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## THE CHALCOLITHIC OCCUPATION OF GERONISOS ISLAND

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*Joan Breton Connelly and Carole McCartney*

## 1.1. Introduction

Rising from the waters just off the coast of western Cyprus, between Pafos and the Akamas, the island of Geronisos has long been a tempting but formidable destination for visitors from the mainland (Fig. 1). Geronisos was originally part of a coastal headland and was probably attached to the mainland as late as the early Holocene (*c.* 12,000-8,000 B.C., Held 1992, 139). It is clear, however, that it was already an island when humans first visited and deposited artifacts here during the Early Chalcolithic period (*c.* 3,800-3,500 B.C.).

Steep cliffs, strong currents and the absence of water have discouraged all but the most intrepid travellers. The first published accounts of visits to the islet are late. D. G. Hogarth described his visit to Agios Georgios tis Pegeias on the mainland in 1888, but did not venture out to the island itself (Hogarth 1889, 12). He relied on the report of one Captain Thompson who told him of the presence of cisterns on Geronisos that resembled those seen on the mainland. Alfred Westholm travelled out to the island in 1933 and was the first to report the presence of what he called Neolithic finds, including stone implements, flint and pottery (Goodwin 1984, 1691). Westholm found this material spread across an area of some 100×70m. Rupert Gunnis may be referring to the Westholm survey material when he describes the “Neolithic flints and pottery” found along the southern side of Geronisos in his 1936 guidebook to Cyprus (Gunnis 1936).

The island remained unexcavated until 1982 when Sophocles Hadjisavvas undertook five weeks of excavations on behalf of the Department of Antiquities of Cyprus (Karageorghis

1983). This campaign established a Chalcolithic date for the prehistoric material that was unearthed including pottery, stone tools and chipped stone. The character of this Chalcolithic occupation was not, however, defined in any detail at this time.

In 1990, New York University was awarded a license to explore and excavate Geronisos Island and its surrounding waters under the direction of the first author, who has written Section 1 of this report.<sup>1</sup> To date, one archaeological survey season (1990), two ecological survey seasons (1990, 1992), six excavation seasons (1992-1994, 1996-1997, 2004) and four study seasons (1995, 2000, 2001, 2002) have been completed. Three major periods of occupation have been established for Geronisos, each separated by long periods of abandonment. These include the Early Chalcolithic, the Late Hellenistic, and the Early Byzantine (Connelly 1995, Connelly 2002, Connelly and Wilson 2002, Connelly and Młynarczyk 2002, Connelly 2005).

In 1996, the second author, who has written Section 2 of this report, began her study of the Geronisos chipped stone. In 1997 she expanded her work to include examination of the ground stone retrieved from the island and, since 2000,

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1. We thank the Department of Antiquities of Cyprus and its Directors under whom we have been licensed to excavate, including Dr Athanasios Papageorghiou, Dr Demos Christou, Dr Sophocles Hadjisavvas and Dr Pavlos Flourentzos. We thank New York University and the Friends of Yeronisos who have generously financed our work, especially James Ottaway, Jr., Salvatore S. Ranieri, William J. Murray, Carl S. Forsythe III and the de Coizart Perpetual Charitable Trust. We also thank the John D. and Catherine T. MacArthur Foundation for its support of Prof. Connelly's work during the years of excavation and study, 1996-2001. Drawings are by Julia Burdajewicz and photographs are by Benjamin Fraker and J.B. Connelly.

she has undertaken systematic study of the Geronisos ceramics as well. This undertaking represents the first time that the Chalcolithic material from Geronisos has been comprehensively examined. Results of this study establish more than just a seasonal presence on the island but rather a major establishment with significant ties to mainland sites and with wide-ranging implications for our understanding of the Early Chalcolithic period in western Cyprus.

Section 1 of this report presents the geology, stratigraphic contexts and distribution of the prehistoric material across the island. Section 2 presents the character of the artifacts recovered, their context and the nature of the Chalcolithic occupation that they define.

## 1.2 Geology

The geology of Geronisos is dominated by two primary formations: a hard, calcarenite level of Pleistocene marine terraces at top, roughly 2.5 to 9m. in thickness, capping a soft, marl core below (Petrides and Charalambos 1981). The calcarenite horizon is the younger of the two geological formations and is made up mostly of shell fragments and microfossils cemented by the agent  $\text{CaCO}_3$ . At the surface of the island, secondary  $\text{CaCO}_3$  brought by capillary action contributes to development of a thin hard layer of secondary limestone known locally as *kafkalla*.

The underlying marl, greenish grey when fresh and ranging from hard to very stiff, is a fissured, silty clay sequence that occurs in bands varying in thickness from 20-40cm. (Petrides and Charalambos 1981). This marl is very susceptible to erosion by wave action that has created large overhangs on the island where the calcarenite crust survives and the marl core has been lost. Great boulders of calcarenite have fallen from the surface of the island creating an effective wave breaker (Fig. 1). Though the island has lost a significant amount of its original surface area, the naturally formed breakwater of boulders has considerably reduced further destructive action of wave erosion.

## 1.3 Stratigraphic contexts

Geronisos has a fairly shallow deposit of earth and fill above bedrock, ranging from just 20cm.-1m. and averaging roughly 50cm. in thickness across the island as a whole. The Chalcolithic material is most often associated with a level of deep red/purple earth that lies immediately above bedrock. Sometimes nicknamed 'Pleistocene Red' this earth represents the *terra rosa* that lies above bedrock itself and with the secondary limestone formation of *kafkalla*. In a few cases, Chalcolithic pottery was found deposited directly upon bedrock, suggesting that earth had been cleared away during this period of occupation.

We also have evidence that the Chalcolithic levels were disturbed during construction activity dating to the Hellenistic period. It is clear that some Chalcolithic material, particularly chipped stone, was reused by the Hellenistic inhabitants of the island and re-deposited on Hellenistic floors. This will be discussed in detail in Section 1.6.

The stratigraphic deposition of historical levels on Geronisos is fairly straightforward. For the most part, the sequence remains the same across the island: topsoil, fill, late Hellenistic destruction level, Hellenistic occupation level, Hellenistic construction level, Chalcolithic level, *terra rosa*, bedrock (Connelly 2002, 255, fig. 9). In certain locations, we have Early Byzantine (5<sup>th</sup>-7<sup>th</sup> century A.D.) construction and occupation levels (Connelly and Wilson 2002) as well as evidence for some Byzantine (13<sup>th</sup> century A.D.) presence.

What is striking about the stratigraphy of Geronisos is the very close proximity of occupation levels separated by millennia of abandonment. In trench R 49 for example, stone pithos lids of Byzantine date were found *in situ* just 20cm. above a good Chalcolithic floor level into which a pit was deliberately dug (Figs 5-8). Elsewhere on the island, good Hellenistic floors lie directly atop Chalcolithic levels, one of which preserves a stone post-pad *in situ* right beside a plaster setting bed for Hellenistic ashlar blocks (Fig. 11).

#### 1.4 Distribution of Chalcolithic material

To date, some 38 grid squares have been excavated across Geronisos, most measuring 4×4m. (Connelly 2002, fig. 7). In several cases associated baulks have been removed, opening 5×5 metre squares. The total excavated area comes to roughly 650 square m. This total includes some nine grid squares at the west end of the island, some ten excavated trenches in the Central South Complex (Connelly 2004, Fig. 3), four trenches in the Central North Complex and ten grid squares in and around the cisterns towards the east end of the island (Connelly and Wilson 2002, fig. 25). Five trenches have been excavated at the east end of the island. Distribution of Chalcolithic finds across these trenches shows a very distinct contrast from the western end of the island, which yielded very little Chalcolithic material, to the eastern end where the distribution of prehistoric material is moderate to dense.

Excavations in the Southwest Complex (Grid squares H 16, H 17, I 15, I 16, I 17 and cleaning G 16 and G 17) exposed a series of Hellenistic walls and a courtyard between them (Connelly 2002, 256-63, fig. 8). This area yielded just over 3500 sherds of which a mere 0.2% were Chalcolithic in date. To the northwest, on sheer cliffs and largely collapsed into the sea, are the foundations of West Building (Grid squares O 8, P 8, Q 9, R 8), which seems to represent the Hellenistic shrine structure that served as the centre of worship on Geronisos during the 1<sup>st</sup> century B.C. (Connelly 2002, 264-66, fig. 25). Just over 1000 sherds were recovered from this area of which just 2.5% represents Chalcolithic material.

The density of Chalcolithic pottery increases dramatically as we turn to the trenches excavated in the centre of the island. The largest area opened up to date, that of the Central South Complex (Grid squares N 22, N 23, N 24, N 25, O 22, O 23, O 24, O 25, P 23 and P 24) measures roughly 20×20 metres (Connelly and Młynarczyk 2002, 299-308 and Connelly 2005, forthcoming). It comprises several rooms, roughly square in shape and a fairly large open courtyard.

The Complex seems to represent the domestic quarter of the Hellenistic sanctuary and is complete with evidence for food preparation and distribution. Some 19,142 sherds were collected from the Central South Complex of which 7.59% are Chalcolithic in date. It should be said, however, that Chalcolithic levels were reached only in a limited number of probe trenches in this area, much of which was excavated only down to Hellenistic floor levels. There is a strong possibility that the Chalcolithic occupation in this area is much more robust than these numbers suggest.

The percentage of Chalcolithic material to the overall sherd count rises markedly when we turn directly to the north. Here, the Central North Complex (Grid squares R 23n/S 23s, T 21, T 24n/U 24s, V 24) preserves a circular enclosure of some 13m. in diameter ringed by a simple two-course rubble wall (Connelly 2002, fig. 7). A substantial foundation of a major north/south wall has also been unearthed here, well dated by a coin of Cleopatra VII and Ptolemy XV Caesar (47-44 B.C.). Of the 694 sherds retrieved from the North Central Complex, 20.20% are Chalcolithic in date, a marked increase over the numbers encountered on the west end of the island.

As we move further to the east, the density of Chalcolithic material ever increases. Two cisterns are visible in the aerial photo (Fig. 2) which shows the broad semicircular paved impluvium of the Hellenistic water tank at centre and, just to the northwest of it, the polygonal platform and square tank of the early Byzantine cistern (Connelly and Wilson 2002, figs 2, 25). The Hellenistic cistern (Cistern 1) yielded some 282 sherds of which just one was Chalcolithic in date. The trench dug beside it (P 41-P 42n/Q 41-Q 42s) produced a total of 774 sherds of which 2.45% represented Chalcolithic wares. Cistern 2, which dates to the Early Byzantine period, yielded just 78 sherds of which only one was Chalcolithic. The trenches surrounding it (S 39, S 37-38n/T 37-38s, V 37e/V 38w, V 40e/V 41w, T 40, T 41, S 40, S 41w baulk and R 41n/S 41s. check) produced 6199 of which 35.36% are Chalcolithic.

Of the 6418 sherds collected from trenches at the eastern end of the island (R 46, R 49, R 50/R 51/S 50, P 50n, Q 50s) the majority of some 53.50% are Chalcolithic in date (Figs 2-4). It should be said that the condition of the Chalcolithic material recovered from this area is superior to that found elsewhere on the island. This may suggest that this material is found in its original deposition location while artifacts recovered to the west, particularly from the Central South Complex, may be re-deposited and even reused. A circular pit, carved into a trampled floor in Grid Square R 49, was deliberately filled with a carefully selected assembly of tools and a figurine, then sealed with very large stones (Figs 5-9). This significant feature will be discussed below in Section 1.5.

### 1.5 Deposit in Pit, Grid Square R 49

Far and away, the greatest density of Chalcolithic material has been found at the eastern end of the island, that which is closest to and visible from the mainland. Today, the most conspicuous feature in this area is a rectangular structure, oriented along a north/south axis at the very tip to the island (Figs 2-4). First excavated by Hadjisavvas in 1982, the structure was designated as East Building. In 1997, the New York University team re-examined the building and sunk new trenches along the exterior of its western wall. East Building exhibits three different types of masonry reflecting three different phases in its construction: Hellenistic, Early Byzantine, and Byzantine/Post Byzantine renovation. The foundation course is comprised of large Hellenistic ashlar blocks. Above them, a course of much smaller, rectangular cut stones set together with slate and tiles represents the second construction phase of the building. Material retrieved from trench R 50/R 51/S 50 established a 6<sup>th</sup> century A.D. date for this period of construction. The uppermost course of masonry is comprised of small irregular stones set in cement mortar representing the third and most recent phase in the building's history.

While the course of Hellenistic ashlars may represent part of the island's original circuit wall, the function of the later building that rests atop it remains uncertain. Voussoir blocks found within the structure indicate that it was barrel-vaulted. A bronze belt buckle (MB.97.01) found in trench R 50/R 51/S 50 is decorated with a Christian cross as are two stone pithos lids found just to the west of the structure. This material may suggest, but certainly does not confirm, a religious association for the building. The structure may have been related in some way to the community of clergy serving the three Early Byzantine basilicas across the water on the mainland. It must be said, however, that East Building could have had a completely non-religious function. Indeed, the north/south orientation of the structure would argue against its interpretation as a chapel.

At the start of our work, the remains of rubble foundation running along a north/south axis, roughly parallel to East Building, was partially visible. This had been exposed by Hadjisavvas' slit trench (Fig. 3, and at the left of Fig. 4) dug in 1982 along a north/south line just to the west of East Building. In 1997, we opened a 4×4m. trench that straddled this wall and designated it as grid square R 49 (Fig. 4, top left and Fig. 5). This trench has yielded the richest of the Chalcolithic finds excavated to date on Geronisos.

At an elevation of 20.87 (level 3) many fragments of glass and pottery dating to the 6<sup>th</sup> century A.D. were unearthed as well as two large stone pithos lids, each incised with a Christian cross (St.97.16-17). It seems that this area served as a storage facility, perhaps associated with East Building. Directly below this Early Byzantine floor level, we encountered a layer containing quantities of Chalcolithic chipped stone and pottery (level 4). The underlying level 5 produced Chalcolithic pottery as well as very large quantities of chipped stone found together with numbers of ground stone tools (St.97.21, 24, 27, 28, 66, 68, 69) some of which can be seen in Fig. 9. It is of interest that no Hellenistic material was unearthed in this area and that the Byzantine level rested directly atop the Chalcolithic layer.

At an elevation of 20.44-20.42m., a trampled reddish earth floor was reached and designated as level 6.1. This floor produced much pottery, chipped stone, ground stone tools (St.97.14, 36-39, 40, 45, 88) and a chalcedony bead, St.97.43 (Fig. 35). Up from under this floor level and protruding to an elevation of 20.66m., a concentration of large stones, including two boulder-sized rocks, was encountered at the south of the trench (Fig. 5). Removal of these stones revealed the lines of a circular pit cut neatly through the floor level (Figs. 6-8). The pit was roughly circular in shape, measuring some 1.10m. at its largest diameter and dug to a depth of *ca* 0.20m. It was filled with a deposit of ash and soft ashy earth, designated as level/deposit 6.2. It is significant that while the earth found within the pit showed quantities of ash and some heat-cracked stones, no charcoal was found. A fire at a separate location seems to have produced the ash which was deliberately imported to the pit along with many fist-sized stones.

The pit contained (Fig. 10) pottery (one medium-sized bag of sherds was recovered), chipped stone and a jasper chip (St.97.59 found at elevation 20.26). It also contained a stone bowl fragment (St.97.58, elevation 20.22), a stone slab/plate fragment (St.97.56), a pecked stone fragment St.97.42 (elevation 20.36), and a stone (St.97.84). An assemblage of stone tools was recovered from the deposit including grinder/hammerstones (St. 97.64 and St.97.65, elevation 20.37), a grinder/polisher (St.97.62), an axe (St.97.44, elevation 20.39), and what may be a rubber (St.97.63). At the very lowest level of the pit (elevation 20.21) a stone figurine was recovered (St.97.55, Figs 37-38).

## 1.6 Secondary use of Chalcolithic material during Hellenistic period

Significant quantities of chipped stone have been recovered from Hellenistic floor levels within the Central South Complex of the island (Connelly 2005). It appears that the Hellenistic inhabitants of the island discovered chipped stone in the course of their building activities and

reused it for their own purposes. The x and y coordinates of every piece of chipped stone excavated from Geronisos have been plotted and elevations have been taken for each artifact. This has enabled us to see the distribution of Chalcolithic chipped stone across Hellenistic floor levels island-wide.

Certain rooms show floors on which chipped stone was distributed in what appear to be working areas. In grid square N 22, for example, some thirteen pieces of chipped stone were recovered including one high quality blade (St.93.31). Six pieces were found in an interior room clustered in close proximity to a Dressel 1 A amphora neck that served as a pot stand (P.93.27) and a Cypriote Sigillata jug (P.93.53). Three small worked blocks placed roughly in a circle around this area, and significant quantities of ash, may define a work space. The grouping of artifacts is suggestive of food preparation in which Chalcolithic chipped stone recovered by Hellenistic inhabitants seems to have been utilized. In contrast, neighbouring grid squares N 23 and O 23 yielded just one piece of chipped stone each, perhaps suggesting that rooms in these squares served quite different functions.

Squares N 24 and O 24 showed an extraordinary density of chipped stone with over 60 pieces recovered from the two trenches combined. Many of these stones were found on the Hellenistic floor level in close proximity to pots, ash and other artifacts. Stone tools were also found at Hellenistic levels within these trenches (chisel, St.93.17 and St.93.24). Two of the rubble platforms that rise above floor level in N 24/O 24 show Chalcolithic tools built into the constructions. Clearly, the Hellenistic builders were encountering Chalcolithic material each time they sunk a trench and they used what they found, both for building material as well as for utilitarian purposes.

## 2.1 Introduction

The results presented below are preliminary, part of the ongoing research into the prehistoric

occupation of Geronisos island.<sup>2</sup> Initial results from the analysis of each of the main artifact categories, ceramics, ground stone and chipped stone are outlined, providing evidence that demonstrates the Early Chalcolithic character of the island's prehistoric occupation. Much of the analytical research to date has focused on the eastern end of the island where *in situ* Chalcolithic occupation deposits have been excavated (Figs 2-4). The character of the material culture is considered in detail, providing evidence for inter-site comparisons while demonstrating the significance of Geronisos island to the interpretation of the Cypriot Early Chalcolithic.

On-going research will seek to further refine the artifact descriptions outlined below in order to better understand the technologies employed and their implications for inter-site comparisons. The nature of the distribution of Chalcolithic material across the island will be documented in detail and considered in terms of its relationship to later occupation of the island. Future excavation of prehistoric deposits will focus on providing a more extensive exposure of *in situ* Chalcolithic deposits and in understanding preliminary indications of contextual variability. Such information will refine our understanding of the nature of the Chalcolithic occupation on Geronisos Island and in relation to other Early Chalcolithic sites across Cyprus.

## 2.2 Ceramics

The ceramic assemblage collected from both excavated and surface contexts on Geronisos provides a variety of evidence relevant to the date and character of the Chalcolithic occupation on the island. Much of the sample analyzed to date (62.94%) is unfortunately heavily abraded (Table 1). Preliminary analysis of the c. 1/3 of sherds with preserved diagnostic surfaces provides information relevant to the recognition of a number of 'wares' that characterize the Geronisos Chalcolithic occupation (Tables 1-2, Figs 12-17). While it is fully recognized that the definition of wares for prehistoric hand-made ceramics is fraught

with difficulties, the term is retained in the present report for the purpose of documenting the relative chronology of the site (cf. Bolger 1988, 290; Baird 1991; Bolger and Shiels 2003). Future analysis of the ceramic assemblage from Geronisos will refine the categories presented below through attribute analysis that will attempt to better understand the relationships between the various fabric types, vessel shapes and the surface treatments utilized. This analysis will, at the same time, permit the large body of abraded sherd material to be more fully documented in terms of the general ceramic technology.

### *Ceramic wares and Relative Chronology*

The wares documented in the present report are based on the definitions provided by Bolger (1998a, 95-100) for the Kissonerga-Mosfilia assemblage. At present three major wares can be documented at Geronisos, including the dominant Glossy Burnished ware (GBW), a smaller proportion of Red-on-White Painted ware (RW), and Coarse ware (CW). Accompanying these primary ceramic types is a small number of sherds, which represent a variation of Red Monochrome along with one Combed ware sherd and a single sherd with a blackened exterior not identified to type (Table 1). This trio of dominant ceramic types (GBW, RW and CW) as well as the presence of a few Combed ware and Red Monochrome sherds has been used to define the Early Chalcolithic elsewhere and provides a relative date (c. 3,800-3,500 B.C.) for the prehistoric occupation of Geronisos Island (Peltenburg 1987, 53-54, 1998, 12-16; see also Bolger 1998a, 102-107).

Analysis of vessel shape is still at a preliminary stage and will be refined with future analysis. At present it is possible to indicate a number

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2. I would like to express my appreciation to Dr Joan Connelly for inviting me to study the Chalcolithic material from Geronisos Island, and to thank Dr Diane Bolger for comments on an earlier version of this paper. All opinions expressed in the text of Section 2, however, are my responsibility alone.

of formal details relevant to the discussion of ceramic types and relative chronology. Both the GBW and RW clearly demonstrate the use of both open and closed vessels at the site, while only open vessels are represented by CW (Table 1). Plain rims demonstrate the presence of both flaring straight-sided platters as well as smaller bowls for both GBW and RW, with GBW manifesting the occasional spouted version. These vessels typically displayed flat bases with one GBW example exhibiting a slight flange. Closed forms dominate the sherd counts for both GBW and RW, more heavily so in the case of RW. Prevalent among the closed sherds are a significant number of neck fragments that demonstrate the common occurrence of flasks (again most frequently with RW). The bowl forms clearly derive from the Ceramic Neolithic with the flask representing the only new vessel form introduced in the Early Chalcolithic (Bolger 1991, 85, 1998a, 107). A similar prevalence of flasks was noted for the Early Chalcolithic at Kalavassos-Pampoules and Kalavassos-Agiou, though the need at Geronisos for the storage of liquid was more clearly vital since there are no water sources on the island (Clarke and Todd 1993; Baird in press; Connelly and Wilson 2002). CW is exclusively dominated by vertical sided flat-based flanged trays with one example exhibiting a small lug. Other diagnostic forms including pointed and omphalos bases are represented, but unfortunately occur only among the abraded fragments (Fig. 17).

### Glossy Burnished ware (GBW)

*surface treatment* – red paint applied directly onto an unslipped surface, heavily burnished to a high lustre, with burnishing strokes frequently visible

*fabrics* – A: a well-levigated orangey-pink colour typically with a grey core, fine rounded white, light grey and sometimes red grit, hard with a bricky fracture

— B: a well-levigated very pale brown to pink colour, more occasional grey sandwiched

core, with a uniform fine white grit, hard with a bricky fracture

*shapes* – platters, bowls, spouted platters/bowls, flasks

Glossy Burnished ware, first defined by Peltenburg (1979, 33-34) for the assemblage collected from the site of Kissonerga-Mylothkia, has become the one of the most significant type fossils defining the Early Chalcolithic in western Cyprus. Described by Bolger (1998a, 108) as a 'true ware' in terms of its consistency of surface treatment, fabric and vessel morphology, this ceramic type is highly consistent between the excavated assemblages of Kissonerga-Mylothkia, Kissonerga-Mosfilia, and now Geronisos (Bolger 1998a, 95-95; Bolger and Shiels 2003). The fabrics and surface treatment of the Geronisos GBW closely correspond with the descriptions provided for the Lempa Cluster sites, while preliminary indications of vessel form demonstrate the presence of the most characteristic Early Chalcolithic shapes and elements (Fig. 12).

According to the survey reports, GBW is present in the predominantly Middle Chalcolithic ceramic assemblage of Miliou-Rodoudes providing an inland extension to presence of this dominant ceramic type, while recent survey collection shows GBW from Agios Kononos in the Akamas area (Stewart 1981, 42-46; Bolger pers. comm.). Glossy Burnished ware shows only a residual presence in the early Middle Chalcolithic (3A), is gone by sub-period (3B) at Kissonerga-Mosfilia, and is absent from Period 1 at Lempa-Lakkous (Peltenburg 1993, 12; Bolger 1998a, 102). A similar fabric lacking the diagnostic glossy surface treatment (perhaps due to surface abrasion) was represented at Early Chalcolithic Maa-Palaiokastro, which is dominated instead by Red monochrome painted ceramics (Peltenburg 1985, 14, table 1; Stewart 1985, 240-50; Bolger 1988, 291-2). Ceramic parallels at the start of the Chalcolithic elsewhere, notably at Kalavassos-Agiou, show highly burnished surfaces used somewhat differently on both Red monochrome and Red-on-White painted ceramics particularly in phase



1b, while corresponding vessel shapes are prominent especially in phase 2 (Kromholz 1981, 21-22; Peltenburg 1987, 54; Baird in press). The particular character of GBW as reflected in the significance of the prominence of monochrome pottery in the west, however, has been described as a regional feature of the Early Chalcolithic tradition belonging to the Pafos region (Peltenburg 1980, 3; Baird in press). Geronisos island, therefore, clearly fits within that regional milieu and belongs within the Early Chalcolithic landscape documented by the Lempa Cluster sites.

### Red-on-White ware (RW)

*surface treatment* – cream to pinky coloured slip, at times relatively thick and chalky, sometimes self-slipped, painted with a thin red-brown paint in broad and narrow lines, block coloured areas and the occasional lattice

*fabrics* – C: a well-levigated orangy-pink colour typically with a grey core, fine rounded white or light grey grit (closely resembles fabric A in terms of colour and temper)

— D: a well-levigated light yellow to cream colour, sometimes with grey core, homogeneous fine grey grit, relatively soft with a smooth rounded fracture (resembles standard Neolithic fabric A at Kissonerga, Bolger 1998a, 97)

*shapes* – bowls, platters(?), flasks

Though GBW may be the most discrete ware and clearly dominates at Geronisos, it is with the painted ceramics that regional aspects of the Early Chalcolithic across Cyprus as well as the transition from the Late Neolithic have been most well documented. In contrast to the northern Ceramic Neolithic tradition, Paralimni-*Nissia*, and perhaps the Late Neolithic of the Pafos district, a low percentage of RW sherds (relative to monochrome) is a characteristic of Early Chalcolithic ceramic assemblages (Kromholz 1981, 29; Baird 1985, 15-18; Bolger 1991; Flourentzos 1997, 4; Peltenburg 1998, 8).

It is with the shift from curvilinear to linear painted decoration at Agios Epiktitos-*Vrysi* that

the origin of the Early Chalcolithic tradition has been demonstrated to emerge from the preceding Late Neolithic (Peltenburg 1980, 3-4, 1983, 10; Bolger, 1985, 33; Peltenburg and Spanou 1999, 19). Parallels exhibited between the final Agios Epiktitos-*Vrysi* RW style and that of Kalavassos-*Agious* (phase 1a) allow the Late Neolithic to Early Chalcolithic transition to be placed near the start of the 4<sup>th</sup> millennium B.C. (Bolger 1987, 84, 1991, 84; Peltenburg and Spanou 1999, 17-19; Baird in press). In the west RW is comparatively less frequent, but demonstrates the same range of linear motifs as well as the use of a multiple brush technique that define the Early Chalcolithic RW tradition elsewhere (Bolger 1991, 84; Peltenburg and Spanou 1999, 17; Bolger and Shiels 2003; Baird in press). The Geronisos RW material clearly belongs to this Early Chalcolithic linear tradition.

Many of the sherds counted as RW in the Geronisos assemblage were defined on the basis of the presence of a creamy coloured slip because comparatively few RW sherds from the island had painted motifs preserved. This sherdage could be defined as 'plain white' (cf. Bolger and Shiels 2003), but because these sherds were indistinguishable from those exhibiting RW painted motifs in terms of both fabric and slip, they were grouped together in the present report. The use of a slip on Geronisos RW sherds is a feature prevalent during the Early Chalcolithic in the Pafos region at sites like Kissonerga-*Mosfilia* (Bolger 1998a, 96). In contrast, the use of a slip was comparatively rare at Kalavassos-*Agious* prior to phase 2 where it was used with burnishing for decorative effect (Kromholz 1981, 29-30; Baird 1991, 23-24, in press). This feature confirms the island's close relationship with other sites of the Pafos district, exemplified by those of the Lempa Cluster.

For the majority of RW sherds only small traces of the red painted pigment have survived. The limited number of Geronisos RW sherds exhibiting preserved painted motifs shows the use of parallel lines and broad bands as well as

block painted areas and the presence of the lattice motif (Figs 14-16). Such a combination of motifs suggests that the RW of Geronisos would be most satisfactorily placed under the description of Red-on-White band and line ware or RWBL (Bolger 1998a, 96). This variety of RW is characteristic of period 2 at *Kissonerga-Mosfilia* and *Kissonerga-Mylothkia*, though the Geronisos range of painted motifs is far more limited (Bolger 1998a, 109; Bolger and Shiels 2003). Interestingly, the Geronisos RW appears most comparable with the description provided by Bolger for the *Maa-Palaiokastro* RW (Bolger 1988, 290-291). RW at both of these small Early Chalcolithic 'homesteads' exhibits a relatively soft creamy slip and a limited range of motifs suggesting that the degree of variability for this ware within any particular site may, in part, be a function of site size and corresponding socio-economic complexity. Bolger (1991, 85) has inferred a chronological distinction linking the RW of *Maa-Palaiokastro* and *Kalavassos-Agiou* phase 1(a) with the Late phase at *Agios Epiktitos-Vrysi* in contrast to greater similarities in the RW of *Kissonerga-Mosfilia* and *Kissonerga-Mylothkia* to that of *Kalavassos-Agiou* phases 1b and 2 (see also Baird in press). The RW from Geronisos may be similarly early, but prominence of GWB at Geronisos, in contrast to *Maa-Palaiokastro*, implies that the former is more closely related to the *Kissonerga* Early Chalcolithic assemblages. The apparent similarity of both the Geronisos and *Maa-Palaiokastro* RW to the earlier Late Neolithic variety (as distinct from the orange-pink (slip) of the *Mylothkia* variant also shown at *Kissonerga-Mosfilia*) may, therefore, suggest a slower rate of change occurring at smaller sites (Stewart 1983, 245; Bolger 1998a, 96). Since the *Kissonerga-Mylothkia* RW has more recently been described as exhibiting a buff or whitish slip (Bolger and Shiels 2003), it appears that this distinction, whether between the smaller and more substantial sites or across time, may be limited to the variety of motifs rather than motif as well as slip character.

## Coarse ware (CW)

*surface treatment* – typically untreated, but sometimes exhibits a thin red wash or paint inside and out or a thick creamy rough plaster like slip

*fabric* – E: coarse dark brown to black crumbly fabric with large coarse chopped vegetable filler and a coarse rounded grey to black and more occasionally red grit.

*shapes* – tray

The significance of the Coarse ware trays in the Geronisos ceramic assemblage is two-fold (Fig. 13). Not only is this vessel type highly diagnostic of the Early Chalcolithic, but the very fragile nature of CW trays suggests that they must have been produced *in situ* (Bolger 1998a, 98). The relatively frequent inclusion of this ceramic type in the Geronisos assemblage, therefore, implies that occupation on the island was more than a mere camping expedition and that at least some ceramics were being produced on the island. The variety of surface treatments shown by the Geronisos CW sherds is typical of this ware seen at *Maa-Palaiokastro* again providing a link between these two small Early Chalcolithic sites (Bolger 1988, 291). The same surface treatments were also noted at *Kalavassos-Agiou*, while the presence of red painted surfaces on Coarse ware fabric has also recently been noted at *Kissonerga-Mylothkia* (Kromholz 1981, 22; Bolger and Shiels 2003). The u-shaped openings characterizing CW trays at *Kissonerga-Mosfilia*, *Kissonerga-Mylothkia* and *Kalavassos-Agiou*, however, have not yet been identified at Geronisos (Baird 1991, 22; Bolger 1998a, 98; Bolger and Shiels 2003). The absence of this particular CW form also from *Maa-Palaiokastro* assemblage (if this site represents a small homestead as interpreted by the excavator) suggests that u-shaped openings in CW trays may be functionally related to site size, being absent from smaller scale occupations (Bolger 1988, 293; Thomas 1988, 283).

## Red monochrome ware (Rm)

*surface treatment* – unslipped but painted with red pigment

*fabrics* – F: somewhat crumbly dark red-brown fabric with medium to large angular red and black grit, hard with a rough bricky fracture (resembles Kissonerga fabric E, Bolger 1998a, 97).

*shapes* – unknown, few sherds

A small number of sherds in the Geronisos assemblage exhibiting red painted but unslipped surfaces and a dark red-brown fabric resemble material defined as Red monochrome (Rm) and fabric E at Kissonerga-*Mosfilia* and RM Kissonerga-*Mylothkia* (Bolger 1998a, 96-97; Bolger and Shiels 2003). Bolger (1998b, 132) has documented the presence of a limited amount of RM in the Kissonerga-*Mosfilia* period 2 assemblage, but noted that this ceramic type, though clearly introduced at this time is as yet poorly understood. RM ceramics are characteristic of the Middle Chalcolithic phases and at Kissonerga-*Mosfilia* demonstrating variability in terms of fabric that has been used to distinguish the period 3 sub-phases 3A and 3B (Bolger 1998a, 103). The small sample of Red monochrome sherds at Geronisos provides an additional example illustrating the presence of Rm pottery within the Early Chalcolithic.

## Combed ware (Cb)

*surface treatment* – pink coloured slip with thin red paint combed with parallel wavy lines

*fabric* – D (the same as RW and the standard Neolithic fabric A at Kissonerga, (Bolger 1998a, 97)).

*shapes* – unknown, single sherd

## ? – unidentified ware (?)

*surface treatment* – slipped? with a black burnished surface on the sherd exterior

*fabric* – C (a misfired RW?)

*shapes* – unknown, single sherd

## *Intra-site variability*

A detailed analysis of context has not yet been carried out, but preliminary ceramic analysis results demonstrate interesting possibilities of intra-site variation that require further investigation (Table 2). Square R 49 (Figs 2-3), which intersects Hadjisavvas's north/south slit trench of 1982, demonstrates a ceramic profile heavily dominated by GBW. A clear contrast is demonstrated by square R 46 (Figs 2-8) where RW was somewhat more prevalent than GBW. The latter ceramic type is again most prominent in square Q 50N/R 50S and sub-square Q 50S, but at a level significantly below that of R 49. RW in Q 50N/R 50S and Q 50S, as in square R 46, is again well represented. These data suggest that the use of RW was prominent in the area underlying the East building, while the monochrome GBW was more heavily used further to the west. The degree to which this circumstance represents a true 'functional' contrast in these different contexts of the Geronisos Chalcolithic occupation, or an accident of surface treatment preservation will need to be explored with future excavation as well as stratigraphic and fabric analyses of the collected sherdage.

Square P 50N stands apart with its unusually high percentage of CW. While not quantified, the CW of the adjacent squares Q 50S and Q 50N/R 50S seemed comparatively poorly preserved. The use of CW trays (probably for food preparation), therefore, appears to be a particular feature associated with the Chalcolithic occupation abutting the southeastern edge of the island. At Lempa-*Lakkous* (Period 2) CW trays were similarly isolated in external areas (Peltenburg 1985, 321). Additional excavation in this area is required to better understand this observation.

## 2.3 Ground stone

The ground stone assemblage from Geronisos Island is still not fully documented in numerical detail and so is not tabulated separately in the present report. A number of ground stone materials from both the centre of *in situ*

Chalcolithic occupation at square R 49 as well as artifacts collected from the south-central part of the island have been analyzed and are summarized below. The character of the overall assemblage, significant tool types and preliminary inter-site comparisons are provided, that further define the nature of the prehistoric occupation of the island.

The ground stone industry of Geronisos Island is typical of the Chalcolithic, while a number of features clearly demonstrate the early character of the material (Fig. 13). Both volcanic and calcareous rocks were utilized on the island of Geronisos as elsewhere in Chalcolithic Cyprus. It is worth noting, however, that the heavier volcanic materials, in particular, are not native to the island's geology but must have been carried (laboriously in the case of the larger querns) onto the island. Calcareous rocks are immediately available in local Pleistocene terrace deposits of the island, but all other stone materials must have been collected from the mainland environment. Volcanic stones are typically available as rolled pebbles from beach localities, while limestone and serpentinite are available from the Mamonia complex that covers most of the Pafos region. The presence of the distinctive Akamas red sandstone in the assemblage demonstrates knowledge of the raw materials available in that area (G. Petrides pers. comm.). Broadly speaking, the Geronisos environment in terms of raw material availability is the same as that for the Lempa Cluster sites (Elliott 1983, 35, fig. 8). The fact that such raw materials were brought to the island helps to demonstrate the periodic (probably seasonal) nature of the Early Chalcolithic occupation on Geronisos Island and suggests familiarity with large areas of the mainland environment.

### *Cutting tools*

In terms of tool type, the ground stone industry from Geronisos is, perhaps not surprisingly, dominated by smaller hand-held objects (Figs 18-20 and 26-29). Of the artifacts analyzed to date, tools made primarily from diabase comprise

a number of cutting tools including axes, adzes, chisels and flaked tools. The axes, in particular, exhibit features such as their small size (less than 12cm. long), rounded butts and limited type variety that suggest an Early Chalcolithic date corresponding to the ceramic assemblage (Elliott 1983, 14, 1985, 274). The axes also show polishing limited to the blade end with the rest of the tool exhibiting only pecking, an early feature demonstrating continuity with the preceding Neolithic period. In light of the discussion of RW ceramics above, it is interesting to note that axes from *Maa-Palaiokastro*, like those of *Lempa-Lakkous* period 1, show a greater degree of faceting and overall extent of surface grinding. These features were interpreted as indicating a slightly later date than those of *Kissonerga-Mylothkia* (Thomas 1988, 282). In contrast to the axes, chisels including cigar-shaped examples were polished more extensively and finished to a much higher degree. Ovoid flaked tools and small, broad well-made adzes, provide additional features derived from Neolithic tradition that are typical of the Early Chalcolithic, elsewhere as at Geronisos (Elliott 1983, 15-16, 1985, 274). These tool types are typical at *Kissonerga-Mylothkia*, the impoverished period 2 assemblage from *Kissonerga-Mosfilia*, *Kalavassos-Agiou*, *Maa-Palaiokastro*, and *Lempa-Lakkous* period 1 (Elliott 1983, 14-16, 1985, 274, 1998a, 180; South 1985, 76; Thomas 1988, 279; see also Jackson 2003). While not yet quantified at Geronisos, such tools represent frequent occurrences suggesting that this assemblage also reflects the typical prevalence (c. 30-36%) of cutting tools in other Early Chalcolithic assemblages (Elliott 1983, 12-18; South 1985, 76-78; Thomas 1988, 279-281).

### *Abrasion tools*

Numerically more prominent are tools associated with various types of abrasion (Figs 21-24 and 30-33). Abrasion tools similarly dominate (c. 50%) other Early Chalcolithic assemblages around Cyprus and imply a significant amount of food preparation activity on Geronisos Island (Elliott 1983, 1998a, 180, 1998b, 193; South

1985, 76-78; Thomas 1988, 279-281). Tool types include numerous grinders and rubber fragments, a few querns, one cup-marked stone, hammerstones, pounders, polishing and burnishing stones, pecking stones and pestles. The relative paucity of pestles at Geronisos and their simple conical form (inherited from the Neolithic) is typical of other Early Chalcolithic assemblages (Elliott 1983, 21, 1998b, 193). The composition and relative frequency of ground stone items on Geronisos, like the ceramic assemblage, characterize the Chalcolithic occupation of the island as more than just a fleeting visit. The variety of wild plants available on the island of Geronisos today comprises 95% of the mainland species, while similar wild plant resources were recorded at *Kissonerga-Mosfilia* (Murray 1998, 222; Connelly 2002). The range of food plants available on the island are likely to have been exploited in antiquity adding to any food stuffs that may have been carried from the mainland.

Beyond food preparation, several lines of evidence suggest manufacturing activities were carried out using ground stone tools. Like the Early and Middle Chalcolithic ground stone assemblages belonging to the Lempa Cluster, tools from Geronisos were frequently used or re-used for more than one type of activity, for example hammerstone/grinders, hammerstone/burnishers, pounder/grinder, grinder/polishers or rubber/grinders. Such non-purpose designed or expedient tools are especially typical of the *Kissonerga-Mylothkia* and *Lempa-Lakkous* assemblages (Peltenburg 1980, 5-6, 1981, 30, 1985, 320-321; Elliott 1985, 275). While this characterization is not unique to the 1<sup>st</sup> half of the 4<sup>th</sup> millennium B.C. it does appear to epitomize the Early Chalcolithic prior to the development of more specialized tool types in the Middle Chalcolithic (Peltenburg 1998, 243).

One interesting feature of the assemblage is a small number of grinding/polishing implements exhibiting a thin mud/clay coating over much of their surfaces. This encrustation often exhibits multiple striations and may be the result of manufacturing activities, perhaps the processing of

clay or plastering (Peltenburg 1980, 5-6; Bolger 1985, 29, 1988, 292). Similarly, the burnishers could have been employed in the production of GBW pottery (cf. Bolger 1998a, 108). Other tools described for the *Kissonerga-Mylothkia* assemblage, in particular, include an association between the crushing of red ochre and cup-marked stones, and the presence of heat-fractured tools found in non-hearth contexts (Peltenburg 1980, 5-6; Elliott 1983, 24). The presence of a number of small lumps of red ochre from Geronisos confirms the processing of this material on the island.

### Vessels

Two small irregular bowl fragments made of calcareous materials were collected from the *in situ* deposits of square R 49. These pieces represent the only examples of stone vessels currently known in the prehistoric ground stone assemblage on Geronisos. Missing from the assemblage is the array of stone bowls, basins and other containers accounting for c. 11-16% of other Early Chalcolithic sites such as *Kissonerga-Mylothkia*, *Kalavassos-Agiou* and *Maa-Palaio-kastro* (Elliott 1983, 24-27; South 1985, 55; Thomas 1988, 279-281). At *Kissonerga-Mosfilia* period 2 where the cutting tools are so rare, stone vessels comprise over 1/3 of the ground stone assemblage (Elliott 1998a, 180, 1998b, 193). The limited domestic vessel repertoire from Geronisos, particularly of larger items, is perhaps indicative of the logistic difficulties faced in transporting finished stone objects up to the top of the island, but fails to explain why the native calcarenite was not more heavily exploited. While this difference may indicate a functional differentiation in the activities performed at the site, a larger exposure of the prehistoric deposits on the island is required to confirm or deny this apparent anomaly. At present, judging from the types of ceramic vessel recovered and the general paucity of ground stone vessels, it appears that storage of things other than liquids was of a relatively low priority. This low storage capacity feature of the Geronisos ceramic and ground stone

assemblages, in light of the current absence of deep bell-shaped storage pits characteristic of Early Chalcolithic sites elsewhere, corresponds to the suggested temporary (seasonal) nature of visits to the island.

### *Non-utilitarian and other items*

Included in the Geronisos ground stone assemblage evaluated to date, are a few objects of personal adornment, possible structural detail, and a single figurine. Two examples of stone beads, which have Late Neolithic precedents, are represented in the form of unfinished bead blanks (Dikaios 1961, 201). These artifacts belong to a relatively large barrel-shaped bead type both of which were made of bright green/grey serpentinite (Fig. 25). Similar shaped stone beads were recorded at Kissonerga-Mosfilia and add to the variety of ornamental objects belonging to Early Chalcolithic sites (Peltenburg 1998, pl. 37.1). At Geronisos, these objects appear to be attempts to utilize a material exhibiting the colour of picrolite, but lacking its softer more easily carved characteristics. Picrolite is represented by a single small (1.3×0.5cm.) carefully shaped and highly polished biconical pendant (Fig. 34). The extreme rarity of this stone at Geronisos (and its absence at Maa-Palaiokastro) suggests that this valued material was more easily obtained by inhabitants of the larger Early Chalcolithic sites like Kissonerga-Mylothkia or Kalavassos-Agiou prior to the development of more intensive trade networks in the Middle Chalcolithic (South 1985, 73; Thomas 1988; Peltenburg 1991a, 2003). A second elongated biconical pendant preform (Fig. 35) has clear parallels at Kalavassos-Agiou and within the Lempa cluster (Peltenburg 1983, 10; South 1985, 73). The example from Kalavassos-Agiou is made from carnelian, possibly imported from Egypt, while the Geronisos example (Fig. 35) appears to be made of local orange translucent chalcedony (Todd 1982, 55; South 1985, 73). One additional ornament, a perforated flat pebble 'pendant' made of a siliceous material is somewhat singular due to its unpolished form (Fig. 36).

The final non-utilitarian item is a stone figurine made on a sedimentary rock (Figs 37-38). This stylized anthropomorphic object is highly characteristic of the Chalcolithic period during which stone 'idols' of chalk, calcarenite, ceramic and (most recognizably) picrolite proliferate. The Geronisos example is crudely modeled providing a highly stylized outline of the human form without reference to gender. The piece was roughly worked and damaged, perhaps deliberately, prior to deposition (see below). A similar single stone figurine was recorded for period 2 at Kissonerga-Mosfilia as well as at Maa-Palaiokastro, which provide close parallels to the Geronisos example (Thomas 1988, 282; Goring 1998, 149, table 2). A single stone figurine from Kalavassos-Agiou is accompanied by more prolific ceramic examples, while at Kissonerga-Mylothkia figurines of stone, including picrolite, and ceramic are abundant (South 1985, 67-68; Peltenburg *et al.* 2003). The presence of a singular stone figurine of the hand-held type defined by Goring (1998, 150) appears to be characteristic of many Early Chalcolithic sites. This feature perhaps built upon a Late Neolithic tradition as suggested by Sotira-Teppes was substantially altered at Kissonerga-Mylothkia, where the prominent use of picrolite (more typically seen in Middle Chalcolithic figurines) appears to have initiated (Dikaios 1961, 201-202; Peltenburg 1991a, 114, 2003).

Two other objects that deserve mention are fragments of flat plates, pot-stands or post-pads one of which is found *in situ* in square O 22 (Fig. 11). These objects have potential parallels at both Kissonerga-Mosfilia period 2 and Kalavassos-Agiou (Todd 1982, 67; Elliott 1998b, 193). The possibility that these artifacts may be structurally related is of significance to the interpretation of context outlined below.

### 2.4 Chipped stone

The Geronisos chipped stone assemblage is relatively small (n=737), but proportionate to the limited extent of the Chalcolithic exposures (Table 3). In general, the assemblage is heavily

fragmented and exhibits the characteristics of severe raw material scarcity (see Fig. 9 for a sample of chipped stone from trench R 49). This dominating feature of the Geronisos chipped stone assemblage dictated the core technology, the heavy degree of core and tool exhaustion, and the most prevalent tool types. Thus, while the assemblage can be usefully compared with other contemporary assemblages on Cyprus, its island context makes it somewhat unique, and demonstrates a distinct *chaîne opératoire*.

### *Raw material utilization*

Though restricted in terms of raw material abundance, the knappers of Geronisos were not impoverished in terms of material quality (Table 4). Over 2/3rds of the assemblage (c. 71%) was made on good to high quality chert types dominated by 'Lefkara-translucent' chert along with the distinctive black to dark grey 'Moni' chert and the very high quality 'Translucent' variety. The use of poorer quality 'Lefkara-dense translucent' and particularly chalcedony or the rare jasper was facilitated by the specific core technology employed (see below). Though the assemblage is composed of a variety of Lefkara chert types available of the Pafos region, it is significant that the more moderate chert type most widely available in the local mainland environment ('Lefkara-basal') was not heavily exploited on the island. This chert type has been observed in the area above the Avgas and Aspros rivers immediately north of the site. Instead, the prevalence of the 'Moni' variety, typical of the Xeros and Diarizos rivers in eastern Pafos, suggests that materials were collected from further afield. Notably, the Geronisos raw material profile parallels those of the Kissonerga-*Mosfilia* and Kissonerga-*Mylothkia* assemblages in terms of the use of high quality 'Translucent' and 'Moni' cherts (though the later assemblages both show a greater use of 'Lefkara-basal' and less 'Lefkara-translucent' chert than seen at Geronisos) (McCartney 1998, 2003). The knappers from Geronisos, therefore, appear to have had the

same access to the distant 'Moni' stone sources as the knappers from these large Lempa Cluster sites. The exploitation of this particular chert variety on Geronisos like presence of picrolite, a material derived from the Kouris river, show the inhabitants of the island to be actively exploiting resources from a wide area across south-west Cyprus (see McCartney in press and references there-in).

The final point that must be mentioned regarding raw material, is the presence of a single piece of obsidian, excavated from square T 40 in the area of the cisterns. This heavily abraded artifact (a medial prismatic bladelet segment) is technologically inconsistent with the dominant Chalcolithic character of the assemblage, suggesting, instead, an Aceramic Neolithic date. The piece exhibits unidirectional dorsal scars and was probably produced with a pressure technique in keeping with other Aceramic Neolithic examples such as those from Kissonerga-*Mylothkia* (McCartney 2003, see also below). It should be noted, however, that a single obsidian artifact was also recovered from floor 1 of pit 15/35 Maa-*Palaiokastro*, a site lacking any evidence of Neolithic activity (Thomas 1988, 282). One piece of obsidian, interpreted as being residual from the Aceramic Neolithic, was also collected from a period 2 context at Kissonerga-*Mylothkia* (McCartney 2003; see also McCartney 1998, 260 for a discussion of obsidian from Chalcolithic contexts at Kissonerga-*Mosfilia*).

### *Technology*

Once on the island, the inhabitants of Geronisos adapted their knapping technology to fit the restricted raw material availability. The extremely intensive core technology is characterized by a dominant use of the bipolar-on-anvil technique and heavily exhausted flake cores. Splintered pieces exhibiting small flake and bladelet or spall scars demonstrate an effort to maximize raw material exploitation. Notably, splintered pieces and bipolar products occur frequently on the high quality raw materials noted above. Other cores

show the use of the discoidal change-of-orientation, single platform and irregular core types for the production of flakes. Broad plain and faceted butts and a small number of simple platform rejuvenation flakes further define this simple core technology. The presence of cores, core-trimming elements, unworked flake blanks and debris clearly demonstrate the production of tools on the island. Frequently, larger flakes (cores-on-flakes) were used as cores for smaller flakes. One feature of this intensive industry shows the use of side-blow truncations to generate segments from larger pieces. Such technological features are common in other Chalcolithic assemblages, including those of the Lempa Cluster, but were not used as intensively elsewhere (McCartney 1998, 2003).

### *Tools*

The re-use of tools for secondary tool functions or as core material also characterizes the material paucity of the island's chipped stone assemblage. Heavily currated tools saw their use lives atypically extended and were reduced to often quite small residual fragments. The prominence of simple utilized flakes is typically viewed as indicative of 'ad-hoc' tool manufacture in a resource-plentiful environment. On Geronisos such informal tools demonstrate the final stage of very intensive raw material exploitation on the island. In this particular context, even the utilized tools were probably used multiple times. Thus, while tool re-utilization and utilized flakes are indicative of Chalcolithic assemblages elsewhere in the Pafos region, they are particularly marked at Geronisos (McCartney 2003). In addition, the prominence of utilized pieces in this coastal assemblage suggests that such tools are not indicative of a coastal versus inland dichotomy, but a feature of the particular context of this assemblage (contra De'Annibale 1999). Assemblage context, site size and place within a regional site hierarchy are factors of equal if not greater importance to geographical location (Bolger, McCartney and Peltenburg in press).

Other tool classes represented in the Geronisos assemblage include burins, backed pieces,

denticulates, glossed pieces, notches, perforators, pièces esquillées, retouched pieces, scrapers, and truncations (Table 5). Of these, burins and marginally retouched flakes are the most prevalent corresponding well with the prominence of burins, in particular, in the Kissonerga-Mylothkia, Kissonerga-Mosfilia and Kalavasos-Agiou Early Chalcolithic assemblages (McCartney 1998, 2003; Betts 2004). Characteristic Chalcolithic flake scrapers are represented by heavily reduced fragments including examples made on 'Moni' chert, the preferred material type for scraper production, particularly prominent in the subsequent Middle Chalcolithic (McCartney 1998, 2003, in press b).

The final tool that should be noted is a single symmetrical point tang recovered from a surface context near square R 46 on the eastern end of the island, which resembles the Byblos type except for the presence of a small notch on the left lateral edge. The artifact exhibits a light gloss on both lateral edges indicating that it was re-utilized in antiquity (possibly accounting for the notch) presumably by the Chalcolithic inhabitants of the island from whom quality chert was valued at such a premium. This piece, made on a bidirectional prismatic blade segment of high quality 'Moni' chert is consistent with point tangs documented for the Early Aceramic Neolithic assemblage from Kissonerga-Mylothkia, though the material used is more typical of the subsequent Middle Aceramic phase (McCartney 2001; Peltenburg 2001; McCartney 2003). The point tang, together with the obsidian bladelet, imply that Geronisos Island was visited during the Aceramic Neolithic prior to the more extended occupation of the island during the Early Chalcolithic.

### *Chipped stone intra-site variability*

In spite of the heavy recycled nature of the chipped stone artifacts belonging to the Geronisos assemblage, intra-site variability is apparent in excavation squares with high chipped stone densities (Table 6). At the eastern end of the island, the concentration of 'in situ' Chalcolithic occupation in square R 49 shows an unusually



high percentage of tools and a relatively low percentage of cores and core-trimming elements. These figures along with a lower than average amount of blanks and debris suggests less core reduction than tool utilization activity in the area of Square R 49. In contrast, in the area of squares S 40 and T 41 between cisterns 1 and 2 the percentage of tools is considerably lower and the percentages of debris and blanks high. A somewhat higher than average percentage of cores and core-trimming elements in square T 41, in particular, suggest a greater focus on core reduction in this area. Square T 40 shows a higher percentage of tools and lower percentage of debris and blanks than either S 40 or T 41, but is still at a level below that of square R 49 to the east. In the south-central area of the island a pattern of greater core reduction resembling that of the cistern area is apparent in square O 24, while that of square N 25 shows a pattern similar to square T 40.

## 2.5 Site Character

In spite of the fleeting evidence of an Aceramic Neolithic visit to Geronisos, the prehistoric activity on the island can be defined as a single period occupation belonging to the Early Chalcolithic. This characterization can be confidently made on the basis of the ceramic, ground stone and chipped stone artifacts, which all indicate a relative date placing the site in the first half of the 4<sup>th</sup> millennium B.C. In spite of the consistency of the various Chalcolithic artifact assemblages, one priority of future excavation will be to obtain material for carbon-14 in order to establish an absolute chronology for the site.

### *Chalcolithic contexts and features*

The Chalcolithic contexts have been outlined in detail in Section 1 of this report. Major areas of Chalcolithic occupation, however, are briefly considered here in terms of artifact density. Three areas, namely, the eastern end of the island around square R 49, between cisterns 1 and 2 in squares S 40, T 40 and T 41, and the south-central area of the island particularly along the eastern side in squares N 24-25 and O 24-25 provide the highest densities

of Chalcolithic artifacts. These density peaks represent clear areas of Chalcolithic occupation, though all excavation squares except for R 49 demonstrate varying levels of disturbance by later occupants of the island. Other excavation squares where artifact densities were lower appear to be more indicative of the disturbance activity by later inhabitants of the island or erosion adding more to our understanding of artifact variability than the nature of the Chalcolithic occupation.

The Chalcolithic material from the Central South Complex was unfortunately heavily disturbed by subsequent Hellenistic building activity. This area provides evidence of artifact variability, but little concerning the nature of the occupation. In contrast, Chalcolithic materials recovered between cisterns 1 and 2 demonstrate not only high densities of artifacts, but evidence of 'mud-brick' and ashy fill in square T 41 suggestive of possible temporary structural debris. Similar evidence of pisé or daub has been recovered from other sites like *Kalavassos-Agiou* and used to define the lightly-built structures that characterize the Early Chalcolithic (Todd 1985, 86). At *Kissonerga-Mosfilia* (period 2) and *Kissonerga-Mylothkia* consistent post hole evidence associated with structural mud indicates the presence of timber framed structures set within shallow hollow depressions (Peltenburg 1998, 24, 2003). The flat stone plates/post-pads from O 22 could be related to the use of light timber structures, but the lack of post-holes in the area makes such evidence tenuous. The potential for similar timber framed structures on Geronisos, therefore, requires further investigation.

At present square R 49 provides the clearest parallels with other Early Chalcolithic sites providing the only *in situ* features excavated thus far on the island. Though the single stone figurine clearly represents an ideological artifact it is the context of this figurine that is most suggestive of 'ritual' activity on the island during the Chalcolithic. Two aspects clearly distinguish this feature, namely, that the figurine was clearly damaged (chipped) prior to discard and it was recovered from the base of a pit cut into a trampled earth

surface. The figurine, along with a number of other stone objects, was deliberately deposited in the pit and 'sealed' with a number of irregular stones heaped on the top of the pit fill (see section 1, Figs 5-8). Parallel examples show a single figurine deposited in the upper fill of pit J (unit 67) at Maa-Palaiokastro with KM 3518 placed in pit 1657 at Kissonerga-Mosfilia (Thomas 1988, 272; Miles and Peltenburg 1998, 84). At Kalavassos-Agiou both the single stone figurine and the numerous ceramic examples were found in the secondary fills of various pit contexts (Todd 1991, 8). These Early Chalcolithic examples of figurines deposited in pit contexts, including the most recent example from Geronisos, provide a prelude to the extra ordinary deposit of KM 1015 from Kissonerga-Mosfilia in the subsequent Middle Chalcolithic (Peltenburg 1991b).

### *General perspectives*

The Early Chalcolithic phase in Cypriot prehistory once labeled simply as the 'transition' from the Late Neolithic to the Chalcolithic has remained difficult to interpret due to an impoverished record (Peltenburg 1983, 11-12, 1993, 12). The latter deficiencies are accounted for by the negative features and conditions of erosion defining the period (*ibid*, 2003, p. 261). As a single period Early Chalcolithic site, the addition of detailed information from Geronisos Island contributes significantly to our understanding of regional perspectives and material culture change through the period. The material culture from the Chalcolithic occupation on the island of Geronisos is in many ways very typical of the Early Chalcolithic phase, thereby adding to the general picture of cultural uniformity during this phase (Bolger 1987, 73). As suggested by Peltenburg (1983, 12) however, there are divergences within this overall picture of uniformity, suggesting, instead, that regional variability does not require complete homogeneity of material culture (Peltenburg 1987, 56). That a regional component (even if of degree rather than of kind) does exist in the Early Chalcolithic is suggested by the close correspondence of GBW between Kisson-

erga-Mylouthkia, Kissonerga-Mosfilia, surface collected Miliou-Rodoudes and Agios Kononas and now Geronisos Island. A parallel reliance on stone figurines at Geronisos, Maa-Palaiokastro and Kissonerga-Mosfilia (period 2) shows a contrast to the more exclusive use of ceramic figurines at Kalavassos-Agiou, with Kissonerga-Mylouthkia representing the main intersection of these different material preferences.

Divergence is also apparent in the individual character of many of the objects of personal ornament, though this sort of difference may have more to do with aspects of site hierarchy than evidence of regional variability. Other features including the lack of u-shaped openings in CW trays and an impoverished RW motif repertoire suggest a distinction between smaller sites like Geronisos and Maa-Palaiokastro and the extensive establishments of Kissonerga and Kalavassos-Agiou. These are differences which also need to be tested against the possibility of earlier and later sub-phases in the Early Chalcolithic (cf. Peltenburg 2003, 257-260).

In terms of site character, Early Chalcolithic sites have been interpreted as demonstrating evidence of a mobile population for whom temporary lightly-built structures were sufficient shelter and who stored their possessions and commodities in a variety of pits and other underground features (Peltenburg 1987, 54, 1998, 240). If correct, the large pit complex sites like Kalavassos-Agiou, Kissonerga-Mylouthkia and Kissonerga-Mosfilia, which have been interpreted in terms of specialized activities including artifact manufacture and communal grain storage, may provide evidence of central sites to which the occupants of small periphery sites like Geronisos returned seasonally (Todd 1981, 67; Peltenburg 1980, 5, 1998, 240-241). Alternatively, from evidence showing the development of timber buildings to structures built of stone, Peltenburg (2003, 270-274) has recently suggested that the latter ephemeral structures and pit complexes represent new settlement foundations. In this model, the later stone-built architecture represents a consol-

idation phase of such newly established settlements. This model, however, cannot apply to single phase Geronisos where the settlement, though it could be viewed as a new settlement failure, is more likely to represent an example of one of the many varied 'lifeways' pursued during the Early Chalcolithic (ibid. 273-274). The unique character of the occupation on Geronisos island, more than other Early Chalcolithic sites, requires an interpretation that views at least part of the population as relatively (perhaps seasonally) mobile.

Economic evidence is still forthcoming from Geronisos with faunal and flotation data still to be processed though deer is notably present in the faunal sample (Croft pers. comm.). The abundance of deer in earlier phases of the Chalcolithic elsewhere has been cited as evidence for wide territorial access and/or contact (Peltenburg 1991a, 108). Access to a wide variety of stone raw materials on Geronisos clearly supports the suggestion of extensive territory or contacts. It is this kind of economic feature that would have stimulated contact in a mobile society rather than fragmented it (contra Peltenburg 1987, 54). Indeed, recent evidence of ceramic diversity in the Late Neolithic of Cyprus suggests that near neighbours demonstrated more divergent patterns of RW motif variability than sites located at a greater distance within any particular region (Clarke 2001, 73-78). Chalcolithic motifs demonstrate a significant degree of 'eclecticism', but

similarities between the more distant Erimi-*Pampoules* and Kissonerga-*Mosfilia* assemblages in contrast to differences between the latter and near neighbour Lempa-*Lakkous* may perpetuate this Ceramic Neolithic social pattern (Bolger 1991, 90-92). While the restricted range of RW motifs at Geronisos may be related to this kind of social dynamic, other factors such as chronology, site size, function, and length of occupation need to be explored further.

The extreme site location of the Early Chalcolithic occupation on Geronisos provides an added dimension in terms of site type dynamics not faced elsewhere. These dynamics are clearly represented, for example, in the heavily curated character of the chipped stone assemblage. Other problems concerning the nature of the occupation similarly revolve around resource availability, water not being the least among the required commodities. The occupation of resource-poor Geronisos Island, particularly in light of the relatively low Early Chalcolithic site density, is both non-essential and comparatively impractical. Beyond the type of general site hierarchy relationships suggested above, and considering the nature of the features recorded to date, one underlying motive for this unique Early Chalcolithic occupation may be as a prehistoric prelude to the highly symbolic occupations of the subsequent Hellenistic, and Byzantine periods.

| <i>Ware</i> | <i>Open</i> | <i>Closed</i> | <i>Body</i> | <i>Rim</i> | <i>Base</i> | <i>Lug</i> | <i>Spout</i> | <i>Neck</i> | <i>Total</i> |
|-------------|-------------|---------------|-------------|------------|-------------|------------|--------------|-------------|--------------|
| GBW         | 172         | 236           | 301         | 65         | 6           | 0          | 3            | 26          | 809          |
| %           | 21.26       | 29.17         | 37.21       | 8.03       | 0.74        | 0.00       | 0.37         | 3.21        | 99.99        |
| RW          | 39          | 82            | 121         | 4          | 0           | 0          | 0            | 23          | 269          |
| %           | 14.50       | 30.48         | 44.98       | 1.49       | 0.00        | 0.00       | 0.00         | 8.55        | 100.0        |
| CW          | 15          | 0             | 127         | 17         | 17          | 1          | 0            | 0           | 177          |
| %           | 8.47        | 0.00          | 71.75       | 9.61       | 9.61        | 0.56       | 0.00         | 0.00        | 100.0        |
| Rm          | 4           | 5             | 6           | 0          | 1           | 0          | 1            | 0           | 17           |
| %           | 23.53       | 29.41         | 35.29       | 0.00       | 5.88        | 0.00       | 5.88         | 0.00        | 99.99        |
| Cb          | 1           | 0             | 0           | 0          | 0           | 0          | 0            | 0           | 1            |
| %           | 100.0       | 0.00          | 0.00        | 0.00       | 0.00        | 0.00       | 0.00         | 0.00        | 100.0        |
| ?           | 1           | 0             | 0           | 0          | 0           | 0          | 0            | 0           | 1            |
| %           | 100.0       | 0.00          | 0.00        | 0.00       | 0.00        | 0.00       | 0.00         | 0.00        | 100.0        |
| ABR         | 0           | 264           | 1752        | 78         | 21          | 0          | 2            | 47          | 2164         |
| %           | 0.00        | 12.20         | 80.96       | 3.60       | 0.97        | 0.00       | 0.09         | 2.17        | 99.99        |
| TOTAL       | 232         | 587           | 2307        | 164        | 45          | 1          | 6            | 96          | 3438         |

Table 1. Preliminary sherd counts and percentages by ware.

| <i>Square</i> | <i>GBW</i> | <i>RW</i> | <i>CW</i> | <i>Rm</i> | <i>Cb</i> | <i>?</i> | <i>Total</i> |
|---------------|------------|-----------|-----------|-----------|-----------|----------|--------------|
| R49           | 571        | 88        | 91        | 6         | 0         | 0        | 756          |
| %             | 75.53      | 11.64     | 12.04     | 0.79      | 0.00      | 0.00     | 100.0        |
| R46           | 70         | 74        | 21        | 2         | 0         | 0        | 167          |
| %             | 41.92      | 44.31     | 12.57     | 1.20      | 0.00      | 0.00     | 100.0        |
| Q50S          | 71         | 50        | 29        | 6         | 1         | 0        | 157          |
| %             | 45.22      | 31.85     | 18.47     | 3.82      | 0.64      | 0.00     | 100.0        |
| Q50N/R50S     | 62         | 46        | 5         | 1         | 0         | 1        | 115          |
| %             | 53.91      | 40.00     | 4.35      | 0.87      | 0.00      | 0.87     | 100.00       |
| P50N          | 33         | 10        | 28        | 2         | 0         | 0        | 73           |
| %             | 45.21      | 13.70     | 38.36     | 2.74      | 0.00      | 0.00     | 100.01       |

Table 2. Preliminary intra-site variability of ceramic wares: counts and percentages.

| <i>Area</i> | <i>Cores</i> | <i>CTE</i> | <i>Flakes</i> | <i>Blades</i> | <i>BL</i> | <i>Debris</i> | <i>Chips</i> | <i>Tools</i> | <i>Total</i> |
|-------------|--------------|------------|---------------|---------------|-----------|---------------|--------------|--------------|--------------|
| East-end    | 9            | 5          | 15            | 0             | 0         | 46            | 5            | 57           | 137          |
| %           | 6.57         | 3.65       | 10.95         | 0.00          | 0.00      | 33.58         | 3.65         | 41.61        | 100.01       |
| Cisterns    | 18           | 3          | 34            | 0             | 2         | 89            | 15           | 74           | 235          |
| %           | 7.66         | 1.28       | 14.47         | 0.00          | 0.85      | 37.87         | 6.38         | 31.49        | 100.0        |
| Central     | 25           | 14         | 50            | 3             | 6         | 102           | 13           | 88           | 301          |
| %           | 8.31         | 4.65       | 16.61         | 1.00          | 1.99      | 33.89         | 4.32         | 29.24        | 100.0        |
| North       | 3            | 0          | 5             | 0             | 0         | 22            | 0            | 27           | 57           |
| %           | 5.26         | 0.00       | 8.77          | 0.00          | 0.00      | 38.60         | 0.00         | 47.37        | 100.0        |
| Sanctuary   | 0            | 1          | 0             | 0             | 0         | 5             | 0            | 2            | 8            |
| %           | 0.00         | 12.50      | 0.00          | 0.00          | 0.00      | 62.50         | 0.00         | 25.00        | 100.0        |
| Total       | 55           | 23         | 104           | 3             | 8         | 264           | 33           | 248          | 738          |
| type %      | 7.45         | 3.12       | 14.09         | 0.41          | 1.08      | 35.77         | 4.47         | 33.60        | 99.99        |

Table 3. Preliminary intra-site chipped stone category counts and percentages (CTE = core-trimming elements, BL = bladelets, Debris = all blank fragments and chunks).

| <i>Chert Type</i>         | <i>Number</i> | <i>Percentage</i> |
|---------------------------|---------------|-------------------|
| Translucent               | 45            | 11.17             |
| Lefakra-translucent       | 173           | 42.93             |
| Lefkara-dense translucent | 30            | 7.44              |
| Lefkara-basal             | 33            | 8.19              |
| Moni                      | 68            | 16.87             |
| Chalcedony                | 34            | 8.44              |
| Jasper                    | 8             | 1.99              |
| Obsidian                  | 1             | 0.25              |
| Other                     | 11            | 2.73              |

Table 4. Chipped Stone raw material utilization (based on a sample of 403 artifacts).

| <i>Tool Class</i> | <i>East End</i> | <i>Cisterns</i> | <i>Central</i> | <i>North</i> | <i>Sanctuary</i> | <i>TOTAL</i> |
|-------------------|-----------------|-----------------|----------------|--------------|------------------|--------------|
| Backed            | 1               | 2               | 0              | 0            | 0                | 3            |
| %                 | 1.75            | 2.70            | 0.00           | 0.00         | 0.00             | 1.21         |
| Burin             | 4               | 8               | 7              | 1            | 0                | 20           |
| %                 | 7.02            | 10.81           | 7.95           | 3.70         | 0.00             | 8.06         |
| Denticulate       | 1               | 1               | 2              | 0            | 0                | 4            |
| %                 | 1.75            | 1.35            | 2.30           | 0.00         | 0.00             | 1.61         |
| Glossed           | 2               | 5               | 1              | 0            | 0                | 8            |
| %                 | 3.51            | 6.76            | 1.14           | 0.00         | 0.00             | 3.23         |
| Notched           | 1               | 1               | 10             | 3            | 0                | 15           |
| %                 | 1.75            | 1.35            | 11.36          | 11.11        | 0.00             | 6.05         |
| Multi-tool        | 3               | 0               | 0              | 0            | 0                | 3            |
| %                 | 5.26            | 0.00            | 0.00           | 0.00         | 0.00             | 1.21         |
| Perforator        | 1               | 0               | 2              | 0            | 0                | 3            |
| %                 | 1.75            | 0.00            | 2.30           | 0.00         | 0.00             | 1.21         |
| Pièce esquillée   | 1               | 2               | 0              | 2            | 0                | 5            |
| %                 | 1.75            | 2.70            | 0.00           | 2.71         | 0.00             | 2.02         |
| Point             | 1               | 0               | 0              | 0            | 0                | 1            |
| %                 | 1.75            | 0.00            | 0.00           | 0.00         | 0.00             | 0.40         |
| Retouched         | 1               | 5               | 14             | 2            | 0                | 22           |
| %                 | 1.75            | 6.76            | 15.91          | 7.14         | 0.00             | 8.87         |
| Scraper           | 3               | 3               | 6              | 0            | 0                | 12           |
| %                 | 5.26            | 4.05            | 6.8            | 0.00         | 0.00             | 4.84         |
| Truncation        | 1               | 1               | 0              | 2            | 0                | 4            |
| %                 | 1.75            | 1.75            | 0.00           | 7.41         | 0.00             | 1.61         |
| Utilized          | 33              | 43              | 40             | 16           | 2                | 134          |
| %                 | 57.89           | 58.11           | 45.45          | 59.26        | 100.0            | 54.03        |
| Tool resharpening | 4               | 3               | 6              | 1            | 0                | 14           |
| %                 | 7.14            | 4.05            | 6.8            | 3.70         | 0.00             | 5.63         |

Table 5. Tool class counts and percentages for each excavation area and the total tool sample.

| <i>Square</i> | <i>Cores/CTE</i> | <i>Debris/Blanks</i> | <i>Tools</i> |
|---------------|------------------|----------------------|--------------|
| R49           | 6.15             | 46.15                | 47.69        |
| O24           | 11.29            | 61.29                | 27.42        |
| N25           | 10.20            | 53.06                | 36.73        |
| S40           | 6.12             | 69.39                | 24.49        |
| T40           | 7.14             | 53.57                | 39.29        |
| T41           | 10.93            | 62.20                | 26.83        |

Table 6. Preliminary chipped stone intra-site variability.

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## ΠΕΡΙΛΗΨΗ

Οι ανασκαφές του Πανεπιστημίου της Νέας Υόρκης έχουν φέρει στην επιφάνεια σημαντικά πρώιμα Χαλκολιθικά ευρήματα συμπεριλαμβανομένων κεραμικής, λειασμένων λίθινων εργαλείων και λίθινων λεπίδων τα οποία καθορίζουν μια ενιαία περίοδο κατοίκησης που χρονολογείται στο πρώτο μισό της τέταρτης χιλιετίας π.Χ. Αυτό το υλικό συμβάλλει στην καλύτερη κατανόηση των τοπικών γνωρισμάτων της περιοχής και τις ουσιώδεις πολιτιστικές αλλαγές καθ' όλη τη διάρκεια της περιόδου. Η ιδιαιτερότητα της κατοίκησης στη Γερόνησο έγκειται στο γεγονός ότι τουλάχιστον μέρος πληθυσμού της Πρώιμης Χαλκολιθικής μετακινείται κατά διαστήματα (ίσως εποχιακά).

Υπάρχουν τρία κύρια αντιπροσωπευτικά είδη κεραμικής, πρωτίστως της Στιλπνής Στιλβωτής και σε μικρότερη αναλογία της Ερυθρής πάνω σε Λευκό και η τραχεία ακόσμητη κεραμική. Σ' αυτούς τους τύπους μπορούμε να προσθέσουμε ένα μικρότερο αριθμό θραυσμάτων κεραμικής που αντιπροσωπεύουν παραλλαγή του Ερυθρού Μονόχρωμου και Κτενιστού τύπου.

Παρομοίως, τα εργαλεία από λειασμένη πέτρα έχουν πρώιμα χαρακτηριστικά. Είναι κυρίως κατασκευασμένα από διαβάση και συμπεριλαμβάνουν εργαλεία κοπής όπως αξίνες, σκεπάνια, σμίλες και λεπιδοειδή εργαλεία όσο επίσης και εργαλεία αλέσματος που υπερέχουν αριθμητικά όπως οι μυλόπετρες, χειρόμυλοι δημητριακών, σφύρες, κόπανοι, στιλβωτήρες, σμίλες και γουδοχέρια. Η παρουσία Ερυθρού ψαμμίτη από τον Ακάμα δείχνει ότι ήσαν γνώστες των πρώτων υλών διαθέσιμων σε εκείνη την περιοχή. Οι διάφοροι τύποι των εργαλείων υποδεικνύουν τόσο την παρασκευή τροφίμων όσο και κατασκευαστικών δραστηριοτήτων. Ορισμένα εργαλεία τροχίσματος / στιλβώματος είναι επιστρωμένα με στρώση πηλού με πολλαπλές ραβδώσεις στην επιφάνεια. Αυτό ίσως υπονοεί την επεξεργασία αργίλου ή γύψου και πιθανόν να αποδεικνύει την παραγωγή κεραμικής στο νησί της Γερονήσου.

Πέραν των δύο τρίτων της συλλογής πελεκητών πετρών είναι καμωμένες από είδη κερατόλιθου καλής μέχρι υψηλής ποιότητας. Επικρατούν ο διαφανής κερατόλιθος Λευκάρων και ο μαυρο / γκριζός κερατόλιθος Μονής. Η μεγάλη ποικιλία πρώτων υλών από πέτρα υπονοεί επαφές ευρείας έκτασης. Ένα μοναδικό κομμάτι υαλώδους οψιδιανού (τμήμα πρισματικού λεπιδίου μεσαίου μεγέθους) είναι ίσως κατάλοιπο από την Ακεραμική Νεολιθική περίοδο.

Ανάμεσα στα προσωπικά αντικείμενα συμπεριλαμβάνονται μια ημιτελής χάντρα κυλινδρικού σχήματος από σερπεντίνη, ένα δικωνικό περιάπτο από πικρόλιθο, ένα δικωνικό περιάπτο από χαλκηδόνη λίθο και ένα επίπεδο περιάπτο/βότσαλο.

Στην Ανατολική άκρη του νησιού βρέθηκε ένα ανθρωπόμορφο πέτρινο ειδώλιο τοποθετημένο σε ένα κυκλικό λάκκο σκαμμένο σε δάπεδο της Χαλκολιθικής περιόδου. Στο ειδώλιο φαίνεται ότι σκόπιμα προκλήθηκε ζημιά πριν από την εναπόθεση του μέσα στο τεφρώδες χώμα και τις ραγισμένες από φωτιά πέτρες που μεταφέρθηκαν από αλλού και σκεπάστηκαν από πάνω με μεγάλες πέτρες. Μαζί με το ειδώλιο βρέθηκαν κεραμική, λίθινες λεπίδες, θραύσμα χαλαζία, θραύσμα από πέτρινη κούπα, τεμάχιο από πέτρινη πλάκα / πιάτο, μυλόπετρες / σφύρες, στιλβωτήρας, μια αξίνα και ένας τριπτήρας.

Το ειδώλιο και τα υπόλοιπα αντικείμενα που σκόπιμα τοποθετήθηκαν μαζί του, οι λίθινοι στυλοβάτες, τα ίχνη ωμόπλινθων πιθανώς από πρόχειρες κατασκευές και η αφθονία ακατέργαστων οστών ελαφιού υπονοούν ευρεία πρόσβαση στην περιοχή, και είναι ενδεικτικά σημαντικής δραστηριότητας στη Γερόνησο. Η δυσκολία πρόσβασης και η έλλειψη αναγκαίων πρώτων υλών, ιδίως νερού καθιστούν την περιοχή μάλλον ακατάλληλη για οίκηση. Το βασικό κίνητρο αυτών των μοναδικών δραστηριοτήτων είναι ίσως ένα πρώιμο μήνυμα του εξαιρετικά συμβολικού χαρακτήρα της Ιεράς Νήσου κατά τη διάρκεια της Ελληνιστικής και Βυζαντινής περιόδου.



Fig. 1. Aerial view of Geronisos from west, Maniki rocks visible at south.



Fig. 2. Aerial view of east end of Geronisos, from west. East Building, trenches R 49 and R 46.

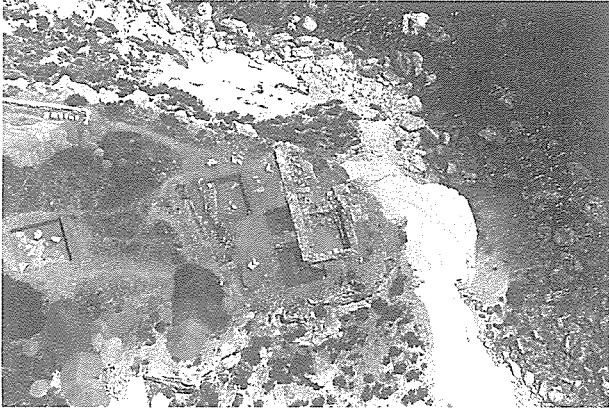


Fig. 3. Aerial view of east end of Geronisos, from south. East Building, trenches R 49 and R 46.



Fig. 4. Aerial view of East Building and R 49.

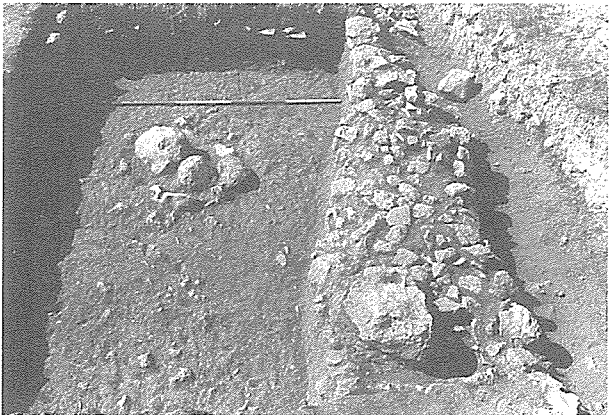


Fig. 5. Trench R 49 with boulders sealing pit, from north.



Fig. 6. Trench R 49 showing pit, from north.

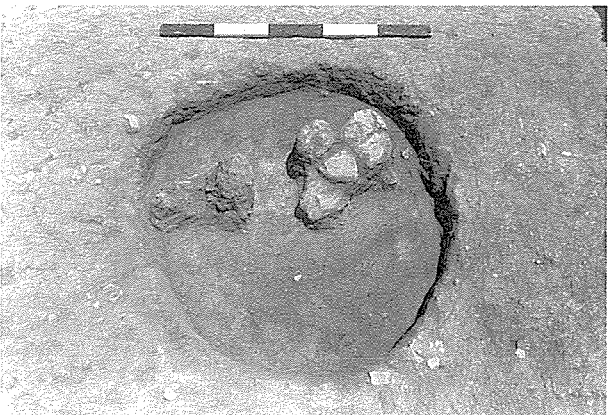


Fig. 7. Trench R 49 showing pit, close up from east.



Fig. 8. Trench R 49, with pit cleaned out, from north.



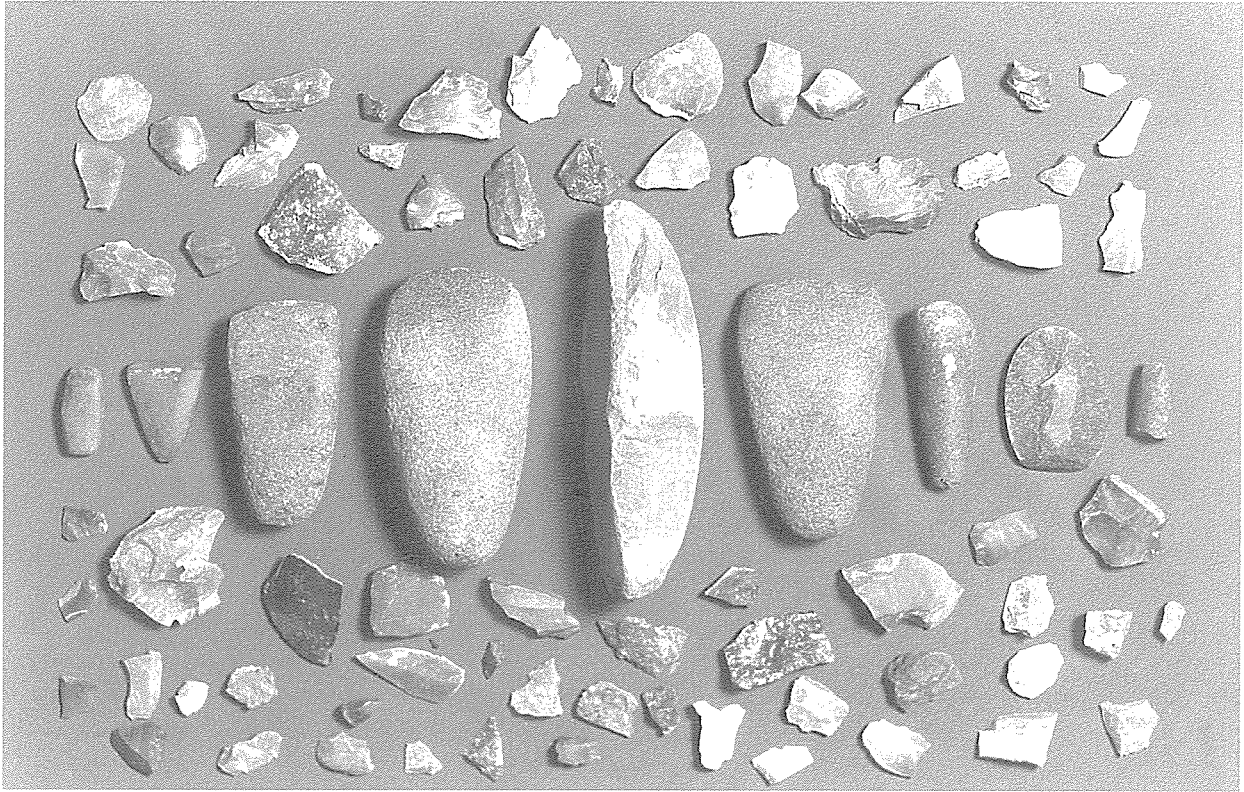


Fig. 9. Objects found from levels 5 and 6.1, R 49.

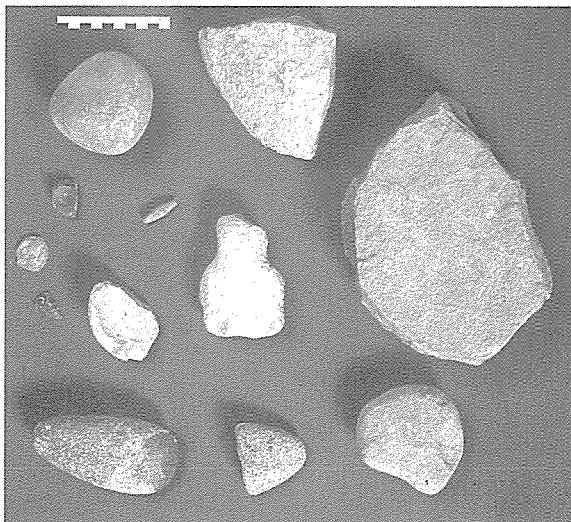


Fig. 10. Objects found in ritual deposit of R 49.



Fig. 11. Stone post-pad shown *in situ* in O 22, Central South Sector.

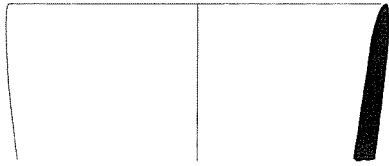


Fig. 12. Glossy Burnished bowl fragment, P.97.18.

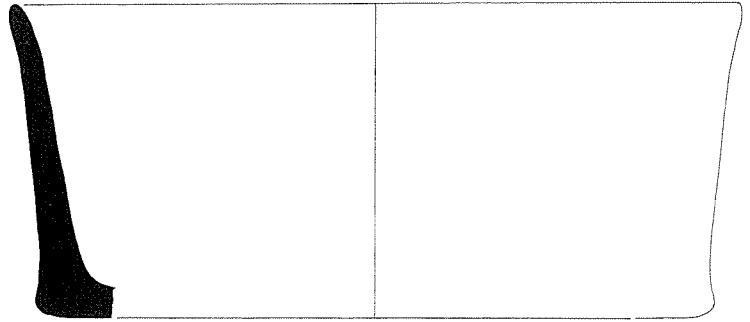


Fig. 13. Course ware tray, P.97.08.

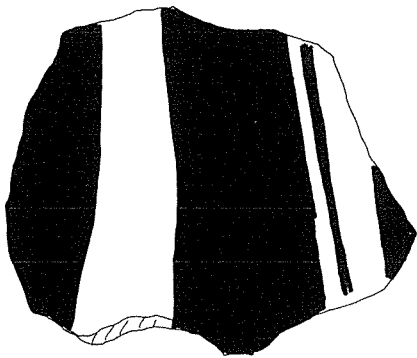


Fig. 14. Red-on-White sherd, P.96.32.

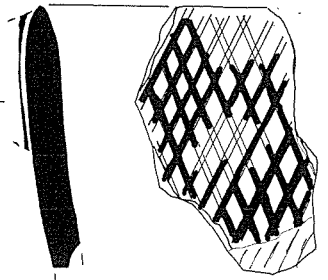
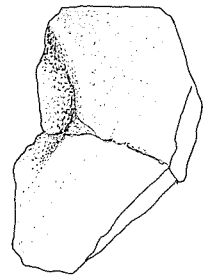
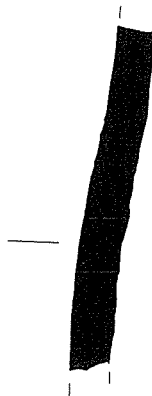


Fig. 15. Red-on-White sherd, P.97.07.

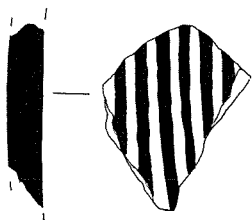


Fig. 16. Red-on-White sherd, P.97.05.

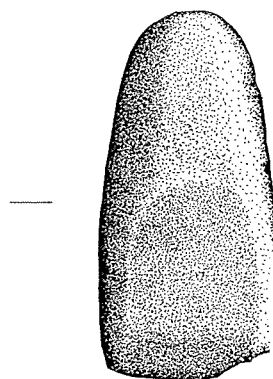
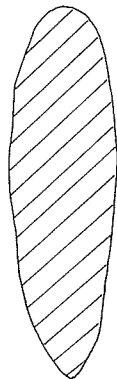


Fig. 18. Axe, St.97.12.

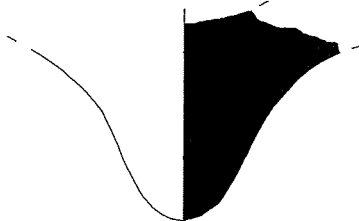


Fig. 17. Pointed Base (abraded), P.97.06.

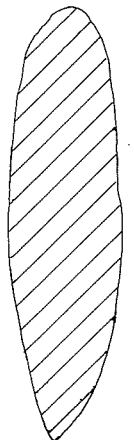
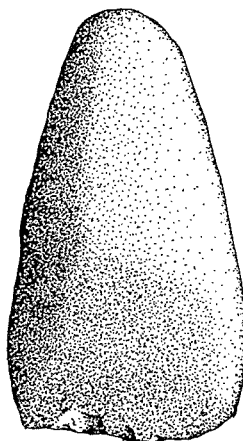


Fig. 19. Axe, St.96.41.

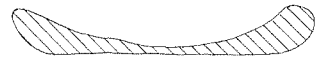
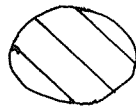
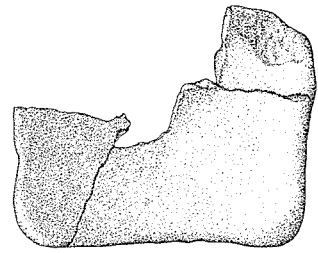
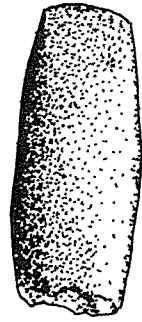
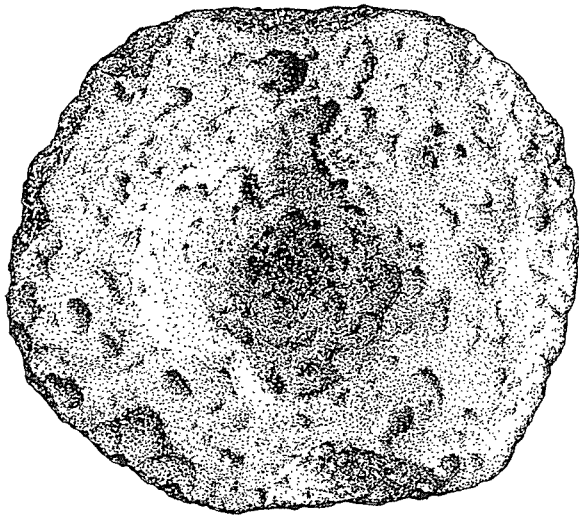


Fig. 22. Quern, St.92.13.

Fig. 20. Chisel, St.93.61.

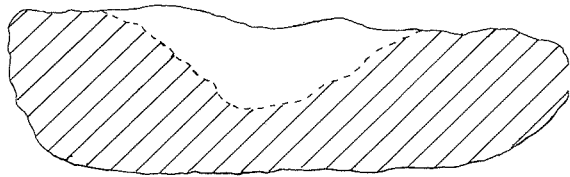


Fig. 21. Cupped stone, St.96.40.

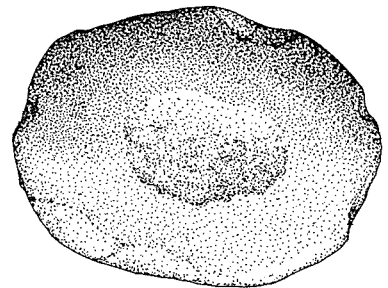
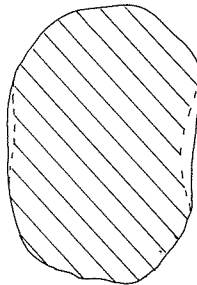


Fig. 23. Hammerstone/grinder, St.93.78.

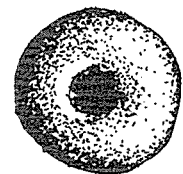
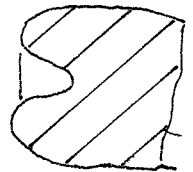
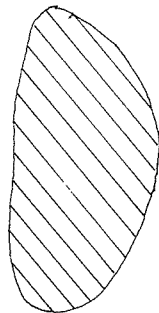
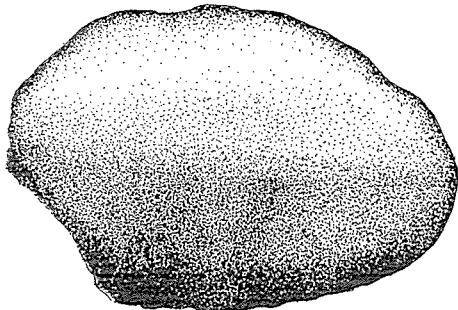


Fig. 25. Bead, St.93.25.

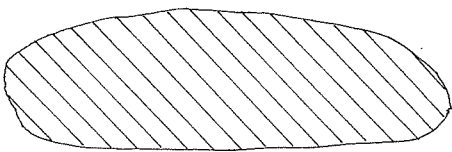


Fig. 24. Grinder, St.97.49.



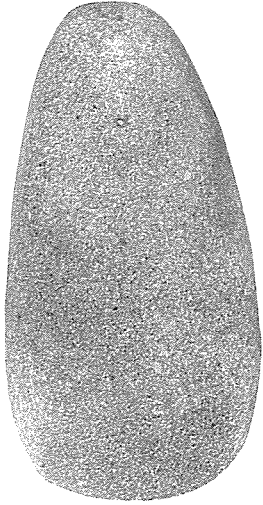


Fig. 26. Axe, St.97.36.

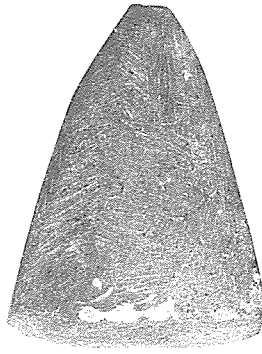


Fig. 27. Adze, St.97.25.

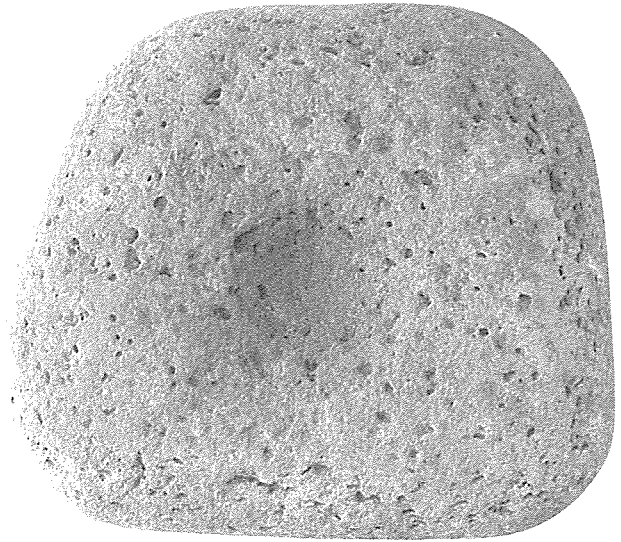


Fig. 32. Cupped stone, St.93.14.

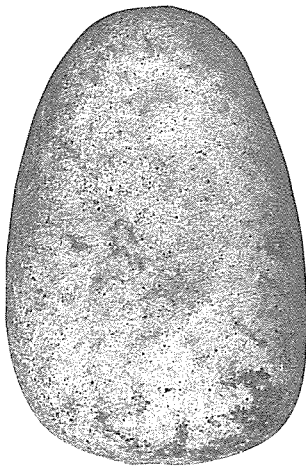


Fig. 30. Grinder, St.97.37.



Fig. 31. Pestle, St.97.39.



Fig. 29. Chisel, St.97.45.

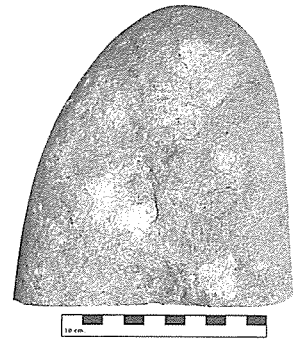


Fig. 33. Rubber/cup-marked stone, St.97.31.



Fig. 34. Biconical picrolite pendant, St.96.26.



Fig. 35. Biconical pendant, St.97.43.

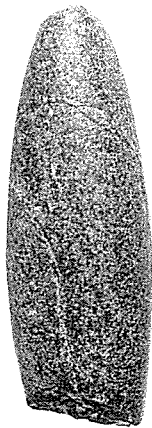


Fig. 28. Chisel, St.97.01.

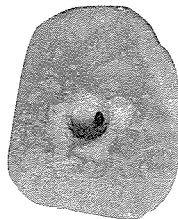


Fig. 36. Pebble 'pendant', St.97.57.



Fig. 37. Stone figurine (front), St.97.55.



Fig. 38. Stone figurine (back), St.97.55.