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THE BRONZE AGE SITE OF MITROU IN EAST LOKRIS

Finds from the 1988–1989 Surface Survey

ABSTRACT

This article presents the results of the study of the surface survey material from the island site of Mitrou. The survey was carried out under the auspices of the Cornell Halai and East Lokris Project (CHELP) in 1988 and 1989, and the finds were studied by the authors between 2000 and 2003. Pottery and small finds indicate that Mitrou was one of the major Bronze Age sites in the region, occupied from Early Helladic II through the Protogeometric period without interruption, and benefiting from trading contacts throughout the Aegean.

INTRODUCTION

The Cornell Halai and East Lokris Project (CHELP) carried out a surface survey on the island of Mitrou in 1988 and 1989 under the direction of John Coleman and William Murray, who generously gave the authors permission to publish the collected material.[1] Mitrou, a tidal islet in the bay of Atalanti in East Lokris, is located on a land and sea corridor connecting

1. Margaretha Kramer-Hajos studied the pottery (summers of 2000, 2001, and 2003, and fall of 2002) and Kerill O'Neill the small finds (summers of 2000, 2001, and 2003).

We are grateful above all to John Coleman (Cornell University) and William Murray (University of South Florida). Various scholars offered advice in the course of preparing this article. Eleni Zahou and Olga Kyriazi of the 14th Ephorate of Prehistoric and Classical Antiquities were extremely helpful in offering parallels from the nearby site of Proskynas, whose finds are currently being studied for publication. Jeremy Rutter shared his expertise and gave many useful insights on the pottery from Mitrou. We also benefited greatly from the expertise of Lia Karimali in evaluating the lithics. We further thank illustrators Yuki Furuya (CHELP volunteer in 2000) and Mary-Jane Schumacher (INSTAP Center on East Crete, 2002). Volunteers assisting with cataloguing were Lois Berkowitz (2000) and Sara Schrage (2002, 2003). We must also thank William Murray and Grigorios Tsokas for kindly providing us with their unpublished manuscripts on the survey methodology and the methodology and results of the electrical resistivity and electrical tomography survey, respectively. We are also grateful to the anonymous *Hesperia* reviewers for their insightful suggestions. Finally, we thank Phanouria Dakoronia, Maria-Photeini Papakonstantinou, Nina Kiparissi-Apostolika, Sonia Dimaki, Olga Kyriazi, and Eleni Zahou, current and former members of the 14th Ephorate of Prehistoric and Classical Antiquities at Lamia for their kindness, generosity, and expertise as we prepared this article.

The following abbreviations are used below: Early Helladic (EH), Middle Helladic (MH), Late Helladic (LH), Early Bronze Age (EBA), Late Bronze Age (LBA), Early Iron Age (EIA), Protogeometric (PG), Early Protogeometric (EPG).

Figure 1. Mitrou from the east. Photo M. Kramer-Hajos

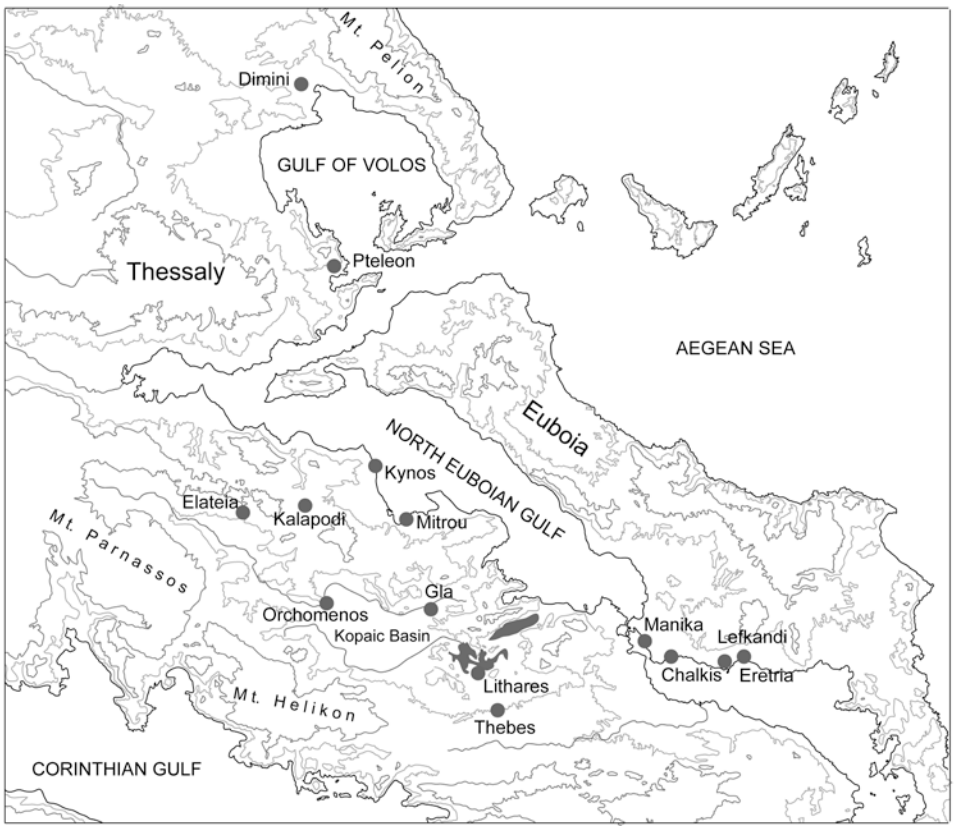
Thessaly with the southern part of central Greece (Figs. 1–3). The aim of the survey was to ascertain when Mitrou was first occupied, how long it was inhabited, and how the settlement changed over the course of time. The results indicate that Mitrou was inhabited and served as a major center from the Early Bronze Age through the Early Iron Age.

Mitrou lies near the southernmost part of the bay of Atalanti, on the western shore of the North Euboian Gulf, 1.5 km north of the modern town of Tragana (Figs. 2, 3). It measures about 330 m north–south and 180 m east–west, and has a roughly balloon-shaped outline, covering an area of at least 3.6 ha. The highest point, about 12 m above sea level, is at the north end, where steep cliffs rise up from the sea. From there the islet slopes gently down toward the south (Fig. 1). The shoreline is sandy near the southern end, which at low tide stretches out in the form of a spit to Tragana beach, projecting ca. 0.25 m above the water. Most of the time, that is, at high tide, this spit is submerged under water up to 0.75 m deep. At its northern end, the shore of the islet is delimited by tall scarps. Numerous walls, floor levels, and cist tombs are visible in these scarps.

The island is now divided into 16 different private plots. It is devoid of modern buildings, thanks to the Greek Archaeological Service, which designated Mitrou as an archaeological site in 1983. The southern end and northwestern side of the islet are covered with olive groves. The northeastern quarter was used for cultivation of grains but has lain fallow in recent years and is covered with dense undergrowth. Aerial photographs from 1972 and 1997 (Fig. 4) illustrate the transition from crop-farming to olive cultivation. The presence of numerous cut and shaped blocks in piles of stones on the sides of the islet and along the beaches suggests that plowing has done some damage to structures, at least in the later strata. At the behest of the Greek Archaeological Service, deep plowing has been banned since the late 1980s, perhaps contributing to the landowners' waning interest in cultivating the islet.

Figure 2 ***(opposite, top)*****. Map of central Greece. Contour lines at 200 and 600 masl.** M. Kramer-Hajos

Figure 3 ***(opposite, bottom)*****. Map of the area around the bay of Atalanti. Contour lines at 200, 400, and 600 masl.** Adapted from CHELP base map; M. Kramer-Hajos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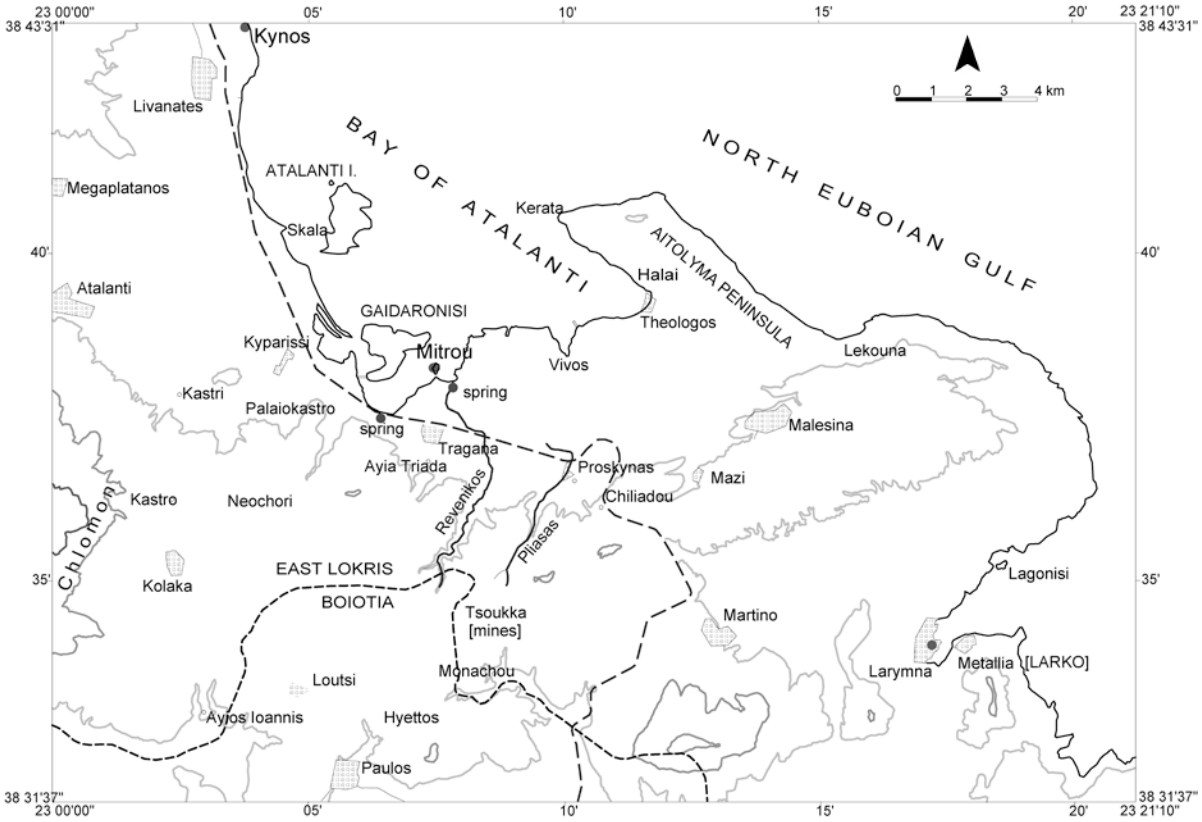
Thessaly
Pteleon
AEGEAN SEA
Euboia
NORTH EUBOIAN GULF
Kynos
Elatela
Kalapodi
Mitrou
Mt. Parnassos
Gla
Orchomenos
Kopaic Basin
Manika
Lefkandi
Chalkis
Eretria
Lithares
Mt. Helikon
Thebes
CORINTHIAN GULF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BAY OF ATALANTI
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ATALANTI I.
Megaplatanos
Kerata
Skala
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Halai
Atalanti
GAIDARONISI
Theologos
Kyparissi
Mitrou
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Lekouna
Kastri
spring
Palaiokastro
spring
Malesina
Tragana
Ayia Triada
Proskynas
Mazi
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Neochori
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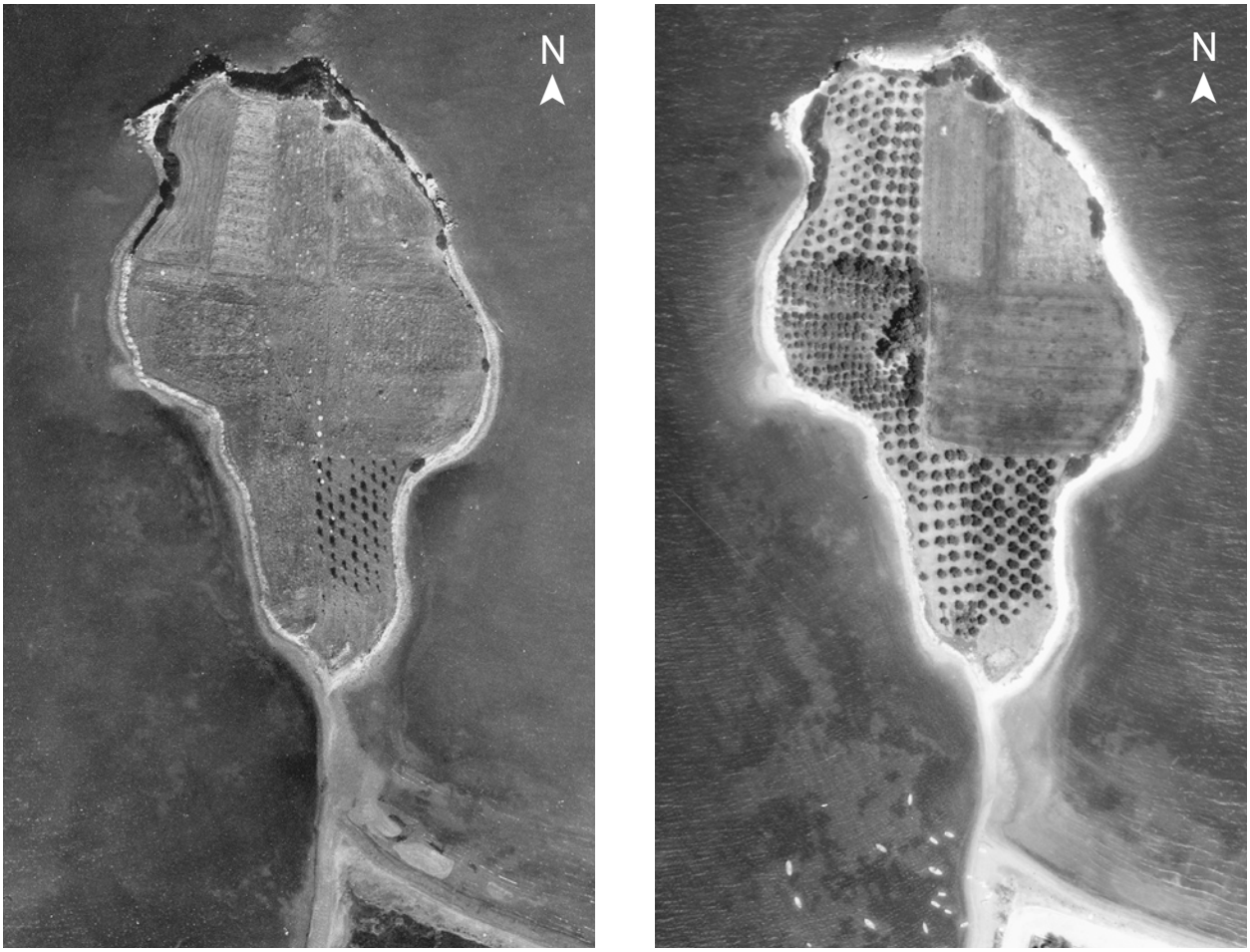


Figure 4. Aerial photographs of Mitrou from 1972 *(left)* and 1997 *(right)*. Photos Greek Army Geographical Service, courtesy J. E. Coleman

Mitrou is now a tidal islet but in prehistory the shoreline extended farther into the bay. Sea level was probably at least 10 m lower in the area around Mitrou in the Late Bronze Age than today, due to a combination of global sea level change, subsidence of the land between Euboia and the mountain ranges on the mainland, and earthquakes.[2] Thus, Mitrou was once a low hill overlooking a coastal plain. The large, fertile coastal plain of Atalanti to the northwest (Fig. 3) is bounded on the south by a steep ridge of hills up to 500 m high. The area is rich in springs and creeks, and the hills contain iron ore.[3]

A number of springs bubble up from the sea floor around Mitrou, on the east, north, and northwest sides of the islet. Two major springs are located nearby, one west-northwest of Tragana at the point where the National Road is closest to the sea, and the other east of Tragana at the point where the Revenikos River flows into the sea (Fig. 3). These springs may be fed by the runoff from the Kopaic Basin and do not dry up even in summer.

Late Bronze Age Mitrou certainly was in contact with the important LH site of Kynos, which lies ca. 10 km north-northwest of Mitrou, at the northern boundary of the plain of Atalanti near the modern town of Livanates (Figs. 2, 3). Interregional contacts with Boiotia and Phokis were facilitated by a number of natural routes.[4] Thebes, less than 40 km to the southeast of Mitrou, can be reached from Orchomenos or from the plain

2. The estimate of 10 m is based on extrapolation from known data (see, e.g., Hafemann 1960a, 1960b; Flemming 1978; Lambeck 1996), especially in the Argolid (van Andel and Shackleton 1982; van Andel 1989) and near Halai (Steven Soter, pers. comm.). For calculations, see Kramer-Hajos 2005, pp. 26–38. A geophysical survey to determine the ancient sea levels is needed.

3. Iron mines in the hills at Tsoukka, south of Mitrou, were worked before World War II. Aerial conveyors, used for the transport of iron to the sea, form a line to Vivos; another line of aerial conveyors ended at Gaidaronisi, suggesting the presence of mines in the area of Neochori as well.

4. See Kramer-Hajos 2005, pp. 18–21. For the LBA regional context, see Kramer-Hajos 2008.

of Hyettos. From the northern part of the plain of Atalanti, the valley of the Daphnoremma River gives access to Kalapodi and Elateia in Phokis.

Mitrou was first mentioned in the dissertation of Paul Girard, who noted worked stones *(petrae effossae)* and pottery fragments *(innumera fictilium rerum fragmenta)* around the mouth of the Revenikos River, to the east of Mitrou (Fig. 3).[5] The island was subsequently investigated by Rainer Felsch in 1974–1975, who recognized remains dating from EH II–MH and LH IIIA–B.[6] John Fossey added pottery finds dating to the Late Neolithic, Protogeometric, Geometric, and, tentatively, Classical periods.[7]

In the summers of 1988 and 1989, members of CHELP conducted an intensive surface survey covering most of the surface and beaches of Mitrou, the results of which are presented in this article.[8] Connected with this survey was a magnetometer survey conducted by Steven Soter.[9] In October 2003, in preparation for excavation by the Mitrou Archaeological Project (MAP), Grigorios Tsokas of Aristotle University in Thessaloniki carried out a geophysical survey over the northeastern part of the island, which revealed a dense network of walls. Excavations then began in the summer of 2004.[10]

Remains of Buildings and Tombs

On the northeastern and northwestern sides of the islet, erosion from the sea has created vertical scarps that extend for stretches of 50 m or more and show the remains of ancient buildings, floors, and tombs (Fig. 5). These deposits are up to 4 m deep in the northern part of the island. The scarps suffer from looting and from the incessant erosion caused by the sea and the wind. As a result, tombs that were visible in the scarp a decade ago have now tumbled down the scarp, their slabs lying on the beach below (Fig. 6). In 1989 student volunteers of CHELP recorded eight looted cist tombs on the western side of the island;[11] at least two more were visible in the northeastern scarp.

Some of the cist tombs may date to the MH period, but it is possible that a number of the ones located on the northwest shore at a lower level, at the low tide line and most of the time covered by the sea, date to the EH period. One tomb on the eastern side, which collapsed in the winter of 1999–2000, may be Mycenaean, given its carefully worked slabs (Fig. 6) and the presence of a large Early Mycenaean sherd (**D1**, see catalogue below) with fresh breaks found in the spill below the tomb.[12] Nevertheless, we are mindful that cist tombs were used throughout the Bronze Age and into the Early Iron Age.

During the LH period the place of burial may have been moved elsewhere: Mycenaean chamber tombs are located 2.5 km away on the hillside of nearby Tragana, on the way up to the monastery of Ayia Triada (Fig. 3). Eight have been investigated by the Greek Archaeological Service[13] and are likely to represent the cemetery for Mycenaean Mitrou. The bones from multiple burials within these chamber tombs have been compared with bones from various other Mycenaean sites in Lokris, and they indicate that the people of Mitrou enjoyed better nutrition, endured less physical hardship, and lived significantly longer than other Lokrians of the period.[14]

In the area above the northeastern tombs, two walls can be seen jutting out of the scarp (Fig. 5, "room"). They are built of unworked hard fieldstones

5. Girard 1881, p. 39.

6. In Schachermeyr 1976a, pp. 218, 271; 1976b, p. 176.

7. Fossey 1990, p. 50.

8. The survey was part of a regional survey focusing on the territory of ancient Halai: Coleman 1992, p. 268. A preliminary paper on Mitrou and its finds was presented in January 2002 at the 103rd Annual Meeting of the Archaeological Institute of America: Kramer-Hajos 2002.

9. Soter et al. 2000.

10. For geophysical survey, see Van de Moortel et al., forthcoming. For a brief preliminary report on the 2004 excavation season, see Van de Moortel and Zahou 2005.

11. Described by Heather Levy in a CHELP student report in 1989 (unpubl.).

12. Kramer-Hajos 2005, p. 176. See Maran 1992, p. 35: tomb 360 in the Pevkakia-Magoula graveyard has a worked groove in its cover slab; it is dated securely to the LH period on the basis of its stratigraphic position.

13. Dakoronia 1997, 1998, 2003.

14. Iezzi 2005, p. 114: the average age at death for those interred in the Ayia Triada chamber tombs was 44 years, with one individual living to a ripe old age of 60, while the average at most other sites in Lokris was 34 years.

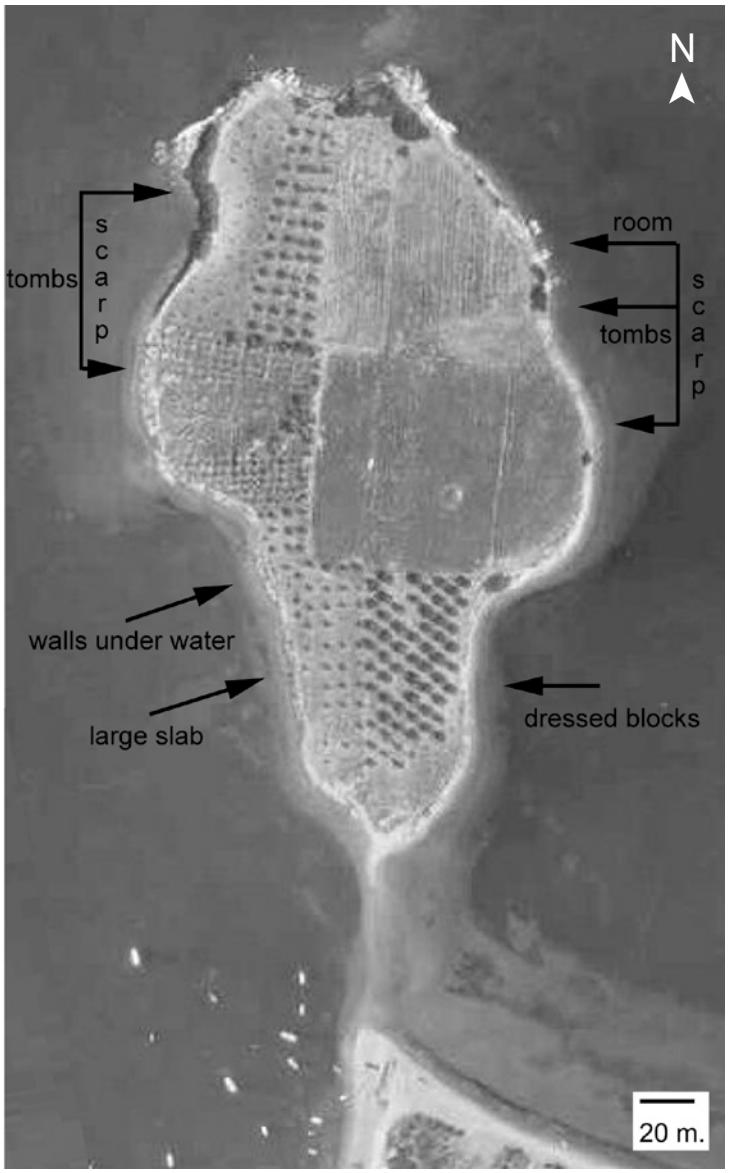


Figure 5. Visible features on Mitrou. Photo Greek Army Geographical Service, courtesy J. E. Coleman; adapted by M. Kramer-Hajos

ca. 0.20 m long, roughly fitted together. Here, too, erosion and looting have taken their toll. Although hardly visible today, a decade ago it was still clear that the two walls formed the corner of a room that is presently outside the scarp. A MH bronze ax (**C35**) and some other small finds were recovered from fresh spill below a tomb robber's tunnel dug along the floor level within the corner of the room. South of this structure, more walls are visible in the scarp. In one case, individual mudbricks are clearly visible in situ above the stone sockle (Fig. 7). Alternating floor levels, visible as lines of cobbles or clay, and ash deposits are present as well.

On the southwestern beach, a large worked slab of sandstone conglomerate beach rock, measuring ca. 2.5 × 0.8 × 0.4 m and with a deep orthogonal cutting on its northern end, is reminiscent of a lintel stone. On the southeastern beach several stone blocks, ca. 0.3 × 0.3 m in size, show evidence of hammer marks. In the shallow waters west of the islet, walls are visible (Fig. 5).

Figure 6. Worked slabs from cist tomb as visible in 2003. Photo M. Kramer-Hajos

Figure 7. Sockle and mudbricks in northeastern scarp. Photo K. O'Neill

The geophysical survey conducted by Tsokas's team yielded impressive evidence for architectural remains on Mitrou.[15] Electrical resistivity mapping in the northeastern part of the islet revealed an extensive network of elongated anomalies at a depth of less than a meter. In general, these anomalies have an approximately northeast–southwest alignment or are perpendicular to that. It seems reasonable to interpret this pattern of rectilinear and orthogonal features as structures in a town grid. Some of the longest stretches (up to 30 m long) may represent enclosure walls for some sort of inner citadel, or possibly terrace walls; several rooms of various sizes are visible as well. Given the shallow depth of these structures, one can assume that they are associated with the later occupation of the site.

Apart from these structures, electric resistivity tomography[16] detected several structures near the northeastern shore at a depth of 1.5–3.5 m. Excavation is needed to ascertain the chronology of the structures identified by both geophysical techniques.

15. Our brief summary is based on Tsokas's 2003 report to the Lamia Ephorate and MAP. The survey was carried out in cooperation with Nina Kyparissi-Apostolika and the 14th Ephorate of Prehistoric and Classical Antiquities, and arranged with Tsokas by Eleni Zahou, Olga Kyriazi, and Kerill O'Neill. Funding was generously provided by the Institute for Aegean Prehistory; the results will appear in *Hesperia* (Van de Moortel et al., forthcoming).

16. For an introduction to archaeophysics in general, and electrical resistivity and electrical resistivity tomography in particular, see Kvamme 2001, esp. pp. 358–362, 380–381.

Surface Survey Methodology

The detailed surface survey of Mitrou was part of a regional survey of the territories associated with the ancient acropolis of Halai, a small coastal town in eastern Lokris located on the eastern shore of the bay of Atalanti (Fig. 3). The goal of this regional survey was to "record and study the archaeological and environmental evidence for human activity at and around ancient Halai from the beginning of the Neolithic period through Byzantine times."[17] The following description of the survey design is based on the field notes and the subsequent written report of the survey by William Murray; since there are no plans to publish a report on the survey methodology, we describe here the survey design and its implementation as we can reconstruct them to the best of our ability.[18]

Three different types of collection techniques were practiced: tract samples (TS), grab samples (GS), and vacuum samples (VS). Tract samples were the largest artifact collection units, delimited by natural features and modern field boundaries. Team members spaced approximately 10 m apart searched the ground in the area accessible to each member's outstretched arms for artifacts and collected all diagnostic artifacts encountered along their path. For the purposes of this survey, diagnostics were defined as ceramic rims, handles, and bases; sherds with incised, impressed, painted, plastic, or glazed decoration; or any oddly shaped item (whether pottery or not) that was not immediately recognizable. Small finds (e.g., chipped stone, glass, bone, metal) were also included in the sample.

As a first step in the survey, eight tracts were laid out (C2-601 to C2-608): four on the surface of the islet and four along the shoreline (Fig. 8).[19] Tracts C2-601, C2-603, and C2-604 were olive groves; C2-602 was a recently harvested wheat field. In addition, the sandy spit connecting Mitrou to the Tragana beach was rich in chipped stone and was assigned the number C2-600. For finds collected by chance during informal visits to the island, the identifying number C2-609 was created. In 1989, a new tract sample was collected on freshly plowed, formerly inaccessible land in the southwestern part of the island, designated C2-610.

The five tracts on the surface of the islet (C2-601 to C2-604, and C2-610, i.e., not the beach tracts) were different shapes and sizes, and different numbers of people were assigned to walk them.[20] Visibility ranged from excellent (80%–100%) for tracts that had been recently plowed (C2-603, C2-604, and C2-610) to fair (40%–60%) or poor (less than 20%) where the land lay fallow (C2-601 and C2-602). The northeastern part of the island (i.e., north of C2-602 and east of C2-604) had lain fallow for some time and was covered with particularly dense ground cover, offering 0% visibility. For this reason, it was not surveyed.

The beach tracts (C2-605 to C2-608) were not sampled in the same way due to their narrow and winding shape and their rocky terrain. There was no possibility of people walking side by side at 10 m intervals: at low tide the beach is only 3–4 m wide. Collection of artifacts on the beach tracts had more in common with a grab sample; as many students as possible combed every inch of the shoreline. The northern beach quadrants were particularly rich in finds due to erosion of the scarps and the illicit digging of tombs.

17. W. Murray, internal CHELP report.

18. Since the primary aim of the surface survey was not to record the density of artifact types in the area, but to determine the periods of habitation represented, the survey methodology seems to have borrowed little from contemporary survey projects in Boiotia (Bintliff 1985, 1986; Bintliff and Snodgrass 1985) and on Keos (Cherry, Davis, and Mantzourani 1991). For this reason, a direct comparison with other survey projects is difficult. The large quantity and fine quality of much of the Mitrou material may even have been a drawback: the temptation to collect only the most striking pieces in freshly plowed fields must have been strong.

19. Under the CHELP system for dividing up the survey region into manageable map sheets for separate teams of fieldwalkers, Mitrou fell onto sheet C2-6. Thus, the eight Mitrou tracts are numbered from C2-601 to C2-608.

20. Nine people walked C2-601, 10 people walked C2-602, the largest of the tracts, seven walked C2-603, and only three people walked C2-604, the smallest and narrowest of the tracts. In 1989, three people walked C2-610.

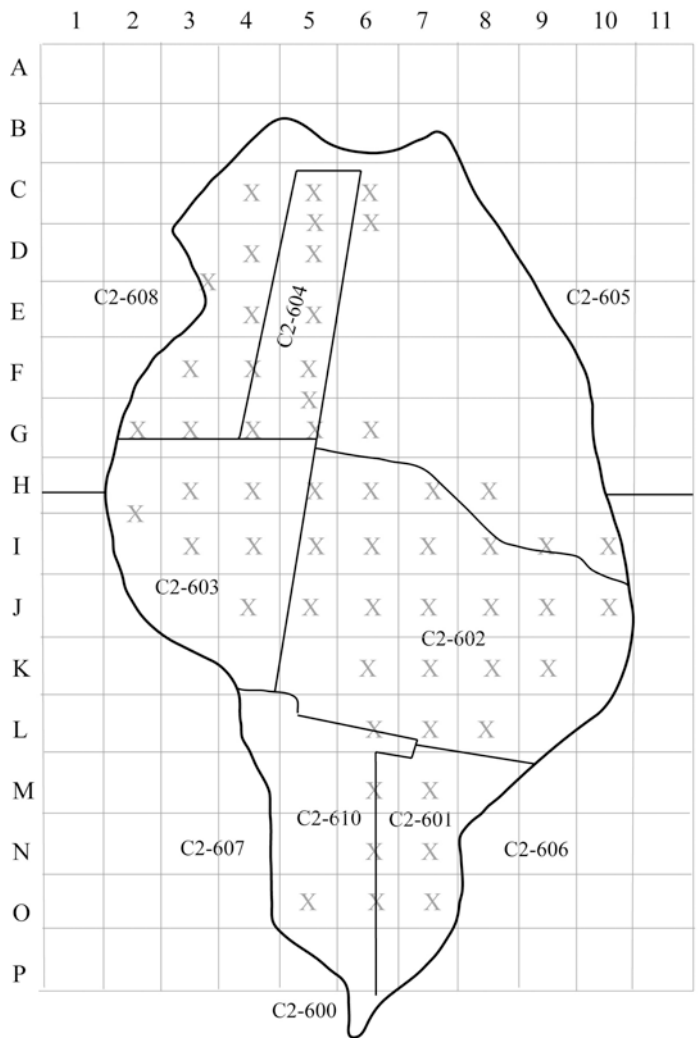


Figure 8. Tracts and grid squares; grab sample indicated by X. Adapted from CHELP survey map; M. Kramer-Hajos

Since an unusually high concentration of specific or significant artifacts was found on Mitrou, the site was subdivided into smaller units consisting of 20 × 20 m grid squares established on a north–south axis over the surface, complete with individual coordinates (Fig. 8). Grid squares in which artifact density was expected to be high, and visibility 40% or higher, were selected for grab sampling. Team members walked over the entire surface of each individual square, collecting a grab sample of every diagnostic artifact. In some cases, a grab sample was collected from two adjacent squares (e.g., in D/E 3 and H/I 2), where more than half of each individual square, on the edge of the scarp, was impossible to survey. The joining of two squares was intended to create plots of roughly equal size for grab sampling.

Although designed to provide a broadly representative selection of the types of pottery and small finds in a particular area, in practice both tract and grab samples resulted in skewed samples, since sherds from some periods and small finds of particular materials are not always equally recognizable. To counteract the possibility of missing evidence of a particular period or of overlooking important information about a site, the teams employed a

third sampling methodology. From a circle with a diameter of 3 m in the center of a grid square, all ground cover was removed, and every artifact, bone, and shell (ancient, modern, or undetermined) was meticulously collected, effectively "vacuumed up," and retained as a vacuum sample. Thus, the vacuum sample serves as a control for any collection biases in the tract sample or grab sample, and compensates for the differing abilities of individuals to identify artifacts in the course of collecting a grab or tract sample.[21] In seven cases where only a small area of the grid square was clear enough for survey, it was determined that it was not feasible to collect vacuum samples.[22]

Upon completion of the GS and TS, the team leader or recorder discarded undiagnostic sherds and any non-artifacts at the grid square or tract from which they came. Many of the stone finds, whether ground or chipped, received the same treatment, with the reasoning that these items are harder to ascribe to a specific time period than diagnostic pottery and are in that respect undiagnostic. The most interesting finds of all three sample types were selected for cataloguing and received field numbers according to their findspot and the type of find represented;[23] other material was bagged and labeled with sample type, findspot, and collection date.

In retrospect, tract sampling may not have been an appropriate methodology for Mitrou, which was already known to be a site. The sheer size of the tracts prevents, in many cases, a clear picture of artifact distribution (see below), which makes it difficult to draw any firm conclusions about the development of specific parts of the site or the functions of different areas within the site. Linked to this shortcoming is the limitation of grab samples to squares where artifact density was judged high before undertaking the GS. Another drawback of the survey was the exclusion of the northeastern quarter of the island.[24] Finally, the fact that much of the chipped and ground stone was discarded after collection means that the conclusions that can be drawn about the stone industry and use patterns are necessarily limited. The survey methods do, however, succeed in answering the research questions: when was Mitrou first inhabited, for how long did habitation last, and, to some extent, how did the settlement change over time? Detailed questions concerning, for example, the layout of the settlement are more difficult to answer.

21. Stone artifacts, in particular, were hard for some collectors to identify.

22. Vacuum survey was not undertaken in C4, D4, and G6 due to poor visibility. In C/D6 and D/E3, the pick-up areas were too narrow to accommodate the 3 m diameter of the VS. In C6, a localized GS was collected from the area around illicit digging that had presumably been conducted by someone looking for antiquities. Apart from the crude hole and pile of excavated earth, C6 was covered in dense undergrowth, so no VS was performed. No VS took place in E4 either.

23. E.g., the first sherd selected for cataloguing found in tract 608 would receive the number C2-608.01; the third selected sherd found in grid C5 would receive the number M-C5.03 (M for Mitrou). Small finds would receive an x before their individual number, e.g., M-C5.x01 for the first selected small find from grid C5.

24. A detailed surface survey of the northeastern part of Mitrou has been initiated by MAP, concurrent with the excavation.

TABLE 1. TRACT SAMPLE SHERD COUNTS

Tract	*Uncatalogued Sherds*	*Catalogued Sherds*	*Total*
600	5	2	7
601	285	2	287
602	204	16	220
603	500	27	527
604	323	21	344
605	127	153	280
606	195	50	245
607	55	3	58
608	291	48	339
609	60	28	88

Distribution of Survey Finds

The survey yielded altogether 108 bags of pottery containing 13,717 sherds (see Tables 1, 2). Most material was found in grid squares E4, F4, F5, G2–G5, H3–H5, H/I2, and I5, and in the south central part (L6, M6, and M7). Of the 644 inventoried sherds, most were found in the northwestern corner (squares D5–G5 and H3); very few of the sherds collected from the south central area were inventoried. The overall paucity of inventoried material from surface tracts is a direct result of the survey methodology, which favored the beach tracts and grab samples. For this reason, the comparison of material densities is often not possible. Another caveat is provided by three sherds belonging to the same vessel (**D96**, **D97**), but found in two grid squares (C5, F5), evidence that plowing of the site had scattered sherds widely across the surface, possibly removing them far from the place where they were originally deposited. Only in cases where large numbers of certain types of sherds are concentrated in a certain area may we tentatively draw conclusions based upon their distribution. Thus, some observations can be made.

The overwhelming majority of the inventoried EH material was collected in the tract system: 115 sherds, as opposed to 10 sherds in the grid system (Figs. 9, 10:a). Of all inventoried EH tract samples, no less than two-thirds (77 sherds) come from tract 605 (the northeastern beach quadrant), 17 from 606, 13 from 608, and the remaining few from tracts 602 and 607, and as chance finds (Fig. 9). The only examples from Mitrou of Ayia Marina ware (**B31**, **B32**) are from 608 (the northwestern beach quadrant). These beach tracts are located on those parts of the shore where erosion is heaviest: the northern half and the eastern part of the island.[25] It is to be expected that EH material would be found on the shores of the island rather than inland; with erosion of the scarps, the lower strata dissolve and tumble down onto the shore, whereas in the interior, they are protected.

25. Tract 606 spans the southern two-thirds of the eastern shoreline, the upper part of which is subject to heavy erosion. Since the exact location of finds within a tract has not been recorded, it is not certain that most sherds from tract 606 were found in the northern part of this tract, but that would seem the most likely.

TABLE 2. GRID SAMPLE SHERD COUNTS

Grid Square(s)	*Uncatalogued Sherds (GS)*	*Uncatalogued Sherds (VS)*	*Catalogued Sherds*	*Total*
C4	195	—	6	201
C5	122	118	8	248
C6	49	—	10	59
C/D5	—	—	7	7
C/D6	48	—	9	57
D4	209	—	2	211
D5	127	104	22	253
D/E3	105	—	9	114
E4	199	—	11	210
E5	274	119	25	418
F3	59	128	1	188
F4	150	187	14	351
F5	162	267	23	452
F/G5	—	—	1	1
G2	109	311	—	420
G3	199	240	8	447
G4	129	208	8	345
G5	334	114	22	470
G6	1	—	—	1
H3	155	195	21	371
H4	246	148	12	406
H5	171	126	11	308
H6	36	51	2	89
H7	27	51	2	80
H8	21	30	—	51
H/I2	120	234	4	358
I3	129	119	3	251
I4	111	177	3	291
I5	86	341	3	430
I6	51	33	1	85
I7	138	42	3	183
I8	35	34	3	72
I9	26	24	3	53
I10	26	44	1	71
J4	102	117	2	221
J5	71	152	3	226
J6	48	86	1	135
J7	31	46	3	80
J8	34	21	1	56
J9	33	41	3	77
J10	42	33	1	76
K6	42	35	3	80
K7	28	43	2	73
K8	49	45	1	95
K9	35	65	3	103
L6	103	275	5	383
L7	42	176	—	218
L8	68	151	—	219
M6	133	211	1	345
M7	91	333	1	425
N6	50	239	1	290
N7	53	106	—	159
O6	59	158	3	220
O7	57	98	1	156
P6	18	10	—	28
P7	52	52	1	105

Abbreviations: GS = grab sample; VS = vacuum sample.

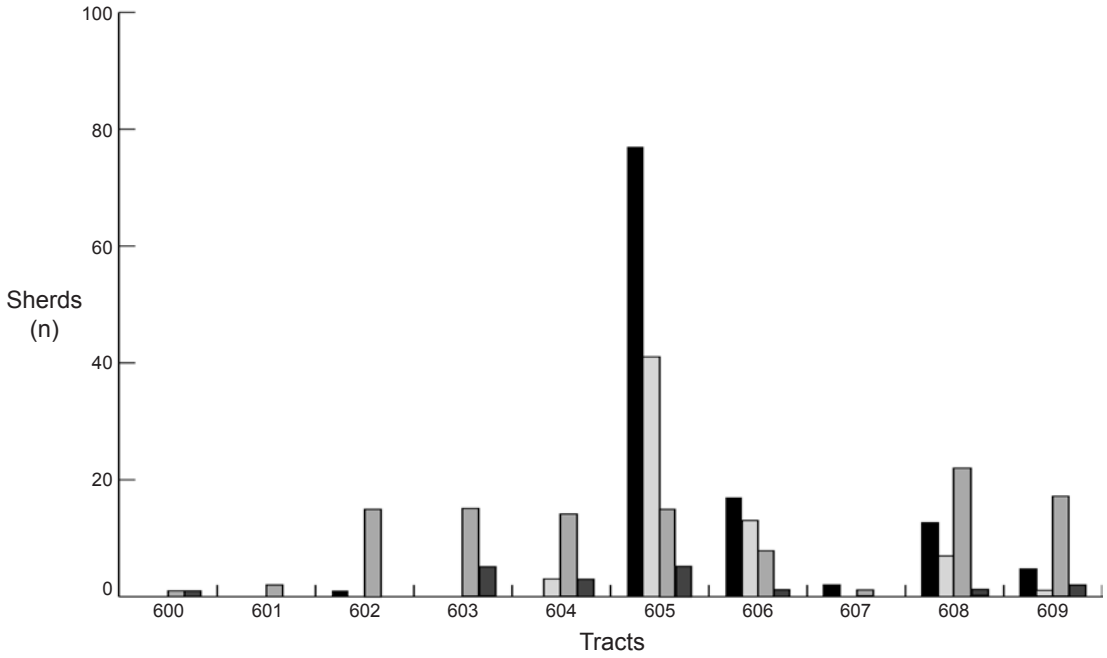


Figure 9. Distribution of inventoried pottery within tracts, by period (black = EH, light gray = MH, medium gray = LH, dark gray = PG). M. Kramer-Hajos

For the MH material the picture is similar, although not as pronounced: 65 inventoried sherds were collected in the tract system, 19 in the grid system (Figs. 9, 10:b). Of the 65 TS sherds, 61 were found in the beach tracts: 41 are from tract 605, 13 from 606, and 7 from 608. Perhaps more significantly, of the 19 GS sherds, no fewer than 16 are from the C–G grid squares in the northern part of the island. The most remarkable MH sherd, a zoomorphic handle (**C20**), comes from 604 (a surface tract overlapping with the C–G5 squares); two fine examples of Red-Burnished ware (**C1** and **C2**) are from square C6 and C2-605, and most of the better Gray Minyan sherds are from C2-605 or square C6 as well. Although their numbers are low, the small finds also suggest that the MH settlement is limited to the northern, high end of the island.

Most LH inventoried sherds were collected in the grid system (111 tract samples versus 204 grid samples; Figs. 9, 10:c [Fig. 10:c includes only the 190 fine-ware sherds]). Since Mitrou was essentially uninhabited after the Early Iron Age,[26] the LH material lies close to the surface of the soil, unprotected by later layers. Human activity such as plowing inevitably brings up more sherds from the upper layers than from the lower ones, accounting for the wealth of LH surface sherds compared to the dearth of EH surface material. Moreover, once plowed up, the wealth of decorated fine-ware sherds may have "blinded" the fieldwalkers to the often undecorated and coarser EH sherds.

The LH samples from the southern part of Mitrou were abundant but of lesser quality and therefore often not inventoried. It is possible that the material originally deposited in the south was of lesser quality than vessels used and deposited in the northern half of the islet; another possibility is that LH sherds were turned up fresh in the northern, higher parts of the islet and were carried by wind and water down the slope to the south, losing their decoration and sharp edges on the way. Possibly, therefore, the observed distribution of decorated versus plain and LH versus EH fragments is largely due to erosion.[27]

26. PG material: 23 tract samples and 40 grid samples.

27. Unlike the LH sherds, the EH material often consisted of large unpainted handle, rim, and base fragments, which retain their diagnostic features even after long exposure to the elements.

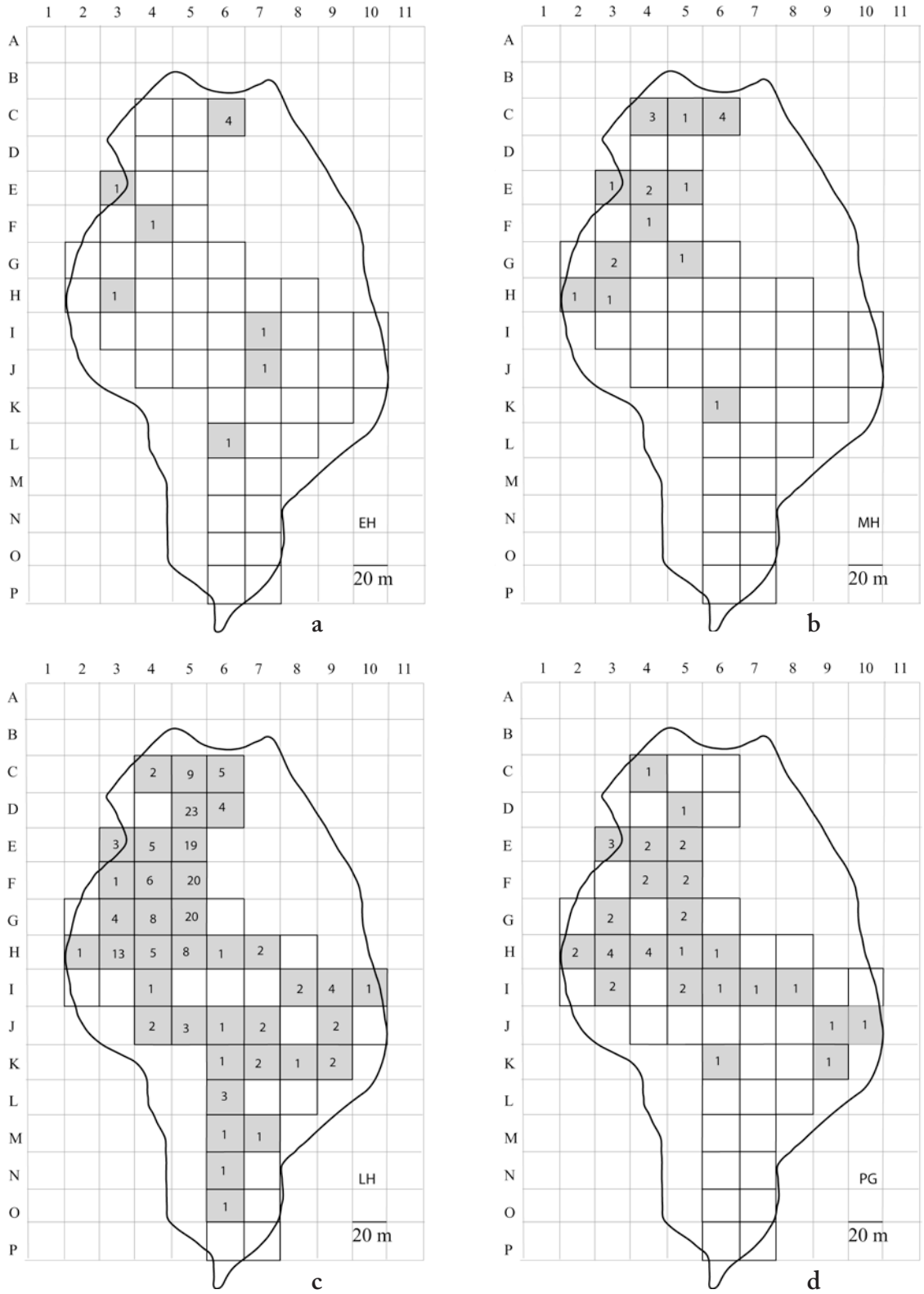


Figure 10. Distributions of inventoried pottery: (a) EH; (b) MH; (c) LH fine wares; (d) PG. Adapted from CHELP survey map; M. Kramer-Hajos

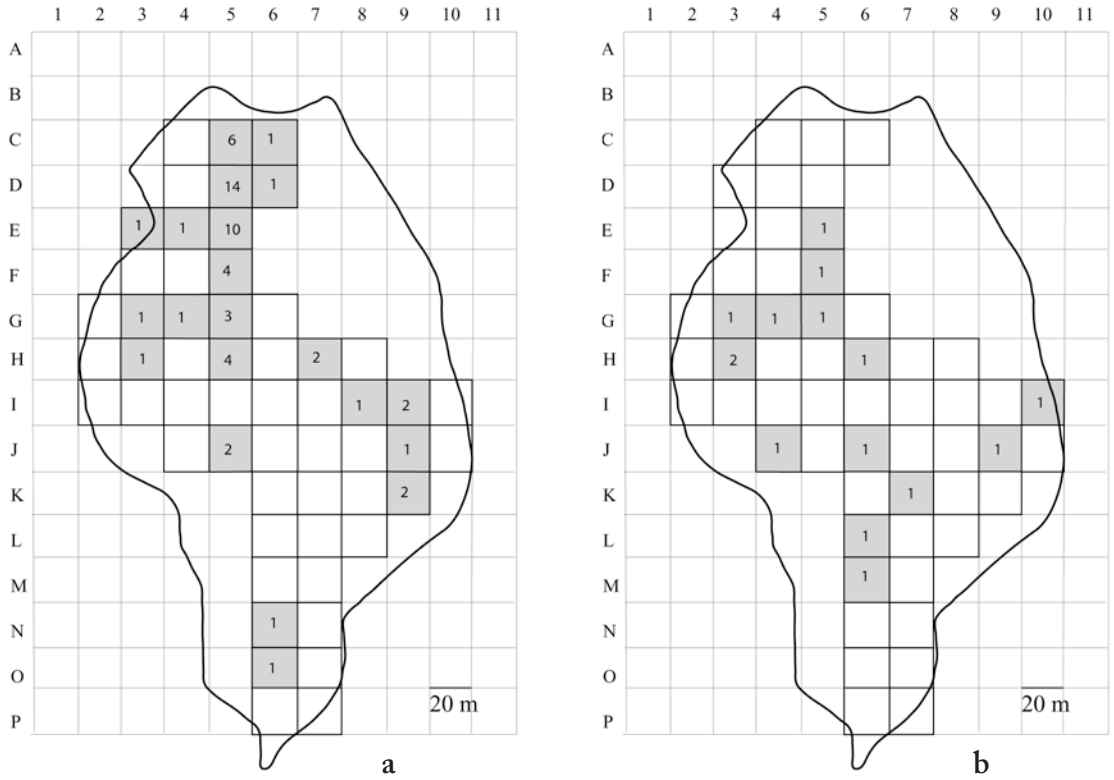


Figure 11. Distributions of LH pottery: (a) "elite" wares; (b) cooking and storage vessels. Adapted from CHELP survey map; M. Kramer-Hajos

Nevertheless, LH I–III fine-ware sherds are found predominantly in the northwestern part of the islet (Fig. 10:c).[28] The southern part of this area overlaps with the two large adjoining rooms near the center of the geophysical survey area. Protogeometric sherds are thinly spread in the northwest quadrant (Fig. 10:d).[29] The concentration of LH sherds in the northwestern area may be too great to be explained solely by coincidence or survey considerations. The survey in the northeastern part of the islet initiated by MAP should help resolve this issue.

A comparison of the densities of certain types of LH vessels shows a concentration of fine "elite" wares in the C5–H5 vertical swathe (Fig. 11:a).

28. LH I: from grid numbers 3 through 6, with the greatest density in the north: eight out of 10 fine LH I sherds were located in grid squares C through H (with the remaining two in J and L, respectively). Four more LH I fine-ware sherds come from tracts 602 (one sherd), 604 (two sherds), and 606 (one sherd).

LH II: of 19 sherds, 18 are located in grid squares C5–H5, C4, F4, and G4. The remaining piece was found in I9. The nine LH II fine-ware sherds from tract samples give a less clear picture, coming from the northwestern and central parts of the island in equal numbers.

LH III: of 61 fine-ware sherds, 50 were picked up in C5–H5 and C/D6, G3, G4, and H3. Of these, 40 come from the C5–H5 vertical swathe. This picture is clear for the LH IIIA material (17 from C5–H5, 2 elsewhere in the northwestern corner, 6 elsewhere on the island), the LH IIIB material (12, 4, and 4, respectively), and the LH IIIC material (13, 4, and 6, respectively). The tract distribution is once again less clear: surprisingly, only one sherd (LH IIIC) comes from tract 604, which roughly overlaps with the C5–F5 vertical. This is probably due to survey mechanics: since the tract samples did not cover the ground completely, much material may have been missed. Eight sherds, all LH IIIA, were found in 608, six in 602, and four in 606.

For sherds dated only generally to LH, the picture is similar (33, 29, and 7 sherds for the C5–H5 vertical, the rest of the northwestern quarter, and the rest of the site, respectively). The greatest density in tracts is found in 603 (9 sherds), 605 and 608 (7 sherds each), and 604 (6 sherds), indicating the greatest density in the northern half of the islet.

29. The tract distribution does not confirm this shift in density.

Pithos fragments are thinly distributed southeast and southwest of this concentration; pan and tripod fragments are located in the southern part of this area and to the southeast and southwest of it (Fig. 11:b). The grid squares where elite wares are predominant have no or very few domestic or storage vessels.[30] Of the eight LH figurine fragments recovered as grab samples from grid squares on the island surface, five come from the C5–I5 vertical area, and another two come from C4 and F4.[31]

It is tempting to suppose that from the inception of the Late Bronze Age, the northern, higher part of Mitrou housed the living quarters of rich Mycenaeans, with more utilitarian kitchen and storage structures just south of these, a bit lower down the slope. At the end of the Mycenaean era, these rich quarters might have been abandoned, as the scarcity of later material from this area suggests.

THE POTTERY AND SMALL FINDS

During the surface survey in 1988 and 1989, more than 600 sherds and 200 small finds were inventoried. Included in the following catalogue is a selection of sherds that are chronologically diagnostic and small finds that are diagnostic either for a period or for a certain activity. This selection has resulted in a heavy emphasis on decorated fine wares, not accurately reflecting the situation in the field.[32]

Pottery and small finds are grouped together by period.[33] Diagnostic pottery fragments from the surface survey cover all periods from the Neolithic through the Byzantine period, but Bronze Age material dominates. The small amount of Geometric and later material collected during the survey is not indicative of habitation and has not been included in this article.

30. The tract distribution is less clear: most elite wares were found in tract 608 (8 sherds), but only one sherd comes from tract 604. Most domestic vessel fragments were found in tract 602, southeast of the area of greatest density (4 sherds). The number of sherds is small, however (with a total of 8 pan/tripod sherds), so it becomes statistically unwarranted to derive any conclusions from these data.

31. The other figurine fragments were recovered from beach tracts or were picked up as chance finds during informal visits to the island.

32. Given the methodology of the survey, a bias against coarse wares began at the time of pickup: fine-ware sherds, especially decorated or otherwise diagnostic ones, are more likely to have been noticed than the duller undecorated coarse fragments (for an extreme example, see Bintliff, Howard, and Snodgrass 1999) and, once collected, were more likely to be inventoried and selected for cataloguing. Hence, almost all of the entries in the following catalogue are decorated fine wares, mostly from tract and grab samples, while in the field undecorated wares dominate, as witnessed by the vacuum samples, which are largely made up of undecorated fine and coarse wares.

33. The periods and their corresponding catalogue designations are as follows: Neolithic (A), Early Helladic (B), Middle Helladic (C), Late Helladic (D), Bronze Age (for items thought to hold some diagnostic value even though they could not be dated very closely) (E), and Protogeometric (F).

Additional abbreviations used in the catalogue are int. (interior) and ext. (exterior). The method of fabrication is handmade for the Neolithic and EH material, and wheelmade for the MH and later material, unless otherwise stated.

Inclusions are labeled by their color except in the case of limestone, quartz, biotite ("silver mica"), and muscovite ("gold mica"). The size of inclusions is based on a five-point scale: very small = <0.1 mm, small = 0.1–1.0 mm, medium = 1.0–2.0 mm, large = 2.0–4.0 mm, and very large = >4.0 mm. The density of inclusions is likewise based on a five-point scale: very few, few, moderate amount, many, and very many. The hardness of the fabric is indicated by reference to the Mohs scale.

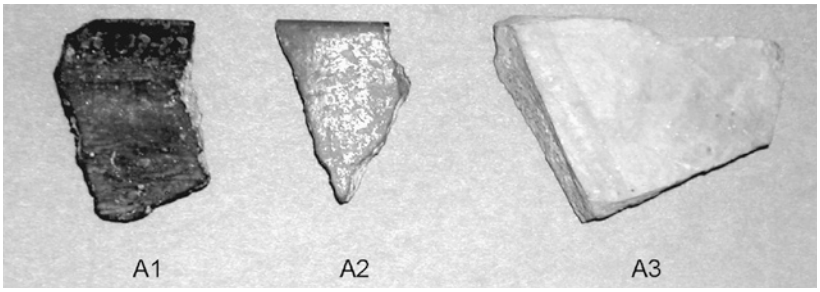


Figure 12. Neolithic pottery.
Scale ca. 1:1. Photo M. Kramer-Hajos

Neolithic and Chalcolithic(?) Pottery

Only three Neolithic sherds have been identified: a black-burnished rim (**A1**), a red-burnished rim (**A2**), and a matt-painted body fragment with very faint paint (**A3**). All three fragments are extremely similar to Middle and Late Neolithic sherds from Halai. **A1** has a rather gritty fabric; **A2** and **A3** are fine. The semifine fragment **A4** might be Chalcolithic; with its deeply incised straight lines, it is a unique piece in the Mitrou assemblage.

A1 Saucer (C2-605.10) Fig. 12

P.L. 0.029, p.W. 0.021, Th. 0.004–0.005 m. Fabric: 2.5Y 5/1–5YR 7/6, moderate amounts of small–medium black, limestone inclusions, Mohs 4. Rim fragment. Ext. and int. burnished, int. to a shiny black.

Late Neolithic?

A2 Open vessel (C2-605.42) Fig. 12

P.L. 0.027, p.W. 0.018, Diam. ca. 0.140, Th. 0.004–0.005 m. Fabric: 5YR 4–2/3, few small–medium red, yellow inclusions, Mohs 3. Rim fragment. Ext. and int. burnished.

Middle Neolithic?

A3 Closed vessel (C2-609.21) Fig. 12

P.L. 0.044, p.W. 0.030, Th. 0.006 m. Fabric: 5YR 7/6, some very small black, limestone inclusions, Mohs 3. Body fragment. Ext. burnished. Decorated with matt-painted black ladders.

Late Neolithic?

A4 Basin? (C2-609.08) Fig. 13

P.L. 0.064, p.W. 0.060, Th. 0.009 m. Fabric: 5YR 5/6, dark gray core, very many very small–large limestone, schist, quartz inclusions, Mohs 3. Rim fragment. Incised with zigzag and parallel lines.

Chalcolithic?

Early Helladic Pottery

Diagnostic Early Helladic pottery fragments from Mitrou include fine and semicoarse bowl fragments with incurved rim (**B1**, **B2**, **B5**) and pellets (**B1–B4**), fine saucers (**B6–B8** and **B24–B26**), fine and semicoarse sauceboats (**B10–B13**), semicoarse jars (**B17–B20**), handmade coarse and semicoarse fragments with loop handles (**B21–B23**), fragments with Kerbschnitt decoration (**B14**, **B15**), and sherds of possible Ayia Marina ware (**B31**, **B32**).

We have not securely identified an EH I phase, but three sherds (**B1**, **B9**, **B17**) might date to EH I. Since their shape and fabric continue into EH II, however, we have erred on the side of caution and included them here with the EH II material.

The EH II fine wares have very pale brown and pink to light reddish brown and reddish yellow fabrics and are fired medium hard (Mohs 3–4). The core is often bluish gray due to incomplete firing. Some have the shiny reddish to black Urfirnis coating, others are slipped or burnished. Shapes represented are bowls and saucers, sauceboats, a basin (**B9**), and a pyxis (**B16**). Semicoarse and coarse wares are used for bowls, jars, sauceboats, and cooking pots in EH II. Firing is irregular: often one surface of a sherd is oxidized and the other reduced, but variations on one and the same surface occur as well. Only a small selection of fairly coarse fragments of baking pans or vessels with characteristic EH handle types or plastic decoration has been inventoried; the large number of such sherds in the uninventoried material suggests that the site was inhabited from the EH II period onward.

Bowls, both semicoarse and fine, are commonly decorated with pellets. These are "comparatively rare" at Eutresis,[34] but their frequency at Mitrou suggests that they were a quite common form of decoration here, as they were at Lerna on a variety of shapes.[35] In one case (**B2**) a pellet is stuck on the rim, but in all other cases they are located just below the rim. A variation of this feature is represented by **B5**, where a plastic ridge below the rim was possibly flanked by two small knobs, as in examples from nearby Proskynas.[36] An example with pellets centered between two handles, from Proskynas now on display in the Atalanti museum, provides a parallel for **B4**. Other parallels are known from Keos.[37]

Saucers with inturned rim (**B6–B8**) are typical and well attested; parallels are known from Eutresis, Lithares, and Manika.[38] The large highly burnished rim fragment **B9** belongs to a basin with diameter of ca. 30 cm and low profile.[39] Three sauceboat spouts (**B11–B13**) attest to the common occurrence of fine sauceboats on Mitrou; **B10** is evidence for the presence of semicoarse sauceboats. Proskynas has produced a number of vessels of this type, often with plastic decoration on the back.[40] The example from Mitrou is decorated with a pellet.

Two fragments with Kerbschnitt decoration have been recovered: **B14**, a fragment of bluish gray fabric coated with Urfirnis, has a very straight orientation but thin walls; and **B15**, a rim fragment, has parallels with Eutresis and Keos.[41] The double pierced lugs of **B16** are typical for EH small pyxides.[42] The example from Mitrou has traces of reddish black Urfirnis preserved. Jar shapes (**B17–B20**) are well known from Eutresis and Manika.[43] The typical EH handle shape found at Mitrou is a large loop handle (**B21–B23**), vertically set, belonging to large jugs or jars; examples are attested at Eutresis and Manika as well.[44]

In the EH IIB phase, fine fabrics are more porous than previously, have more inclusions, and are warm yellow to red in color, with large gray cores. They can be slipped (**B27**) or burnished to a high shine (**B24**); the latter is very similar to highly burnished bowl fragments from Lithares.[45] Three saucer fragments (**B24–B26**) and the base of a jar (**B27**) represent this period in the Mitrou assemblage.

34. Goldman 1931, p. 84.

35. *Lerna* IV, pp. 441, 453, nos. 813, 866, and passim.

36. E. Zahou (pers. comm.).

37. *Keos* IX, p. 30, nos. II-77, II-78, pl. 46.

38. Eutresis: Goldman 1931, p. 102, fig. 133:1, 11. Lithares: Tzavella-Evjen 1984, pls. 18–22. Manika: Sampson 1985, p. 269, no. 19, pl. 62:a, and p. 275, no. 29, pl. 65; for profiles, see p. 142, pl. 34. See also, e.g., *Keos* IX, pp. 11–15; *Lerna* IV, p. 596, fig. II:93.

39. Based on Wiencke's (*Lerna* IV, p. 538) criteria: "The category 'basin' includes all broad bowls . . . of a rim diameter generally over 0.20 and a ratio of height to diameter of at least 1:1.70. The earliest examples are the broadest, as a rule, with a ratio of height to diameter of well over 1:2."

40. E. Zahou (pers. comm.).

41. Eutresis: Goldman 1931, pp. 107, 111, 114, figs. 141:1, 147, 149:2. Keos: *Keos* IX, pp. 54–55, nos. II-400–II-411, pl. 58.

42. Parallels for this arrangement: Goldman 1931, p. 131, fig. 151:5; *Tiryns* IV, p. 28, pl. XII:4.

43. Eutresis: Goldman (1931, pp. 87, 96, 115, figs. 102:2, 103, 123, 153:3) provides close parallels for **B19** and **B20.** Manika: for an overview of typical shapes, see Sampson 1985, p. 145, pl. 35.

44. Eutresis: Goldman 1931, pp. 91–92, figs. 114:1, 116:3. Manika: Sampson 1985, p. 128, fig. 14.

45. Tzavella-Evjen 1984, pl. 22.

In the EH III period, in addition to the above fabrics, Gray Minyan makes its first appearance. The Gray Minyan ware Bass bowl **B28** is an example of the EH III predecessors of MH Gray Minyan ware. The shape is thought to have originated locally in central Greece.[46] The example from Mitrou is somewhat rough and irregularly shaped.

B30 has the tall, cylindrical profile characteristic of the depas amphikypellon, a wheel-thrown shape known from the latest stratum of Troy II and from Early Cycladic IIB–IIIA on Keros and Syros. Stumps of one of the two vertical loop handles are preserved. The sherd has smoothed edges, evidence that after breakage it was used for rubbing or polishing.

Two light-on-dark pieces were found (**B31**, **B32**); both are small and do not have a clear profile, but they may represent Ayia Marina ware. Since Ayia Marina ware originated and is primarily found in central Greece, its presence at Mitrou connects Mitrou with mainland central Greece in EH III. It cannot be excluded, however, that they instead represent MH light-on-dark ware.

Early Helladic II

B1 Bowl (C2-608.29)

P.L. 0.076, p.W. 0.057, Diam. >0.300, Th. 0.007–0.010 m. Fabric: 5YR 5/4–2.5YR 4/1, very many small–large limestone, quartz, red, purple inclusions, Mohs 3.5. Rim fragment with pellet.

B2 Bowl (C2-608.33) Fig. 13

P.L. 0.063, p.W. 0.038, Th. 0.009–0.012 m. Fabric: 2.5Y 4/1–7.5YR 5/4, very many small–medium quartz, limestone, red, yellow inclusions, Mohs 3.5. Rim fragment with pellet.

B3 Bowl (C2-606.04) Fig. 13

P.L. 0.046, p.W. 0.043, Th. 0.005–0.010 m. Fabric: 5YR 4/3–7.5YR 5/3, moderate amounts of small–very large yellow, greenish yellow inclusions, Mohs 3.5. Body fragment with pellet and incision. Decorated with incised parallel lines, probably originally located between two pellets.

B4 Bowl (C2-608.04)

P.L. 0.034, p.W. 0.022, Th. 0.008 m. Fabric: 7.5YR 7/6–10YR 4/1, many small–medium limestone, red, black inclusions, Mohs 3.5. Ext. slipped, 7.5YR 7/6. Body fragment with two pellets.

Cf. *Keos* IX, p. 30, nos. II-77, II-78, pl. 46.

B5 Bowl (C2-605.89) Fig. 13

P.L. 0.038, p.W. 0.030, Th. 0.004–0.005 m. Fabric: 10YR 7/4, core 2.5Y 5/2, many small quartz, limestone, red inclusions, Mohs 3. Rim fragment with ledge lug.

Cf. Tzavella-Evjen 1984, pl. 18:δ; *Keos* IX, p. 30, no. II-84, pl. 47.

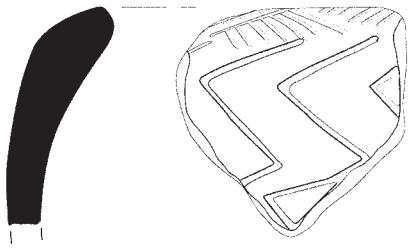
B6 Saucer (C2-605.15) Fig. 13

P.L. 0.044, p.W. 0.044, Th. 0.005–0.007 m. Fabric: 2.5YR 5/6, core 10YR 4/1, many small–large red, yellow, black, quartz inclusions, Mohs 4. Rim fragment.

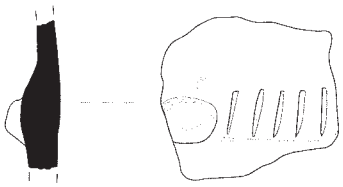
B7 Saucer (C2-608.40) Fig. 13

P.L. 0.029, p.W. 0.031, Th. 0.004–0.008 m. Fabric: 10YR 4/2, core 2.5Y 5/1,

46. Rutter 1983, p. 347; cf. p. 333, fig. 3.



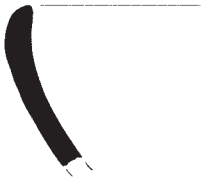
A4



B3

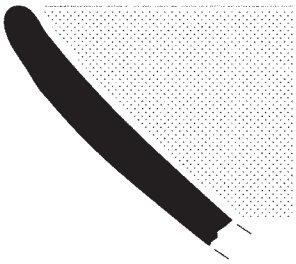
B2

B5



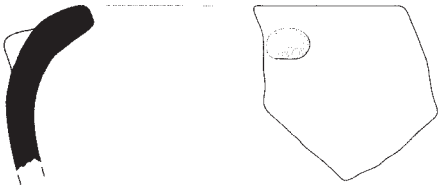
B6

B7



B9

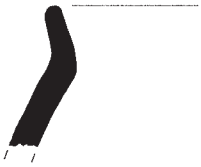
B11



B10

B12

B17



B18

B19

B20

Figure 13 *(opposite)*. **Chalcolithic(?) A4 and EH II pottery.** Scale 1:2. Drawing M.-J. Schumacher

moderate amounts of small–medium limestone, black inclusions, Mohs 4. Rim fragment. Ext. burnished.

B8 Saucer (C2-606.45)

P.W. 0.031, p.L. 0.026, Th. 0.005–0.006 m. Fabric: 10YR 6/4, many small yellow inclusions, Mohs 3. Rim fragment. Int. and ext. painted monochrome black (Urfirnis).

B9 Basin (C2-605.40) Fig. 13

P.L. 0.079, p.W. 0.086, Diam. ca. 0.300, Th. 0.009–0.010 m. Fabric: 7.5YR 6/4, very few small–medium limestone inclusions, Mohs 4. Rim fragment. Ext. and int. slipped and burnished, 5YR 5/4.

B10 Sauceboat (C2-605.16) Fig. 13

P.L. 0.047, p.W. 0.048, Diam. ca. 0.240, Th. 0.005–0.007 m. Fabric: 5YR 5/4, core 2.5Y 5/2, many very small–medium quartz, limestone, yellowish green, dark gray inclusions, Mohs 3. Rim fragment with pellet.

B11 Sauceboat (C2-606.03) Fig. 13

P.L. 0.043, p.W. 0.019, H. 0.035, Th. 0.004–0.005 m. Fabric: 10YR 6/4, no inclusions, Mohs 3. Spout. Ext. and int. brown-black Urfirnis, badly worn.

B12 Sauceboat (C2-606.29) Fig. 13

P.L. 0.028, p.W. 0.028, H. 0.017, Th. 0.004–0.005 m. Fabric: 10YR 7/4, moderate amounts of very small–very large black, red, limestone inclusions, Mohs 4. Spout.

B13 Sauceboat (C2-605.18)

P.L. 0.048, p.W. 0.034, Diam. ca. 0.055–0.060, Th. 0.004–0.006 m. Fabric: 7.5YR 6/4, very few medium–large limestone inclusions, Mohs 3. Spout. Ext. and int. black Urfirnis.

B14 Open vessel (M-H3.03) Fig. 14

P.L. 0.028, p.W. 0.019, Th. 0.004–0.005 m. Fabric: 2.5Y 6/1, no inclusions, Mohs 3. Body fragment with small triangular Kerbschnitt decoration. Ext. and int. painted lustrous black.

B15 Shape unknown (C2-605.34) Fig. 14

P.W. 0.034, p.L. 0.036, Th. 0.009 m. Fabric: 5YR 6/3, core 2.5Y 6/1, very few small–medium limestone, quartz inclusions, Mohs 4. Rim fragment with Kerbschnitt decoration. Int. and ext. slipped, 2.5Y 8/2. Ext. painted lustrous grayish brown; incision and plastic decoration. Traces of white fill on rim.

B16 Pyxis (C2-606.27) Fig. 14

P.L. 0.040, p.W. 0.036, Th. 0.003–0.004 m. Fabric: 10YR 7/6, black core, no inclusions, Mohs 3. Body fragment with two pierced lugs. Ext. painted red-black (Urfirnis), 5YR 4/6.

B17 Jar (C2-605.30) Fig. 13

P.L. 0.078, p.W. 0.059, Diam. ca. 0.250, Th. 0.007–0.011 m. Fabric: 5YR 6/6, black core, many small–large quartz, schist inclusions, Mohs 4. Rim fragment. Ext. slipped, 10R 5/6.

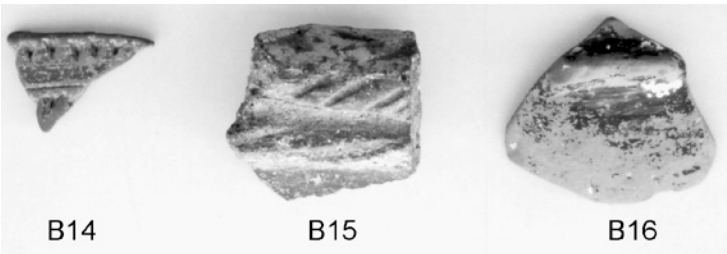


Figure 14. EH II Kerbschnitt fragments and pyxis. Scale ca. 2:3. Photo M. Kramer-Hajos

B18 Jar (C2-605.99) Fig. 13

P.L. 0.060, p.W. 0.039, Diam. ca. 0.170–0.180, Th. 0.005–0.008 m. Fabric: 5YR 5/6, core 5Y 4/1, moderate amounts of small quartz inclusions, Mohs 3.5. Rim fragment.

Cf. Goldman 1931, p. 119, fig. 160.

B19 Jar (C2-606.06) Fig. 13

P.L. 0.075, p.W. 0.084, max. Diam. mouth ca. 0.010, Th. 0.006–0.009 m. Fabric: 7.5YR 6/6, many very small–large limestone, clay inclusions, Mohs 3. Part of neck and shoulder (and rim?). Int. neck white slipped, ext. brown slipped, 7.5YR 6/6, and lightly burnished.

B20 Jar (C2-605.93) Fig. 13

P.L. 0.059, p.W. 0.052, Th. 0.005–0.007 m. Fabric: 5YR 6/6, core 10YR 5/1, many small–very large quartz, red, black inclusions, Mohs 4. Neck.

B21 Shape unknown (C2-605.33) Fig. 15

P.L. 0.125, p.W. 0.077, Th. 0.014, H. handle 0.052, Th. handle 0.007–0.008 m. Fabric: 2.5YR 5/6, core 2.5Y 4/1, moderate amounts of small–large quartz, red, black inclusions, Mohs 4. Loop handle of large coarse vessel. Ext. slipped, 2.5YR 5/6.

B22 Shape unknown (C2-605.32) Fig. 15

P.L. 0.073, p.W. 0.073, H. 0.043 m. Fabric: 2.5YR 5/4, very many small–very large quartz, black inclusions, Mohs 3. Handle of large coarse vessel.

B23 Shape unknown (C2-606.35) Fig. 15

P.L. 0.077, p.W. 0.059, H. handle 0.058 m. Fabric: 10YR 8/3, moderate amounts of small black, red, quartz, limestone inclusions, Mohs 4. Handle of large coarse vessel.

Early Helladic IIB

B24 Saucer (C2-605.14) Fig. 15

P.L. 0.049, p.W. 0.050, Th. 0.003–0.005 m. Fabric: 5YR 6/4, no inclusions, Mohs 4. Rim fragment. Ext. and int. slipped, ext. burnished, 5YR 5/6–3/2.

B25 Saucer (C2-605.13) Fig. 15

P.L. 0.038, p.W. 0.030, Diam. ca. 0.180, Th. 0.003–0.005 m. Fabric: 10YR 5/1, no inclusions, very porous, Mohs 4. Rim fragment. Ext. slipped and polished, 7.5YR 6/6.

Cf. Goldman 1931, p. 102, fig. 133:1, 3.

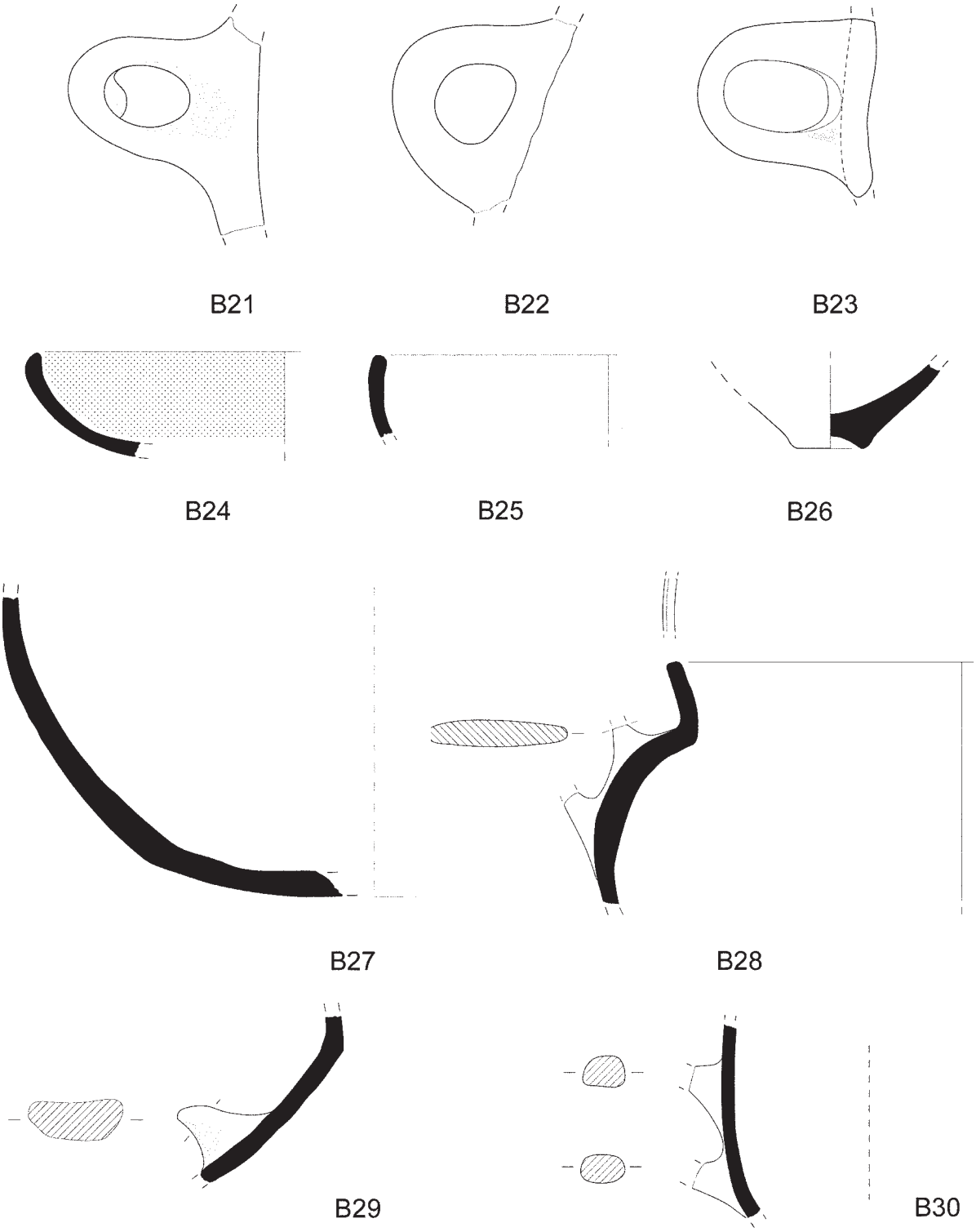


Figure 15. EH II (B21–B23) and EH IIB (B24–B27) pottery; EH III Bass bowl (B28), tankard (B29), and depas amphikypellon (B30). Scale 1:2. Drawing M.-J. Schumacher

B26 Saucer (C2-608.43) Fig. 15

P.L. 0.061, p.W. 0.031, H. 0.046, Diam. foot 0.025, Th. 0.004 m. Fabric: 2.5YR 5/6–10YR 4/2, core 10YR 4/2, many very small–large yellow, black, limestone inclusions, Mohs 3.5. Ring base.

Cf. Goldman 1931, pp. 98–99, figs. 125:3–8, 128:4; *Tiryns* IV, pp. 19–21, pl. VII; Tzavella-Evjen 1984, pl. 56:α.

B27 Jar (C2-608.05) Fig. 15

P.L. 0.176, p.W. 0.152, H. 0.075 m. Fabric: 7.5YR 7/6, gray core, moderate amounts of small–medium limestone inclusions, very porous, Mohs 3. Rounded base. Ext. and int. slipped, ext. burnished, 7.5YR 6/6.

Early Helladic III

B28 Bass bowl (C2-605.142) Fig. 15

P.L. 0.097, p.W. 0.086, Diam. 0.192, Th. 0.003–0.007 m. Fabric: 7.5YR 6/4, black core, moderate amounts of small quartz, red inclusions, Mohs 3. Part of rim and body with handle stumps. Ext. and int. burnished, 2.5Y 6/3–4/1.

Cf. Rutter 1983, p. 333, fig. 3.

B29 Tankard (C2-605.38) Fig. 15

P.L. 0.067, p.W. 0.068, Th. 0.003–0.005 m. Fabric: 10YR 7/4, few small–large limestone inclusions, Mohs 3. Part of neck and body with handle scar. Ext. slipped and burnished, 10YR 7/4.

B30 Depas amphikypellon? (C2-605.39) Fig. 15

P.L. 0.047, p.W. 0.073, Th. 0.003–0.006 m. Fabric: 2.5YR 6/4, core 2.5Y 5/1, few small–medium quartz, green, red, mica inclusions, Mohs 3. Body fragment with handle scars. Wheel-thrown. Ext. and int. slipped and polished, 7.5YR 6/5. Modified sherd, used for rubbing (smoothed edges).

B31 Jar? (C2-608.08) Fig. 16

P.L. 0.046, p.W. 0.027, Th. 0.005–0.007 m. Fabric: 7.5YR 7/6, core 7.5YR 6/2, very few small quartz, limestone inclusions, Mohs 4. Body sherd. Ext. decorated with painted white (2.5Y 5/1–5/2) parallel stripes on a black background. Ayia Marina ware, or possibly MH light-on-dark ware.

B32 Jar? (C2-608.28) Fig. 16

P.L. 0.046, p.W. 0.038, Th. 0.005–0.006 m. Fabric: 10YR 6/4, few small quartz, limestone inclusions, Mohs 4. Body sherd. Ext. decorated with painted creamy white (10YR 8/3) lines on a black background. Ayia Marina ware, or possibly MH light-on-dark ware.

Figure 16. Ayia Marina ware.
Scale ca. 2:3. Photo M. Kramer-Hajos

Early Helladic Small Finds

The Early Helladic group of small finds comprises a bead, a celt, a figurine fragment, and a terracotta spindle whorl.

Stone

The only bead assigned to the EH period exhibits significant signs of wear around the piercing (**B33**), suggesting a long period of use. Beads of the same material and shape were recovered during the excavation of EH strata at the site of Proskynas.

One celt (**B34**) is included even though there is some doubt as to its provenance. It was recovered on the Tragana beach opposite the spit that stretches from Mitrou toward the shore, an area with many sherds. But as trucks had recently been dumping crushed rock as the foundation for a new road along the beach, the possibility remains that the celt comes from the location where the crushed rock was gathered rather than from Mitrou. Only the cutting edge and a strip about a centimeter wide abutting that edge have been polished, while the rest of the surface is covered with pecking marks. Stroulia has observed at Franchthi that this differential treatment of the distal and proximal ends (i.e., the cutting and hafting ends of the celt) permits more efficient manufacturing, and does not diminish the efficacy of the tool; that some celts are ground over their entire surface and others not, however, leads Stroulia to speculate that the differential treatment of the ends may be as much about personal preference or hafting techniques as about manufacturing efficiency.[47]

On the basis of their examination of 1,000 ground stone tools from Euboia, Sampson and Sugaya proposed a typology of ground stone axes based primarily on length, since length is crucial in determining the "functional capability" of the tool. They identified seven different groups: the smallest axes in Greece (group I) measure 4–6 cm, while the largest axes (group VII) measure 25–30 cm.[48] The example from Mitrou is 7 cm long, placing it firmly in group II (6–8 cm), by far the most numerous type, accounting for almost half of the axes studied from Euboia. Sampson and Sugaya separately identify five different morphological forms of axes: oval, shoelast, triangle, trapezoid, and cylindrical. Once again, the Mitrou ax falls into the most common group, the shoelast (type b), which accounts for nearly two-thirds of the ax forms from Euboia. The edge profile bevels symmetrically to the edge point, the side lines curve gradually to the butt end, the edge line is straight, and the section is biconvex and oblong.

A sandstone object (**B35**) might be interpreted as a portion of a schematic gynecomorphic figurine. An incised line on the front, back, and bottom of the stone appears to define the female form. The surface of the stone is soft and worn, and the details are hard to distinguish. Two depressions, one above the other, on one side may represent the navel and pubic hair. On the other side there is a deep broad hollow, which may represent the small of the back. The groove on this side is deeper than on the "front" side, and it may be intended to indicate the buttocks. It is a unique piece with no close comparanda, but the crude representation of the female pudenda and buttocks by grooves recalls an unstratified rough limestone figurine from Corinth.[49]

47. Stroulia 2003, p. 10.

48. Sampson and Sugaya 1988–1989, pp. 12–15. Sampson and Sugaya classify smaller ground stone tools as adzes or chisels because of their asymmetrical profiles, a distinction rejected by Stroulia (2003) in her study of the Franchthi celts.

49. See Phelps 1987, p. 249, no. 33, pl. 39.

Figure 17. EH spindle whorl, celt, and bead. Scale ca. 1:2. Photo K. O'Neill

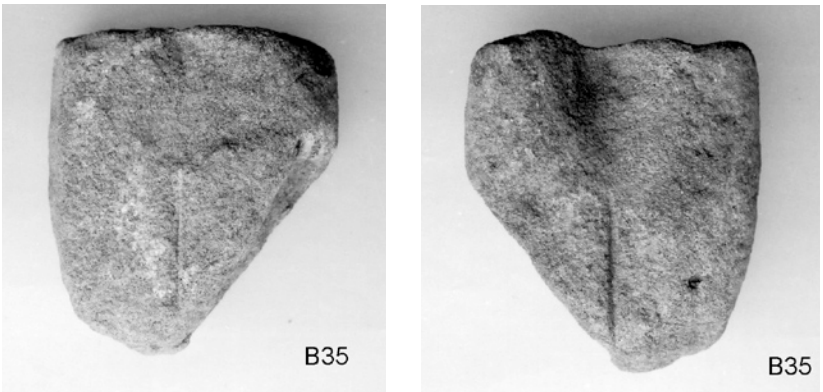


Figure 18. EH gynecomorphic figurine, two views. Scale 2:5. Photos K. O'Neill

B33 Bead, discoid (M-H3.x05) Fig. 17

P.Diam. 0.018, p.Diam. hole 0.008, Th. 0.008 m; Wt. 0.002 kg. Complete. Steatite. Olive green. Disk of irregular thickness, pierced centrally by drilling from both sides.

B34 Celt (C2-609.x06) Fig. 17

P.L. 0.07, p.W. 0.038, p.Th. 0.027 m; Wt. 0.118 kg. Complete. Serpentinite. Tsountas 1908, type A: only area near cutting edge has been polished.

See Sampson and Sugaya 1988–1989, form IIb.

B35 Figurine, gynecomorphic (C2-608.x03) Fig. 18

P.L. 0.108, p.W. 0.093, p.Th. 0.057 m; Wt. 0.721 kg. Sandstone. Lower body: pudenda, buttocks, and/or legs.

Terracotta

Only one terracotta small find has been dated to the EH period: a spindle whorl (**B36**) typical of EH spindle whorls in central and southern Greece.[50] It is unslipped, unburnished, and worn, possibly from exposure to waves on the shore; the base is blackened by burning. It is comparable in shape and size to an EH spindle whorl from Eutresis,[51] and close to the shape,

50. Cf. Banks 1967, pp. 491, 495, 524–525; Carington Smith 2000, pp. 217–218.

51. Caskey and Caskey 1960, p. 145, no. IV:26; unfortunately, the authors do not record the weights of their whorls.

size, and weight of an EH example from Servia.[52] Further comparanda are provided by two spindle whorls from EH II–III contexts at Lerna.[53] Some very similar EH spindle whorls from Proskynas are on display in the Atalanti museum.

B36 Spindle whorl (C2-606.x11) Fig. 17

P.H. 0.023, p.Diam. 0.045, p.Diam. hole 0.008 m; Wt. 0.045 kg. Complete, short, straight-sided cone becoming convex at upper end. Fabric: 5YR6/6, fine sand size, limestone and biotite inclusions.

Middle Helladic Pottery

The MH pottery is represented by many pieces of Gray Minyan ware: 49 pieces have been inventoried and many more fragments are present in the uninventoried material.[54] Red-Burnished (**C1–C3**) and Matt-Painted wares (**C28–C34**) are present as well, though not in large numbers. The slip of the Red-Burnished pieces flakes off easily. The high burnish on **C1** and **C2** is reminiscent of Red-Burnished vessels from Eutresis. Two of the three Red-Burnished pieces (**C1, C3)** have muscovite inclusions, identifying them as Aiginetan imports. Muscovite inclusions have not been identified in the Mitrou material before the MH period.

Several large sherds of fine Gray Minyan come from the immediate vicinity of cist tombs, which suggests they belonged to vessels deposited as grave goods. Characteristic shapes are (ring-stemmed) goblets and kantharoi, ring stems being characteristic of MH II–III Gray Minyan in central Greece. Only a fraction of these were catalogued; the large amounts of material suggest extensive settlement of the site in MH times. Gray Minyan handles may have plastic decoration at the base, imitating metal rivets (e.g., **C17–C19**). **C17** is almost identical to a handle from a surface survey at Skala Atalantis currently on display in the museum in Atalanti. Other parallels are known from Pteleon.[55] **C18** has a flat back, and **C19** a hollowed back.

An interesting piece is **C20**, a zoomorphic handle. The handle is crudely shaped into an animal head and originally had two plastic pellets for eyes, one preserved and the other indicated by a scar. The shaping of the head/handle is very rough and irregular. Possibly the pellets originated as imitations of metal rivets, in which a creative potter saw eyes, thus giving rise to the animal shape of this Gray Minyan handle.[56] Zoomorphic protomes originating from sauceboat spouts are well attested for the EH II period;[57] they sometimes decorate the base of a handle on an askos or jug, and, in the case of a small stone vase from Tiryns, one serves as a handle.[58] We do not know of a similar treatment of handles in the Middle Helladic and so this zoomorphic handle might in fact be Early Helladic. Another handle fragment, **C13**, may be Early Helladic as well, as suggested by its incised decoration.

Matt-Painted ware is less common than Gray Minyan, although it is possible that it has been overlooked because the paint has deteriorated. The Matt-Painted ware from Mitrou is often very worn, and slip and paint have flaked off, sometimes to the extent that the original design is barely noticeable (e.g., **C29**, **C30**). **C29** is decorated with a pattern attested also at Pteleon.[59]

52. Carington Smith 2000, pp. 217–218, no. SF280, fig. 4:32 (misnumbered as SF290 in the figure). Cf. also SF336: Carington Smith 2000, p. 218, fig. 4:32.

53. Banks 1967, pp. 491, 495, 524–525, nos. 1253, 1283, pl. 16.

54. Although wares in the MH tradition such as Gray Minyan originate in the EH period and persist well into the Mycenaean period (see, e.g., Mountjoy 1981, pp. 13–14), for this collection of surface material we have chosen to assign to the MH period all Gray Minyan not dated unequivocally by shape to the EH or LH period.

55. Maran 1992, pls. 147:8, 148:2, 3.

56. See, e.g., *Tiryns* IV, p. 48, pl. XX:6–9, 12, 13, EH handles with one to three pellets that seem to imitate metal rivets. No. 7 has two pellets, similar to large staring eyes.

57. See, e.g., Blegen 1928, pp. 92–93, nos. 251, 260, pl. 10:1, 2; *Tiryns* IV, pp. 14–15, pl. V, all rams. For an overview, see Weisshaar 1986.

58. Weisshaar 1986, p. 331, pl. 16:1; Rutter 1993, p. 768.

59. Maran 1992, pl. 150:1.

C1 Open vessel (M-C6.02) Fig. 19

P.L. 0.069, p.W. 0.062, Diam. ca. 0.240–0.250, Th. 0.004–0.006 m. Fabric: 7.5YR 7/5, few very small muscovite inclusions, Mohs 3. Red-Burnished ware. Rim fragment. Ext. and int. highly burnished, 2.5YR 4/8.

C2 Open vessel (C2-605.149) Fig. 19

P.L. 0.058, p.W. 0.061, Diam. 0.224, Th. 0.005–0.006 m. Fabric: 7.5YR 7/5, core 5Y 7/1, very many small–large muscovite, quartz, yellow, red, black inclusions, Mohs 2. Red-Burnished ware. Rim fragment with lug handle. Int. and ext. highly burnished, 10R 4/8, with two painted black bands.

C3 Open vessel (M-C6.10)

P.L. 0.054, p.W. 0.062, Th. 0.009 m. Fabric: 2.5YR 5/8, no inclusions, Mohs 5. Red-Burnished ware. Body, near rim. Ext. and int. highly burnished, 2.5YR 5/8.

C4 Goblet or kantharos (C2-605.136) Fig. 19

P.L. 0.053, p.W. 0.026, Diam. ca. 0.135, Th. 0.004–0.005 m. Fabric: 2.5Y 6/1, very few medium limestone inclusions, Mohs 4. Gray Minyan ware. Rim fragment. Ext. and int. slipped and burnished, 5Y 6/2.

C5 Goblet or kantharos (C2-605.46) Fig. 19

P.L. 0.048, p.W. 0.028, Diam. ca. 0.240, Th. 0.005 m. Fabric: 5Y 6/1, very few very small–small limestone inclusions, Mohs 3.5. Gray Minyan ware. Rim fragment. Ext. and int. thickly slipped and burnished, 5Y 5–6/1.

C6 Goblet or kantharos (C2-606.42) Fig. 19

P.L. 0.082, p.W. 0.034, Diam. 0.180, Th. 0.004–0.005 m. Fabric: 2.5Y 5/1, few small–medium limestone inclusions, Mohs 4. Gray Minyan ware. Rim fragment. Ext. and int. slipped and burnished.

C7 Goblet or kantharos (M-C6.03) Fig. 19

P.L. 0.080, p.W. 0.041, Diam. 0.160, Th. 0.004–0.005 m. Fabric: 5Y 6/1, no inclusions, Mohs 3. Gray Minyan ware. Rim fragment. Ext. and int. slipped and burnished, 2.5Y 5/1.

C8 Goblet or kantharos (C2-606.12) Fig. 19

P.L. 0.068, p.W. 0.053, Diam. ca. 0.280, Th. 0.005–0.006 m. Fabric: 5Y 5/1, no inclusions, Mohs 4. Gray Minyan ware. Rim fragment. Ext. and int. slipped, 5Y 5/1.

C9 Goblet or kantharos (M-C6.04) Fig. 19

P.L. 0.032, p.W. 0.030, Th. 0.004–0.005 m. Fabric: 2.5Y 7/2, no inclusions, Mohs 3.5. Gray Minyan ware. Rim fragment. Ext. and int. slipped and burnished, 2.5Y 5/1.

C10 Goblet or kantharos (C2-605.139)

P.L. 0.067, p.W. 0.024, Diam. ca. 0.220, Th. 0.005–0.006 m. Fabric: 5Y 6/1, very few small limestone inclusions, Mohs 4. Gray Minyan ware. Rim fragment. Ext. slipped and burnished, 5Y 5/1.

C11 Goblet or kantharos (C2-605.140) Fig. 19

P.L. 0.056, p.W. 0.046, Th. 0.005, W. handle 0.034 m. Fabric: 2.5Y 5/1, very few small quartz, red inclusions, Mohs 4. Gray Minyan ware. Loop handle with part of body. Surface slipped and burnished, 2.5Y 4–5/1.

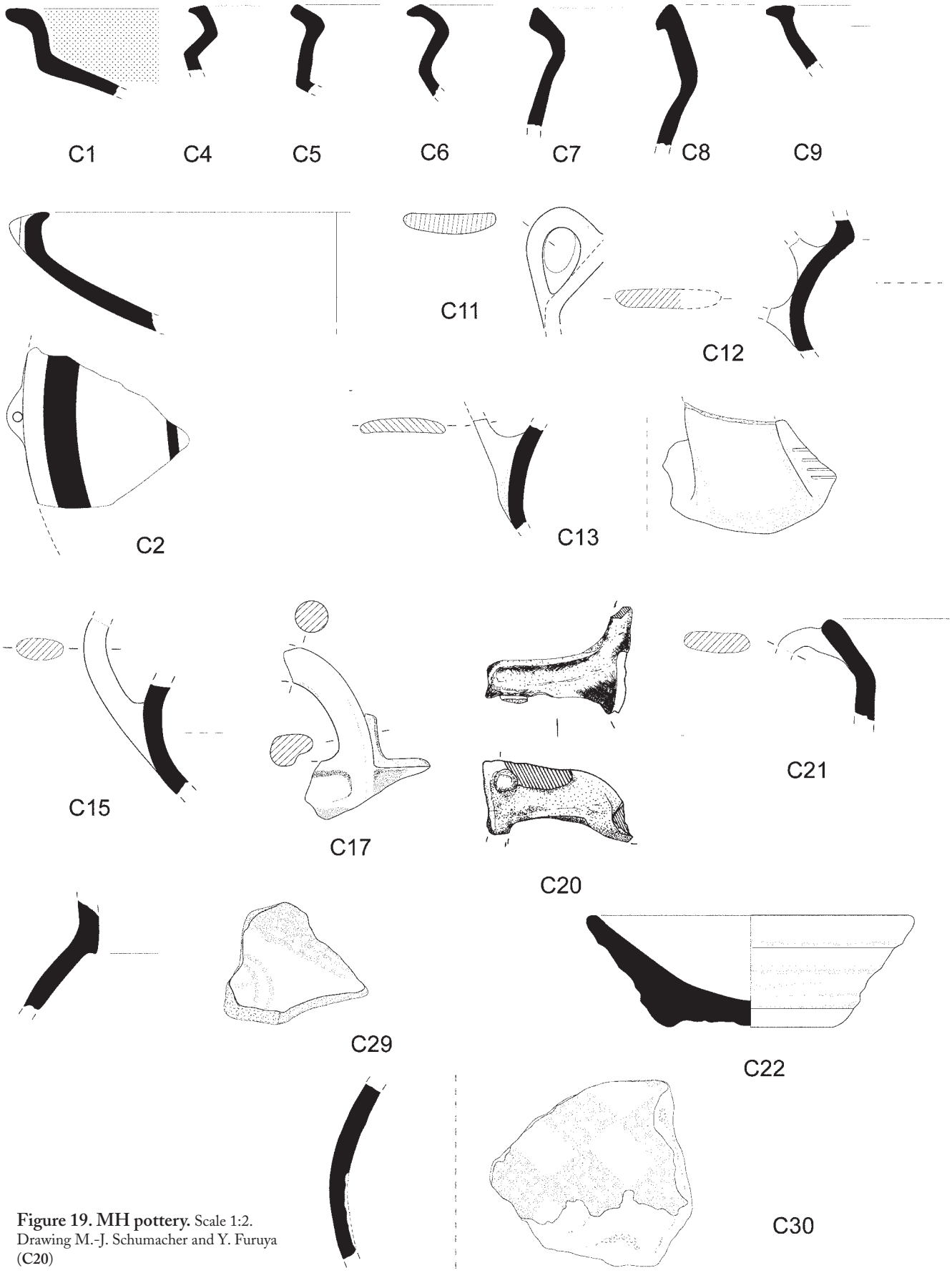


Figure 19. MH pottery. Scale 1:2. Drawing M.-J. Schumacher and Y. Furuya (**C20**)

C12 Goblet or kantharos (M-C5.08) Fig. 19

P.L. 0.054, p.W. 0.055, Th. 0.005–0.007 m. Fabric: 2.5Y 5–6/1, no inclusions, Mohs 3.5. Gray Minyan ware. Body sherd with handle scars. Ext. and int. slipped and burnished, 2.5Y 4–5/1.

C13 Goblet or kantharos (C2-608.19) Fig. 19

P.L. 0.064, p.W. 0.043, Th. 0.003–0.004, handle 0.005 × 0.032 m. Fabric: 5Y 4/1, very few small–medium quartz, red inclusions, Mohs 4. Gray Minyan ware. Body fragment with part of handle. Surface slipped and burnished, 5Y 4–5/1, decorated with incised parallel lines.

C14 Goblet or kantharos (C2-606.10)

P.W. 0.048, Diam. handle 0.015 × 0.004 m. Fabric: 2.5Y 6/1–2, very few very small limestone inclusions, Mohs 3. Gray Minyan ware. Handle fragment.

C15 Kantharos (C2-605.138) Fig. 19

P.L. 0.040, p.W. 0.075, Th. 0.004–0.005, H. body 0.043, handle 0.008 × 0.018 m. Fabric: 2.5Y 5/1, very few small–medium shell inclusions, Mohs 3. Gray Minyan ware. High swung handle. Ext. and int. slipped and polished, 2.5Y6–4/1.

C16 Goblet or kantharos (M-D/E3.09)

P.W. 0.016, H. 0.048, Th. 0.015 m. Fabric: 2.5YR 6/1, moderate amounts of small–medium limestone, black, red inclusions, Mohs 3. Gray Minyan ware. Double loop handle.

C17 Goblet or kantharos (C2-605.141) Fig. 19

P.L. 0.063, p.W. 0.054, Th. 0.004, Diam. 0.012, p.H. body 0.042, p.L. body 0.024 m. Fabric: 2.5Y 6/1 and 2.5Y 7/4, no inclusions, Mohs 4. Gray Minyan ware. Horizontal handle. Surface slipped and burnished 5Y 6/1–2.

C18 Goblet or kantharos (C2-606.16)

P.L. 0.034, p.W. 0.088, handle 0.012 × 0.018 m. Fabric: 2.5Y 6/2, no inclusions, Mohs 4. Gray Minyan ware. Handle fragment. Surface has traces of slip, 2.5Y 5/1.

C19 Goblet or kantharos (M-E5.06)

P.L. 0.020 (at base), p.W. 0.058, handle 0.015 × 0.008 m. Fabric: 2.5Y 6/2, no inclusions, Mohs 3. Gray Minyan ware. Handle fragment. Surface slipped.

C20 Goblet or kantharos (C2-604.18) Fig. 19

P.L. 0.026, p.W. 0.039, H. 0.057, Th. 0.003–0.004 m. Fabric: 10YR 6/2, few very small–small limestone, black inclusions, Mohs 3. Gray Minyan ware. Zoomorphic handle. Surface burnished, 10YR 5/1.

C21 Goblet (C2-605.147) Fig. 19

P.L. 0.045, p.W. 0.041, Th. 0.005 m. Fabric: 5YR 7/6, some small limestone inclusions, Mohs 3. Gray Minyan ware. Handle fragment. Ext. slipped, 10YR 8/4.

C22 Goblet (C2-606.44) Fig. 19

P.L. 0.092, p.W. 0.043, Th. 0.008–0.015 m. Fabric: 5Y 5/1, very few small–large quartz, red inclusions, Mohs 4. Gray Minyan ware. Profile of bowl. Ext. and int. slipped, gray 1.5/N.

C23 Ring-stemmed goblet (M-E4.10)

P.L. 0.046, p.W. 0.046, Diam. ca. 0.085, Th. 0.006–0.014 m. Fabric: 2.5Y 6–7/1–2, very few small limestone inclusions, Mohs 3. Gray Minyan ware. Ring stem. Ext. and int. slipped and burnished, 5Y 7/1–2.5Y 5/2–4/1.

C24 Ring-stemmed goblet (C2-608.26)

P.L. 0.054, p.W. 0.037, Th. 0.005–0.009 m. Fabric: 2.5Y 6/2, no inclusions, Mohs 4. Gray Minyan ware. Ring stem. Ext. slipped.

C25 Ring-stemmed goblet (M-G3.07)

P.L. 0.038, p.W. 0.039, Th. 0.007–0.008 m. Fabric: 2.5Y 6/2, no inclusions, Mohs 3. Gray Minyan ware. Ring stem. Ext. slipped and burnished, 2.5Y 5/1.

C26 Ring-stemmed goblet (C2-605.48)

P.L. 0.057, p.W. 0.038, Diam. 0.080, Th. 0.007–0.009 m. Fabric: 2.5Y 6/2, no inclusions, Mohs 5. Gray Minyan ware. Ring stem. Surface slipped, 2.5Y 5/1.

C27 Ring-stemmed goblet (M-K6.02)

P.L. 0.041, p.W. 0.039, Diam. ca. 0.080, Th. 0.008–0.010 m. Fabric: 7.5YR 6/4–2.5 Y6/2, very few very small limestone inclusions, Mohs 3. Yellow Minyan ware. Ring stem. Ext. slipped, 2.5Y 8/2.

C28 Open vessel (M-C4.03 [handle])

P.L. 0.047, p.W. 0.030, p.H. handle 0.026, Diam. handle 0.008 × 0.020 m.

Fabric: 10YR 8/4, core 5YR 6/6, very few small–medium limestone inclusions, Mohs 3. Matt-Painted ware. Body fragment with handle stump. Ext. and int. slipped, 10YR 8/3, decorated with painted brown stripes.

C29 Closed vessel (M-H3.12) Fig. 19

P.L. 0.043, p.W. 0.049, Th. 0.005–0.009 m. Fabric: 7.5YR 7/4, very few small black, limestone inclusions, Mohs 2. Matt-Painted ware. Body fragment at shoulder. Ext. slipped, 2.5YR 8/1, decorated with painted black crosshatched geometric patterns.

C30 Closed vessel (C2-608.16) Fig. 19

P.L. 0.070, p.W. 0.069, Th. 0.006 m. Fabric: 7.5YR 6/4, very few small limestone inclusions, Mohs 3.5. Matt-Painted ware. Body fragment. Ext. and int. slipped, 2.5Y 8/2, decorated with painted dark crosshatched lozenges. Handmade.

C31 Closed vessel (C2-609.20)

P.L. 0.062, p.W. 0.043, Th. 0.007 m. Fabric: 10YR 7/4, very few very small–small limestone, black inclusions, Mohs 2. Matt-Painted ware. Body fragment. Ext. slipped, decorated with painted fishnet, 10YR 6/2. Handmade.

C32 Probably a closed vessel (C2-606.07)

P.L. 0.044, p.W. 0.044, Th. 0.005–0.007 m. Fabric: 2.5Y 7/6, moderate amounts of small–medium black inclusions, Mohs 3. Matt-Painted ware. Body fragment. Decorated with painted black geometric pattern. Handmade.

C33 Closed vessel (C2-608.27)

P.L. 0.036, p.W. 0.035, Th. 0.005–0.006 m. Fabric: 10YR 7/4 and 2.5Y 6/1, many small–large red, limestone inclusions, Mohs 4. Matt-Painted ware. Body fragment. Ext. and int. slipped, 10YR 8/3, decorated with wide curving painted black band.

C34 Closed vessel (C2-605.43)

P.L. 0.035, p.W. 0.025, Th. 0.006–0.007 m. Fabric: 10YR 7/5, moderate amounts of small red, yellow, black inclusions, Mohs 2. Matt-Painted ware. Body fragment. Ext. slipped, decorated with painted bands, 5YR 6/5. Handmade.

Middle Helladic Small Finds

The Middle Helladic small finds include a bronze ax, a stone chisel mold, an arrow-straightener, a grooved stone tool, five terracotta spindle whorls, and a terracotta spool.

Metal

A bronze ax (**C35**) was found with two stone tools (an arrow-straightener, **C37**, and another tool of unknown function) in fresh spill immediately below the corner of a room or house in the scarp above beach tract C2-605. This room had been exposed by erosion, and robbers had dug a small tunnel (Diam. ca. 15 cm) at floor level along the inside of one of the walls. The chisel mold was found nearby during a subsequent visit to the islet, and the possibility remains that they both came from this room.

The bronze ax, a wedge-shaped flat ax narrowing toward a flat butt of medium width, is a type produced throughout the Aegean from the 19th century B.C. through the Mycenaean period.[60] Cast in a one-piece mold, this type exhibits significant variation in the size and shape of the cutting edge. Nevertheless, the cutting edge is always lunate to some degree and normally flanged. The flanges are the result of the fashioning of the cutting edge in the forge.

Axes of this type would have been mounted in a slot cut into a wooden haft. Catling illustrates a very similar flat ax from a Middle Cypriot tomb at Lapithos.[61] The relatively small size of this bronze tool might suggest that it could have served as a chisel, either mounted in a bone or horn handle, or used without a handle and struck with a stone or another metal tool.[62] In Branigan's typology, for example, this item would be classified as a type III chisel, with comparable pieces known from Syros and Lesbos.[63] Tripathi acknowledges the difficulty in distinguishing smaller flat axes from chisels.[64] McGeehan Liritzis, however, stresses the different functions of chisels (shaping) and axes (chopping), and argues that the size and shape of the cutting edge determines whether the tool was designed for chopping or shaping.[65] McGeehan Liritzis cites the physical law that pressure equals force exercised over the area of the striking point of the implement. Thus, the larger the cutting edge, the lower the pressure exercised, and the narrower the cutting edge, the greater the pressure exercised. Chisels require concentrated pressure and therefore have a narrower cutting edge.

Departing from the arbitrary or undefined division between axes and chisels made by earlier scholars, McGeehan Liritzis standardizes the distinction by arguing that the ratio of length to maximum width can be used to determine whether a tool is an ax or a chisel. She posits that the length divided by the maximum width (L./max. W.) of Aegean axes is less than 4.4 cm, and for chisels anything above. Following this method, which has the advantage of attempting to deduce function and of standardizing

60. For the typology, see Catling 1964, p. 63, fig. 4. See also Demakopoulou 1988, p. 265.

61. Catling 1964, p. 63, fig. 4:3.

62. Demakopoulou 1988, p. 246.

63. Branigan 1974, pp. 25, 169, 170, pl. 14:776, 883.

64. Tripathi 1988, pp. 41, 46.

65. McGeehan Liritzis 1996, pp. 58–59.

Figure 20. Ax and chisel mold.
Scale 1:2. Photo K. O'Neill

the distinction between axes and chisels, the Mitrou bronze tool (with a L./max. W. ratio of 3.03) is an ax. We can further classify it as type A2 on the basis of its concave sides, narrowing to a straight or mildly rounded butt, its convex cutting edge, flat profile, and rectangular section.

C35 Bronze ax (C2-605.x07) Fig. 20

P.L. 0.10, p.W. 0.033, Th. 0.007 m; Wt. 0.097 kg. Complete but for tip of one flange of cutting edge.

See McGeehan Liritzis 1996, pp. 59–66, fig. 2.4.2.1 (type A2).

Stone

The bronze ax (**C35**) may have been imported, but the stone chisel mold (**C36**) demonstrates that Mitrou was the site of metallurgy. There may be traces of copper in the base of the mold. The nearest copper sources are in Thessaly, southern Attica, and the southeastern tip of Euboia.[66] Thus, this mold implies the importation to Mitrou of ore or processed copper from some distance. The mold is a bivalve type; two holes served to secure the extant half to another joining piece, which had projecting pegs designed to fit into those holes. The hollow in the mold suggests that the chisel would have had a very steep cutting edge with just a 2 mm difference between the cutting edge and the top of the tool. It was unusual to cast chisels in a two-piece mold, which was usually employed for artifacts that could not be cast in a one-piece mold, such as double axes or spearheads.[67]

The arrow-straightener (**C37**) is a flattened ovoid stone with a single groove running the length of the stone, polished smooth by rubbing. In the middle of the opposite side of the stone is an indentation, possibly from pounding. The other stone tool (**C38**) found with the arrow-straightener initially appears to have had a similar function but is of a much softer sandstone, and the groove dips in the middle, making it unlikely that it could have served the purpose of smoothing an arrow shaft.

C36 Limestone chisel mold (C2-609.x05) Fig. 20

P.L. 0.07, p.W. 0.049, Th. 0.022 m; Wt. 0.166 kg. Half of a two-piece mold. The maximum dimensions of the matrix are 0.048 × 0.019 × 0.007 m.

66. McGeehan Liritzis 1996, fig. 3.2.1.
67. Branigan 1974, pp. 81–82.

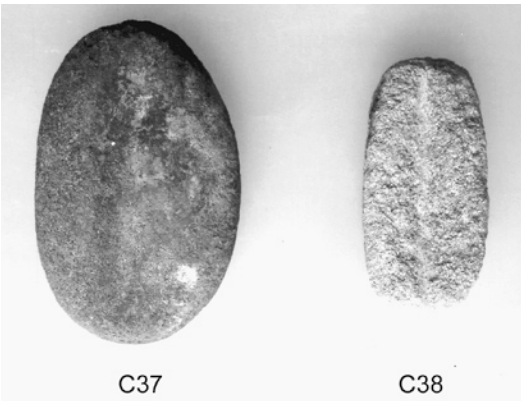


Figure 21. MH stone tools.
Scale 1:2. Photo K. O'Neill

C37 Arrow-straightener (C2-605.x09) Fig. 21

P.L. 0.091, p.W. 0.057, Th. 0.032 m; Wt. 0.302 kg. Complete.

C38 Grooved stone tool (C2-605.x11) Fig. 21

P.L. 0.071, p.W. 0.035, Th. 0.027 m; Wt. 0.086 kg. Complete. Soft sandstone.

Terracotta

Various types of Bronze Age terracotta objects are usually associated with textiles: pierced sherd disks, spindle whorls, small clay ring weights, clay spools, loomweights, and clay anchors. No clay anchors or ring weights have been identified at Mitrou but artifacts traditionally identified as spindle whorls have been assigned to each of the three periods in the Bronze Age, and a spool has been assigned to the MH period.

The five spindle whorls and spool (**C39–C44**) can be considered as evidence of weaving industry at Mitrou in the MH period.[68] It is not always possible to distinguish beads from spindle whorls, so they have been included here, too. In practice, we have simply assumed that some of the smallest of these pierced whorls are intended for decorative use as beads. It is also possible that some of the "spindle whorls or beads" are actually dress weights or buttons. **C39** and **C40** are biconical. Carington Smith observes that, whereas biconical whorls are found in all phases of the Bronze Age in northern Greece and Macedonia, in central Greece and the Peloponnese they are common in the MH and LH periods only.[69] **C39** and **C40** exhibit very similar incised decoration: a spiral or concentric circles encompass the hole at the bottom of the lower cone, and a series of concentric semicircles ring the rest of the lower cone.[70] **C39** has a vertical incision between each set of concentric semicircles. In her volume on Eutresis, Goldman suggests that "the small biconical clay button decorated with simple incised patterns, frequently filled with white pigment, is as distinctive of this period [MH] as the Minyan pottery, and the material of which they are made is sometimes the same smooth grey clay."[71] **C40** is formed of a smooth gray clay, while **C39** has a light reddish brown clay. **C41** is a straight-sided, truncated cone of a type found in both EH and MH strata.[72]

The last item in the MH group is a spool (**C44**), a type strongly associated with the Middle Helladic.[73] Unlike many so-called spools, this particular type, perforated along its long axis and marked by concave sides, may well have been used as a reel for thread or yarn.

68. The terminology and classification for these items follows Banks 1967.
69. Carington Smith 2000, p. 217.
70. Two very similarly decorated whorls were found at Eutresis: Goldman 1931, p. 198, pl. XIX:6, 7.
71. Goldman 1931, p. 198.
72. Cf. Carington Smith 2000, p. 217, no. SF193, fig. 4:32.
73. Banks 1967, pp. 551–565; Carington Smith 1983, pp. 290–291.

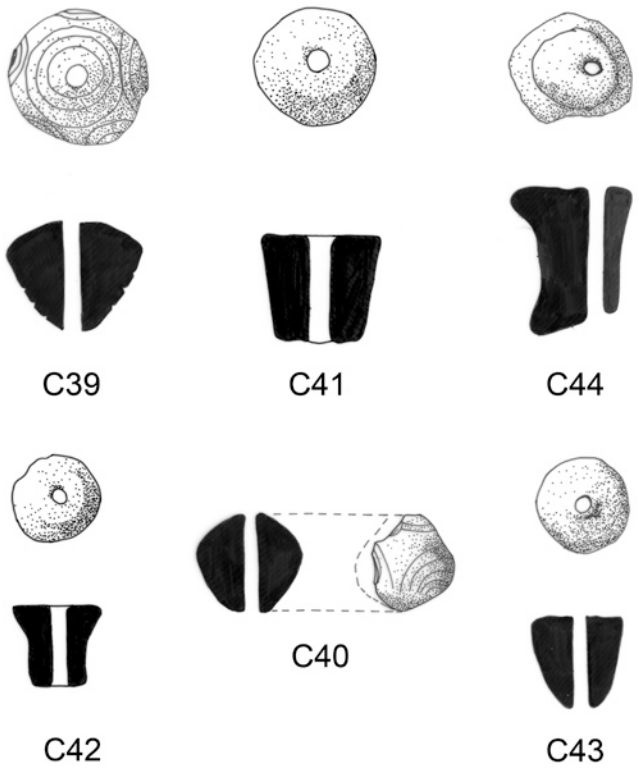


Figure 22. MH terracotta spindle whorls and spool C44. Scale 1:2. Drawing Y. Furuya

C39 Spindle whorl (M-E4.x02) Fig. 22

P.H. 0.027, p.Diam. 0.036, p.Diam. hole 0.007 m; Wt. 0.03 kg. Fabric: 5YR 6/4, coarse sand inclusions. Complete, convex-sided biconical. Decoration: incised concentric semicircles.

C40 Spindle whorl (C2-606.x02) Fig. 22

P.H. 0.024, p.Diam. 0.024, p.Diam. hole 0.005 m; Wt. 0.007 kg. Fabric: 10R 5/3, medium sand-sized inclusions. Incomplete, convex-sided biconical. Decoration: incised concentric semicircles.

C41 Spindle whorl (C2-602.x01) Fig. 22

P.H. 0.027, p.Diam. 0.031, p.Diam. hole 0.008 m; Wt. 0.029 kg. Fabric: 7.5YR 6/2, very coarse limestone inclusions. Complete, straight-sided, truncated conical.

C42 Spindle whorl (C2-604.x01) Fig. 22

P.H. 0.021, p.Diam. 0.023, p.Diam. hole 0.0055 m; Wt. 0.01 kg. Fabric: 7.5YR 7/2, fine sand, gray inclusions. Complete, standard inverted bell-shaped cone.

C43 Spindle whorl (M-C4.x04) Fig. 22

P.H. 0.025, p.Diam. 0.025, p.Diam. hole 0.006 m; Wt. 0.016 kg. Fabric: 7.5YR 6/4, medium sand-sized inclusions. Complete, standard convex-sided conical with well-rounded top edge.

C44 Spool (C2-608.x09) Fig. 22

P.H. 0.035, p.Diam. 0.032, p.Diam. hole 0.005 m; Wt. 0.022 kg. Fabric: 10YR 6/4, granule-sized gravel inclusions. Incomplete, battered and worn. Pierced longitudinally with concave sides and concave flaring ends.

Late Helladic Pottery

Late Helladic I

The Mycenaean fine-ware sherds cover the entire spectrum from LH I through LH IIIC.[74] In the LH I phase Gray Minyan, Matt-Painted, and Polychrome Matt-Painted wares, which persist into the Early Mycenaean period and make up the bulk of the material in central Greece, exist next to the "true" Mycenaean style with its lustrous paint.

A single Gray Minyan sherd, **D1**, is a large piece with the shine and soapy feel that characterize the best pieces of this class. Its profile, with a smooth curve and a flaring lip, suggests it belongs to the LH I period rather than to the MH period.[75] Found on the eastern shore beneath a cist tomb, it may belong to a vessel deposited as a grave gift.

D2, the bridge spout of an Aiginetan hole-mouthed jar, closely follows the MH Matt-Painted tradition: the fabric is fairly coarse, pale in color, and the painted decoration consists of black bands. It dates to the transitional period of MH IIIB–LH IA.[76]

The bichrome sherds from Mitrou (**D3–D12**) are reminiscent of Shaft Grave ware. They have an orange-colored fabric (except for **D8**, which is brownish gray) and are slipped on the outside. **D8** and **D9** have a rough and irregular interior. Apart from **D5**, **D7**, and **D12**, they are polished to a nice shine. **D6** (and possibly **D8**) were polished after the paint was applied: the entire surface is smooth and shiny and the black lines smear slightly onto the lighter background. On all other pieces the paint was applied after burnishing: the painted surface is rough to the touch and lines are crisp without smearing. The added paint is black, red, and brown, and shows simple geometric patterns and lightly curving bands. Dietz suggests a Boiotian origin for this class, based on its distribution and on provenance studies.[77]

The lustrous Mycenaean LH I style is represented by a sherd from an alabastron (**D13**),[78] and by a few Vapheio cup fragments (**D14–D16**, and possibly **D17**) with the distinctive projecting horizontal ridge in the center of the body and painted ripple decoration. The sherds are thin—between 3 and 4 mm—and their fabric is very fine, without any inclusions. They have the typical Mycenaean light slip, on which lustrous dark (reddish brown to black) paint is applied. All three fragments are slipped and polished on the outside and unworked on the inside, as is standard in LH I open vessels. **D17** is painted on the inside, which may place it in the LH II phase; the decoration, however, is more typical for LH I. A semiglobular cup fragment (**D18**) is unworked on the inside except for a painted band around the rim and may therefore belong to LH I as well; the paint on the exterior flakes off.

These fragments represent the "true" Mycenaean LH style thus far barely represented in this part of Greece.[79] The only example Mountjoy lists from Phthiotis is a Vapheio cup sherd from Drachmani-Piperi, decorated with a ripple pattern.[80] From Boiotia she lists altogether one vessel and two linear sherds from Orchomenos and one sherd decorated with a ripple from Eutresis.[81] For Euboia, Thessaly, and Phokis, no LH I pottery is listed at all. With several fragments from surface survey alone, Mitrou is therefore unusually rich in LH I material.

74. For a more comprehensive catalogue of the LH pottery, see Kramer-Hajos 2005, pp. 316–358.

75. See Dietz 1991, pp. 202–203, figs. BA-5, BA-5a.

76. For examples from both periods dated by associated finds, see Dietz 1991, pp. 186–189.

77. Dietz 1991, p. 32.

78. Similar to Mountjoy 1986, p. 12, fig. 4:2.

79. Mountjoy 1999, pp. 639, 807.

80. Mountjoy 1999, p. 811, fig. 323:1.

81. Mountjoy 1999, p. 648.

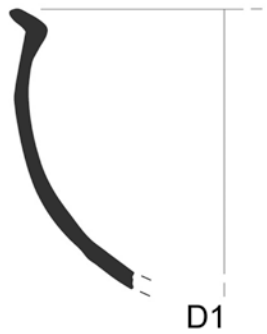


Figure 23. LH I Gray Minyan semiglobular cup. Scale 1:2. Drawing M.-J. Schumacher

D1 Semiglobular cup (C2-605.137) Fig. 23

P.L. 0.070, p.W. 0.073, Diam. 0.110, Th. 0.003–0.004 m. Fabric: 2.5Y 5/1, very few small–large quartz, limestone, red inclusions, Mohs 3. Rim fragment. Gray Minyan ware. Ext. (and int. to a lesser degree) burnished, 2.5Y 5–4/1.

D2 Hole-mouthed jar (M-C6.08) Fig. 24

P.W. 0.060, p.L. 0.038, Th. 0.008–0.012 m. Fabric: 10YR 7/3, many small–medium muscovite, limestone, black inclusions, Mohs 3.5. Aiginetan Matt-Painted ware. Bridge spout. Surface slipped, 2.5Y 8/2–3. Painted black bands.

D3 Jar (C2-609.13) Fig. 24

P.L. 0.053, p.W. 0.059, Th. 0.005–0.008 m. Fabric: 5YR 7/4, few very small–small limestone, biotite inclusions, Mohs 4. Mainland Polychrome Matt-Painted ware. Neck and shoulder. Ext. slipped and burnished, 7.5YR 7/6. Painted bichrome red and black bands.

D4 Jar (C2-604.20) Fig. 24

P.W. 0.028, H. 0.051, Th. 0.005–0.007 m. Fabric: 7.5YR 6/6, very few very small–small limestone, black, red inclusions, Mohs 2. Mainland Polychrome Matt-Painted ware. Neck fragment. Ext. slipped and burnished, 7.5YR 7/6. Painted blue and red bands.

D5 Jar (C2-604.14) Fig. 24

P.L. 0.035, p.W. 0.032, Th. 0.009 m. Fabric: 5YR 7/5, no inclusions, Mohs 3. Mainland Polychrome Matt-Painted ware. Shoulder fragment. Painted red zone bordered by a black band.

D6 Jug (M-F3.01) Fig. 24

P.L. 0.037, p.W. 0.030, max. Diam. ca. 0.130, Th. 0.006–0.008 m. Fabric: 2.5YR 6/6, no inclusions, Mohs 2. Mainland Polychrome Matt-Painted ware. Body fragment. Ext. slipped, 7.5YR 7/4. Painted black and red hatched lozenges and bands.

D7 Jar or jug (M-L6.01) Fig. 24

P.L. 0.033, p.W. 0.061, Th. 0.008–0.009 m. Fabric: 2.5YR 6/6–5/3, core 2.5YR 6/1, few very small–small limestone, sand inclusions, Mohs 3. Mainland Polychrome Matt-Painted ware. Body fragment. Ext. slipped, 10YR 7/3. Painted red and black bands and wavy line.

D8 Jar (M-D5.01) Fig. 24

P.L. 0.049, p.W. 0.048, Th. 0.005–0.011 m. Fabric: 7.5YR 5/2, very few small limestone inclusions, Mohs 3. Mainland Polychrome Matt-Painted ware. Shoulder fragment? Surface: ext. slipped and polished, 7.5YR 7/4. Painted bichrome black and red oblique stripes and bands. Inside is reworked (rough and irregular).

D9 Jar or jug (M-F5.22) Fig. 24

P.L. 0.044, p.W. 0.046, Th. 0.005–0.006 m. Fabric: 5YR 6/6, few small limestone inclusions, Mohs 3. Mainland Polychrome Matt-Painted ware. Body fragment. Ext. burnished. Painted bichrome red and black converging stripes. Handmade.

D10 Open vessel? (M-C5.03) Fig. 24

P.L. 0.068, p.W. 0.028, Th. 0.005–0.006 m. Fabric: 7.5YR 6/6, few very small–small limestone inclusions, Mohs 4. Mainland Polychrome Matt-Painted

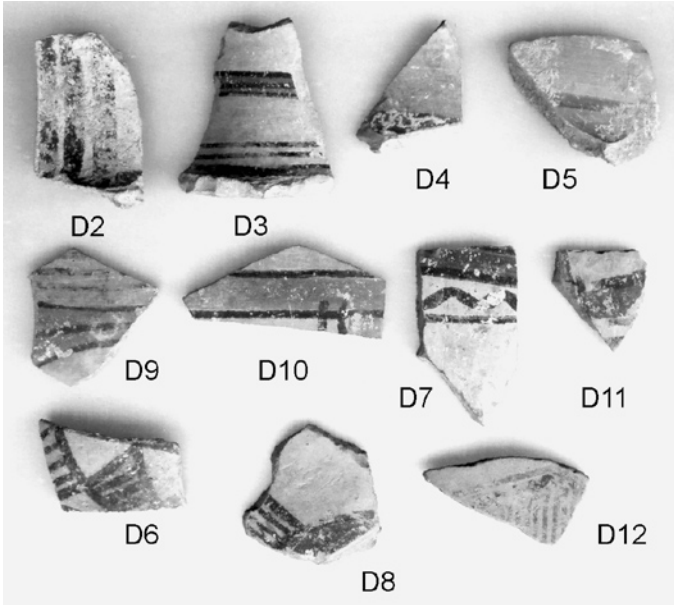


Figure 24. Aiginetan and mainland Polychrome Matt-Painted ware.
Scale ca. 2:5. Photo M. Kramer-Hajos

ware. Body fragment. Ext. slipped and burnished. Painted polychrome red, blue, and black bands.

D11 Shape unknown (M-L6.04) Fig. 24

P.L. 0.014, p.W. 0.017, Th. 0.006 m. Fabric: 7.5YR 7/6, moderate amounts of very small–medium limestone, red, black inclusions, Mohs 3. Mainland Polychrome Matt-Painted ware. Body fragment. Ext. slipped and burnished, 10YR 7/6. Painted brown and black bands and oblique stripes. Handmade.

D12 Shape unknown (C2-606.08) Fig. 24

P.L. 0.052, p.W. 0.031, Th. 0.008 m. Fabric: 5YR 5/4, some small limestone inclusions, Mohs 4. Mainland Polychrome Matt-Painted ware. Body fragment. Ext. slipped and burnished, 7.5YR 6/4. Painted bichrome black and red bands and oblique stripes.

D13 Rounded alabastron (M-H3.10) Fig. 25

P.L. 0.032, p.W. 0.036, Th. 0.004 m. Fabric: 7.5YR 7/3, no inclusions, Mohs 3. Lustrous ware. Body fragment decorated with a painted brown spiral.

D14 Vapheio cup type II (C2-602.04) Fig. 25

P.L. 0.044, p.W. 0.038, Th. 0.003–0.005 m. Fabric: 10YR 7/2, no inclusions, Mohs 2. Lustrous ware. Body fragment. Ext. slipped and burnished, 2.5Y 7/2. Painted black ripple.

D15 Vapheio cup (M-C/D5.06) Fig. 25

P.L. 0.025, p.W. 0.024, Th. 0.003 m. Fabric: 7.5YR 7/4, no inclusions, Mohs 3. Lustrous ware. Body fragment. Ext. slipped and burnished, 10YR 6/2. Painted red ripple.

D16 Vapheio cup, type II? (M-J5.03) Fig. 25

P.L. 0.022, p.W. 0.023, Th. 0.003 m. Fabric: 5YR 7/4, no inclusions, Mohs 3. Lustrous ware. Body fragment. Painted black ripple.

D17 Vapheio cup (M-G5.12) Fig. 25

P.L. 0.028, p.W. 0.022, Diam. ca. 0.150, Th. 0.004 m. Fabric: 5YR 7/4, no

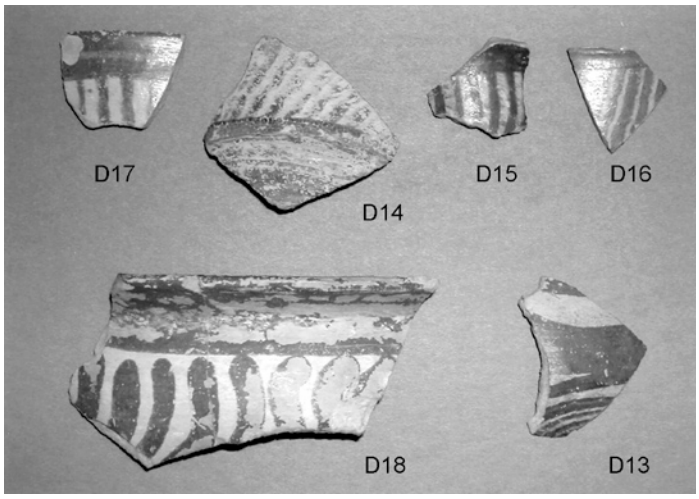


Figure 25. LH I Lustrous ware.
Scale ca. 1:2. Photo M. Kramer-Hajos

inclusions, Mohs 3. Lustrous ware. Rim fragment. Ext. slipped and burnished. Ext. and int. painted red rim band; ext. painted ripple.

D18 Semiglobular cup (M-I8.02) Fig. 25

P.L. 0.069, p.W. 0.041, Diam. ca. 0.150, Th. 0.006 m. Fabric: 7.5YR 7/6, no inclusions, Mohs 3. Lustrous ware. Rim fragment. Ext. and int. slipped, 10YR 8/2. Int. and ext. painted rim band, ext. red foliate band.

Late Helladic II

The number of recovered sherds increases in the LH II phase and both LH IIA and IIB are well represented. For most sherds the decoration, rather than the shape, is the diagnostic feature. Marine (especially in LH IIA) and floral patterns occur next to monochrome-painted pieces and pieces painted with dot-lined stripes.

In most cases the clay contains no inclusions; where inclusions are present, they are rare, small, and usually limestone. Most fine ware sherds are slipped and sometimes polished; decoration is applied with red, brown, or black lustrous paint on the off-white to orange slip.

Perhaps the most striking LH IIA marine-decorated sherd is **D23**, which shows a Minoanizing octopus or argonaut. This Marine Style is rare in central Greece,[82] but does appear in Athens.[83] Whether the vessel was a local product or an import (fabric and slip are of a deeper orange than those of other sherds from this period), it shows that, as in the LH I period, now too, Mitrou was an important site that had connections with regions to its south and east rather than west and north. It is similar in decoration to **D21**, a (stirrup) jar shoulder fragment, though **D21**, like **D22**, is polished and has red paint. **D26**, **D27**, and **D34** have a burned gray surface with black marine patterns; one may wonder whether the gray firing of vessels with marine motifs was intentional and meant to imitate the color of the sea. The prime LH IIB piece from Mitrou is **D29**, a large rim fragment from an Ephyraean goblet painted with a lily.

Closed LH II shapes are jugs (**D19**), stirrup jars (**D20–D22**), piriform jars (**D23**), and alabastra (**D28**, **D34**). Among the open shapes, goblets (**D29**, **D30**, **D35**) make their appearance and the Vapheio cup continues, now with foliate bands diagnostic of LH II Vapheio cups (**D31**, **D32**, **D36**, **D37**).

82. Mountjoy 1999, p. 22.
83. Mountjoy 1981, p. 66, no. 205, pl. 16, possibly an import from Aigina.

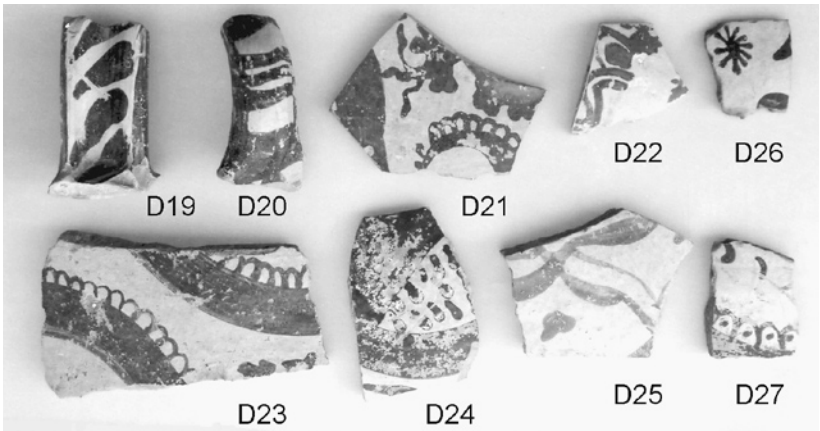


Figure 26. LH IIA pottery.
Scale ca. 1:2. Photo M. Kramer-Hajos

Late Helladic IIA

D19 Bridge-spouted jug (M-E5.05) Fig. 26

P.L. 0.024, p.W. 0.050, Th. 0.013–0.014 m. Fabric: 5YR 7/3, no inclusions, Mohs 3. Handle fragment. Surface slipped. Painted black formal foliate band.

D20 Stirrup jar (M-G4.01) Fig. 26

P.L. 0.019, p.W. 0.042, Th. 0.014 m. Fabric: 5YR 7/4, few very small–small black inclusions, Mohs 4. Handle fragment. Painted black wavy bands.

D21 Stirrup jar (M-G5.05) Fig. 26

P.L. 0.050, p.W. 0.037, Th. 0.005–0.006 m. Fabric: 5YR 7/3, no inclusions, Mohs 4. Shoulder fragment. Surface slipped. Painted red-brown (2.5YR 4/6) octopus/argonaut and rocks.

Cf. Mountjoy 1981, p. 66, pl. 16:205.

D22 Stirrup jar? (M-J5.02) Fig. 26

P.L. 0.029, p.W. 0.038, Th. 0.003–0.005 m. Fabric: 5YR 7/6, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 10YR 8/4. Ext. painted red marine design.

D23 Piriform jar (C2-609.07) Fig. 26

P.L. 0.082, p.W. 0.047, Th. 0.008–0.010 m. Fabric: 7.5YR 7/6, moderate amounts of very small–small limestone, black inclusions, Mohs 4. Body fragment. Ext. slipped, 10YR 7/6. Painted black octopus or argonaut.

D24 Jar or jug (M-E5.21) Fig. 26

P.L. 0.051, p.W. 0.035, Th. 0.005–0.006 m. Fabric: 5YR 6/6, black core, no inclusions, Mohs 3. Body fragment. Ext. slipped, 10YR 8/3. Painted purplish brown bands with "drops" inside.

For decoration, cf. Mountjoy 1986, p. 27, figs. 23:2, 24.

D25 Jar (M-H5.02) Fig. 26

P.W. 0.057, H. 0.041, Th. 0.006–0.008 m. Fabric: 5YR 7/4, moderate amounts of very small–small limestone, black, red inclusions, Mohs 3. Body fragment. Ext. slipped, 10YR 8/4. Painted reddish, yellowish brown marine or floral design.

Cf. Mountjoy 1986, pp. 24, 30, 31, figs. 18:1, 28:1, 29:1, 30:1.

D26 Jar? (C2-602.01) Fig. 26

P.L. 0.022, p.W. 0.026, Th. 0.004 m. Fabric: 7.5YR 7/2, some very small–

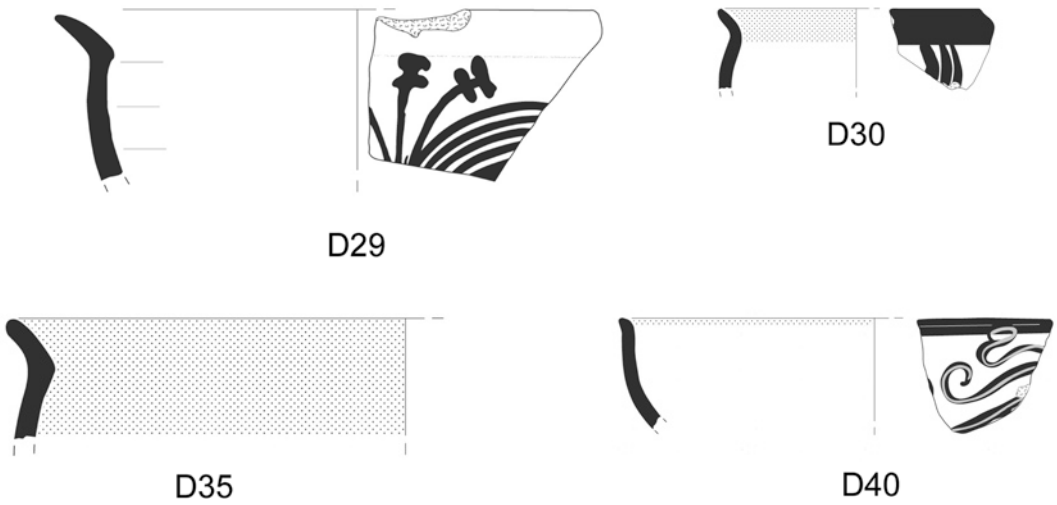


Figure 27. LH IIB (D29, D30) and LH II (D35) goblets; LH IIIA1 Ephyraean goblet D40. Scale 1:2. Drawing M.-J. Schumacher

small sand inclusions, Mohs 4. Body fragment. Surface slipped. Painted black sea urchin.

D27 Jar? (C2-603.11) Fig. 26

P.L. 0.030, p.W. 0.022, Th. 0.005–0.006 m. Fabric: 7.5YR 7/3, very few small limestone inclusions, Mohs 4. Body fragment. Ext. slipped and burnished, 2.5Y 8/3. Painted black octopus or argonaut.

Late Helladic IIB

D28 Rounded alabastron (C2-609.12)

P.L. 0.031, p.W. 0.028, Th. 0.005–0.006 m. Fabric: 2.5Y 8/3 and 7.5YR 8/4, no inclusions, Mohs 3.5. Body fragment. Ext. slipped, 2.5Y 8/2. Painted orange rock pattern.

D29 Ephyraean goblet (M-E5.04) Fig. 27

P.L. 0.063, p.W. 0.043, Diam. ca. 0.160, Th. 0.006 m. Fabric: 7.5YR 7/8, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped. Ext. painted lily.

D30 Goblet? (M-C/D5.01) Fig. 27

P.L. 0.025, p.W. 0.019, Diam. ca. 0.080, Th. 0.004–0.005 m. Fabric: 5YR 7/3, some very small black inclusions, Mohs 4. Rim fragment. Ext. and int. slipped. Int. and ext. painted rim band; ext. painted brown motif (palm?).

D31 Vapheio cup (C2-609.14)

P.W. 0.025, H. 0.020, Th. 0.004 m. Fabric: 10YR 7/4, few small limestone, black inclusions, Mohs 2. Body fragment. Ext. painted red horizontal bands and foliate band.

D32 Vapheio cup (M-H5.09)

P.L. 0.021, p.W. 0.021, Th. 0.003 m. Fabric: 10YR 7/2, no inclusions, Mohs 4. Body fragment. Ext. and int. slipped. Ext. painted black bands and foliate band.

Late Helladic II (General)

D33 Jug (M-F5.06)

P.L. 0.036, p.W. 0.032, Th. 0.005–0.013 m. Fabric: 5YR 7/2, few very small limestone inclusions, Mohs 3. Handle. Surface slipped. Painted black vertical running quirk below row of dots.

D34 Alabastron (M-C4.05)

P.L. 0.041, p.W. 0.037, Th. 0.004 m. Fabric: 7.5YR 7/2, no inclusions, Mohs 4. Body fragment. Ext. slipped. Painted black rock pattern with part of spiral.

D35 Goblet (M-D5.05) Fig. 27

P.L. 0.056, p.W. 0.031, Diam. ca. 0.220, Th. 0.004 m. Fabric: 5YR 6/6, very few small limestone inclusions, Mohs 3.5. Rim. Ext. and int. painted monochrome red.

Cf. Mountjoy 1999, pp. 653, 655, 699, 834, figs. 248:17, 249:37–39, 268:7, 334:41.

D36 Vapheio cup (C2-604.15)

P.L. 0.016, p.W. 0.012, Th. 0.002–0.003 m. Fabric: 5YR 7/6, no inclusions, Mohs 3. Body fragment. Ext. slipped and burnished, 2.5Y 8/3. Ext. painted reddish brown formal foliate band.

D37 Vapheio cup (M-E5.15)

P.L. 0.018, p.W. 0.022, Th. 0.004 m. Fabric: 5YR 7/4, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped. Ext. painted red foliate band.

Late Helladic III

The number of recovered sherds culminates in abundant quantities of inventoried LH III examples. Within LH III, quantities slightly decrease from LH IIIA to LH IIIC. Typical well-represented shapes are stirrup jars (both in the large and fairly crudely made version and in the small fine version) and kylikes, often painted with whorl shells. Many kylix stems have survived, for obvious reasons. The whorl shell is by far the most popular motif; other motifs are flowers, octopuses, and argonauts. As in LH II, fine wares are usually slipped with off-white, buff, yellowish or brownish orange slip. Paint is mostly lustrous red in IIIA, brown or black in IIIB, and black or dull orange in IIIC. Fabrics are pale pink to whitish yellowish in LH IIIA. In LH IIIB they can still be very pale, but darker pinkish and buff fabrics appear as well. LH IIIC fabrics are generally a dark pink to buff color.

New shapes in LH IIIA that are well represented on Mitrou are mostly associated with drinking: the mug, the kylix, the krater, and the stemmed bowl, which first appears in LH IIIA2. Among the closed shapes, alabastra, (piriform) jars, and stirrup jars remain popular. **D48** is a large part of a fine very small stirrup jar used for perfumed oil.[84] **D74**, **D75**, and **D76** have the ridged rim diagnostic of LH IIIA2 large mugs.

Typical LH IIIA1 motifs represented on Mitrou are spirals, bands, nets, stipples, and fish scales. LH IIIA2 motifs are the horizontal whorl shell on kylikes, foliate bands, wavy bands on stemmed bowls, quirks, chevrons, and a flower (**D62**). A generic LH IIIA sherd (**D67**) is decorated with bands on both the interior and the exterior.

Late Helladic IIIA1

D38 Large piriform jar (M-E5.24) Fig. 28

P.L. 0.040, p.W. 0.026, Th. 0.05–0.006 m. Fabric: 5YR 5/1, no inclusions, Mohs 3. Shoulder fragment. Ext. slipped, 5YR 6/1. Ext. painted brown scale pattern.

84. Shelmerdine 1985, pp. 141–143.

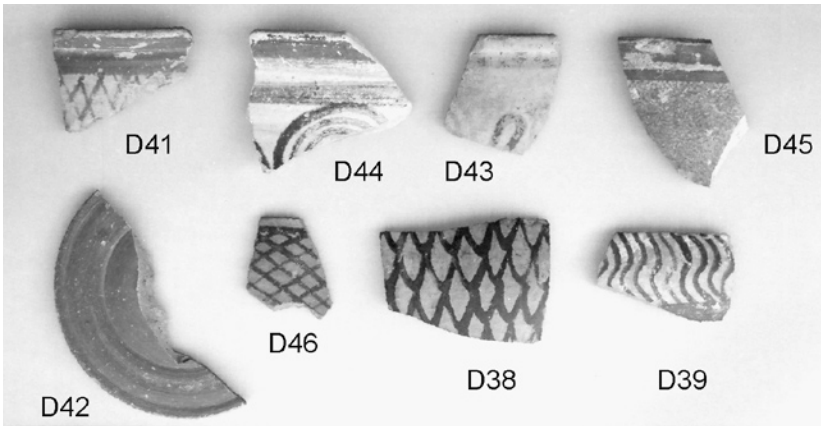


Figure 28. LH IIIA1 pottery.
Scale ca. 2:5. Photo M. Kramer-Hajos

D39 Piriform jar (C2-603.10) Fig. 28

P.L. 0.030, p.W. 0.016, Th. 0.005 m. Fabric: 5YR 7/4, no inclusions, Mohs 4. Shoulder fragment. Ext. slipped, 7.5YR 7–8/4. Int. painted red band, ext. curved stripes.

D40 Ephyraean goblet (M-E5.03) Fig. 27

P.L. 0.036, p.W. 0.029, Th. 0.004–0.005 m. Fabric: 7.5YR 7/2, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 7.5YR 7/2. Painted argonaut with applied white on tentacles.

D41 Kylix or goblet (M-K9.01) Fig. 28

P.L. 0.033, p.W. 0.021, Diam. ca. 0.190–0.200, Th. 0.005–0.065 m. Fabric: 5YR 7/6, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped. Painted red band and net.

D42 Kylix (C2-608.36) Fig. 28

P.L. 0.032, p.W. 0.081, Diam. 0.085, Th. 0.004–0.006 m. Fabric: 7.5YR 7/4, moderate amounts of very small–small sand inclusions, Mohs 4. Foot. Painted monochrome red.

D43 Goblet (M-N6.01) Fig. 28

P.L. 0.020, p.W. 0.025, Diam. ca. 0.110, Th. 0.005 m. Fabric: 7.5YR 7/4, no inclusions, Mohs 2. Rim fragment. Surface slipped, 10YR 8/3. Painted red curved, stemmed spiral and rim band.

D44 Semiglobular cup? (M-E5.10) Fig. 28

P.L. 0.050, p.W. 0.042, Diam. 0.170, Th. 0.004 m. Fabric: 10YR 8/3 and 7.5YR7/5, no inclusions, Mohs 4. Rim fragment. Ext. and int. slipped, 10YR 8/3. Painted brownish yellow and red bands and spiral.

D45 Mug (M-D5.04) Fig. 28

P.L. 0.023, p.W. 0.033, Diam. 0.120, Th. 0.004–0.006 m. Fabric: 5YR 7/6, no inclusions, Mohs 4. Rim fragment. Ext. slipped, 2.5YR 4/8. Int. painted red rim band, ext. red bands and stipples.

D46 Mug (C2-608.37) Fig. 28

P.L. 0.025, p.W. 0.028, Th. 0.002–0.003 m. Fabric: 5YR 6/4, no inclusions, Mohs 4. Rim fragment. Surface slipped, 7.5YR 6/4. Ext. painted brown net; reserved band below rim.

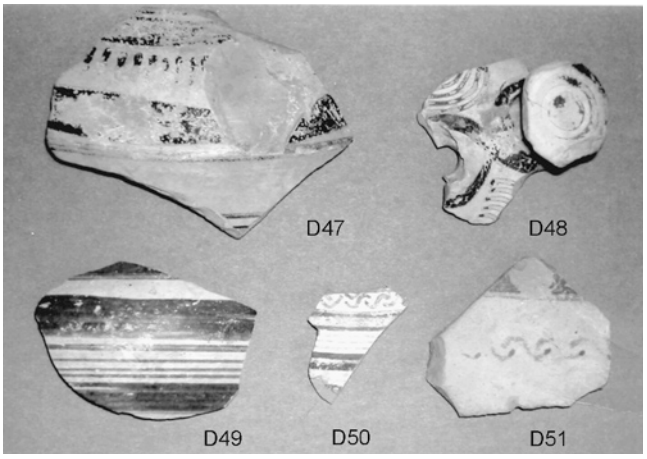


Figure 29. LH IIIA2 closed shapes.
Scale ca. 1:2. Photo M. Kramer-Hajos

Late Helladic IIIA2

D47 Straight-sided alabastron (M-D5.14) Fig. 29

P.L. 0.065, p.W. 0.060, Th. 0.006 m. Fabric: 5YR 7/4, no inclusions, Mohs 4. Body fragment. Ext. slipped and burnished. Painted black bands and foliate band.

D48 Stirrup jar (C2-608.02) Fig. 29

P.L. 0.020, p.W. 0.016, Diam. false mouth 0.013, Th. 0.003 m. Fabric: 5Y 7/2, no inclusions, Mohs 3. Top. Ext. slipped, 2.5Y 8/2. Painted orange and dark brown multiple stem.

D49 Stirrup jar (M-G5.04) Fig. 29

P.L. 0.044, p.W. 0.027, max. Diam. 0.120, Th. 0.003–0.004 m. Fabric: 5YR 6/4, no inclusions, Mohs 2. Body fragment. Ext. slipped, 5YR 8/2. Painted red and brown horizontal bands.

D50 Stirrup jar (M-G5.19) Fig. 29

P.L. 0.023, p.W. 0.029, Th. 0.003–0.005 m. Fabric: 5YR 6/2, no inclusions, Mohs 4. Shoulder. Ext. and int. slipped, 7.5YR 8/2. Painted brown running quirk and bands.

D51 Closed vessel (M-D4.02) Fig. 29

P.W. 0.047, H. 0.038, Th. 0.004–0.005 m. Fabric: 7.5YR 7/6, moderate amounts of very small–small black, limestone inclusions, Mohs 3. Body fragment. Ext. has traces of slip. Painted orange running quirk and band.

D52 Cup (M-E5.12) Fig. 30

P.W. 0.045, H. 0.042, Th. 0.004 m. Fabric: 5YR 7/6, no inclusions, Mohs 3. Rim fragment. Ext. slipped, 7.5YR 7/6. Int. painted red bands, ext. foliate band.

D53 Kylix (C2-609.22) Fig. 30

P.W. 0.040, H. 0.036, Th. 0.003 m. Fabric: 7.5YR 7/4, no inclusions, Mohs 3. Rim fragment. Surface slipped, 5YR 7/6. Painted red chevrons and vertical lines.

Cf. Mountjoy 1986, p. 88, fig. 106.

D54 Kylix (M-J5.01) Fig. 30

P.L. 0.038, p.W. 0.033, Diam. ca. 0.230, Th. 0.003–0.005 m. Fabric: 7.5YR 8/4, no inclusions, Mohs 2. Rim fragment. Surface slipped, 10YR 8/2. Painted dark brown horizontal whorl shells.

Figure 30. LH IIIA2 cup D52 and kylix fragments. Scale ca. 1:2. Photo M. Kramer-Hajos

D55 Kylix (M-C5.06) Fig. 30

H. 0.036, p.W. 0.073 m. Fabric: 2.5YR 7/4, core 7.5YR 7/3, no inclusions, Mohs 3. Stem. Surface slipped, 5YR 7/5. Painted red bands.

D56 Kylix (M-C/D5.04) Fig. 30

H. 0.045, Diam. 0.024 m. Fabric: 5YR 7/6, no inclusions, Mohs 3. Stem. Surface slipped, 7.5YR 8/4. Painted red bands.

D57 Kylix (M-D5.12) Fig. 30

P.L. 0.027, p.W. 0.012, Th. 0.004 m. Fabric: 5YR 7/4, very few medium limestone inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 7.5YR 7/2. Painted brown horizontal whorl shell.

D58 Kylix (M-G3.01) Fig. 30

P.L. 0.016, p.W. 0.024, Th. 0.005–0.006 m. Fabric: 5YR 7/4, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 7.5YR 8/4. Painted brown horizontal whorl shell.

D59 Kylix (C2-602.14) Fig. 30

P.L. 0.037, p.W. 0.013, Th. 0.004–0.005 m. Fabric: 5YR 7/4, very few medium limestone inclusions, Mohs 3. Body fragment. Surface slipped, 10YR 8/2. Painted red-brown stripes.

D60 Stemmed bowl (M-F5.14) Fig. 31

P.L. 0.040, p.W. 0.026, Diam. ca. 0.220, Th. 0.004–0.005 m. Fabric: 2.5YR 6/6, no inclusions, Mohs 4. Rim fragment. Ext. slipped. Int. painted monochrome, ext. orange curved bands.

D61 Stemmed bowl (M-F5.19) Fig. 31

P.L. 0.046, p.W. 0.043, Th. 0.005–0.006 m. Fabric: 5YR 7/4, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 10YR 8/2. Painted red bands and wavy line.

D62 Kylix? (M-C/D5.02) Fig. 31

P.L. 0.051, p.W. 0.034, Diam. 0.150, Th. 0.004–0.007 m. Fabric: 7.5YR 7/3,

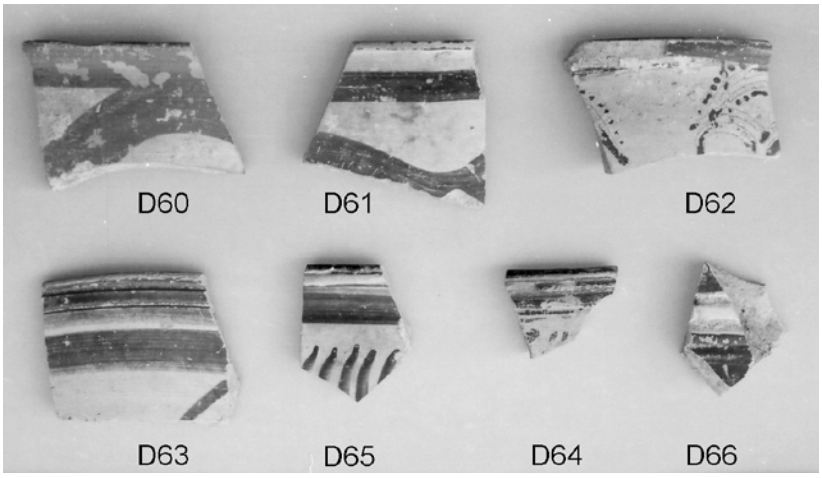


Figure 31. LH IIIA2 stemmed bowls D60 and D61, kylix D62, and mugs D63–D66. Scale ca 1:2. Photo M. Kramer-Hajos

no inclusions, Mohs 4. Rim fragment. Ext. and int. slipped, 10YR 8/3. Painted orange flower.

Cf. Mountjoy 1986, pp. 89, 111, figs. 107:5, 135:2.

D63 Mug (C2-608.24) Fig. 31

P.L. 0.037, p.W. 0.039, Diam. ca. 0.170, Th. 0.004 m. Fabric: 7.5YR 7/3, no inclusions, Mohs 3. Rim fragment. Surface slipped, 10YR 8/2. Painted dark brown bands.

Cf. Mountjoy 1986, p. 85, fig. 101:2.

D64 Mug (M-D5.10) Fig. 31

P.L. 0.017, p.W. 0.024, Diam. 0.110, Th. 0.004–0.006 m. Fabric: 5YR 7/4, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 10YR 8/3. Painted rim band and foliate band.

D65 Mug (M-M7.01) Fig. 31

P.L. 0.028, p.W. 0.023, Th. 0.005 m. Fabric: 10YR 7/3, no inclusions, Mohs 3. Rim fragment. Ext. painted reddish black foliate band.

D66 Mug (C2-604.07) Fig. 31

P.L. 0.028, p.W. 0.035, Th. 0.006–0.007 m. Fabric: 10YR 8/4, gray core, no inclusions, Mohs 4. Body fragment. Ext. and int. slipped, 10YR 8/3. Ext. painted dusky red bands.

Late Helladic IIIA (General)

D67 Bowl or cup (C2-608.23)

P.W. 0.028, H. 0.042, Th. 0.003–0.005 m. Fabric: 7.5YR 7/6–2.5YR 6/6, few very small–small black inclusions, Mohs 4. Base. Ext. and int. slipped, 10YR 8/4 and 5YR7/6. Ext. and int. painted red-black bands.

Sherds belonging certainly to LH IIIB come from deep bowls, the characteristic vessel for the IIIB period, kraters, stirrup jars, kylikes, and miniature vessels. Elsewhere in Greece deep bowls take over the dominant position from the kylix, but the surface material from Mitrou does not confirm this shift.

The LH IIIB material from Mitrou is slightly less abundant than the LH IIIA material. Sherds from Mitrou dating to the LH IIIB1 period are

still numerous. They belong to (ring-based) kraters, deep bowls, stirrup jars, and especially kylikes. Diagnostic for this period is the Zygouries kylix, with unpainted rim and one large motif in the center of each side. Only a stem belonging to a Zygouries kylix has been identified in the Mitrou material (**D86**).

LH IIIB1 first saw the introduction of the vertical version of the whorl shell as a decoration,[85] present on many sherds in the catalogue. **D72**, a sturdy body sherd belonging to a krater, has a decoration of a vertical whorl shell and an octopus flower, types common in LH IIIB1.[86] The filled body of the whorl shell dates this sherd to the end of the LH IIIB1 period.[87] The horizontal voluted flowers of **D75** are diagnostic for LH IIIB1.[88]

The LH IIIB2 period in Greece is characterized by the appearance of deep bowls with a monochrome painted interior and a very deep rim band and rosette bowls. Neither has been identified in the Mitrou surface material, and in fact only **D87** and **D88** have been assigned with certainty to LH IIIB2.

Two transport stirrup jars, **D93** and **D94**, are crudely made. **D93** is fired very hard (Mohs 7), but **D94** has the same medium hard fabric as most fine wares (Mohs 3). Since **D93** is also unusual with its shell inclusions (the only other catalogued piece with shell inclusions is **C15**), it may be an import.

Late Helladic IIIB1

D68 Stirrup jar (M-J7.01) Fig. 32

P.L. 0.067, p.W. 0.056, Diam. ca. 0.110, Th. 0.006–0.007 m. Fabric: 10YR 8/2, no inclusions, Mohs 3. Large shoulder fragment. Ext. slipped, 10YR 8/2. Painted orange-brown unvoluted flower.

D69 Krater (M-F/G5.01) Fig. 32

P.L. 0.067, p.W. 0.071, Diam. ca. 0.240, Th. 0.005–0.007 m. Fabric: 2.5YR 6/6, core 5YR 6/6, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 7.5YR 8/2. Painted rim band and vertical whorl shell.

D70 Ring-based krater (C2-603.02) Fig. 32

P.L. 0.047, p.W. 0.052, Diam. ca. 0.170, Th. 0.007–0.009 m. Fabric: 10YR 6/4, no inclusions, Mohs 3. Rim fragment with handle scar. Ext. and int. slipped, 10YR 8/3. Painted whorl shell, 10YR 4/2.

D71 Krater (M-G5.09) Fig. 32

P.L. 0.037, p.W. 0.063, Diam. ca. 0.200, Th. 0.006–0.008 m. Fabric: 2.5YR 6/6, no inclusions, Mohs 3. Rim fragment. Ext. (and int.?) slipped, 7.5YR 8/2. Painted orange flower.

D72 Krater (M-H5.01) Fig. 32

P.L. 0.063, p.W. 0.075, Th. 0.008–0.010 m. Fabric: 10YR 6/4, core 5YR 4/1, no inclusions, Mohs 3.5. Body fragment. Ext. and int. slipped, 10YR 7/3. Painted brown whorl shell and octopus flower.

D73 Deep bowl (C2-603.03) Fig. 33

P.L. 0.082, p.W. 0.039, Diam. 0.160, Th. 0.004–0.005 m. Fabric: 10YR 8/3, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 2.5Y 8/2. Painted red rim band, ext. vertical whorl shell.

85. As Mountjoy (1986, p. 67) explains, the vertical whorl shell appears before the deep bowl, so that one can adopt an earlier boundary based on the appearance of the vertical whorl shell, or a later one based on the appearance of the deep bowl. Here we have chosen to assign all vertical whorl shells to LH IIIB1 rather than to LH IIIA2 (and thus adopt the earlier marker), since they became popular in IIIB only.

86. Cf. Mountjoy 1986, pp. 110–111, figs. 134, 135:2.

87. Mountjoy 1986, p. 95.

88. See Mountjoy 1986, p. 96.

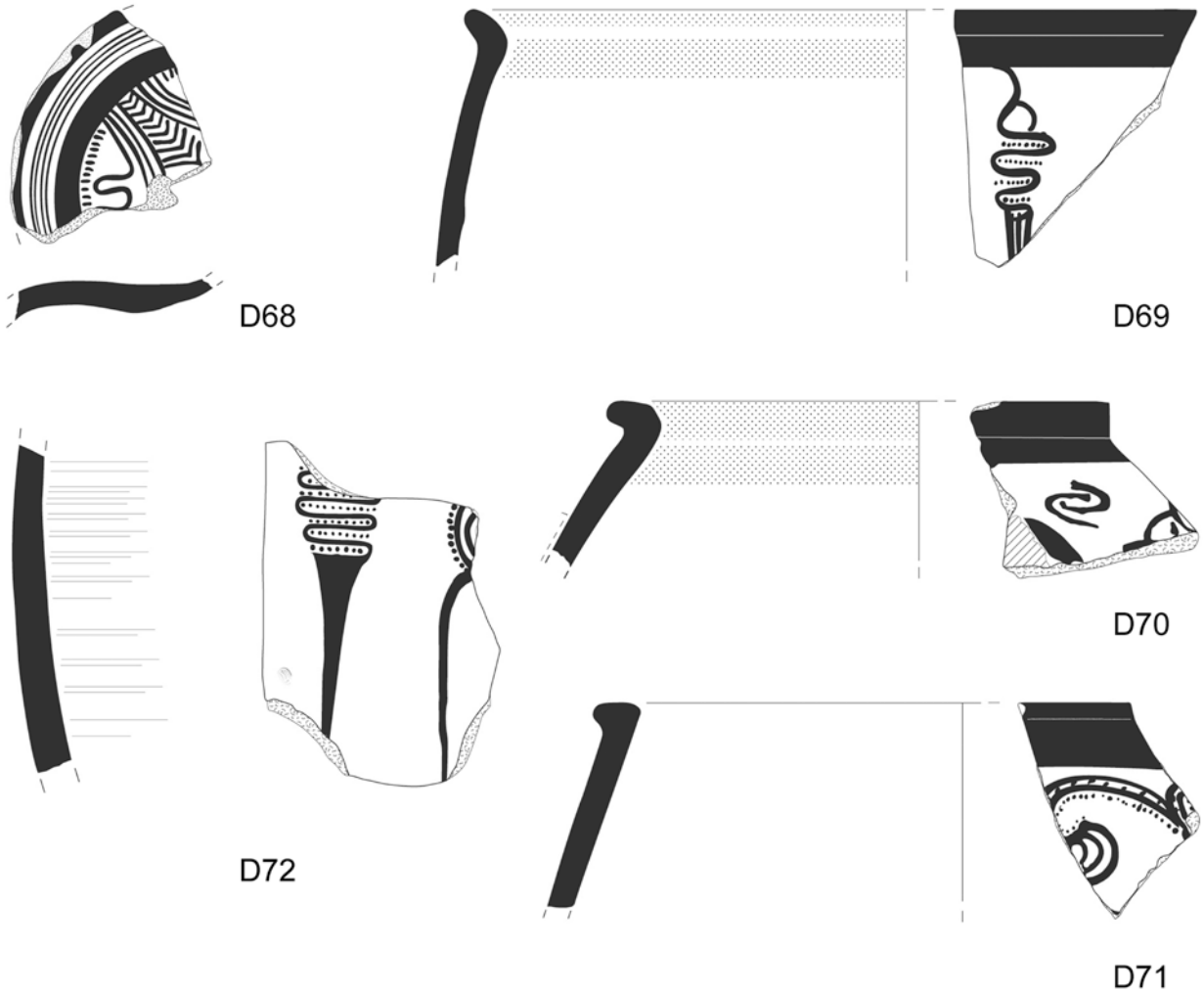


Figure 32. LH IIIB1 pottery.
Scale 1:2. Drawing M.-J. Schumacher

D74 Shallow cup (M-G5.02) Fig. 33

P.L. 0.064, p.W. 0.040, Diam. 0.160, Th. 0.003–0.004 m. Fabric: 5YR 8/4, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 7.5YR 8/2. Ext. painted vertical whorl shells.

D75 Kylix (M-G5.03) Fig. 33

P.L. 0.036, p.W. 0.046, max. Diam. 0.140, Th. 0.003 m. Fabric: 5YR 7/4, very few small limestone inclusions, Mohs 2.5. Rim fragment. Ext. slipped, 5YR 7/3. Painted brown/orange horizontal voluted flower.

D76 Bowl? (M-C/D5.05) Fig. 33

P.L. 0.034, p.W. 0.018, Th. 0.004–0.005 m. Fabric: 2.5YR 7/4, no inclusions, Mohs 4. Rim fragment. Ext. and int. slipped, 10YR 8/2. Ext. painted red panel pattern with horizontal wavy lines.

D77 Kylix (C2-602.03) Fig. 33

P.L. 0.037, p.W. 0.028, Th. 0.003 m. Fabric: 5YR 8/3, no inclusions, Mohs 3. Rim fragment. Ext. and int. slipped, 7.5YR 8/2. Ext. painted red vertical whorl shell.

D78 Deep bowl (M-H3.13) Fig. 33

P.L. 0.022, p.W. 0.021, Th. 0.004 m. Fabric: 2.5YR 6/6, very few small

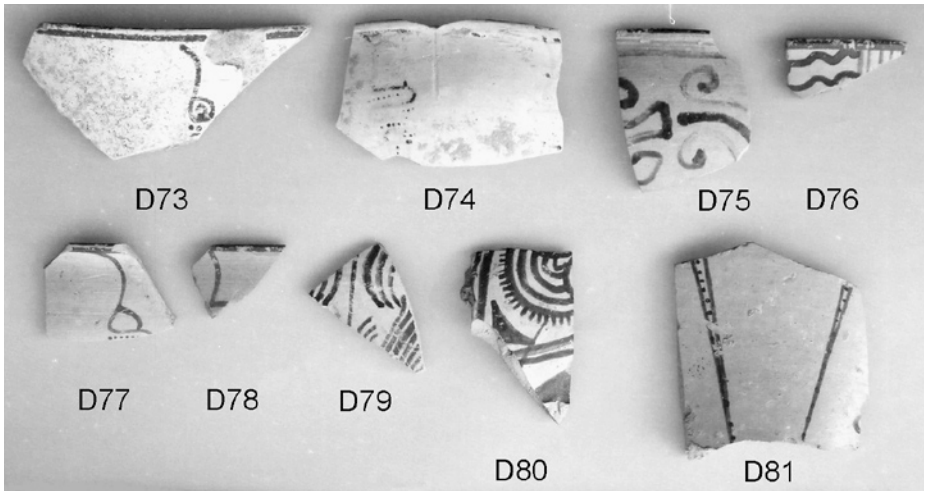


Figure 33. LH IIIB1 kylix and bowl fragments. Scale 1:2. Photo M. Kramer-Hajos

limestone inclusions, Mohs 4. Rim fragment. Ext. and int. slipped, 5YR 7/4. Ext. painted red vertical whorl shell, int. horizontal bands.

D79 Kylix (M-D5.11) Fig. 33

P.L. 0.027, p.W. 0.020, Th. 0.003–0.005 m. Fabric: 2.5Y 7/3, no inclusions, Mohs 3. Body fragment. Surface slipped, 5Y 8/1. Ext. painted red-brown palm.

Cf. Mountjoy 1986, p. 109, fig. 133:1.

D80 Open vessel (C2-609.23) Fig. 33

P.W. 0.036, H. 0.054, Th. 0.004 m. Fabric: 10YR 8/4, very few very small black, limestone inclusions, Mohs 3. Body fragment. Int. and ext. slipped, 2.5Y 8/3. Ext. painted brown flower.

D81 Conical kylix (M-C5.04) Fig. 33

P.L. 0.058, p.W. 0.056, Th. 0.005–0.008 m. Fabric: 7.5YR 7/4, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 10YR 8/4. Painted orange whorl shells.

D82 Kylix (M-I9.02) Fig. 34

P.L. 0.062, p.W. 0.041, Diam. stem 0.025 m. Fabric: 10YR 7/3, no inclusions, Mohs 3. Stem. Surface slipped, 10YR 8/3. Ext. three painted dark brown horizontal bands.

D83 Kylix (M-K9.02) Fig. 34

P.L. 0.068, p.W. 0.038, Diam. stem 0.022 m. Fabric: 5YR 7/4, few very small sand inclusions, Mohs 3. Stem. Surface slipped, 10YR 8/2. Ext. painted horizontal bands, whorl shells.

D84 Kylix (M-C/D6.04) Fig. 34

P.L. 0.076, p.W. 0.063, Diam. stem 0.026, Th. 0.005–0.006 m. Fabric: 7.5YR 7/3, no inclusions, Mohs 3. Stem. Surface slipped, 10YR 7/3. Ext. painted whorl shell or flower stem.

D85 Kylix (C2-606.48) Fig. 34

P.L. 0.049, p.W. 0.049, H. 0.048, Diam. stem 0.027, Th. 0.004 m. Fabric: 5YR 7/6, no inclusions, Mohs 4. Parts of stem and body. Ext. and int. slipped, 7.5YR 8/6. Ext. painted red to reddish brown bands and whorl shell.

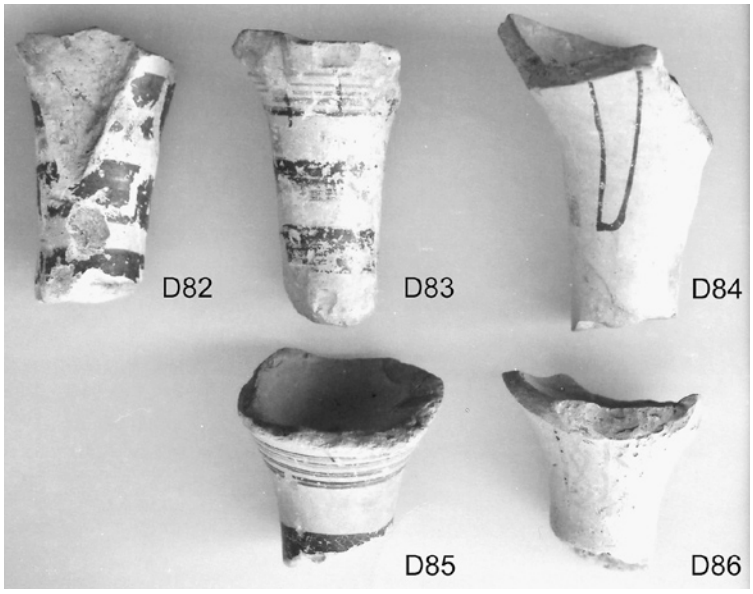


Figure 34. LH IIIB1 kylix stems.
Scale ca. 1:2. Photo M. Kramer-Hajos

D86 Zygouries kylix (M-H4.12) Fig. 34

P.L. 0.047, p.W. 0.035, H. 0.053, Diam. stem 0.025, Th. 0.005 m. Fabric: 2.5Y 8/3, no inclusions, Mohs 3. Stem. Ext. slipped, 2.5Y 8/2. Ext. painted black panel of whorl shell ends.

Cf. Mountjoy 1986, p. 114, fig. 141:11.

Late Helladic IIIB2

D87 Stirrup jar, or piriform jar? (M-F5.20) Fig. 35

P.L. 0.049, p.W. 0.036, Th. 0.004 m. Fabric: 5YR 7/3, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 10YR 8/2. Ext. painted red horizontal bands and noncontinuous wavy line.

Cf. Mountjoy 1986, p. 105, fig. 127:2.

D88 Jug? (C2-602.05) Fig. 35

P.L. 0.051, p.W. 0.035, Th. 0.004–0.005 m. Fabric: 5YR 7/4, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 10YR 8/2. Ext. painted red panel pattern.

Late Helladic IIIB (General)

D89 Miniature bowl (C2-609.04) Fig. 35

P.L. 0.027, p.W. 0.023, Diam. ca. 0.080, Th. 0.004–0.005 m. Fabric: 2.5YR 6/4, no inclusions, Mohs 3.5. Rim fragment. Ext. slipped, 10YR 8/2. Ext. painted red rim band and foliate band.

D90 Miniature jug (M-E5.13) Fig. 35

P.L. 0.022, p.W. 0.021, Th. 0.002–0.004 m. Fabric: 2.5YR 7/4, no inclusions, Mohs 3. Body fragment. Ext. slipped, 10YR 7/4. Ext. painted red horizontal band and foliate band. Handmade.

D91 Kylix (M-F4.09) Fig. 35

P.W. 0.023, H. 0.011, Th. 0.004 m. Fabric: 10YR 8/4, moderate amounts of very small sand inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 10YR 8/3. Ext. painted red rosette.

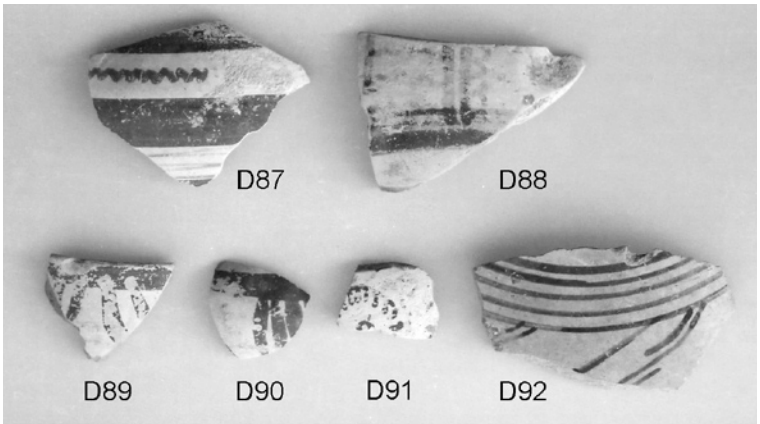


Figure 35. LH IIIB2 (D87, D88) and LH IIIB pottery. Scale ca. 1:2. Photo M. Kramer-Hajos

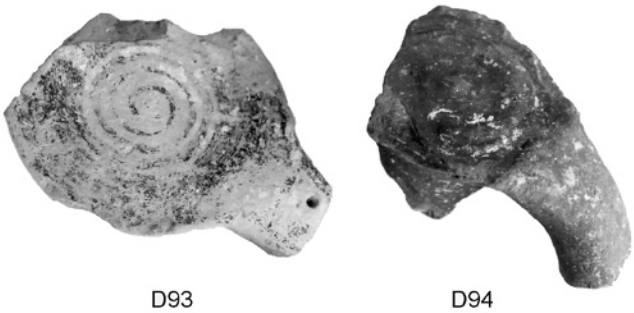


Figure 36. Transport stirrup jars. Scale 1:3. Photo M. Kramer-Hajos

D92 Kylix (C2-608.03) Fig. 35

P.L. 0.048, p.W. 0.023, Th. 0.005 m. Fabric: 10YR 7/4, no inclusions, Mohs 4. Body fragment. Int. slipped, 10YR 7/2. Ext. painted dark brown bands and oblique stripes.

D93 Stirrup jar (C2-608.13) Fig. 36

P.L. 0.095, p.W. 0.043, Th. 0.011 m. Fabric: 2.5YR 5/1, many small–large sand, shell, limestone inclusions, Mohs 7. Top. Decoration: originally painted black, plastic spiral. Crudely made. Firing hole in handle.

D94 Stirrup jar (M-H4.03) Fig. 36

P.L. 0.093, p.W. 0.032, Diam. ca. 0.850, Th. 0.018–0.019 m. Fabric: 5YR 7/4, very few very small–small black inclusions, Mohs 3. Top. Surface slipped? Ext. painted black spiral; originally painted monochrome?

The inventoried LH IIIC material from Mitrou is quantitatively less than the earlier LH III material, but nevertheless interesting. It comes mainly from LH IIIC Middle kraters, some of which show elaborate nonpictorial designs. Other shapes are deep bowls; not catalogued here but recognized among the other inventoried material are amphoras and (stirrup) jars.[89] The design for **D96** and **D97** has a close parallel with a krater from Dimini that displays characteristics of the LH IIIC Middle period as well as the PG period.[90]

D95, a deep bowl with monochrome interior and deep rim band on the exterior, is characterized by simple linear decoration and continues a shape from the LH IIIB period although it dates to the LH IIIC Early period. A number of krater fragments, **D96–D98**, date to LH IIIC Middle.

89. For a description and catalogue of all inventoried LH IIIC material, see Kramer-Hajos 2005, pp. 216–220, 333–337.

90. Sipsie-Eschbach 1992.

The LH IIIC material from Mitrou, although occasionally carelessly decorated, is well made. Only the large krater fragment **D98** seems to have been unsuccessful: the rim is very crooked as a result of the handle attachment. In most cases the clay is hard and well levigated. Fabrics are generally darker than in preceding periods, a brownish or pinkish buff, with dark brown paint or reddish paint on a light slip. Occasionally the dark paint is highly vitrified, as on **D96**. Somewhat similar to the design on **D101** is the decoration on a vessel from Scimatari, although that is much more sloppily executed.[91]

Late Helladic IIIC Early

D95 Bowl (C2-606.17)

P.L. 0.046, p.W. 0.053, Diam. ca. 0.140, Th. 0.002–0.004 m. Fabric: 5YR 7/6, no inclusions, Mohs 3. Rim fragment. Ext. slipped, 7.5YR 8/4. Int. painted monochrome, ext. red rim band.

Cf. French and French 1971, pl. 29:2; Mountjoy 1999, pp. 681, 685, 691, 848, figs. 260:168, 262:184–186, 266:227, 343:108.

Late Helladic IIIC Middle

D96 Krater (M-F5.17) Fig. 37

P.L. 0.050, p.W. 0.091, Th. 0.010 m. Fabric: 5YR 6/4, no inclusions, Mohs 3. Body fragment. Ext. slipped, 10YR 8/3. Int. painted monochrome, ext. red and brown design.

D97 Krater (M-C5.05 and M-F5.21) Fig. 37

P.L. 0.055, p.W. 0.162, Th. 0.010 m. Fabric: 5YR 6/3, very few very small sand inclusions, Mohs 3. Body fragment. Ext. slipped, 10YR 8/4. Int. painted monochrome, ext. red-brown design. Mended from two fragments.

D98 Krater, possibly ring based (M-G5.20) Fig. 38

P.L. 0.117, p.W. 0.072, Diam. ca. 0.200, Th. 0.006 m. Fabric: 7.5YR 7/2, very few very small–large sand, quartz inclusions, Mohs 4. Rim, body, and handle scar. Surface slipped. Int. painted monochrome black, ext. black spirals.

Late Helladic IIIC (General)

D99 Deep bowl (M-G4.06) Fig. 38

P.L. 0.091, p.W. 0.099, Diam. 0.148, Th. 0.006 m. Fabric: 7.5YR 7/3, few very small sand inclusions, Mohs 3. Parts of rim, body, and handle. Surface slipped. Int. painted monochrome, ext. painted red bands; reserved band below rim.

D100 Deep bowl (M-G5.13) Fig. 38

P.L. 0.037, p.W. 0.087, Diam. ca. 0.120, Th. 0.007 m. Fabric: 2.5YR 6/6, few small quartz, limestone inclusions, Mohs 3. Parts of rim, body, and handle. Surface slipped. Int. painted monochrome, ext. painted red bands.

D101 Krater (M-G5.18) Fig. 38

P.L. 0.062, p.W. 0.039, Diam. 0.196, Th. 0.007 m. Fabric: 2.5YR 6/6, few very small–small sand inclusions, Mohs 4. Rim fragment. Surface slipped, 2.5YR 7/3. Int. painted monochrome brown, ext. brown design.

D102 Krater (M-C5.02) Fig. 38

P.L. 0.062, p.W. 0.043, Diam. ca. 0.260, Th. 0.008 m. Fabric: 2.5YR 6/6,

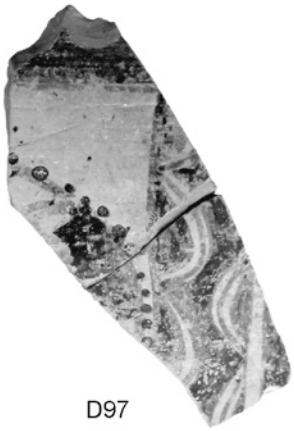


Figure 37. LH IIIC Middle krater fragments. Scale ca. 1:3. Photo M. Kramer-Hajos

91. Mountjoy 1983, p. 66, no. 68, fig. 25.

Figure 38. LH IIIC pottery. Scale 1:2.
Drawing M.-J. Schumacher

no inclusions, Mohs 3. Rim fragment. Ext. slipped, 2.5Y 8/2. Painted brown "concentric arcs"?

For decoration, cf. Mountjoy 1986, p. 140, fig. 170.

D103 Krater (M-H/I2.04) Fig. 38

P.L. 0.053, p.W. 0.050, Th. 0.011 m. Fabric: 5YR 7/4, few very small limestone inclusions, Mohs 5. Rim fragment with handle scar. Ext. and int. slipped, 10YR 8/3. Ext. and int. painted red rim band; ext. red triglyph.

Late Helladic Small Finds

The Late Helladic group of small finds comprises two lead fishing weights, five steatite spindle whorls, three steatite beads or counters, two terracotta spindle whorls, a terracotta bead, and fragments of five anthropomorphic, nine zoomorphic, and two chariot-group figurines, as well as a fragment of a large zoomorphic figure.

Metal

Evidence of fishing at Mitrou is provided by two folded lead fishing weights. **D104** is almost square, while **D105** is thin and elongated. Both types of fishing weights are very similar to those from a fisherman's tomb in Perati, Attica (LH IIIC–12th century B.C.).[92] Their dimensions are very similar, although the weights of the Perati examples are not given. Iakovidis records that local fishermen suggested that the weights were from a *manomenon,* a trammel net, consisting of three parallel net walls joined to the same lines with the middle wall having a much finer mesh,[93] but Powell says such weights could be used either in a trammel net or in a cast net.[94] The weights from Mitrou weigh 24 g (**D104**) and 14 g (**D105**), respectively. Powell reports that the weights currently in use are about 25 g for a *pezovolo* (circular cast net), and between 34 and 45 g for *apladia* (single-walled net set in a location and later retrieved) and *manomena.*[95]

Folded lead weights are exclusive to the LBA when metallurgy in general, and the use of lead specifically, became more common and accessible to ordinary people.[96] The advantage of lead weights is that they are less bulky than stone or terracotta ones and can perform the same task as stone weights with only a fifth of the number of weights.[97] As they are more expensive, however, they may have been used only in offshore fishing away from rocky areas. Lead would probably have been imported from Laurion in Attica or Siphnos. "Square" folded weights of similar dimensions have also been found in a LH IIIA/B grave on the island of Astypalaia.[98]

Reference has already been made to the analysis of the Mycenaean skeletons from the nearby Ayia Triada tombs believed to be associated with Mitrou. This analysis revealed that one of the factors contributing to the greater age at death of the interred in relation to other Lokrian sites was better nutrition, and fish was an important part of that enhanced diet.[99]

D104 Lead fishing weight (M-F3.x01) Fig. 39

P.L. 0.023, p.W. 0.019, Th. 0.009 m; Wt. 0.024 kg. Complete. Rectangle of lead folded over on itself to form an approximate square.

92. Iakovidis 1969–1970, vol. 2, p. 355; vol. 3, pl. 135:b; Demakopoulou 1988, pp. 244–245.
93. Iakovidis 1969–1970, vol. 2, p. 355.
94. Powell 1996, p. 118.
95. Powell 1996, p. 119. Cf. Walberg 1998, p. 273, no. M42, lead folded into square.
96. Powell 1996, p. 118.
97. Powell 1996, p. 107.
98. Doumas 1983, p. 372, pl. 272. Cf. Papadimitriou 1956, p. 86, pl. 24.
99. Iezzi 2005, p. 114.

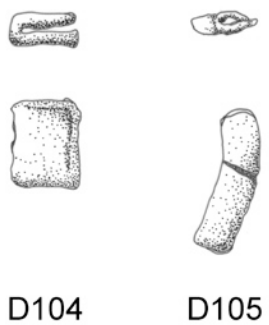


Figure 39. LH lead fishing weights.
Scale 1:2. Drawing Y. Furuya

D105 Lead fishing weight (M-G2.x01) Fig. 39

P.L. 0.037, p.W. 0.01, Th. 0.006 m; Wt. 0.014 kg. Complete. Rectangle of lead folded over on itself to form an elongated rectangle.

Stone

The stone spindle whorls, counters, and beads make an interesting collection of eight pieces: four of black steatite, four of green. An unworked example of macroscopically identical green steatite material from Proskynas is on display in the Atalanti museum. This material is not available locally and may have been imported from as far away as Kythera or Crete. There are five straight-sided, truncated, flat-topped cones, or at least they appear as such in their preserved condition. Very similar stone spindle whorls were recovered at another Lokrian site, Megaplatanos.[100] The function of these so-called spindle whorls has long been a matter of dispute. Whether they are dress weights, true spindle whorls, buttons, or ornaments is still a matter of debate.[101] Their presence on the chest of a corpse in a grave at Megaplatanos lends credence to their identification as ornaments of some kind.[102] Two of the Mitrou spindle whorls (one conical, **D111**, and one cylindrical, **D112**) do not have piercings, so they may have been counters or gaming pieces, or unfinished beads. There is one biconical bead of smooth black steatite (**D113**) but the cones are asymmetrical.

D106 Spindle whorl (M-H4.x02) Fig. 40

P.H. 0.032, p.Diam. 0.041, p.Diam. hole 0.007 m; Wt. 0.066 kg. Steatite, greenish black. Complete, but base chipped. Straight-sided, truncated conical.

D107 Spindle whorl (C2-609.x18)

P.H. 0.021, p.Diam. 0.029, p.Diam. hole 0.006 m; Wt. 0.025 kg. Steatite, greenish black. Complete. Straight-sided, truncated conical.

D108 Spindle whorl (M-M6.x03) Fig. 40

P.H. 0.016, p.Diam. 0.023, p.Diam. hole 0.005 m; Wt. 0.01 kg. Steatite, greenish black. Complete, but base chipped. Straight-sided, truncated conical.

D109 Spindle whorl (C2-600.x01) Fig. 40

P.H. 0.009, p.Diam. 0.028, p.Diam. hole 0.006 m; Wt. 0.006 kg. Steatite, green. Complete, but top chipped. Straight-sided, truncated, short conical.

D110 Spindle whorl (M-L7.x02) Fig. 40

P.H. 0.009, p.Diam. 0.022, p.Diam. hole 0.004 m; Wt. 0.006 kg. Steatite, green. Incomplete; slanting break across top of cone. Straight-sided, probably truncated conical.

D111 Counter/unfinished bead (M-N8.x01) Fig. 40

P.H. 0.01, p.Diam. 0.016 m; Wt. 0.004 kg. Steatite, greenish black. Complete. Straight-sided, truncated conical with no perforation.

D112 Counter/unfinished bead (C2–608.x07) Fig. 40

P.H. 0.017, p.Diam. 0.013 m; Wt. 0.005 kg. Steatite, green. Complete. Roughly cylindrical with no perforation.

100. Dakoronia et al., n.d., pp. 39–40, fig. 18.
101. Iakovidis 1977.
102. Dakoronia et al., n.d., p. 40.

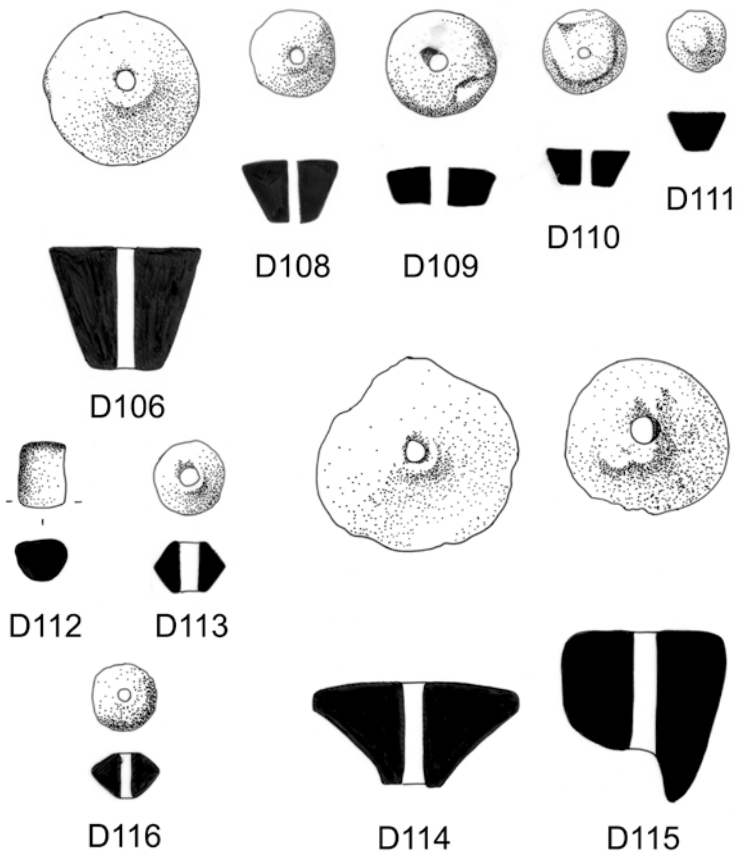


Figure 40. LH stone and terracotta spindle whorls and beads. Scale 1:2. Drawing Y. Furuya

D113 Bead, biconical (M-H5.x04) Fig. 40

P.H. 0.013, p.Diam. 0.019, p.Diam. hole 0.005 m; Wt. 0.006 kg. Steatite, black. Complete. Biconical but asymmetrical.

Terracotta

Two LH terracotta spindle whorls and one bead were found. **D114**, though biconical, is of significantly different form from the steatite MH biconical whorls described above: in this case, one cone is little more than a convex surface and there is no incised decoration, and the other cone has slightly concave sides. **D115**, although incomplete, is the largest and heaviest of the terracotta whorls recovered from Mitrou.

Carington Smith notes that heavier whorls became common after the Neolithic period, and that this change may reflect a switch from wool to flax spinning, which requires a heavier whorl.[103] **D116** is probably too small and light to have been a spindle whorl. Carington Smith observes that a very light whorl can keep a spindle spinning if its diameter is wide enough to compensate for the lack of weight. She reports that experiments suggest that whorl diameters should fall between 2 and 8 cm, and optimally between 3 and 7 cm. Their weight can range between 5 and 90 g, but they function best if they weigh between 10 and 50 g. Furthermore, Carington Smith doubts that a whorl with a hole diameter of less than 4 mm could accommodate the tip of a spindle.[104] Thus, **D116** is marginal on weight, fails to meet minimum diameter needs, and has too small a perforation to be an effective or even functioning spindle whorl. It is notable, too, that its asymmetrical biconical shape recalls that of the black steatite bead **D113**.

103. Carington Smith 2000, p. 217.
104. Carington Smith 2000, p. 208.

D114 Spindle whorl (M-K8.x02) Fig. 40

P.H. 0.027, p.Diam. 0.053, p.Diam. hole 0.007 m; Wt. 0.046 kg. Fabric: 7.5YR 7/4, granule-sized gravel inclusions. Complete. Biconical, with concave-sided lower cone and very shallow upper cone. Traces of brownish slip.

D115 Spindle whorl (C2-605.x10) Fig. 40

P.H. 0.044, p.Diam. 0.042, p.Diam. hole 0.007 m; Wt. 0.065 kg. Fabric: 10R 4/1, granule-sized gravel inclusions. Incomplete. Standard conical with slightly convex sides. Incompletely and unevenly fired. Crumbling and battered.

D116 Bead, biconical (M-I3.x02) Fig. 40

P.H. 0.013, p.Diam. 0.018, p.Diam. hole 0.003 m; Wt. 0.005 kg. Fabric: 5YR 6/1, fine sand inclusions. Complete but worn about the perforation on both sides. Biconical but asymmetrical. A yellowish brown slip (10YR 5/4) preserved over most of the surface.

Seventeen terracotta figurine fragments have been recovered from Mitrou. Five of these are anthropomorphic. The one Phi head and torso (**D117**) has applied eyes, solid painting of the top and back of the head, and numerous wavy lines decorating the body that mark this figurine as a Phi A in French's classification system and date it to LH IIIA2–early IIIB.[105] **D118** is a stem, probably from a Phi B or Psi basic figurine (LH IIIA–B). The head with polos (**D119**) has a cross painted on the top of the polos with a dot in each quadrant; the cross decoration recalls LH IIIB examples from Mycenae cited by French.[106] There are two Psi torso fragments. **D120** has no breasts. The torso of **D121** with applied pellet breasts, a heavy edge-line to the upper body, and an elaborate red painted decoration on the back identify it as a late Psi A type and date it to late LH IIIB.[107] There are no identifiable Tau figurine fragments.

It is hard to determine the species represented by the nine Mycenaean zoomorphic figurines in the Mitrou assemblage, but most are probably bovid. We follow French's classification system, which distinguishes animal figurines by decoration: Wavy, Linear, Spine, and Ladder.[108] There are no identifiable examples of the Spine or Ladder types. There is one example of the earliest and most naturalistic type of zoomorphic figurine: **D122** is Wavy type 1 (LH IIIA), with irregular wavy lines swirling around the horns, legs, body, and head. The more schematic, parallel wavy lines on the body of **D123** marks it as an example of Wavy type 2 (LH IIIA–B). The multiple straight lines running the length of the body of **D124** identify it as Linear type 1 (LH IIIA–B). There are two identifiable examples of Linear type 2 animal figurines that span LH IIIA–B. **D125** does not have the common neckband, and an unusual feature is the broad band that runs down the throat and along the belly. **D126** is a more typical example of Linear type 2, with three parallel lines extending down the back from a neckband. The surface of **D127** is so battered that no surface decoration is discernible. The remaining zoomorphic fragments are **D128**, a leg, and **D129** and **D130** that could be either legs or horns.

Two fragments of chariot groups were recovered from Mitrou. In typical LBA chariot groups, the horses are modeled either in the round or as flattened strips.[109] Often the legs of each horse are represented schematically with just one "leg" to represent the forequarters or hindquarters of each animal. The bodies of the horses are then joined at the rear by the chariot,

105. French 1971, p. 116.
106. French 1971, p. 146.
107. French 1971, pp. 133–134.
108. French 1971, pp. 151–158.
109. Tamvaki 1973, p. 231.

and at the front by a yoke. **D131**, however, has the bodies of the two horses formed from one piece of clay; the heads, forelegs, and rear of the horses along with the actual chariot are broken off. **D132** must have belonged to a more typical chariot group, with each horse separately modeled in the round; only the hindquarters and tail of one of the horses was recovered. With only one "leg" to represent the hindquarters, it cannot have stood alone.

The final item in this section (**D133**) is a fragment not of a figurine but of a large figure. While it is possible that the bovid ear may come from a rhyton, it seems more likely to be part of a large bull figure. Large bull figures, or portions thereof, have been found at Phylakopi, the Citadel House area of Mycenae, Amyklaion, and, most recently, the Mycenaean settlement of Dimini.[110] French observes that large or wheelmade animal figures have generally been associated with a votive deposit. The terracotta hoof of a bovine figure that must have been at least 50 cm tall was found in the Mycenaean levels of the peak sanctuary on the summit of Kynortion in Epidauria.[111] More recently, excavations at the Mycenaean settlement of Dimini recovered a large terracotta bull figure in what appears to be a household shrine.[112]

D117 Head and torso; Phi A (C2-609.x01) Fig. 41

P.H. 0.056, p.W. 0.029, Th. 0.019 m; Wt. 0.013 kg. Fabric: light red, 2.5YR 6/6, small calcite inclusions, Mohs 3. Surface: 7.5YR7/4. Painted decoration: 5YR 2.5/2. Eyes are painted disks of clay; breasts are prominent. Top and back of head are solidly painted; stripe down nose; slim, wavy lines on front and back of torso.

D118 Stem; Phi B/Psi basic? (M-H5.x03) Fig. 41

P.H. 0.044, p.W. 0.023, Th. 0.022 m; Wt. 0.013 kg. Fabric: 5YR 6/6, Mohs 3. No core. Surface: 5YR 7/4. Painted decoration: 5YR 3/2–5YR 6/8. Columnar stem of Phi B or Psi basic figurine. The waistband and vertical stripes running down the stem are brown, while the diagonal (wavy?) stripes on the surviving part of the torso are red.

D119 Head with polos; Psi? (C2-606.x09) Fig. 41

P.H. 0.033, p.W. 0.022, Th. 0.018 m; Wt. 0.007 kg. Fabric: 2.5YR 5/6, Mohs 3. No core. Surface: 5YR 7/4. Painted decoration: 2.5YR 2.5/2. Pinched face with painted eyes. Top of polos has painted cross with ovoid dot in each quadrant; lines from cross on hat continue down over nose, sides of face, and back of neck; neckband with pendant dots.

D120 Torso; Psi (C2-609.x02) Fig. 41

P.H. 0.0475, p.W. 0.0395, Th. 0.0115 m; Wt. 0.011 kg. Fabric: 5YR 7/4, muscovite inclusions, Mohs 3. No core. Surface: 7.5YR 7/6. Painted decoration: 2.5YR 5/8. Broad vertical stripes on front of torso and upraised arms; horizontal belt; top of narrower vertical stripes visible on surviving back surface.

D121 Torso; Late Psi A (C2-609.x15) Fig. 41

P.H. 0.035, p.W. 0.043, Th. 0.013 m; Wt. 0.014 kg. Fabric: 7.5YR 7/6, Mohs 3. No core. Surface: 5YR 7/6. Painted decoration: 2.5YR 5/8. Applied pellet breasts, a heavy edge-line to the upper body, and an elaborate red painted decoration on the back, typical of Late Psi A. Series of connected oval shapes run from neck to waist and from waist toward each upraised arm; dot at the center of each oval; cluster of dots on each shoulder blade. Decoration on front badly worn but traces of red paint around neck, waist, and abdomen.

110. Phylakopi: Renfrew 1985, pp. 236–252, pls. 39–43. Mycenae, Amyklaion: Nicholls 1970. Dimini: Y. Pantou (pers. comm.).

111. Lambrinoudakis 1981, p. 59, fig. 8. Note that the ear and cheek of a life-size bronze bull head was also recovered from this level: p. 62, fig. 9. Lambrinoudakis believes that this bronze artifact is part of a rhyton.

112. Y. Pantou (pers. comm.).

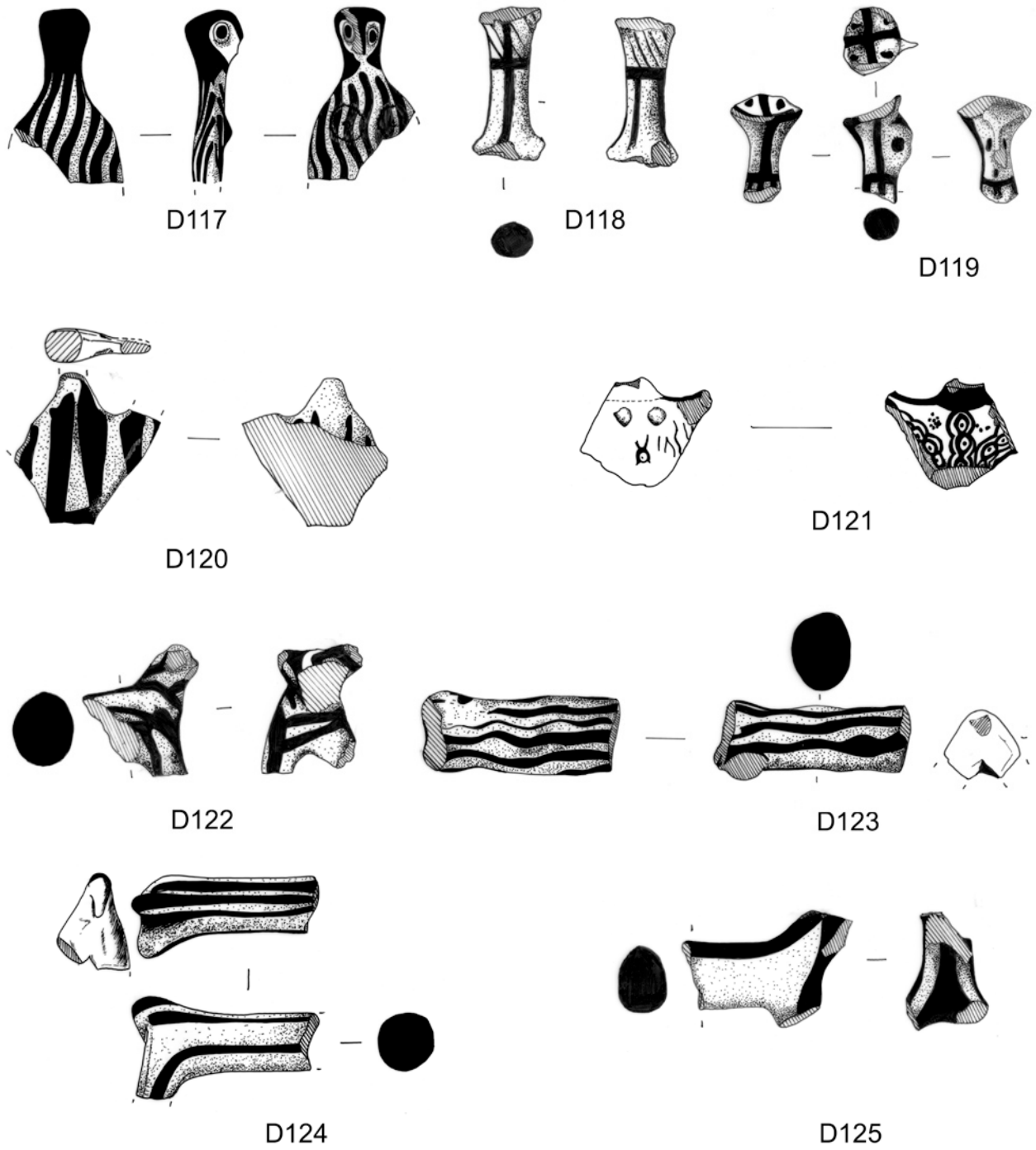


Figure 41. LH figurines: gynecomorphic figurines D117–D121; animal figurines D122–D125.
Scale 1:2. Drawing Y. Furuya

D122 Forequarters and head (M-E5.x02) Fig. 41

P.H. 0.039, p.W. 0.04, Th. 0.028 m; Wt. 0.027 kg. Fabric: 10YR 8/3, Mohs 4. No core. Surface: 10YR 8/4. Painted decoration: 10YR 3/2. Irregular wavy lines around horns, legs, body, and head. Wavy type 1.

D123 Body and hindquarters (C2-600.x02) Fig. 41

P.H. 0.023, p.W. 0.061, Th. 0.024 m; Wt. 0.034 kg. Fabric: 7.5YR 7/6, Mohs 2.5. Core: 10YR 6/4. Surface: 10YR 7/4. Painted decoration: 10YR 2/2. Wavy type 2.

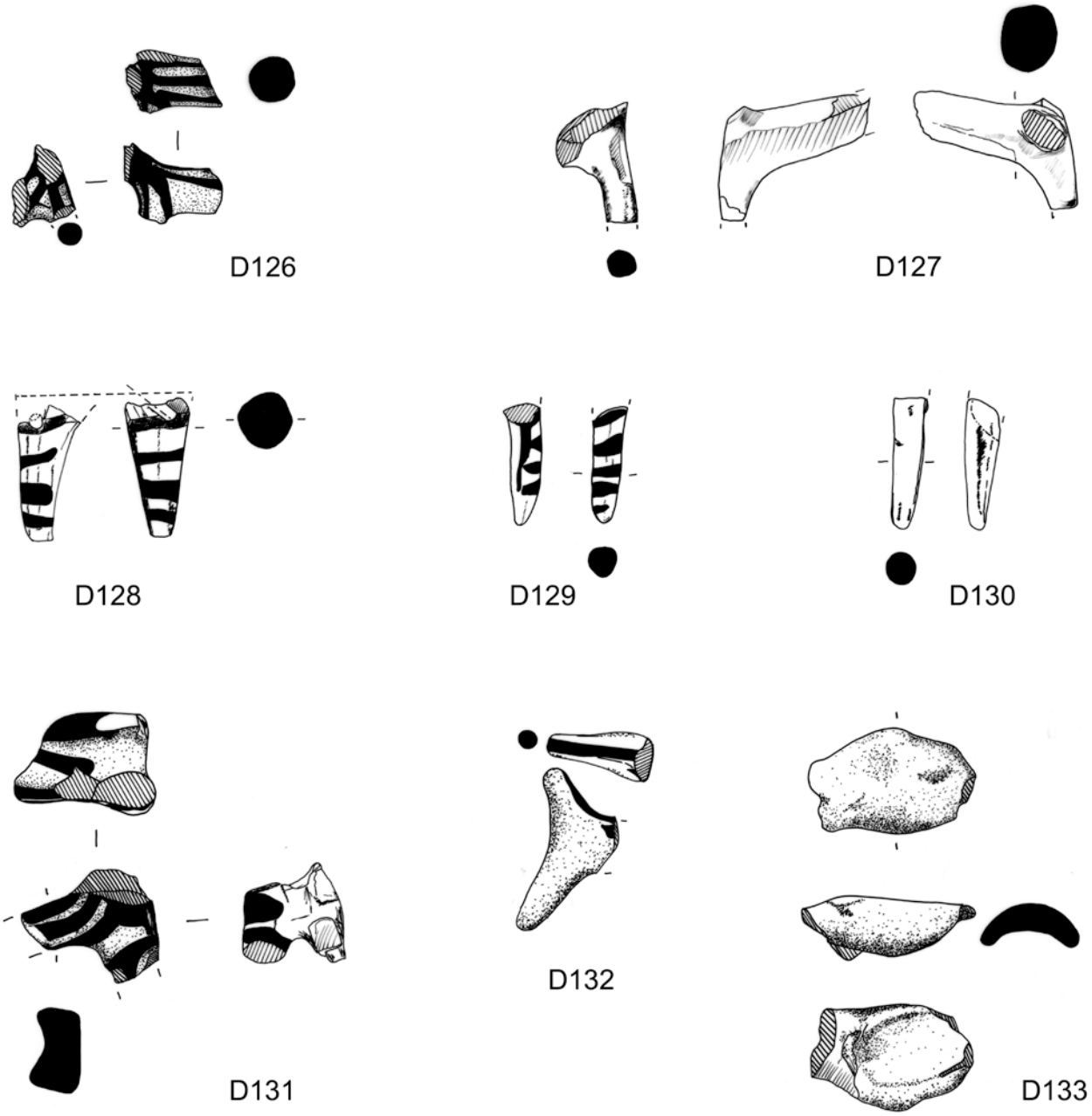


Figure 42. LH animal figurines D126–D130; chariot group figurine fragments D131, D132; ear of large animal figure D133. Scale 1:2. Drawing Y. Furuya

D124 Body and hindquarters (C2-609.x04) Fig. 41

P.H. 0.031, p.W. 0.056, Th. 0.018 m; Wt. 0.028 kg. Fabric: 2.5YR 5/2, Mohs 4. No core. Surface: 5YR 7/4. Painted decoration: 2.5YR 5/8. Despite weathering, traces of multiple straight red lines on flanks and back. Short tail rises from back and folds back on itself, ending well above the point where the rear legs separate. Linear type 1?

Cf. Dakoronia et al., n.d., p. 39, fig. 17, from Tragana chamber tomb.

D125 Forequarters (M-C5.x01) Fig. 41

P.H. 0.035, p.W. 0.052, Th. 0.025 m; Wt. 0.03 kg. Fabric: 5YR 7/6, Mohs 4. No core. Surface: 5YR 6/6. Painted decoration: 10R 4/8. No neck band visible,

but single broad band runs along back and down the outside of each leg; another band runs down the throat and (unusually) continues the length of the belly with possible offshoots down the inside of the front legs. Linear type 2.

D126 Forequarters (C2-609.x03) Fig. 42

P.H. 0.026, p.W. 0.029, Th. 0.018 m; Wt. 0.006 kg. Fabric: 7.5YR 6/6, Mohs 4. No core. Surface: 10YR 7/6. Painted decoration: 10YR 3/2. Three straight lines run from neck band down length of body and three lines run down each leg. Linear type 2.

D127 Hindquarters (M-C4.x06) Fig. 42

P.H. 0.032, p.W. 0.052, Th. 0.032 m; Wt. 0.025 kg. Fabric: 5YR 6/4, muscovite inclusions, Mohs 4. No core. Surface: 5YR 7/6. Painted decoration: 10R 4/8. Severely battered surface covered with white accretion. Just one flake of decorative paint remains. Tail stump indicates that tail arched over back, presumably to connect with back of head.

D128 Leg (C2-609.x16) Fig. 42

P.H. 0.04, p.W. 0.02, Th. 0.018 m; Wt. 0.009 kg. Fabric: 7.5YR 7/6, Mohs 2.5. Core: 2.5Y 7/3. Surface: 2.5Y 8/4. Painted decoration: 5YR 4/4. Leg with four parallel horizontal lines, not meeting at back(?) of leg; faint traces of paint may indicate that a vertical line ran down back(?) of leg. Bottom of leg has flat resting surface with slightly projecting toe.

D129 Leg/horn (M-D5.x02) Fig. 42

P.H. 0.036, p.W. 0.013, Th. 0.009 m; Wt. 0.006 kg. Fabric: 10YR8/3, Mohs 4. Core: 10YR 7/2. Surface: 10YR 8/4. Painted decoration: 10YR 2/2. Horizontal bands bordered on both sides with heavy vertical lines. Linear type 1?

D130 Leg/horn (M-E4.x03) Fig. 42

P.H. 0.04, P.W. 0.013, Th. 0.011 m; Wt. 0.006 kg. Fabric: 5YR 7/6, ferrous oxide inclusions, Mohs 4. Core: 10YR 7/3. Surface: 5YR 7/6. Painted decoration: 10R 5/8. Traces of two straight lines running length of leg/horn.

D131 Forequarters of two horses (C2-606.x10) Fig. 42

P.H. 0.031, p.W. 0.041, Th. 0.029 m; Wt. 0.022 kg. Fabric: 7.5YR 7/4, Mohs 3.5. Core: 10YR 6/2. Surface: 10YR 7/4. Painted decoration: 10YR 2/2. Both horses formed from one piece of clay; their four front legs are represented by just two columns of clay. Broad lines run down the necks, around front of the chests, and along the sides and backs.

D132 Hindquarters of single horse (M-K8.x01) Fig. 42

P.H. 0.05, p.W. 0.028, Th. 0.016 m; Wt. 0.011 kg. Fabric: 2.5YR 6/8, Mohs 4. No core. Surface: 7.5YR 7/6. Painted decoration: 7.5YR 3/2. Straight line runs along back and upraised tail. Tail presumably connected with a chariot to keep figurine from falling over.

D133 Ear of large figure? (M-I5.x02) Fig. 42

P.H. 0.049, p.W. 0.031, Th. 0.018 m; Wt. 0.021 kg. Fabric: 5YR 7/6, Mohs 4. No core. Surface: 2.5YR 4/8. No painted decoration. Ear of large bull figure or bull's head rhyton; less likely wing of avian figurine. Irregular shape with surface covered in red slip.

Bronze Age Small Finds

Small finds of interest that could not be dated to a particular phase of the Bronze Age were recorded as part of a general Bronze Age collection. The representative sample presented below includes the leg of a marble vessel, fragments of two stone bowls (probably mortars), fragments of two saddle querns, six pounding stones, one stone pestle, a whetstone, and 55 pieces of chipped stone.

Ground Stone

Three fragments of stone vessels have not been dated to a particular phase of the Bronze Age. **E1** appears to be a polypod vase leg of white marble. The others appear to have the form of three-legged bowls. They recall the form of the Mycenaean tripod mortar, described by Runnels as having "a deep, bowl-shaped body, three short, rectangular legs, and a spout at the rim."[113] This type is common in Cyprus, Crete, the Cyclades, and on the mainland in the Middle and Late Bronze Age, and is found in both domestic and ritual contexts. Runnels suggests that it may have been used for grinding spices, like those employed in scenting olive oil. The two examples recovered in the southern Argolid survey are made of Saronic Gulf-type andesite, and Runnels suggests that there may have been a production site for such mortars on one of the islands there.

Each of the two possible mortars from Mitrou preserves a leg and part of an open, rounded basin but neither confirms the presence of a spout. The smooth interior on **E2** indicates that it may have been used as a mortar, but its material and shape recall a three-legged stone vessel in the Nauplion archaeological museum identified as a washbasin. Furthermore, the interior surface is uniformly smooth, and there is no evidence of greater wear at the bottom of the bowl. **E3** seems like a closer match for the Mycenaean tripod mortar because the leg has a rectangular cross-section; the interior of the bowl, however, is as rough as the exterior, so it may not have been used much.

E1 Leg of marble vessel (C2-609.x07) Fig. 43

P.H. 0.074, p.W. 0.044, Th. 0.039 m; Wt. 0.176 kg. Smoothly tapering cylindrical leg of polypod vessel of white marble. Bottom edge flat, partially missing.

E2 Leg and bowl fragment (M-F5.x01) Fig. 44

P.H. leg 0.145, p.W. leg 0.088, Th. leg 0.075, max. Th. bowl 0.037, min. Th. bowl 0.019 m; Wt. 1.92 kg. Gray porous stone with flecks of muscovite. Tripod mortar or basin. Leg has semicircular cross-section (flat side facing out). Porous rough surface except for interior of bowl, which has been rubbed smooth.

E3 Leg and bowl fragment (C2-607.x05) Fig. 44

P.H. leg 0.137, p.W. leg 0.082, Th. leg 0.065, max. Th. bowl 0.079, min. Th. bowl rim 0.065, est. Diam. 0.26 m; Wt. 2.75 kg. Andesite. Tripod mortar? Rectilinear leg stub and bowl with wide flat rim; all surfaces rough.

Figure 43. Bronze Age marble vessel leg. Scale ca. 1:2. Photo K. O'Neill

The shores of Mitrou are strewn with fragments of saddle querns of two primary materials: conglomerate and andesite. The conglomerates range in color from greenish to weak red, while the andesites range from the pale red and bluish gray associated with the andesites from the Saronic Gulf islands

113. Runnels 1988, p. 270; see also Kardulias and Runnels 1995, pp. 134–135, fig. 114.

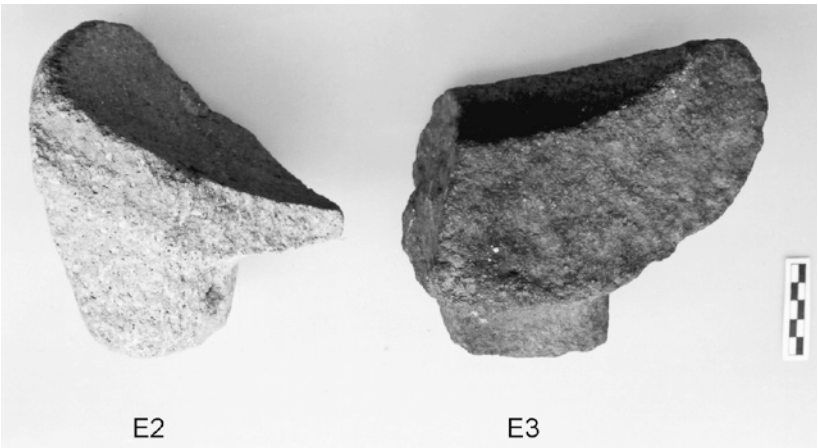


Figure 44. Bronze Age stone vessel fragments. Photo K. O'Neill

to the dark gray and black associated with the andesites from Nisyros and Santorini in the south Aegean volcanic arc.[114] Due to their number and weight, only a selection of these quern fragments were collected, and we include just two representative examples in this catalogue. Both are laterally flat but longitudinally concave from regular use. None of the saddle querns we encountered preserves its full length but many preserve the entire width. The widths of **E4** (0.18 m) and **E5** (0.15 m) fall within the typical range for Bronze Age querns recovered by the southern Argolid survey project, and from excavated Bronze Age sites in the Argolid.[115] As there is no discernible change throughout the Bronze Age in size, form, or material of saddle querns,[116] no close dating is possible for **E4** or **E5**.

E4 Andesite saddle quern (C2-606.x01)

P.L. 0.172, p.W. 0.181, Th. 0.083 m; Wt. 3.15 kg. Originally convex exterior has been shaped into flat resting surface. Outer sides have also been worked to create flat surfaces angling up (45°–75°) from base. Laterally flat, longitudinally concave working surface.

E5 Conglomerate saddle quern (M-L7.x03)

P.L. 0.193, p.W. 0.152, Th. 0.057 m; Wt. 2.375 kg. Convex exterior has not been worked to create flat resting surface. Laterally flat, longitudinally concave working surface.

Pounding stones are notoriously difficult to date closely.[117] Examples have been recovered from secure EBA strata at Servia, from LBA levels at Mycenae, from LBA and EIA levels at Assiros Toumba in Macedonia, and from Bronze Age and EIA levels at Kastanas.[118] They are often but not always found with querns and mortars.[119] Of the six examples we include here, some may even date from the EIA rather than the Bronze Age. Five are made of diabase and one (**E11**) of a chocolate-colored chert.[120]

E6 Diabase pounder (M-H5.x02)

P.H. 0.055, p.W. 0.051, Th. 0.048 m; Wt. 0.265 kg. Between spherical and cube shaped, with six rounded facets; possibly unused.

E7 Diabase pounder (C2-607.x03)

P.H. 0.057, p.W. 0.055, Th. 0.053 m; Wt. 0.301 kg. Almost perfectly spherical; no obvious evidence of use for pounding or grinding.

114. Kardulias and Runnels 1995, p. 111.
115. Kardulias and Runnels 1995, pp. 113–115, table 5:23.
116. Kardulias and Runnels 1995, p. 116.
117. Carter and Ydo 1996, p. 175.
118. Ridley, Wardle, and Mould 2000, p. 157.
119. Renfrew 1985, p. 356; Ridley, Wardle, and Mould 2000, p. 157.
120. Chert is the material used for pounders recovered during surveys of the Almiros-Sourpi plain in Thessaly and of the southern coast of Euboia (at Ayia Pelayia), according to L. Karimali (pers. comm.).

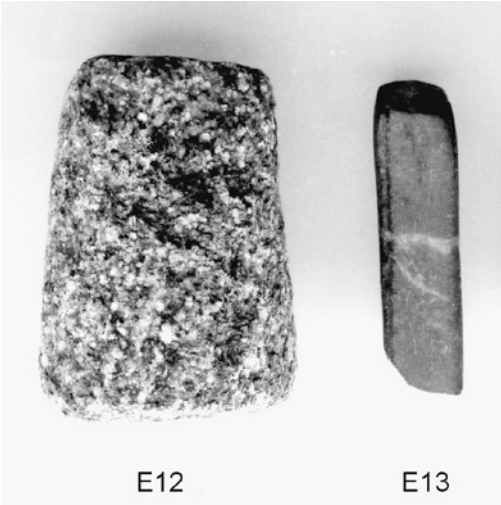


Figure 45. Bronze Age pestle and whetstone. Scale ca. 2:5. Photo K. O'Neill

E8 Diabase pounder (C2-605.x08)

P.H. 0.066, p.W. 0.061, Th. 0.055 m; Wt. 0.453 kg. Main pounding surface was later used for rubbing: sharp breaks and points have been worn down. Hard plasterlike concretion covering over half of second pounding surface.

E9 Diabase pounder (M-F4.x02)

P.H. 0.072, p.W. 0.059, Th. 0.061 m; Wt. 0.595 kg. Flattened sphere with two flattened areas: one chipped from pounding, one smoothed from rubbing.

E10 Diabase pounder (M-J8.x01)

P.H. 0.071, p.W. 0.062, Th. 0.064 m; Wt. 0.532 kg. Roughly spherical with one pounding surface and two gouges in that surface (pounding postdepositional?). Very hard white plasterlike substance adheres to a sixth of surface.

E11 Chert pounder (M-L8.x01)

P.H. 0.073, p.W. 0.067, Th. 0.042 m; Wt. 0.43 kg. Flattened sphere with pitting and crushing on both flat surfaces; burnt.

Only one pestle was recovered during the survey. **E12** exhibits some pitting and evidence of grinding on its larger circular pestle end. A whetstone rounds out the collection of stone tools. Whetstones serve to sharpen the blades of metal tools and are manufactured from fine-grained igneous stone.[121] **E13** has a rectangular cross-section.

E12 Pestle (M-J8.x02) Fig. 45

P.H. 0.112, p.W. 0.08, Th. 0.07 m; Wt. 1.135 kg. Green and white granitelike stone with pitted surface. Complete. Truncated cone with steeply sloping straight sides; top is roughly ovoid, base is roughly circular.

E13 Whetstone (M-C4.x03) Fig. 45

P.L. 0.099, p.W. 0.039, Th. 0.026 m; Wt. 0.023 kg. Fine-grained igneous stone, purple with green veins. Incomplete: one end broken. The two long narrow sides and a raised point in the middle of the preserved end have been polished smooth by rubbing.

121. Ridley, Wardle, and Mould 2000, p. 151.

Chipped Stone

Throughout the Bronze Age, a largely continuous tradition of lithic technology existed, so there are very few means to distinguish between the technology and typology of the EH, MH, and LH periods.[122] All of the chipped stone pieces from Mitrou have been assigned to the general Bronze Age group because, without any stratigraphic reference, it would be speculative to distribute them among the different phases of the Bronze Age, and arbitrary to assign them to a particular phase. Only two or three pieces from the assemblage might possibly be assigned to a particular period. The presence of cores and chipped stone on the surface of Mitrou, where there is comparatively little material earlier than LH pottery, suggests that the chipped stone industry continued throughout the Bronze Age and, perhaps, into the Early Iron Age.

Given restrictions of space, we provide catalogue entries below for a representative sample of the lithics collected, including two sickle elements (**E62**, **E63**) that are quite probably of MH type. Since excavation of Mitrou has now begun, it should be possible eventually to compare this assemblage with artifacts from dated and stratified contexts. Not all pieces of chipped stone recovered during the grab sample phase of the survey were kept. Only pieces deemed to be diagnostic (pieces recognized in the field as cores, tools, etc.) were retained. Thus, less distinctive artifacts, such as smaller blade or flake fragments, or some cortical pieces, were never recorded as part of the assemblage. For that reason, tables showing percentages of material in the collection would not be a reliable indicator of preference or availability and would probably mischaracterize the assemblage. We have therefore eschewed such an approach and included only our own necessarily subjective selection, based on what we deemed representative of the range and quality of the Mitrou chipped stone assemblage.

Materials. Obsidian at Mitrou is glossy black to striated gray black. Like the obsidian at Lerna, Lithares, Manika, Pefkakia, and Tsoungiza, it is visually consistent with obsidian from Melos, but no provenance studies have been performed.[123] Of the 55 chipped stone pieces in the sample, 41 are obsidian, and only 14 are chert. The chert varies widely in texture and color, from chocolate to gray to green. In this regard, the Mitrou chert assemblage more closely reflects the variety found at Lerna, Lithares, and Tsoungiza. At Manika, by contrast, a green chert is the only chipped stone material other than obsidian.[124]

Two chert flakes, **E41** and **E42**, exhibit the visual characteristics of the chocolate chert from the Pindus region, popular at Pefkakia.[125] There are several pieces of chert dappled with brown and green. Unworked pieces of macroscopically identical chert can be found near the village of Kyparissi, just a few kilometers from Mitrou. No local source was positively identified for any of the other chert recovered during the East Lokris survey. Almost all the chert beds identified during the survey or in subsequent years in the hills east of Mitrou are of such poor quality that they could not be worked. The value of chipped stone provenance studies to understanding interregional and local economic consumption has been amply demonstrated by Blitzer, Kardulias, Parkinson, and Newhard.[126] It is hoped

122. Runnels 1985, p. 390; Stocker 2003, p. 356.

123. Runnels 1985, p. 358; Karabatsoli 1997, pp. 74, 90, 102, 117.

124. Runnels 1985, pp. 359–361; Karabatsoli 1997, pp. 89, 102, 159.

125. Karabatsoli 1997, p. 276.

126. Blitzer 1998; Kardulias 1999; Parkinson 1999; Newhard 2003.

that provenance studies on all the chipped stone can be accomplished in the course of the excavations.

The reduction sequence. The presence of cortical flakes (primary, secondary, and tertiary) in the obsidian assemblage indicates that unprepared nodules were imported to Mitrou, and the entire range of the obsidian reduction sequence took place locally (Fig. 46).[127] Of course, the presence of cortical material does not preclude the possibility that decorticated cores were also imported. The evidence from the Lakonia survey indicates that only roughly prepared nodules were imported from Melos.[128] At Tsoungiza, too, the virtual absence of cortical flakes from an otherwise complete *chaîne opératoire* indicates that cores were at least partially prepared before importation.[129] Mitrou, however, follows the pattern of other Bronze Age sites in central Greece (Manika, Pefkakia, and Lithares) where decortication took place on site.

In the chert assemblage, cortex is found on one retouched flake (**E42**), two flake core fragments (**E16**, **E17**), and one sickle element (**E62**). There are no unretouched chert cortical flakes, which may indicate that only finished chert tools or prepared cores were imported to Mitrou. The evidence from the southern Argolid, Messenia, and other sites in central Greece suggests that some finished chert products were imported while others were fashioned locally.[130] Since the overall number of chert pieces in this Mitrou assemblage is low, however, we must be cautious about drawing firm conclusions.

Complete examples and fragments of cores indicate that several different methods were employed in the reduction sequence. There are seven blade cores, four flake cores, and one core (**E22**) that was initially reduced for blades but, after a failed attempt at core rejuvenation, was reduced for flakes. The presence of both blade and flake industries at Mitrou contrasts with monolithic blade production at Lithares and Tsoungiza, where flakes occurred only as by-products of blade-making, but parallels the twin industries found at Pefkakia.[131] The blade industry is often accompanied by a flake industry at sites in Messenia. It may be that some centers deliberately fashioned flakes too, because their production demands less skill.[132]

The Mitrou blade cores come in tabular, conical, and miniature versions. While some scholars have attributed conical cores to the Neolithic and tabular to the Bronze Age, it is more likely that the distinction indicates different methods of blade production or, perhaps, different stages in the reduction sequence, with tabular cores eventually becoming conical as reduction progresses.[133] The complete miniblade core (**E23**) measures only 0.014 m in length. There are four complete conical blade cores, and they range in length from 0.053 to 0.064 m. The mean length is 0.057 m. The only tabular core (**E18**) is somewhat smaller, with a length of 0.029 m. The predominance of conical cores at Mitrou stands in marked contrast to the all but exclusive use of tabular cores at Lerna and Tsoungiza, and a heavy preference for tabular cores at Lithares and Manika.[134] Faceted platforms are an integral element of core preparation for all the blade cores: conical, tabular, and miniature. Some of the cores (obsidian and chert) have a crest in situ creating a corner.

Mitrou, like other Bronze Age sites, employed pressure-flaking techniques in stone tool production rather than direct or indirect percussion.

127. Primary flakes have 70% or more of their dorsal surface covered by cortex; secondary, from 30% to 70% covered; tertiary, less than 30% covered.

128. Carter and Ydo 1996, p. 160.

129. Karabatsoli 1997, p. 256.

130. Runnels 1985, pp. 360–361; Karabatsoli 1997, pp. 184, 237–238, 276; Kardulias 1999, p. 66; Parkinson 1999, p. 80.

131. Karabatsoli 1997, p. 268.

132. Parkinson 1999, p. 76.

133. Kardulias and Runnels 1995, p. 77.

134. Runnels 1985, pp. 361, 374, 382; Karabatsoli 1997, pp. 163–165, 196, 224, 267.

Some scars on **E22**, the combined blade and flake core, reveal pronounced ventral undulations that suggest indirect percussion but this piece is an exception within the assemblage. It nonetheless is paralleled by a piece from Manika, where Karabatsoli notes the re-exploitation of a blade core to provide flakes created by indirect percussion.[135]

Some cores show evidence of splintering, or use as tools. **E15**, a flake core, has a faceted scraping edge showing signs of use-wear, and **E22** has been subject to splintering, which suggests use as a tool.

Rejuvenation of blade cores as flake cores, and their subsequent reuse as *pièces esquillées* may be a feature of the chipped stone industries of central Greece. Karabatsoli observes examples from Manika, Pefkakia, and Tsoungiza.[136] Two of the flake cores, **E16** and **E17**, and two of the blade cores, **E21** and **E25**, are chert. The chert cores exhibit a degree of fine workmanship matching that of the obsidian cores. **E21**, made from the dappled brown and green chert we associate with Kyparissi, is a particularly fine example of a Bronze Age core. It is conical, with a carefully faceted platform, and parallel blade scars extending up to a *posterieur* crest in situ.

The assemblage offers examples of primary, secondary, and tertiary crested blades. There are three primary crested blades, and all three have been retouched. One (**E32**) exhibits possible signs of use-wear. Two secondary crested blades (**E33**, **E34**) are catalogued below, and both are anterior crested blades. That is to say, they are part of the reduction sequence moving away from the removal of the first crest, before meeting the second, and therefore later *(posterieur)* crest. One of the secondary crested blades (**E34**) is truncated with a notch on the right margin. All three tertiary crested blades have been retouched. **E35** has bifacial and bimarginal retouch. **E36** has a notch on its right margin. One tertiary crested blade (**E67**) is the blank for a *pièce esquillée* (the term "blank" encompasses blades and flakes).

The 13 blade fragments have a mean width of 0.009 m, and all examples fall within the range of 0.006 and 0.015 m. The mean blade thickness is 0.0026 m and there is little variation, with all blades having a thickness of no more than 0.003 and no less than 0.002 m. The only complete blade recovered by the survey is **E33**, a secondary crested blade that measures 0.05 m in length. The six proximal blade fragments have triangular butts, and there is no sign of trimming to remove overhang on any of them.

Flakes were produced in the process of core preparation and as a deliberate product of the reduction sequence. The catalogue contains examples of chert and obsidian flakes, both unmodified and retouched as blanks for a variety of tools.

Tools. Tools at Mitrou are formed on blades and flakes, obsidian and chert. A common tool type is the retouched piece. A retouched piece is a blank (i.e., blade or flake) that has been deliberately retouched but does not fit into a recognized morphological or functional category. Retouch varies from continuous to discontinuous, and occurs on one or both margins, and on one or both surfaces. Retouched blades are found at Bronze Age sites, but their presence in greater numbers is associated more with the later Neolithic.[137] Of numerous examples, just one retouched blade and two retouched flakes are included in this catalogue. Surprisingly, at the Euboian site of Manika, there is a marked paucity of retouched pieces.[138] One retouched flake at Mitrou (**E45**) is truncated at the distal end and

135. Karabatsoli 1997, p. 207.

136. Karabatsoli 1997, pp. 218, 230–231, 268, 282.

137. Perlès 1981, p. 158; Carter and Ydo 1996, pp. 153–154.

138. Karabatsoli 1997, p. 220.

has continuous ventral retouch on the right margin and near continuous ventral retouch on the left. It also has been thinned on the dorsal surface to create a comfortable thumb grip.

Notched pieces may have blades or flakes as their blanks, and there are two examples from each type of blank in the catalogue below. On the two blades, **E46** and **E47**, notches are created by tiny retouch on the dorsal surface. **E47** is a secondary cortical blade, with cortex present on the distal end. The notched flakes have been subjected to more continuous retouch. **E48** has a notch on each margin, one near the proximal end, one near the distal. **E49** also has two notches but they are both on the distal end. Some additional retouch on the dorsal surface may indicate overhang removal.

There are two pointed pieces, **E50** and **E51**. Tools of this type, also called piercers or *perçoirs*, can be formed on flakes or blades and are usually found on the distal end of the blank. They may have served to pierce holes in hides or shells, to incise pottery, or generally to scrape, bore, drill, or score a variety of materials.[139] Both of these examples were formed on flakes.

Multiple tools, that is, tools with two or more retouched areas designed for different functions, may indicate conservative use of source material. On the other hand, Kardulias and Runnels suggest that the increase in popularity of multiple tools in the Bronze Age Argolid should be linked with the Helladic peoples' "wider range of tool-using behavior." They theorize that multiple tools may indirectly contribute to the impression of "a more complex scheme for exploiting the environment."[140]

The Mitrou assemblage offers six examples of multiple tools. One piece, **E52**, has the potential to function as a pointed piece, a notched piece, and a side-scraper. **E53** presents two notches on its left margin, and it is truncated on its distal end. Between the truncation and the second notch, there is a point that shows signs of rounding and crushing. **E54** is truncated, too, but at the proximal end, and it has a single notch, created by dorsal retouch on its right margin. **E55** combines an end-scraper with a notched piece. It has another interesting feature: on the dorsal surface, over the notch, a large thinning flake has been detached to create a better thumb grip for using the tool as an end-scraper. **E56**, which combines a side-scraper with a pointed piece, has also had a thinning flake removed from the dorsal surface to facilitate a more secure thumb grip.[141] **E57** is a side-scraper that has been truncated on its distal end.

Four of the six multiple tools offer the possibilities of a scraper of some sort. Three of them are side-scrapers, just one is an end-scraper. In addition to these multiple tool scrapers, there are also two plain side-scrapers, **E58** and **E59**. **E58** is formed on a primary cortical flake, a part of the *chaîne opératoire* that is often passed over at other sites as a blank for tool manufacture.

One of the few functional tool types that can be identified by macroscopic analysis alone, a sickle element is characterized not only by a denticulated margin or margins but also by the presence of silica gloss. Silica gloss is a polish produced by abrasion of the tool edge with soil particles or plant stems.[142] One of the few morphological traits that may be chronologically diagnostic is whether sickle elements were made on a blade (EH II) or a flake (EH III/MH).[143] Of the four sickle elements in this catalogue, only one, **E60**, was made on a chert blade. **E61**, **E62**, and **E63** were all made on chert flakes. There are also two denticulated sickle elements of characteristic Middle Helladic type, **E62** and **E63**.[144]

139. Kardulias and Runnels 1995, pp. 81–82; Carter and Ydo 1996, p. 153.

140. Kardulias and Runnels 1995, p. 96.

141. A better grip is made possible by a similar thinning flake on the dorsal surface of **E45**, a retouched flake.

142. For a fuller explanation of this process and references to scientific studies, see Kardulias and Runnels 1995, p. 82.

143. Runnels 1985, p. 388.

144. See, e.g., Goldman 1931, p. 210, fig. 280:7, 8.

Truncation on blades may sometimes have been a response to longitudinal curvature. The removal of the proximal or distal end might facilitate the hafting of the blade in a piece of wood or horn.[145] One truncated blade (**E64**) is devoid of retouch while the other (**E65**) has limited retouch on both margins near the distal truncation.

Pièces esquillées are heavily splintered pieces that exhibit flaking scars from battering at opposite ends. Their function remains uncertain but they may have served either as tinder flints or as tools to shape antler or bone.[146] There are three *pièces esquillées* in the Mitrou catalogue below. One of these (**E68**) appears to have been formed on a tertiary crested blade. At Manika, *pièces esquillées* are the predominant tool type, while at Lithares they are very rare.[147] In general, splintering is common at Mitrou, and, in addition to these *pièces esquillées*, there are many other pieces in the assemblage that show evidence of splintering.

Chipped Stone: Some Conclusions

The presence of unretouched primary cortical flakes demonstrates that unprepared nodules of obsidian were imported to Mitrou and decortication took place on site. This contrasts with evidence from Tsoungiza and from the Lakonia survey that indicates that only roughly prepared nodules were imported from Melos. Torrence has suggested that there were two different procurement strategies for Melian obsidian: (1) "special-purpose" trips by experienced knappers who carefully selected nodules and performed the preliminary decortication and preparation of cores at the quarries before transporting them elsewhere; and (2) haphazard collection and transportation of unworked nodules by traders, fishermen, or other people as a task of secondary importance to their primary goal or occupation.[148] The people of Mitrou, it seems, obtained their raw materials from Melos by the latter, more opportunistic method.

Kardulias and Runnels observe that the increasingly complex polities of the Bronze Age create a potential for more regular, structured exchange of raw materials. They identify crested blades as indicators of on-site modification of nodules into blade cores, as opposed to the importation of prepared cores. They then cite an abundance of crested blades at a particular site (in comparison with others in a region) as a marker that that particular site may be "a major obsidian processing center which, if it did not control, certainly had a major input into, the exchange network involving obsidian, and probably other commodities as well."[149] The sample of crested blades from Mitrou permits us to speculate that the site may prove to be just such a major obsidian processing center. It will be interesting in future years to compare and contrast the Mitrou chipped stone assemblage with those of Proskynas, Kynos, and other Bronze Age sites in Lokris, and more broadly with those of Lithares, Manika, and Pefkakia, to see if these sites obtained finished products from Mitrou.[150]

Mitrou was inhabited throughout the Bronze Age, and we know from Lerna, for example, that there were changes in the chipped stone industry from period to period in terms of preference and procurement of raw materials, and in terms of economic activity. Thus, we must practice caution in drawing conclusions from the relative presence or absence of certain materials or economic indicators in a survey assemblage. For example, obsidian predominates over chert at Mitrou, as at most Bronze Age sites,

145. Carter and Ydo 1996, pp. 146–147.

146. Runnels 1985, p. 374.

147. Karabatsoli 1997, pp. 188, 218.

148. Torrence 1986, p. 216.

149. Kardulias and Runnels 1995, p. 106. Cf. Carter and Ydo 1996, p. 160.

150. Examining the chipped stone assemblages at these sites in terms of world systems theory could provide a revealing test case for the relationships of early state models proposed in Kardulias 1999.

but did chert gradually become more common in Mitrou after EH II, as it did at Lerna? Four of the 12 cores from Mitrou are chert but chert products of the reduction sequence make up a much smaller percentage of the assemblage. Does this mean that Mitrou was a distribution center for imported chert cores? In the Argolid, probably because of widespread access to low-quality cherts throughout the region, there is no evidence for a single major chert-artifact production or distribution center,[151] but that does not preclude such a scenario in Lokris. Carter and Ydo suggest that cores may have been curated resources, and that their presence in larger numbers may indicate that a site is a regional center.[152]

Despite the possible evidence that Mitrou was a center for the manufacture and distribution of obsidian and chert artifacts, there are also signs that obsidian was used conservatively. Kardulias and Runnels note that some sites appear to view cortical flakes as waste, preferring to use small noncortical flakes as blanks for retouching rather than the larger cortical flakes. At Mitrou, however, several cortical pieces have been retouched to form tools, and crested blades have also been retouched or used. In addition, three out of the four sickle elements were used on both sides. There are also several multiple tools, and they may constitute another sign of conservative use of raw material. Since excavations on Mitrou have now started, it should be possible to interpret these features of the assemblage at some future date.[153]

E14 Core, flake (M-H4.x01a) Fig. 46

P.L. 0.043, p.W. 0.054, Th. 0.025 m. Obsidian. Complete. Cortex: y. Three of six sides are covered with cortex.

E15 Core, flake/tool (M-D5.x01a)

P.L. 0.034, p.W. 0.03, Th. 0.024 m. Obsidian. Fragment. Cortex: n. Retouch along one flake scar creates faceted scraping edge.

E16 Core, flake (M-E5.x03) Fig. 46

P.L. 0.022, p.W. 0.029, Th. 0.02 m. Chert. Fragment. Cortex: y.

E17 Core, flake/nodule (M-M6.x02)

P.L. 0.04, p.W. 0.045, Th. 0.012 m. Chert. Fragment. Cortex: y. One face has a jumble of flake scars that may be naturally occurring; other face has cortex over an area of 1 cm^2.

E18 Core, ps-blade (C2-609.x10) Fig. 46

P.L. 0.029, p.W. 0.023, Th. 0.011 m. Obsidian. Complete. Cortex: n. Tabular core. Blade scars on one face only; transversal flaking and splintering on reverse side.

E19 Core, ps-blade (C2-609.x11) Fig. 46

P.L. 0.053, p.W. 0.023, Th. 0.013 m. Obsidian. Complete. Cortex: n. Worked on all sides; visible platform preparation scars; some patina and abrasion.

E20 Core, ps-blade (C2-608.x05) Fig. 46

P.L. 0.054, p.W. 0.017, Th. 0.011 m. Obsidian. Complete. Cortex: n. Worked on all sides; crest on posterior face.

151. Kardulias and Runnels 1995, p. 108.

152. Carter and Ydo 1996, pp. 166–167.

153. The following abbreviations are used in the chipped stone catalogue: ps-blade = parallel-sided blade; y = yes; n = no; u/w = use-wear; fl. = flake; bl. = blade. The blank (blade or flake) on which the tool is fashioned is identified. As the presence of cortex is important in understanding the *chaîne opératoire*, distribution patterns, and economy of production, its presence or absence is indicated for each piece.

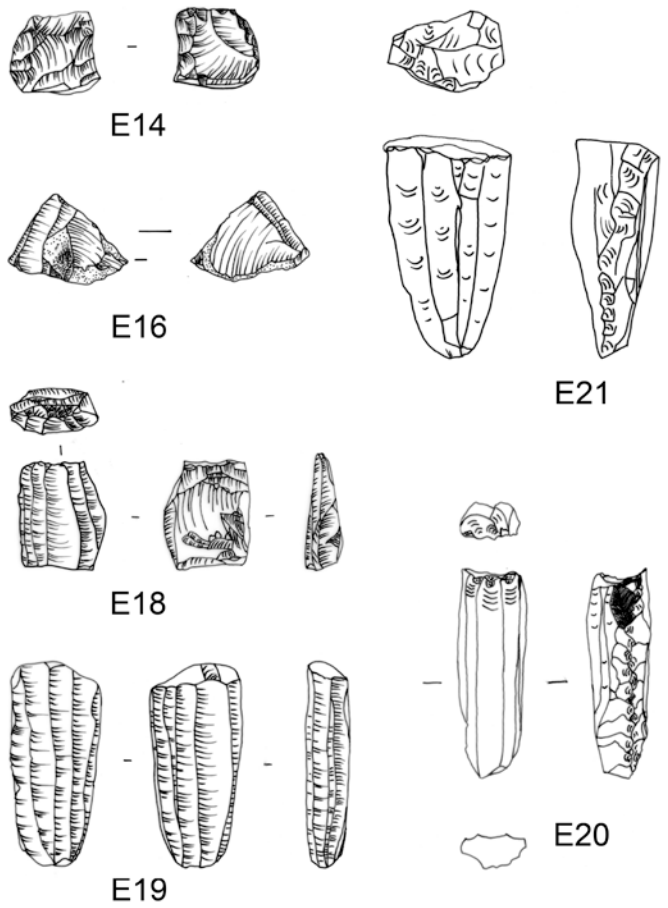


Figure 46. Cores: obsidian E14, E18–E20; chert E16, E21. Scale 1:2. Drawings Y. Furuya (**E14**, **E16**, **E18**, **E19**) and M.-J. Schumacher (**E20**, **E21**)

E21 Core, ps-blade (C2-609.x17) Fig. 46

P.L. 0.057, p.W. 0.032, Th. 0.023 m. Chert. Complete. Cortex: n. Crest on posterior face, conical.

E22 Core, ps-blade and flake (C2-607.x01) Fig. 47

P.L. 0.064, p.W. 0.034, Th. 0.036 m. Obsidian. Complete. Cortex: n. Splintered; possibly used as tool. Crest in situ, and evidence of second crest; faceted platform with steep step from attempted platform rejuvenation. One blade scar runs in opposite direction to flanking scars; some scars betray pronounced ventral undulations that suggest indirect percussion.

E23 Core, ps-blade (M-H3.x06) Fig. 47

P.L. 0.014, p.W. 0.013, Th. 0.012 m. Obsidian. Complete. Cortex: n. Worked around half of circumference; heavy abrasion obscures details of top of blade scars; faceted platform.

E24 Core, ps-blade (M-I3.x03) Fig. 47

P.L. 0.022, p.W. 0.008, Th. 0.005 m. Obsidian. Fragment. Cortex: n. Splintered core fragment with micro pressure-blade scars.

E25 Core, ps-blade (C2-605.x02) Fig. 47

P.L. 0.03, p.W. 0.033, Th. 0.022 m. Chert. Fragment. Cortex: n. Worked on all sides; crested blade in situ.

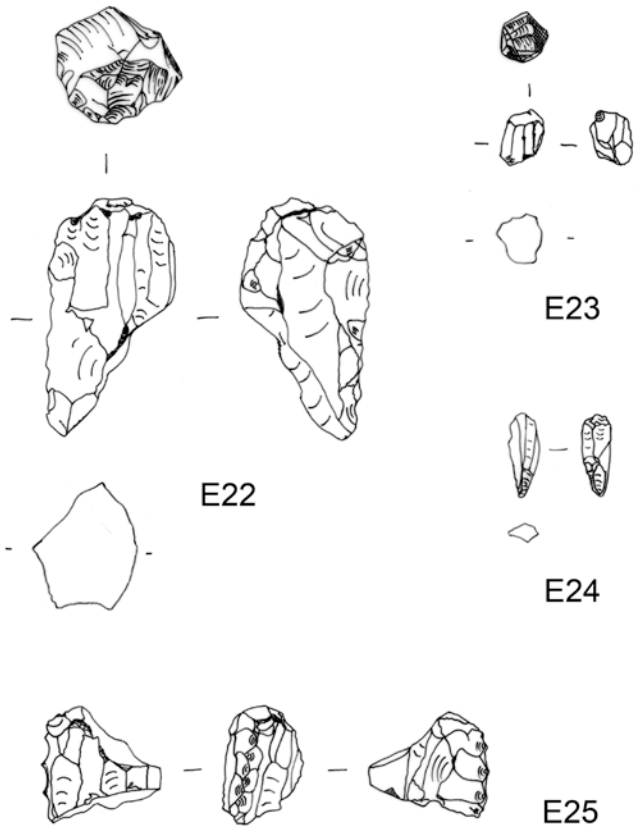


Figure 47. Chipped stone cores: obsidian E22–E24; chert E25.
Scale 1:2. Drawing M.-J. Schumacher

E26 Cortical blade, secondary (C2-606.x07a) Figs. 48, 49

P.L. 0.021, p.W. 0.019, Th. 0.006 m. Obsidian. Blank: fl. Proximal. Cortex: y. Nice flat butt.

E27 Cortical flake, primary (C2-603.x06a) Fig. 48

P.L. 0.04, p.W. 0.035, Th. 0.015 m. Obsidian. Blank: fl. Complete. Cortex: y.

E28 Cortical flake, primary (M-D5.x01d) Fig. 48

P.L. 0.031, p.W. 0.021, Th. 0.012 m. Obsidian. Blank: fl. Complete. Cortex: y.

E29 Cortical flake, secondary (C2-603.x06b) Fig. 48

P.L. 0.031, p.W. 0.03, Th. 0.008 m. Obsidian. Blank: fl. Complete. Cortex: y.

E30 Crested blade, retouched (C2-606.x13) Fig. 49

P.L. 0.028, p.W. 0.012, Th. 0.005 m. Obsidian. Blank: bl. Distal. Cortex: n. Dorsal and ventral retouch on both margins.

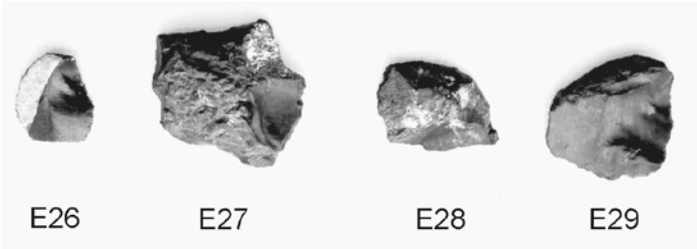


Figure 48. Cortical pieces.
Scale ca. 1:2. Photo K. O'Neill

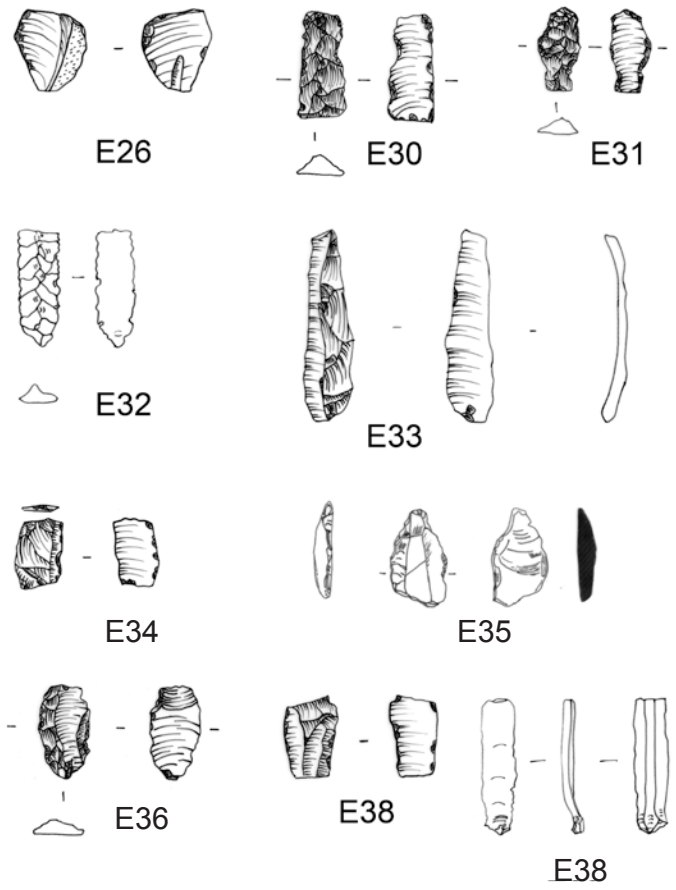


Figure 49. Cortical blade E26; crested blades E30–E32; secondary crested blade E33; notched crested blade E34; tertiary crested blade E35; notched tertiary crested blade E36; rejuvenation flake E37; blade E38. Scale 1:2. Drawings Y. Furuya (E26, E30, E31, E33, E34–E37), M.-J. Schumacher (E32, E38)

E31 Crested blade, retouched (C2-600.x10) Fig. 49

P.L. 0.022, p.W. 0.011, Th. 0.004 m. Obsidian. Blank: bl. Distal. Cortex: n. Retouch on left margin: on dorsal face toward distal end, ventral at proximal end.

E32 Crested blade, retouched/used (C2-600.x09) Fig. 49

P.L. 0.031, p.W. 0.011, Th. 0.005 m. Obsidian. Blank: bl. Proximal. Cortex: n. Possible u/w on both margins.

E33 Crested blade, secondary anterior (C2-608.x01b) Fig. 49

P.L. 0.05, p.W. 0.013, Th. 0.004 m. Obsidian. Blank: bl. Complete. Cortex: n.

E34 Crested blade, secondary anterior, notch (M-D/E3.x01a) Fig. 49

P.L. 0.017, p.W. 0.012, Th. 0.003 m. Obsidian. Blank: bl. Medial. Cortex: n. Tiny retouch on distal end creates truncation; notch on right margin created by tiny retouch.

E35 Crested blade, tertiary, retouch (M-H5.x01c) Fig. 49

P.L. 0.025, p.W. 0.015, Th. 0.005 m. Obsidian. Blank: bl. Distal. Cortex: n. Blade with bifacial bimarginal retouch at distal end: steep dorsal on right, and shallow ventral retouch on left. Splintered; possibly crested, but may be hinged twice.

E36 Crested blade, tertiary, notch (M-C5.x02) Fig. 49

P.L. 0.024, p.W. 0.013, Th. 0.004 m. Obsidian. Blank: fl. Proximal. Cortex: n.

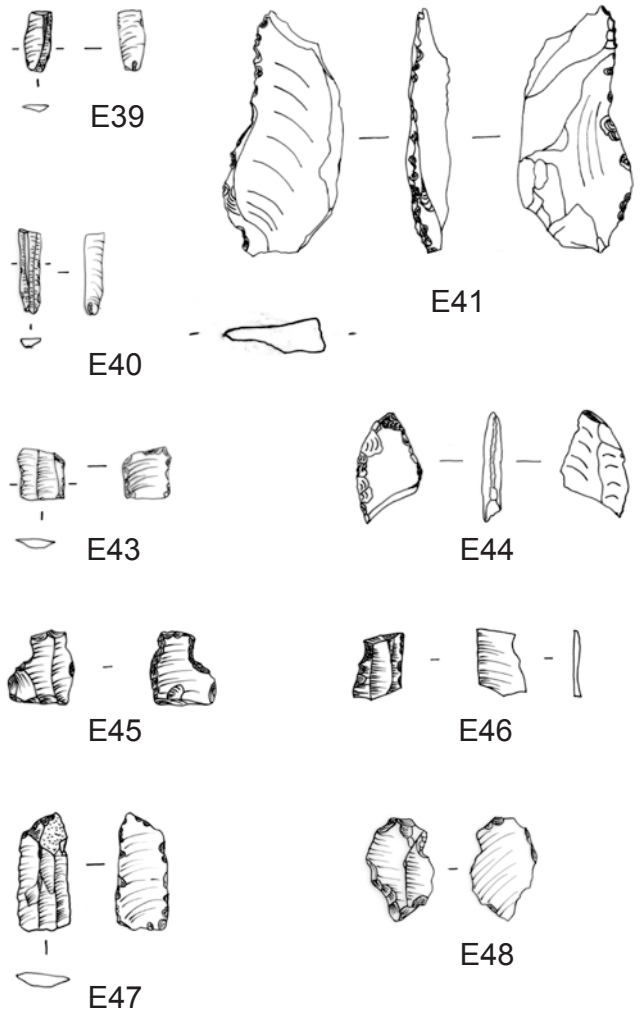


Figure 50. Blades E39, E40; chert flake E41; retouched blade E43; retouched flakes E44, E45; notched blades E46, E47; notched flake E48. Scale 1:2. Drawings Y. Furuya (**E39**, **E40**, **E43**, **E45**, **E46–E48**), M.-J. Schumacher (**E41**, **E44**)

Shallow notch on right margin near proximal end; retouch on left margin; ventral splintering on distal end opposite axis of blade.

E37 Rejuvenation flake (C2-606.x07b) Fig. 49

P.L. 0.021, p.W. 0.014, Th. 0.004 m. Obsidian. Blank: bl. Distal. Cortex: n. Cleaning of old crested scars.

E38 Blade (C2-606.x12) Fig. 49

P.L. 0.021, p.W. 0.009, Th. 0.003 m. Obsidian. Blank: bl. Proximal. Cortex: n. U/w along both margins?

E39 Blade (C2-606.x07h) Fig. 50

P.L. 0.016, p.W. 0.007, Th. 0.002 m. Obsidian. Blank: bl. Proximal. Cortex: n. U/w along both margins?

E40 Blade (C2-606.x07k) Fig. 50

P.L. 0.021, p.W. 0.006, Th. 0.002 m. Obsidian. Blank: bl. Proximal. Cortex: n. U/w along both margins?

E41 Flake (C2-606.x08) Fig. 50

P.L. 0.064, p.W. 0.03, Th. 0.009 m. Chert. Blank: fl. Complete. Cortex: n. U/w along entire right margin.

E42 Flake (C2-600.x06)

P.L. 0.018, p.W. 0.021, Th. 0.004 m. Chert. Blank: fl. Proximal. Cortex: y. Secondary cortical flake; dorsal retouch on left margin, ventral on right?

E43 Retouched blade (M-O6.x02) Fig. 50

P.L. 0.013, p.W. 0.012, Th. 0.003 m. Chert. Blank: bl. Medial. Cortex: n. Inverse retouch. Fine-grain material. Imported blade?

E44 Retouched flake (C2-601.x03) Fig. 50

P.L. 0.029, p.W. 0.019, Th. 0.0056 m. Chert. Blank: fl. Distal. Cortex: n. Ventral retouch along both margins; distal retouch scars overlap.

E45 Retouched flake (M-H/I2.x01e) Fig. 50

P.L. 0.019, p.W. 0.018, Th. 0.003 m. Obsidian. Blank: fl. Complete. Cortex: n. Truncated at distal end; ventral retouch along right margin creates possible scraping edge.

E46 Notched blade (M-H5.x01a) Fig. 50

P.L. 0.016, p.W. 0.012, Th. 0.003 m. Obsidian. Blank: bl. Distal. Cortex: n. Tiny, dorsal retouch creates notch in distal half of left margin.

E47 Notched blade (M-C4.x01a) Fig. 50

P.L. 0.031, p.W. 0.014, Th. 0.005 m. Obsidian. Blank: bl. Distal. Cortex: y. Secondary cortical flake; cortex on distal tip. Retouch and possible u/w along both margins; dorsal retouch forms notch near distal end of right margin.

E48 Notched flake (C2-600.x04c) Fig. 50

P.L. 0.027, p.W. 0.017, Th. 0.005 m. Obsidian. Blank: fl. Complete. Cortex: n. Dorsal retouch creates notches in distal right margin and in proximal left margin.

E49 Notched flake (M-N6.x01) Fig. 51

P.L. 0.027, p.W. 0.034, Th. 0.006 m. Chert. Blank: fl. Complete. Cortex: n. Steep ventral retouch on right margin; bifacial retouch creates distal notches. Overhang removal on dorsal face?

E50 Pointed piece (M-C5.x04) Fig. 51

P.L. 0.033, p.W. 0.028, Th. 0.007 m. Obsidian. Blank: fl. Complete. Cortex: n. Steep dorsal retouch on right margin and ventral retouch on left margin create distal point.

E51 Pointed piece (C2-600.x04a) Fig. 51

P.L. 0.024, p.W. 0.014, Th. 0.004 m. Obsidian. Blank: fl. Complete. Cortex: n. Extensive dorsal retouch except at proximal end.

E52 Multiple tool: notched, pointed side-scraper (C2-600.x04k) Fig. 51

P.L. 0.022, p.W. 0.018, Th. 0.008 m. Obsidian. Blank: bl. Distal. Cortex: n. Dorsal retouch creates multiple tool with point at distal end. Steep retouch on left margin distal end, notch in left margin; steep retouch at proximal end of left margin provides side-scraping possibility.

E53 Multiple tool: notched, truncated, pointed (C2-600.x04b) Fig. 51

P.L. 0.023, p.W. 0.014, Th. 0.005 m. Obsidian. Blank: fl. Complete. Cortex: n. Truncated at distal end; deep notch in left margin. Point between notch and

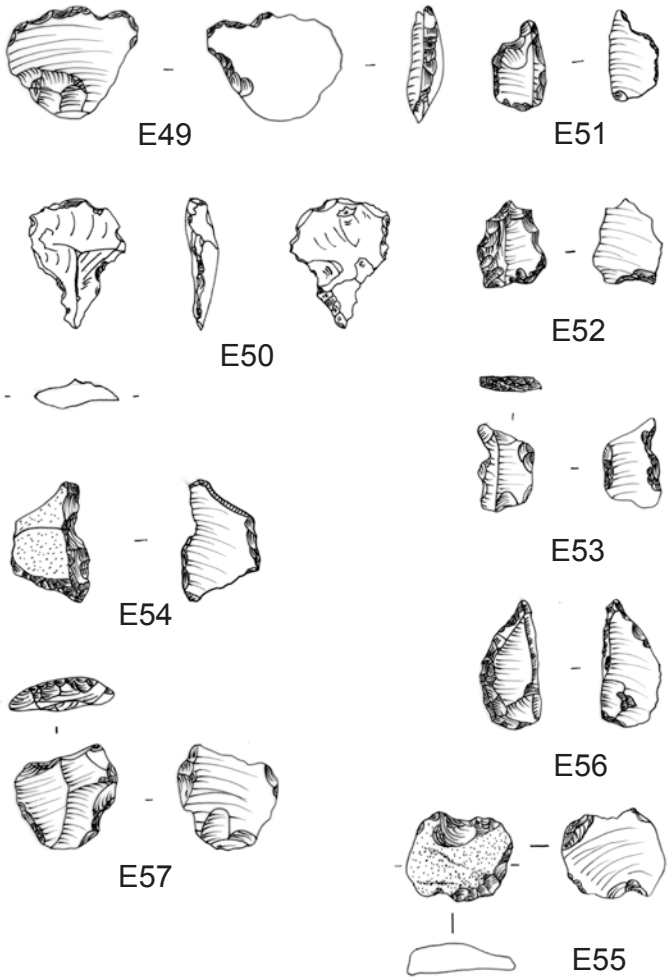


Figure 51. Notched flake E49; pointed pieces E50, E51; multiple tools E52–E57. Scale 1:2. Drawings Y. Furuya (**E49**, **E51–E57**), M.-J. Schumacher (**E50**)

truncation shows possible signs of rounding and crushing. Ventral retouch on both margins; dorsal retouch at distal end.

E54 Multiple tool: notched, truncated (C2-600.x04d) Fig. 51

P.L. 0.031, p.W. 0.02, Th. 0.009 m. Obsidian. Blank: fl. Complete. Cortex: n. Truncated at proximal end with steep, dorsal retouch. Dorsal notch in right margin. Bifacial retouch at proximal end of right margin, ventral retouch on left margin. Possible u/w on all retouched edges.

E55 Multiple tool: end-scraper, notched (C2-600.x04i) Fig. 51

P.L. 0.028, p.W. 0.021, Th. 0.007 m. Obsidian. Blank: fl. Complete. Cortex: n. End-scraper and notched piece. Dorsal retouch on both margins, also ventral at distal end. Flake removal over notch for better thumb grip.

E56 Multiple tool: side-scraper, pointed (C2-603.x07) Fig. 51

P.L. 0.033, p.W. 0.016, Th. 0.008 m. Chert. Blank: fl. Complete. Cortex: n. Steep dorsal retouch along curving left margin; distal ventral retouch to create point. Note thinning flake on dorsal surface to create better thumb grip opposite point and steep retouch.

E57 Multiple tool: side-scraper, truncated (C2-600.x04q) Fig. 51

P.L. 0.027, p.W. 0.027, Th. 0.008 m. Obsidian. Blank: fl. Complete. Cortex: n.

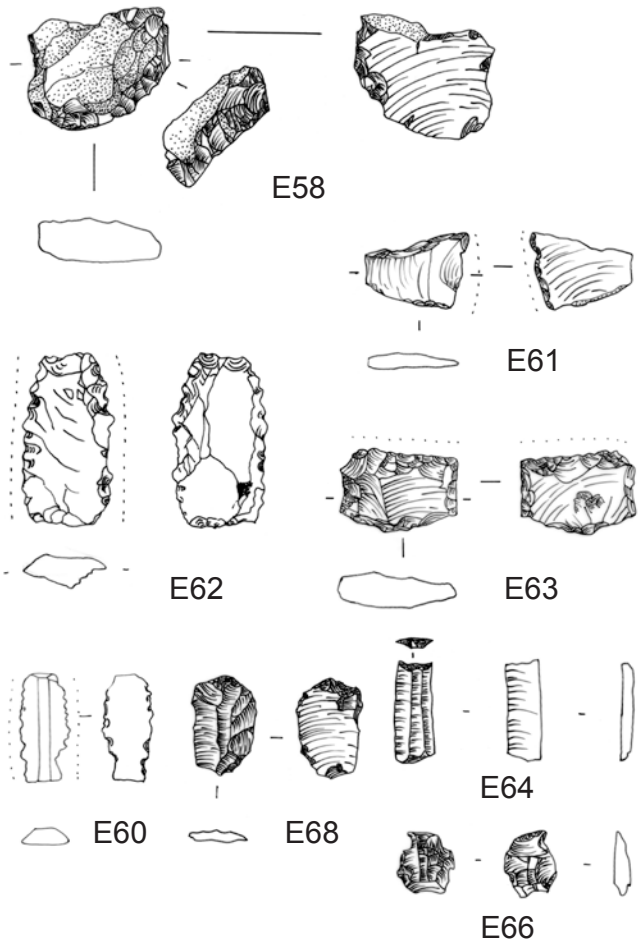


Figure 52. Side-scraper E58; chert sickle elements E60–E63; truncated blade E64; *pièces esquillées* E66, E68. Scale 1:2. Drawings Y. Furuya (**E58**, **E61**, **E63**, **E64**, **E66**, **E68**), M.-J. Schumacher (**E60**, **E62**)

Dorsal retouch on right margin at proximal end, and ventral retouch in middle of right margin create side-scraper; truncated at distal end.

E58 Side-scraper (C2-600.x04r) Fig. 52

P.L. 0.03, p.W. 0.037, Th. 0.013 m. Obsidian. Blank: fl. Complete. Cortex: y. Primary cortical flake with steep dorsal retouch along most of right margin and ventral retouch or u/w in middle of right margin.

E59 Side-scraper (M-I3.x01a)

P.L. 0.026, p.W. 0.023, Th. 0.004 m. Obsidian. Blank: fl. Complete. Cortex: n. Retouch along right margin, steep at proximal end, shallow at distal end.

E60 Sickle element (C2-600.x07) Fig. 52

P.L. 0.029, p.W. 0.013, Th. 0.004 m. Chert. Blank: bl. Medial. Cortex: n. Denticulated from ventral retouch on both margins.

E61 Sickle element (C2-600.x04m) Fig. 52

P.L. 0.02, p.W. 0.025, Th. 0.005 m. Chert. Blank: fl. Medial. Cortex: n. Gray. Ventral retouch on right margin.

E62 Sickle element, denticulated (C2-605.x01) Fig. 52

P.L. 0.045, p.W. 0.026, Th. 0.008 m. Chert. Blank: fl. Complete. Cortex: y. Tertiary cortical flake. Truncated dorsally and ventrally at proximal and distal

ends; denticulated with extensive dorsal and ventral retouch; silica gloss on both margins.

Probably MH.

E63 Sickle element, denticulated (C2-609.x12) Fig. 52

P.L. 0.02, p.W. 0.03, Th. 0.008 m. Chert. Blank: fl. Complete. Cortex: n. Retouched bifacially on both margins and on broad distal end to create roughly rectangular shape. Heavy u/w and silica gloss.

Probably MH.

E64 Truncated blade (C2-608.x01a) Fig. 52

P.L. 0.026, p.W. 0.01, Th. 0.003 m. Obsidian. Blank: bl. Distal. Cortex: n. U/w along both margins?

E65 Truncated blade (C2-600.x04g)

P.L. 0.019, p.W. 0.023, Th. 0.006 m. Obsidian. Blank: bl. Complete. Cortex: n. Dorsal retouch along distal half; ventral along middle of left margin.

E66 *Pièce esquillée* (C2-600.x04e) Fig. 52

P.L. 0.016, p.W. 0.015, Th. 0.004 m. Obsidian. Blank: fl.? Complete. Cortex: n. Scars running in opposite directions on both faces; smashed appearance.

E67 *Pièce esquillée* (M-H4.x01b)

P.L. 0.022, p.W. 0.021, Th. 0.01 m. Obsidian. Blank: fl. Complete. Cortex: n.

E68 *Pièce esquillée* (M-G4.x01) Fig. 52

P.L. 0.025, p.W. 0.017, Th. 0.003 m. Obsidian. Blank: fl. Complete. Cortex: n. Formed on tertiary anterior crested blade; trapezoidal cross-section. Note that central scar on dorsal surface runs opposite to axis of force.

Protogeometric Pottery

The Protogeometric material from Mitrou is less abundant than that of earlier periods, though still indicative of settlement. Shapes and decoration are drastically different from those of preceding periods and have parallels with material from Lefkandi and Kalapodi. Sherds belong to a small range of shapes among which are kraters and skyphoi with pendant concentric semicircles, a hallmark of the period.[154] A cup fragment with zigzag decoration (**F4**) follows the Attic preference for having one zigzag line, whereas examples from Lefkandi exhibit a preference for a double zigzag.[155] We do find a double zigzag, however, on the amphora rim **F1**. High conical feet such as **F5–F7** are attested for a range of open shapes: cups, skyphoi, bowls, and krater bowls.[156] The partial (banded) decoration on **F7** executed in dull orange paint may place it in the Submycenaean rather than the PG period, though this is tentative; it has a parallel with a cup from Lefkandi.[157]

The skyphos fragments **F8**, **F9**, and **F10** seem to belong to the basic shape with a "deep rounded body and out-curved lip"[158] and have a monochrome painted rim. **F11** has at least two sets of concentric semicircles, spaced so close together that they just overlap. The center of the semicircles is taken up by a Maltese cross or hourglass, common in the Lefkandi material on both kraters and krater bowls;[159] the Mitrou example differs slightly in its much larger number of semicircles (13, as compared to the

154. Catling and Lemos 1990, pp. 22–23.

155. Catling and Lemos 1990, p. 17, pl. 9.

156. Catling and Lemos 1990, pp. 14, 16, 18, 19, 21, 23, nos. 1, 2, 57, 99, 101, 120, 293, pl. 5.

157. Lemos 2002, fig. 65:6. See also Catling and Lemos 1990, pl. 48:99.

158. Catling and Lemos 1990, p. 22.

159. Catling and Lemos 1990, pp. 24, 29, pls. 25, 54–59.

five to seven on the Lefkandi examples; compare the 14 semicircles on a neck-handled amphora from the Kerameikos,[160] or the 18 on a skyphos from Vranesi Kopaidos).[161] According to Kearsley, this large number of arcs becomes more common in the Geometric period,[162] but the hourglass is mentioned only for her type 1, which she dates to Late Protogeometric.[163] All circles and semicircles are neatly drawn with a compass; on **F12** and **F13**, examples of decoration with full concentric circles, the compass points are clearly visible. **F10** and **F11** are fragments from large well-built kraters.

A few coarse fragments from pithoi have been selected to represent a group of LH III–EPG coarse ware common on Mitrou (**F16–F19**). These fragments are decorated with rows of small impressed squares possibly made with a comblike instrument;[164] they have parallels with large coarse hand-built pithoi from Kalapodi and with a fragment of a Mycenaean relief pithos from Delphi.[165] The Kalapodi examples date from LH IIIC to EPG, and they become more and more popular toward the end of this time span.[166]

One coarse pithos fragment (**F19**) has a decoration of impressed rings.[167] These, too, are attested for Kalapodi and are also known from a Geometric tomb in Tragana.[168] Linear decoration or bands of fingerprints are attested at both Mitrou and Kalapodi as well, but the elsewhere popular rows of indented small grooves ("Kerbbandleisten"), present at Kalapodi, are conspicuously absent at Mitrou.[169]

After the Protogeometric period, the sherd quantity decreases dramatically, indicating that the site was essentially uninhabited from then on.

F1 Amphora (C2-603.04) Fig. 53

P.L. 0.037, p.W. 0.044, Diam. ca. 0.150, Th. 0.004–0.010 m. Fabric: 5YR 6/8, very few small–medium limestone inclusions, Mohs 2.5. Rim fragment. Ext. slipped, 10YR 8/4. Painted brown zigzags below wide band.

F2 Amphora (M-H/I2.03) Fig. 53

P.L. 0.079, p.W. 0.067, Th. 0.008–0.010 m. Fabric: 7.5YR 7/6, very few medium–large red, black inclusions, Mohs 3. Shoulder fragment. Ext. slipped, 7.5YR 8/4. Painted orange-brown bands and zigzags.

Cf. Catling and Lemos 1990, p. 116, no. 458, pl. 27.

F3 Closed vessel? (C2-603.06) Fig. 53

P.L. 0.031, p.W. 0.039, Th. 0.004–0.005 m. Fabric: 2.5YR 6/6, no inclusions, Mohs 2.5. Body fragment. Ext. slipped, 10YR 7/2. Painted red zigzag line.

F4 Cup (M-F5.01) Fig. 53

P.L. 0.049, p.W. 0.024, Diam. 0.150, Th. 0.003–0.004 m. Fabric: 5YR 6/6, no inclusions, Mohs 4. Rim fragment. Int. and ext. slipped and burnished, 10YR 8/4. Painted dark reddish brown bands and zigzag line.

Cf. Catling and Lemos 1990, pl. 9.

F5 Open vessel (M-I6.01)

P.L. 0.028, p.W. 0.045, Diam. foot 0.055, Diam. stem 0.024 m. Fabric: 7.5YR 7/4, very few small limestone, red inclusions, Mohs 3. Foot and stem. Surface slipped, 2.5Y 8/3. Painted orange-brown band at foot and inside bowl.

F6 Open vessel (C2-605.70)

P.W. 0.027, Diam. foot ca. 0.040, Diam. stem ca. 0.020 m. Fabric: 5YR 6/6,

160. Whitley 1991, pl. 14.
161. Desborough 1952, p. 197, pl. 17:5.
162. Kearsley 1989, types 2–5.
163. Kearsley 1989, pp. 84, 86.
164. Jacob-Felsch 1996, p. 81, esp. no. 414, pls. 21, 45.
165. Kalapodi: Felsch, Kienast, and Schuler 1980, p. 47. Delphi: Lerat 1961, p. 364, fig. 50.
166. Jacob-Felsch 1996, p. 81.
167. See Kramer-Hajos 2005, p. 227, fig. 3:54.
168. Kalapodi: Jacob-Felsch 1996, p. 81, nos. 78, 130, pls. 27, 29. Tragana: Onassoglou 1989, pl. 31:a.
169. Jacob-Felsch 1996, p. 81, nos. 69, 129, pls. 21, 26 (linear decoration); p. 81, nos. 263, 415, pls. 21, 38, 45 (bands of fingerprints); p. 81, no. 68, pls. 21, 26 (Kerbbandleisten).

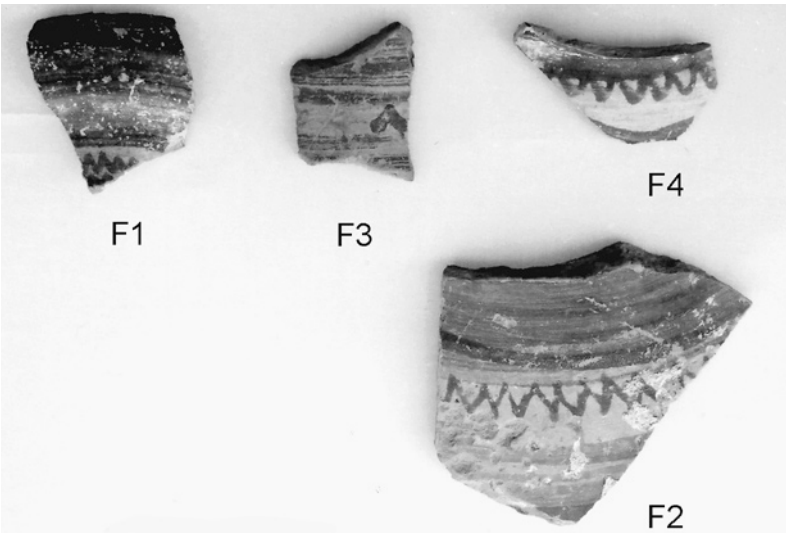


Figure 53. PG pottery with zigzag decoration. Scale 1:2. Photo M. Kramer-Hajos

no inclusions, Mohs 3. Foot. Surface slipped? Monochrome lustrous painted orange.

F7 Open vessel (C2-608.18)

P.L. 0.057, p.W. 0.038, Diam. ca. 0.070, Th. 0.007–0.008 m. Fabric: 5YR 7/5, very few small–very large limestone, red inclusions, Mohs 3.5. Part of pedestal base. Ext. and int. slipped, 10YR 7/4. Painted red band.

F8 Skyphos (C2-603.01) Fig. 54

P.L. 0.071, p.W. 0.055, Diam. 0.170–0.0180, Th. 0.004–0.006 m. Fabric: 7.5YR 7/5, very few small quartz inclusions, Mohs 2.5. Rim fragment. Ext. and int. slipped, 7.5YR 8/4. Painted black bands and pendant semicircles.

F9 Skyphos (C2-609.27) Fig. 54

P.W. 0.036, H. 0.044, Th. 0.005–0.006 m. Fabric: 10YR 7/3, some very small–small limestone, black inclusions, Mohs 3. Body fragment near rim. Ext. slipped white. Painted brown pendant concentric semicircles.

F10 Skyphos (C2-605.82) Fig. 54

P.L. 0.057, p.W. 0.048, Th. 0.005–0.007 m. Fabric: 10YR 6/4, no inclusions, Mohs 4. Body fragment with handle scar. Ext. and int. slipped, 10YR 8/3. Ext. painted black circles.

F11 Krater bowl or skyphos (M-G3.03) Fig. 54

P.L. 0.080, p.W. 0.052, Th. 0.006–0.009 m. Fabric: 7.5YR 7/4 and 10YR 7/3, no inclusions, Mohs 3. Body fragment. Ext. and int. slipped, 2.5Y 6/2–3. Ext. painted black band and pendant semicircles with a Maltese cross in the center; int. monochrome.

F12 Closed vessel (M-H5.10) Fig. 54

P.L. 0.051, p.W. 0.042, Th. 0.007–0.009 m. Fabric: 5YR 7/4, some small–very large red inclusions, Mohs 2. Body fragment. Ext. slipped, 7.5YR 8/2. Decorated with brown concentric circles.

F13 Closed vessel (M-H4.08) Fig. 54

P.L. 0.029, p.W. 0.032, Th. 0.005 m. Fabric: 7.5YR 8/4, very small red, lime-

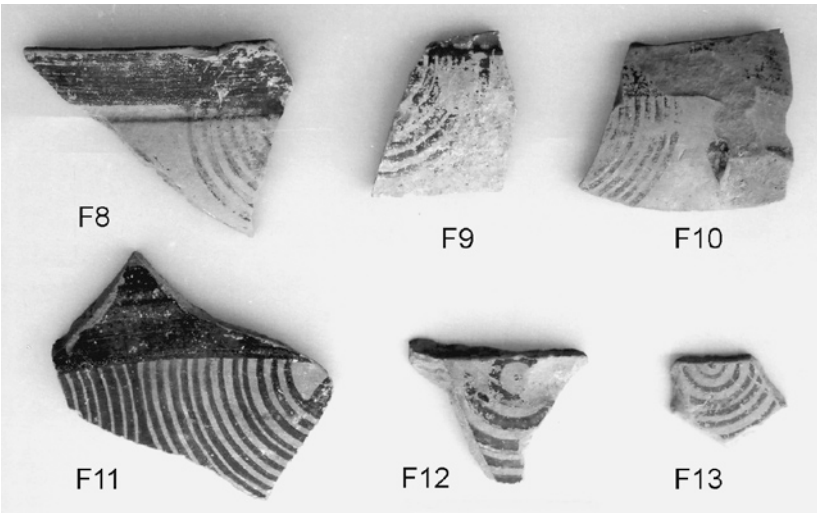


Figure 54. PG pottery with compass-drawn circles. Scale 1:2. Photo M. Kramer-Hajos

stone inclusions, Mohs 2. Body fragment. Ext. slipped, 7.5YR 8/6. Ext. decorated with black concentric circles.

F14 Krater (M-H3.09 and M-I3.02)

P.L. 0.134, p.W. 0.063, Diam. ca. 0.450, Th. 0.008–0.022 m (rim). Fabric: 5YR 6/6, no inclusions, Mohs 4. Rim fragment. Top rim (and ext.?) slipped, 7.5YR 7/3. Int. painted monochrome black; ext. decorated with broad band. Broad stripes on top of rim, grooves under rim.

F15 Krater (M-K6.01)

P.L. 0.080, p.W. 0.091, Th. 0.010–0.013 m. Fabric: 7.5YR 7/4, moderate amounts of small–very large limestone inclusions, Mohs 3. Body fragment. Painted reddish brown to black stripes below broad band. Mended from two fragments.

F16 Pithos (C2-602.12)

P.L. 0.142, p.W. 0.015, Th. 0.025–0.09 m. Fabric: 5YR 7/6, gray core, very many small–very large angular black, red inclusions, Mohs 4. Body fragment. Ext. slipped, 7.5YR 8/4. Decorated with a raised band (H. ca. 5 cm) with a zigzag line of impressed squares. Handmade.

F17 Pithos (M-G3.08)

P.L. 0.079, p.W. 0.082, Th. 0.029–0.032 m. Fabric: 7.5YR 6/4, many small–very large quartz, gray, yellow, black, red, limestone inclusions, Mohs 2. Rim fragment. Decorated with a raised band with a zigzag line of small impressed circles. Handmade.

F18 Pithos (M-G4.05)

P.L. 0.068, p.W. 0.084, Th. ca. 0.022 m. Fabric: 5YR 7/6, many small–large black inclusions, Mohs 4. Body fragment. Ext. slipped, 10YR 8/3. Decorated with a raised band with small impressed squares in rows.

F19 Pithos (C2-602.08)

P.L. 0.070, p.W. 0.111, Th. 0.012–0.013 m. Fabric: 2.5YR 6/8, gray core, moderate amounts of small–large black, limestone inclusions, Mohs 4. Body fragment. Ext. slipped, 5YR 6/4. Decorated with a raised band (H. 35 mm) with impressed rings.

CONCLUSIONS

The pottery from the surface survey at Mitrou is exceptional, both in quantity and in quality, and is evidence of continuous habitation of the site from the Early Bronze Age into the Iron Age. The superior quality of the preserved Late Bronze Age fragments indicates the presence of a Mycenaean elite, with many sherds coming from high-class wares. Mitrou seems to have reached its acme in importance and richness during the Mycenaean period.

Although evidence for an EH I phase is lacking, settlement was uninterrupted from the EH II period through the Protogeometric. The EH wares display some characteristics that are shared with the extremely similar material from nearby Proskynas. The coarse sauceboats and the highly burnished bowl and saucer fragments in a warm orange fabric are especially typical for both sites. It is tempting to suppose that Proskynas, where evidence for an industrial potters' quarter was found,[170] may have been the production site for some of the EH Mitrou material. Much of the EH II material is similar to that found at other EH central Greek sites such as Eutresis, Lithares, and Manika, which places Mitrou firmly in the general EH cultural tradition of the area. The presence of the depas (**B30**) suggests contact with the eastern Aegean, and the large amounts of obsidian, some of which must date to the EH period, indicate contact with Melos via the Euboian Gulf.

In the MH period both Gray Minyan and Matt-Painted wares have parallels with Pteleon to the northwest. Gray Minyan handle fragments, in particular, resemble the material from Pteleon illustrated by Maran.[171] Red-Burnished ware is reminiscent of similar ware from Eutresis in Boiotia, although some of it was manufactured on Aigina. This situation indicates that trade, in part or possibly entirely over sea, continued in the Middle Bronze Age. Contact with Pteleon, too, may have occurred via the Euboian Gulf, which is a shorter route than overland.

The MH material shows markedly less sea-erosion damage than the EH material. Many fragments are well preserved, possibly because they come from cist tombs. The MH small finds of particular interest are the bronze ax (**C35**) and the stone chisel mold (**C36**). If the ax was not fashioned at Mitrou, at the very least it demonstrates the existence of trade with the eastern Mediterranean. The presence of the mold, however, indicates that metallurgical processes were undertaken at Mitrou.

The abundance of LH material shows that Mitrou was extensively settled throughout the Mycenaean era. In the LH I phase, Middle Helladic pottery traditions persisted beside the new Mycenaean shapes and schemes of decoration, and sometimes mixed with them, as is especially clear in the Gray Minyan cup (**D1**). Gray Minyan ware had a strong tradition in central Greece and it is not surprising that it persisted even when Mycenaean shapes became predominant. If Polychrome Matt-Painted ware has a Boiotian origin, as Dietz suggests,[172] the many sherds of this ware from Mitrou show that during this transition from MH to purely Mycenaean pottery, the traditions from central Greece remain strong.

The presence of lustrous LH I ware at Mitrou shows that this style, and thus possibly the Mycenaean culture associated with it, arrived and was

170. E. Zahou (pers. comm.).
171. Maran 1992, pls. 147–149.
172. Dietz 1991, p. 32.

absorbed at Mitrou early on. Whether the style was introduced to Mitrou by "the actual movements of potters familiar with the style,"[173] or by the import of examples from another center,[174] it proves that Mitrou had connections with the mainstream of Mycenaean culture from its inception. It also indicates that Mitrou was an important center—important enough to attract potters from other centers or to import the latest fashion items—and at this time had closer connections with the southern part of Greece than with its northern part, given the virtual absence of LH I material to the north of Mitrou. The presence of Aiginetan ware throughout the Mycenaean era confirms (trade) contacts with the Aegean.

The LH II sherd material from Mitrou is remarkable for its quality, with decorative schemes suggesting contact with Crete. The LH IIIA–B material is equally well made and follows fully the shapes and decorations common to the period.

Comparison of the LH IIIC pottery from Mitrou with that of Kynos and Elateia reveals similarities between the Kynos and Mitrou material. The Elateia LH IIIC pottery is paler in color and less crisply painted with a duller paint. The strong parallel of the unusual LH IIIC Middle krater fragments **D96** and **D97** with a krater from Dimini suggests that Mitrou in the LH IIIC phase formed a koine with other sites on the coast of or near the Euboian Gulf. Maritime traffic through the Euboian Gulf united the sites of Mitrou, Kynos, Dimini, and others; the interior possibly did not partake in this exchange of goods and ideas and followed a different tradition at a time when the Mycenaean palatial networks were no longer functional, as suggested by the differences between the material from Mitrou and that from Elateia. The quantities of sherds at Mitrou diminish somewhat in LH IIIC, and it is possible that in this period the site of Kynos to the north played the main role in the area. The LH IIIC material from Kynos is rich and includes figurative krater fragments.[175]

The 50 inventoried Protogeometric sherds from Mitrou indicate that occupation continued into the Early Iron Age. After this time period there was almost no human activity.[176] The continuity from Bronze to Iron Age corresponds with patterns at Lefkandi, Kalapodi, and Elateia.

Pithos fragments from Mitrou show marked similarities with LH IIIC–PG material from Kalapodi, and skyphoi with pendant concentric semicircles indicate contact with Euboia. A skyphos with pendant semicircles from the Geometric cemetery in Tragana, found in an extraordinarily rich grave that also yielded, among other objects, a bronze phiale with a neo-Hittite inscription,[177] is dated to the Middle to Late Geometric transition on the basis of its shape: its low profile and offset lip are typical for later skyphoi.[178] The fragments from Mitrou fall into an earlier category with a taller profile and a less offset lip, and predate the finds at Tragana. It is thus difficult to establish a connection between the Tragana cemetery and Mitrou in the Early Iron Age on the basis of the Mitrou surface material. Possibly the locus of settlement shifted in the Geometric period from Mitrou to Tragana, although no evidence for a Geometric settlement in or near Tragana exists to date.

A variety of materials were imported to Mitrou: obsidian, chert, andesite, steatite, marble, lead, and copper. The presence of these materials

173. Dickinson 1994, p. 129.

174. Provenance studies of the clay used for some of Mitrou's vessels would be useful in determining the extent of import.

175. Dakoronia 1987; Dakoronia 1996, p. 1173, pl. 4 (a figurative krater fragment with a warship).

176. Even when one supposes that erosion will have destroyed the later material, one would expect to find quantities of it on the shores, washed down from above. There is, however, hardly any of it anywhere around the island, with the exception of Roman combed ware sherds, which occasionally turn up on the southwestern and, more rarely, the southeastern shore. These sherds may be connected with underwater walls on the west side of Mitrou; see above, p. 168 and Fig. 5.

177. Onassoglou 1989, p. 21.

178. Onassoglou 1989, p. 38; cf. Coldstream 1968, pp. 155–157; Kearsley 1989, p. 136.

makes it clear that Mitrou was part of a trading network that reached across the Aegean. We have no evidence for the local working of some of these materials (andesite, marble, lead, or steatite), and they may have arrived at Mitrou as finished objects. Andesite from the Saronic Gulf was used for saddle querns, and andesite from Nisyros and Santorini in the south Aegean volcanic arc was used for both a tripod mortar and saddle querns. No provenance studies have been undertaken for the lead weights recovered at Mitrou, but the lead is likely to have come from as far afield as the Laurion mines in Attica or those at Ayios Sostis on Siphnos. The steatite used to fashion beads, counters, and spindle whorls probably originated on Kythera or Crete. Copper metallurgy took place at Mitrou but the nearest copper sources are in Thessaly, Attica, and southeastern Euboia.

Obsidian nodules were imported, presumably from Melos, in unworked form, and the full reduction sequence took place on site. For chert, too, it seems likely that at least some working of imported material occurred locally. The composition of the chipped stone assemblage suggests that Mitrou may have been a significant regional distribution center for both obsidian and chert. Primary, secondary, and tertiary cortical flakes indicate that obsidian nodules were imported in an unworked state. The presence of crested blades demonstrates that cores were then prepared at Mitrou. Finally, if chipped stone cores really do constitute curated resources, the number of obsidian and chert cores recovered by the survey encourages us to investigate in future years whether Mitrou may have been an important processing center for chipped stone, possibly even exerting control over the commodity within the region.

Thus, analysis of the pottery and small finds recovered from Mitrou, coupled with the results of the geophysical survey, present a picture of a settlement that profited from its location to endure throughout the Bronze Age and into the Early Iron Age. The inhabitants engaged in trade over a wide area of the Aegean. Possibly as early as its inception in the Early Helladic period, Mitrou was an important regional center for the processing of chipped stone tools, importing obsidian from Melos and chert from other sources. By the Middle Helladic period, Mitrou was prosperous enough to engage in metallurgy, fashioning bronze tools from imported materials. It reached its apex in the Mycenaean period when it was home to a wealthy elite group who thrived on a diet supplemented by the fish they caught, and lived to a ripe old age by contemporary standards. The later settlement appears to have had an orderly city grid, and may have been divided into different quarters for the rich and ordinary citizenry. Now that an ongoing excavation of Mitrou has begun, it should be possible in the future to test, confirm, or refute the deductions we have offered here on the basis of the nonintrusive methods of geophysical and surface survey.

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