

SVENSKA INSTITUTEN I ATHEN OCH ROM
INSTITUTUM ATHENIENSE ATQUE INSTITUTUM ROMANUM REGNI SUECIAE

Opuscula

Annual of the Swedish Institutes at Athens and Rome

7
2014

STOCKHOLM

EDITORIAL COMMITTEE:

Prof. Gunnel Ekroth, Uppsala, Chairman
Prof. Arne Jönsson, Lund, Vice-chairman
Ms Kristina Björkstén Jersén, Stockholm, Treasurer
Dr Erika Weiberg, Uppsala, Secretary
Prof. Peter M. Fischer, Göteborg
Dr Kristian Göransson, Rome
Prof. Karin Hult, Göteborg
Prof. Arja Karivieri, Stockholm
Dr Emilie Karlsmo, Uppsala
Prof. Anne-Marie Leander Touati, Lund
Dr Arto Penttinen, Athens

SECRETARY'S ADDRESS:

Department of Archaeology and Ancient History
Box 626
SE-751 26 Uppsala, Sweden
E-mail: secretary@ecsi.se

EDITOR:

Dr Jenni Hjöhlman, Stockholm
E-mail: editor@ecsi.se

DISTRIBUTOR:

eddy.se ab
Box 1310
SE-621 24 Visby, Sweden

For general information, see www.ecsi.se

For subscriptions, prices and delivery, see <http://ecsi.bokorder.se>

Published with the aid of a grant from The Swedish Research Council

The English text was revised by Dr Catherine Parnell, Athens, and Rebecca Montague, Hindon, Salisbury, UK

Opuscula is a peer reviewed journal. Contributions to *Opuscula* should be sent to the Secretary of the Editorial Committee (address above) before 1 November every year. Contributors are requested to include an abstract summarizing the main points and principal conclusions of their article. For style of references to be adopted, see www.ecsi.se/guides-contributors. Books for review should be sent to the Secretary of the Editorial Committee (address above).

ISSN 2000-0898

ISBN 978-91-977798-6-9

© Svenska Institutet i Athen and Svenska Institutet i Rom

Printed by Elanders Sverige AB, Mölnlycke 2014

Cover by Kristin Parknert. Drawing from Karlsson *et al.* in this volume, p. 38, fig. 18

Labraunda 2012–2013

A preliminary report on the work at the sanctuary, with a new reconstruction drawing of the sanctuary by Jesper Blid Kullberg and an appendix by Fredrik Tobin

Abstract

This article is divided into two parts. In the first part, preliminary reports on the archaeological work conducted at the sanctuary during the years 2012 and 2013 is presented, and in the second part, two conservation projects are discussed. The first part includes a description of the excavations at the Split Rock by Lars Karlsson, an account of the excavations on the slope of the Monumental Tomb, a description of the work at the Akropolis Fortress gate by Baptiste Vergnaud, and a synopsis of the work at the M-Building. The second part starts with a report on the preparations for the stabilization of Andron A and continues with an account of the last two years of marble conservation by Agneta Freccero. The final report on the Exedra of Demetrios on the Temple Terrace will be presented separately in the Appendix by Fredrik Tobin. A new drawing by Jesper Blid Kullberg, presenting a restored view of the sanctuary at the beginning of the 4th century AD, is also published here.

Keywords: Labraunda, sanctuary, Zeus, Kybele, fortress, conservation

Introduction (Figs. 1a–b)

During these two years of work (2012–2013), the Labraunda project concentrated on three archaeological projects inside the temenos and one outside, as well as two conservation projects:¹ inside the temenos, excavation work was conducted

(1) at the Split Rock by Lars Karlsson, (2) on the slope below the Monumental Tomb by Olivier Henry, (3) at the so-called M-Building (on the Well-House Stoa), which is now believed to be a Roman basilica, by Jesper Blid Kullberg and Ragnar Hedlund, and (4) above the temenos, where an excavation was conducted by Baptiste Vergnaud in the gate area of the Akropolis Fortress. The final publication on the study of the semi-circular exedra on the Temple Terrace by Fredrik Tobin will appear in the Appendix. The two conservation projects include (1) a preparation for the stabilization of the 9-metre-tall south wall of Andron A, executed in collaboration with the Architectural Conservation Department of The Middle East Technical University (METU) in Ankara, and (2) the marble conservation work initiated in 2010 by Agneta Freccero. Both of these will be described at the end of this article. The team consisted of researchers from the universities of Uppsala, Stockholm and Bordeaux, as well as 15 local workmen.

* This report is dedicated to the memory of Labraunda architect Thomas Thieme (1939–2014). The campaign of 2012 became his last.

¹ The participants in 2012 were as follows: Lars Karlsson (director), Pontus Hellström, Ragnar Hedlund, Axel Frejman, Klara Borgström, Fredrik Tobin, Uppsala University; Thomas Thieme, Göteborg, Jesper Blid Kullberg, Stockholm University; Fatma Bağdatlı (Aydın University, second director); Olivier Henry, the French Institute of Anatolian Studies in Istanbul; Baptiste Vergnaud and Celia Decalonne, Bordeaux University. The conservation team consisted of Agneta Freccero, Tommarp, Erika Andersson and Andreas Berndt, Göteborg University, and Yilmaz Gündüz, Muğla University. Economic support came from Magnus Bergvalls Stiftelse and Åke Wibergs Stiftelse, as well as The Friends

of Labraunda and Uppsala University, Department of Archaeology and Ancient History. Representing the Turkish Ministry of Culture and Museums was Mehmet Katkat, Eskişehir Museum. The participants in 2013 were as follows: Lars Karlsson and Olivier Henry (both acting as co-directors); Pontus Hellström, Ragnar Hedlund, Klara Borgström, Fredrik Tobin; Jesper Blid Kullberg; Baptiste Vergnaud of The French Institute of Anatolian Studies in Istanbul, Melissa Cormier Huguet, Bordeaux University; Katerina Stathi, Athens; Vasile Lungu from the Romanian Academy in Bucharest. The conservation team consisted of Agneta Freccero, Erika Andersson, Riksantikvarieämbetet, Visby, Anna Plahn, Victoria Bly and Adam Justin Moll, all from Uppsala University Campus Gotland, and Anna Enberg, Nässjö. The economic support came from The Royal Swedish Academy of Letters, History and Antiquities, The Friends of Labraunda and Uppsala University, Department of Archaeology and Ancient History. Representing the Turkish Ministry of Culture and Museums was Suleyman Özgen, Milas Museum.



Fig. 1a. Aerial view of the sanctuary from the south. Note the Split Rock in the upper middle picture, with the rock outcrop to the left. The soil in between these rocks was excavated in 2012. Photograph courtesy of Anneliese Peschlow-Bindokat, Herakleia-under-Latmos excavations.

The excavations

The Split Rock investigations (L.K.) (Figs. 1–12)

What is the origin of the sanctuary? Where in Labraunda are we likely to find the earliest evidence of cultic activity? The impressively huge Split Rock in Labraunda has always intrigued visitors to the site. Not only is it cut in two, but it can also be seen all the way from Mylasa, 15 kilometres to the south (Fig. 1a). Furthermore, the famous spring water of Labraunda gushes forth just below this rock. Often a sanctuary can be found above a spring, as if to safeguard that the water would continue to come out. As a comparison, there is another spring in Labraunda south of the sanctuary with a Christian chapel placed on the rock above it. Thus, some kind of sanctu-

ary ought to have existed on the rock above the spring inside the temenos as well. The cut rectangular niche on the west side of the Split Rock (measuring 1.9×1.26 m, with a depth of 0.45 m, and a 0.3-m-wide frame surrounding it; see below Fig. 7) is reminiscent of niches found in Kybele sanctuaries, and in Anatolia the Goddess Kybele is closely connected to springs. Could the small terrace above the spring and in front of the rock-cut niche contain a Kybele sanctuary? A cleaning of the area was initiated in 2012. Klara Borgström probed just below the niche in the hope of finding something that could have come from the niche. Unfortunately, this probe produced nothing of interest.

The rock formation at the top of the sanctuary in Labraunda consists of the Split Rock to the east and a strange, narrow but high section of rock to the west (see Fig. 1a–b). In between these two protruding rocks there is an open space with

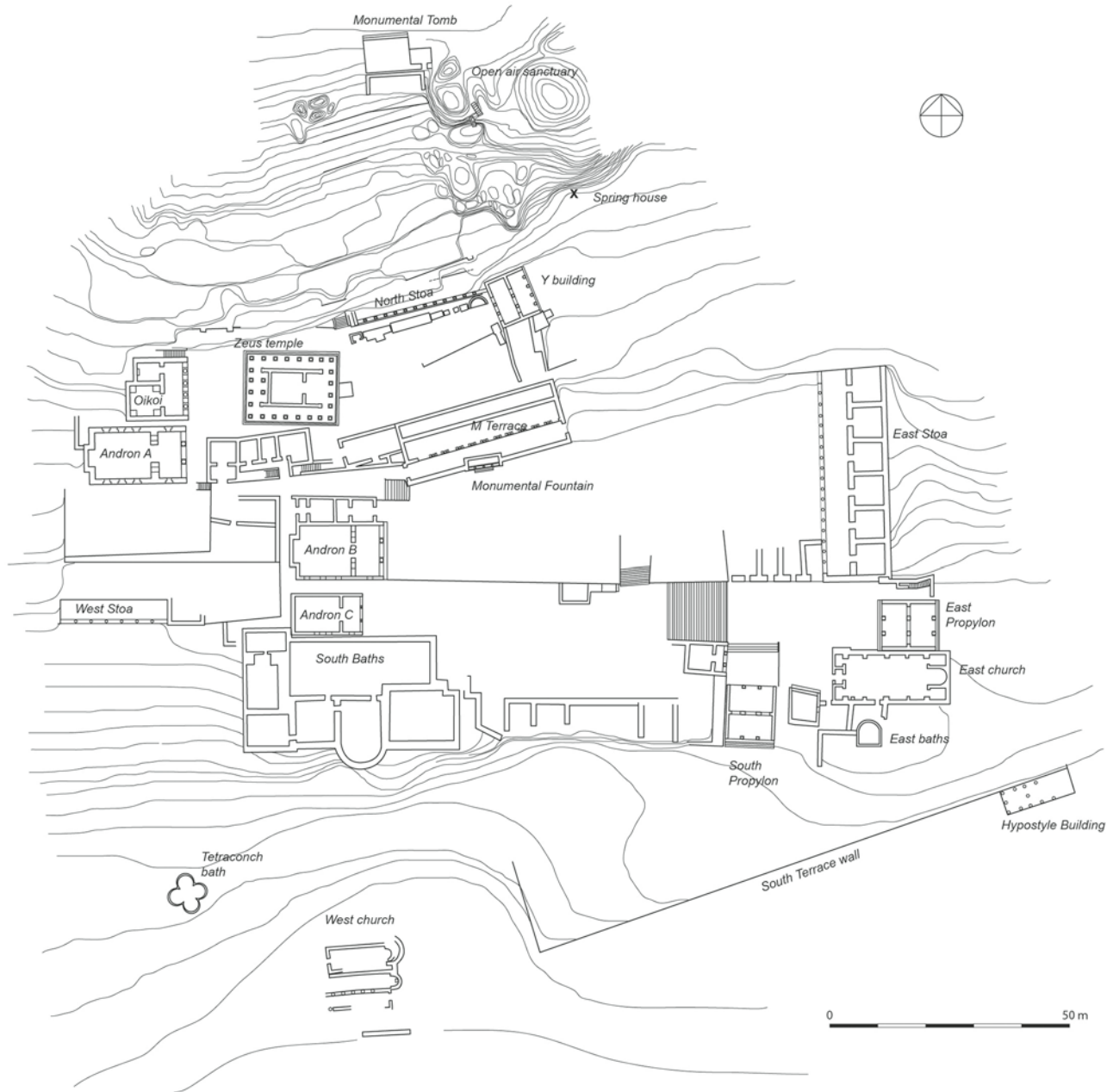


Fig. 1b. Plan of the Labraunda sanctuary. The possible Kybele sanctuary is located at the “Open air sanctuary”, the M-Building on the “M-Terrace”, and the Monumental Tomb is at the top (by O. Henry 2014).

a width of about 10–14 m. In the middle of this space a large platform has been cut in the rock (1 on Fig. 3), as if it was meant to be a base for something (a throne arrangement?). The space between this platform and the split rock was cov-

ered with soil, and a long trench was put down here in 2012. The aim was to better understand the relationship between the Split Rock and this rock-cut platform to the west.

WALL A, THE UPPER LATE (PROBABLY BYZANTINE) WALL (FIG. 3)

In the uppermost area of the trench, about ten large ashlar blocks loosely placed in a row were found. The blocks are spolia lying on top of soil, which indicates that this is a very late wall (probably from the Byzantine period) that was meant to close the space between the two areas of bed-rock. Two glazed Byzantine pottery fragments were found in this upper level, suggesting that the wall is contemporary with the Byzantine refortification of the Inner Fortress on the Akropolis.²

WALL B, THE UPPER EAST–WEST WALL (FIGS. 2–4)

A little further below, our investigations revealed a terrace wall running east–west, cutting across the open space at the top of the excavated area and thus also joining the two upper parts of the Split Rock and the western rock outcrop (Figs. 2–3). Wall B would originally have measured about 14 m in length. It is built of blocks from primarily the more porous brownish gneiss, and it has a width of 1.1 m. In the area close to the Split Rock, the preserved elevation is 1.75 m (Fig. 4a–b). The wall stands on a footing level that is 1.1 m high and projects 10 cm from the vertical line of the wall. It is possible that the opening in the wall would have been for a gate. The outer face of the block to the left of the opening contains two small holes with diameters of 2 cm, which are placed 20 cm from each other and 15 cm from the bottom of the stone. 30 cm of the surface around the holes has been smoothed as if something, maybe a wooden post (a door-frame decoration?), was meant to be placed against the stone surface. The faces of the bigger blocks have oblique cuttings from a metal tool, which are typical for walls of the later 4th century BC and are similar to those on walls at Eleusis, Rhamnous and Sounion.³

WALL C, THE EASTERN NORTH–SOUTH, AUGENGNEISS WALL (FIGS. 3–5)

Perpendicular to, and in all likelihood predating the above-discussed Wall B, the lowest course of a wall built of very compact grey Augengneiss (gneiss with small black dots, which look like eyes, see Fig. 5) was found at the bottom of the trench. This wall has a length of 7.20 m and a width of 0.85 m. At the side facing the Split Rock, there is a footing course, giving the wall at this point a total width of 1.1 m. The



Fig. 2. View of the excavation between the rocks from the top of the Split Rock. Note the pithos with band in situ in the lower right-hand corner. The east–west upper Wall B is to the right, the setting beds for the middle east–west Wall D to the left, and the staircase is in the background. The cut platform can be seen a little to the right of the centre.

blocks used in this wall are not as well cut as the ones in Wall B, which gives the impression that Wall C is of an earlier date. Furthermore, blocks of the grey Augengneiss used in this wall were not employed in Wall B. Thus, the two walls cannot be contemporary.

WALL D, THE MIDDLE EAST–WEST WALL (FIGS. 2, 3, 6, 7)

Wall C runs south to an east–west cutting in the bedrock for another major east–west wall, Wall D. Very little of Wall D itself is preserved, but the rock is here cut with three levels of setting beds for blocks (Fig. 6). Today, only the upper level contains blocks. Four well-cut rectangular blocks fill the east part of the setting beds. These blocks are larger and better cut than any of the blocks in the other two walls: the wall must have functioned as a terrace wall, and it is likely that these blocks are so well-cut and well-fitted into the setting beds so as to create a strong base for the upper levels of the wall. The three levels of setting beds running in front of the bedrock platform above are intriguing. The mid-level setting bed is the widest and the best cut, but it contains no blocks today. There is a major protrusion approximately in the middle, which measures 64 cm in length and projects 30 cm (i.e. about 1:2) (Fig. 7). It is unclear what the purpose of this projection was. It does not seem to be a staircase; rather it probably carried blocks in some way. However, the surface below the projection, i.e. the lowest of the three setting-bed levels, is also smoothed as if to carry blocks. Why did the ancient builders need three levels of blocks? Should blocks be placed in the upper and lower setting beds, and the filling of the wall be placed

² For the Akropolis Inner Fortress, see Karlsson 2009; Karlsson 2011.

³ Wrede 1933, pls. 71, 72 and 106.

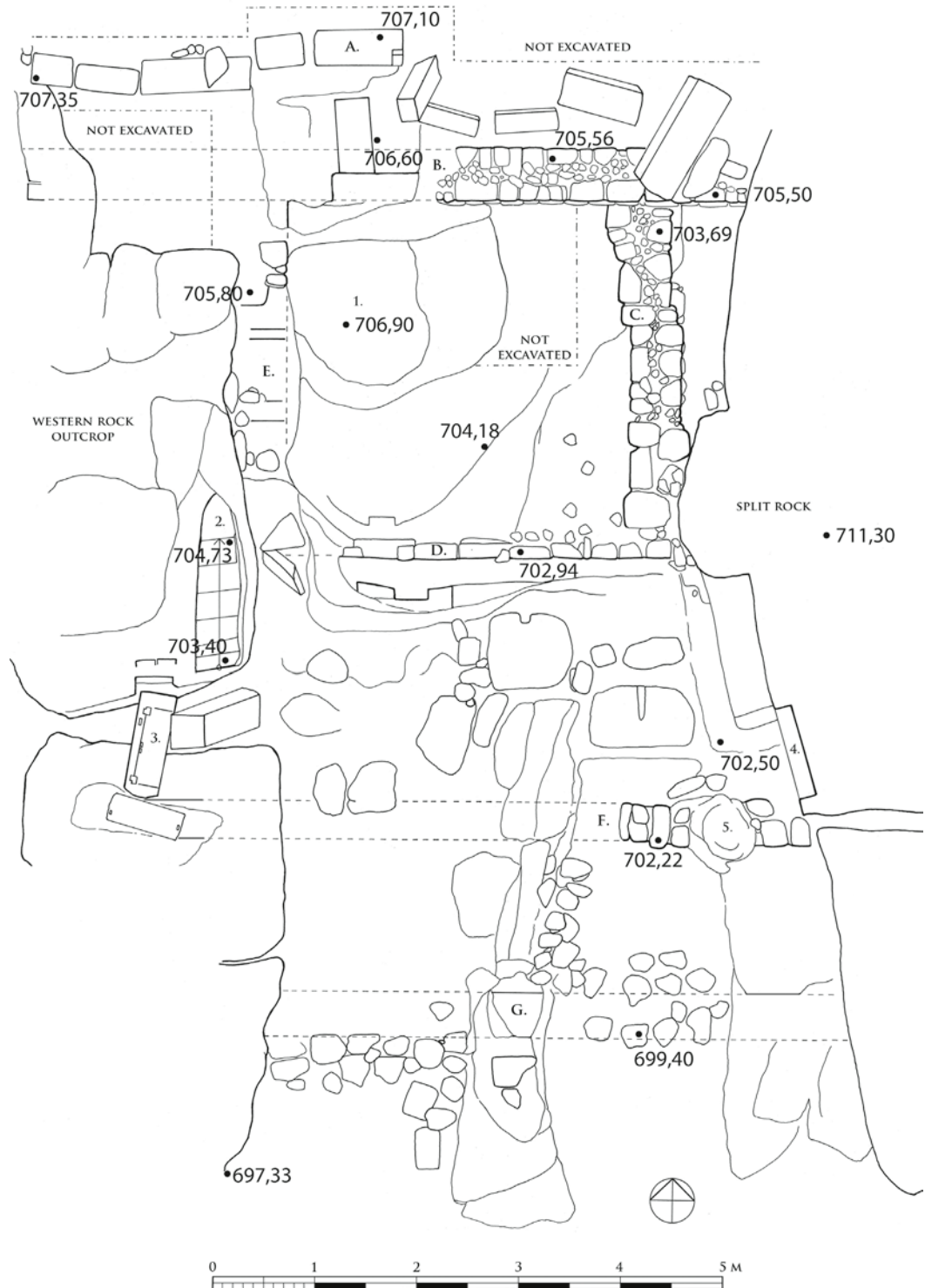


Fig. 3. Plan of the excavated area (by L. Karlsson and J. Blid Kullberg). Probably late (Byzantine) upper wall (A); upper east-west wall (B); eastern north-south wall, Augengneiss wall (C); middle east-west wall (D); western north-south wall (E); fourth east-west wall (F); lowest east-west wall (G); rock-cut flat platform surface (1); staircase (2); large threshold block (3); rock-cut niche in Split Rock (4); round-cut block in Wall F (5).



Fig. 4a. View from the south of the east–west upper Wall B and the north–south Augengneiss Wall C. To the right is the Split Rock.



Fig. 5. The north–south Augengneiss Wall C in 2013. Note that Wall B behind does not contain blocks of Augengneiss.

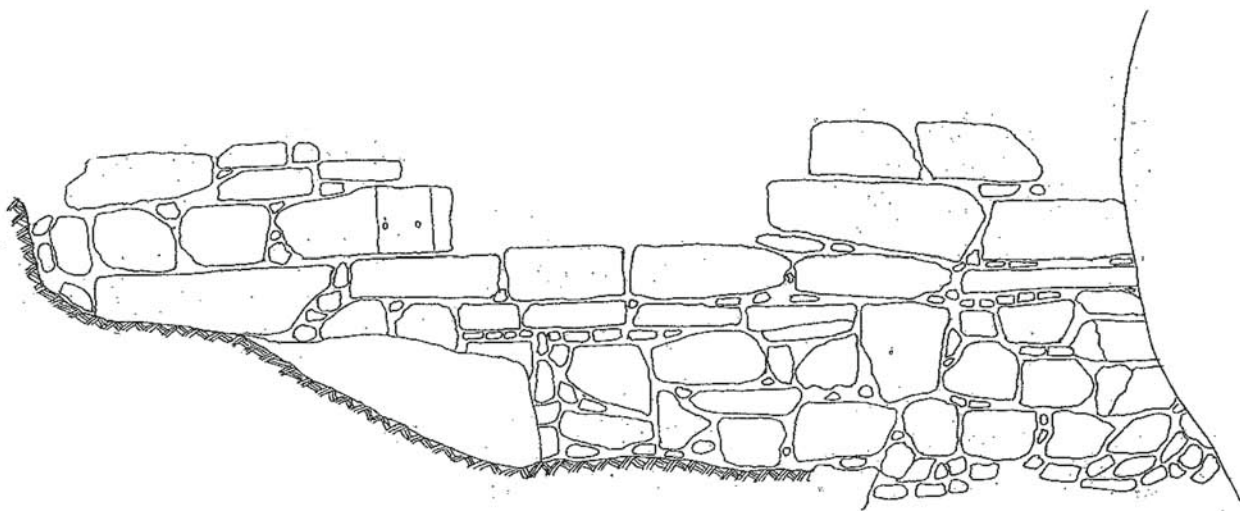


Fig. 4b. Elevation drawing of the upper east–west Wall B (L. Karlsson).

on the middle setting bed? But why then is the middle setting bed the smoothest and best executed? Probably, all three levels contained blocks, maybe to form some kind of steps at the front of the building; but why is there a protrusion from the middle setting bed protruding above the lower setting bed? The total length of this lower east–west wall would have been around 8.30 m. At this stage of the research it is difficult to explain the three levels of setting beds.

WALL E, THE WESTERN NORTH–SOUTH WALL (FIGS. 2, 3)

West of the bedrock platform and east of the west rock outcrop, there is a crack in the rock that is filled with soft and badly eroded rock and soil. In this north–south space, traces of setting beds can be seen. The wall that stood here would have paralleled the Augengneiss Wall C along the Split Rock. The length of this wall would have been around 7.5 m. Wall E is in line with a projecting piece of rock above the rock-cut platform, and it is likely that this projecting bedrock piece formed the beginning of the inner face of this north–south wall.

These four walls (B–C–D–E) form a rough rectangle, with the east side measuring 7.2 m and the west side 7.5, while the north and south sides measure 8.3 m (see plan, *Fig. 3*). However, it is my belief that the upper east–west Wall B is a later construction, which was possibly placed here to hold back the soil pushing down into this area after the earlier platform had fallen. This argument is supported by the fact that 1 m above the Augengneiss Wall C, the excavations revealed a large pithos of the type with horizontal bands. This type of pithos is commonly found in the Hekatomnid towers, but the bad quality of the pottery here indicates that it is a somewhat later pithos, maybe from the late 4th century and contemporary with Wall B. In any case, the Augengneiss Wall C cannot have functioned when this pithos stood on soil 1 metre above it (see *Fig. 2*). The pithos is surely not later than the 3rd century BC.

THE STAIRCASE (FIGS. 2, 3, 6)

West of Wall E, cut into the east side of the rock outcrop, there are six steps of a staircase (2 on *Figs. 3* and 6). The staircase runs up towards the cut platform in the centre of the construction (1 on *Fig. 3*), and it is likely that this was the only way to reach the platform when the four surrounding walls were still standing. The staircase is connected to a large threshold block (3 on *Fig. 3*) lying on the rock below. This huge threshold block measures 2.1 m in length and 0.66 m in width; there are clear cuttings on the top for the turning of the two door-leaves as well as slots for the door-stopper and the door pivots. There is no question that this is a threshold, and the setting-bed cuttings in the two rocks indicate that it was originally placed



Fig. 6. View from the east of the setting beds of the middle east–west Wall D. The staircase and the threshold block can be seen in the background.

astride the slit in the rock and that a staircase would have led up to this door from the outside, i.e. from the slope below the Monumental Tomb. It is probable that this was the only entrance to the sacred area around the niche and the rectangular platform.

WALLS F AND G, THE TWO LOWEST EAST–WEST WALLS (FIGS. 3, 7, 17)

Setting beds south of this threshold block and on top of the little rock indicate that another wall, Wall F, started here and crossed the open space between the west rock and the Split Rock. This is the fourth east–west wall, counting from the top. In our excavations, just at the right edge of the niche in the Split Rock, we identified a row of blocks in line with the setting beds at the threshold. Clearly, this was a terrace wall that cut right across the space. The wall is placed c. 5.2 m south of the east–west Wall D. The largest block in this wall below the niche has a circular cutting, which is about 0.80 m (5 on



Fig. 7. View of the excavation from the west rock outcrop. To the right are the setting beds for the middle east–west Wall D, while the niche in the Split Rock is in the background. Note the big block below the niche to the right with a circular cutting.

Fig. 3). Was this for the placement of a circular altar, typical for Kybele? (see *Figs. 7 and 17*).

Another 4.2 m (a total of 9.40 m in front of Wall D) south of the fourth east–west Wall F, there is a fifth east–west wall, Wall G (*Fig. 3*). This is the lowest of the terrace walls supporting this open-air sanctuary. Setting beds for blocks, clearly running east–west, can be seen below the Split Rock and further west, where a rock outcrop has been smoothed horizontally. Between these rock outcroppings there are a large number of blocks and rocks, clearly from this terrace wall and the filling behind. The wall must have run up to the bedrock to the left with the threshold block.

THE RECONSTRUCTION

This area was arranged for some kind of cultic activities in the 5th, 4th and 3rd centuries BC. Four walls going east–west (B, D, F and G) and two north–south (C and E) can be dated to these centuries. The two lowest walls were terrace walls: one ran in front of everything (Wall G), and the second started at the threshold and the door (Wall F). Wall F was obviously there to prevent anyone from entering this area

except through the door on the west side (meant only for the priests?). On this wall, below the niche, a circular altar likely stood. The next east–west wall (Wall D) was connected to the two north–south walls and created a large raised platform (1 on *Fig. 3*), onto which a staircase (2 on *Fig. 3*) led from the south–west, connected to the door and the threshold (3 on *Fig. 3*). The back wall for this platform has not been established and could be even further up the slope. The upper east–west Wall B was built at a later stage, possibly around 300 BC when the sanctuary was rebuilt, and the big pithos with bands was placed on soil at a level of one metre above the Augengneiss wall. The entire arrangement is similar to a Kybele sanctuary cut into the bedrock at Demirli Kalesi near Afyonkarahisar.⁴ Here, a staircase to the left ascends to a platform, and there are setting beds on several levels for transverse walls.

The discovery of several fragments of lamp nozzles suggests that the rites took place at night-time, which is actually what Herodotos says about the cult of the Mother of the Gods at Kyzikos, that it was a “nightly rite of worship”.⁵

⁴ Ilasli & Ülyümez 2008, 16–18.

⁵ Hdt. 4.76: *pannychida stesein*.

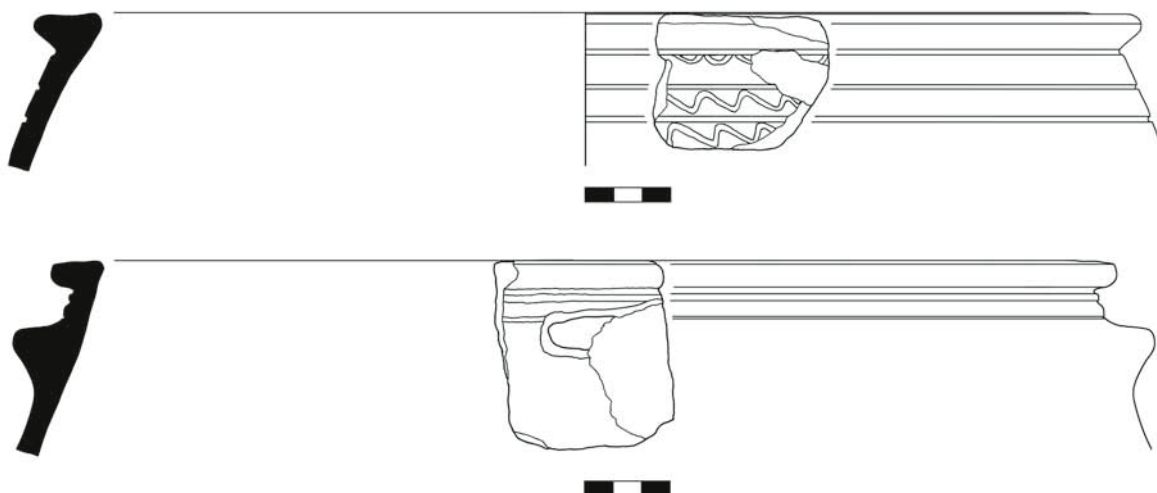


Fig. 8b. Drawing of the two Protogeometric fragments 3 and 4 (by L. Karlsson).

FINDS

Prehistory

The most unusual finds in 2012 were five handmade fragments of prehistoric pottery. Prehistoric pottery has never been recorded at Labraunda before. It should be remembered that the Bronze Age scholar Axel W. Persson of Uppsala University began the excavations in Labraunda in 1948 in order to prove a connection between the Bronze Age cultures of Crete and Karia.⁶ However, Persson was never able to register any prehistoric remains, so the discovery in 2012 must be considered quite sensational because it moves the history of Labraunda about 2,500 years further back. The oldest pieces are two fragments of a possibly Chalcolithic bowl/jar with a flat foot, dating to the second half of the fourth millennium (no. 1 on Fig. 8a). The clay contains white and dark grits and has been tempered with much organic material (judging from the chaff impressions), making these two pieces a ware-type never seen before at Labraunda. The pottery has a grey core and an orange/red surface.⁷ Comparable examples can be noted in the material from Kumtepe B, near Troy, or even Troy I itself.⁸ The second piece is a thick wall fragment of a jar from possibly the same period. Patches of an orange/red



Fig. 8a. Prehistoric pottery. Chalcolithic bowl flat-foot fragment (1); chalcolithic jar wall-fragment with a knob (2); fragment of a Late Protogeometric krater rim and lug handle (3); fragment of a Late Protogeometric krater rim (4). Photographs by L. Karlsson & A. Frejman.

surface covering are still traceable. The Labraunda piece has a typical knob on the side (no. 2 on Fig. 8a).⁹ The third and fourth fragments illustrated here are krater rim fragments of Late Protogeometric/Early Iron Age pottery of the 11th and early 10th centuries BC. Similar kraters have been published

⁶ For more on this background, see Karlsson 2013, 175f.

⁷ For a Chalcolithic example with similar colouring, see Paksoy 2007, 39.

⁸ See e.g. Troy 2002, 138. According to the German scholars at nearby Herakleia-under-Latmos, similar pieces have there been dated to Middle Chalcolithic; Christoph Gerber tells me that the Labraunda piece “is indistinguishable from our Latmian survey sherds, which I date to the Chalcolithic period (tentatively Middle Chalcolithic)”. Similar open bowls can be noted in the Troy I material, see e.g. Troy I, pl. 260:19. The study of the prehistoric pieces is still underway.

⁹ Christoph Gerber believes that this piece is of the same type as the previous fragment. He writes, “The early pottery has a more or less wide grey core. The oxidizing fired thin surface remains only in small patches in this example”. I thank Dr Gerber for his kind information.



Fig. 9. An obsidian piece (photograph by A. Frejman).

from level VIIb3 of the city of Troy.¹⁰ One fragment preserves a projecting rim with two grooves and a lug handle (marked 3 on Fig. 8a, drawing on Fig. 8b), and the other has a projecting rim with two levels of S-shaped wavy bands (no. 4 on Fig. 8a, drawing on Fig. 8b). The Troy VI–VII publications by Blegen contain several similar jars with these wavy decorations.¹¹ However, the wavy bands increase in number over time: single lines at the beginning, but in the Geometric period in Troy VIII, there are up to three wavy bands placed one on top of the other.¹² Since the Labraunda fragment has two lines, it belongs in the later part of this chronology. Finally, a small kernel piece of obsidian was discovered (Fig. 9). It measures only 4 × 5 cm and contains many inclusions. Our scientific analysis has shown that it comes from the small volcanic island of Giali (Gyali) between Kos and Nisyros in the Dodecanese. This is the only piece of obsidian known from Labraunda and could very well belong to the period of the Chalcolithic sherds. It should be noted finally that the prehistoric fragments were not discovered in levels that could be called prehistoric. The soil is very much mixed here due to the erection of the walls at different times.

Coins

In the area of the circular cutting, several coins were discovered, all of which date to the late 4th–early 3rd century BC. These coins were (1) a gold *stater* from Philip II, which is worn



Fig. 10a and b. Gold stater from Philip II, minted posthumously at Pella (photograph by A. Frejman).



Fig. 11a and b. Bronze coin from Antigonos Gonatas, 277–239 BC (photograph by A. Frejman).

and was most certainly minted posthumously,¹³ portraying Apollo on the obverse and Philip on the quadriga on the reverse.¹⁴ The trident under the horses suggests that the coin was minted in Pella (Fig. 10); (2) a bronze coin from Antigonos Gonatas (277–239 BC) with the helmeted head of Athena on the obverse and the god Pan erecting a trophy on the reverse (Fig. 11);¹⁵ (3) a bronze coin from Kassander (306–297);¹⁶ (4)

¹⁰ Aslan 2009, 150, fig. 17.10. Kraters with the same angled rim profile (Shape C80) can be noted in Troy VII layers, see *Troy IV*, pl. 236, cat. no. 35.635; pl. 240:1; pl. 240:6–10; pl. 275:1–3; drawing on pl. 249, cat. no. 35.635.

¹¹ E.g. *Troy III*:2, pl. 326 (cat. no. 34.315), pl. 385:7 and pl. 395:8. These jars/kraters have the same rim profile as the Labraunda pieces.

¹² *Troy IV*, pl. 300.

¹³ Le Rider 1977, 157 n. 281, D87 R215, pl. 61. Carmen Arnold-Biucchi wrote the following about this coin: “It belongs to Le Rider’s series II which he attributed to Pella and dated either 340–328 BC or 336–328 BC. Le Rider in 1977 knew of only one example of this die combination. So it is very interesting that one of these staters ended up in Labraunda!” I thank her for this information. I also thank Harald Nilsson of the Uppsala Coin Cabinet for his work on the Labraunda coins.

¹⁴ Inv. no. OA12-40. AV, diam. 1.8 cm, weight 8.5 g; see *SNG Greece II*, cat. nos. 259–260.

¹⁵ Inv. no. OA12-41. AE, diam. 1.9 cm, weight 4.9 g; see *SNG Greece II*, cat. nos. 1010–1045.

¹⁶ Inv. no. AO12-42. AE, diam. 1.7 cm, weight 3.1 g; on the obverse is a helmet seen from the side, on the reverse is a spear-head with the legend ΒΑΣΙΛΕΩΣ ΚΑΣΣΑΝΔΡΟΥ; see *SNG Sweden I*, cat. no. 292; *SNG Sweden I*:2, cat. no. 39.



Fig. 12. Lead weight marked with an E, weighing 143.7 g (photograph by A. Frejman).

a bronze coin from Alexander (336–323),¹⁷ and (5) a badly worn bronze coin,¹⁸ which is possibly the same as (4). Another metal find was a lead weight¹⁹ (Fig. 12), weighing 143.7 g, probably corresponding to a sixth of *stater*. It has the letter E stamped on the front, and this could refer to the Greek word for a sixth, “ἕκτη”. In the *Agora* volume on weights and measures, a sixth of a *stater* based on the Solonian system is given as 152.6 g.²⁰ The letter E could also refer to the number 5, being five units of a smaller unit or a fifth of the larger *mina*.²¹

Classical pottery

1. Pithos with bands (Figs. 2 and 13). One metre above the Augengneiss Wall C, the lower parts of a pithos were found still standing *in situ*, but the rim could not be found. The foot was very wide, with a diameter of 13 cm: this was in order to accommodate a large gauged-out hole inside with a diameter of 9 cm. What is the purpose of such a hole on the inside



Fig. 13. Bottom fragment of the pithos with bands. To the right is the fragment from the Kybele area, to the left is a similar piece from the Monumental Tomb excavation still with a terracotta “plug” inside.

of a pithos foot? A possible answer came from the other side of the west rock outcrop where Olivier Henry excavated the slopes below the Monumental Tomb. Here, he found a very similar foot, but it had a terracotta plug perfectly fitted into this hole (see Fig. 13). This is the reason for the hole—to take a round plug. But why? A member of the team remembered seeing something similar in France where the hole and the plug were meant to collect the waste and unclean parts of the wine. Could this late comparison explain the purpose of the gouged-out pithos foot? This type of pithos with bands has also been found during our excavations of the free-standing towers around Labraunda and also the Akropolis Fortress. Unfortunately, none of the pithoi found in the other towers have preserved feet. The sloppy craftsmanship of this pithos, compared to the other ones from the towers, suggests that it is later—possibly 3rd century BC, but surely not later.

2. A black-gloss lamp nozzle,²² from the early 4th century BC.

3. A black-gloss convex-concave dish,²³ dated to the second quarter of the 4th century BC.

4. A bowl with incurving rim; rim diam. 12 cm,²⁴ c. 350 BC.

5. The rim of a plate,²⁵ dated to the early 4th century BC.

¹⁷ Inv. no. AO12-44. AE, diam. 1.9 cm, weight 4 g; on the obverse is the head of Herakles, while on the reverse a quiver and club with the legend ΑΛΕΞΑΝΔΡΟΥ are present; see *SNG Sweden* I, cat. no. 284; *SNG Sweden* I.2, cat. nos. 5–6; *SNG Greece* II, cat. nos. 712–737.

¹⁸ Inv. no. OA12-43. AE, diam. 1.7 cm, weight 3.3 g.

¹⁹ Inv. no. 8, measuring 3.5 × 3.5 cm, thickness 1.1 cm. The letter E measures 2 cm in height and 1.5 in width.

²⁰ Based on the 105-drachma standard between 882 and 924 g; see *Agora* X, 5. If the lower weight 882 g is divided by 6, we get 147 g, which is even closer to the Labraunda weight. The Athenian weights almost exclusively use symbols such as dolphins, amphorae and tortoises to indicate the weight. I have not been able to find any parallel with a capital E. A mould for weights and weights with letters are reported from Ephesos, see *Katalog Ephesos Museums*, 71 and 74.

²¹ As was kindly suggested to me by Dr Hans Taeuber of Vienna University.

²² Inv. no. 2. For a comparison, see *Isthmia* III, cat. no. 126 (Type VIID, c. 350 BC); *Kerameikos* XI, cat. no. 83 (c. 350 BC). Another nozzle apparently belongs to Broneer's Type IV, esp. cat. nos. 42 and 44 (end of 6th/beginning 5th century BC); see *Isthmia* III, 10 and *Kerameikos* XI, cat. nos. 27 and 41 (5th century BC).

²³ Inv. no. 18. Very fine glaze; see *Samothrace* 7, 361 cat. no. 95. I thank Dr Vasilica Lungu for her excellent assistance with the pottery.

²⁴ Inv. no. 9. Very fine glaze; see *Agora* XII, cat. no. 830 (c. 350 BC).

²⁵ Inv. no. 6. Very fine glaze; see *Agora* XII, cat. nos. 1014–1016 (c. 400–350 BC).



Fig. 14. View from the east of the excavations in the terraces below the Monumental Tomb in 2012.

The excavation below the Monumental Tomb (Fig. 14)²⁶

Olivier Henry defended his dissertation in 2005 on the tombs of Karia, and he came to Labraunda in 2007 in order to study the Labraunda necropolis. More than 120 tombs have now been inventoried, and these will be published in a volume in the Labraunda series. The Monumental Tomb inside the sanctuary will also be published in this series. In order to understand the superstructure of the Monumental Tomb, we needed more blocks—more evidence in this large architectural puzzle. Clearly, as the archaeologists have said for a long time, they are all lying on the unexcavated slope below and south of the Monumental Tomb.

We also wanted to learn how the tomb was approached in antiquity. These questions are part of our project to understand and, if possible, re-establish the ancient communication

roads and pathways inside the sanctuary. Thus in 2008, we began the excavation of a staircase just east of the temple.²⁷ The staircase started the ascent to the tomb; but how was it connected with the upper terrace walls? Several terrace walls can be identified on the slope, but how did they function together, and where was the ascending pathway? In 2012 and 2013, the upper part of this slope was cleaned (see Fig. 14). It contained more soil than we could have imagined, and this means that the process of cleaning the slope will take several more seasons. However, many new entablature blocks from the superstructure were found. A total of 38 architectural blocks have now been recorded and drawn by Henry.²⁸ The most exciting discovery was a wall that ran parallel to the south side of the tomb. It was finished at each end by short, projecting, perpendicular walls. The entire arrangement thus has a wide pi-shape. Could it be a bench for votive gifts, given to the dead in the tomb or even an altar? The absence of ash suggests a votive

²⁶ A longer report on this work was presented in Henry *et al.* 2013, 301–310. The Monumental Tomb is also called the Built Tomb.

²⁷ See preliminary report in Karlsson 2009, 85f., figs. 67–68.

²⁸ See preliminary report in Henry *et al.* 2013, 304.

arrangement. If this is the tomb of Hekatomnos, the founder of the Hekatomnid dynasty and re-founder of Labraunda as a sanctuary, our pi-shaped bench could have served as a place for gifts. The entire arrangement may have been inspired by the tomb of Kyros in his *paradeisos* in Pasargadae.²⁹ We should remember that Karia was a Persian satrapy at this time. The upper two terrace walls that cross the slope were cleaned, and openings in the eastern side suggest that the path came up here. However, more cleaning work needs to be done in order to understand the approach to the tomb.

Two finds were especially interesting. One was the pithos foot with a plug *in situ*, mentioned above, which was similar to the pithos foot found in the Split Rock excavations (see Fig. 13). The second find was a terracotta bust of a Kybele figurine (Fig. 15), portraying a female figure with a large breastplate covering her breast and stomach. It measures 15 cm in length and 9 cm in height, so it is an unusually large piece. The piece is broken off at the neck, but the beginning of it can be traced, as well as two tresses of hair falling down on each shoulder. The hair and the protrusion at the level of the breasts suggest that this is a female figure. Her right arm seems to be naked but was probably covered by a thin chiton. The large size of the figurine and the plaited hair-tresses suggest a date in the Late Archaic period, probably around 500–480 BC.³⁰ The most remarkable feature of this terracotta is that the figure is carrying a breastplate, *pectoral*, which seems to be fixed on a long mantle that hangs over her shoulders. The *pectoral* itself is 6.5 cm wide and the height is approximately the same, though the lower edge is broken off. The *pectoral* frame is surmounted by three rounded bullets which are interconnected by low-hanging arches. On other versions, this motif looks like an antefix or a crown with three pointed tops, similar to the crowning on Kybele niche reliefs. In our terracotta the “bullets” suggest heads, as if the central figure is reaching out to hold the two heads at the edges (almost like a *potnia theron* arrangement). The plate of the *pectoral* itself contains two rows of interesting objects. Three of them seem to be outstretched animal skins; they all have a head in the upper centre and four leg-like protrusions at the edges. The fourth “skin” in the lower right corner has a hollow where the others have heads, and the skin itself seems to be wider, or it could even be two smaller ones placed next to each other. The diagonal break here prevents a more detailed analysis. In the centre, between the animal skins, there is a figure in the lower row with uplifted arms, and it seems that she is holding the front edges of the animal skins, again in some kind of *potnia theron* position. The curiously

shaped object above the figure, in between the animal skins of the upper row, is enigmatic. It has a half-moon or sickle shape, again with a small rounded extension on top, suggesting a figure with a head and outstretched arms above the lower figure. It should be noted here that there are no similar pieces published in the archaeological literature.³¹ Other (known) pieces with a *pectoral*, e.g. the seated Kybele from Troy,³² are all from the Hellenistic period. The Labraunda terracotta will be analysed further elsewhere,³³ but it is important to note here that it was found only about 30 m from the Split Rock excavations, where I believe there is a Kybele sanctuary.



Fig. 15. The Kybele terracotta from the Monumental Tomb excavation.

The renewed study of the so-called M-Building (J.B.K.) (Fig. 16)

The M-Building³⁴ was initially constructed as a stoa situated on the M-Terrace between the Temple Terrace and the lower terrace in front of Andron B. During its construction, an earlier freestanding well-house on the Andron B terrace was incorporated into the southern terrace wall of the M-Building, making the complex two storeys high.³⁵ The stoa, which was most probably built during the Hellenistic period (and conformed to a widespread tradition of multi-storeyed stoas),³⁶ seems to have been rebuilt in the Roman period with the addi-

²⁹ On Labraunda as a *paradeisos*, see the Münster conference (Karlsson forthcoming 1).

³⁰ For similar plaited tresses on Late Archaic terracotta figurines, see the Iasos material in Landolfi 2013, tav. XXXI.

³¹ Nothing comparable can be found in the works of Vermaseren, see e.g. Vermaseren 1987.

³² See Troia. *Traum und Wirklichkeit* 2001, unnumbered beginning pages; for Kybele figurines, see also Thompson 1963.

³³ Karlsson forthcoming 2.

³⁴ Previously labelled the “Well-House Stoa”; cf. Hellström 2007, 95–97.

³⁵ For closer scrutiny of the different construction phases of the M-Building and the Well House, see Henry *et al.* 2013, 327–336.

³⁶ Cf. for example at Assos (South Stoa), Aigai (Market Building); Athens (Stoa of Attalos); Coulton 1976, 213, 219, figs. 14–15, 18, 28, 43;



Fig. 16. View from the north of the excavation in the M-Building in 2013.

tion of one more storey facing the Temple Terrace. Preserved inscriptions on architectural elements found on the Temple Terrace (these were excavated almost 60 years ago), which are believed to be related with the Roman phase of the M-Building, have been published by Jonas Crampa.³⁷ An architrave inscription mentions a dedication to Emperor Trajan. However, no conclusive studies have as yet been published on the architecture of the M-Building during the Hellenistic and Roman periods.

In 2011, Jesper Blid Kullberg and Ragnar Hedlund started to record the architectural members of the M-Building and to rediscover them in the notebooks of the late 1940s and 1950s. A new proposal for the façade facing the Temple Terrace has been drawn by Blid Kullberg.

In order to investigate the foundations and the chronology of the building, a north–south oriented trench was laid

out right across the centre of the building in 2013 (Fig. 16). The suggested building phases—a Hellenistic foundation followed by increased activity during the Early Imperial period—were confirmed by these excavations. This year's work proved that major rebuilding took place in the Late Antique period,³⁸ when smaller rooms were built into the ruins of the Hellenistic and Roman phases of the M-Building on the level of the M-Terrace.³⁹ Considerable pottery finds of Middle Byzantine and Ottoman date, which suggest several post-Antique occupation phases at the very centre of Labraunda, were also discovered.

and at Selge (*Marktgebäude*), Machatschek & Schwarz 1981, 55–58, pls. 7–8:1/2.

³⁷ *Labraunda* III:2, cat. no. 24 (B35).

³⁸ It is interesting to note how many remains there are at Labraunda from the Late Antique period, a subject that has been extensively dealt with by Jesper Blid Kullberg in his doctoral dissertation, *Labraunda in Late Antiquity (AD 300–700)*, PhD diss., Stockholm University 2012. The dissertation is now being reworked by the author to be printed in the *Labraunda* series, published by the Swedish Research Institute in Istanbul.

³⁹ A longer report on this work will be published in the 2014 volume of *Anatolia Antiqua* (Henry *et al.* 2014).

A NEW PANORAMA OF LABRAUNDA (FIG. 17)

In connection with the work on the M-Building, Jesper Blid Kullberg has completed a new, restored panorama of the Labraunda sanctuary, seen from the south.⁴⁰ It is published here for the first time and could be said to illustrate the results of sixty years of fieldwork by the Labraunda team. Several features have been uncovered by the recent investigations, such as the extent of the temenos wall, the Monumental Tomb, the M-Building (directly right of the Temple of Zeus), the West Church Stoa, and the restored south elevation of Andron A. The frozen moment in time illustrated by Blid Kullberg is the beginning of the 4th century AD (when the construction of the Tetraconch was under way).



Fig. 17. The new view of the sanctuary from the south by J. Blid Kullberg

⁴⁰ The project is grateful to the Friends of the Swedish Institute in Rome for providing a grant to Jesper Blid Kullberg for this work.

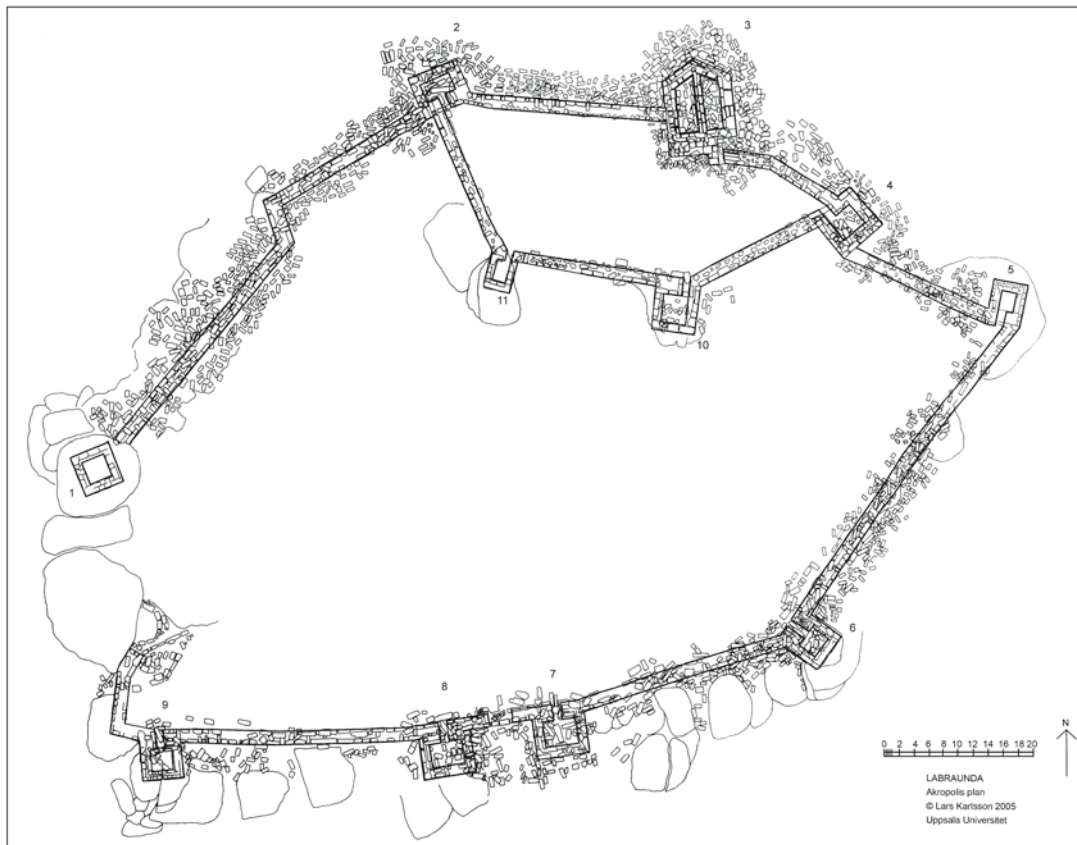


Fig. 18. Plan of the Akropolis Fortress (by L. Karlsson).

Lower Akropolis excavations 2012–2013 (B.V.) (Figs. 18–31)

The Akropolis of Labraunda, also known as the Hissar Kale, is situated at an altitude between 752 and 798 m above sea level. It is 100 m above the Temple Terrace, and it had a commanding view not only of the site and its surroundings but also towards the Mylasa valley. It was defended by a large enceinte, largely taking advantage of the relief (Fig. 18). This enceinte was built around the third quarter of the 4th century BC.⁴¹ It was occupied until the Late Byzantine period, with an apparent interruption in the Roman period.

In 2012, excavations on the Akropolis of Labraunda were resumed after a short interruption. Until the start of the new excavation project led by the Baptiste Vergnaud the attention was focused on the Inner Fortress, situated on the upper part of the Akropolis. L. Karlsson and his team were able to document the function of this area and determine the main occu-

pation phases.⁴² According to the Swedish team's research, this space housed the living quarters of the soldiers who manned the fortress in the Hekatomnid and Hellenistic periods. After a long interruption of several centuries, this area was again settled between the 11th and 13th centuries AD. During this period, the Akropolis seems to have kept its military function.

The new research conducted on the Akropolis intends to document the totality of the fortified space. The aim of the project is to date the fortress construction more precisely through stratigraphical excavations. We also aim to document the various occupation phases and determine if the space inside the walls was settled or not. The following notes summarize the principal results of the last two campaigns.⁴³

⁴² Preliminary reports in Karlsson 2009, 57–87; Karlsson 2010, 61–104.

⁴³ A more detailed preliminary report of the 2012 campaign is available in Vergnaud 2013, 285–298.

⁴¹ Karlsson 2011, 217–252.

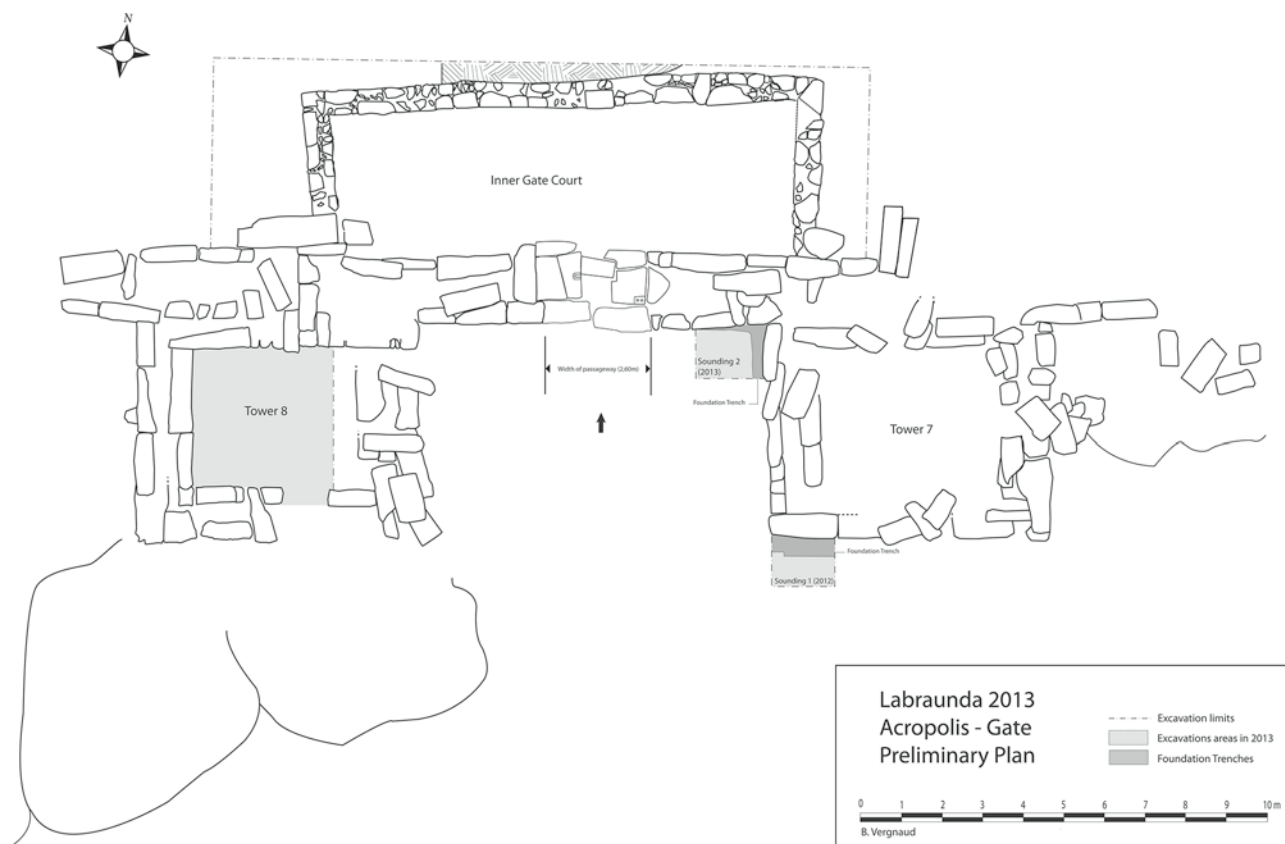


Fig. 19. Preliminary gate plan (by B. Vergnaud).

THE GATE COURT

The 2012 and 2013 campaigns mainly focused on the gate area situated at the lowermost part of the Akropolis fortifications (Fig. 18). The gate itself is composed of an opening 2.60 m wide flanked by two projecting towers of almost square plan (7×7.10 m). The first excavations were conducted behind the entrance, inside the fortified space. They led to the discovery of three walls delimitating what can be interpreted as an inner gate court or chamber (Figs. 19 and 20). Although the material associated with this construction is rare and the layers very disturbed, it seems clear that it was not part of the original building phase. Indeed, the walls are a lot less regular than those of the fortification wall and are not bonded to the main construction. A date in the Hellenistic period is plausible, but the evidence is scarce. Indeed, the upper layers contained a fair amount of late material, but the lowermost one, resting on the bedrock and against the wall, did not. It contained very few finds, but some tile fragments which belong to the Hekatomnid and Hellenistic periods were found. The very fact that so few ceramic sherds and tile fragments were uncovered inside the gate court informs us that it was not a permanent living or stationing space. The plan and the loca-

tion of this construction strongly suggest that it was an inner courtyard, a tactical device widely used in Anatolia in the Iron Age and in the Mediterranean in the following periods. Those courtyards can be interpreted as traps for enemies who broke through the gate.⁴⁴

TOWER 7 FOUNDATION SOUNDINGS

In order to reach closer dating for the construction of the fortress, a few soundings were made against the external walls of the eastern gate tower (Tower 7) (see Fig. 19). The first one (sounding 1), made in 2012 at the south-west corner of the tower, did not yield any dating material. However, it provided some information on the foundation techniques used by the builders. Indeed, the bedrock was cut at a right angle to a depth of 90 cm (Fig. 21). This method of building a foundation aimed at increasing the stability of the tower. The other angle was directly founded on the rock whose surface had only been slightly cut out prior to the layout of the blocks. The same technique is observable in the foundation of the other

⁴⁴ On gate courtyards in the Iron Age, see Vergnaud 2012, 153–157.



Fig. 20. Inner Gate Court (photograph by B. Vergnaud).



Fig. 21. Tower 7. Sounding 1 (photograph by B. Vergnaud).



Fig. 22. Tower 7. Sounding 2 (photograph by B. Vergnaud).

tower. The fact that the bedrock has been cut out so deeply in the SW corner can be explained by the layout of the gate construction on a very steep slope. This topographical setting forced the builders to provide the towers with very strong foundations, so that the protruding structures could act as buttresses. A second trench (sounding 2) was made in 2013 at the north-west corner of the tower, where it meets the fortification wall (see *Fig. 19*). Here too the builders cut deeply into the bedrock (*Fig. 22*). Despite our best efforts, it was impossible to reach the bottom of the foundations because the space between the bedrock and the wall was too narrow. However, the fill of this foundation trench yielded a small quantity of material which is currently under study. If some of the ceramic sherds and tile fragments date from the Hellenistic period, as our first field observations suggest, the chronology of the fortress could partly be revised.

The present research is at too early a stage to discuss the possibility of a modification of the Akropolis' defence system in this area. Only material evidence can help us reach a firm conclusion on that matter. However, observation of the building techniques suggests that the walls may have been partly rebuilt. This is in part suggested by the use of blocks which have deep cuttings. According to I. Pimouguet-Pédarros, this particular bonding technique was common in the Hellenistic period but does not seem to have been in use in the fortifications of the Hekatomnid period.⁴⁵ Such blocks are visible at

the south-west corner of tower 7 as well as in the entrance wall linking the two towers (*Fig. 23*). Other polymorphic blocks with deep cuttings have also been detected on the slope below the gate.

TOWER 8 EXCAVATIONS

Despite the present uncertainties, the Akropolis fortress seems to have experienced a very important occupation in the Hellenistic period. This is at least what can be deduced from the excavations conducted inside the western gate tower (Tower 8) in 2013 (*Figs. 24* and *25*). Under a thick destruction layer containing blocks and stones of various sizes, it was possible to bring to light several floor levels made of packed earth. They are not well preserved and have suffered from the destruction of the building. Some of them must be understood as the result of surfacing operations undertaken in order to maintain an even level throughout the tower. The last floor level of the tower (4010), i.e. the most ancient, rested on a 1-m filling layer made of soil and crushed stones, which apparently contains no archaeological material.⁴⁶ This floor could be followed to a fairly large extent, and pottery and tiles were found crushed on the surface. The material analysis is currently underway, but no Classical material has yet been detected. Moreover, our observations tend to indicate that the majority of the material is of Hellenistic date. Among the pottery is an almost



Fig. 23. Entrance wall. Block with a deep cutting (photograph by B. Vergnaud).

⁴⁵ Pimouguet-Pédarros 2000, 69, 74, 98.

⁴⁶ A test trench has been set in the south-western corner of the tower. No material has been unearthed.



Fig. 24. Tower 8 before the excavations (photograph by B. Vergnaud).



Fig. 25. Tower 8 at the end of the excavations (photograph by B. Vergnaud).

complete pot which was identified as an amphora or a hydria (Fig. 26). It is dated to the second half of the 3rd or early 2nd century BC, on the basis of comparisons with Hellenistic material from Miletos.⁴⁷ A Mylasean coin was also found. It has a trident on one side and a horse on the other (Fig. 27). It is also dated to the 3rd and 2nd centuries BC.⁴⁸ The roof tile of imbrex type found on top of that layer is probably also of Hellenistic date (Fig. 28). It is very similar to the examples found by Lars Karlsson at Ucalan Kule.⁴⁹ More pottery was found on the surface of floor 4003, situated approximately 12–14 cm above floor 4010. One of them is a lopas which seems to date from the first half of the 3rd century BC (Fig. 29).⁵⁰



Fig. 27. Coin from floor level 4010 (photograph by B. Vergnaud).



Fig. 28. Imbrex on floor level 4010 (photograph by B. Vergnaud).

A hearth was found on this floor level (Fig. 30). It is of rectangular shape, and its dimensions (0.60 × 0.68 m) are similar to the ones found at Tepesar and Kepez Kule.⁵¹ The hearth was probably related to the soldiers' cooking activities in the

⁴⁷ This pottery will be more thoroughly discussed in the forthcoming report in *Anatolia Antiqua* XXII, 2014.

⁴⁸ Information kindly provided by Koray Konuk. See, in particular, Akarca 1959, 15–18 and pl. IV.

⁴⁹ Karlsson 2010, 78–79, fig. 45.

⁵⁰ For comparisons see *The Maussolleion at Halikarnassos* 7, Lopas G36.

⁵¹ Tepesar (room 4b): Karlsson 2011, 27 (figs. 3, 4b; fig. 11). Kepez: Karlsson 2012, 52, figs. 3, 6–7.

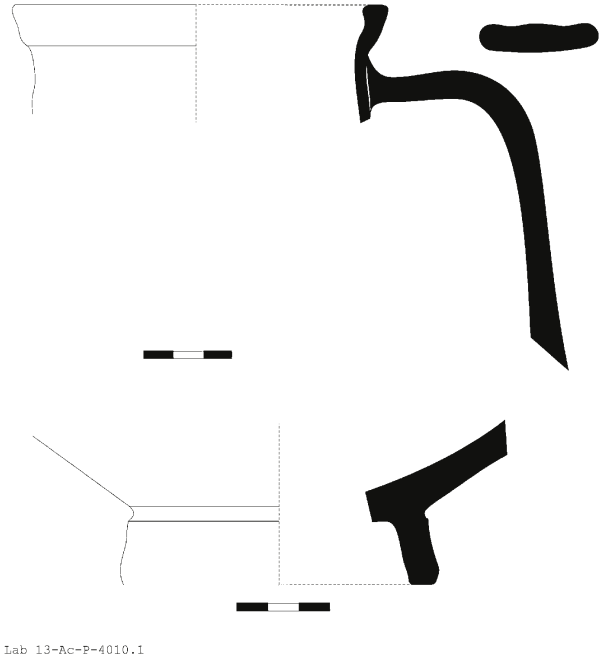


Fig. 26. Hydria or amphora from floor level 4010 (by V. Lungu).



Fig. 29. Lopas from floor 4003 (photograph by B. Vergnaud).

tower. Among the notable finds from the tower is a stamped pan tile (*tegula*) with the double axe/trident motif which is paralleled in the Inner Fortress of the upper Akropolis.⁵² The most unusual discovery is that of four terracotta loom weights or spindle whorls. They are all similar in shape (roughly round or oval) and dimensions, although one is truncated (pyramid or cone shaped) (Fig. 31).⁵³ This discovery is unusual since no

⁵² Karlsson 2010, 75–76.

⁵³ The weights are 95.2 g, 103.7 g, 104.4 g and 127.9 g. The average thickness is around 3 cm. The average diameter is around 6 cm.



Fig. 30. Hearth related to floor level 4010 (photograph by B. Vergnaud).



Fig. 31. Loom weights from Tower 8 (photography by B. Vergnaud).

piece of that kind has ever been found on the Akropolis or in the other towers and fortresses in Labraunda's vicinity. Moreover, we expect to find loom weights in domestic or artisanal rather than in military contexts. It thus sheds light on the soldiers' daily activities, or it may indicate that civilians played a role in the fortress.⁵⁴ In any case, this discovery is stimulating for the continuation of the present project, which partly aims to document the nature of the occupation of this fortified complex. It should finally be added that not a single piece of late material was uncovered during the tower excavations. This indicates that the building was not reused in Byzantine times and was thus not standing when the Inner Fortress was reoccupied.

The following campaigns will mostly be dedicated to the documentation of the space inside the fortified area. Several constructions have been detected in the north-west part of the Akropolis. They are mainly built of reused blocks, and thus seem to belong to later periods. However, a careful investigation may lead to the discovery of structures dating back to the Hekatomnid and Hellenistic periods.⁵⁵ In any case, this investigation will allow us to evaluate the extent to which the Akropolis was settled.

⁵⁴ Bean & Duyuran (1947, 134) regard the presence of loom weights in the Hellenistic fortress of Sancaklı Kalesi (Ada Tepe), as a sign of a long term occupation by a garrison.

⁵⁵ For further discussion about the chronology of Labraunda Akropolis Fortress, see Vergnaud 2014, 107–122.

Conservation and cultural heritage management

The stabilization of the south wall of Andron A (Fig. 32)

In 2004, a team from Sweco in Stockholm conducted a laser scanning of Andron A as the start of our project to stabilize the 9-m-tall south wall of Andron A.⁵⁶ A first suggestion on how to stabilize the wall was drawn up by Krister Berggren and Stefan Thorstensson. Their work has now been included in a major new study which appeared in June 2013. In order to gain approval for our Andron A project with authorities in Turkey, we contacted the Architectural Conservation Department of The Middle East Technical University (METU) in Ankara, led by Professor A. Güliz Bilgin Altunöz. They were interested in producing a new proposal, which is now the basis for our application to the Turkish regional antiquarian board in Muğla.



Fig. 32. The probe at the south-west corner of Andron A.

⁵⁶ A project that was supported that year by The Royal Swedish Academy of Letters, History and Antiquities, Stockholm.

In order to understand the foundations of Andron A, a trench was dug in the south-west corner of the building (Fig. 32). It was 3 metres deep and revealed a foundation construction of six courses, each measuring about 50 cm. It could also be established that the building definitely stands on the bedrock, as is common for Classical buildings. In this trench, two marble cornice blocks were discovered, of which one was the corner block; we know that this is in its rightful place since the trench was located at the corner of the building. We are now awaiting an answer from the antiquarian authorities in order to continue our work stabilizing the south wall.

Two new information signs were put up at the new excavations of the West Church, and one was erected at the Stadion west of the sanctuary. The roofs over our three storage rooms were covered by large asbestos sheets in the 1970s; these were replaced this year with a brown metal roof which is better in the environment of the sanctuary (Fig. 33). Staircases of metal for visitors were also erected in the new excavation areas below the Monumental Tomb and in the Kybele sanctuary.

Labraunda marbles: conservation and research (A.F.) (Figs. 34–42)

In 2009, Lars Karlsson asked me to make a survey of the archaeological site of Labraunda and present a conservation plan, which I did the following year. Thirty-three items were listed as in great need of conservation, but the number of weathered and damaged pieces is much larger. Several objects are broken or have crevices that eventually will provoke material losses, but dilapidation and biological growth constitute the main problems. Many fragments are partially unstable and crystals fall at the slightest touch. The conservation project described below began in 2011. My wish to understand more about the marble at Labraunda led to the analyses of a few samples and later to the definition of a marble study. Both topics will be presented below, but first I present a general discussion on the prevailing circumstances, conservation principles and marble decay in the open-air environment.

On the south mountain slope facing the valley, there are the standing structures of ancient buildings at the sanctuary of Labraunda, which have impressive, natural rock formations as a background.⁵⁷ In the midst of this striking scenery, there is a mass of cut and sculpted stone. Fragments of architectural elements such as capitals, columns and blocks with inscriptions dominate the site. Placed in rows or scattered on the ground,

⁵⁷ Facing south means the marble is constantly exposed to great variations in temperature. The site is exposed to extreme heat during day, chilly, windy nights in the summer, and icy nights and warm days in the winter.



Fig. 33. The new metal roof over the storage rooms.

the main part of these pieces have been unattended for more than half a century. At first sight, all fragments look dotted grey, but on closer inspection, it becomes evident that some are marbles while others are gneiss.

The dotted grey surface of white marble is due to biological factors; they represent the biodiversity on the surface of the stone. As long as the marble's surface is kept clean, not much happens, but when decay starts and the pores between the crystals grow, then there is space for deposits of soil which form the main environment for the survival of algae, lichens and mosses on and in the stone. Some biological surface deposits are harmful—lichens feed on calcium, and the acids produced by certain lichens break down the marble. When removed, depressions in the stone reveal that lichens have been present for a long time. Lichens are known as powerful colourants which are negative in contact with white marble.

The quantity of items and the extent of the decay at Labraunda make conservation a long-term project; one way of managing is to focus on safe, low-cost conservation and the maintenance of systematically selected items. Turning the marble white again is hardly possible since soil has penetrated into the stone and cannot be removed, unless the top layer of crystals is sacrificed, which of course is not an option

to consider. Bleaching the surfaces with chemicals is another alternative, but such interventions are avoided in this project; instead we apply a biocide and remove the lichens and mosses mechanically with pointed scalpels, clean the surface with water and a soft brush, and finally (when necessary), we treat the marble with a consolidant. Consolidation substances, when solidifying, form crystals that fill the empty spaces between the marble crystals, thereby preventing further losses.⁵⁸

Conservation of a monument or a site may interfere with romantic ideas of contemplation and enjoyment of the ruin, but conservation is a premeditated, conscious way of trying to decrease the decaying process in order to prolong the life of the monument. When conservation is performed, there are concepts of values connected to objects to consider—values that are important to preserve. One set of criteria for adding an object to the conservation list was as follows: the object had severe damage; finely sculpted ornaments or forms were lost; negligence would lead to the loss of works of art. The second criterion, which regards inscriptions, was a reduced leg-

⁵⁸ Colloidal silica is a product which forms crystals in marble in contact with air.



Fig. 34 (top). Substances tested at the lower part of the slab were covered with wet tissue paper and a plastic sheet to prolong the drying process.

Fig. 35 (above). The slab at inspection in 2012.

ibility that would eventually lead to the loss of historic documents. In addition, the object's position at the site need to be taken into account, since its visibility and integration have an impact on the impression and understanding of the site.

At Labraunda, the artistic value (sculpted ornaments and forms) and historic values (inscriptions) have been regarded as of equal importance. There are, for example, a great number of decaying architrave fragments with finely cut ornaments and blocks with egg-and-dart mouldings or dentils spread over the ground. These pieces were not put on the emergency list simply because they are too many of one kind, and it would seem odd to conserve only one piece of a 20-metre-long decoration—unless, of course, we wanted a showpiece. Conservation of a row of ornamental marbles ought to be performed as part of a long-term plan aimed at a different kind of display. The same point is valid for the rows of column drums, some of which are broken and disintegrating.

In order to understand what kind of conservation materials are functional at this particular site and on these specific types of marble, some simple material tests were made in 2010, when a biocide (a natural soap) and one consolidation substance were tested on a couple of objects. A partial consolidation was performed on a fallen and broken column, below

which was a pile of fallen crystals. Biocide treatment, cleaning, and consolidation were performed on a severely disintegrating Ionic capital. Then, some objects which had been selected for the following year's conservation were treated with a biocide. The application of biocide one year before conservation has proven to be quite efficient. Material tests for consolidation substances continued on a large marble slab in 2011. Four different substances were applied according to a strict arrangement.⁵⁹ In 2012, yet another substance was applied.⁶⁰ During the first working-days with students in the following years, the slab was inspected as part of the instruction. Last year, diammonium phosphate seemed the better alternative, and the validity of the product was confirmed this year. All objects conserved are checked each year, and the results, so far, are satisfactory with no negative effects (*Figs. 34–35*). A few samples were taken in 2011 and 2012 for the identification of marbles and the most common black growth. Analyses were made not

⁵⁹ Bindzil CC30, Bindzil CC40, casein/lime, and diammonium phosphate were tested.

⁶⁰ Calcium oxalate. The product was to be tested in 2011, but was not available at that time. The tests are described in the reports of 2011 and 2012.

only of the black matter but also of the surface deposits on all Labraunda samples of 2012 as an extra favour from the CNR team in Florence (see below). We now have a clear picture of the biodiversity on the marbles (*Fig. 36*), which consists of phototropic organisms such as the prevailing cyanobacteria and the green alga associated with a fungus form of lichens, which are symbiotic organisms. The results are very helpful for choosing substances and methods for conservation.

CONSERVATION IN 2011–2013

The fundamental principle in this conservation project is to perform the minimum intervention needed with simple and non-toxic conservation materials. Therefore, interventions have concentrated on cleaning and consolidation, which means preserving the elements treated for the future rather than performing extraordinary interventions suitable for museum objects; the items will remain in the outdoor environment.⁶¹ If desired, it will be possible to proceed with additional actions at a later stage.

Conservation in 2011 was performed over two weeks, with two participating students, Erika Andersson and Andreas Berndt. Work was concentrated on Andron B, and concerned the south anta of Maussollos' Andron, consisting of the anta capital and seven blocks, six of which were inscribed.⁶² An Ionic capital in front of the Andron and an anta capital at the South Propylaea were conserved too.⁶³

In 2012, the conservation period was three weeks.⁶⁴ Due to the particular circumstances this year, conservation principally regarded large inscriptions, which could be performed by unskilled hands. The most extensive works were two fragmentary inscribed architraves, the andron dedications of Maussollos and of Idrieus; the former consisted of six large damaged blocks, and the latter consisted of three large blocks, all of which had a variety of problems.⁶⁵ A finely cut inscribed block at Andron A was treated as well, and one of the column drums placed at the entrance to the same andron was also conserved. At the end of the period, a few objects were treated with biocide, i.e. prepared for conservation in 2012.



Fig. 36. Biodiversity on marble: cyanobacteria enter between the crystals and give a black hue to the stone.

In 2013, conservation was planned for a two-week period.⁶⁶ We decided to concentrate our work on the North Stoa which houses five Corinthian capitals (*Fig. 37*), two of which had been prepared for conservation the previous autumn.⁶⁷ Biocide was applied on the other three on the first day at the site. We also conserved the large column drum that stands in front of Andron B (*Fig. 38*). Furthermore, a broken architrave on the ground at the South Propylaea was lifted and the inscribed side which had been buried in the ground became visible. The blocks were cleaned and consolidated. Some rearrangements were made—the blocks were placed at the top of the stairs, together with the uninscribed left side of the architrave (*Fig. 39*). The left-side pediment was placed upon it. The left-hand side anta capital was placed on an anta block at the left side of the stairs, thereby approximately mirroring the arrangement on the right side, with the anta capital conserved in 2011. In consequence, it is planned that conservation work will be concentrated on the South Propylaea in 2014.

One particular problem makes planning difficult: not knowing the number of persons who will participate or the level of their competence. As already mentioned in previous reports, collaboration with a conservation institute is of vital importance for making a sustainable long-term plan, forming a conservation team, and ascertaining the availability of conservation materials and equipment. With such a plan and skilled hands available, the programme could be extended to comprise research and more complex kinds of intervention.

⁶¹ See the unpublished reports: Labraunda Marbles. Reports 2010, 2011, 2012, 2013.

⁶² On Andron A and Andron B, see Hellström & Thieme 1981.

⁶³ On the South Propylaea, see *Labraunda* I:1.

⁶⁴ Erika Andersson, who was the only conservation student, could unfortunately only stay for the first week. The archaeologist Fredrik Tobin and a Turkish student in the archaeological team, Yılmaz Gündüz, also took part during the first week, after which I worked on my own.

⁶⁵ On the inscriptions, see *Labraunda* III:2.

⁶⁶ The team was expanded: four students from the building conservation programme at Uppsala University Campus Gotland, Anna Plahn, Anna Enberg, Adam Justin-Moll and Victoria Bly took part, as did Erika Andersson, this time as my assistant.

⁶⁷ See Liljenstolpe & von Schmalensee 1996.



Fig. 37. North Stoa column capital after conservation.



Fig. 38. Conservation of the column drum from Andron B.



Fig. 39. The South Propylaea. The rearrangement of the inscribed architrave blocks. The large, broken block to the right has been cleaned and consolidated.



Fig. 40. The characteristic large-grained marble at Labraunda.

Working with conservation requires theoretical knowledge in the humanities such as history of art, knowledge of cultural aspects, as well as some competence in the natural sciences, i.e. knowledge about original materials and materials for conservation. In addition, one needs to have good practical training and a feeling for the aesthetics of the site. Theory and practice complement each other. Practical training has been the basis for theoretical discussions in this project. For that reason, the material tests mentioned above were made part of the programme. To question methods or materials and to look at results are good ways of forming an idea about choices available. Pieces for future conservation were also selected during discussions, since talking made us aware that we select partly on the basis of personal taste and preferences. Other experiences that were of benefit for the participants were excursions each year to archaeological sites such as Iasos, Stratonikeia, Lagina, Euromos, Didyma and Herakleia. These were organized by Lars Karlsson, who guided us and explained the sites, buildings, decorations and materials. We also visited Antique marble quarries at Mount Sodra in 2011 and at Iasos and Euromos in 2013. The possibility for interdisciplinary discussions at the site should be noted, and the availability of Pontus Hellström, Olivier Henry, and other members of the archaeological team, to answer our questions, was a great help.

Marble

According to tradition, the marble used at Labraunda is a local stone that was quarried in the nearby caves at Mount Sodra, north-west of Milas. It seems reasonable to assume that marble was brought from the nearest supply in order to avoid

transporting it over long distances. But there were many quarries in the area in antiquity, and the question of origin remains open until some marbles have been satisfactorily analysed.

Ocular inspection of Labraunda marbles in 2010–2013 indicates that there are at least three kinds of marble at the Sanctuary of Labraunda, and these are of different qualities: fine, medium-sized and large-grained, while the colours vary from brilliant white to pale grey and white with grey veining. A particular and most characteristic type is composed of medium-sized and large crystals with inclusions of clusters of very large rectangular crystals (*Fig. 40*).

Maybe all the marble used at Labraunda was quarried at Sodra from different caves which provided different types of stone. Or, some blocks may have been from Sodra, and other pieces are from as yet unknown caves. We must also consider that one type of marble may have been preferred for sculpture, finely cut inscriptions and architectural elements, while another quality was used for columns, bases and anta blocks. I also assume that the Karian kings, in order to impress the people and demonstrate their power, would have chosen what was considered the very best at the time, rather than choosing the nearest product available. Was marble from Mylasa known as the best? Was it considered superior to the famous marble from Herakleia, for example?

I started to address these questions in 2011, when five samples were sent for analysis at CNR/ICVBC in Florence.⁶⁸ Two of these were obtained at Labraunda, one from the quarries at

⁶⁸ Consiglio Nazionale delle Ricerche/Istituto per la Conservazione e Valorizzazione dei Beni Culturali.

Sodra and one from a modern quarry near Stratonikeia. In addition, one black stone and one crystal from Sodra were also analysed. All samples were pieces found on the ground. The results of the investigation are briefly presented below.

Sample	Mineralogical composition
Labraunda bianco (white)	calcite, traces of dolomite, medium/large grains
Labraunda grigio (grey)	dolomite, calcite, fine grains
Sodra (white)	dolomite, calcite, fine grains
Stratonikeia (white)	quartz (not marble)
Sodra nero (black)	diasporo, haematite, quartz
Sodra (single crystal)	calcite

According to analyses, the fine-grained grey marble at Labraunda and the sample taken at Sodra were very similar, but the characteristic large-grained white marble at Labraunda which was almost exclusively calcite is different. The following year, the study expanded a little, and five samples were obtained from datable objects. At that time, I was also informed by Pontus Hellström about an earlier investigation concerning stable isotopes that had been performed on two samples obtained from the architraves, which had dedications of Maussollos and Idrieus (A3, C42) and represent the Hekatomnid period.⁶⁹ These architraves were sampled again (Fig. 41). Another two samples were removed from two of the Corinthian capitals (CorCap1, CorCap2) from the Roman period (Fig. 42). A fifth sample was removed from an un-fluted column (LabCol), which was probably of the Roman period too. The sixth sample (MaTo) was taken from the marble tomb situated near the village of Kargicak. The tomb was sampled when a few cleaning tests were made with the joint objectives of finding a method for removing the red matter that covers the walls and reducing the effect of graffiti. The results are briefly presented below.

Sample	Mineralogical composition
A3	pure calcite marble, medium/large grains
C42	pure calcite marble, medium/large grains
CorCap1	calcite marble, fine grains
CorCap2	calcite marble, fine grains
LabCol	calcite marble, medium large grains
MaTo	calcite, Dolomite, very fine grains

The two samples from the architraves were not identical but had similar characteristics. The Corinthian capitals proved to be of the same kind, and were of a different kind of marble, and the column was, in spite of its similarities to the architraves, different from the capitals. The extremely fine-grained



Fig. 41. Sample A3, from the architrave of Idrieus' Andron, Andron A.



Fig. 42. Sample CorCap2, obtained from one of the Corinthian capitals.

greyish marble from the tomb was of a different kind again—it was considered to be breccia rather than marble.

At this point, the large-grained white marble at Labraunda (Labraunda bianco, C3, C42 and LabCol) seem to have some characteristics in common. The same goes for the fine-grained grey marble at Labraunda and the fragment from Sodra. The two capitals belong to a third type. But what is the provenance of the large-grained white marble? This question, the results of the isotope analysis, and recent research on Greek and Turkish marbles gave me the impetus to plan an extended marble study, for which I received funding 2013.⁷⁰ The

⁶⁹ Personal communication, September 2012.

⁷⁰ Attanasio 2003; Bağcı *et al.* 2010; Cramer 2004; Monna & Pensabene 1997; Prochaska & Attanasio 2012; Prochaska & Grillo 2012.

marble study, which started within the conservation project described above, has now become a separate research project called “Marble trade in Antiquity”. The research is expected to lead to the identification of marbles used at Labraunda from the Hekatomnid to the Byzantine period.

MARBLE BLOCKS INVENTORIED IN 2013 (ITALICS = CONSERVED)

South Propylaea

1. Anta block with inscription (61 A and 61 B), inv. K 73, at the west side of the entrance, relating the decision of Roman officials regarding freedom from annoyance of the inhabitants of the sacred land. *Biocide treatment in 2013.*

2. Anta capital, inv. K 80, with egg-and dart decoration at the top, followed by a palmetto and lotus frieze, a Lesbian moulding and a bead-and-reel list. *Conserved in 2011.*

3. Column at the end of the passage on the east side. Badly damaged at the lower part, on a broken base.

4. Column standing at the end of the passage at the west side.

5. Anta capital, southeastern anta, moved to the southeastern side of the gateway, placed on inv. K 73. *Biocide treatment in 2013.*

6. Inscription (61A and 61B), inv. K 19, decision of Roman officials regarding freedom from annoyance of the inhabitants of the sacred land.

7. Pediment of the south-east architrave. Placed upon architrave fragment K 4. *Biocide treatment in 2013.*

8. Architrave fragment, inv. K 4. *Biocide treatment in 2013.*

9. Architrave fragment with dedication of the gateway, inv. K 81. The fragment, broken into two pieces, was lifted from the ground and is now beside K 4. *Conserved in 2013.*

Andron B (see Fig. 38)

1. Anta capital, inv. C 84, decorated with egg-and-dart, a lotus-and-palmette frieze, Lesbian cymatium and a bead-and-reel moulding, placed on the terrace. The capital has flaking areas at the top, indicating there will be future material losses. These parts need to be secured. *Conserved in 2011.*

2. Inscription I. Labraunda 6, inv. C 39, on the terrace. *Conserved in 2011.*

3. Inscription I. Labraunda 5, inv. C 76, placed on the terrace. *Conserved in 2011.*

4. Inscription I. Labraunda 5, inv. C 78, letter of Philip of Macedon to Mylasa. *Conserved in 2011.*

5. Inscription I. Labraunda 6B, inv. C 38, placed on the terrace. *Conserved in 2011.*

6. Inscription I. Labraunda 14, consisting of seven blocks lined up on the terrace, inv. C 11, C 10a, C 10b, C 13, C 12, C 165, C 42. *Biocide treatment in 2011. Conserved in 2012.*

7. Ionic capital, inv. C 80, standing in front of Andron B. *Conserved in 2011.*

8. Column, inv. C 3, one of a pair at the entrance to the building, placed towards north. *Biocide treatment in 2012. Conserved in 2013.*

9. Column, inv. C 44, at the entrance to the building, placed towards south. *Biocide treatment in 2013.*

10. Anta block, inv. C 82, on which inv. C 84 is standing. *Conserved in 2011.*

11. Inscription I Labraunda 5, inv. C 77, placed on the terrace. *Conserved in 2011.*

12. Inscription I Labraunda 7, inv. C 40, placed on the terrace. *Conserved in 2011.*

Andron A

1. Column, inv. A 125, one of a pair standing at Andron A, placed towards the south.

2. Column, inv. A 13, second of a pair at Andron A, on the ground towards the north.

3. Ionic capital, inv. A 104. *Conserved in 2010.*

4. Inscription I Labraunda 4, inv. A 150, placed in the corner close to no 5. *Conserved in 2012.*

5. Inscription I Labraunda 15, consisting of 3 large blocks, inv. A5, A3, A2, placed in front of the north column. *Conserved in 2012.*

Oikoi

1. Inscription I Labraunda 21, inv. NA 2, placed on a row of frieze blocks standing outside the building. *Biocide treatment in 2013.*

Temple of Zeus

1. Column at the north side. The column is vertically broken into two pieces. Flaking areas.
2. Column drum at the north side. Damaged.
3. Column drum, north-west corner. Damaged. *Biocide treatment in 2013.*
4. Ionic corner capital, north-west corner. *Biocide treatment in 2013.*
5. Base and block at the north-east corner of the stylobate. Damaged.
6. Column drum at south side, split.
7. Column drum at south side, split.
8. Reconstruction, 3 blocks. (Top block with Lesbian cymatium, dentils, egg-and-dart, and bead-and-reel mouldings.) Strange crust on the Lesbian cyma. *Biocide treatment in 2013.*

On Temple terrace

1. *Architrave fragment with decoration. Cleaned for documentation in 2012.*

North Stoa (see Fig. 37)

1. *Capital B152, treated with biocide 2012. Conserved in 2013.*
2. *Capital B147, treated with biocide 2012. Conserved in 2013.*
3. *Capital B95. Conserved in 2013.*
4. *Capital B146. Conserved in 2013.*
5. *Capital B141. Conserved in 2013.*
6. Entablature with inscriptions (7, plus 9 decorated and/or inscribed blocks).

Exedra

1. Stele with inscription, inv. 118/Y30.

LARS KARLSSON
Department of Archaeology and Ancient History
Uppsala University
Box 626
SE-751 26 Uppsala
lars.karlsson@antiken.uu.se

JESPER BLID KULLBERG
Centre for Theology and Religious Studies
Lund University
Box 192
SE-221 00 Lund
jesper.blid_kullberg@teol.lu.se

BAPTISTE VERGNAUD
Institut français d'études anatoliennes
Palais de France
Nuru Ziya Sok PK 54
TR-344 33 Istanbul
baptiste.vergnaud@laposte.net

AGNETA FRECCERO
Järnvägsgatan 2
SE-272 93 Tommarp
agnetafreccero@gmail.com

Appendix: The exedra of Demetrios, son of Python, at Labraunda

BY FREDRIK TOBIN

In front of the Temple of Zeus at Labraunda, there is an open area where a large number of small, free-standing monuments stood in antiquity. Today, mostly statue bases remain, but in the north-eastern corner of the Temple Terrace a relatively well preserved exedra can be found (Fig. 43).⁷¹ Apart from the publication of its inscriptions it has received little scholarly attention.⁷² Parts of it were seen by Alfred Laumonier in 1933;⁷³ it was later excavated by Swedish archaeologists and finally reassembled on 5 July 1948. During the 2013 field season, the exedra was cleaned of accumulated dirt and documented (Fig. 44).

The exedra itself is semi-circular in shape, c. 4 m wide and c. 2 m deep. It is built entirely of marble and stands on a rectangular foundation built of local gneiss. The floor of the exedra consists of 11 marble blocks which have all been preserved. The superstructure consists of a back wall and a bench, both of which have been partly preserved.⁷⁴

The back wall was originally made up of five blocks, one of which is missing (Fig. 45).⁷⁵

Back wall block	Labraunda find ID	Inscriptions ⁷⁵
A	B 84	Labraunda 29 d
B	B 4a	Labraunda 29 c
C	B 48 + B 83	–
D	B 4	Labraunda 29 a and 29 b

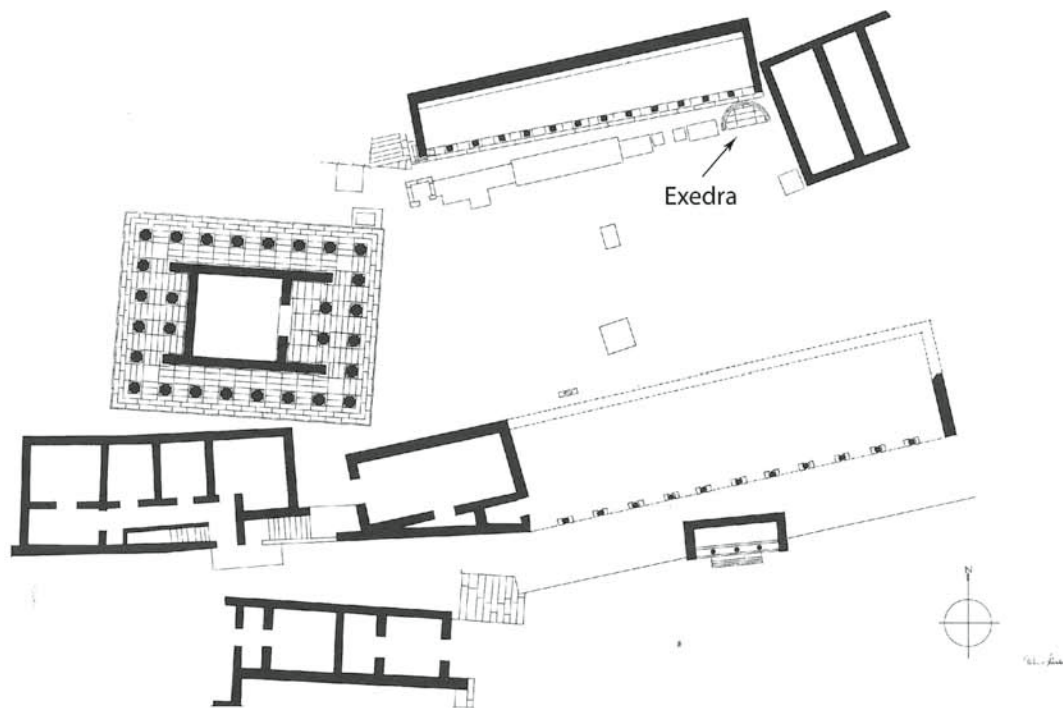


Fig. 43. Plan of the Temple Terrace at Labraunda (P. von Schmalensee & T. Thieme).

⁷¹ I am very grateful to Pontus Hellström for generously giving me access to archival material and for stimulating discussions. The field work was carried out with financial support from the foundation Harald och Tonny Hagendahls minnesfond.

⁷² The exedra was included in Susanne Freifrau von Thüngen's study of Greek free-standing exedrae, but she did not have the opportunity to see the monument herself, and her description of it (Thüngen 1994, 143) is therefore lacking.

⁷³ Laumonier 1934, 330–331; Laumonier 1936, 309–310.

⁷⁴ The inscription *ILabraunda* 66 (*Labraunda* III:2, 134–137) is today placed on the floor of the exedra, but is not directly related to it.

⁷⁵ Sketches of the tops of block B and D were published in Laumonier 1936, 310, fig. 22 (Block D is the top one and block B is the middle one). The find locations of all the blocks except B 48 can be seen in *Labraunda* II:5, 15, fig. 2.

⁷⁶ *Labraunda* III:2, 29–30.



Fig. 44. The exedra of Demetrios in its current state.

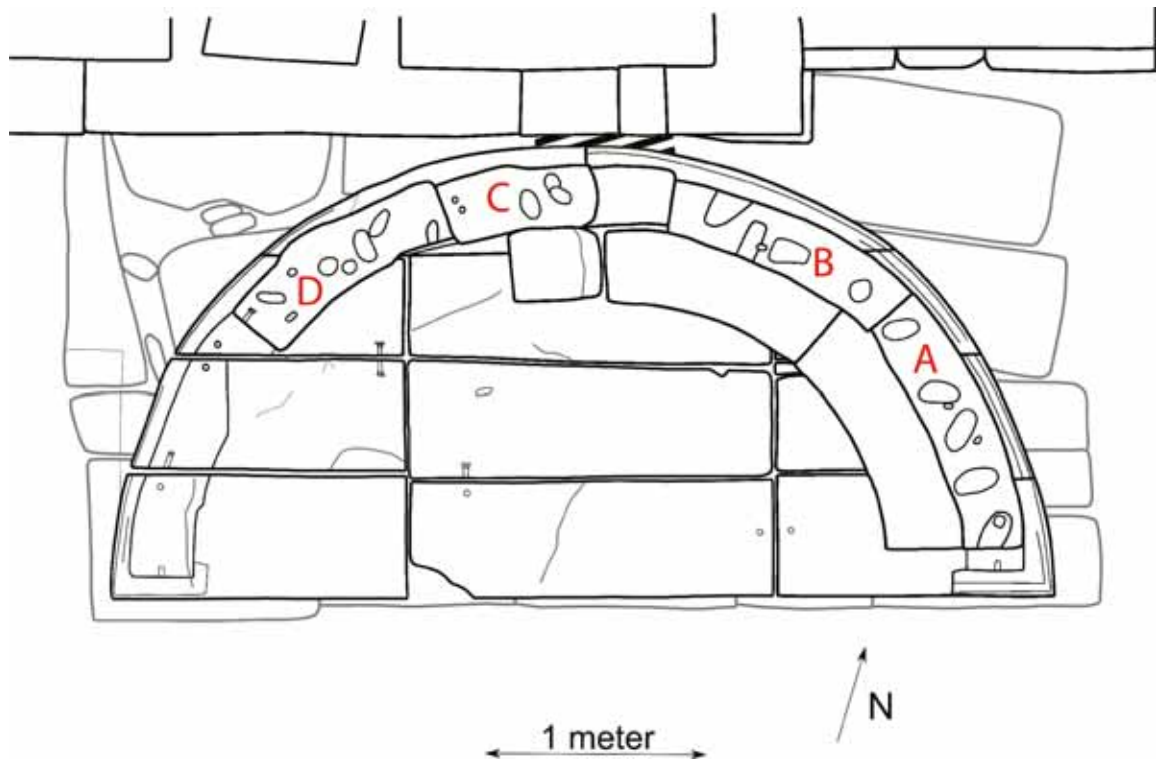


Fig. 45. Plan of the exedra (in black) and its foundation (in grey).

The original order of placement of the back wall blocks cannot be determined with complete certainty. Block A is the only block which has mouldings and an inscription on its right short side, meaning that it must have been the final block on the right side. Since none of the preserved blocks have mouldings on their left short side, this means that the missing block was the final block on the left side. Since block D has a small part of an inscription on the left end of the front of block (Labraunda 29 b), the block standing directly to the left of it must have contained the rest of the inscription. Neither block B nor C has any such inscriptions, suggesting that block D was positioned to the right of the missing block. Nothing certain can be said about the internal order of placement of blocks B and C.

The superstructure of the exedra was constructed using orthostate blocks for the back wall, combined with a completely separate bench (Fig. 46). On the Greek mainland, the bench is usually integrated into the back wall. In fact, exedrae with separate benches are found only on the Aegean islands and in Asia Minor.⁷⁷ Mouldings run along the top of the back wall, both on the front side and on the back side. Although the back-side moulding is very damaged, it seems to have been identical to the front-side moulding (an observation made previously in the 1948 field journal B II, page 64). A third moulding runs along the back side of the exedra floor. For the reconstructed section, the front side of block D was used as the basis for both top mouldings, while the floor blocks under back wall blocks A and B were used for the floor moulding.

Three of the four known inscriptions on the exedra (Labraunda 29 a–c) were cut into the front side of the back wall and simply state the name of the dedicator of the monument: Demetrios, son of Python (Fig. 47). The fourth inscription (Labraunda 29 d) was cut into the short side of block A and seems to have been at least five lines long, although only a few single letters were readable when it was excavated. All of the inscriptions are almost completely destroyed today, but Jonas Crampa, who published the inscriptions, made squeezes of them which are now at the Uppsala University Library.⁷⁸ Crampa dated the inscriptions to the 3rd century BC on account of the lettering.

Cuttings for bronze statues can be noted on the top of the back wall. They are easiest to interpret on block A, where two pairs of feet can be seen clearly. The cuttings on the other blocks are less obvious in shape, but it seems certain that statues were placed all along the top of the back wall, presumably also on the missing back wall block. Gunter has estimated that there were as many as nine statues.⁷⁹

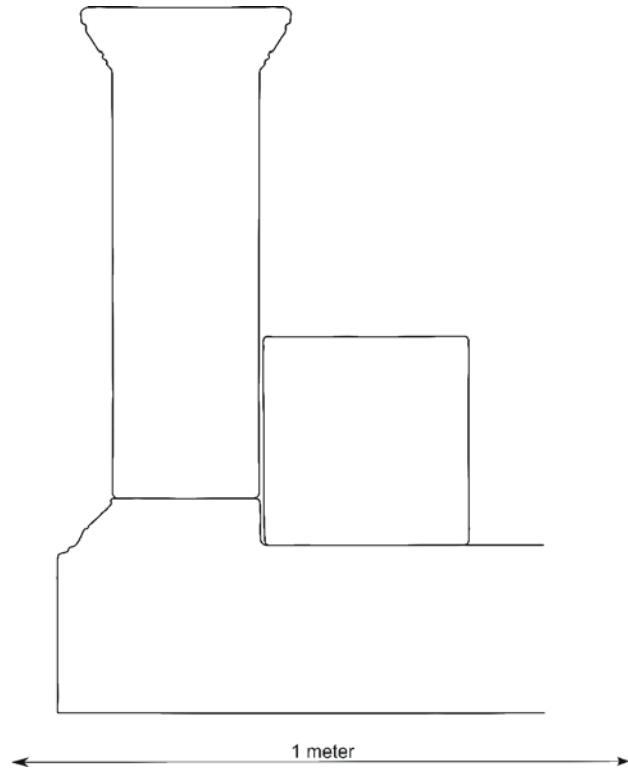


Fig. 46. Reconstructed section of the exedra.



Fig. 47. Inscription 29 a on the back wall block D.

⁷⁷ Thüngen 1994, 12.

⁷⁸ Accession number 2011/13.

⁷⁹ Labraunda II:5, 53.

Clamps were used to hold blocks of the exedra floor together, and these were also used between back wall block D and the missing back wall block. Two of the clamp holes in the floor still contain remains of iron clamps. A clamp in the floor under back wall block D even preserves its lead cover, and according to the field journal, a second clamp (now covered by one of the bench blocks) also has a preserved cover. Even though many of the clamp cuttings are very worn, it is clear that at least some of the cuttings which would have been visible on the floor had dovetailed cuttings. The practice of giving visible clamps dovetailed cuttings and the non-visible ones plain cuttings is apparent also in the Temple of Zeus, for example.⁸⁰

The exedra is placed only a few centimetres from the Stoa of Poleites (also known as the North Stoa). The construction of this stoa has been dated to somewhere between AD 102 and 114,⁸¹ but it also contains *anta* blocks from an earlier stoa dedicated by Maussollos (first half of the 4th century BC). The relationship between the Stoa of Poleites and the Stoa of Maussollos is still being debated. Peter Liljenstolpe and Patric von Schmalensee have suggested that the two stood on almost the same spot and that the Stoa of Poleites reused some materials and the back wall from the earlier stoa, but that it was largely a new building.⁸² The gneiss foundation of the exedra extends under the *euthynteria* of the stoa, so unless the exedra foundation was originally constructed for a different, earlier monument, this means that the construction of the stoa must post-date the construction of the exedra. And even though the exedra cannot be very precisely dated, a dating to the period of Maussollos can be ruled out since free-standing exedrae did not emerge until the end of the 4th century BC.⁸³ It is of course possible that blocks in the stylobate and *euthynteria* of the Stoa of Poleites could come from the Stoa of Maussollos, but in that case they must have been moved to their current position sometime after the construction of the exedra.

FREDRIK TOBIN
Department of Archaeology and Ancient History
Uppsala University
Box 626
SE-751 26 Uppsala
fredrik.tobin@antiken.uu.se

Bibliography

- Akarca, A. 1959. *Les monnaies grecques de Mylasa*, Paris.
- Attanasio, D. 2003. *Ancient white marbles. Analysis and identification by paramagnetic resonance spectroscopy*, Roma.
- Bağcı, M., Y. Kibici, A. Yildiz & Ö. Tezcan Akinci 2010. 'Petrographical and geochemical investigation of the Triassic marbles associated with Menderes massif metamorphics, Kavaklıdere, Muğla, SW Turkey', *Journal of Geochemical Exploration* 107, 39–55.
- Bean, G.E. & R. Duyuran 1947. 'Ada Tepe Again (Sancaklı Kalesi)', *JHS* 67, 128–134.
- Berndt-Ersöz, S. 2003. *Phrygian rock-cut shrines and other religious monuments. A study of structure, function and cult practice*, PhD diss., Stockholm University.
- Chabot Aslan, C. 2009. 'End or beginning? The Late Bronze Age to Iron Age transformation at Troia', in *Forces of transformation. The end of the Bronze Age in the Mediterranean. Proceedings of an international symposium held at St. John's College, University of Oxford, 25–26th March 2006*, eds. C. Bachhuber & R.G. Roberts, Oxford, 144–151.
- Coulton, J.J. 1976. *The architectural development of the Greek stoa*, Oxford.
- Cramer, T. 2004. *Multivariate Herkunftsanalyse von Marmor auf petrografischer und geochemischer Basis*, Berlin.
- Hellström, P. & T. Thieme 1981. 'The Androns at Labraunda. A preliminary account of their architecture', *Medelhavsmuseet Bulletin* 16, 58–74.
- Hellström, P. 2007. *Labraunda. A guide to the Karian sanctuary of Zeus Labraundos*, Istanbul.
- Henry, O. et al. 2013. 'Labraunda 2012. Rapport préliminaire', *Anatolia Antiqua* XXI, 285–355.
- Henry, O. et al. 2014. 'Labraunda 2013. Rapport préliminaire', *Anatolia Antiqua* XXII.
- Isthmia III = Broneer, O. 1977. *Isthmia. Excavations by the University of Chicago under the auspices of the American School of Classical Studies at Athens III. The terracotta lamps*, Princeton.
- İlaslı, A. & M. Ülyümez 2008. *Afyonkarahisar*, Istanbul.
- Karlsson, L. 2009. 'Labraunda 2008. A preliminary report on the Swedish excavations with contributions by Jesper Blid and Olivier Henry', *OpAthRom* 2, 57–87.

⁸⁰ *Labraunda* I:3, 19.

⁸¹ Liljenstolpe & Schmalensee 1997, 129–131.

⁸² Liljenstolpe & Schmalensee 1997, 145–146.

⁸³ Thüngen 1994, 16.

- Karlsson, L. 2010. 'Labraunda 2009, a preliminary report on the Swedish excavations with contributions by Jesper Blid and Olivier Henry', *OpAthRom* 3, 61–104.
- Karlsson, L. 2011. 'The forts and fortifications of Labraunda', in *Labraunda and Karia. Proceedings of the International Symposium Commemorating sixty years of Swedish archaeological work in Labraunda. The Royal Swedish Academy of Letters, History and Antiquities, Stockholm, November 20–21, 2008*, eds. L. Karlsson & S. Carlsson (Boreas, Uppsala Studies in Ancient Mediterranean and Near Eastern Civilizations, 32), Uppsala, 217–252.
- Karlsson, L. 2013. 'The sanctuary of the Weather God of Heaven at Karian Labraunda. A Bronze Age cult exposé for Robin Hägg', in *Perspectives on Ancient Greece. Papers in celebration of the 60th anniversary of the Swedish Institute at Athens*, ed. A.-L. Schallin (ActaAth-8°, 22), Stockholm, 173–189.
- Karlsson, L. forthcoming 1. 'The sanctuary of Zeus Labraundos. From nature sanctuary to Persian *paradeisos*', in *Hekatomnid Karia. Proceedings of the conference in Münster in March 2013*, ed. E. Winter, Münster.
- Karlsson, L. forthcoming 2. 'Kybele at Labraunda', in *Archaic Karia. Proceedings of the conference at Institut Français de l'Etudes Anatoliennes, November 13–15, 2012*, ed. O. Henry, Istanbul.
- Katalog Ephesos Museums = Erdemgil, S. et al. 1989. *Katalog des Ephesos Museums*, Istanbul.
- Kerameikos XI = Scheibler, I. 1976. *Kerameikos. Ergebnisse der Ausgrabungen XI. Griechische Lampen*.
- Labraunda I:1 = Jeppesen, K. 1955. *Labraunda. Swedish excavations and researches I:1. The Propylaea* (ActaAth-4°, 5:1:1), Lund.
- Labraunda I:3 = Hellström, P. & T. Thieme 1982. *Labraunda. Swedish excavations and researches I:3. The Temple of Zeus* (Swedish Research Institute in Istanbul), Stockholm.
- Labraunda II:5 = Gunter, A. 1995. *Labraunda. Swedish excavations and researches II:5. Marble sculpture* (Swedish Research Institute in Istanbul), Stockholm.
- Labraunda III:1 = Crampa, J. 1969. *Labraunda. Swedish excavations and researches III:1. The Greek inscriptions 1–12 (period of Olympichos)* (ActaAth-4°, 5:3:1), Lund.
- Labraunda III:2 = Crampa, J. 1972. *Labraunda. Swedish excavations and researches III. The Greek inscriptions II. 13–133* (ActaAth-4°, 5:3:2), Stockholm.
- Landolfi, M. 2013. 'La coroplastica votiva dal Santuario di Zeus Megistos', in *Iasos e il suo territorio. Atti del convegno internazionale per i cinquanta anni della Missione Archeologica Italiana*, eds. D. Baldoni, F. Berti & M. Giuman, Roma, 105–117.
- Laumonier, A. 1934. 'Inscriptions de Carie', *BCH* 58, 291–380.
- Laumonier, A. 1936. 'Archéologie carienne', *BCH* 60, 286–335.
- Le Rider, G. 1977. *Le monnayage d'argent et d'or de Philippe II frappé en Macédoine de 359 à 29*, Paris.
- Liljenstolpe, P. & P. von Schmalensee 1996. 'The Roman Stoa of Poleites at Labraynda. A report on its architecture', *OpAth* 21, 125–148.
- Machatschek A. & M. Schwartz 1981. *Bauforschung in Selge*, Wien.
- The Maussolleion at Halikarnassos 7 = Vaag, L.E., V. Nørskov, & J. Lund 2002. *The Maussolleion at Halikarnassos. Reports of the Danish Archaeological Expedition to Bodrum 7. The Pottery. Ceramic material and other finds from selected contexts* (Jutland Archaeological Society Publications, XV: 7), Aarhus.
- Monna D. & P. Pensabene 1997. *Marmi dell'Asia Minore*, Roma.
- Paksoy, G. 1997. *Anadolu'da pisen toprak (Fired earth in Anatolia)*, Istanbul.
- Pimouguet-Pédarros, I. 2000. *Archéologie de la défense: Histoire des fortifications antiques de Carie aux époques classique et hellénistique*, Presses Universitaires de Franche Comté.
- Prochaska W. & D. Attanasio 2012. 'Tracing the origin of marbles by inclusion fluid chemistry', *Interdisciplinary studies on ancient stone*, Tarragona, 230–237.
- Prochaska W. & S.M. Grillo 2012. 'The marble quarries of the metropolis of Ephesos and some examples of the use for marbles in Ephesian architecture and sculpting', *Interdisciplinary studies on ancient stone*, Tarragona, 584–591.
- Robertson, N. 1996. 'The ancient Mother of the Gods. A missing chapter in the history of Greek religion', in *Cybele, Attis and related cults. Essays in memory of M.J. Vermaseren*, ed. E.N. Lane, Leiden, 239–304.

- Samothrace* 7 = McCredie, J., G. Roux, S.M. Shaw & J. Kurtich, *Samothrace. Excavations conducted by the Institute of Fine Arts, New York University* 7. *The Rotunda of Arsinoe*, Princeton 1992.
- SNG Greece II = Kremydi-Sicilianou, S. 2000. *Sylloge Nummorum Graecorum, Greece II. The Alpha Bank Collection*, Athens.
- SNG Sweden I = Westermarck, U. 1974. *Sylloge Nummorum Graecorum, Sweden I. The collection of the Late Majesty King Gustaf VI Adolf, the Fred Forbat Collection*, Stockholm.
- SNG Sweden I:2 = Boehringer, C. 1995. *Sylloge Nummorum Graecorum, Sweden I:2. Sammlung Eric von Post*, Stockholm.
- Spanos, P.Z. 1983. 'Einige Bemerkungen zum sogenannten Niobe-Monument bei Manisa (Magnesia ad Sipylum)', in *Beiträge zur Altertumskunde Kleinasiens. Festschrift für K. Bittel*, eds. R.M. Boehmer & H. Hauptmann, Mainz, 477–483.
- von Thüngen, S.F. 1994. *Die frei stehende griechische Exedra*, Mainz 1994.
- Thompson, D.B. 1963. *Troy Supplementary Monograph, III. The terracotta figurines of the Hellenistic period*, Princeton.
- Troia. Traum und Wirklichkeit* 2001. J. Latacz, M. Korfmann *et al.* *Troia. Traum und Wirklichkeit*, Stuttgart.
- Troy* I = Blegen, C.W., J.L. Caskey, M. Rawson & J. Sperling 1950. *Troy: Excavations conducted by the University of Cincinnati 1932–1938 I. General introduction. The first and second settlement*, Princeton.
- Troy* III = Blegen, C.W., J.L. Caskey & M. Rawson 1953. *Troy: Excavations conducted by the University of Cincinnati 1932–1938 III. The sixth settlement*, Princeton.
- Troy* IV = Blegen, C.W. 1958. *Troy: Excavations conducted by the University of Cincinnati 1932–1938 IV. Settlements 7a, 7b and 8*, Princeton.
- Vergnaud, B. 2012. *Recherches sur les fortifications d'Anatolie occidentale et centrale au début du premier millénaire av. J.-C. (Xe–VIIe s.)*, PhD diss., Université de Bordeaux.
- Vergnaud, B. 2013. 'L'acropole du site', in Henry *et al.* 2013, 285–298.
- Vergnaud, B. 2013. 'Quelques observations sur la forteresse de la Labraunda', in *LABRYS. Studies presented to Pontus Hellström*, eds. L. Karlsson, S. Carlsson & J. Blid Kullberg (Boreas. Uppsala Studies in Ancient Mediterranean and Near Eastern Civilizations, 35), Uppsala, 107–122.
- Vermaseren, M.J. 1987. *Corpus Cultus Cybelae Attidisque* (CCCA) I. *Asia Minor*, Leiden.
- Wrede, W. 1933. *Attische Mauern*, Athen.