (local) stone, averaging in length from 1 to 1.2m. In all probability, the irregular shape of the cistern (with sides measuring 9m, 4.5m, 7.5m, and 5.5m) can be related to the local, pre-existing topographical conditions.

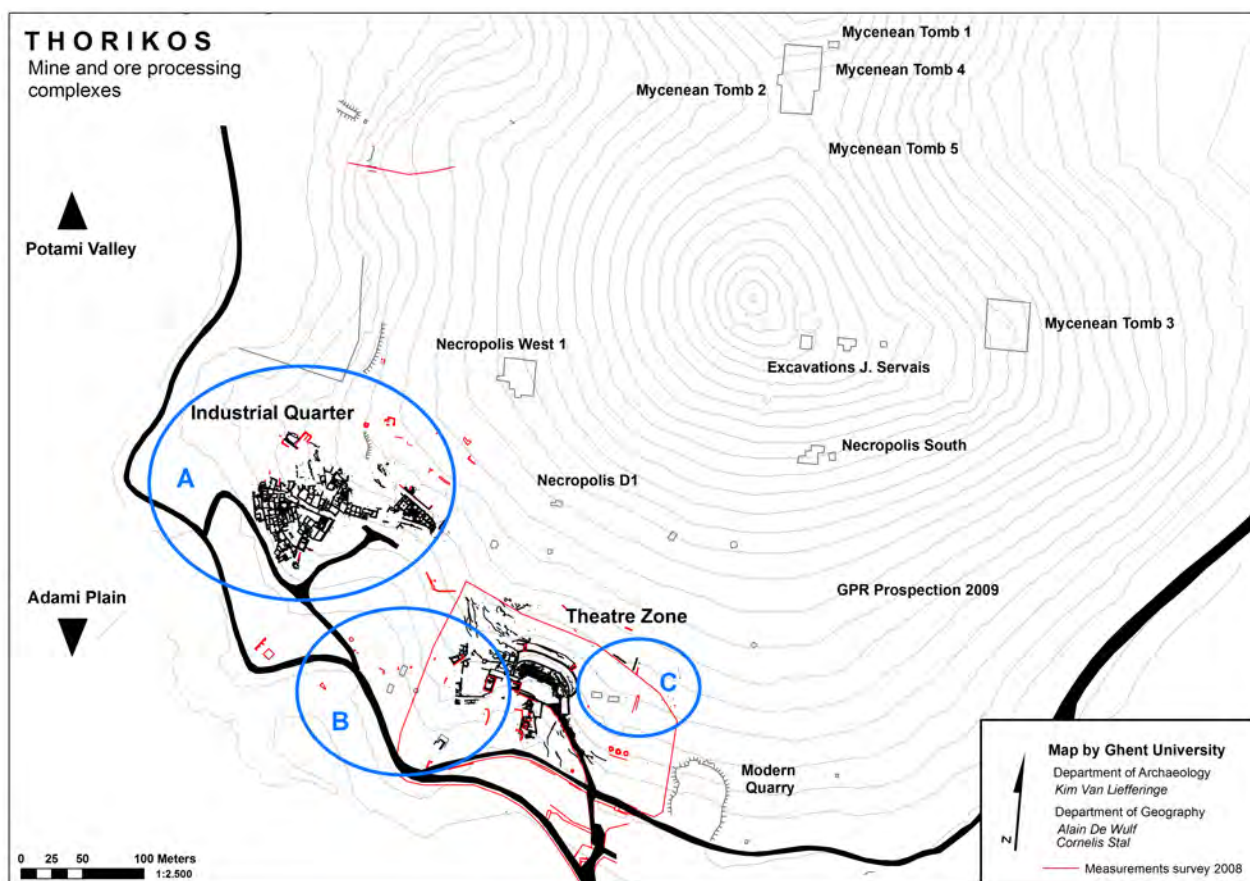


Fig. 2. Thorikos. The three mining and ore processing complexes on the lower Velatouri hill.

To prevent seepage, the cistern's walls and the fractures in the bedrock surface were filled and lined with a waterproof mortar, which in places was still present in a fairly good state of preservation (**Fig. 6**). As with other cisterns in the Laurion, the mortar had been applied in two layers. Firstly, the inner basin of the cistern was lined with a rather thick layer of lime mortar. Subsequently, this layer was roughened with scratches in order to allow for a better adhesion of the upper coating. This second coating was a thin layer of only a few millimetres and represented the actual hydraulic plaster. Mortar samples have been taken and will be investigated shortly in Greece. Noteworthy in this context is the research that was conducted by C. Conophagos on the mortars of a cistern in Demoliaki. His analyses revealed the presence of SiO_2 , Al_2O_3 , Fe_2O_3 , CaO , MgO , ZnO , PbO and MnO in the lining material. Especially interesting is the presence of litharge (PbO), which was a by-product of silver extraction ensuring the coatings' impermeability (Conophagos, Badécas 1974, 254-260; Conophagos 1980, 253).

Building a cistern on this specific location was certainly not a random choice. This part of the Velatouri hill seems to be particularly favourable for the catchment of water. The slope is not only steep, but the surface just above the cistern is also remarkably smooth and free of fractures. These conditions guaranteed an optimal water recuperation after rainfall. The cistern was also equipped with a kind of barrage to further optimize water catchment: the east wall of the cistern runs further uphill



Fig. 3. Thorikos. Cistern no.1 during cleaning in 1965, picture taken from the west with spoil heaps of Mine no. 2 in the background.



Fig. 4. Thorikos. Cistern no.1 during cleaning in 1965, picture taken from the south.

forming a sort of blockage for the water running downhill during rains (**Fig. 5**). Thus, water was directly diverted into the basin through an inlet, which was created by cutting an opening into the bedrock on the northern part of the cistern (see **Fig. 16**).

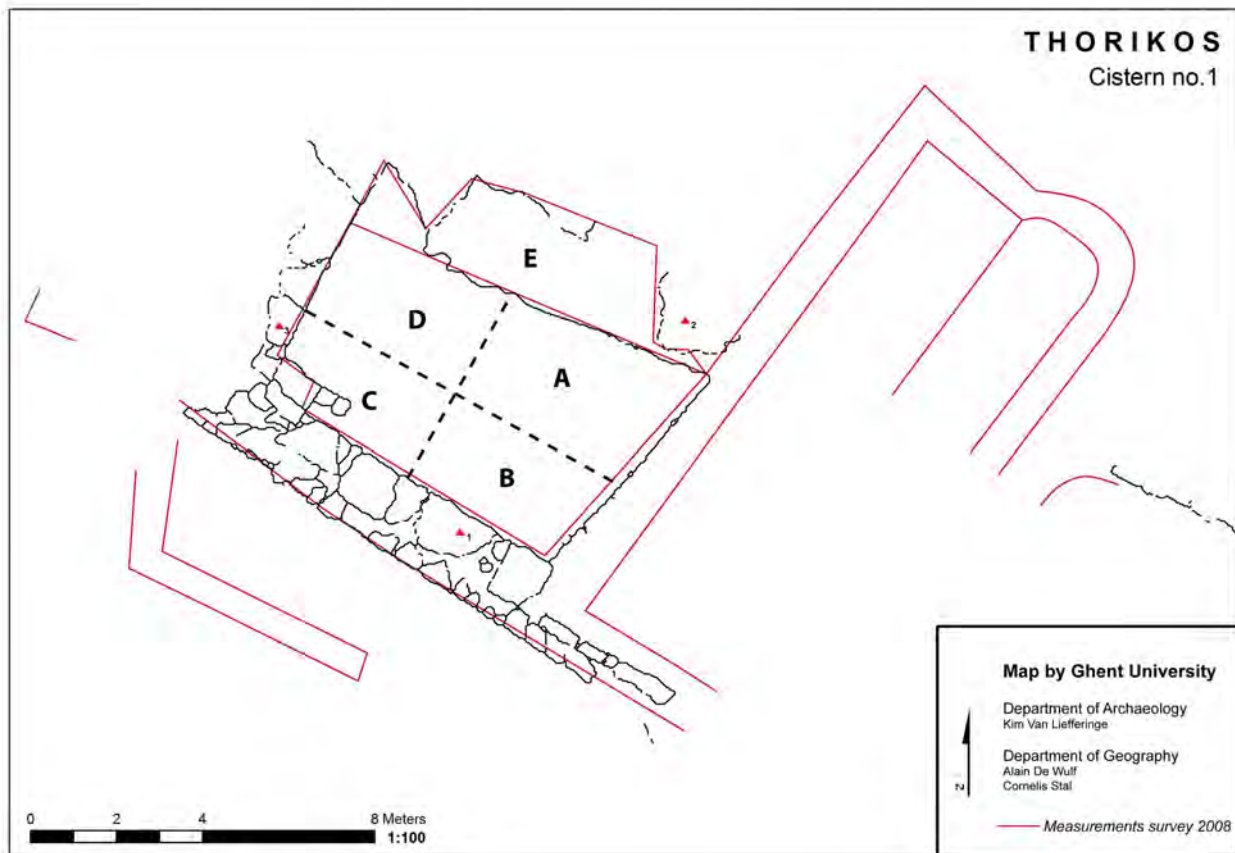


Fig. 5. Thorikos. The excavated zones in Cistern no.1 (A-B-C-D-E; Fixed points 1-2-3)

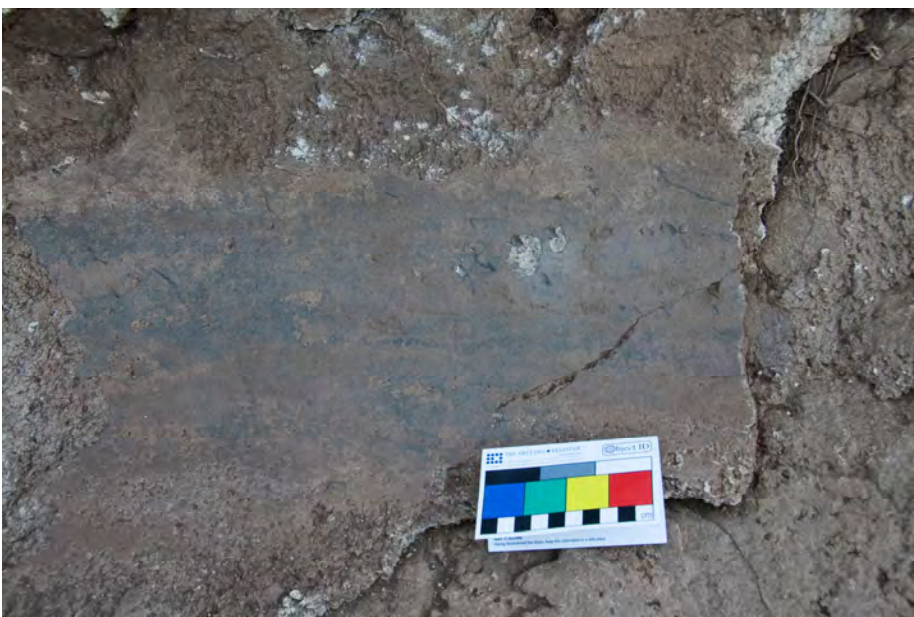


Fig. 6. Detail of the waterproof mortar in the basin of Cistern no. 1, Zone E (upper north corner).



Fig. 7. Cistern no.1. Blocked off drainage channel in the south corner of the basin (2011).



Fig. 8. The two drainage channels of Cistern no.1 (2010). Picture taken from the northeast.

Two drainage channels have been observed. The first channel, located in the south corner, was intentionally closed at some unknown moment, the second was probably operational until the cistern's abandonment (**Figs. 7-8**). The latter was likely to have been built at the same time the cistern was erected: it rested upon a foundation entirely cut out into the bedrock, which was simultaneously used to support the western and southern walls. Furthermore, a large stone slab covering the channel was incorporated into the cistern's walls. Unfortunately, a more detailed interpretation of this channel is obscured by the presence of a tree near the inlet (now cut, but with its roots still in place), which badly damaged the structure.

The cistern can be described as a typical example of an industrial water reservoir. Numerous parallels are to be found in the Laurion as a survey by the first author in 2011 showed. A strikingly similar cistern, in shape, size and building technique, may be observed close to the Soureza workshops; it belonged to the so-called Negriz workshop (**Fig. 9**). The only difference with Cistern no. 1 at Thorikos is the presence of a small decantation basin, used to clarify the surface runoff before it flowed into the principal cistern. Oddly enough, no cisterns with decantation basins were observed in Thorikos itself. This is particularly surprising since they were widely used in the rest of the Laurion.

Cistern no. 1: excavation procedure and stratigraphy

Rather than a full description of every individual archaeological unit or context, the following text provides a synopsis of the most significant stratigraphical layers within the cistern.³ As noted above, the basin had been divided in five zones at the start of the excavation: A-B-C-D-E (see also **Fig. 5**). In 2010, Zone A, C and E were excavated simultaneously in order to have a clear view of the stratigraphy. In 2011, the same was done for B and D, but A was further investigated as well. Considering measures of safety and time, additional test trenches were dug in both A and C. **Figs. 10-13** present the main results of these activities.

The recorded stratigraphy was very much in line with what could be expected in a cistern. It can be described as a multi-layered filling, containing all types of material, which through time had tumbled and washed into the basin. Cisterns were structures requiring high and constant maintenance. Generally, their basins were full at the end of the rain season, supplying the workshop until the rain resumed the following autumn. As it was mostly empty by the end of summer, people would then have taken the opportunity to clean the basin and, if necessary, to carry out repairs. This implies a yearly removing of the sediments, which had settled down on the bottom, and the restoration of the waterproof cement, where it showed signs of deterioration. Therefore, no stratigraphy of the cistern's use period can be established. The resulting fill will not offer a precise construction date, but at the best a *terminus ante quem* of its last use phase, since upon abandonment no efforts would have been made to clear the cistern from residues anymore. The most accurate date for this moment may be

³ The full and detailed presentation of these contexts, with a Harris Matrix, will be published after the conclusion of the excavation.



Fig. 9. An industrial cistern in the Soureza area (Negrís workshop).



Fig. 10. The five excavation zones (and extra test trenches) in Cistern no.1: A-B-C-D-E (2010).

expected from the archaeological finds contained in the lowest level of the fill, which, however, has not yet been reached. The fill above, excavated in part in 2010-2011, would be composed of material washed into the cistern from higher up the hill. One may reasonably suppose that it contains the same kind of material that one encounters at the surface around the cistern. To enable comparison, surface finds from within macro-square A'51 were systematically collected and studied as well in 2010 and 2011.

The four zones within the lowest part of the cistern (A-D) show a uniform stratigraphy, although the distribution of the material finds is not entirely similar. As of yet, five distinct types of sediments have been distinguished: topsoil (1) and four lower strata (2-5; **Figs. 11-13**).

The full area was covered with a topsoil layer (1). This was a humus deposit, mixed with very few pottery fragments and large stone blocks, reflecting a structural collapse of a possible superstructure and/or originating from structures that once stood in the vicinity of the inlet. The deposit had a top surface sloping down in southwestern direction (**Figs. 8, 14**). Considerable amounts of charcoal were found in the topsoil, particularly in Zone A. In all likelihood, these can be linked to the numerous bushfires that have ravaged the Velatouri in the past.

Under this concealing layer, a more compact, dark brown, silty sand deposit was encountered (2). The thickness of the layer differed considerably from location to location. Generally, the stratum was 40 to 60cm thick. Next to the channel in the west corner of the cistern, the deposit was dotted with mortar fragments, giving it an ash-like texture and colour. The large amount of mortar fragments, some of which measured 10 to 20cm, is easily understood in this location. As the channel extended beyond the cistern's wall, it created more corners and thus elevated the risk of leakage. As a preventive measure, every corner was meticulously coated with an extra thick layer of mortar, a practice which has also been recorded in other cisterns of the Laurion. Furthermore, considerable amounts of cement originated from a heavily disturbed floor, which was found inside the channel. The floor was made of stone slabs with a substructure consisting of small stones in a matrix of lime mortar. In the upper north corner of Zone E, the same situation has been recorded. The mortar fragments were numerous and well preserved (see also **Fig. 6**).

A third stratum, ranging from about 50cm to 1m in thickness, was rather similar in texture (brownish, fine, silty sand) but considerably lighter in colour (3). It still contained pieces of charcoal and a fair amount of stones; however, their number and sizes were decreasing. As noted above, two trenches were dug (one in A and one in C) in order to enhance the work progress. Excavation was not continued in Zone B and D below this level.

In sharp contrast to the third stratum, the fourth layer can be characterised as a stone packing, mainly consisting of medium sized stones observed both in Zone A and C (4). The earth was also brownish in colour with a silty sand texture. Noteworthy was the large amount of bones in the west corner of Zone C. This stratum was about 80-90cm thick.

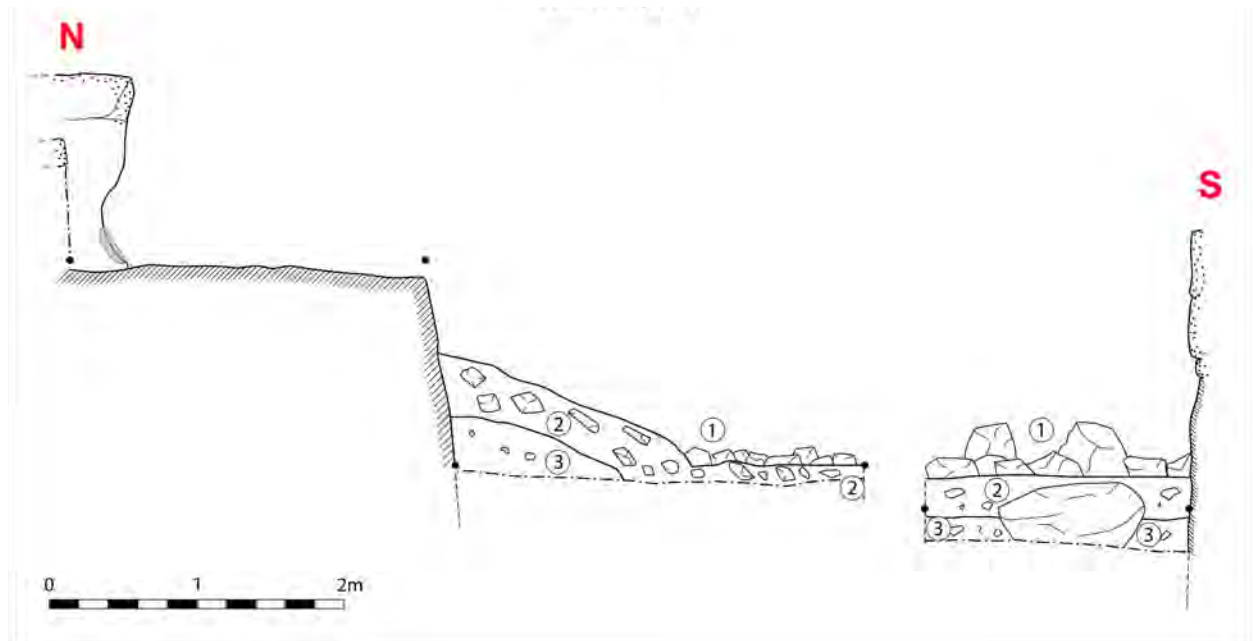


Fig. 11. Cistern no. 1, north-south profile (2011); drawing KVL and TP, digitized by J. Angenon.

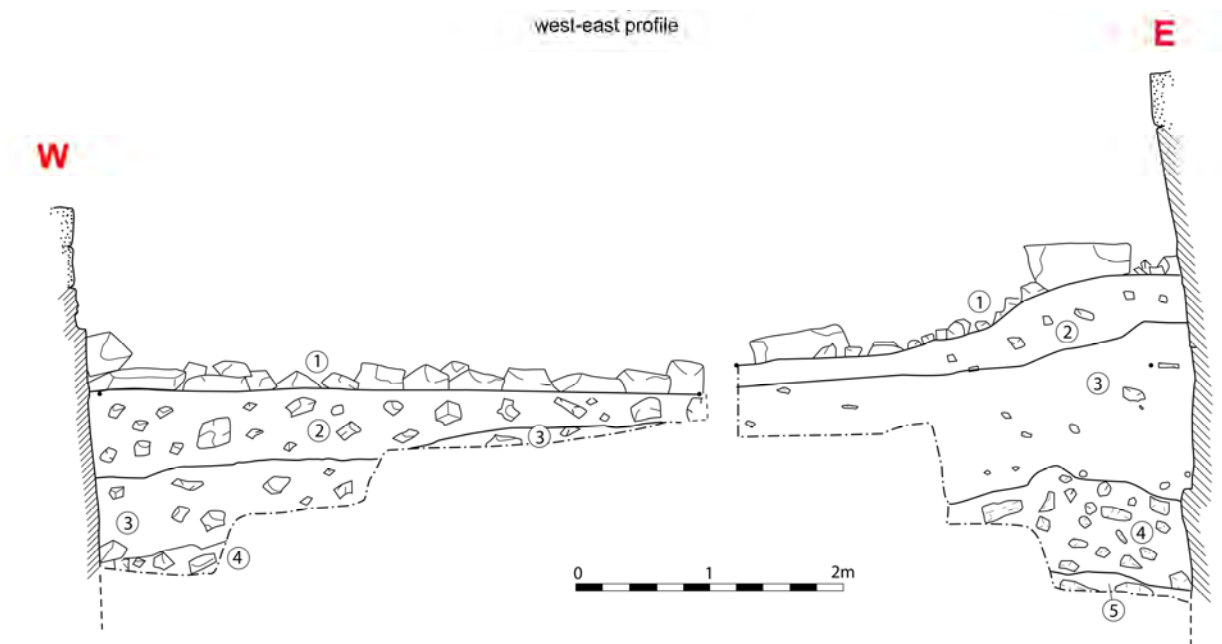


Fig. 12. Cistern no. 1, west-east profile (2011); drawing KVL and TP, digitized by J. Angenon.

After cutting through this layer, the excavation was only continued in Zone A. There, another stone layer, consisting of significantly larger stones was encountered (5). The texture of the soil was still the same but it was somewhat darker in colour, which can easily be explained by the humidity of the soil. The frequency of pottery was greatly reduced. The depth reached was 4.7m, measured from fixed point 2 (see **Fig. 5**), which was at the highest level of the cistern's walls.

Zone E, the top part of the cistern, can be described as the actual inlet of the cistern (**Figs. 5, 8-right, 10, 11-left**). The natural bedrock had been left untouched in most places; however, it used to be completely covered by waterproof cement, as suggested by some small fragments. Fissures in the rock were carefully filled with a mix of small stones and lime mortar (**Fig. 15**), implying that the cistern could – and would - have been filled with water up to this level. In contrast to the other sides of the cistern, which all consisted of nicely built ashlar walls, this part entirely made use of the natural bedrock. Part of this natural ‘wall’ was reworked to leave an opening, allowing the surface runoff to flow in. No traces of any extra infrastructure were found. The material recovered from Zone E, consisting of a mix of stones, mortar and very few pottery fragments, may with all certainty be considered as a modern infill (albeit solely composed of material of ancient date), since the area had been cleared to the level of the bedrock in 1965, when a first plan of the cistern had been made (see also **Figs. 3-4**).



Fig. 13. Cistern no. 1. East-west section of the test trench in Zone A (2010).

Surrounding structures

The cistern had clearly been part of a larger metallurgy workshop, as indicated by several features in its close vicinity (**Fig. 16**). On the western side of the cistern, an obvious working area was observed. The bedrock was adjusted in order to create a smooth rectangular platform. A few meters further to the west, a crushing table was recorded (**Fig. 17**). Crushing tables, together with grinding stones, were used to

THORIKOS
Cistern no.1
 Topsoil



Fig. 14. Cistern no. 1. Topsoil (2010); drawing KvL and E. Kakavoyannis, digitized by J. Angenon.



Fig. 15. Cistern no. 1. Fissures in the rock filled with a mixture of stones and lime mortar (2010).

prepare ores before they were brought to the washeries. The latter were large, rather flat slabs of (mostly) limestone, employed to reduce the grain size of ores by means of iron pounder. (Basalt) grinding stones could take different shapes; the fragments encountered during the excavation undoubtedly originated from the rectangular variant (see elsewhere in this volume, pp. 117-118, cat. 103, fig. 41). By means of this device, the ores were grinded until a flour-like substance was achieved (Conophagos 1980, 216, 220-221). **Fig. 18** shows a reconstruction of how crushing tables and grinding stones were used (Conophagos 1980, 227, fig. 10-15).

In 2011, an important discovery was made at surface level within the macro-square: an ore washery that can be linked to the cistern and formed part of the workshop. It is situated 3m below the cistern and at a distance of about 16m to its west. Its location is easily explained by its proximity to the cistern's most western overflow channel (**Fig. 16**). One of the settling tanks had been exposed, one side of which could be measured (1.3m), the rest is completely covered with topsoil and overgrowth.

On the east side of the cistern several curved walls, organised in a rather peculiar way, were built (**Figs. 5, 16**). As no parallels could be detected in other Laurion workshops, it is not yet clear what purpose they served.

As mentioned in the introduction, the Cistern no. 1 workshop was part of a mining and ore processing complex erected in relation to Mine no. 2. Several observations suggest that this complex was not of minor importance. In the first place, the capacity of Cistern no. 1 was sufficiently large to have served several ore washeries. In the second place, an important street ran through the area, the so-called Metallurgy Street, which linked Mine no. 2 with several workshops (see **Fig. 1**). When extending its axe, the street is likely to have led along *insula* 13 to Mine no. 2 and further up to the Cistern no. 1 workshop. Also worth mentioning is the possible presence of a tower (no. 5) close to the mine entrance (Mussche 1998, 57).

Preliminary conclusions

The present report has provided a general overview of the 2010 and 2011 excavation campaigns, focussing on the interpretation of the findings rather than a detailed description of every encountered context. Even though further excavations are necessary to fully understand the structure and its fill, a few preliminary conclusions may be drawn.

The stratigraphy can be described as a filling, characterised by two thick stone layers. These layers are likely to be explained as structural collapses, originating from a superstructure and/or buildings that once stood uphill. The first layer of stones is the top fill, the second one is represented by the fourth and fifth stratum.

The finds in the fill of the cistern, discussed in two contributions elsewhere in this volume, can be divided in two large chronological horizons. The bulk of the finds belong to the Late Archaic to Early Hellenistic period (see elsewhere in this volume,

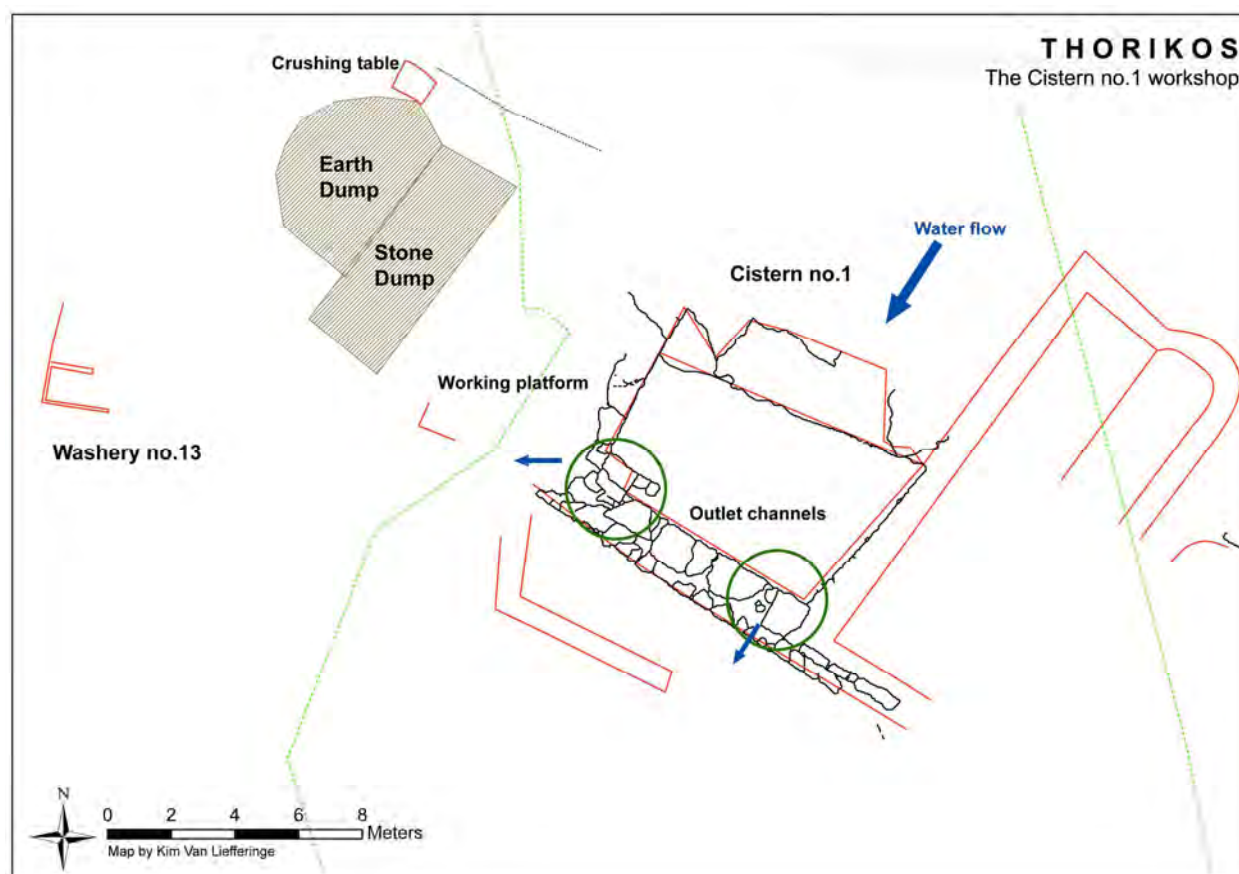


Fig. 16. The Cistern no. 1 workshop (2011).

p. 119, fig. 42), with two specific peaks in the 5th century BCE and the second half of the 4th century BCE (see also elsewhere in this volume, p. 137, fig. 6). In the second place, a smaller portion of the finds belong to the last period of Thorikos' existence, the Late Roman and Early Byzantine period, viz. principally the 6th and 7th centuries CE (*ca.* 520-700 CE), extending into the 8th century. This chronology is later than hitherto known for Thorikos. These finds consist mainly of larger fragments in comparison to the finds of the earlier chronological horizon. These fragments also show more joins, allowing for the reconstruction of larger profiles. Apparently this part of the fill is of a more primary nature, deliberately dumped in the cistern during the 6th, 7th and/or 8th century CE. The fragments of the Late Archaic till Early Hellenistic period are generally smaller and often also more abraded and probably originate in erosion processes. They, hence, may once have formed the make-up of the stratigraphy higher up the hill.⁴ It is not unlikely that the cistern by the Late Roman and Early Byzantine period had already been partly filled in with erosion material containing solely material from the Late Archaic till Early Hellenistic period. However, these levels of the fill do not seem to have been reached yet during the present excavations, since even the lowest levels contained fragments of the late

⁴ How quick these erosion processes take place and cause the filling up of areas hitherto exposed may be illustrated in the example of Zone E, discussed above.

pottery horizon. That the cistern would have retained its original function in the Late Roman period and only got filled in thereafter seems very unlikely. Rather, one has the impression that the dumping of Late Roman/Early Byzantine pottery took place at a time when the erosion processes were still going on, causing the gradual filling of the cistern. This would at least explain the presence of these late fragments, sometimes clustering and connecting with assemblages of larger bone fragments, within the fillings composed of mainly earlier material. In this connection, it is remarkable that the quite numerous surface finds from the area around the cistern do not seem to contain fragments of this latest phase.

As a last word concerning the finds, it is noteworthy that several pieces of grinding stones of the Late Archaic and Classical periods were encountered in the cistern fill and during the systematic collection of surface finds in macro-square A'51 (see elsewhere in this volume, pp. 117-118, cat. 103, fig. 41). They may contribute to the functional understanding of this part of Thorikos.

Cistern no. 1 forms a clear example of an industrial cistern, which provided water for ore processing. This is not only suggested by a comparison with other workshops and industrial cisterns in the Laurion, but also by metallurgical features in the close vicinity of Cistern no. 1 itself (a.o. an ore washery, a crushing table, fragments of grinding stones and Mine no. 2).

The initial estimated capacity of the cistern needs to be recalculated. The structure is evidently considerably larger than scholars had previously estimated; it appears to have contained at least 135m³. As the bottom of the cistern has not yet been reached, the capacity will likely be substantially larger. Especially in connection with the newly discovered cistern during the 2008 survey, this result may seriously question the previous hypothesis on water shortage in Thorikos (see introduction). Rather, it seems likely that enough water had been available in Thorikos. The false impression was probably caused by a lack of interest in the subject in addition to the limited archaeological work conducted on water capturing installations in Thorikos.⁵

At this early stage of research, the chronology of the cistern and, hence, the workshop still remains uncertain. In comparison to other *ergasteria* in Thorikos and the Laurion, one may assume that the Cistern no. 1 workshop had been constructed somewhere towards the end of the 5th or in 4th century BCE (Kakavoyannis 2001; Docter, Van Liefferinge 2010). Future fieldwork, scheduled for 2012 and encompassing small sondages outside the cistern's basin, as well as a further excavation of the fill inside, is expected to clarify this chronology.

⁵ Although cisterns seem to have been partly emptied before (as e.g. the two subterranean cisterns in *insula* 2), the results never made it into the publications.



Fig. 17. Crushing table west of Cistern no. 1 (for position, see **Fig. 16**).

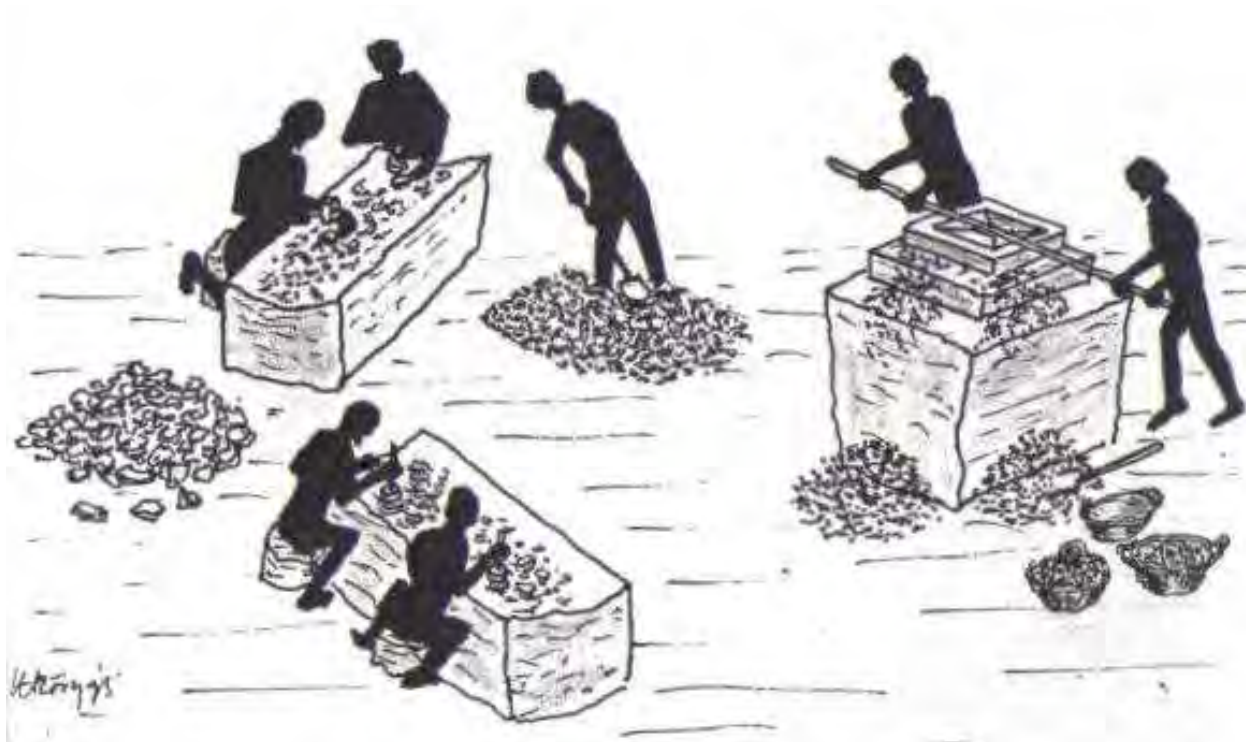


Fig. 18. Crushing and grinding of ores (after Conophagos 1980, 233, fig. 10-15).

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Late Archaic to Late Antique Finds from Cistern No. 1 at Thorikos (2010 Campaign)

Roald Docter, Patrick Monsieur, Winfred van de Put

Introduction

This study of the finds made during the 2010 campaign is preliminary and selective.¹ It aims at offering a chronological and functional overview of the fill of Cistern No. 1 and of the surface finds in its immediate surroundings. 1710 fragments (mainly pottery) from 56 different archaeological contexts (units) were counted, washed, bagged and registered. Of these, 721 were inventoried in a detailed manner on database-level by Winfred van de Put in the finds laboratory (42%).² Since the excavation of the cistern has not yet been finished, it was decided to keep all finds.³ 122 fragments of 103 individual diagnostic items were recorded in a more detailed way with section drawings, descriptions and photographs with a view to publication (**Cat. 1-103**).⁴ Apart from that, 21 paper bags with uncounted bone and shell from these archaeological contexts were registered, as well as 30 dry sieving samples (retrieved from sieves with 2.2, 4, and 8mm mesh sizes), 7 charcoal and 2 mortar samples.⁵

The discussion of the items follows the different general pottery classes and wares, with a subdivision based upon chronology. It is only in the concluding comments that the functional groups are discussed within their respective chronological horizons.

¹ The 2010 campaign lasted only 11 working days in the field (between 17 and 28 May 2010). The campaign was financially supported by the Belgian School at Athens and research funds of Ghent University. We would like to thank the secretary of the School, Mr. P. Iossif, as well as its director, Dr. S. Soetens, for their support. In Greece our thanks go Dr. I. Tsirigoti-Drakotou, Ms E. Andrikou and Ms D. Kai, as well as F. Spanou, S. Makri, and the other staff members of the Lavrio Museum.

² The fact that the first part of the campaign consisted mainly of clearing the site of overgrowth, cleaning, and making a detailed plan of the surface layer of the stone infill, resulted in a very low number of finds that initially entered the finds laboratory. The backlog of 989 fragments has been reduced to 327 in 2011.

³ 4 crates with pottery finds and 1 carton box with bone, shell and samples have been deposited in the storerooms of the Lavrio Museum.

⁴ Section drawings were made by Roald Docter and later digitised by F. Gignac of Archéodesign (Montreal); photographs were taken by Winfred van de Put; descriptions are by both. Patrick Monsieur (Ghent University) studied the amphora material based upon this documentation (**Cat. 65-88**); figured and most of the black glaze pottery was studied by van de Put (**Cat. 1-22**), the other finds by Docter (**Cat. 23-64; 89-103**). Given the preliminary nature of this publication, no attempt has been made to balance the comments within the contribution. Hence, the comments to the individual items may be restricted to a mere reference to the well-known reference works, as *Agora* XII or XXIX, but may also be more elaborate.

⁵ Study of the faunal material is foreseen for the 2011 campaign and is in the hands of both Lilian Karali Giannakopoulou (National and Kapodistrian University of Athens) and her team, and of Eftychia Yanoulli. That such studies for Thorikos are much needed, may be clear from the fact that hitherto only one short note on the faunal remains of Thorikos has been published, Gautier 1967.

Decorated and semidecorated wares

Black glaze and red-figure

The black glaze finds from the 2010 campaign are for the most part drinking vessels: skyphoi, (cup-) kantharoi and a cup make up 13 of the 21 catalogued black glaze items. Other drinking implements are a bowl and two, maybe three krater fragments. Plate, lamp, lebes and lekythos fragments complement the small catalogue. A separate entry is devoted to the numerous (often partly black glaze) lekanai.

For some fragments, it is possible they belonged to figured vases. The sturdy krater feet **Cat. 19-20** may well have belonged to red-figured vases, while the lekythos fragment **Cat. 12** probably carried a simple meander in a frieze on the shoulder.

Only one red-figured fragment came to light (**Cat. 22**), part of a mantle-figure, probably from the reverse of a closed shape (amphora or pelike) from the third quarter of the 5th century BCE.

Overall, the record is very similar to that of the domestic and industrial quarters in Thorikos. The dating in the publications of this material derives mainly from *Agora* XII, an example followed here but augmented by *Agora* XXIX, dealing with the Hellenistic fine-wares. The later examples in the catalogue fall between these two pivotal publications.

It is hazardous to estimate the percentage of red-figured vases from the entire ensemble from such a small sample, but with the one, possibly three, fragments out of a total of 721 inventoried, it will not have exceeded 0.5% of the total ceramic record; a number to be expected in a domestic setting. The quantity of krater fragments in the cistern fill (three feet from different kraters **Cat. 19-20** and TC10.179) is remarkable. The finds database records six fragments for washery 1, four for tower compound 1, three for House 1 and two for House 2, so it seems an infrequent shape, overrepresented here.⁶

Skyphos

Cat. 1: TC10.25 (context T10-5-1), 1 wall fragment with transition to base of type A skyphos (**Fig. 1**).
Max. diam. 5.9, PH 3.4; good black glaze on outside.
Cf. *Agora* P 26019 (*Agora* XII, no. 352).
Date: *ca.* 330 BCE.

Cat. 2: TC10.110 (context T10-8-2), 1 base fragment (**Fig. 1**).
Diam. base 5, PH 2.9; good black glaze on both sides, miltos on lower part of base.
As **Cat. 1**.

⁶ The number of krater fragments in the Thorikos database must be treated with caution (see below, n. 12), since at times apparently also lekane fragments have been classed under this heading. Also on the sites of the rural deme Atene, kraters seem to have a limited occurrence, Lohmann 1993, 47, 375, 432, 511, pls. 10, CH33-2; 25, PH33-3, 45, LE15-1.

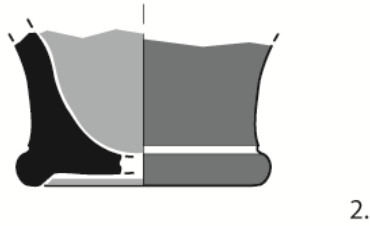
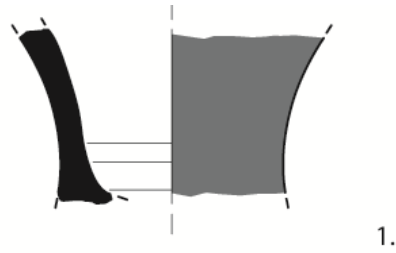


Fig. 1.

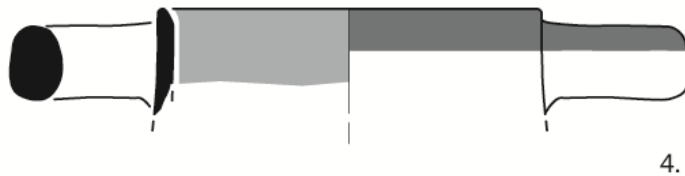
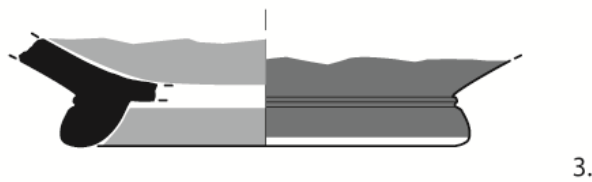


Fig. 2.

Bolsal (?)

Cat. 3: TC10.38 (context T10-5-2), 1 base fragment of bolsal, cup-skyphos or cup-kantharos (**Fig. 2**).
Diam. base 8.0, PH 2.1; good black glaze on interior and exterior.
Cf. bolsal Agora P 14242 (*Agora* XII, no. 558), and cup-kantharos Agora P 9343 (*Agora* XII, no. 651).
Date: *ca.* 380-350 BCE.

Cat. 4: TC10.159 (context T10-15-1), 1 rim fragment with handle of bolsal or one-handler (**Fig. 2**).
Diam. rim 7.5, PH 1.9, handle section 1x1.4; brownish glaze on inside and upper part of outside.
Straight wall/rim and horizontal handles like bolsal, cf. Agora P 423 (*Agora* XII, no. 541), but handle too short and diameter too small. Cf. one-handler Thorikos TC86.1 (Mussche 1998, 68, no. 13, fig. 135).
Date: late 5th century BCE?

Cup

Cat. 5: TC10.34 (context T10-7-1), kylix, 1 floor fragment of tondo (**Fig. 3**).

Diam. base *ca.* 4.5, PH 0.7; traces of black glaze on interior; band of rays around lost foot on exterior.

For rays around foot, cf. the lekanis Agora P 24255 (*Agora* XII, no. 1221).

Date: *ca.* 425-400 BCE.

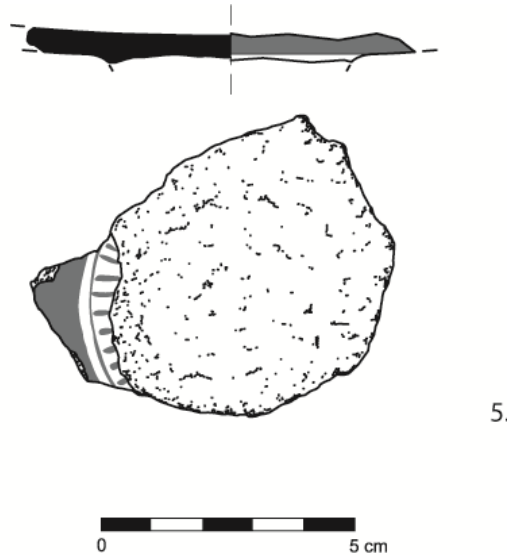


Fig. 3.

Plate or shallow bowl

Cat. 6: TC10.145 (context T10-8-3), 1 base fragment (**Fig. 4**).

Diam. base 12, PH 3; brown glaze on exterior; reddish brown glaze on interior.

Impressed palmettes within single-file rouletting on interior.

Cf Agora P 13543 (*Agora* XII, no. 835, 325 BCE), for shape of foot; Agora P 23418 (*Agora* XII, no. 611, 375-350 BCE) and P 5862 (*Agora* XII, no. 1047, 400-375 BCE) for the common palmettes and rouletting.

Date: 375-325 BCE (shape).

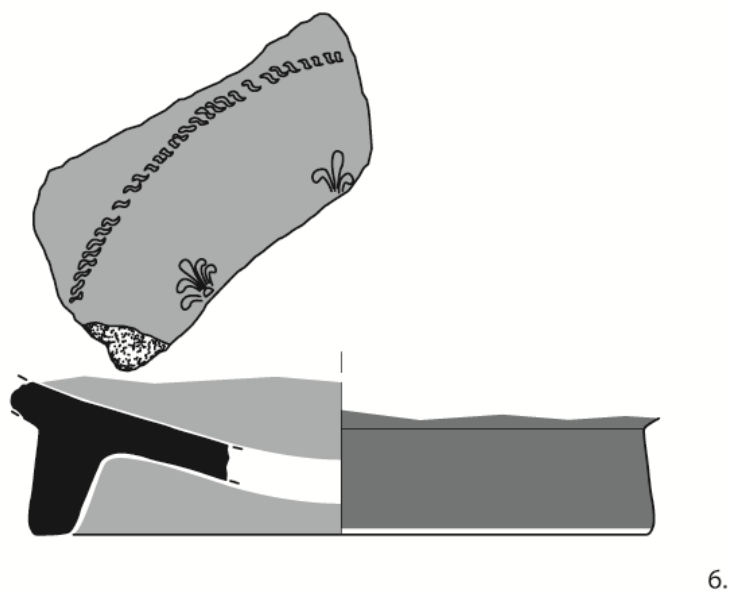


Fig. 4.

(Cup-) kantharos

Cat. 7: TC10.31 (context T10-7-2), 1 carination and upper body fragment of kantharos (**Fig. 5**).

Max. diam. 6.5, PH 3.1; good black glaze on outside. Repair hole at top of fragment.

Cf. Agora P 12698 (*Agora* XII, no. 708).

Date: 350 BCE.

Cat. 8: TC10.41 (context T10-5-2), 1 wall fragment with spur and start of handle of cup-kantharos (**Fig. 5**).

Max. diam. wall 11.0, PH 1.8, handle section 0.8x1.

Cf. Agora P 1828 (*Agora* XII, no. 709).

Date: 350-325 BCE.

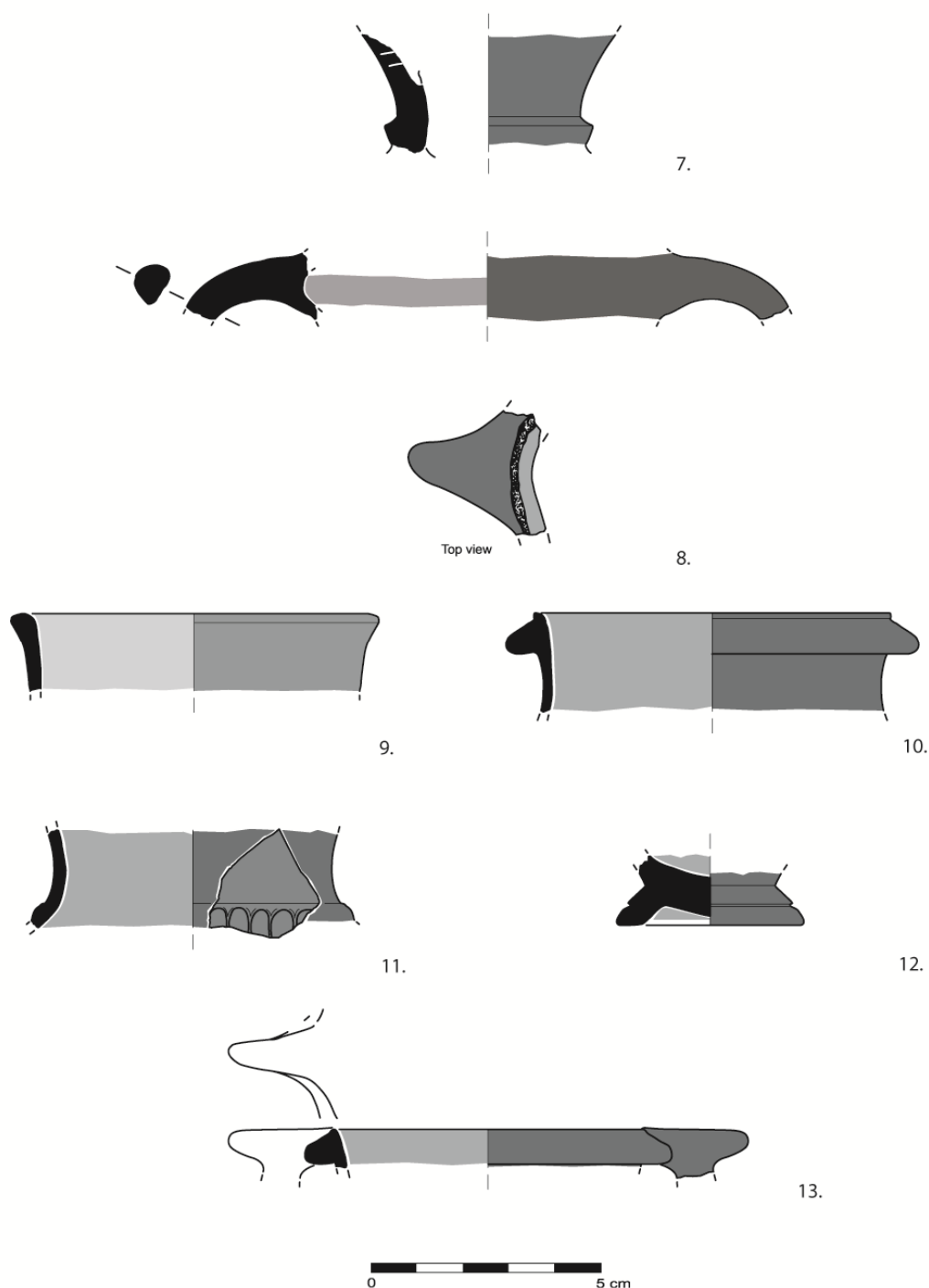


Fig. 5. (Cup) kantharoi.

Cat. 9: TC10.46 (context T10-5-2), 1 rim fragment of kantharos (**Fig. 5**).
 Diam. rim 10, PH 2.1; reddish glaze on both sides.
 Cf. Agora P 15409 (*Agora* XXIX, no. 9).
 Date: 325-300 BCE.

Cat. 10: TC10.70 (context T10-5-2), 1 moulded rim fragment of kantharos (**Fig. 5**).
 Diam. rim 11.5, PH 2.7; good black glaze on both sides.
 Cf. Agora P 3778 (*Agora* XII, no. 704) and Agora P 22039 (*Agora* XXIX, no. 38).
 Date: 325-300 BCE.

Cat. 11: TC10.71 (context T10-5-2), 1 carinated wall fragment of kantharos or cup-kantharos (**Fig. 5**).
 Max. diam. 8.5, PH 2.6; good black glaze on both sides.
 Cf. Agora P 13529 (*Agora* XII, no. 676) and Agora P 29180 (*Agora* XXIX, no. 94).
 Date: 325-315 BCE.

Cat. 12: TC10.102 (context T10-8-2), 1 base fragment: ring foot in 2 degrees of kantharos (**Fig. 5**).
 Diam. base 5, PH 1.8; good black glaze.
 Cf. Agora P 12690 (*Agora* XII, no. 661) for foot.
 Date: 350-325 BCE.

Cat. 13: TC10.103 (context T10-8-2), 1 rim fragment: moulded rim and slender spur (**Fig. 5**).
 Diam. rim 10, PH 1.4; reddish-black glaze on both sides.
 Cf. Agora P 6935 (*Agora* XII, no. 712) for slender spur, Agora P 12691 (*Agora* XII, no. 701) and Thorikos TC68.678 (Mussche 1990, 50-51, no. 100) for moulded rim.
 Date: 350-325 BCE.

Bowl

Cat. 14: TC10.147 (context T10-8-3), 1 rim fragment (**Fig. 6**).
 Diam. rim 16, PH 1.2; black glaze on both sides.
 Cf. Agora P 20141 (*Agora* XII, no. 690, XXIX, no. 130), bowl-kantharos.
 Date: 325-300 BCE.

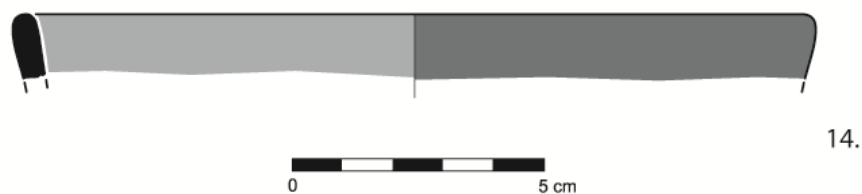


Fig. 6.

Pyxis, type D

Cat. 15: TC10.61 (context T10-5-2), 1 base fragment (**Fig. 7**).
 Diam. base 10, PH 1; good black glaze.
 Cf. Agora P 20510 (*Agora* XXIX, no. 1253), Agora P 24279 (*Agora* XII, no. 1309). Cf also Bingen 1968, 66, fig. 60 (from Thorikos).
 Date uncertain.

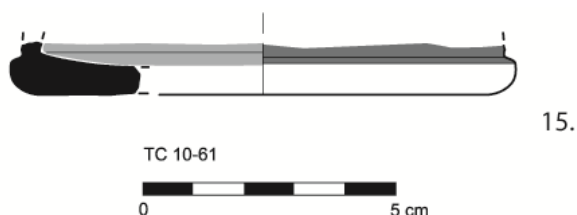


Fig. 7.

Lebes

Cat. 16: TC10.51 (context T10-6-3), 1 rim fragment: incurved, thickened rim (**Fig. 8**).

Diam. rim 14, PH 2.2; reddish glaze on interior and in band around exterior rim.

Cf. Agora P 2870 (*Agora* XII, no. 87) for shape and decoration.

Date: 320-300 BCE.

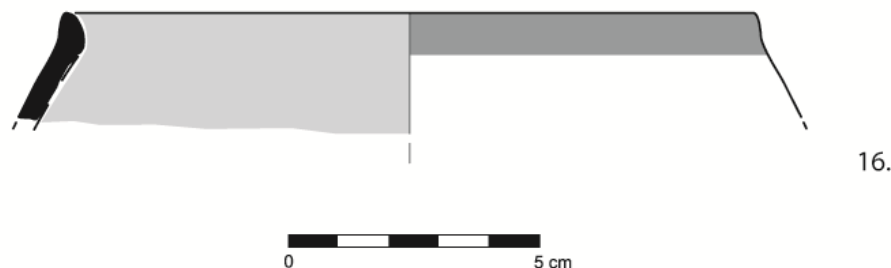


Fig. 8.

Lamp

Cat. 17: TC10.168 (context T10-13-1), 1 spout fragment (**Fig. 9**).

Cf. TC73.441 (Blondé 1983, 128 no. 230, fig.24), an 'inkwell' shape lamp; TC75.533 (Blondé 1983, 107 no. 150, fig. 16), globular lamp with offset rim, straight top dissimilar.

PH 1.6; good black glaze all over.

Date: 375-300 BCE.

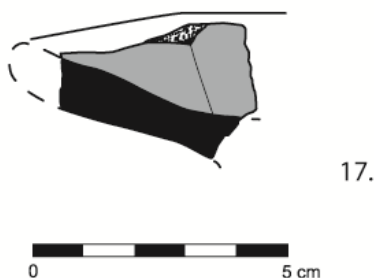


Fig. 9.

Krater (Cat. 19-20 possibly figured)

Cat. 18: TC10.141 (context T10-11-1), 1 rim fragment of open shape, possibly krater; folded rim, tapering upwards (**Fig. 10**).

Diam. rim 33, PH 6.8; good black glaze on both sides.

Date: 5th century BCE?

Cat. 19: TC10.170 (context T10-13-1), 1 base fragment of bell krater. Lipped, groove of lip reserved (**Fig. 10**).

Diam. base 20, PH 3.6; good black glaze on exterior, smoothed on lower part of base.

Cf. the bell-krater Berlin F 2643 (*CVA* 11, pl. 42, Beil. 9.3), Dinos Painter; decoration Polygnotan, see *CVA* Berlin 11, 47.

Date: 430-400 BCE.

Cat. 20: TC10.174 (context T10-10-3), 1 base fragment of bell krater (**Fig. 10**).

Diam. base 18, PH 3.7; reddish glaze on top of foot, smoothed on lower part of base.

Cf. the bell-krater Berlin F 2401 (*CVA* 11, pl. 40-41, Beil. 9.2), Clio Painter.

Date: 450-430 BCE.

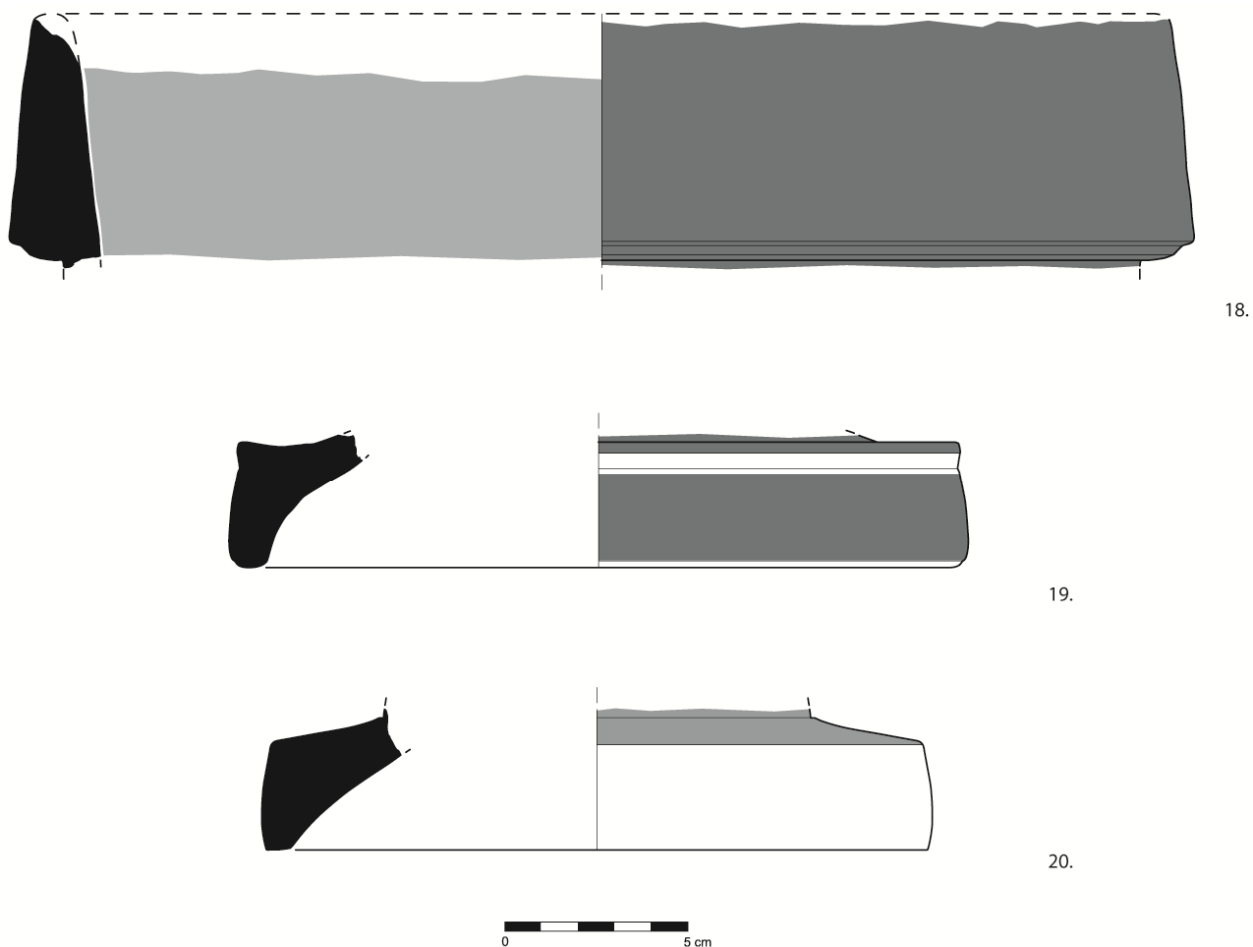


Fig. 10. Kraters.

Squat lekythos

Cat. 21: TC10.101 (context T10-8-2), 1 shoulder fragment.

Diam. shoulder at carination 5, PH 1.6; good black glaze on shoulder (**Fig. 11**).

Many similar lekythoi in Thorikos, e.g. TC65.830 (*Thorikos* III 53, fig. 64) and in the Kerameikos, e.g. the lekythos in grave 370 (*Kerameikos* VII,2, 96, pl. 63.7, dated third quarter of the 5th century BCE).

Date: *ca.* 450 BCE.

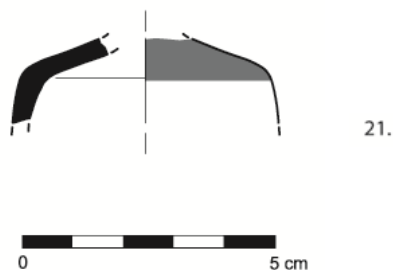


Fig. 11.

Red figured closed shape

Cat. 22: TC10.100 (context T10-8-2), 1 wall fragment (**Fig. 12a-b**).

Max. diam. 26.5, PH 3.1. Mantle figure of reverse of closed vessel: upper part of leg and start of body, striped hem of himation; broad folds.

Cf. Agora P 1855 side B (*Agora* XXX, no. 274; Polygnotan, dated 440 BCE) for similar folds and hem stripes.

Date: 450-425 BCE.

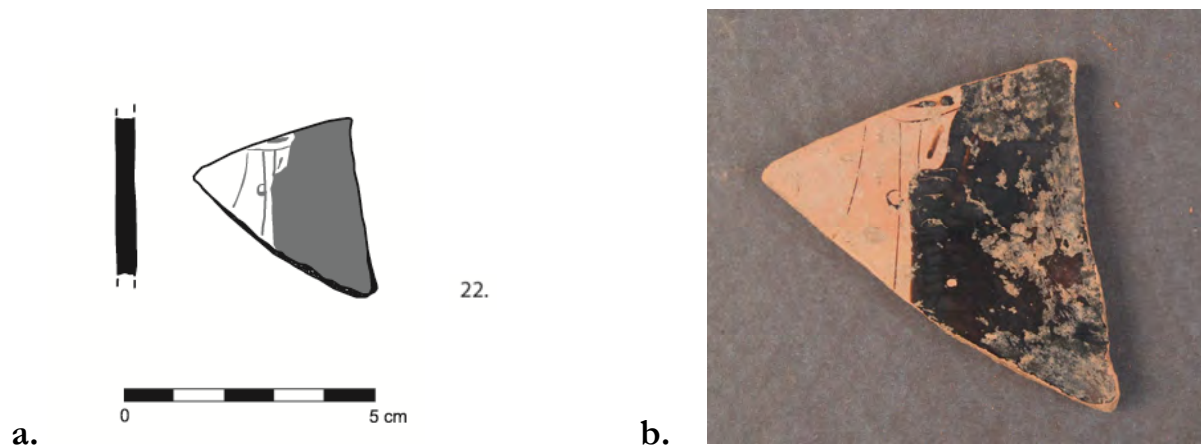


Fig. 12. Wall fragment of red-figured closed shape. (b. Photo by WvdP, not to scale).

Lekanai

In a monograph of the year 2000, G. Lüdorf discusses the class of Attic lekanai, offering a typology that goes beyond the classification in *Agora* XII and XXIX.⁷ To a large extent she bases her observations upon the stratified material excavated in Thorikos since 1963, which was hitherto largely unpublished.⁸ Of the 922 catalogue numbers, no less than 401 (43%) stem from Thorikos. Of these 401 items only 8 offer more or less complete profiles.

Attic lekanai served different functions, mainly in the sphere of the symposium, but also as washing basin, brazier and even potty (Lüdorf 2000, 10-13). This probably explains their wide popularity and also the high numbers of fragments in various archaeological contexts. Already in the survey of the rural deme of Atene, H. Lohmann (1993, 47) observed that lekanai occurred quite regularly in the rural households; also these have been included in the study of Lüdorf.

Lüdorf returned on the vessel shape in a recent contribution discussing pottery production in Attica (Lüdorf 2010, 157-159, pls. 40-41). On the basis of the distribution and occurrence in series of particular rim shapes she postulates, convincingly, a local production of lekanai and other pottery types in or near Thorikos.

⁷ *Agora* XII, 213-216, figs. 15, 21, pls. 86-87, nos. 1754-1843; *Agora* XXIX, 167-168, figs. 66-68, nos. 1090-1105 ("deep bowl, projecting rim"). Lüdorf 2000, see also Fless 2003 and, more critically, Rotroff 2004. In using this study for the present classification of the finds from Cistern No. 1, one is faced with the uneasy feeling that the general framework of her typology is clear, but that the distinctions between one (sub)type or the other are sometimes difficult to follow (see e.g. the discussion with **Cat. 26** and **35**, below). It may well be that minor variations in shape are merely accidental or may be attributed to different potters working in the same tradition and even pottery workshop. In other cases it is clear that a more technological approach in studying the pottery, such as that advocated by the team of H.J. Franken of Leiden University (see Frendo 1988 for a critical discussion of the pros and cons), would have resulted in a more diversified typology. If one compares e.g. the three rim profiles illustrated on pl. 99 (Lüdorf 2000, LR127-129), it is clear that these are the results of three different pottery techniques. Lüdorf however considers them as one rim Form (III 1a).

⁸ Lüdorf 2000, 66-78. Unfortunately, the value of the stratigraphical information is often considered of less importance than the value of the 'typological' date of the item, which is established partly on other grounds; see particularly n. 9-11, below.

Cat. 23: TC10.1 (context T10-3-1), 1 wall fragment with handle root (**Fig. 13**).

Max. diam. 41, PH 5.8; handle section 2.1; reddish glaze in band below handle and brownish glaze 'à-la-brosse' on the inside.

The decoration of this wall fragment with handle is rather typical of lekanai: a painted band below the unpainted handles and handle zone (Lüdorf 2000, 36-37). The decoration scheme is generally dated to the 5th century BCE.

Cat. 24: TC10.55 (context T10-5-2), 1 rim fragment (**Fig. 13**).

Diam. rim 41, PH 3.

Cat. 25: TC10.106 (context T10-8-2), 1 rim fragment (**Fig. 13**).

Preserved diam. rim 32.5, PH 2.3; good quality black glaze on top of rim and on inside.

Cat. 26: TC10.66 (context T10-5-2), 1 rim fragment (**Fig. 13**).

Diam. rim 29, PH 3.2.

Cat. 27: TC10.63 (context T10-5-2), 1 rim fragment (**Fig. 13**).

Diam. rim ?, PH 1.

Cat. 28: TC10.118 (context T10-8-2), 1 rim fragment (**Fig. 13**).

Diam. rim 42, PH 3.9.

The triangular rim of **Cat. 24** belongs to Lüdorf's rim Form X, "Lekannen mit dreikantigem Rand" (Lüdorf 2000, 28). She dates the rim shape generally early, from the late 6th to the first quarter of the 5th century BCE, although the archaeological contexts of some finds, as the Dema House seem to date the rim shape even to the last quarter of the 5th century BCE (on this, Lüdorf 2000, 28, 65). Especially LR499 from the Dema House is close, albeit of smaller dimensions (Lüdorf 2000, 28, 153, pl. 172). Two other parallels come from Athens: LR497 from well Q12:3 in the Agora, dated to 520-480 BCE (Lüdorf 2000, 28, 48-49, 153, pl. 171), and the fully preserved profile of L39 from the Kerameikos, tentatively dated to the first half of the 5th century BCE or even 480-460 BCE (Lüdorf 2000, 16, 28, 89, pl. 30).

For rim **Cat. 25** fairly good parallels may be found in Athens in the (second half of the) 7th, 6th and first quarter of the 5th century BCE. Although the rim edge is broken off, enough is preserved to show that it belongs to rim Form II 1 and lekane Form B of Lüdorf with horizontal handles attached directly to the rim ("Lekannen mit planem Rand und an den Rand angestrichenen Henkeln", Lüdorf 2000, 14-15, 19-20). A Kerameikos ostrakon of Menon dated to 471 BCE is particularly close (LR40: Lüdorf 2000, 19-20, 103, pl. 79), but also LR1 from well M11:3 in the Agora, with finds dated from 650-600 BCE until the early 6th century (Lüdorf 2000, 19-20, 45, 98, pl. 72), and the fully preserved lekane L11 from the 'Eckterrasse' of the Kerameikos, dated to the last quarter of the 6th century BCE (Lüdorf 2000, 14-15, 19-20, 86, pl. 8) may be mentioned as parallels.

The best parallels for **Cat. 26** may be found in the material from Thorikos itself. Its shape is comparable with examples of rim Form II 1, e.g. LR14, a surface find from the Theatre tentatively dated to ca. 500 BCE (TC65.212: Lüdorf 2000, 19-20, 100, pl. 75), LR27, from a layer in the Tower Compound, *insula* 3, Room ASs, with finds probably dating to ca. 500 BCE (TC73.68: Lüdorf 2000, 19-20, 70, 101, pl. 77), and LR73, from upper layers in *insula* 13, tentatively dated to the 4th century BCE (TC69.827: Lüdorf 2000, 20, 74, 106, pl. 84). A separate type distinguished by Lüdorf, rim Form XII, offers a parallel (LR506 from *insula* 4 House 5 room KU), tentatively

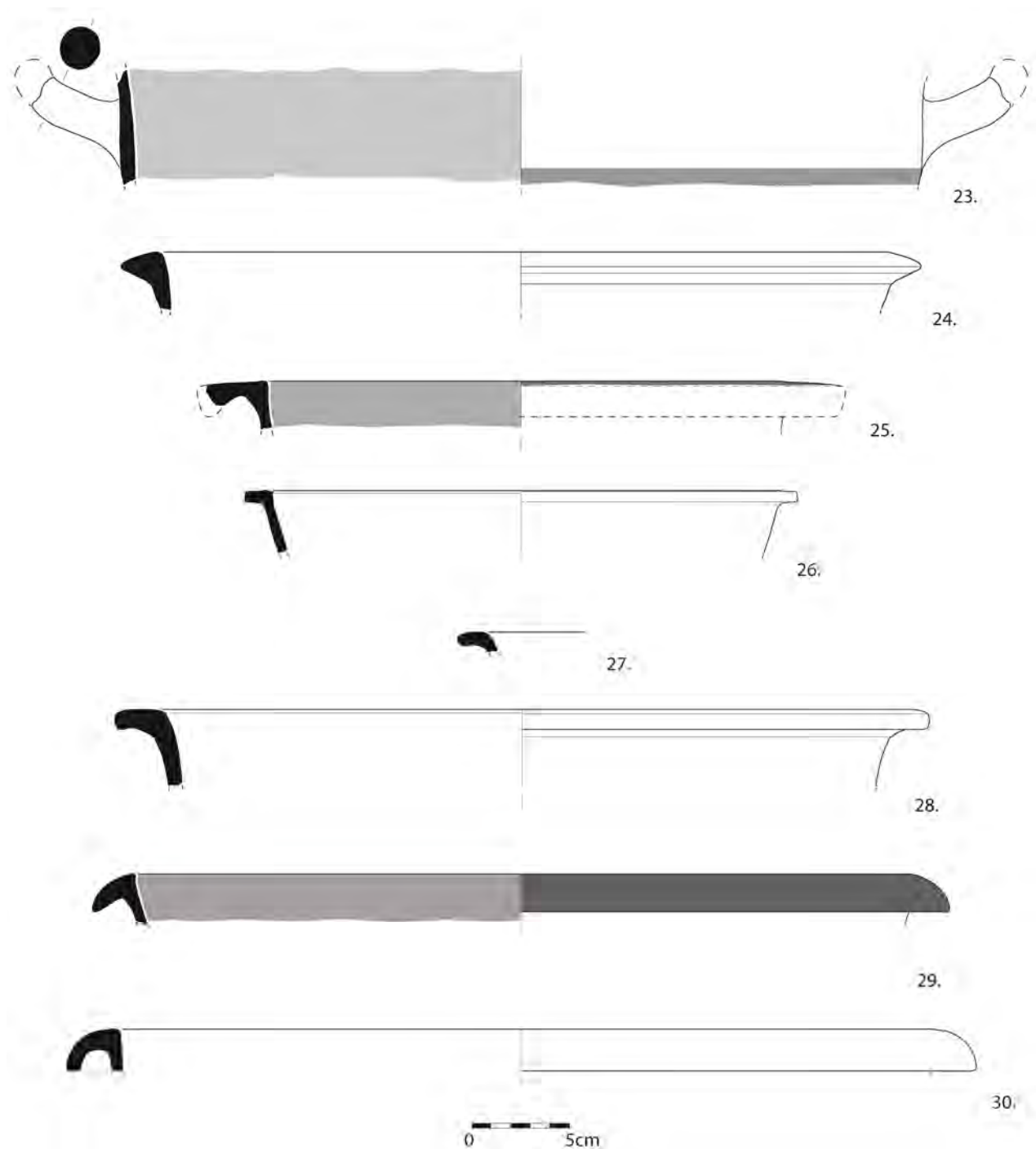


Fig. 13. Lekanai.

dated to the first half of the 5th century BCE (TC73.427: Lüdorf 2000, 28, 72, 154, pl. 173). The differences with rims of Form II 1 appear to be slight, however; the apparent distinctive feature of a rounded tendency of the upper rim surface is hardly noticeable, at least in the example of LR506.

Also the rims of **Cat. 27** and **28** find parallels in rim Form II 1. The former may be confronted with an example of rim Form II 1b from Thorikos, LR74, found in the upper layers of *insula* 13, Room HG and tentatively dated to the 4th century BCE

(TC69.774: Lüdorf 2000, 20, 74, 106, pl. 84). **Cat. 28** is similar to rim LR26, a surface find from Thimari, which is tentatively dated to *ca.* 500 BCE (Lüdorf 2000, 19-20, 101, pl. 77). It may, however, also be compared with rim LR461 of Form VI from Thorikos, found in sondage 6 of the Theatre and tentatively dated to the first quarter of the 5th century BCE (TC63.323: Lüdorf 2000, 26-27, 75, 149, pl. 160).

Cat. 29: TC10.39 (context T10-5-2), 1 rim fragment (**Fig. 13**).

Diam. rim 44, PH 2.7; good black glaze on top of rim, thinner on in- and outside.

Cat. 30: TC10.40 (context T10-5-2), 2 joining rim fragments (**Fig. 13**).

Diam. rim 47, PH 2.

Cat. 31: TC10.76 (context T10-5-2), 1 rim fragment (**Fig. 14**).

Diam. rim 48, PH 2.7; brownish glaze on top of rim and on inside.

Cat. 32: TC10.108 (context T10-8-2), 1 rim fragment (**Fig. 14**).

Diam. rim 48, PH 2.4; brown glaze on inside, probably also on top of rim, but worn off.

Cat. 33: TC10.68+73 (context T10-5-2), 2 joining rim fragments (**Fig. 14**).

Diam. rim 44, PH 3.4; reddish glaze on top of rim and on inside.

Cat. 34: TC10.56 + TC10.79 (context T10-5-2), 1 rim fragment and 1 not-joining wall fragment (**Fig. 14**).

Diam. rim 41, PH 2.5; good black glaze on top of rim and on inside; outside smoothened red.

Cat. 35: TC10.105 (context T10-8-2), 1 rim fragment (**Fig. 14**).

Diam. rim 40, PH 2.7; red glaze on top of rim and on inside.

The seven rims **Cat. 29-35** belong to variants of the most common lekane rim shapes of the 5th century BCE, rim Form III. The first four, **Cat. 29-32**, belong to Lüdorf's rim Form III 1a, although **Cat. 29** has not (yet?) the canonical inverted U-shaped rim profile; it is rather of an inverted V-shape. It finds a good parallel in LR129 from Thorikos *insula* 3 Shop GF, stratigraphically dated to the first quarter of the 5th century BCE.⁹ The other three show the fully-fledged inverted U-shaped profile. For **Cat. 30-31** several good parallels come into question; a good one may be found in LR148 from Thorikos 'House 2' in the Theatre area, Room P, tentatively dated to the second quarter of the 5th century BCE (TC75.459: Lüdorf 2000, 22-23, 76, 115, pl. 103). Also for **Cat. 32** several parallels may be found, of which three from Thorikos are mentioned: LR155 from Sondage 4 in the Theatre, tentatively dated to the second quarter of the 5th century BCE (TC63.974: Lüdorf 2000, 22-23, 75, 115, pl. 105), LR179 from *insula* 4 House 5 Room KB, also tentatively dated to the second quarter of the 5th century BCE,¹⁰ and LR192 from a layer in *insula* 11 House 1 Room U, containing material dated to the time span 460-400 BCE.¹¹

⁹ TC71.206: Lüdorf 2000, 22-23, 69, 113, pl. 99; see also n. 8 above. The layer itself contains material that spans the whole first half of the 5th century BCE, however (Lüdorf 2000, 69).

¹⁰ TC71.965: Lüdorf 2000, 22-23, 72, 118, pl. 109. The layer itself contains both Archaic material and finds dating to within the second half of the 5th century BCE, however (Lüdorf 2000, 72).

¹¹ TC86.59: Lüdorf 2000, 22-23, 73, 119-120, pl. 112. The indications on the dating of this piece are particularly unclear: (p. 73) the finds in "Lehmschicht I" date to the period 460-400 BCE; the date (of the lekane rim) is – typologically – indicated as 5th/4th century BCE; on p. 120 the date is given as late 5th/early 4th century BCE (460-400 BCE).

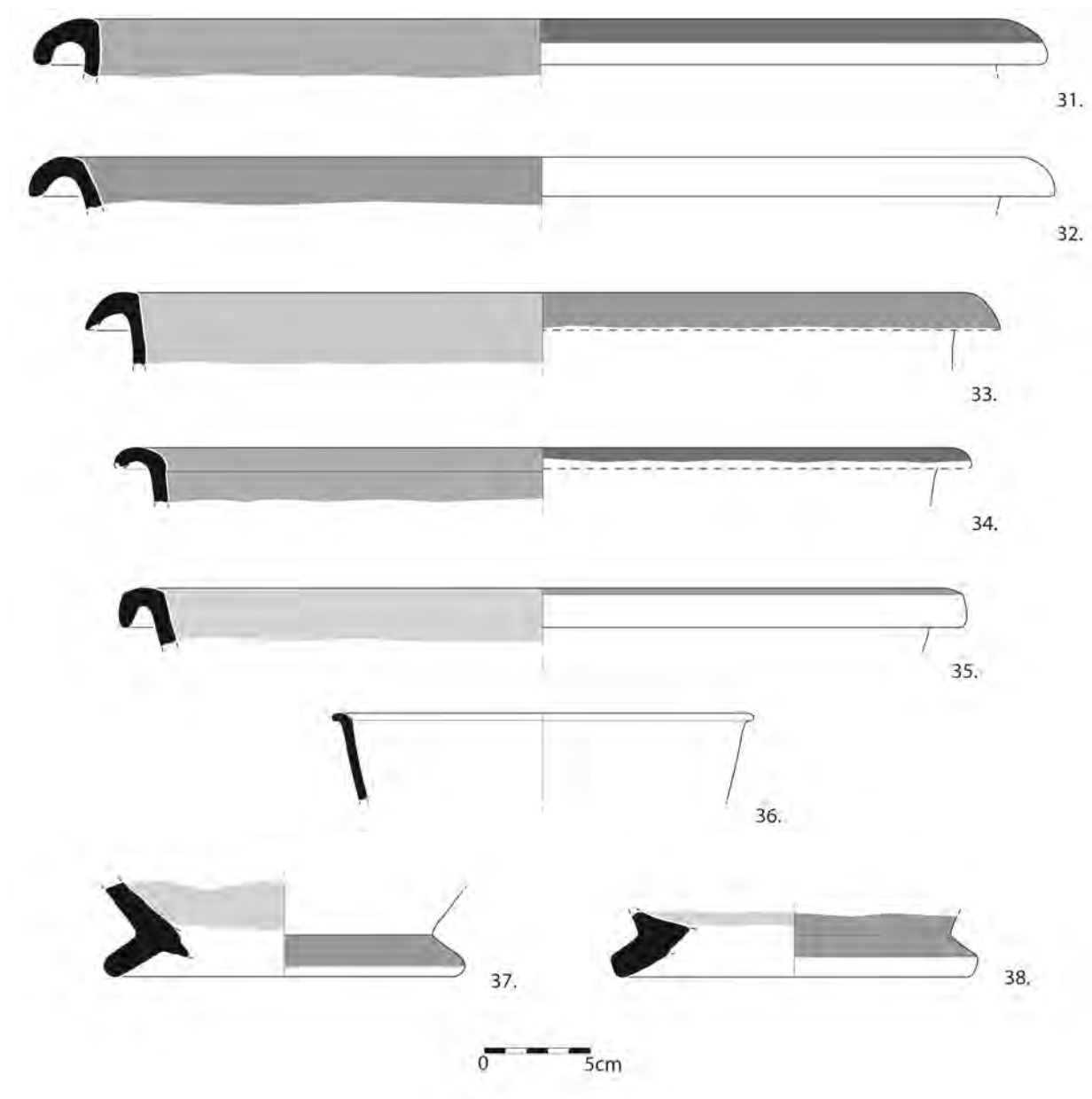


Fig. 14. Lekanoi.

The two rims of **Cat. 33-34** find rather good parallels in examples of Lüdorf's rim Form III 2c. Two comparisons from the Theatre excavations in Thorikos are tentatively dated to the last quarter of the 5th century BCE. For **Cat. 33** one may refer to LR400, found in Sondage 6 (TC63.333: Lüdorf 2000, 25-26, 75, 142, pl. 148) and for **Cat. 34** to LR422, a surface find from Sondage 5 (TC63.638: Lüdorf 2000, 25-26, 75, 145, pl. 152).

It is particularly in looking for comparisons for the last rim fragment **Cat. 35** that one touches upon the limitations of Lüdorf's lekane typology. It may be compared with three rims from Thorikos that G. Lüdorf assigns to three different shapes within rim Form III: LR149 of rim Form III 1a, from 'House 2' in the Theatre area, Room P, tentatively dated to the second quarter of the 5th century BCE (TC75.457: Lüdorf 2000, 22-23, 76, 115, pl. 103), LR363 of Form III 2b, a surface find, tentatively dated

to the 4th century BCE (TC63.295: Lüdorf 2000, 25, 77-78, 138, pl. 141), and LR396 of rim Form III 2c, from Sondage 6 in the Theatre, tentatively dated to the last quarter of the 5th century BCE (TC63.329: Lüdorf 2000, 25-26, 75, 142, pl. 147).

Cat. 36: TC10.144 (context T10-8-3), 1 rim fragment (**Fig. 14**).

Diam. rim 20, PH 4; import?

As for the Plain Ware rim **Cat. 36** with its remarkably small diameter of 20cm, no exact confrontations in the published record of lekanai could be found, although a rather late rim may be mentioned. The Plain Ware rim fragment LR317 of rim Form III 1d from well G13:4 of the Athenian Agora, dated to 340-275 BCE, is comparable, although slightly more flaring (Lüdorf 2000, 24, 56-57, 133, pl. 131). Its diameter is exactly twice that of **Cat. 36**.

Cat. 37: TC10.111 (context T10-8-2), 1 base fragment (**Fig. 14**).

Diam. base 17, PH 4.3; reddish glaze in band on outside foot; brownish red glaze on inside.

Cat. 38: TC10.104 (context T10-8-2), 1 base fragment (**Fig. 14**).

Diam. base 17.5, PH 3.1; reddish glaze on outside foot, body, and on inside; underside of foot smoothed brownish; local?

Cat. 39: TC10.109 (context T10-8-2), 1 base fragment (**Fig. 15**).

Diam. base 17.5, PH 2.8; red glaze on outside foot and body; local?

Cat. 40: TC10.117 (context T10-8-2), 1 base fragment (**Fig. 15**).

Diam. base 12, PH 2.5.

Cat. 41: TC10.113 (context T10-8-2), 1 base fragment (**Fig. 15**).

Diam. base 16.5, PH 4.6.

Five bases may be attributed to lekanai (**Cat. 37-41**). Although **Cat. 37** finds a good comparison in LB9, a surface find from Thimari, tentatively dated to the last quarter of the 6th and the first quarter of the 5th century BCE and belonging to the earliest foot Form 1a (Lüdorf 2000, 29, 162, pl. 177), it is more likely that it may be linked with examples of foot Form 2c as LB35, an ostrakon from the Athenian Kerameikos dated to 471 BCE (Lüdorf 2000, 30, 165, pl. 180). The decoration scheme of **Cat. 37** with one painted band on the exterior of the foot seems to be characteristic for lekanai of the 5th century BCE (Lüdorf 2000, 36). Also **Cat. 38** may be linked with examples of foot Form 2c as LB35 and LB36, both of which are ostraka of Megakles Hippokratous dated to 471 BCE (Lüdorf 2000, 30, 165, pl. 180). The foot decoration of LB36 is even identical to that of **Cat. 38**. A general date in the first half of the 5th century BCE seems plausible.

The best comparison for **Cat. 39** is found in foot Form 2b, LB 34 from *insula* 4 House 5, room KB in Thorikos, dated stratigraphically to the second quarter of the 5th century BCE (TC73.372: Lüdorf 2000, 30, 72, 165, pl. 180). A surface find from Thimari, LB26 of foot Form 2a tentatively dated to *ca.* 500 BCE, is also close in shape but seems to be shorter than **Cat. 39** (Lüdorf 2000, 30, 164, pl. 179). Foot Form 2b generally dates to the last two decades of the 6th and the first half of the 5th centuries BCE. In all fully preserved lekanai, feet of Form 2b belong to lekanai of Types C1 and C2 and are combined with thickened, rounded and sometimes triangular lekane rims, e.g. of Form X (see here, **Cat. 24**).

The Plain Ware base fragment **Cat. 40** finds good parallels in foot Form 2a and 2c. A surface find from Thimari, LB24 of foot Form 2a tentatively dated to *ca.* 500 BCE, is close in shape and dimensions (Lüdorf 2000, 30, 164, pl. 178). Also the Plain Ware base fragment LB38 of foot Form 2c, found in well H6:5 of the Athenian Agora and dated to 470-460 BCE, is comparable (Lüdorf 2000, 30, 51, 166, pl. 180).

The Plain Ware base fragment **Cat. 41** may generally be attributed to feet of Form 3. As comparison LB47 of foot Form 3a may be mentioned, a find from Thorikos tentatively dated to the first quarter of the 5th century BCE (TC63.355: Lüdorf 2000, 31-32, 77-78, 167, pl. 181). Undecorated feet seem to be rare within foot Form 3a, however. Also LB132 of foot Form 3d, an ostrakon of Megakles Hippokratous found in the Athenian Kerameikos and dated to 471 BCE, is close in shape (Lüdorf 2000, 34-35, 176, pl. 192). Most examples of foot Form 3d are dated to the first half of the 5th century BCE and seem to occur on the large lekanai of Type D with the typical inverted U-shaped lekane rim profiles (see here, **Cat. 30-35**).

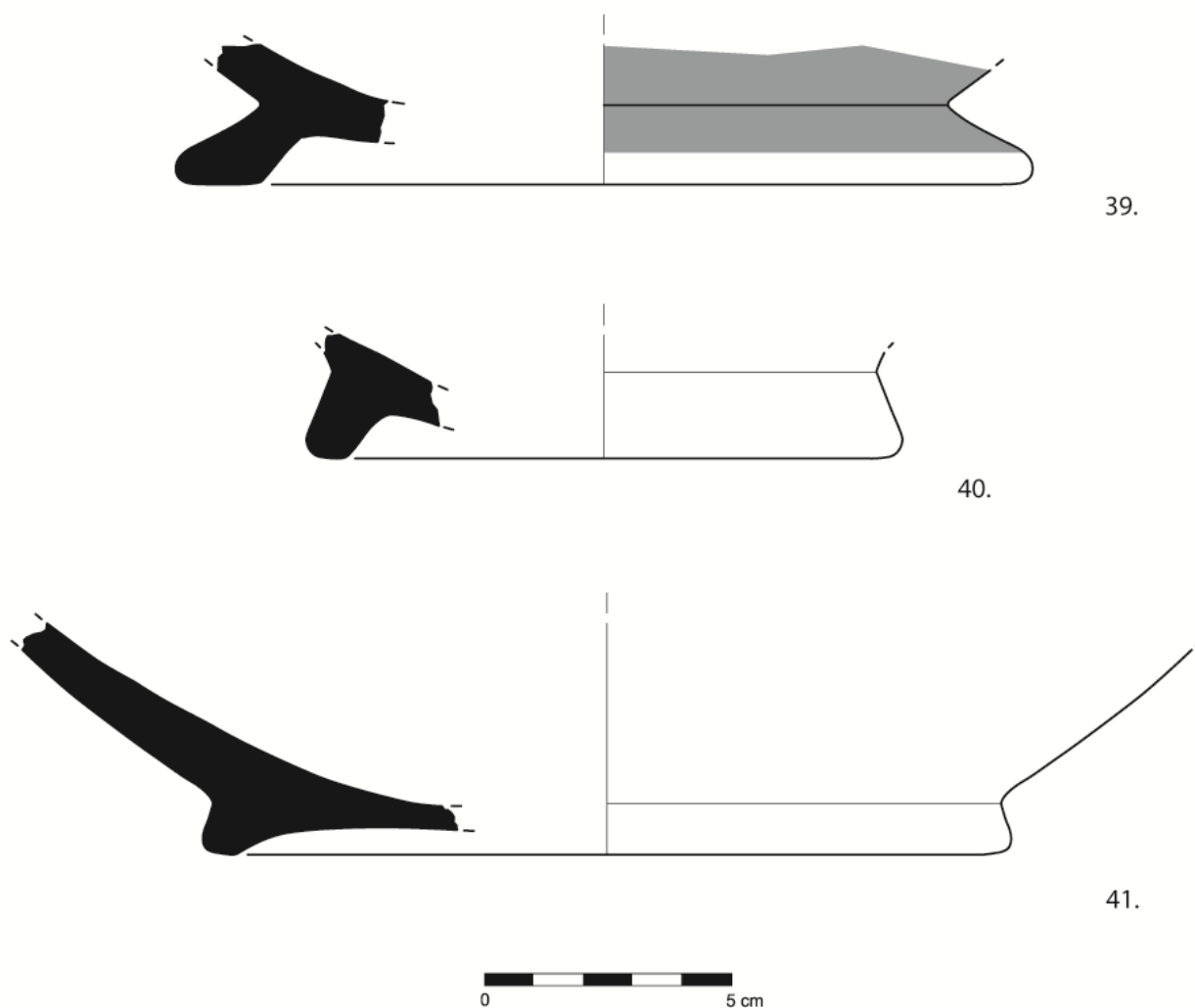


Fig. 15. Lekanai bases.

Lekane?

Cat. 42: TC10.43 (context T10-5-2), 1 base fragment (**Fig. 16**).

Diam. base 14, PH 1.3.

It is not certain that this flat base fragment belonged to a lekane. The closest parallel is lekane base LB134 of Form 3d, a surface find tentatively dated to the first quarter of the 5th century BCE, but that one still has a slightly hollow base (Lüdorf 2000, 34-35, 176, pl. 192). Since the wall inclination of **Cat. 42** has not been preserved, a general date in the second half of the 5th and the whole 4th century BCE seems plausible.

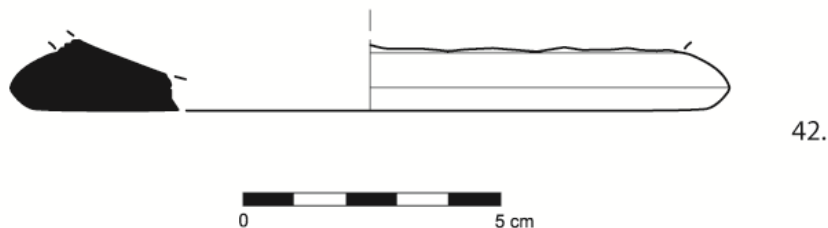


Fig. 16.

Spindle whorl

Cat. 43: TC10.173 (context T10-10-3), 1 spindle whorl (**Fig. 17a-b**).

Max. diam. 4, H 3.2; black glaze in traces.

A comparable, but Corinthian black-figure spindle whorl has been published from Washery 1 (room AN) of *insula* 1 in Thorikos (TT64.12; Mussche 1967a, 60, fig. 61; Mussche 1978, 60, fig. 79). It has been dated to the last quarter of the 7th century BCE and has a comparable height of 3.6cm. The Thorikos database¹² lists 36 more spindle whorls of different chronologies, of which apparently 6 with full black glaze and 12 with black glaze or painted decoration. A similar, glazed spindle whorl has been published from a deposit of the second and third quarters of the 5th century BCE in the Athenian Agora (Rotroff, Oakley 1992, 34, 128, pl. 61, 371). It is more concave in its upper profile, however, and with a height of 4.5cm slightly larger.¹³ The authors refer to a very similar spindle whorl, both in glazing and shape, from a mid-5th century BCE well in the Athenian Agora (Boulter 1953, 112, pl. 41, 188). It has a preserved height of 3.5cm. The Athenian Agora excavations have given published evidence of several more examples.¹⁴ The largest sample of these spindle whorls, however, has been found as dedications of women in the Sanctuary of the Nymphs in Athens.¹⁵ Equally from an Attic sanctuary site, and likewise as a votive, one may mention a black-figure spindle whorl from Loutsas (Kalogeropoulos 2010, pl. 43, 3). The date of **Cat. 43** may be set in the 6th or first half of the 5th century BCE on the basis of the published comparisons.

¹² The Thorikos Database in Access 2000 format has been made by K. Van Gelder, based upon older databases, and was last updated on 20.2.2002. In 2009, starting from this database, W. van de Put made a spreadsheet for data input during the excavations, which will be integrated in the general Thorikos Database.

¹³ MC1223. A second, similar one from the same deposit (MC1224) is not illustrated but apparently smaller.

¹⁴ Sparkes, Talcott 1951, fig. 57 (MC250, MC373, MC781, MC937-938, MC948); Rotroff, Lamberton 2005, 32-34, fig. 37 (MC365, MC373, MC938, MC948).

¹⁵ Pandermalis *et al.* 2011, 6-7 with pl.

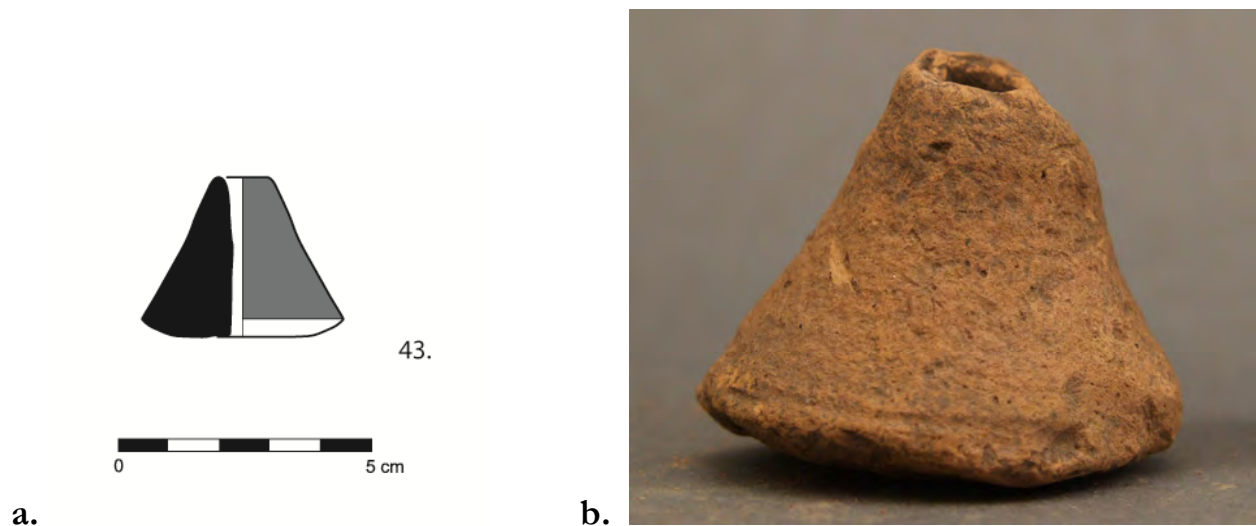


Fig. 17. Spindle whorl. (b. Photo by WvdP, not to scale).

Undecorated Wares (Cooking, Plain and Coarse Wares)

The previous publications of Thorikos frequently used the label ‘Domestic Pottery’ to designate all Plain and Cooking Wares, but also some semi-decorated wares as the *lekanai* discussed above.¹⁶ In the frame of the present contribution it is preferred to use the more precise labels of the different wares. These Coarse, Plain, and Cooking Wares make up of the bulk of the finds encountered in the excavations in Thorikos, but have only rarely been published in the (preliminary) reports for their own sake or as a meaningful part of the archaeological context.¹⁷ No more than 26 undecorated vessels from the first seven campaigns have been published in the first six preliminary volumes (*Thorikos* I-VI; Bronze Age not included), more from graves than from the settlement.¹⁸ This is an extremely low number in comparison with the figured and otherwise decorated wares, which comprise 94% of all published items (411). Essentially, this lack of attention for undecorated wares was not unlike the publication practise elsewhere in Greece at the time (but see e.g. Boulter 1953).

¹⁶ This usage is very much in line with the conventional designation ‘Household Ware’ of the Athenian Agora excavations, cf. *Agora* XII, esp. 34.

¹⁷ See also Fless 2003, 469. The general proportions of (semi-)decorated wares and undecorated wares in Thorikos (*infra* 120-121) are very much in line with those encountered in the rural deme of Atene, Lohmann 1993, 47 (“Selbst Schwarzfirnisware ist selten, die Hauptmasse der Keramik besteht aus Gebrauchsgeschirr.”).

¹⁸ See Servais 1968, 52, figs. 26-27 (pithos TC63.1063), Bingen 1968, 60-61, 67, 70-71, 73, figs. 43-44, 62-64, 76-77, 84 (jars TC63.4, TC63.15, TC63.24, hydria TC63.1); Bingen 1967a, 42-43, fig. 35 (amphora TC64.370); Hackens 1967a, 83-84, 86, 99-100, figs. 76, 82, 107-108 (amphorae TC63.1061, TC64.682; bowl TC63.182; basin TC64.1); Bingen 1967b, 38, 55, figs. 43, 67 (pithos TC65.882; basin/sarcophagus TT65.16); Mussche 1967b, 60, 68, figs. 71, 91 (chytra TC65.812; amphora TC65.880); Mussche 1968, 96, fig. 123 (amphora TC63.117); Hackens 1967b, 86, fig. 120 (chytra TC65.562); Bingen 1969, 106, 110, 113-114, 119, figs. 119-120, 122, 129, 140-141 (handmade jugs TC66.226, TC66.225; amphora TC66.181; chytra TC66.320, pyxis TC68.226); Mussche 1969, 123-124, figs. 130-131 (chytra TC66.70); Mussche 1971, 121, fig. 76 (lamp TC68.294 = Blondé 1983, 50, cat. 1, fig. 1); Bingen 1973, 7, fig. 1 (chytra TC69.126); Mussche 1978, 60, fig. 79 (spouted chytra TC68.1004); Devillers 1988, 70-71 (chytra TC63.1630 and lopas TC63.1634).

The publication strategy changed with *Thorikos* VII, when representative selections of the archaeological contexts, also containing undecorated wares, were published in the preliminary reports, mainly under the authorship of P. Spitaels.¹⁹

The publication of entire archaeological contexts by Spitaels and others has by necessity resulted in the presentation of the undecorated finds from these contexts. But even in these cases, the ritual and funerary character of these contexts dictate the (low) proportions of their undecorated contents. In 1988, M. Devillers published the finds from a votive deposit dating from the 7th until the late 4th century BCE in the Mycenaean Grave no. 1 on the Acropolis of the Velatouri hill. Among the selection of 406 items, she included only two undecorated ones.²⁰ Also in the second final report of the excavations of Thorikos, H. Mussche published 15 more undecorated vessels, of which four without illustration, mainly stemming from the theatre necropolis, which was published by him for the first time in a more or less coherent way.²¹

The publication of individual material classes has also included undecorated items, as in the monograph on the lamps from Thorikos (Blondé 1983), in which 21 undecorated items were included, against 257 glazed ones (so 7.6%).²² It is also when provided with a graffito, dipinto or a stamp that some of the undecorated wares received more attention. In the third final report D. Vanhove (re-)published 86 of such vessels and fragments (against 146 decorated and semidecorated ones, so 37%).²³ In both cases, however, these numbers and percentages would more realistically reflect historical realities of the distribution of decorated vs undecorated wares.

Few and mainly short monographic studies have been devoted to the Plain, Cooking and Coarse Wares from Thorikos: on beehives²⁴ and a Late Archaic/Early Classical relief-decorated basin relating to a pithos from Legrena and other relief wares from

¹⁹ 24 against 112 figured and (semi-)decorated fragments (18%): Spitaels 1978, 70, 72-73, fig. 29 (jug, kadoi, hydria TC68.513, TC71.581, TC68.592, TC68.593, TC68.594), 80-83, figs. 39-40 (jugs, chytrai, kadoi TC73.34, TC73.35, TC73.36, TC73.91, TC73.92, TC73.93, TC73.94, TC73.95, TC73.96, TC73.97, TC73.98, TC73.99), 86-87, fig. 44 (pithos TC73.79), 92-93 (pithoi TC66.293, TC66.294); 100-101, figs. 57-58 (amphora, chytra TC68.536, TC68.570); 103-105, figs. 60-63 (Late Roman amphorae TC73.186, TC73.187).

²⁰ Devillers 1988, 70-71, cat. 405-406 (chytra TC63.1630; lopas TC63.1634); on the composition, see also Stissi 2002, 236, 250, table XVI.8.

²¹ Mussche 1998, 74, 166, fig. 160 (lekanis TC64.268), 76, 168, fig. 171 (tile TC78.27), 77, 171, figs. 183-184 (chytra TC85.01), 78, 172, figs. 178-188 (hydria TC85.05), 78, 174-174, figs. 189-190 (hydria TC85.08), 78, 174-175, figs. 191-192 (pithos TC85.21), 78, 176, fig. 193 (storage bin TC85.24), 79, 177, fig. 197 (amphora TC85.47), 79, 178, fig. 200 (miniature cup TC85.50), 180-181, figs. 210-211, 213 (amphora TC85.63), 83 (hydria TC88.55), 83 (jug? TC88.56), 84 (chytrai TC88.57 and TC88.58), 85, 189, fig. 246 (miniature jug TC88.71).

²² Of these, two had already been published in a preliminary way, Blondé 1983, 50-52, cat. 1, 12-13, figs. 1-2, pl. 1 (TC68.294, TC68.960, TC68.588).

²³ Vanhove 2006, based upon earlier preliminary publications and manuscripts: Bingen 1967a, 42-43, fig. 35 (amphora TC64.370); Mussche 1969, 128, figs. 159-160 (amphorae TC66.121, TC66.143); Mussche 1971, 116, fig. 70 (amphora TC68.232); Spitaels 1978, 100-101, fig. 58 (amphora TC68.536); Bingen 1978, 174-179, figs. 94, 97, 102 (amphorae TC71.77 [erroneously as TC71.774], TC71.717, TC72.201); Monsieur 1989; Mussche 1998, 76, 168, fig. 171 (tile TC78.27).

²⁴ Jones 1990. TC63.168, TC69.284, TC77.95. See also Mussche 1990, 59, cat. 124 for TC69.284 (Roman); Lüdorf 1998/1999, 58, 62, 87 (B19, B21). On the graffito of TC69.284, see Vanhove 2006, 62-63, 199, figs. 241-242.

Attica and its immediate surroundings.²⁵ A southeastern Attic origin for the basin and pithoi from Thorikos could be established by petrographical analyses (De Paepe 1979a; Helsen 1978, 167-168).²⁶ A similarly short contribution discussed two 4th and early 3rd century BCE cooking vessels from Thorikos.²⁷ The main contribution of the Thorikos excavations to the knowledge of Coarse, Plain and Cooking Ware pottery in Attica, undeniably, lies in the domain of petrographic studies (De Paepe 1979a, 1979b). It could be shown that the Coarse and Plain Wares may principally have originated in local production centres, whereas Cooking Wares were imported from the Saronic Gulf area (mainly Aegina) and the Southern Cyclades.

Closed vessels in Cooking Ware

Cat. 44: TC10.5 (context T10-3-2), 1 rim fragment (**Fig. 18**).

Diam. rim 12, PH 2.2; volcanic inclusions; import.

Cat. 45: TC10.6 (context T10-3-2), 1 rim fragment (**Fig. 18**).

Diam. rim 26, PH 1.6; volcanic inclusions; import.

Cat. 46: TC10.72 (context T10-5-2), 1 rim fragment (**Fig. 18**).

Diam. rim 24?, PH 1.4; import.

The rim fragment **Cat. 44** finds a good parallel in a context from room ASnw in the Tower Compound excavations of Thorikos (Spitaels 1978, 80-81, fig. 39,59). The material in the context is dated to the 6th century and the first two decades of the 5th century BCE. The rim of that jug (TC73.36) also has a diameter of 12cm. The same context yielded a good parallel for **Cat. 45**, possibly of a kados (Spitaels 1978, 80-81, fig. 60), although with a smaller rim diameter (*ca.* 18cm) than **Cat. 45**. Similar rims are illustrated for kadoi from the Athenian Agora excavations (*Agora* XII, 202, 349, pl. 72, fig. 17, nos. 1607, 1610), but are also attested for chytrai (*Agora* XII, 372, pl. 93, no. 1932). Especially the latter chytra with a rim of 20cm and a date of 330-305 BCE, as well as a kados, dated to between 460 and 440 BCE, and provided with a rim of 22cm (*Agora* XII, 201-203, 349, pl. 72, fig. 17, no. 1607), come close in diameter. Also rim **Cat. 46** may be connected with kadoi, although no exact parallel could be found.

Cat. 47: TC10.60 (context T10-5-2), 1 base fragment (**Fig. 18**).

Diam. base 16, PH 2; secondarily burned; import.

Cat. 48: TC10.62 (context T10-5-2), 1 base fragment (**Fig. 18**).

Diam. base 13, PH 2.9; secondarily burned; import.

Cat. 49: TC10.112 (context T10-8-2), 1 base fragment (**Fig. 18**).

Diam. rim 11, PH 2.5; import.

Cat. 50: TC10.119 (context T10-8-2), 1 base fragment (**Fig. 18**).

Diam. base 8, PH 2; import.

²⁵ Helsen 1978: basin TC68.1108. Other comparisons for the decorative motifs in Thorikos are mentioned and illustrated in the article: TC63.825, TC66.293, TC66.294, TC68.613a, TC68.534, TC70.159, TC70.161, TC75.24. A fragment of a pithos decorated with the aid of the same seal has been published from the Kythnos Survey, Mazarakis Ainian 1995, 200-201, fig. 45,7; Mazarakis Ainian 1996, 271-272, fig. 29; Mazarakis Ainian 1998, 375-376. We thank the author for kindly providing the full bibliographical references.

²⁶ Mazarakis Ainian (see previous footnote) suggested that the seal with which the Thorikos basin and the Kythnos pithos had been decorated originated in Kythnos, given the sharpness of the details in the fragment found there. This does not contradict the findings of De Paepe, since the geology of Kythnos may well be related to that of southeastern Attica, or the seal may have travelled from Kythnos at a later stage.

²⁷ Straetman 1994 (TC69.126 and TC66.70); also Bingen 1973, 7, fig. 1 (TC69.126).

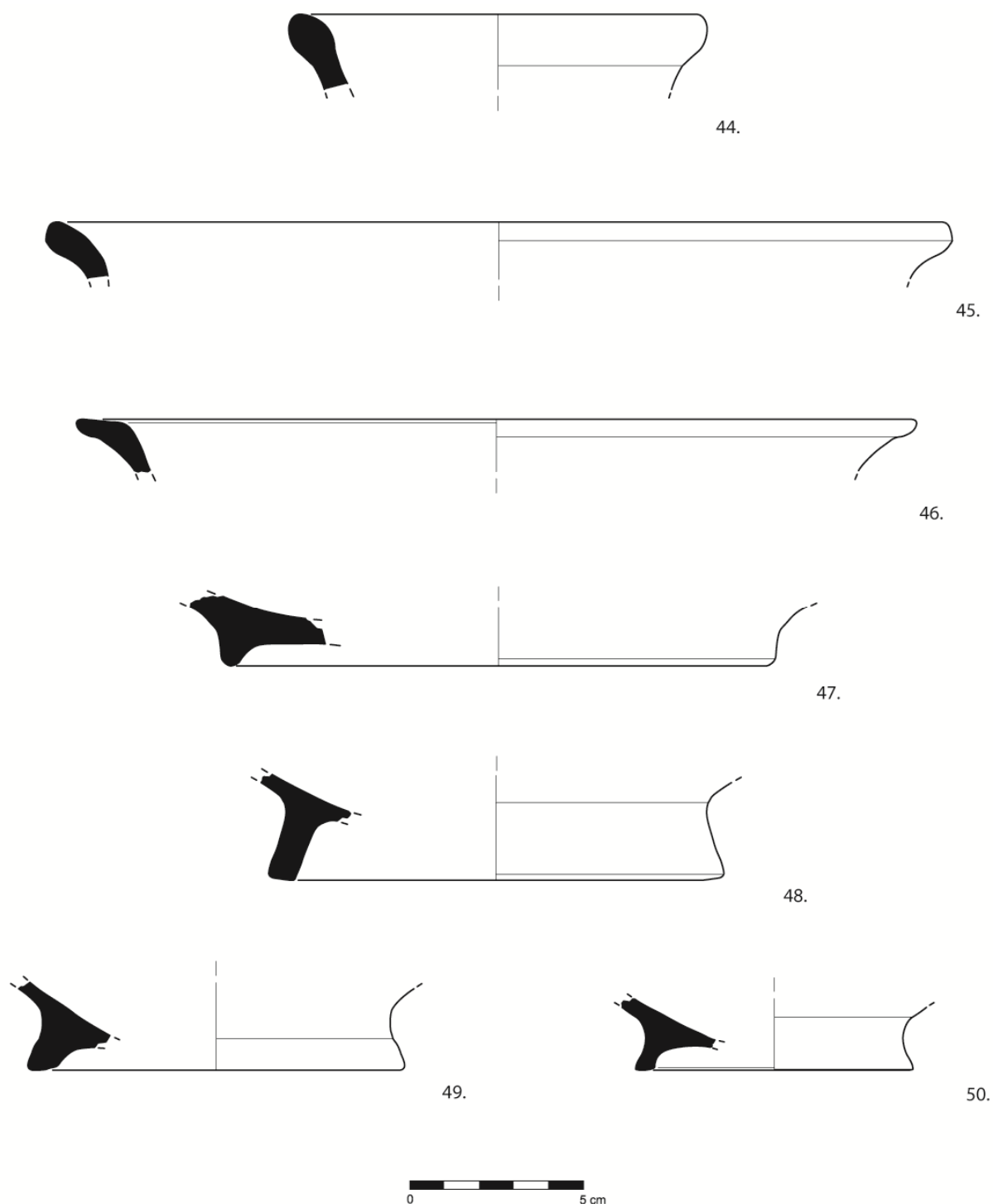


Fig. 18. Closed vessels in Cooking Ware.

The context from Thorikos mentioned above (with **Cat. 44-45**) also yielded a good parallel for the base of **Cat. 47** (Spitaels 1978, 82-83, fig. 40,65: TC73.95). With its base diameter of *ca.* 18cm, it also comes close in dimensions.

The high ring foot of **Cat. 48** most probably is to be attributed to a hydria, as e.g. the piece from the Athenian Agora (*Agora* XII, 200-201, 348, pl. 71, fig. 17, no. 1596), dated to *ca.* 425-400 BCE, and in Thorikos the hydria from a possible jar burial in the

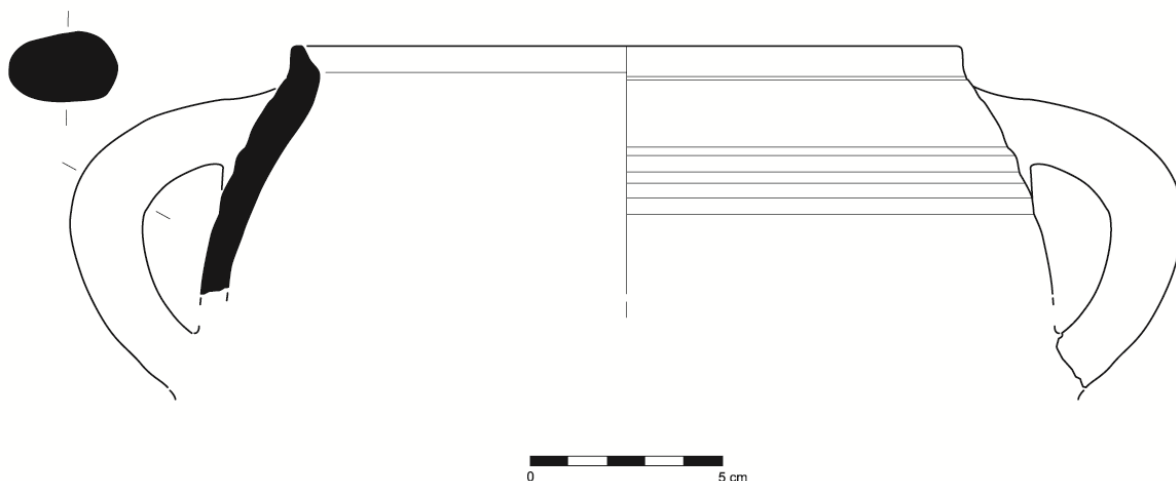
Theatre necropolis (TC85.8; Mussche 1998, 173-174, figs. 189-190). **Cat. 49-50** find less convincing parallels in the published record, although the ring foot of a kados in the Athenian Agora probably dated to 500-480 BCE (*Agora* XII, 202, pl. 72, fig. 17, no. 1603) is reminiscent.

Late Antique cooking pot

Cat. 51: TC10.160 (context T10-15-1), 4 joining rim fragments with handle (**Fig. 19a-b**).

Diam. rim 16, PH 9, handle section 1.8x2.7; import; secondarily burned on lower part, from the middle of the handle down.

The cooking pot does not find any parallel in the published repertoire of cooking vessels of Late Archaic to Early Hellenistic date in Thorikos, neither morphologically nor from a material point of view. It may belong to a class of cooking pots of the 'Corinth/Mitello' type, that seem to have been produced in the Otranto region (Arthur 2010, 80-81, 85, fig. 5), but apparently also in Athens (Saraga 2004). These date to the 7th and 8th centuries CE, but may have started already in the late 6th century CE.²⁸



a.



Fig. 19b. Photo by WvdP (not to scale).

²⁸ Laboratorio di Archeologia Medievale s.d.

Table amphorae

Cat. 52: TC10.69 (context T10-5-2), 1 rim fragment (**Fig. 20**).

Diam. rim 12, PH 2.1.

Cat. 53: TC10.75 (context T10-5-2), 1 rim fragment (**Fig. 20**).

Diam. rim 8, PH 1.7.

The rim shape of **Cat. 52** finds a good parallel in a table amphora from the Athenian Agora (*Agora* XII, 187, 337, no. 1445, fig. 12, pl. 60) found in a context of 500-480 BCE. Although that one is painted on the inside and even on the exterior of the rim, it appears that many examples are unpainted as the present one from Thorikos. For the other rim, **Cat. 53**, no good published parallel could be found.

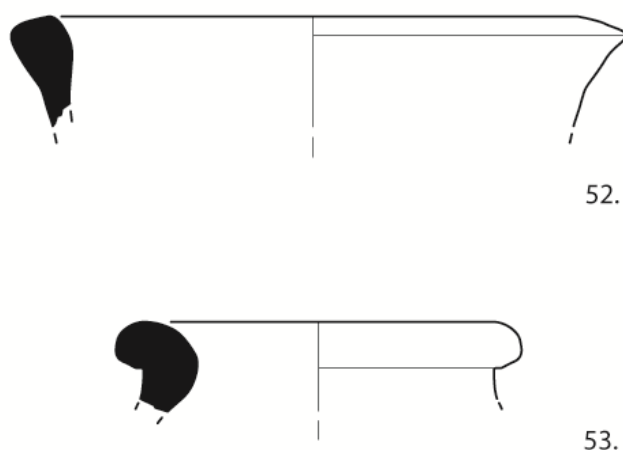


Fig. 20.

Olpe

Cat. 54: TC10.74 (context T10-5-2), 1 rim fragment (**Fig. 21**).

Diam. rim 6, PH 0.8.

The rim appears to have belonged to an olpe, like several ones that have been published from the Athenian Agora (*Agora* XII, 77-78, 254, nos. 252, 260, 264, fig. 3, pls. 12-13), dated to *ca.* 550 and 500 BCE respectively.

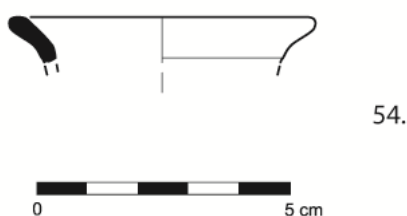


Fig. 21.

Jugs

Cat. 55: TC10.65 (context T10-5-2), 1 base fragment (**Fig. 22**).

Diam. base 12.4, PH 1.7.

Cat. 56: TC10.116 (context T10-8-2), 1 handle fragment (**Fig. 22**).

PH 8.8, handle section 1.4x3; import?

Cat. 57: TC10.123 (context T10-8-2), 4 joining rim fragments with handle root (**Fig. 22**).

Diam. rim ?, PH 8, handle section 1.2x2.5.

Cat. 58: TC10.158 (context T10-15-1), 1 handle fragment (**Fig. 22**).

PH 4.7, handle section 1.1x3.

Cat. 59: TC10.178 (context T10-17-4), 1 base fragment (**Fig. 22**).

Diam. base 4, PH 3.7; local?

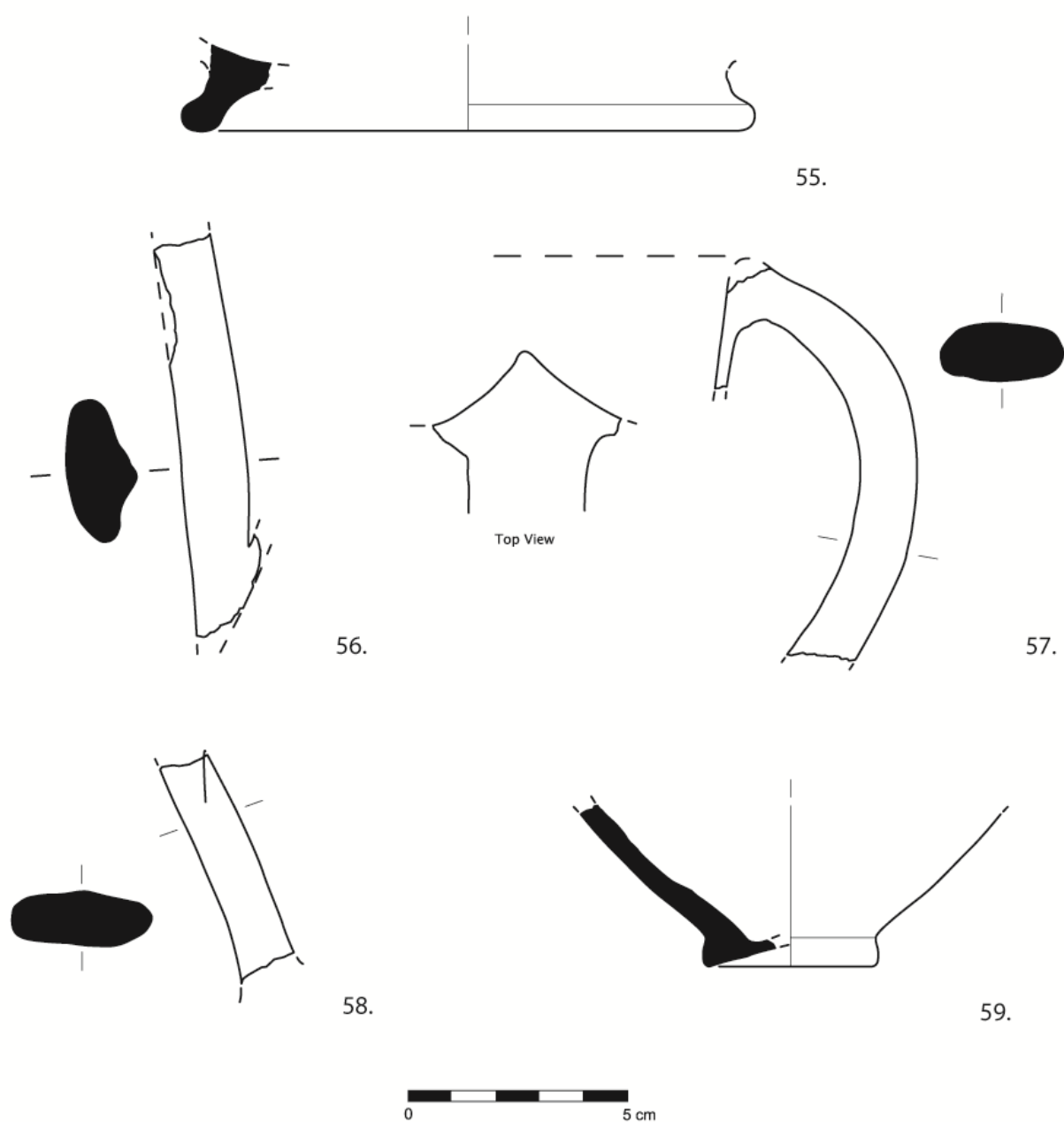


Fig. 22. Jugs in Plain Ware.

A good morphological parallel for **Cat. 55** would be offered by a lagynos foot from the Athenian Agora (*Agora* XXIX, 231, 397, no. 1550, fig. 93, pl. 120), dated to between 50 BCE and 50 CE. This chronology does not, however, correspond to any of the other fragments found in the cistern fill, so an earlier parallel is more likely. The high foot of a Cooking Ware jug in the Athenian Agora is comparable; it is dated by its context in the years 520-480 BCE (*Agora* XII, 205, 351, no. 1641, fig. 17, pl. 75).

The handle fragments **Cat. 56** and **Cat 58** may have belonged to several types of jugs of the Archaic or Classical periods. Good parallels for **Cat. 57** with its typical handle spur may be found in some trefoil mouth jugs from the Athenian Agora (*Agora* XII, 205, 351, nos. 1626, 1629, fig. 14, pl. 74), dated to 340-310 and 325-300 BCE, respectively.

A parallel for **Cat. 59** may be found in the base of the trefoil mouth jug from the Athenian Agora (*Agora* XII, 205, 351, no. 1626, fig. 14, pl. 74), dating to 340-310 BCE and already mentioned with **Cat. 57**. This base, however, is broader.

Basin or mortar

Cat. 60: TC10.57 (context T10-5-2), 1 rim fragment (**Fig. 23**).

Diam. rim *ca.* 40, PH 1.7; coarse clay; red wash on entire surface; import?

Cat. 61: TC10.142 (context T10-11-1), 1 base fragment (**Fig. 23**).

Diam. base 19, PH 5.9; coarse clay; import.

For **Cat. 60** one may suggest that it belonged to a basin, although no exact parallel could be found within the material presented in *Agora* XII. The lekane rim no. 1827, reused as an ostrakon for Hippokrates of 482 BCE, is comparable but has a definitely more elongated tendency (*Agora* XII, 214, fig. 20). The heavy base of a mortar or basin **Cat. 61** finds no convincing parallel in *Agora* XII.

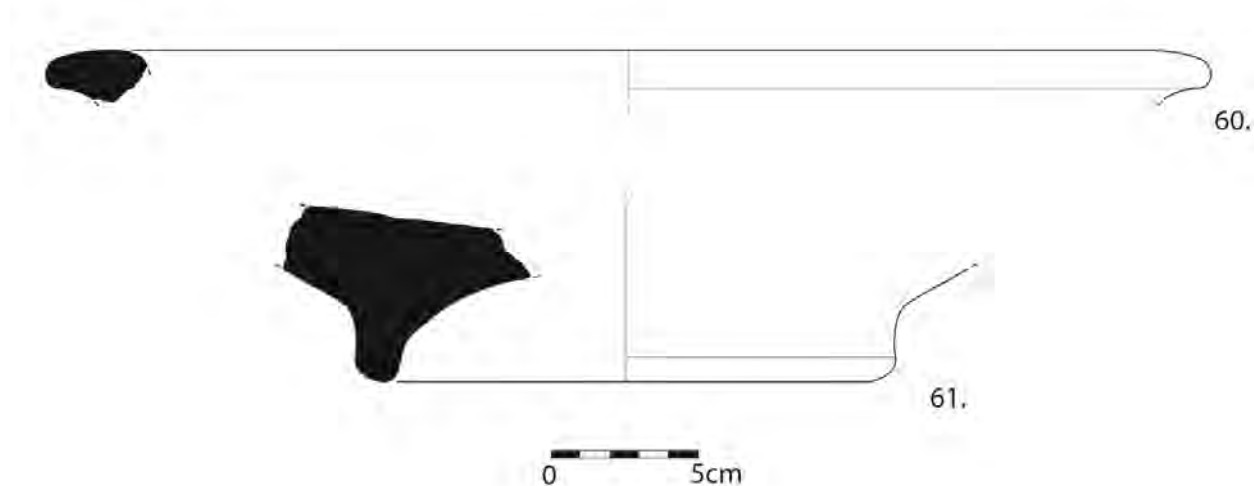


Fig. 23.

Rectangular basin or drain/water channel

Cat. 62: TC10.52 (context T10-5-2), 1 base fragment (**Fig. 24**).

PH 4.2, preserved width 13.4; coarse clay; roughened on underside; calcareous concretions on inside.

The base fragment may either have belonged to a terracotta drain or water channel, which would have been perfectly at home in the area of a cistern, or to a terracotta basin, like one encountered as sarcophagus for a child burial in the West Necropolis



62.

Fig. 24.



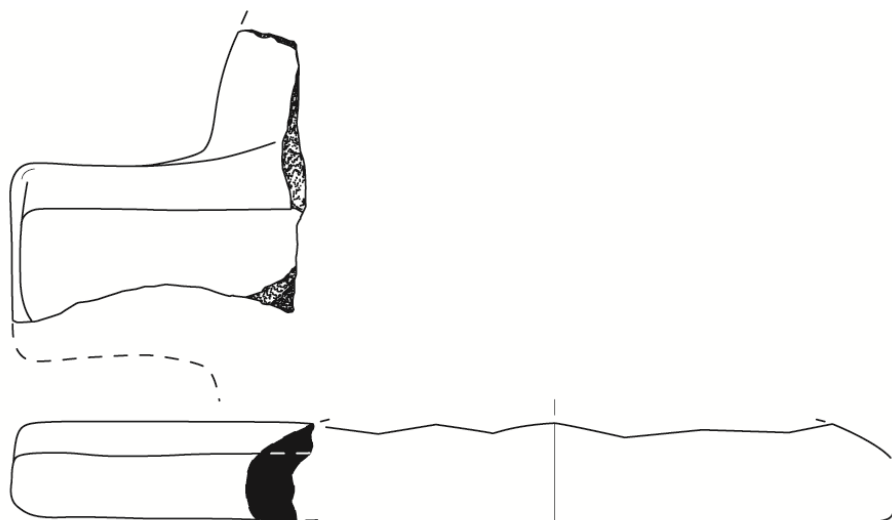
of Thorikos (Bingen 1967b, 55, fig. 67; TT65.16). The latter container has been tentatively dated by the excavator to after 300 BCE. A terracotta water channel has been found in the fill of a mid-5th century BCE well in the Athenian Agora (Boulter 1953, 112, cat. 192). Unfortunately, it has not been illustrated.

Mortar

Cat. 63: TC10.114 (context T10-8-2), 1 rim fragment with spout (**Fig. 25**).

Diam. rim 30, PH 2.5; length spout 7.4; import.

Mortars are part of the standard household pottery and from the 5th century BCE on were predominantly of Corinthian manufacture, exported to Athens and the rest of Attica.²⁹ Although the rim has not been preserved, some clues as to the dating may be grasped by the specific shape of the spout, which has straight sides and is not yet of the 'fluked spout' versions that are generally considered to be a late feature (to within the 4th century BCE). In combination with the fabric that probably is of the (Corinthian) 'Sandy Class' type described in *Agora* XII (pp. 37, 222), and is less typical than the standard Corinthian fabric also used with *louteria* and the Corinthian A amphorae, one may arrive at a date in the 5th century BCE, probably the second or 3rd quarter of the 5th century BCE.



63.

Fig. 25.



²⁹ Generally on mortars, *Agora* XII, 221-223, fig. 16, pls. 90-92, nos. 1884-1921; for the present piece, cf. esp. nos. 1904 and 1912.

Amphorae

The finds from the cistern do not represent the variety of amphora types known from Thorikos (see P. Monsieur, in: Docter *et al.* 2010, 49-51). Archaic amphorae are quasi absent and there is a relative poverty of Classical amphorae, although these normally abound in almost every zone of the site. This contrasts with the rather high proportion of Late Roman and Early Byzantine amphorae. Within the surprising low number of amphorae from the Archaic and Classical periods we still find some of the most representative examples of the Lesbian/Aiolian and Chian types ('old style' and Late Classical), the groups of ring-toes and mushrooms of possible different origins (Northern Greece, Samos, coast of Asia Minor?). Some other main types as Chios 'new style', Corinthian A and B, and Mende are missing in the sample that has been studied to date. Thasos, which is generally not well represented on the site, has not been identified either. Besides these well-known types, the site of Thorikos as a whole yields a whole range of less well defined Archaic and Classical amphora types (e.g. from Klazomenai and Peparethos?), some of which one might have expected to be present in the cistern. There seems no presence of Hellenistic or Italic (neither Republican nor Early or High imperial) amphorae.

Most striking is of course the occurrence of Late Imperial and Early Byzantine amphorae. This points again, as has already been noted in previous publications, to a certain importance of Thorikos in Late Antique and Early Medieval times. There can be little doubt that this had to do with a resumption of mining activities, as the discovery of more than 60 lamps at the entrance of Mine no. 3 proves (Butcher 1982). Most probably these activities were concentrated on the extraction of lead. Lamps, amphorae and Cooking Ware were also recovered at other spots on the site, in different parts of the living quarters and on the top of the Velatouri hill (for an overview see Monsieur 2008). There was also a renewed activity in this period in the surroundings of Thorikos, as well as in the adjacent deme of *Atene*, as became clear from the finds of the Belgian and German surveys (Vanhove 1994; Lohmann 1993). Some globular amphorae, one maybe from Cretan origin, turned up in Tower Compound 1 (Spitaels 1978, 103-105 and fig. 60-63; cf. Poulou-Papadimitriou, Nodarou 2007, esp. fig. 6, no. 14). Late Roman amphorae types 1 and 3, carrying wine from Cilicia and the region of Ephesos respectively, were recognized in the sectors of the Industrial Quarter and the Theatre Necropolis (Monsieur 2008 and unpublished). Up till now, no North African amphorae have turned up in Thorikos, although a spike and some African Red Slip Wares were picked up in the survey of *Atene* (Lohmann 1993, CH15-53, CH-45 and pl. 7-8). Palestinian amphorae (LRA 4 and 5) were also not noticed in the cistern fill.

Unfortunately, due to the fact that most fragments are mere wall sherds, the finds in Cistern 1 remain for the better part unidentified. Only the Late Roman 1 and 2 amphorae could be identified with certainty. The first type was recognized by its specific fabric, the second type, of Aegean origin, by the peculiar profile of the rim. Late Roman 3 is presumed, but although a little micaceous, the composition of the

fabric remains unclear. The Cretan origin of two globular amphorae seems a reasonable identification. If the Archaic and Classical amphora fragments may be considered as residual material that slipped in the cistern after the it went out of use, it could be postulated that the Late Antique and Early Medieval amphorae reflect a renewed period of use of the cistern. As there can be no doubt about the resumed mining activities in this period, this hypothesis is at least worth considering (but see also the conclusions and Van Liefferinge *et al.*, elsewhere in this volume). The amphorae, for instance, could have been of secondary use, to carry water for the miners and the labourers, or oil for the lamps. Yet, in the light of the possible late use of the cistern some serious problems of chronology appear. Indeed, the evidence of a coin hoard dated to 365-379 CE (discovered in tomb 519 of the Theatre Necropolis: Bingen 1990), the lamps and most of the amphorae point to a date between the 4th and 6th centuries CE, whereas at least one globular amphora must date from the 7th or 8th century CE if we follow J. Hayes in the dating of some parallels from the excavations of the Polyeuktos church at the Saraçhane site in Constantinople (Hayes 1992, 66, 71, figs. 23, 57). Some finds from the survey of the deme of *Atene* also suggest that it outlived the end of Antiquity, undermining the idea that Thorikos and different sites of South-Attica came to an end with the Slavic incursions around 580 CE. It seems that Constantinople still kept an eye on this region.

Lesbian/Aiolian

Cat. 64: TC10.143 (context T10-8-3), 1 upper part of handle associated to wall (**Fig. 26**).

PH 7.8, handle section 2.5x2.5; 'Lesbian grey'.

Cat. 65: TC10.177 (context T10-17-4), 1 neck fragment with upper part shoulder (**Fig. 26**).

Diam. neck 11, PH 6.3; 'Lesbian grey'.

If the precise origin(s) of this amphora group still remains a matter of debate, the concentration of finds on the island and the results of archaeometric research make an attribution to Lesbos very plausible. However, for the same reasons the Aiolian coast can be considered as another possible region of production. Archaeologically, the production of Lesbian amphorae is attested from the 7th to 4th century BCE, although later texts still refer to Lesbian wine production.³⁰ Lesbian amphorae are, if not abundant, well represented in Thorikos (Hackens 1967a, 99-100, figs. 106-107; Mussche 1967b, 68, fig. 91). The bow of the profile of the handle fragment **Cat. 64** could point to a date in the second half of the 5th century BCE (cf. Clinkenbeard 1982, pl. 70-71, no. 7). Concerning the second fragment **Cat. 65**, the large diameter of the neck and the low inclination of the shoulder seem to refer to a 7th-6th-century BCE typology (cf. Clinkenbeard 1982, pl. 69, 70-71, Nos. 1-3; Dupont 1998, fig. 23.4).

³⁰ Clinkenbeard 1982; Roberts, Glock 1986; Dupont 1998, 156-163; Lawall 1995, 196-217; Fantalkin, Tal 2010.

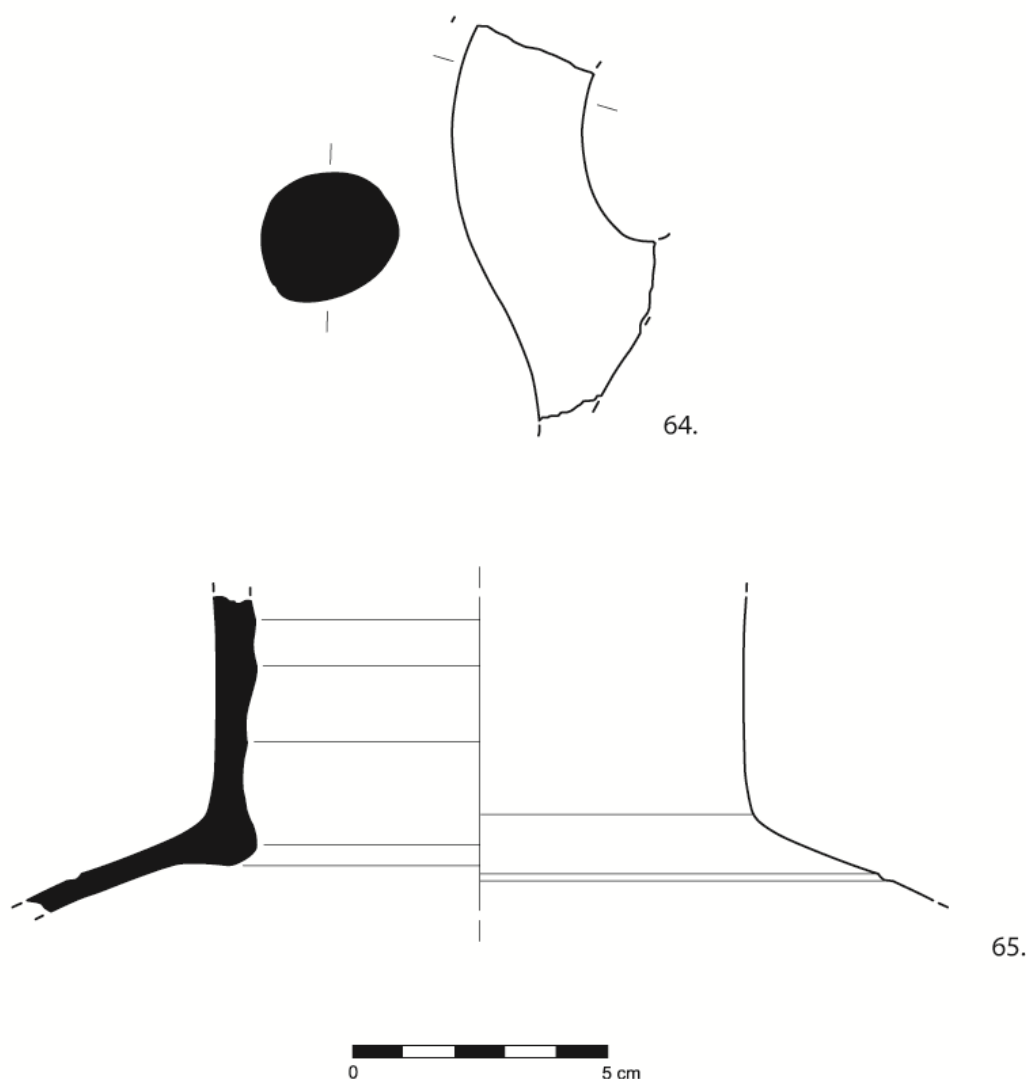


Fig. 26. Lesbian / Aiolian amphorae.

Chian

Cat. 66: TC10.35 (context T10-4-1), 1 handle fragment lower part (**Fig. 27**).

PH 7.5, handle section 2.5x4.2; fine light brown fabric.

Cat. 67: TC10.22 (context T10-5-1), 1 neck fragment with handle attachment (**Fig. 27**).

Diam. neck 13, PH 8.6, handle section 2.9x4.3; reddish yellow fabric (5 YR 6/6) with fine white inclusions.

Chian amphorae, especially the ancient types (old style type, bulging-neck type; Grace 1979, figs. 44-45; Lawall 1995, 88-103), are very common in Thorikos (Bingen 1967a, 42-43 and fig. 34-36). **Cat. 66** belongs to this type as becomes clear from the fabric, measurements, section and the light curve of the profile. The fragment does not allow for a more precise chronology than 6th or 5th century BCE, but before *ca.* 425 BCE when the new style or straight-neck type appeared. The fabric, the tubular profile of the neck and the upward position and the section of the handle of **Cat. 67** leave little doubt as to the later type with triangular (or conical) body profile, to be dated in the second half of 4th century BCE.³¹

³¹ For bibliography and other finds in Thorikos and elsewhere see Monsieur 1990.

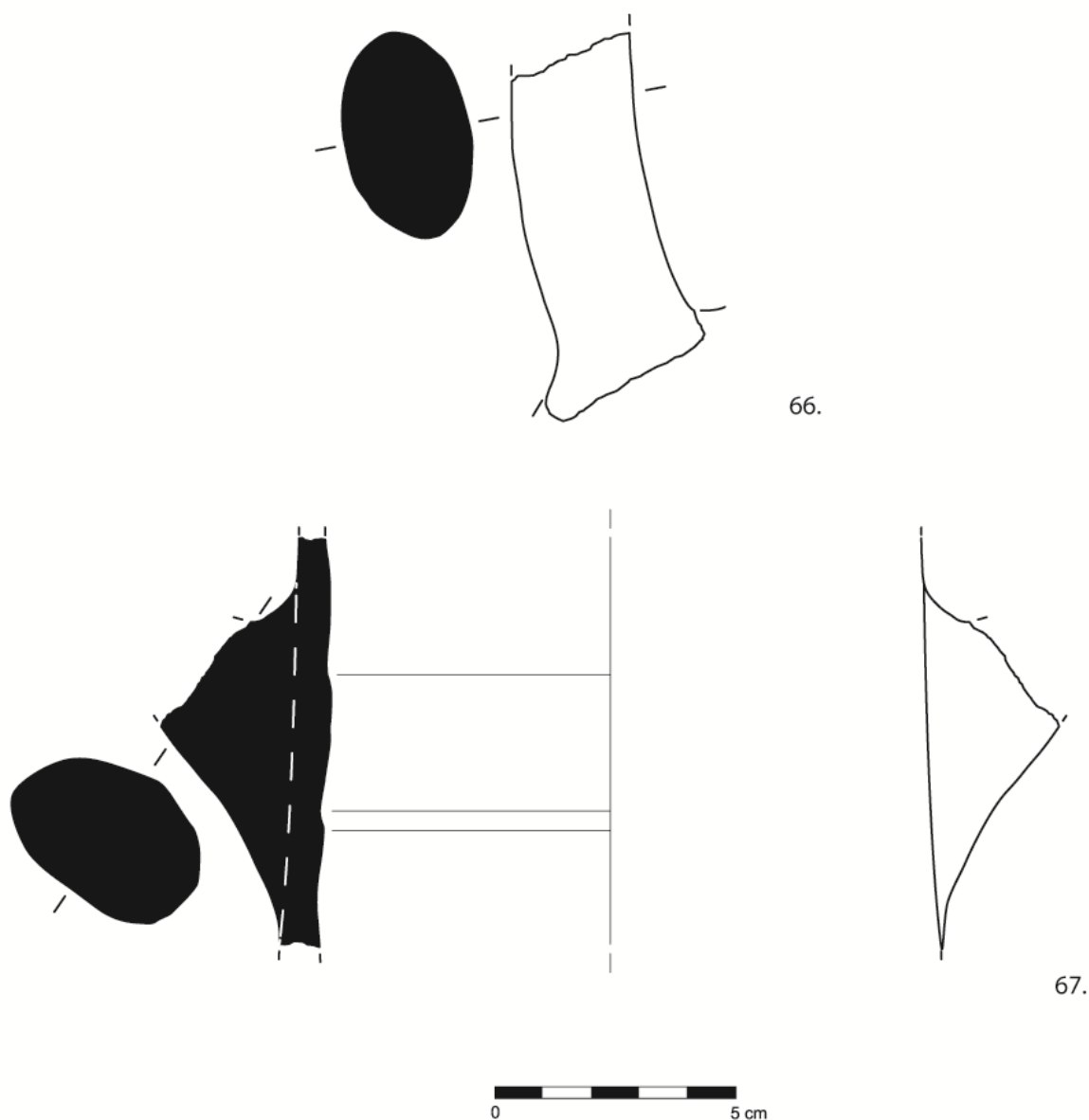


Fig. 27. Chian amphorae.

Samian? North Greek? Asia Minor coast and islands?

Cat. 68: TC10.64 (context T10-5-2), 1 rim fragment (**Fig. 28**).

Diam. rim 18, PH 3; white deposit on in- and outside.

Cat. 69: TC10.157 (context T10-15-1), 1 rim fragment (**Fig. 28**).

Diam. rim 16.5, PH 5.1.

Cat. 70: TC10.12 (context T10-3-2), 1 rim fragment (**Fig. 28**).

Diam. rim 20, PH 3.6; secondarily burned.

Amphorae with mushroom rims seem to appear from the last quarter of the 5th century BCE on and belong to a wide variety of production regions: North Greece, Klazomenai, Knidos, Rhodes, Samos *etc.*³² A Samian origin for **Cat. 68** is tentatively proposed after comparing the fragment with better preserved, but unpublished

³² For discussion and examples of mushroom rim types, see further Nørskov 2004; Blondé, Muller, Mulliez 1991, 229-230; Grandjean 1992, 573, no. 103.

examples from Thorikos and following the identification of this type by V. Grace.³³ 4th century BCE dates match with the chronology of the (unpublished) Thorikos contexts.

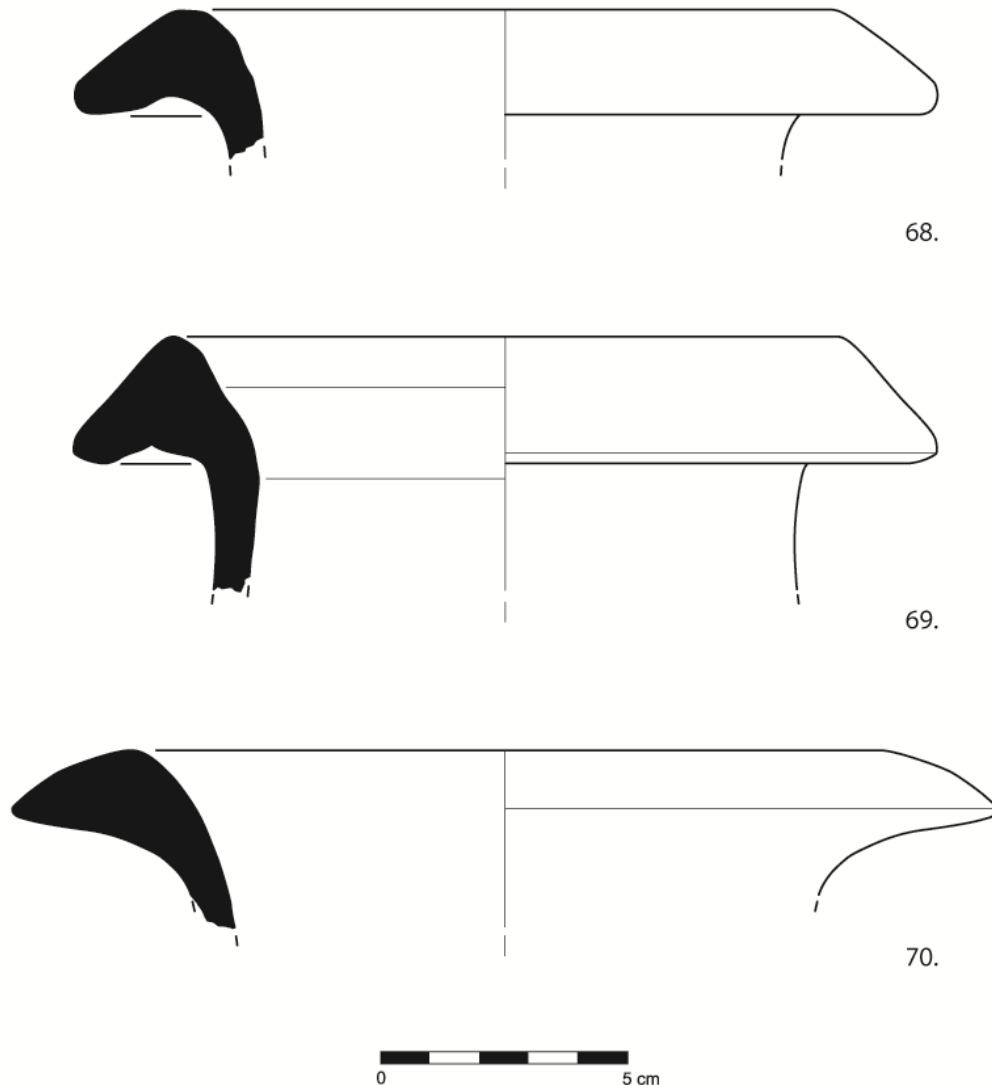


Fig. 28. Amphorae from Samos, northern Greece, Asia Minor coast or islands?

North Greek?

Cat. 71: TC10.97 (context T10-8-2), 1 base fragment (**Fig. 29**).

Diam. base 7, PH 2.8.

Cat. 72: TC10.98 (context T10-8-2), 1 base fragment (**Fig. 29**).

Preserved diam. base 5, PH 2.8.

The ring-toes of **Cat. 71** and **72** are most probably North Greek, but a Samian origin remains possible (Lawall 1995, 116-175, 176-195, Solokha I form: 216-232; Grandjean 1992, 547-548, no. 19). It is hard to associate them with complete examples; apparently, they belonged to amphora types presenting a globular body, with simple

³³ Grace 1971, 81-82, pl. 15, no. 13; cf. type 2 of M. Lawall in Nørskov 2004; see also Solokha I form in Lawall 1995, 216-213, figs. 88-93; cf. *infra* ring-toes.

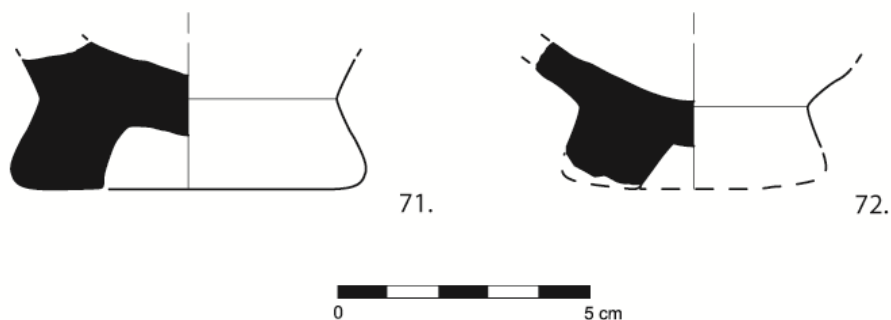


Fig. 29.

thickened rims or mushroom rims, as some complete examples found in the necropoleis of Thorikos testify.³⁴ A general date in the 5th century BCE or the beginning of the 4th century BCE may be proposed.

Indeterminate Classical amphorae

Cat. 73: TC10.99 (context T10-8-2), 1 rim fragment with upper part handle (**Fig. 30**).

Diam. rim 12, PH 6.6, handle section 2.5x4.1; orange brown fabric with white inclusions.

Cat. 74: TC10.121 (context T10-8-2), 1 neck fragment with handle attachment (**Fig. 30**).

Diam. neck 28.5?, PH 6.8, handle section 3x5.8.

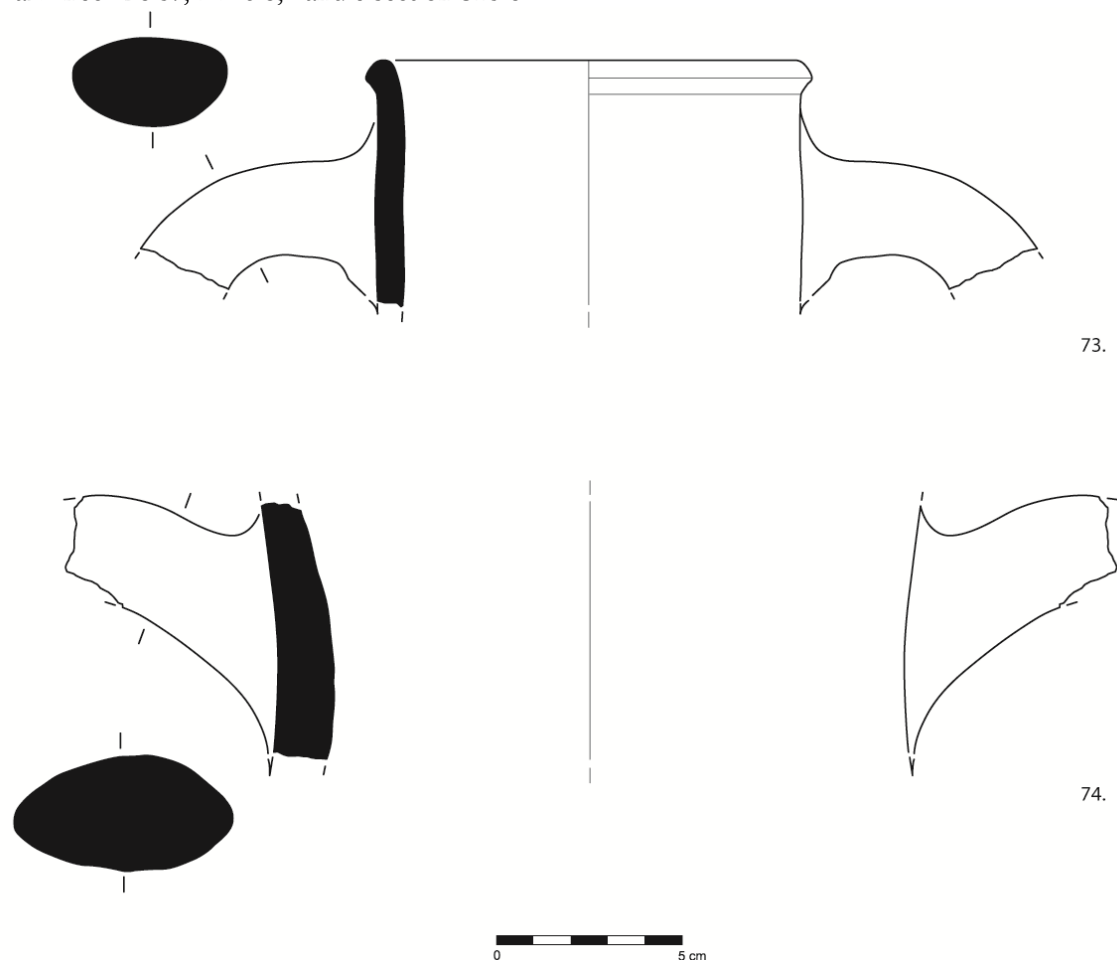


Fig. 30.

³⁴ Bingen 1968, 63, figs. 50-51 (West Necropolis, tomb 3: ca. 500-450 BCE); Hackens 1967a, 83-84, figs. 75-76 (Theatre Necropolis, tomb 1: ca. 410-400 BCE, Solokha I form?); Bingen 1969, 110, fig. 122 (West Necropolis, tomb 81: ca. 475-450/440 BCE); Bingen 1984, 142-143, figs. 87-88: ca. 500-450 BCE).

Cat. 73 may be related to the Chian new style or straight-neck type, dated to the last quarter of the 5th and the first half of the 4th century BCE (Grace 1979, fig. 45; Lawall 1995, 88-103). Another possibility, based on both shape and fabric, is an amphora of East Greek origin as proposed for some finds in Thasos (Blondé, Muller, Mulliez 1991, 233-234, esp. no. 59, fig. 9).

Late Roman Amphora 1 (LRA 1)

Cat. 75: TC10.50 (context T10-6-3), 1 wall fragment (**Fig. 31**).

Max. diam. 39, PH 5.7; white deposit on outside; import.

Cat. 76: TC10.122 (context T10-8-2), 2 joining wall fragments (**Fig. 31**).

Max. diam. 29, PH 3.6; green-yellowish clay; import.

Cat. 77: TC10.149 (context T10-8-3), 6 wall fragments, 2 of which joining (**Fig. 31**).

Max. diam. 23, PH 9.2; import.

The fabric assigns at least two wall fragments to the Late Roman Amphora type 1.

Cat. 77 belongs probably also to this group. In 1963, the first year of the Thorikos excavations, a substantial fragment (rim, handle, wall up to the middle) of a LRA 1 turned up when clearing the Late Classical Washery 1 in the Industrial Quarter (unpublished, cf. Monsieur 2008). Probably another fragment was found on the Velatouri (unpublished, cf. Monsieur 2008). The fabric enabled the identification of the production centres of these wine amphorae in southern Cilicia (Empereur, Picon 1989, 236-243). This attribution is confirmed by the discoveries of several workshops (for an overview, see Pieri 2005, 80), the most impressive complex having been excavated in Sebaste Elaïoussa by an Italian team (Burrigato *et al.* 2007). The combination of sub-types (LRA 1A, LRA 1A transition, LRA 1B) and chronology as presented by D. Pieri is difficult to follow, however (Pieri 2005, 69-85, pls. 1-22). Yet this is not relevant for the fragments of Cistern 1, but it could have been for the better preserved fragment of Washery 1. Only a general date from the second half of the 5th to the middle of the 7th century CE may be proposed.

Late Roman Amphora 2 (LRA 2)

Cat. 78: TC10.176 (context T10-17-3), 2 joining rim fragments, broken off at transition to handle (**Fig. 32a-b**).

Diam. rim 10, PH 7.3; coarse clay; import.

This is the first time a Late Roman Amphora 2 occurs in Thorikos. Following the typology of D. Pieri, the rim fragment belongs to the type LRA 2B (Pieri 2005, 85-93), commonly attested during the whole 6th century CE. The workshop of Kounoupi in the southern Argolid and some presumed workshops in Chios and Samos confirm a widely spread production in the Aegean. Different arguments, e.g. the spherical form and the funnel rim (cf. the earlier Baetican Dressel 20 and Haltern 70 amphorae), suggest olive-oil and eventually olives as its principal contents (Pieri 2005, 85-93; Swan 2004).

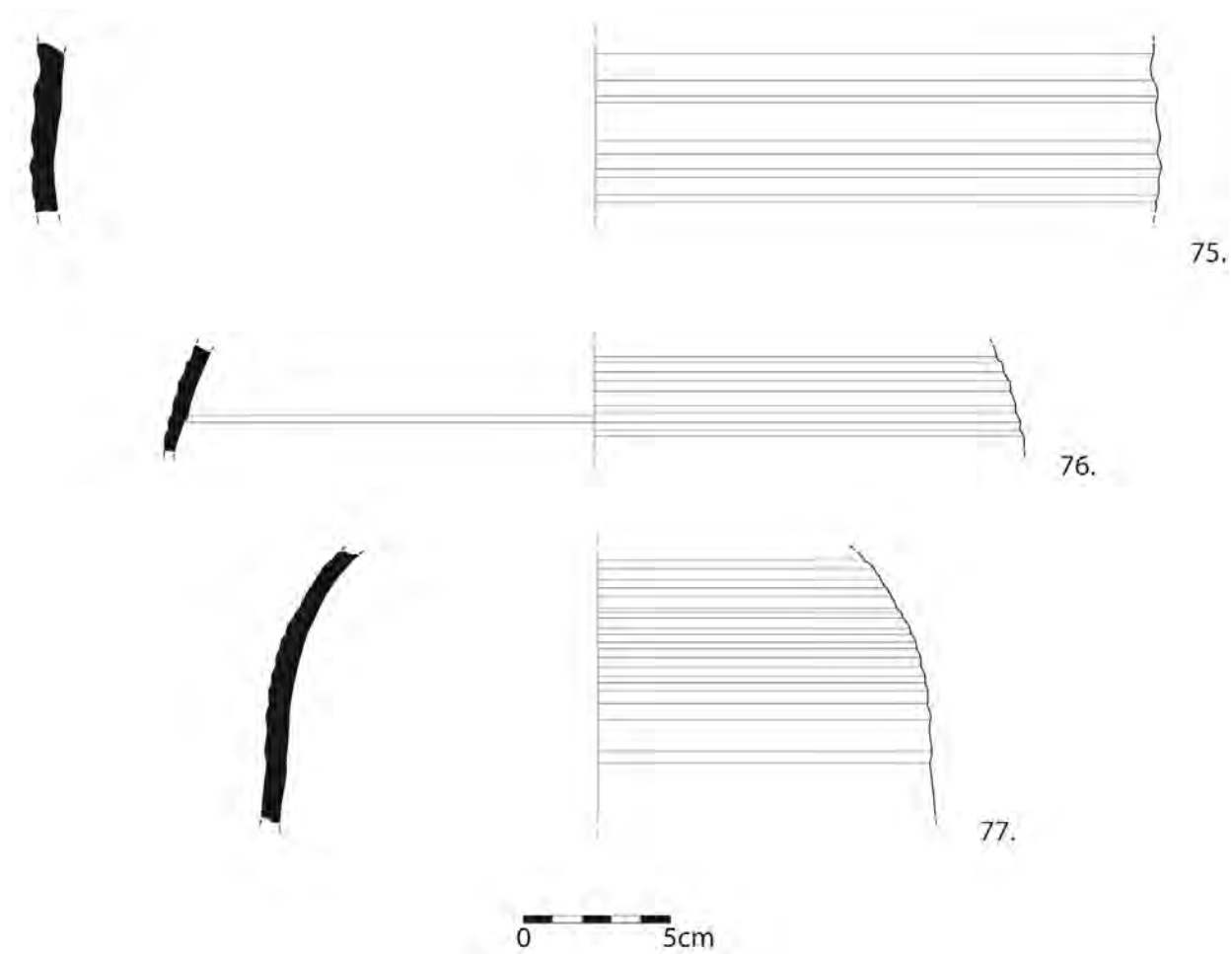
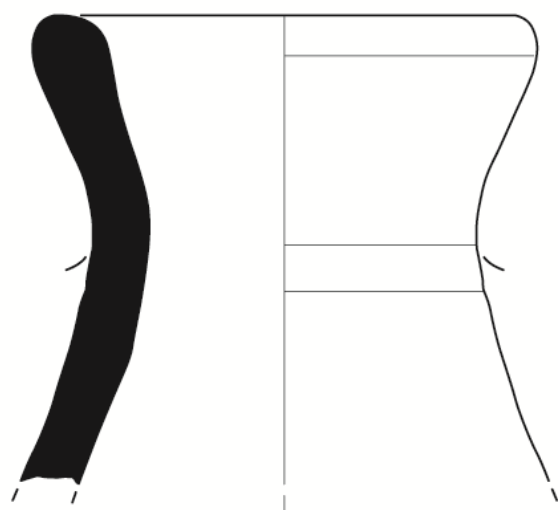


Fig. 31. Late Roman Amphora 1 (LRA 1).



78.



a.

0 5 cm

b.

Fig. 32. Late Roman Amphora 2 (LRA 2); **b.** photo by WvdP (not to scale).

Late Roman Amphora 3 (LRA 3)?

Cat. 79: TC10.150 (context T10-8-3), 1 wall fragment (**Fig. 33**).

Max. diam. 37, PH 4.2; import.

The Theatre Necropolis revealed the upper part of at least one Late Roman Amphora 3 type during the 1976 excavations (unpublished, cf. Monsieur 2008). The wall fragment found in Cistern 1 is tentatively assigned to this type because of some resemblance with the peculiar fabric of this wine container (although not so micaceous), considered as originating from the Ephesos region and the Meander valley (Robinson 1959, 17; Pieri 2005, 94-101). A general chronology in the 5th-6th centuries CE may be proposed.

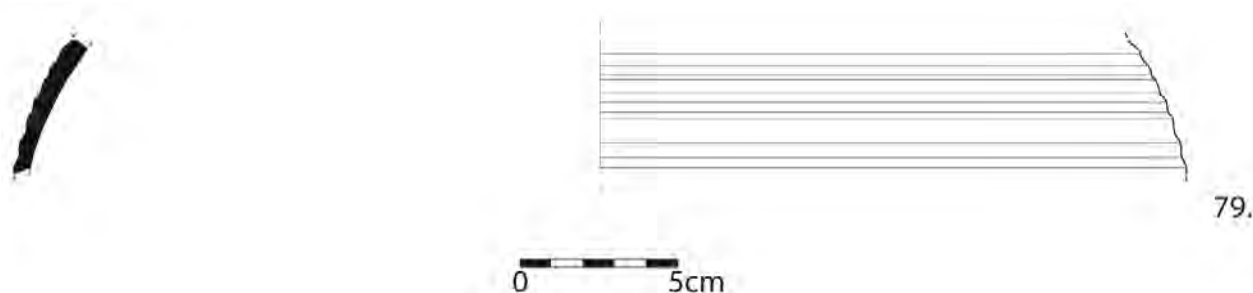


Fig. 33. Late Roman Amphora 3 (LRA 3).

Cretan globular amphorae?

Cat. 80: TC10.19 (context T10-5-1), 2 joining rim fragments with slightly ribbed handle (**Fig. 34a-b**).

Diam. rim 8, PH 10.2, handle section 2.2x3.6; sandy clay with sandy yellowish inclusions.

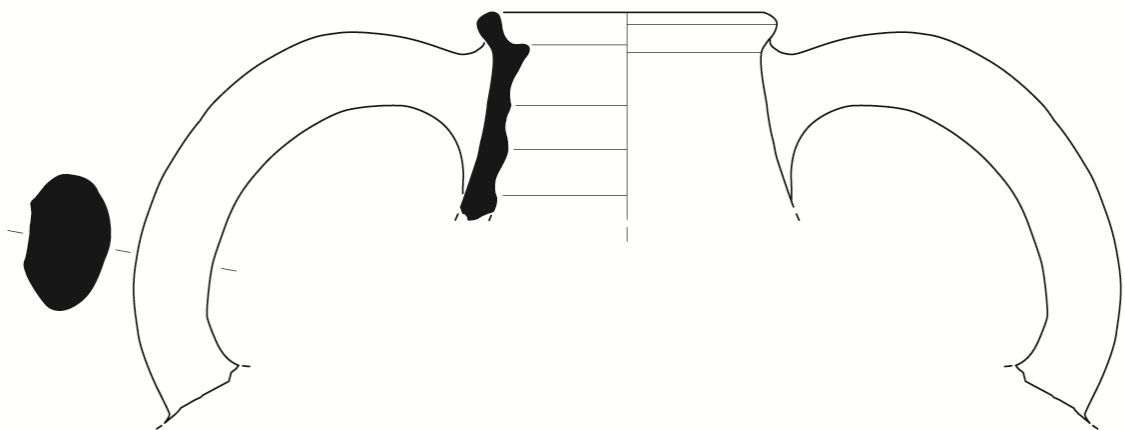
Cat. 81: TC10.156 (context T10-15-1), 1 neck fragment with handle root (**Fig. 34a**).

Diam. neck 7, PH 5.3, handle section 1.9x3.5.

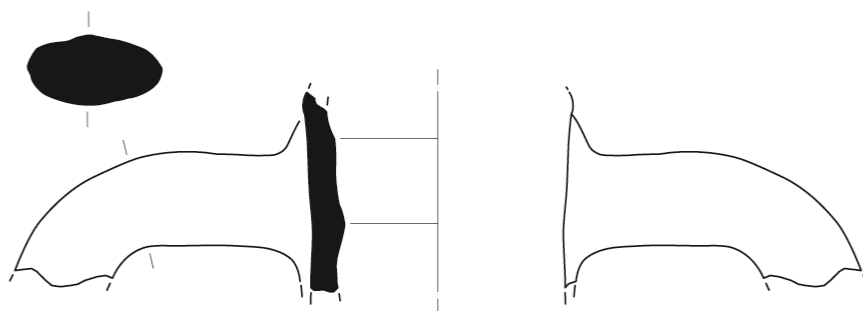
Cat. 80 is a remarkable fragment from a typological point of view. While the specific bow of the handle deserves attention, one is especially struck by the profile of the rim with its peculiar gutter or gully device at the inside (apparently for an *operculum*?). Because of this device and the profile in general, there can be little doubt that we have to associate this type with the later globular amphorae as distinguished by J. Hayes amongst the material revealed by the excavations of the Polyeuktos church (Saraçhane) in Constantinople (Hayes 1992, 66, 71, figs. 23, 57). The chronology points to the 7th-8th centuries CE, which seems to be confirmed by the finds of the Crypta Balbi in Rome and in Ostia.³⁵ Some considerations about the later evolution of globular amphorae derived from the LRA 2-type in combination with some specific characteristics of Cretan amphorae from the 2nd and 3rd centuries CE on, strengthen the attribution of this fragment to a Cretan origin.³⁶ In this manner (apart from the rim) we would like to classify also **Cat. 81** within the Cretan group, as well as a find from Tower Compound 1 in the Industrial Quarter (Spitaels 1978, 103, no. 136, figs. 62-63).

³⁵ Villa 1994, 354-356, 410-413, with bibliography, pl. 4, with no. 7 as an interesting parallel, pl. 11; cf. also Böttger 1974, 131-132, fig. 1, Hc for the Danube fortress of Iatrus.

³⁶ Portale, Romeo 2000; Yangaki 2007; Pieri 2005, 89; cf. Marangou-Lerat 1995, for the earlier types.



80.



81.



a.



b.

Fig. 34. Cretan globular amphorae?; **b. Cat. 80**, photo by WvdP (not to scale).

Indeterminate Late Antique amphorae

Cat. 82: TC10.58 (context T10-5-2), 1 wall fragment (**Fig. 35**).

Max. diam. 42, PH 5.5; import.

Cat. 83: TC10.59 (context T10-5-2), 1 wall fragment (**Fig. 35**).

Max. diam. 25.5, PH 5.8; import.

Cat. 84: TC10.120 (context T10-8-2), 1 wall fragment (**Fig. 35**).

Max. diam. 21, PH 7.3; import?

Cat. 85: TC10.153 (context T10-15-1), 1 wall fragment (**Fig. 35**).

Max. diam. 18, PH 8.5; import.

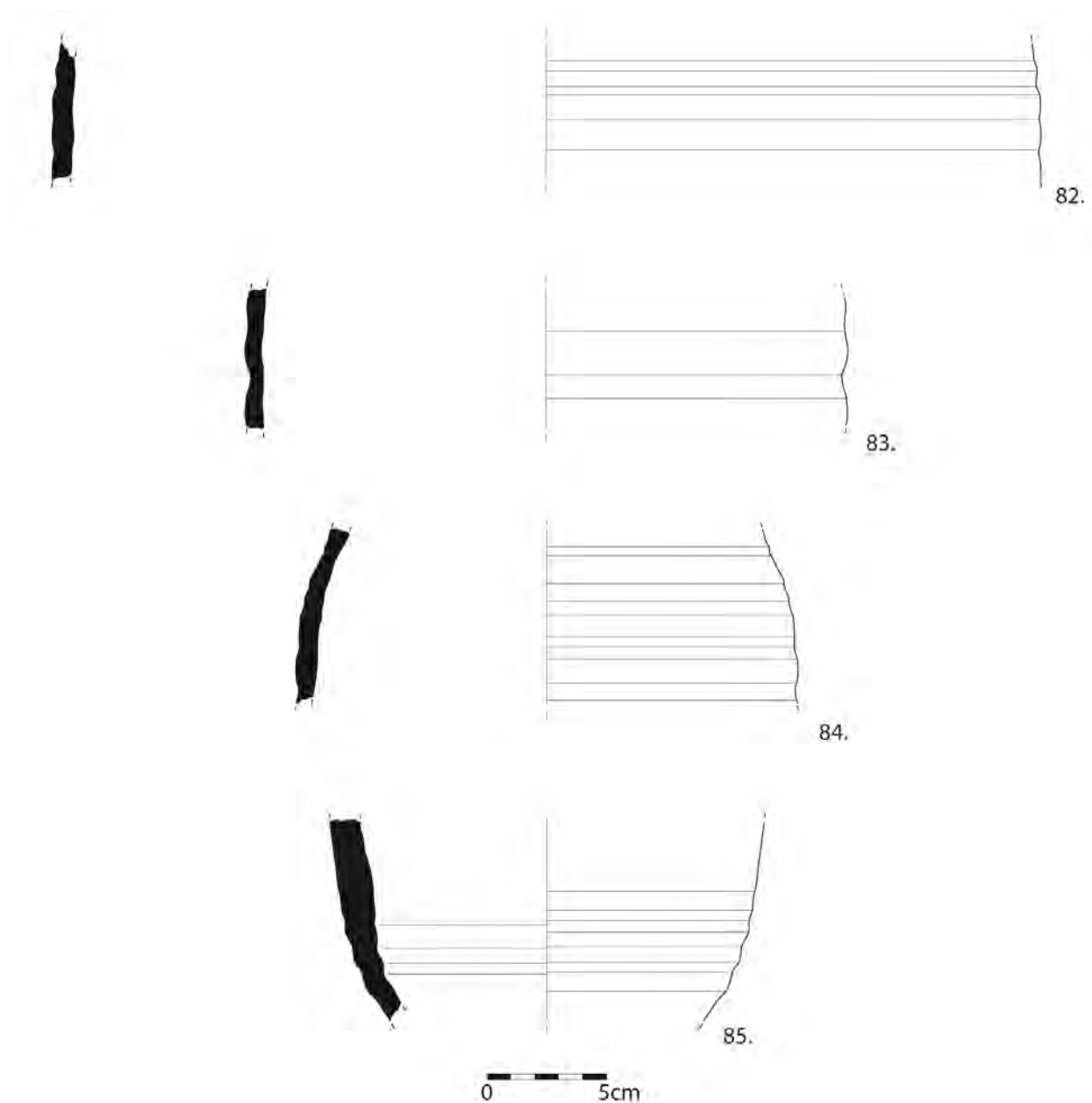


Fig. 35. Indeterminate Late Antique amphorae.

Indeterminate amphorae

Cat. 86: TC10.115 (context T10-8-2), 1 rim fragment with upper part of handle (**Fig. 36**).

Diam. rim ?, PH 5.5, handle section 1.5x3; coarse clay with many black and white inclusions.

Cat. 87: TC10.67 (context T10-5-2), 1 rim fragment (**Fig. 36**).

Diam. rim 8, PH 2.3.

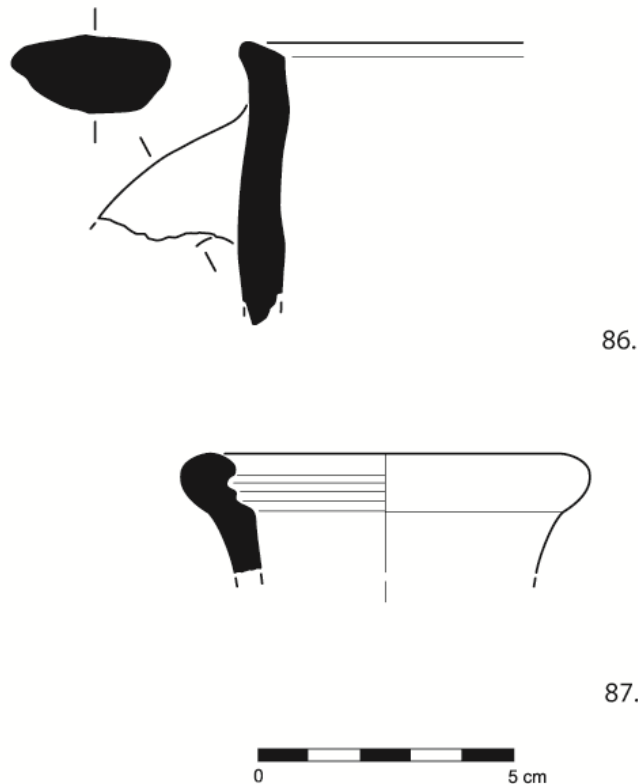


Fig. 36.

Neither the state of preservation, nor the fabric does allow any identification of **Cat. 86**. The peculiarly indented profile at the inside of the rim of **Cat. 87**, however, is remarkable. This element and the dimensions could point to an Early Byzantine amphora.

Pithos

Cat. 88: TC10.154 (context T10-15-1), 1 rim fragment (**Fig. 37**).

Diam. rim 54, PH 6.3; coarse clay.

Cat. 89: TC10.175 (context T10-1-2), 1 rim fragment (**Fig. 37**).

Diam. rim 36, PH 7.9; coarse clay; local?

Pithoi have received comparatively little attention in the past, which is definitely undeserved, if only because in Antiquity they may have constituted one of the most expensive categories of ceramic vessels. They are extremely difficult to date, because of the lack of good numbers of published examples and in view of their long periods of use (see now Giannopoulou 2010).

Rim fragment **Cat. 88** finds some comparissons in the published pottery repertoire of Thorikos.³⁷ Closest in shape is fragment TC76.98, tentatively dated to the second quarter of the 5th century BCE, with a rim diameter of 37cm (Van Hove 2006, 80-81, 210, figs. 283-284, cat. 135). A smaller pithos, re-used as a jar burial of a child dated to around 500 BCE, shows a rim shape that is more or less comparable (Mussche 1998, 78, 174, figs. 191-192, cat. 98: TC85.21). Its rim diameter is merely 29cm. The rather outturned, sometimes flat tendency of the rim is to be found in other pithos rims

³⁷ The study of Attic pithoi (Bogess 1979) has, unfortunately, not been accessible to us.

of the Late Classical and Hellenistic periods: pithoi of the 4th century BCE and the Hellenistic period from Eleia (Giannopoulou 2010, 201, fig. 13) or a Hellenistic pithos from Corinth, dated to *ca.* 400-200 (contextually until 146) BCE, provided with a rim diameter of 42cm (Bogess 1970, esp. figs. 1-2; Giannopoulou 2010, 207, fig. 31).

The rounded rim of **Cat. 89** finds no exact parallel in the published record, although generally the thick rounding of the rim seems to occur more often in examples post-dating the Classical and Hellenistic periods, even as late as the 19th century CE (Giannopoulou 2010, 207, fig. 33).

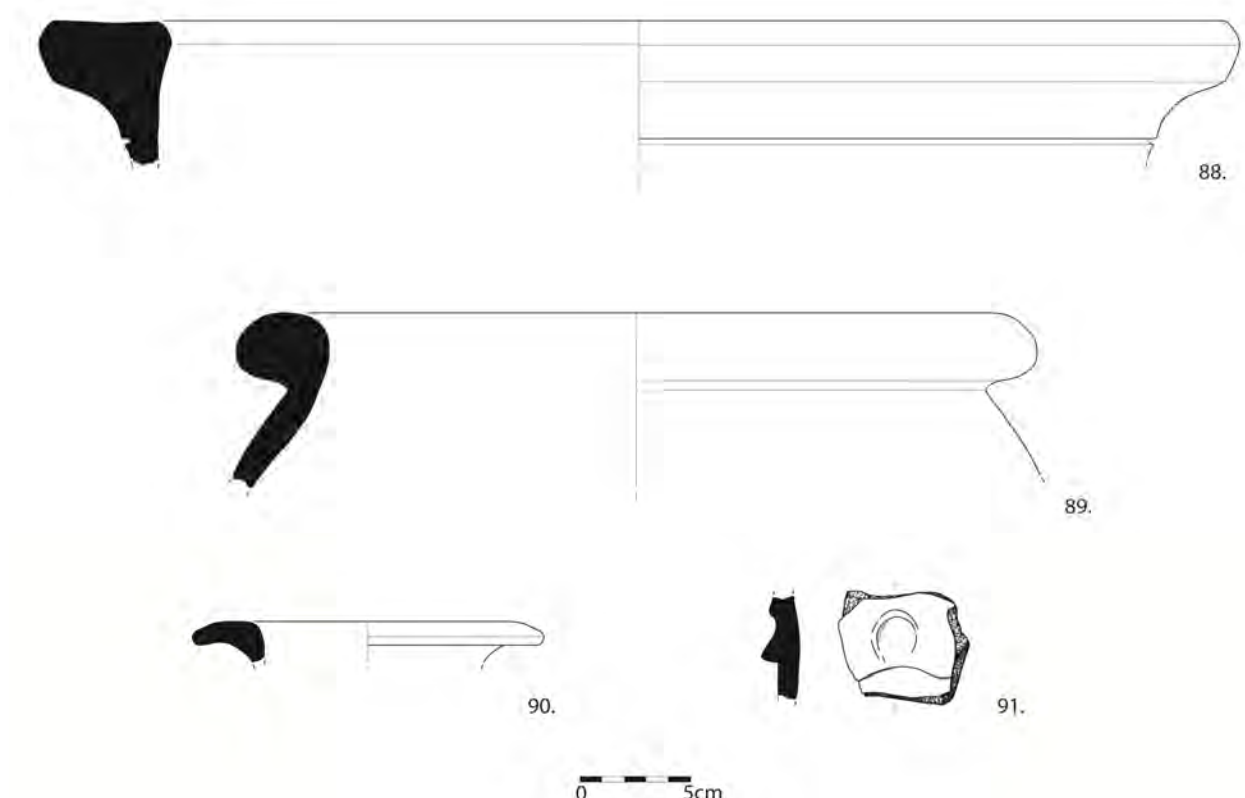


Fig. 37. Pithoi.

Pithos?

Cat. 90: TC10.42 (context T10-5-2), 1 rim fragment (**Fig. 37**).

Diam. rim 16, PH 1.7.

Cat. 91: TC10.155 (context T10-15-1), 1 wall fragment with handle root (**Fig. 37**).

Diam. wall ?, PH 4.6.

The attribution of the rim **Cat. 90** to a precise shape remains relatively uncertain, since the particular form may be found with vessels of various functions, e.g. with basins. A deposit of the second and third quarter of the 5th century BCE in the Athenian Agora has yielded a similar rim profile from a hydria in Cooking Ware (Rotroff, Oakley 1992, 29, 121, fig. 26,329, pl. 58,329). Still, in view of the relatively small mouth opening, it seems not unlikely that we are dealing with a pithos mouth, as the one published from the South Necropolis of Thorikos (TC63.1063; Servais 1968, 52, figs. 26-27). It has a rim diameter of 15cm and is dated to the period 640-620 BCE by an ovoid Corinthian aryballos of the Tor Pisana Workshop.³⁸

³⁸ Neeft 1987, 186-187, Subgroup D, missing from List LXXX on p. 338.

Pessoi (counters, gaming pieces and the like)

Cat. 92: TC10.77 (context T10-5-2), 1 wall fragment of amphora (**Fig. 38**).

Dimensions 5.1x5.3; local?

Cat. 93: TC10.146 (context T10-8-3), 1 wall fragment of amphora (**Fig. 38**).

Dimensions 5.5x5.5.

The two rounded pottery sherds, neatly chipped around the edges, have very similar dimensions. Such objects of secondary use have conventionally been interpreted as gaming pieces or small lids.³⁹ It is not to be excluded, however, that these objects served other, commercial purposes. One could think of their function as casting counters (German: 'Rechenpfennige'), known from the Roman period and still in use in Europe during the Medieval period (Barnard 1917). These were used on a counting board to make simple addition and subtraction sums. The house-made objects would have played a role in daily commercial activities, like street markets etc. Ceramic disks from contexts of the Roman to Byzantine period have been similarly interpreted by the excavators of the British mission in Carthage (Henig, Fulford 1984, 251-252, fig. 96). Their graphics clearly suggest a preferential diameter for these disks in the range of 2.5-4.0cm.

Recently, J. Papadopoulos added a new interpretation to the corollary of possible functions, that of 'convenient' wipers (in: Lawall *et al.* 2002, 423-427, esp. with fig. 7). Although this usage seems very convincing for the many *ostraka*, that would have received in this manner a third life, conveniently showing an equal 'appreciation' for the politicians inscribed on them, it would in most cases be fairly cumbersome to cut nice round disks for such trivial and repetitive human actions. Unless, of course, the procedure involved a thorough cleaning of the disk after every wiping. One wonders, moreover, whether the ancient Greeks wouldn't rather have preferred other, more oval shapes?

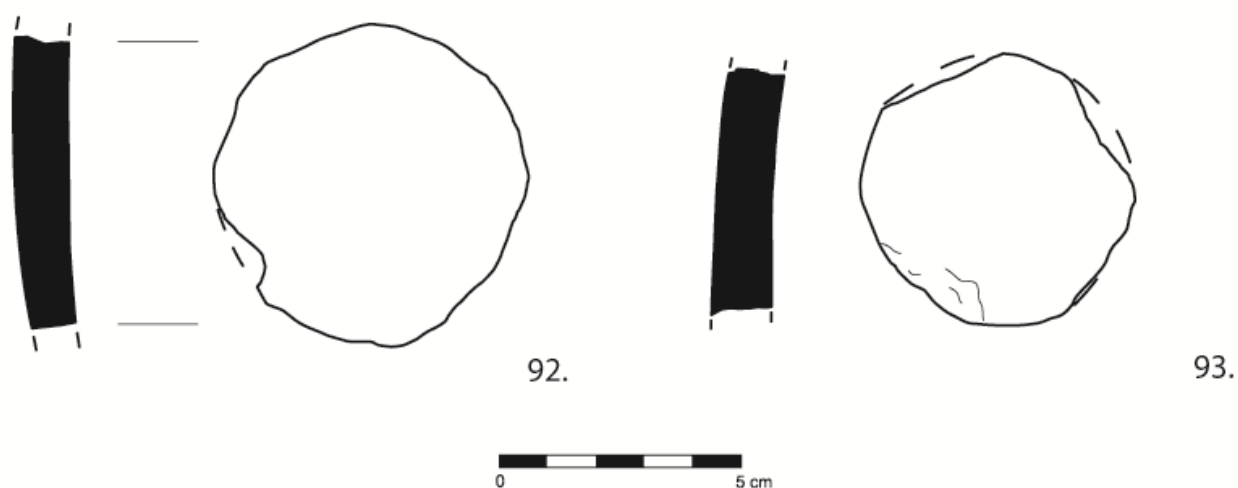


Fig. 38. *Pessoi*.

³⁹ For Athens, Lawall *et al.* 2002, 423-425 with fig. 6. Also for Punic Carthage from the 7th century BCE on, one might cite several parallels, Docter 1997, 187, figs. 375-377, 422, 497; Docter 2007, 629, cat. 5349-5350.

Tiles

Up to now, tiles have received little attention in the Thorikos publications. Among the illustrated exceptions is a rare fragment of a flat unpainted tile with a secondarily incised woman's head found in the remains of a funerary pyre in the theatre necropolis.⁴⁰ The excavator has dated it to the 5th century BCE.⁴¹ The fact that the shape is indicated as 'flat' suggests it belongs to a Corinthian roofing system. One may mention also two equally flat tile fragments with identical stamps composed of three lines from House 1 in *insula* 11 (Room Q).⁴² The Thorikos database lists only 40 tiles on a total of 8336 entries,⁴³ but this is hardly surprising given the general lack of attention paid to tiles in Classical Archaeology in the period when excavation took place in Thorikos (1963-1989).

The expectation that tiles would figure prominently in the excavated record of Thorikos can be substantiated by some rough figures given in an appendix by D. Vanhove (2006, 140-141). A large dump in Alley MC of square C4 i8 contained about 6000 sherds of the 5th century BCE. Of these, no less than 1020 (17%) were tile fragments. The composition is also remarkable: 950 fragments of flat tiles and only 70 of 'curved' ones. Pending further study, no more details are available.

The tile fragments found in the present cistern fill belong to both pan tiles and cover tiles of the Laconian roofing system, current in Greek domestic architecture (Wikander 1988, 209-211, figs. 3-4). Flat tiles of the Corinthian system are present in the fill, but have not been included in the present contribution since they did not occur in contexts studied in 2010.

One wonders where these large numbers of tiles were manufactured. Tile producing pottery workshops have been excavated in Attica, although dating to the Late Classical and Hellenistic periods: near Spata, dating to the late 4th to 2nd century BCE and in Argyroupoli dating to the 4th/3rd century BCE (Lohmann 1993, 43, n. 305; Lüdorf 2010, 155-156).

Cat. 94: TC10.37 (context T10-5-2), 1 edge fragment (**Fig. 39**).

PH 3.5; reddish glaze on top.

Cat. 95: TC10.54 (context T10-5-2), 1 edge fragment (**Fig. 39**).

PH 3.7; black glaze on top and on edge; local?

The two glazed tile fragments **Cat. 94-95** would seem to belong to fairly flat, concave pantiles with widths of more than 30cm. The fact, however, that only the convex sides of their surfaces have been glazed, shows that they were meant to function as cover tiles, rather than pan tiles. The variation in edge finishing suggests that they may have belonged to different production batches. One may refer to the production site of Phari (Thasos) for glazed pan tiles, found in a context of the first half of the 5th

⁴⁰ Mussche 1998, 76, 168, fig. 171, cat. 78 (TC78.27); Vanhove 2006, 108, 229, figs. 376-377.

⁴¹ Vanhove's (2006, 108) proposal to date the piece to the second quarter of the 5th century BCE on the basis of a confrontation with Attic figured wares seems to stretch the evidence too much.

⁴² Bingen 1990c, 151-153 (TE86.15, TE86.16). These stamps have not been included in the final publication of the graffiti, dipinti and stamps, Vanhove 2006.

⁴³ See above, n. 12.



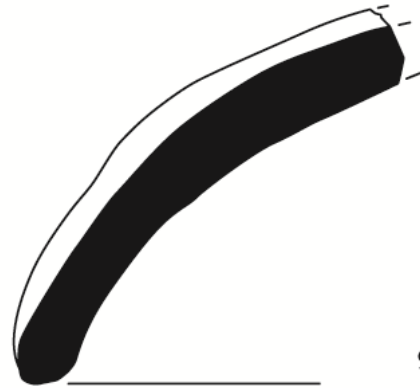
94.



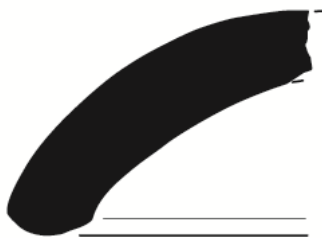
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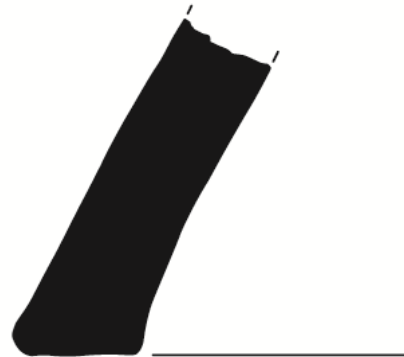
96.



97.



98.



99.



100.



101.



Fig. 39. Tiles.

century BCE, but there the concave, i.e. exterior surfaces had been covered with glaze (Perreault 1990, 203-205, figs. 2-3). The sole reconstructable tile from that production site had a length of 91.5cm; the widths are in the ranges of 39-41 and 35-37cm. The Stoa Gutter Well in Athens, dated to the period 490/480 BCE, contained a fully reconstructable glazed cover tile, of which the section is more semi-circular in shape than **Cat. 94-95**, more as with **Cat. 97-101** (Roberts, Glock 1986, 61-62, fig. 40, pl. 14). It has a length of 83.2cm. This length comes close to that stipulated by the well-known tile standard of the Athenian Agora: 2.5 Attic feet of 0.328cm = 82cm (Phillips Stevens 1950, 179, fig. 2, pl. 82,1). In that same publication, a pan tile (A938) and a cover tile (A1322) from the Agora excavations are illustrated (Phillips Stevens 1950, pl. 82,2). For both fragments presented here, one may tentatively suggest a date in the second half of the 6th and the first half of the 5th century BCE.

Cat. 96: TC10.124 (context T10-8-2), 1 edge fragment (**Fig. 39**).

PH 6.1.

This unglazed tile fragment may have belonged to a pan tile (see discussion above, **Cat. 94-95**). Its date may be set in the second half of the 6th until the late 4th century BCE.

Cat. 97: TC10.95 (context T10-8-2), 1 rim fragment with ridge at the end of the tile (**Fig. 39**).

PH 7.6.

Cat. 98: TC10.53 (context T10-5-2), 1 edge fragment (**Fig. 39**).

PH 4.9; local?

Cat. 99: TC10.23 (context T10-5-1), 1 edge fragment (**Fig. 39**).

PH 6.6; reddish yellow (5 YR 7/6) clay with grainy structure.

Cat. 100: TC10.94 (context T10-8-2), 4 edge fragments, twice 2 joining (**Fig. 39**).

PH 6.2; roughened on underside; import.

Cat. 101: TC10.148 (context T10-8-3), 2 edge fragments (**Fig. 39**).

PH 6.6; roughened on underside.

These five tile fragments seem to belong to conventional cover tiles in the Laconian system, more or less semi-circular in section. Cover tiles are smaller in width than pan tiles and normally of trapezoidal shape. Placed upon the roof, these tiles would cover the edges of two joining pan tiles, and their wider parts would be at the lower ends. A similar fully preserved cover tile (A1322) has been published from the Agora excavations (Phillips Stevens 1950, pl. 82,2). Also the production site of Phari (Thasos) has yielded similar cover tiles in a context of the first half of the 5th century BCE (Perreault 1990, 206-207, fig. 5). The ridge at the end of tile fragment **Cat. 97** suggests that it belongs to the wider lower end of the tile (cf. Perreault 1990, 207, figs. 4-5, pl. 26). Roughened concave sides of two of the fragments (**Cat. 100-101**) are encountered more often with such cover tiles, and would guarantee a better grip on the lower tiles. With pan tiles this principle is sometimes encountered on the convex, i.e. lower sides (cf. Perreault 1990, 204-205, fig. 3). The date of these tiles may be set in the second half of the 6th until the late 4th century BCE.

Water pipe

Cat. 102: TC10.96 (context T10-8-2), 1 wall fragment (**Fig. 40**).

Diam. wall 10, PH 9; calcareous concretions on in- and outside.

Water pipes have been known rather well from 6th to 4th century BCE Athenian contexts. They are often semi-glazed, with the glaze applied in bands, and provided with joint tongues.⁴⁴ The present piece is smaller in diameter than most of the ones published from Athens that range between *ca.* 14 and 26cm, although smaller diameters of 11.5cm occur in 'Gruppe 4' of R. Tölle-Kastenbein (1994, 69) and of 10cm in a younger branch of the water channel of the Athenian Tholos (Tölle-Kastenbein 1994, 70). Moreover, **Cat. 102** seems to have been fully unglazed.

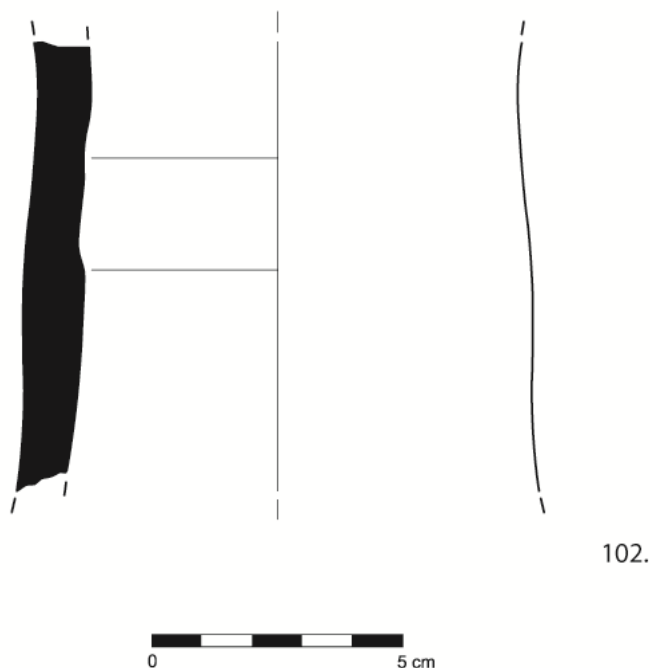


Fig. 40.

Stone

Basalt mill stone

Cat. 103: TP10.152 (context T10-4-1), 1 rim fragment (**Fig. 41**).

Preserved width 12.8, PH 8.9, width of top edge 3.5.

The fragment belongs to a rectangular millstone as frequently used in the silver processing in the Laurion area.⁴⁵ The Museum of Lavrio has presently one on display at the entrance, several more in the garden and one on the inside. Their use may be grasped from the impressionistic reconstruction drawing made by C. Conophagos (see elsewhere in this volume, p. 73, fig. 18). Dating remains problematic: 6th to 4th century BCE.

⁴⁴ e.g. Boulter 1953, 112, pl. 41,192; Tölle-Kastenbein 1994; S. Marinakis, in: Parlama, Stampolidis 2000, 58; O. Zachariadou, in: Parlama, Stampolidis 2000, 154-155, figs. 7-8, p. 192, fig. 2; E. Lygouri-Tolia, in: Parlama, Stampolidis 2000, 222-223. See also Lang 1968.

⁴⁵ In general on the role of mill stones in the process of silver extraction, see Conophagos 1980, 216-223; also Ardaillon 1897, 61; Tsaimou 1988; Tsaimou 2000, 115-116.



Fig. 41.

Comment on the composition of the fill

In general, the fill of the cistern excavated in 2010 contains finds of two large chronological horizons. The majority of the finds published here (87%) originate in the previous activities that took place around the cistern, and most likely higher up the Velatouri. Only 13% of the finds may be attributed to the Late Antique phase, when the cistern was ultimately filled in (**Fig. 42**). Sherd size and the measure to which joins are encountered within the finds may play an important role in assigning material to one of the two major chronological horizons, especially in the case of chronologically less distinctive Plain, Cooking and Coarse Wares. It appears that the Late Archaic to Late Classical/Early Hellenistic material in the fill is much more fragmented, smaller and worn. The Late Antique fragments generally seem to be of larger sizes (cf. **Figs. 19a-b, 32, 34a-b**). It seems that several contexts with large numbers of animal bones (of relatively large sizes) belong exactly to this chronological horizon.

The Late Archaic to Early Hellenistic finds in the cistern's fill show two marked peaks: one comprising the 5th century and one the second half of the 4th century BCE, with a significant peak in the period 330-320 BCE (**Fig. 42**).

As to the Late Antique finds, one may note the fact that also in the northern part of Tower Compound 1 in *insula* 3 Late Roman amphorae have been found (Spitaels 1978, 103-105, figs. 60-63) in connection with possibly Late Roman domestic pottery, of which P. Spitaels mentions only two cooking pots.⁴⁶ The amphorae are fairly well preserved and are clear evidence of a layer of abandonment. Judging from the description, the cooking vessels also seem to have been preserved with fairly large portions of their profiles, very much like the vessels discussed here (see **Cat. 51, Fig. 19a-b**). The amphorae (and presumably also the other finds) were found under a thick demolition layer composed of stones from the collapsed walls (Spitaels 1978, 106, fig. 64), very much as the situation encountered in Cistern No. 1.

⁴⁶ Spitaels 1978, 103 with n. 45: TC68.719, TC65.766.

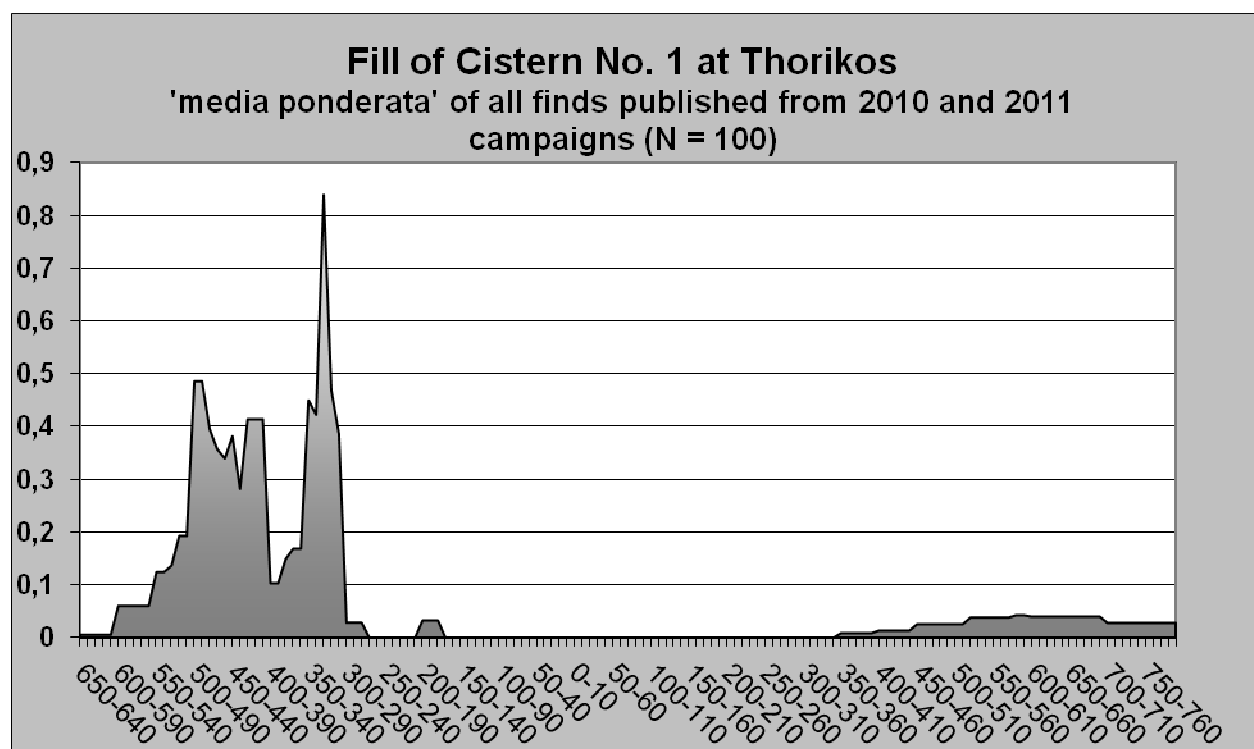


Fig. 42. Thorikos, Cistern No. 1. 'Media ponderata' of fill (published finds from 2010 and 2011 campaigns); prepared by R. Docter on basis of this report and that of S. Mortier, this volume.⁴⁷

The Late Roman period in Thorikos has been cursorily treated in earlier publications. There is some evidence in the shape of lamps, amphorae and rock inscriptions and drawings, mainly in Mines nos. 3 and 4, *insula* 3 and the Theatre Necropolis, and mainly dating to the 5th century CE with some earlier material belonging to the 3rd/4th centuries CE and some material dating to the 6th.⁴⁸ H. Mussche describes the state of affairs as follows: "There are no demonstrable architectural remains, which leads one to conclude that it was once again a sort of squatter occupation, or a very rudimentary miners' settlement".⁴⁹

The presentation of the finds of the 2010 campaign in Cistern No. 1 clearly show that this chronological picture has to be adjusted (see also **Fig. 42**). The finds of this latest phase of Thorikos' history seem to date more coherently to the 6th and 7th centuries CE (viz. between 520 and 700 CE). They even lead us into the Early Byzantine period, with clear indications of finds dating to within the 8th century CE. It is not unlikely that a more detailed restudy of previously excavated finds from other sectors on the site would confirm this chronology on a broader base.⁵⁰

⁴⁷ The graphic representation ('media ponderata') is based upon the work of N. Terrenato and G. Ricci: Terrenato, Ricci 1998; see also Van de Weghe *et al.* 2007.

⁴⁸ See n. 47; Butcher 1982; Mussche 1990, 57-60, figs. 54-55, Mussche 1998, 65; Vanhove 2006, 63, 97, figs. 243-244, 342-343; Monsieur 2008; P. Monsieur in: Docter *et al.* 2010, 49-51, fig. 20.

⁴⁹ Mussche 1998, 65. Apparently some architectural remains of the Late Hellenistic and Roman periods seem to have been published, however: Mussche 1990, 57-60, fig. 54.

⁵⁰ It is highly likely that the distribution of Roman, Late Antique and even Early Byzantine finds on the site is much denser than expected, see e.g. Mussche's and Spitael's report in Catling 1979-1980, 19 (Theatre area).

Also from a topographical and functional point of view, the postulation of a squatter occupation in Thorikos in the (Late) Roman period is not a comfortable one. The distribution of finds over the area is just too extensive, even more so if one acknowledges the fact that especially these upper layers, structures and finds have been most liable to suffer from later destruction and erosion processes. The rather limited attention to finds of the period in the wider research agenda of the scholars working in Thorikos since 1963 will definitely not have helped this situation for the better. The main argument, however, in considering the squatter occupation theory not a realistic one is the fact that, apparently, the inhabitants of Thorikos continued using and respecting the earlier necropoleis, especially the Theatre Necropolis until well into the Late Roman period.⁵¹ Moreover, it seems that the mining activities at the time, small as they may have been in scale, were nonetheless extensive, and now also include Mine no. 2, situated to the East of the Cistern. Mussche is probably right in connecting these late mining activities from the 5th century CE on with “a greater demand for silver during the reign of Theodosius II (408-450 AD) and Marcianus (450-471 AD), who found themselves cut off from the silver mines in Spain (...)” (Mussche 1998, 65), although a possible extraction of lead is not to be excluded either. The ensuing connection of the end of occupation in Thorikos and the Laurion as a whole with the Slav incursions in 582/583 CE (Mussche 1998, 65), however, may not be tenable in the light of the finds presented here (esp. **Cat. 51 and 80; Figs. 19a-b, 34a-b**).

In a recent overview, T. Mattern (2010, with pl. 53) sketches the desperate state of affairs of our understanding of Late Antique and Early Byzantine Attika. Although the evidence he included for Thorikos is far from complete (Mattern 2010, 222, 229, pl. 53), the published picture for the whole of Laurion and even for well-studied areas elsewhere in Attika, seems to be hardly any better. Mattern lists a whole series of historically attested events during the (Late) Roman and Early Byzantine period that all may have disrupted – even temporarily – the human occupation and settlement pattern in Attika and, hence, may also be taken into consideration for Thorikos: the Heruli incursions of 267 CE, the Visigothic incursions under Alaric I between 395 and 397 CE, the ravaging of the coasts by the Vandal fleet in 475 CE, the large earthquake of 552 CE, and the Slav incursions since 582 CE (Mattern 2010, 202). Whatever historical event (if any) had affected Thorikos and may have caused a disruption of its occupation, it will not have been a final end. The present contribution shows that the site recovered and witnessed a last – modest – phase till within the 8th century CE (esp. **Cat. 51 and 80; Figs. 19a-b, 34a-b**).

A last word on the composition of the fill regards the selection published here. Only 43 of the 103 pottery vessels and objects belong to the categories of figured and (semi-)decorated wares, which in previous preliminary and final reports figured so prominently (see above, p. 91). This means that 58% of all items belong to other, less

⁵¹ Graves 516 and 519 of 3rd/4th century CE and end 4th/beginning 5th century CE, respectively, as well as graves 507 and 509: Catling 1979-1980, 19; Bingen 1990b; Mussche 1998, 65, 72, 75-76; Mattern 2010, 229, pl. 53.

conspicuous pottery classes. When looking at the database of the 2010 campaign (1373 fragments of the 1383 inventoried ones), it becomes clear that the selection published here still does not do full justice to the archaeological reality: 14% figured and (semi-) decorated wares *vs.* 86% Plain, Coarse, Handmade and Cooking Wares. Nevertheless, this presentation may offer a more balanced and representative view of the variety of material remains, and hence of human presence and activities in ancient Thorikos, than had been possible on the basis of previous publications.

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Late Classical and Early Hellenistic Finds from Cistern No. 1 at Thorikos

Sophie Mortier

Introduction

Attica at the transition from the Late Classical to the Early Hellenistic period (i.e. *ca.* 350-250 BCE) is one of the lesser-known areas in the domain of Greek archaeology. Traditionally, a strong research focus has always been on the (Early and High) Classical period of Athens, i.e. the 5th century BCE because of the leading role Athens played in geopolitics, literature, arts, philosophy and science.

One of the decisive economic factors in the Athenian success story has been its access to the silver mining area of the Laurion in south-eastern Attica. Within the region, Thorikos played a substantial role as a supplier of silver; it shows metallurgic activity from the Late Archaic period to the Early Classical period after which activities seem to have ceased until the beginning of the 4th century BCE.

During the second quarter of the 4th century BCE a boom in mining activities appears to have taken place. Proof of the resumption of such activities can be found in a lease dated to 367 BCE (Crosby 1950, 190). Apart from new mining leases dating to this period, a large number of 'inkwell' lamps, good chronological markers, were found in and around Mine no. 3, and have been used as an additional body of evidence.¹ Also, in the Industrial Quarter considerable building activity took place, which points to a reoccupation of this part of the site during the second quarter of the 4th century BCE (Mussche 1998, 64; Docter, Van Liefferinge 2010, 58). The function of this part of the site seems to have changed from a residential area in the 5th century BCE to a markedly industrial one in the second quarter of the 4th.

The generally held view, based upon the epigraphical and archaeological evidence, is that at the end of the 4th century BCE decline set in, slowly at first, but faster near the close of the century (Mussche 1998, 64). Since Thorikos played a pivotal role in the Laurion mining district, the archaeological record of the site may be expected to reflect the vicissitudes of economic life in the region and perhaps even, by extension, of Athens and Attica. The precise chronology of this 'closing' phase of Thorikos, however, has not been established conclusively yet. A preliminary inventory of

¹ Mussche 1967a, 47-62; Blondé 1983, 115-132, 170, nos. 192-195, 197-209, 211-213, 215-216, 218-221, 223-224, 241, 243, 248-249. The use of these lamps as additional indicators for the resumption of activities in the second quarter of the 4th century BCE (as in Mussche 1998, 64) would, however, lead to a circular argument. Blondé (1983, 118-120), in fact, used the epigraphically attested resumption of mining activities as an argument to date the start of these inkwell lamps to the (early) second quarter of the 4th, rather than to the middle of the 4th as Howland (*Agora* IV, 61) did on the basis of the Athenian evidence.

published finds dated to the general period 350-250 BCE in Thorikos yields not inconsiderable amounts of material distributed over the whole site (see **Fig. 1**). Some of these finds date to the first half of the 3rd century BCE (see also Blondé 1983, 119). One may, therefore, ask whether mining continued, possibly on a smaller scale, or whether habitation continued on a different economic basis.

Historical background

Historically, the latter part of the Late Classical and Early Hellenistic period in Attica can be seen as a period of turmoil as a result of Macedonian involvement in Greece and subsequent dominance over the area: the sequence of war and conflicts had a dramatic effect on the economical workings of the countryside. Starting with the Battle of Chaeronea in 338 BCE one conflict followed another. Athens' loss of control over the strategic Mounychia hill in Piraeus and thus over the harbour between 322-307 and 295-229 BCE, had a considerable impact upon economic activities that took place in the countryside around Athens. The Chremonidian war of the years 265-261 BCE brought civil unrest and destruction to Attica. For the better part of the 3rd century BCE the Athenian polis is thought to have been no longer in control of its own territory due to the presence of foreign garrisons (Oliver 2007).

Summary of Late Classical / Early Hellenistic finds across Thorikos (Fig. 1)

Although very little attention has been paid to finds from the Late Classical and Early Hellenistic period, this does not mean they are not present in the (ceramic) repertoire. One of the major finds of the site can even be placed in this very period: the monetary hoard found during the 1969 campaign (Bingen 1973; Bingen 2010). This hoard was uncovered in *insula* 2, in the Industrial Quarter. 282 Attic tetradrachms from the late 4th century BCE and 10 other coins from different places were found in a chytra. Among the other coins were four non-Attic gold staters, a posthumous striking of Philip II in Macedonia, to be dated around 310 BCE as well as an Athenian gold stater assigned to 301-294 BCE and a silver tetradrachm of Alexander the Great. The closing date of the hoard, which has always been linked to the abandonment of the site, can thus be placed around 295 BCE (Bingen 1973, 18-21; Bingen 2010, 64-65).

In several places in Thorikos, lamps point to Late Classical and Early Hellenistic activity on the site. Mine no. 3 for example provided a considerable number of 'inkwell' lamps that can be dated from *ca.* 370 to 260 BCE.² This strongly suggests that exploitation of Mine no. 3 still took place in the late 4th/early 3rd century BCE.³

² See above, n. 1, and the other lamp types of the 4th and early 3rd century BCE, Blondé 1983, 99-114.

³ For a similar deposit from the Agora excavations with inkwell lamps cf. *Agora* XII, 386.



Fig. 1. Thorikos. Find locations of Late Classical and Early Hellenistic material in Thorikos (prepared by S. Mortier on the basis of map by K. Van Liefferinge, C. Stal, and A. De Wulf).

Other examples of these late lamps have been found in other places on the site. House no. 1 provides two lamps, one dating to the end of the 4th century and another dating between around 350 and the first quarter of the 3rd century BCE (Mussche 1968, 94-96; Blondé 1983, 99-100). In the destruction layer of *insula* 3 several lamps were found dating to 365-275 BCE, 325-260 BCE and 350-300 BCE (Mussche 1967b, 57-71; Blondé 1983, 99-100). Also, the Tower Compound showed some indications of late 4th/early 3rd century activity with two lamps dating to around 360-260 BCE (Spitaels 1978, 39-110; Blondé 1983, 99-100).

Thorikos has produced several examples of the kantharos, one of the main Late Classical and Early Hellenistic drinking vessels that originated in the 4th century BCE. Some of these examples can be dated to the late 4th century BCE. Others are to be dated earlier in the 4th century, for example those with rouletting and palmette decoration. This type of decoration appears at the beginning of the kantharos' development, but loses popularity later in the century (*Agora* XXIX, 83-93, figs. 4-11, pls. 1-13).

In the Theatre area excavations have been carried out in House no. 2, next to the Theatre. In the 4th century BCE this house was thoroughly rebuilt and repaired. The presence of sherds of 'Megarian' bowls indicates that it was still in use during the Hellenistic period (Mussche 1998, 34-35).

In square D4f0, part of the area south of the Theatre, an iron forge indicates metallurgical activity of a different nature than in previous periods. In the most recent layer of this forge a bronze coin dating to the 2nd century BCE, 17 stamped Hellenistic amphora handles, numerous fragments of Hellenistic amphorae from Kos (mainly 2nd century BCE) and a number of sherds of 'Megarian' bowls suggest a date in the Hellenistic period (Mussche 1998, 44, 64-65; Vanhove 2006, 114-138; Docter *et al.* 2010, 50).

Selection of finds from Cistern no. 1

In 2010 and 2011 excavations have been carried out in the largest cistern on the Velatouri hill (Cistern no. 1), which is situated in macro-square A'51 (see Van Liefferinge *et al.*, this volume). Cistern no. 1 belonged to a larger workshop of ore-washeries and cisterns situated around Mine no. 2. The structure is well preserved and was partly cut into the rock and partly built with ashlar masonry. The finds from the cistern's fill can be divided in two distinct chronological groups, namely pottery belonging to the Late Archaic to Late Classical/Early Hellenistic period and pottery belonging to Late Antiquity (Docker, Monsieur, van de Put, this volume, esp. 118-119, fig. 42). The large proportion of Late Classical/Early Hellenistic pottery, notably of the second half of the 4th century BCE, and more particularly of the decade 330-320 BCE, is remarkable (see also below, **Fig. 6**). It remains to be investigated whether this is a strictly local chronological phenomenon (i.e. in and around Cistern no. 1) or whether it conforms to a more general pattern in Thorikos. The presentation of the pottery from this phase found in the 2010 and 2011 campaigns may be a first step towards such an investigation.

Campaign 2010

Below, some more detailed information is provided on the Late Classical/Early Hellenistic finds from the 2010 campaign.⁴ Of the seven diagnostic kantharos fragments that were found in the 2010 campaign, six belong to the second half of the 4th century BCE and three can even be attributed to the last quarter of that century.⁵ One of these later pieces is a kantharos with ribbing. This type of decoration develops during the second half of the 4th century BCE. None of the earlier examples of kantharoi that have been found on other parts of the site have been found in the cistern thus far.

⁴ For full descriptions of these fragments one may refer to the catalogue entries in Docker, Monsieur, van de Put, this volume.

⁵ See Docker, Monsieur, van de Put, this volume, 79-80, cat. 7-13, fig. 5.

Other sherds that can be attributed to the Late Classical and Early Hellenistic period are two fragments of a skyphos, a rim fragment of a bowl, a rim fragment of a lebes, possibly a rim fragment of a lekane, a rim fragment of a jug, a base fragment of a trefoil mouth jug, and a neck-handle fragment of a Chian amphora.⁶ A fragment of a brown glazed bowl with rouletting and impressed palmettes from the 2010 campaign finds a good parallel in a bowl found in the 2011 assemblage (see below, **Cat. 4**).⁷ The very fragmentary spout of a lamp may tentatively also be attributed to a shape of this period; it has been compared by W. van de Put with an inkwell lamp from Thorikos dated between 375 and 300 BCE.⁸

Campaign 2011

Five pieces of the 2011 campaign can with some certainty be assigned to the Late Classical and Early Hellenistic period. The finds include three kantharos rims and two fragments of bowls with rouletting and impressed palmettes. Apart from these, one possible lagynos fragment, dating to the first quarter of the 2nd century BCE, has also been found in the cistern's fill.

Kantharos

Cat. 1: TC11.10 (context T11-5-1), 1 moulded rim fragment of kantharos (**Fig. 2**).

Max. diam.: 10 cm; good black glaze on inside and outside.

Clay: light reddish brown 5YR6/3⁹. Fabric with isolated white particle.

Cf. Agora P 13528/P12691 (*Agora* XII, no. 700/701)

Date: ca. 350-325 BCE.

Cat. 2: TC11.23 (context T11-5-2), 1 fragment of spur handle of kantharos (**Fig. 2**).

Max. diam. not to be determined; good black glaze all around.

Clay: reddish yellow 5YR6/6. Fine Attic clay, no inclusions visible.

Cf. Agora P 12691 (*Agora* XII, no. 701).

Date: as **Cat. 1**.

Cat. 3: TC11.81 (context T11-1-5), 1 moulded rim fragment of kantharos (**Fig. 2**).

Max. diam.: 10 cm; good black glaze on inside and outside.

Clay: light reddish brown 5YR6/4. Some white particles (< 0.1) visible.

Cf. Agora P 13528/P12691 (*Agora* XII, no. 700/701).

Date: as **Cat. 1**.

⁶ See Docter, Monsieur, van de Put, this volume, 76-77, 81, 87-88, 97-98, 102-103, cat. 1-2, 16, 36, 57, 59, 67, figs. 1, 8, 14, 22, 27.

⁷ W. van de Put dates this piece to the period 375-325 BCE, however, on the basis of the shape: Docter, Monsieur, van de Put, this volume, 78, cat. 6, fig. 4.

⁸ Docter, Monsieur, van de Put, this volume, 81, cat. 17, fig. 9.

⁹ Colour descriptions follow *Munsell Soil Color Charts* 1990 revised edition. Measurements are in cm unless otherwise stated.

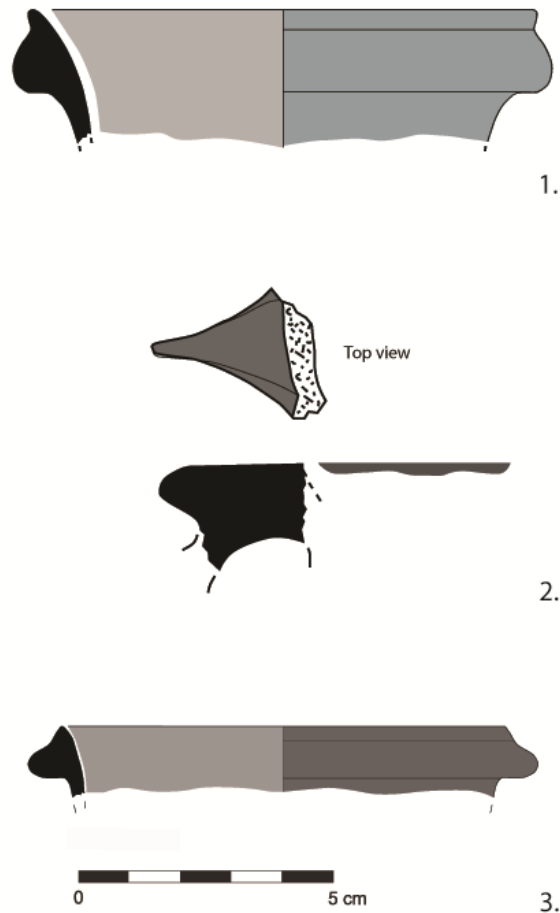


Fig. 2. Kantharoi.

Bowl

Cat. 4: TC11.85 (context T11-1-5), complete profile of small bowl (echinus bowl?) (**Figs. 3-4**).

Max. diam. rim: 9 cm; good brown glaze on inside and outside (2,5 YR 4/8); two impressed palmettes inside single-file rouletting.

Clay: red 2,5YR5/6. Very fine clay, no inclusions visible.

Cf. Agora P 4427 (*Agora* XXIX, no. 965).

Date *ca.* 325-300 BCE.

Cat. 5: TC11.120 (context T11-10-2), 1 rim fragment of small bowl (**Fig. 3**).

Max. diam. rim: 10 cm; brown glazed inside and outside (10 R 5/6); single-file rouletting around bottom.

Clay: light red 2.5YR6/6. Fabric with isolated dark particle 0.2.

Cf. Agora P 4427 (*Agora* XXIX, no. 965).

Date: as **Cat. 4**.

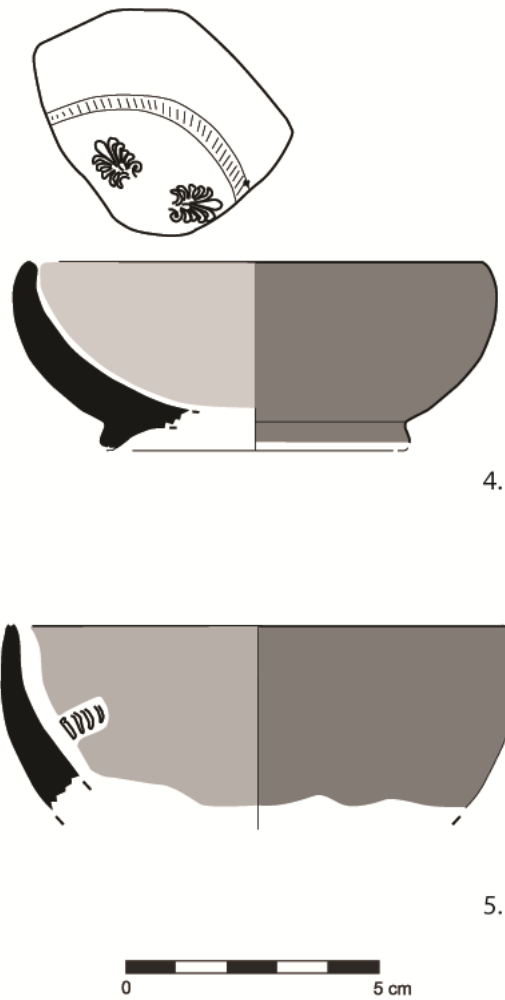


Fig. 3. Bowls.



Fig. 4. Bowl Cat. 4; photo's W. van de Put (not to scale).

This type of bowl originated at the beginning of 4th century BCE and lasted well into the Hellenistic period. The shape starts off as a bowl with incurving rim and a substantial ring foot. Later on, the shape develops a higher and thinner foot while the wall loses its curve and straightens out. The typical decoration with rouletting and palmette stamps is harder to put into a developmental sequence, since it is a very common pattern.

During the previous campaigns in Thorikos other examples have been found of wares resembling **Cat. 4**. In the western necropolis “céramique à palmettes estampées, beaucoup de poterie d’un brun rougeâtre” was found during the 1963 campaign (Bingen 1968, 79-80). *Insula 3* provided some bowls that are very similar to **Cat. 4** (same shape and decoration, but of a larger size) and that can be dated in the same period: ca. 325-300 BCE (Mussche 1990, 48-50). The 2010 campaign has yielded a similar fragment of a bowl or plate, which may be dated around 325 BCE.¹⁰ The diameter of the base is substantially larger than the examples found during the 2011 campaign and could thus also have belonged to a plate or large bowl (cf. *Agora* XII, P 13543, no. 835).

Lagynos (?)

Cat. 6: TC11.30 (context T11-5-2), 1 body fragment of lagynos (?) (**Fig. 5**).

Max. diam. body: 20 cm; brown glazed outside, partially worn off.

Clay: red 10R4/4. Possibly local fabric with isolated vacua and one small mica fragment.

Cf. *Agora* P18710 (*Agora* XXIX, no. 494).

Cat. 6 is possibly a fragment of a typical Hellenistic shape, a lagynos. Comparison of the fragment with examples from the Athenian Agora excavations provides good parallels for the shape leading to a date of ca. 200-175 BCE.

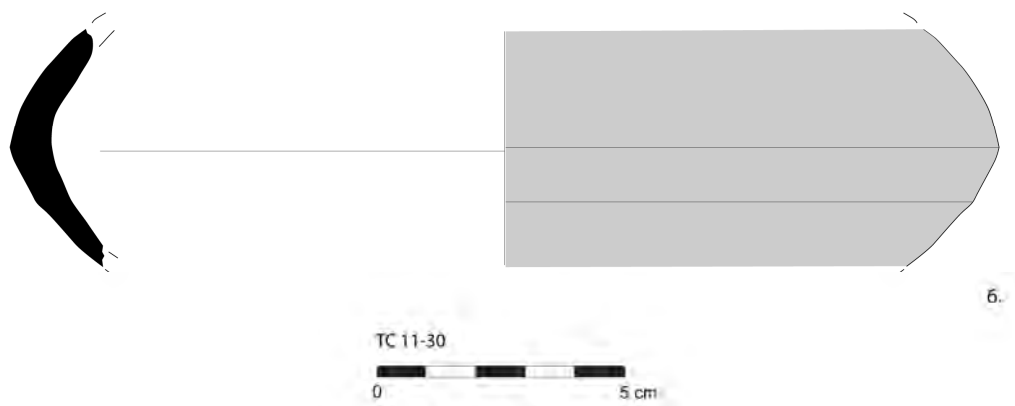


Fig. 5.

¹⁰ Or 375-325 BCE, see above, n. 7.

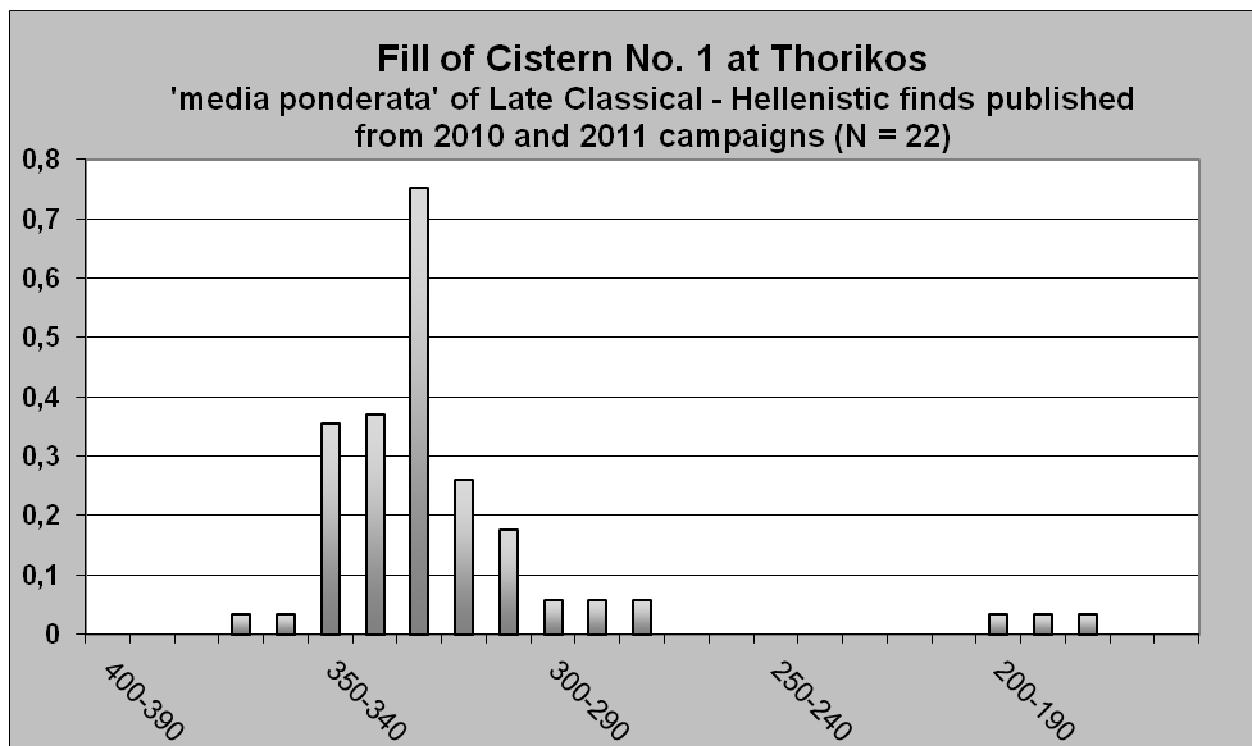


Fig. 6. Thorikos, Cistern No. 1. 'Media ponderata' of Late Classical and Hellenistic finds from the fill (2010 and 2011 campaigns); prepared by R. Docter on the basis of this report.¹¹

Conclusion

Given the small number of sherds that can be attributed to the Late Classical and Early Hellenistic period, both in the earlier publication record of Thorikos and the 2010-2011 campaigns, it is still too early to grasp the full picture of the site in this period. Some aspects have become clear, however: the Late Classical and early Hellenistic period is indeed represented in the ceramic repertoire. Within the finds from the cistern published in this volume, the Late Classical and early Hellenistic period accounts for no less than 20% (**Fig. 6** and fig. 42 on p. 119, this volume). Although there are not many fragments published in absolute terms, those that have been belong to shapes that were very common throughout this period (brown-glazed bowl, kantharos) and indicate a certain level of activity during this period. Another aspect that needs to be taken into account is the fact that some Classical shapes live on in later periods and are hard to distinguish from earlier varieties of the same shape, especially when in fragmentary state. Lekanoi for example are still popular during the Hellenistic period (Lüdorf 2000; Lüdorf 2010, 155-158). Some sherds actually belonging to the Hellenistic Period may thus have been erroneously assigned to the Classical period in previous publications.

¹¹ The graphic representation ('media ponderata') is based upon the work of N. Terrenato and G. Ricci: Terrenato, Ricci 1998; see also Van de Weghe *et al.* 2007.

It may be concluded that most fragments in the cistern's fill that belong generally to the Late Classical and Early Hellenistic period seem to date to the last thirty years of the 4th century, especially to the decade 330-320 BCE (**Fig. 6**). Pieces dating to the 3rd century have not yet been found with full certainty. A possible lagynos fragment (**Cat. 6, Fig. 5**) may well date to the 2nd century BCE, and would, hence, fit in the thin 2nd-century BCE stratum that has been attested elsewhere on the site (see above, the iron forge south of the Theatre). More examples of pottery dating to this period are needed, however, to change the chronology of the cistern's fill.

In this connection, it should be taken into consideration that the Hellenistic settlement could have been located in a different part of the site. A systematic survey of the Velatouri hill and the surrounding territory of Thorikos, which is scheduled for 2012 and the following years, may lead to more clarity on this point. Also post-depositional processes should be considered in explaining the chronological picture of the Industrial Quarter and, in particular, the workshop area of Cistern no. 1. This zone, as the rest of the settlement of Thorikos, is located on the lower part of the Velatouri hill. Erosion processes may well have brought in material from farther up the hill or, alternatively, have washed away the highest and most recent levels (Mussche 1998, 64).

In conclusion, pending a fuller and more intensive study of the Late Classical and Early Hellenistic period in Thorikos, the chronology and nature of the latest (pre-Roman) occupation of the site remain an open question. Only after a systematic study of Thorikos in this period, more general questions, such as the end of metallurgical activity in Thorikos and the Laurion, the role of the site within the economy of Athens, and the way the Athenians exploited their wider hinterland, may be addressed and answered.

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