Sonderdruck aus

UGARIT-FORSCHUNGEN

Internationales Jahrbuch
für die Altertumskunde Syrien-Palästinas

begründet von Manfried Dietrich und Oswald Loretz †

unter Mitarbeit von Josef Tropper

herausgegeben von
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Band 46
2015

Ugarit Verlag

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Redaktion
Ugarit-Verlag, Rosenstr. 9, D-48143 Münster
(Kai A. Metzler : metzler@ugarit-verlag.de)

Printed in Germany

ISBN 978-3-86835-181-1

Printed on acid-free paper

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Pyla-*Kokkinokremos*

Preliminary Report on the 2014 Excavations[1]

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Introduction

Following several earlier explorations of the site of *Kokkinokremos*[2], near the village of Pyla on the south-east coast of the island of Cyprus, a first excavation

[1] The project benefited from the aid of the Department of Antiquities and especially Dr. Marina Solomidou-Ieronymidou and Dr. Despo Pilides. We also thank Dr. Anna Satraki for her generous help at the Larnaca Museum and Eftychia Zachariou (Department of Antiquities) for advice. Excavations were financed by the Institute for Aegean Prehistory, the ARC-A World in Crisis?, the Onderzoeksfonds of the KU Leuven and the *IAP 7/14.* The excavators also wish to thank Dr. Vassos Karageorghis for his kind advice.

[2] P. Dikaios in 1952 (Dikaios, 1971) opened a trial in the south-east area of the hill top and one to the north-east (Area I, henceforth Sector 1), whereas V. Karageorghis in 1981–1982 (Karageorghis/Demas, 1984) worked in Area II (henceforth Sector 2) where work was continued in 2010–2011 by himself and Dr. A. Kanta (Karageorghis/Kanta, 2014). A. Kanta excavated alone in 2012. A preliminary report of that excavation is included in Karageorghis/Kanta, 2014.

campaign by a joint mission of the Universities of Leuven and Louvain (Belgium) and the Mediterranean Archaeological Society of Crete (Greece) took place from October 25th to November 16th, 2014. The specific aims of the project are foremost to get a better understanding of the multicultural character of the site as reflected by its material culture, especially against the background of the continuing discussion on migration, interaction and acculturation, which typifies the late 13th and early 12th c. BC in the Eastern Mediterranean. Moreover, we aim to produce a detailed topographical map including the accurate location of all excavated and visible remains on the plateau and provide a better knowledge of the course and nature of the casemate wall, which was traced at various points of the hill. In addition, we want to clarify whether the highly organised residential quarters that have been excavated form the normal habitation of the plateau or if other types of occupation can be identified as well. Eventually a better understanding of the site within its regional chronological context is hoped for.

The Site

The site of Pyla-*Kokkinokremos* lies about 10 km east of Larnaca, ancient Kition, and some 20 km south-west of Enkomi, two major Bronze Age centres of the 13th–12th c. BC, the period known as Late Cypriot IIC and IIIA. Located within the Dhekelia Sovereign Base Area[3], the hill towers above its surrounding plain at a distance ca. 800 m from the south-east coastline of Cyprus. Coring suggests that at some stage the sea almost reached the foot of the hill, but the precise chronological fixing of coastal changes still needs to be ascertained[4].

The 2014 Excavation Campaign

After initial reconnaissance by the directors in February 2014, several areas were selected for further exploration during the excavation campaign by the international mission[5]: first of all, we aimed at conducting a series of random tests

[3] We are grateful to the British Sovereign Base and Mr. M. Gregoriou for making this work possible and having given the permission to use the UAS for low aerial photography as well as Mr. A. Nicolaedes of Eurosure Insurance Group for having taken care of the insurance of all our team members working within the base.

[4] Zomeni, 2014.

[5] Apart from the three directors, also participated: For the UCL: Dr. Simon Jusseret, field director, Nicolas Kress, in charge of topographical recording, aided by Dr. Sylviane Déderix, graduate students Thérèse Claeys and Johanne Garny. N. Kress also operated the UAS and was responsible for much of the logistics of the expedition as well as for all the plans that accompany this report; for the KU Leuven: Greta Jans, Anne-Sophie Van Vyve, both archaeologists and field supervisors, and the students Shana Deboeck and Thomas Maréchal. We also thank Irini Papadopoulou who took care of environmental

in the north part of the plateau in order to verify the nature and state of preservation of the architectural remains (Sector 3). We also wanted to continue the earlier explorations in 2012 in the Gate area in the west lobe of the heart-shaped plateau, where well-preserved architectural and ceramic contexts had also yielded fragments of two apparently intentionally fired Cypro-Minoan tablets (Sector 4). And finally, we wanted to explore the east lobe of the heart-shaped plateau, where other wall remains were visible (Sector 5)[6]. This report is a preliminary assessment of the results and more study of the contexts and finds is necessary.

Topographical and Archaeological Mapping of the Hilltop (Nicolas Kress / Sylviane Déderix) (Figure 1)

The hill of Pyla-*Kokkinokremos* (34° 59' 27" N, 33° 42' 51"E) culminates at an altitude of ca. 83 m above present sea-level. Its summit takes the form of a large and irregularly-shaped plateau, ca. 6 ha. in extent and maximum ca. 300 m by ca. 650 m large. On all sides of the hill, the upper slopes are relatively mild, in contrast to the medium- and lower-slopes that fall abruptly down to the level of the surrounding valleys. The goal of the first campaign was twofold: producing a topographical map of the plateau, and gathering the spatial information obtained in the course of the excavation and the topographic survey in a single digital environment. The topographic equipment consisted of a robotic total station Trimble S6, a Differential GPS (DGPS) Leica Viva GNSS GS10/GS15 and a total station Leica Viva TS11, as well as a drone DJI Phantom 2 carrying a GoPro Hero 3+ Silver 10 megapixel camera.

The hill has been surveyed in the past but with traditional topographic methods. No accurate and precise topographic data were available prior to the 2014 campaign. The priority was to map the plateau, which is believed to be the focus of the Late Bronze Age occupation. The survey was also extended to the upper slopes around Sectors 4 and 5, so as to contextualize these two excavation trenches that spread below the plateau proper.

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sampling and Marina Faka of the Cyprus Institute and Dr. Sorin Hermon (STARC) who provided timely topographical help (DGPS). The processing of the ceramic material was directed by Dr. Ilaria Caloi with Dr. Hannah Joris, both of the UCLouvain. Conservation of the pottery was undertaken by Konstantina Hadjivassili. Manolis Vrachnakis from Knossos was in charge of the workforce which further comprised M. Papadantonakis, L. Constantinou, S. Antoniou, C. Fotiou, M. Agathagelou, N. Michail, E. Vasil and M. Othman Tzihad. G. Kipri did the sherd washing.

[6] We thank M. Vrachnakis, our foreman, for pointing out this particular spot.

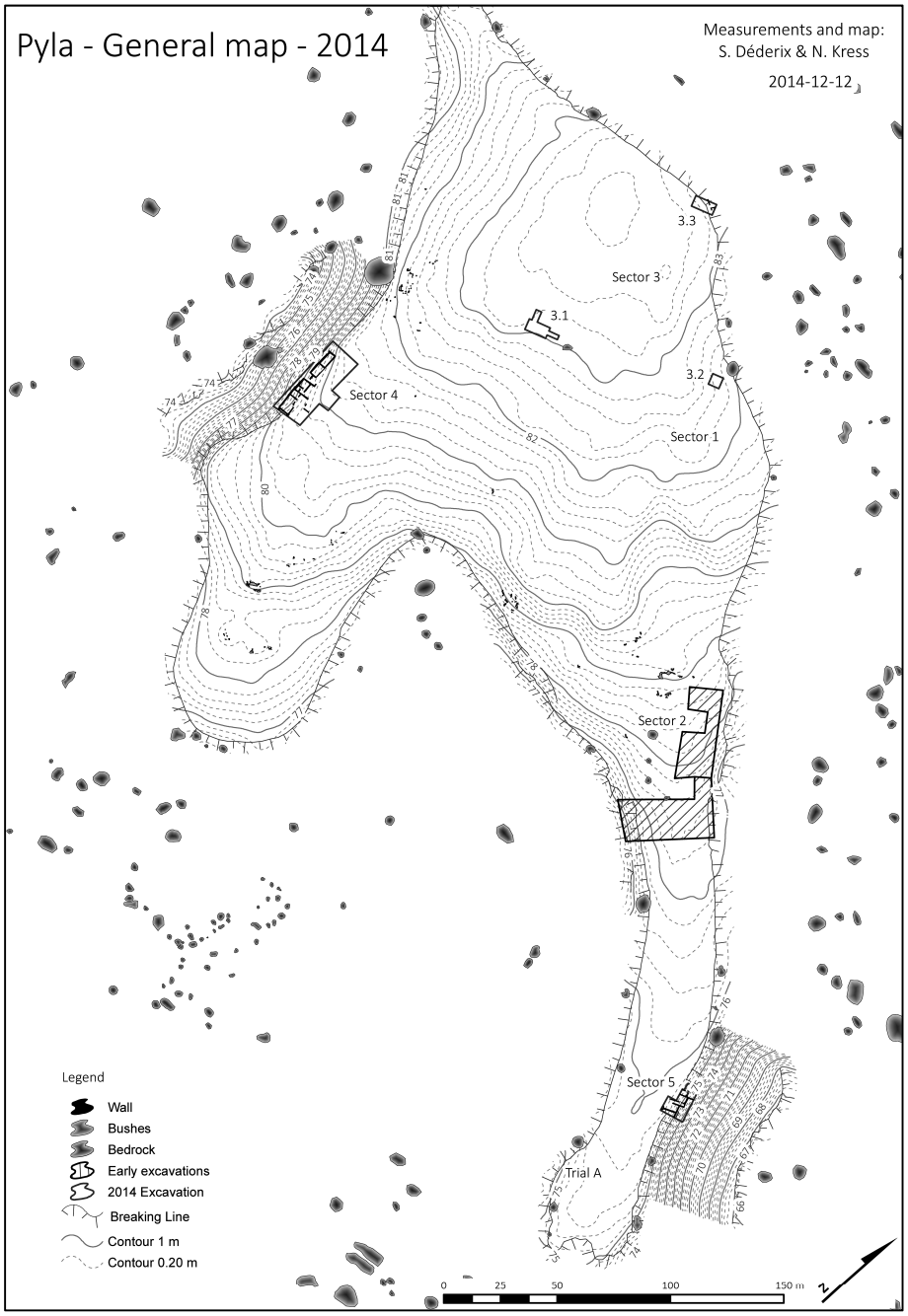

Figure 1 : Pyla-*Kokkinokremos* – Topographical plan (N. Kress / S. Déderix).

First of all, 17 references stations were set up around and across the predefined survey area. Thanks to the use of the DGPS, which allows a theoretical accuracy of ca. 2 cm, the Total Positioning System (TPS) data could then be registered in the Cypriot projected coordinate system (CGRS_1993_LTM). Topographic measurements could eventually be recorded; they consisted for the most part of elevation points distributed across the plateau, along its edge ("breaking lines") and around Sectors 1 and 2, but natural and modern man-made features were also mapped – e. g. paths, trees and bushes, bedrock outcrops, poles and flags. The use of the robotic total station, which allows manipulation by a single operator, enabled fast data collection: a total of ca. 10,000 TPS measurements could be recorded within less than a week. The topographic measurements were then used to create a Digital Elevation Model (DEM) of the survey area. The procedure was undertaken in ArcGIS 10.1 by using the "Topo to Raster" interpolation method, with the elevation points and the breaking lines as input features. Finally, the DEM was itself used to retrieve the contour map of the plateau and the surroundings of Sectors 4 and 5.

Once the DEM of the plateau was completed, it was decided to produce a full photographic coverage of the summit and the slopes of Pyla-*Kokkinokremos* by means of an UAV (drone). A total of ca. 700 aerial photographs were taken, covering an area of 29 ha. The permission granted by the Dhekeleia Sovereign Base Area authorities allowed a maximum flying altitude of 50 m. The aerial photographs were then used to create a photogrammetric model of the hill. Such a procedure offered a coarse accuracy compared to DEM produced by means of TPS, but it constituted nevertheless a fast and low cost opportunity to place the plateau of *Kokkinokremos* in its wider environment. The integration of the two DEMs created from TPS measurements and aerial photographs, respectively, is currently in progress.

The second objective of the 2014 campaign was to develop a Geographical Information System (GIS) to gather topographic and archaeological information in a single spatial database. In the course of the excavation, archaeological data were for the most part recorded by means of the total stations and the DGPS unit on the one hand, and with the drone on the other hand. The need of hand-drawings was indeed limited thanks to the availability of the drone, as the aerial photographs could be used to create photogrammetric models and large-scale orthophotos. During the campaign, the involvement of the topographic equipment depended on the requirements of the different teams, which followed somewhat differing recording strategies. The total station and DGPS units were in this way implemented to set up excavation trenches (Sectors 3 and 5); record the position of trenches (Sectors 3, 4 and 5), excavation units (Sector 3) and artefacts (Sectors 3 and 4); and define archaeological levels (Sectors 3, 4 and 5). In addition, a total of ca. 250 reference points were recorded in order to georeference the orthophotos extracted from the various photogrammetric models

that were produced during the campaign. These models were of two types. First, the drone was flown on an almost daily basis to document the pottery deposits that were brought to light, mostly in Sectors 3 and 4. Furthermore, at the end of the campaign, a full coverage of each of the three sectors allowed the production of a complete three-dimensional model of the final state of the excavation. The orthophotos obtained from these models were then rectified in the GIS environment and a preliminary stone-by-stone plan (ca. 2000 stones) of the architectural remains of Pyla-*Kokkinokremos* was created.

Sector 3 – Tests on the Plateau (Simon Jusseret)

Three test trenches were opened in the central and north-eastern sectors of the plateau in order to establish whether the nature of the occupation was similar to that found elsewhere and to find out whether any functionally specific building existed. Since no archaeological remains were visible on the surface, tests were located randomly: Trench 3.1 was positioned close to the highest point of the plateau, Trench 3.2 close to its north-eastern slope and Trench 3.3 on the northern edge of the plateau, in an area offering a commanding view on the site's hinterland. Although these areas were left largely unexplored by previous archaeological research, P. Dikaios had opened a trial (Sector 1) in an area which may have been located about 15 m to the south-west of that occupied by our Trench 3.2 (see below)[7].

Trench 3.1

Trench 3.1 was initially excavated as a 10 m × 5 m test, later extended to the north and east by two smaller trenches (5 m × 2.5 m and 5 m × 2 m respectively). In the eastern sector of the test, excavation yielded limited results due to the presence of bedrock very close to the surface. No clear evidence of human activities (e. g. rock-cut archaeological features) could be found in this area. In the western sector of Trench 3.1, archaeological remains consisting of two rubble walls were only preserved in a shallow bedrock depression: one wall runs north-west/south-east, the other north-east/south-west. They define three spaces (Spaces 1.1–1.3) of which only a single one (Space 1.1) preserved a deposit (**figure 2**). Although the latter space was only partially excavated, it yielded the remains of an earth floor which occupies the centre of the bedrock depression and bears patches of white plaster. It is likely that the bedrock in the southern part of Space 1.1, slightly sloping towards the north, was directly used as a floor

[7]Although only vaguely located by Dikaios on a sketch map (cf. Dikaios, 1971, 896–897; plate 296, 4), Sector 1 is positioned by Karageorghis and Demas (1984, 20) "some 125 m. north of Area II (Sector 2) and 25 m. west of the eastern ridge of the plateau". Interestingly, Sector 1 also represents the place of origin of the looted gold jewelry that led to the first recognition of the site by Dikaios (Dikaios, 1971, 896).

level. Several fine quality vases were found resting directly on, or slightly above, this floor surface. They include a complete mug – with pierced bottom, hence a rhyton – decorated with whorl shells[8], half of a large, bell-shaped deep bowl with panel decoration of antithetic spirals and scale pattern[9], and an almost complete spindle bottle and a flask painted with red concentric motifs. Although little can be said at this stage about the function of Space 1.1., parts of large sherds visible in the west baulk of the trench suggests the continuation of the floor assemblage to the west. The exploration of this baulk will be a priority for the next excavation campaign.

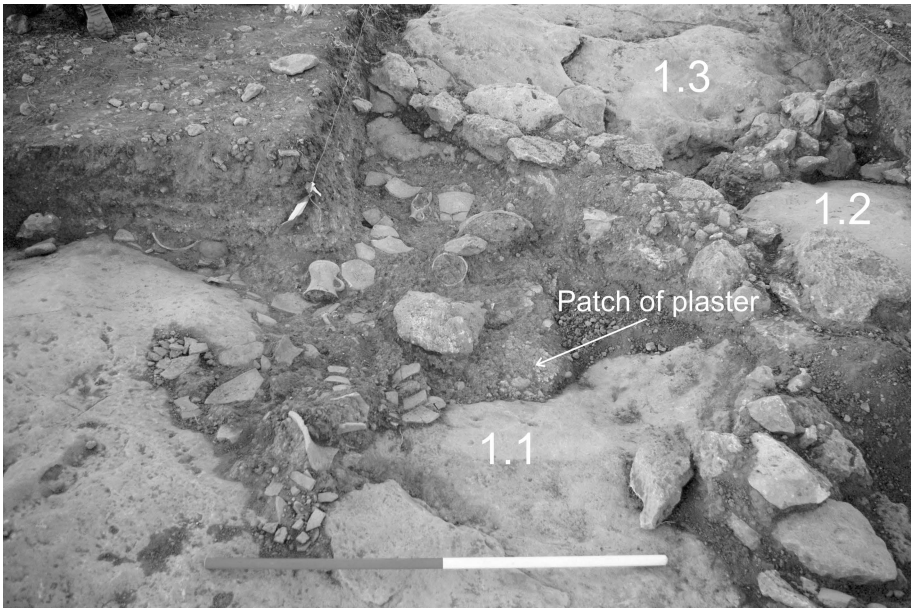

Figure 2 : Sector 3, Trench 3.1 : view of Spaces 1.1–1.3 looking north, with in situ floor deposit in Space 1.1 (photo : S. Jusseret).

Trench 3.2

Located 80 m to the north-east of Trench 3.1, Trench 3.2 (5 m × 5 m) yielded only very limited results : in the north-western half of the trench, a possible

[8] It is interesting to note that mug rhyta painted with a single patterned zone are regarded by Kohl (2006, 62) as a defining characteristic of Cretan products. Accordingly, one of the best parallels for the Pyla rhyton comes from Sissi (north-eastern Crete, cf. Jusseret, 2012, 141–142), where Langohr (2012, 163) sees the whorl shell motif as a good chronological indicator of LM IIIB productions.

[9] A parallel for this deep bowl comes from Enkomi (Sector I, wells) (Dikaios, 1969b, pl.109, N^{o} 5 (4539/2) ; 1969a, 329, N^{o} 5) and is dated by Dikaios (1969a, 329) to Mycenaean IIIC.

occupation level was identified, with only a few scattered body sherds, two bronze scraps and a bronze lunar or boat-shaped earring[10], all resting on an irregular surface of earth and large pebbles. In the southern and northern angles of the trench, concentrations of ash and burnt matter were recognized. The concentration near the south angle (**figure 3**) consists of an accumulation of ash lying directly on the bedrock. Traces of burning on the bedrock surface surrounding the ash confirm the primary nature of the deposit and excludes its accumulation as secondary refuse. The concentration was found bounded to the east by three slabs that may correspond to some kind of working platform. In the centre of the ash layer, a shallow pit was excavated at some stage and filled by brown gravelly sediment (**figure 3**) – an action possibly related to the maintenance or use of the feature. A test opened in the floor surface directly to the north of the ash feature provided evidence for another, irregular occupation level made of compacted earth. The level yielded a fragmentary vase.

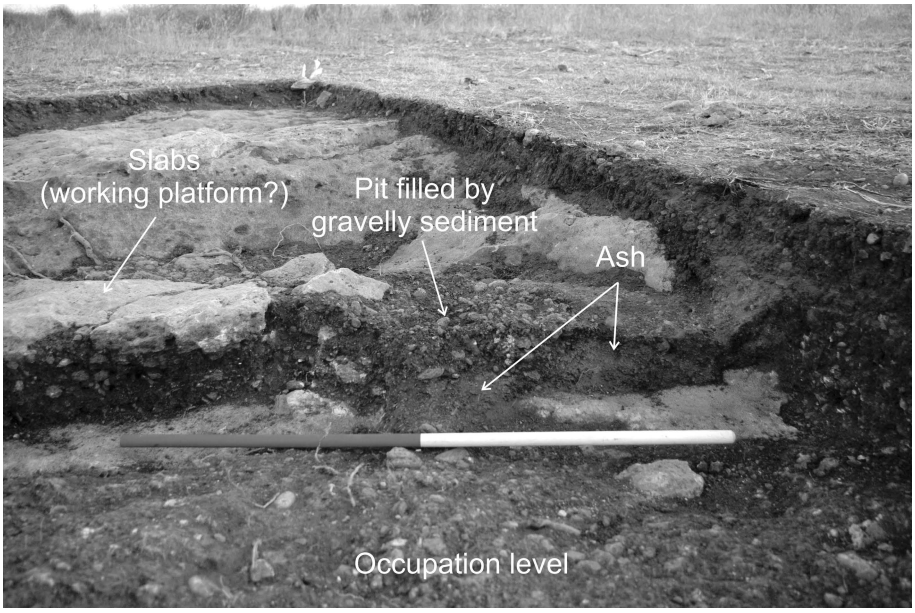

Figure 3 : Sector 3, Trench 3.2 : ash concentration in the southern angle of the trench and associated (?) occupation level (photo : S. Jusseret).

The presence of bronze scraps close to this ash concentration is reminiscent of the sheets of scrap metal found associated with an ash-filled pit in Sector 1 by

[10] Minute grains of bronze covering the surface of the earring may have been meant to mimic granulation. Similar, though undecorated, examples of this earring were previously found at Pyla : see Karageorghis / Demas (1984, pl. XXVII, nos. 79 and 1952/64) and Karageorghis / Georgiou (2014, 130 ; pl. XIX, N° 127.3).

P. Dikaios. Although this evidence was initially taken by Dikaios to represent the remains of ritual activities, Karageorghis and Demas (1984, 23) preferred to see it as part "of a craftman's kit, with the ash-filled pit nearby perhaps being his furnace". Following this interpretation and considering the probable spatial proximity between Sector 1 and Trench 3.2, it is tempting to associate the evidence of Trench 3.2 with similar metalworking activities, although more exploration is needed to confirm this.

Trench 3.3

Trench 3.3, located 78 m to the north-west of Trench 3.2 and 90 m to the north of Trench 3.1, was located on the edge of the plateau and at the top of the north-eastern slope. The trench, 10 m × 5 m, revealed poorly preserved walls on the slope break oriented in a north-west/south-east and north-east/south-west direction (i. e. parallel and perpendicular to the edge of the plateau, respectively). These architectural remains define three spaces (Spaces 3.1–3.3) (**figure 4**). Space 3.1, located on the edge of the plateau, is connected to Space 3.3 through a 1.2m-wide doorway. Space 3.2, only partially excavated, may have also been directly connected to Space 3.1 through a doorway. It is interesting to note that the surviving southern face of wall C1 is constructed of carefully cut limestone blocks set upright, which may signal its use as a façade and the existence of an open area in Space 3.1. If this interpretation is correct, the spatial configuration of Spaces 3.1–3.3 is quite similar to that described for Complex G (Sector 2), where a 1.4m-wide corridor (Room 4) flanked by two rooms (Rooms 8–9) gave access to an inner courtyard (Rooms 16 and 29)[11]. Excavation of Space 3.1 revealed a floor surface immediately beneath the topsoil (**figure 4**). Although some parts of the bedrock were apparently directly used as a floor level, some bedrock irregularities were levelled with compacted earth and pebbles, as is documented elsewhere at Pyla[12]. The floor deposit included a single rough pyramidal terracotta loom weight, several large lithic tools (including a pestle or grinder, a quern and a possible whetstone), a fine but fragmentary small stirrup jar, a small pithos and ostrich egg fragments. Another larger pyramidal terracotta loom weight as well as a zoomorphic (duck-shaped?) stone weight found in the topsoil may have originally belonged to the same floor deposit. The discovery of loom weights in Trench 3.3 needs to be stressed, since this category of object was thus far unknown at Pyla[13]. Towards the north, the floor assemblage was found covered by a dense layer of rubble, lining the southern faces of walls C1 and C5 (**figure 4**) and blocking the access leading to Space 3.3. Excavation of the rubble layer – probably corresponding to collapsed wall material – re-

[11] Kanta, 2014a, 16–45.

[12] Kanta, 2014a, 2.

[13] Kanta, 2014a, 3.

vealed smashed pottery including an amphora or jar as well as a Canaanite jar. Since no architectural remains were preserved in Space 3.1, it cannot be excluded that this space was used as a courtyard used for food processing and other domestic activities. Similar courtyards have been described elsewhere on the site, notably in Complexes A, B, G and I of Sector 2, and are usually associated with "industrial or craft activities of various kinds"[14]. The discovery of two pyramidal terracotta loom weights in Space 3.1 may suggest that weaving – an activity traditionally associated with women in the Bronze Age Mediterranean and Near East[15] – took place in the sector of the plateau occupied by Trench 3.3. Adjacent to the north-east of Space 3.1, Space 3.2 provided evidence for an earth floor level on top of which were lying two fragments of a large storage vase.

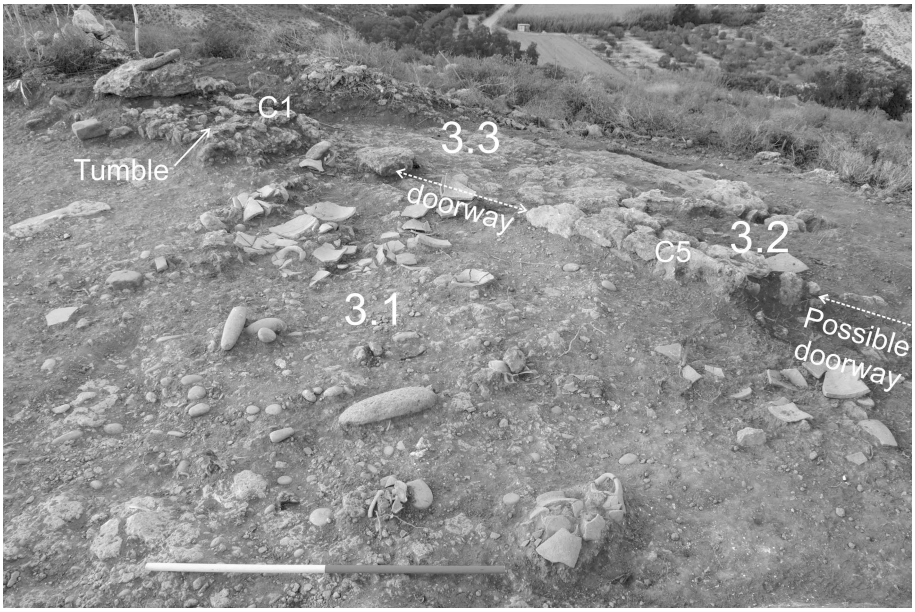

Figure 4: Sector 3, Trench 3.3: view of Spaces 3.1–3.3 looking north, with in situ floor deposit in Space 3.1 (courtyard?) in the foreground. Note tumble against wall C1; its removal brought to light a large vase (jar or amphora?) and a Canaanite jar (photo: S. Jusseret).

Sector 4 – The West Lobe of the Hill (Athanasia Kanta)

During the 2012 campaign, excavation on the west side of the west lobe of the plateau had resulted in the discovery of structures on either side of a gate. These

[14] Kanta, 2014b, 117.

[15] Cutler, 2012, 150.

structures had been called the North Complex and the South Complex. Each complex consisted of several spaces which we have called Rooms for convenience sake and in order to follow the practice established in the previous Pyla volumes. It was in one of the rooms of the South Complex that fragments of Cypro-Minoan tablets had been discovered. In 2014 excavation advanced to the north, south and east of these complexes and rooms. Again the western limit was formed by the casemate wall. Starting from the 2012 excavation, several extensions were made to the north, east and south (see **figures 5 and 6**). Once topsoil was removed and the outline of the spaces defined, excavation took place by space. Much of this extension yielded bedrock close to the surface. The archaeological remains had been destroyed in the past by the mechanical digger. Excavation in 2014 concentrated on Rooms 7 and 8 in the North Complex and Rooms 9–16 in the South Complex.

The depth of soil all over the sector did not exceed 0.50 m and two main archaeological levels, each about 0.25 m thick, were distinguished: topsoil consisting of brown soil and a few stones but very few sherds and an abandonment layer with a similar soil but comprising the wall remains and the in situ vases. The scarcity of sherds and stones from the top soil layer is probably the result of the action of the mechanical cultivator which destroyed almost everything to a depth of ca 0.20–0.25 m from the surface. It was very instructive to see this machine in action in the field opposite *Kokkinokremos*, which, incidentally, is full of walls and antiquities dating to later periods.

The North Complex

Within the North Complex, excavation concentrated on Room 7 (**figure 7**), a casemate room immediately north of Room 1, uncovered during 2012, and almost its mirror image. Its west side is formed by the casemate wall. Despite the shallow earth cover, the entire surface was found full of smashed vases in situ. Since the sherds of each vase had mingled with the sherds of neighbouring vases, it was difficult to define the precise number of vases in this space. They were removed in layers and were found to cover even more smashed vases. The cleaning and mending process needs to be completed before a full inventory can be made, but the deposit also included a bath tub and several bronze objects, including some bronze earrings. The floor of the space is formed by the bedrock. Along the west side of the space there is a water channel cut in the rock, ending in a purification basin next to the opening of a sunken shaft in the south-west corner of the space with a diameter of about 2 m and 2.90 m deep.

Figure 5: Sector 4: Aerial view (photo N. Kress).

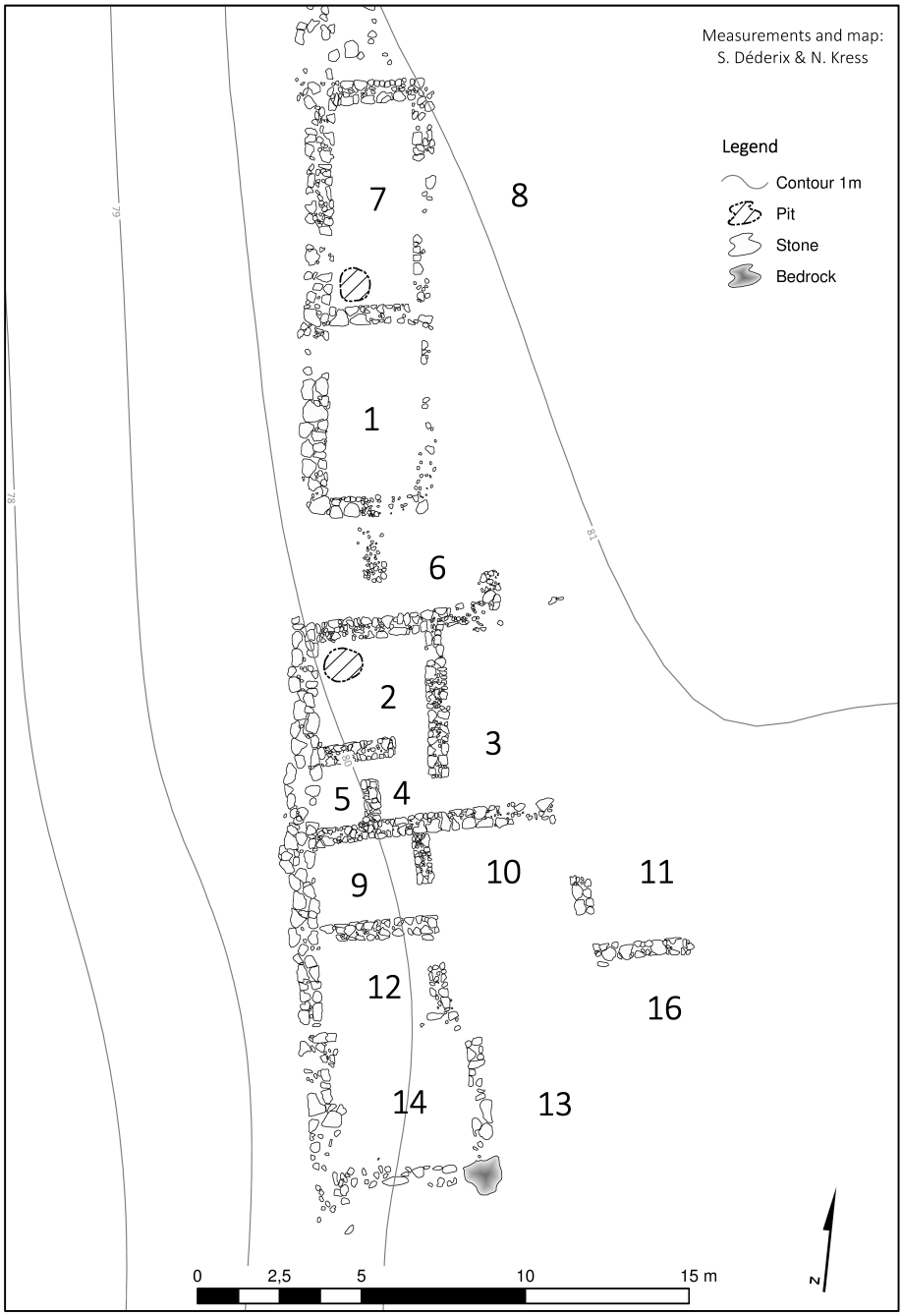

Figure 6: Sector 4: Plan (N. Kress).

Figure 7: Sector 4: Room 7 from the north with the vase deposit and, to the west, the water channel along the casemate wall (photo: A. Kanta).

Excavation within the shaft produced several vases, including a broken but complete Pastoral Style krater, the second to have been found in this sector. The identification of a water channel and purification basin suggests that the shaft functioned as a cistern which collected rain water from the surrounding roofs. The function of such shafts is a question that still needs clarification. In any case, the discovery of the shaft helps us to understand how people survived in a reputedly waterless citadel, a problem prominent in the bibliography since the original Pyla 1984 publication[16]. East of Room 7 is Room 8, an area greatly damaged down to bedrock by cultivation. Among the assemblage left in situ was a fragmentary wall bracket. The excavation of the space is unfinished and will be continued in the future.

[16] Karageorghis/Demas, 1984, 5, 11, 95.

The South Complex

During the 2010 and 2011 excavations, several shafts were found in Sector 2, yielding fragmentary pithoi and large vases for the storage of liquids but none had been entirely excavated [17]. Likewise, during the 2012 campaign in Room 2 of the South Complex in Sector 4, the top of a circular shaft up to a depth of ca 0.80 m had also been revealed. This shaft was fully cleared during the 2014 campaign in order to establish its original depth and any relevant technical features and estimate its capacity (**figure 8**).

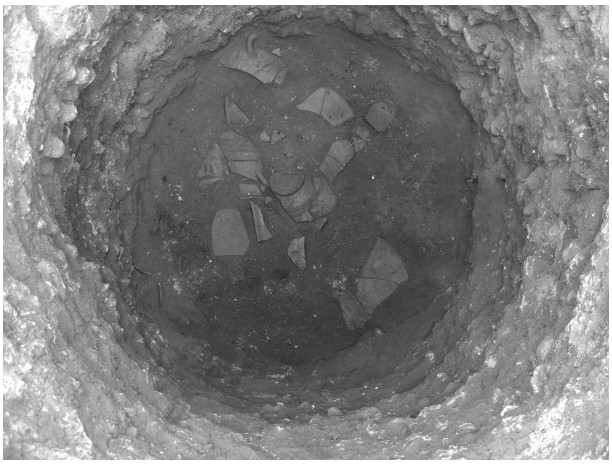

Figure 8: Sector 4: shaft in Room 2, showing sherds of a Pastoral Style krater in situ (photo: A. Kanta).

On excavation, it was seen that the fill was similar to that of comparable shafts found elsewhere, with earth, stones and sherds of large vases suitable for liquid storage. However, below these, and below a thin sterile layer, sherds of a fine Pastoral Style krater decorated with bulls came to light (**figure 8**), just before the bottom of the shaft was reached. The vase was broken but complete. Presumably, the vase was accidentally lost when somebody went to the cistern to fill it with fresh water, perhaps to prepare for wine mixing. The stratigraphy of the shaft in Room 7, described above, is similar.

South of the spaces cleared during the 2012 campaign are a series of spaces that preserve most of their contents. Casemate Room 9 (**figures 9–10)**, immediately south of Room 5, is a rectangular space with an east doorway opening into Room 10 and with its walls built on bedrock ledges, hence forming a room which we have dubbed *hyposkafon*[18]. It was found full of large vases which had fallen on their sides and had trapped many smaller vases beneath them.

[17] Karageorghis/Kanta, 2014, 23, 88, 109.

[18] Kanta, 2014b, 113.

Figure 9: Sector 4: View of Room 9 from the west with the vases in situ. Note the entrance to Room 10 (photo: A. Kanta).

Figure 10: Sector 4: View of Room 9 from the south with the vases in situ. Note the entrance to Room 10 (photo: A. Kanta).

East of Room 9 is a large space (10) of which the edges have not yet been properly defined but communicated to the south-west with Room 12 and to the east with Room 11. Its floor and size suggest it may have been an open space and the presence of several post holes and a rectangular shallow pit seem to corroborate this (**figure 11**). A large patch of whitish-greyish soil (**figure 12**) found near the north wall probably represents the collapse of a roofed area of which the covering was made of "havara" soil, comparable to those found elsewhere on the island and in the Aegean. Several smashed vases were found here, some still containing burnt matter. To the east of Room 10 are the remains of another space which, unfortunately, was badly damaged because of cultivation. Near its western entrance, however, was found a deposit which included a very large, fine but badly smashed Minoan amphoroid krater (cf. **figure 25**), hiding other smaller broken vases beneath it. Room 12, south of Room 9, was also a casemate room of which only the top level was excavated. There seems to be a doorway between this space and that to the east, Room 13. Likewise, excavation in Room 14, 15 and 16 has not been completed apart from the topsoil layer. Agricultural practices have severely damaged both wall lines and floor deposits. Only Room 16 preserves part of its north partition wall with Room 11. Against the south side of this wall were resting several vases indicating that the building and occupation continued to the south-east.

Figure 11 : Sector 4 : Rooms 9, 10, 11 general view from south-east corner (photo : A. Kanta).

Figure 12: Sector 4: Room 10, from the south. Detail of whitish-greyish soil, probably representing roof collapse (photo: A. Kanta).

Room 13 (**figures 13–14**) is the continuation to the south of Room 10 to which it opens widely. Again, a series of small post holes cut in the rock suggest the presence of a roof made of light material here. Its south wall is not preserved but the presence of a straight east-west line formed by the in situ vases may suggest the one-time existence of a light wall between it and Room 15 immediately to the south.

Room 13 was found full of pottery as well as some other interesting finds including a large quern, a large number of sea shells perhaps originally used as bait in fishing, some stone tools, a bronze hoe and a bronze mallet (**figure 15**). Moreover, a lead scale weight and a miniature Astarte pendant possibly of silver were also found here (**figure 16**). The latter belongs to a well-known type present in Cyprus and Ugarit as well as in Syro-Palestine[19]. The goddess seems to be represented in an abstract form. The object is undergoing cleaning and conservation.

[19] Maxwell-Hyslop, 1971, 138–140; Benzel, 2013, 258–267.

Figure 13 : Sector 4 : Room 13 from the east with a deposit of smashed vases on the floor (photo : A. Kanta).

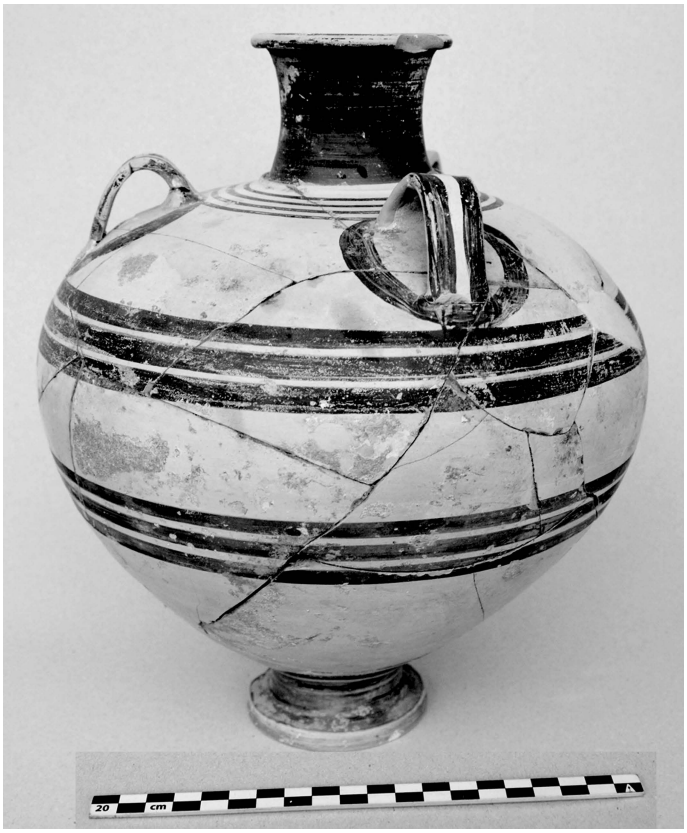

Figure 14 : Piriform jar from Room 13 (photo : J. Bretschneider).

Figure 15: Sector 4: Finds made in Room 13: detail of metal tools in situ (photo: A. Kanta).

Figure 16: Front of Astarte pendant before conservation (photo: J. Bretschneider).

Sector 5 – The South-East Lobe of the Hill (Greta Jans / Anne-Sophie Van Vyve / Joachim Bretschneider)

A large trench of 14 m × 10 m was opened against the eastern slope of the south-east lobe of the plateau, which protrudes as a long peninsula towards the south, at a point where the plateau is at its narrowest (width ca. 28 m). One of the initial aims of this test was to examine whether the casemate wall – partly excavated during previous campaigns and possibly encircling the entire plateau[20] – was also present on this southern outcrop and, if it was, to further clarify its nature. An additional objective was to investigate whether more buildings existed in this area and whether their plan and chronology correspond to that of earlier excavated remains in Sectors 2 and 4. The choice of the precise location of the sector was guided by the surface remains of a large pithos, seemingly in situ and – due to its position down the slope – seemingly located on the exterior of a presumed outer wall.

The architecture within Sector 5 is remarkably well preserved, partly because of the slope and the sturdy walls, which retained downhill erosion. A look at the aerial picture and plan allows a preliminary reconstruction of the architectural lay-out. Six architectural spaces (**figures 17–18**) were partially excavated but all still have one or two walls that need to be exposed in the future. Some of the

[20] For a recent discussion of the casemate wall, see Kanta, 2014b, 119–121.

spaces (Spaces 1, 4 and possibly Spaces 2 and 5) seem to be oriented approximately east-west in a north-south direction, parallel to each other. The excavation of the different spaces suggests that the entire area had quite a complex internal plan, perhaps on both sides of a central corridor or alley, formed by Space 4. At the same time it must be admitted that it is not yet clear whether the remains comprise a clear north-south external façade that can be identified with the casemate structure that exists both in Sectors 2 and 4, and perhaps also in Trench 3.3 of Sector 3. The two north-south walls that have been cleared in this area do not adjoin but are at different levels. It may also be seen that Spaces 1 and 4 seem to form a block which could jut out from a north-south line and it is this line which could have formed the casemate wall. If so, Spaces 1 and 4 may have formed a bastion-like or tower construction. But outside and to the east of these protruding spaces there also seems to have been some activity, as proved by the prolongation of the north wall of Space 1 and the pithos found downhill.

Several of the walls in Sector 5 were anchored in the bedrock, which was levelled for this purpose prior to construction, thus functioning as both a foundation and consolidator. The levelling of the bedrock created spaces at different levels in a series of terraces against the hill and in most cases a fill of pebbles, sherds and plaster was used to level the uneven bedrock. The architecture and some remarkable in situ installations and objects as well as the most important ceramics are briefly described below. The spaces were numbered successively as they emerged during excavation.

Space 1

Three walls of this space, which is 2.50 m wide in north-south direction, have been identified whereas the western wall is still covered (**figures 18–19**). Its east-west length must be larger than 3.9 m and, although its north and south walls need better definition, the south wall has a considerable length of more than 7 m. Each of these is ca. 0.50 m wide and they seem both bonded into the east wall. Both the north and south walls slope down towards the east – following the natural slope of the hill – and seem to have been built directly on bedrock, which was cut to create a lower level for the interior of the adjoining Space 4. There are probably two door openings in its south wall, one leading into Space 4, the other more to west in an area that needs further exploration. The downward or east wall is wider (0.70–0.80 m) than any of the other walls so far uncovered in Sector 5 and the base of this wall has not yet been reached.

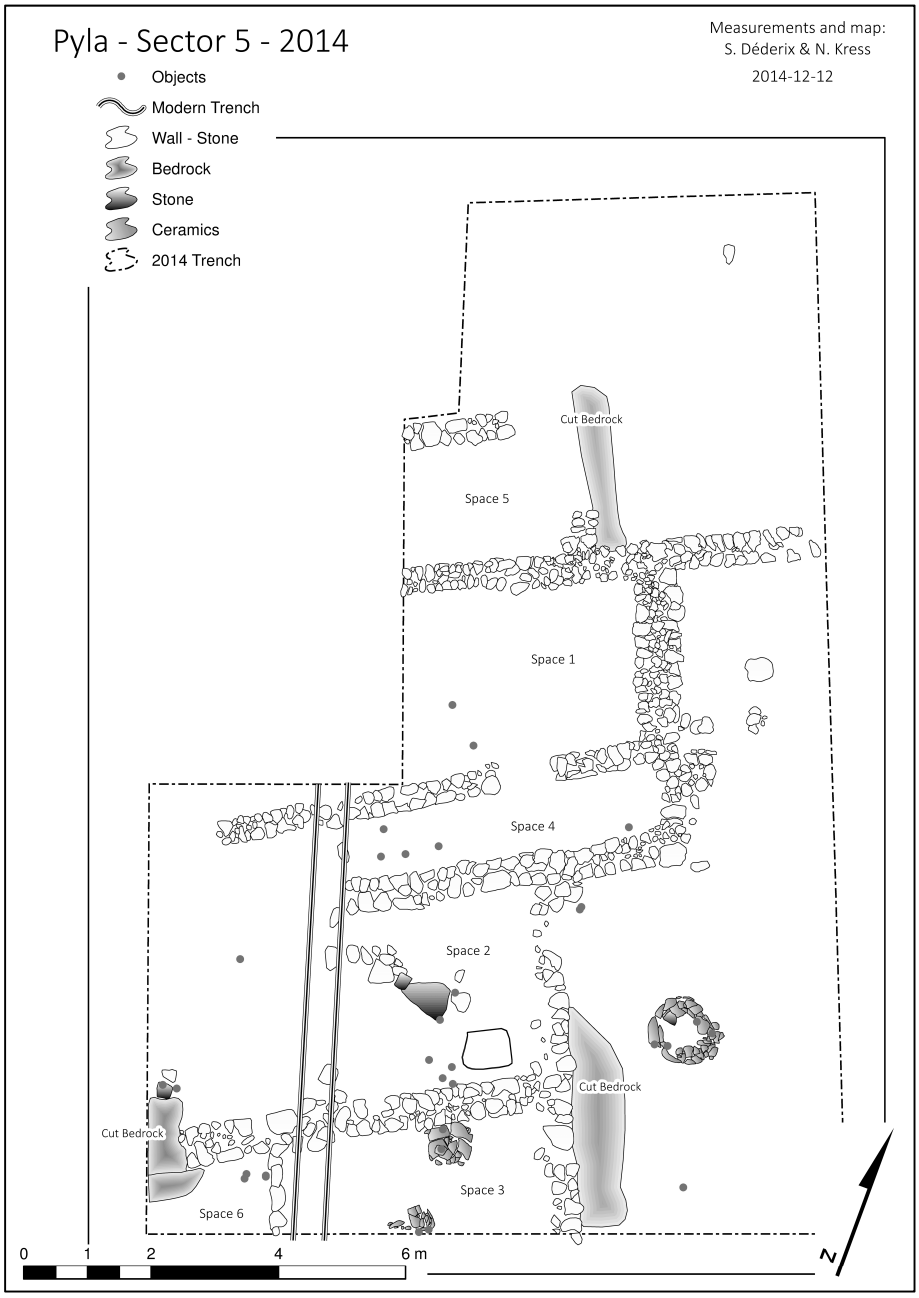

Figure 17: Plan of Sector 5 (plan: N. Kress).

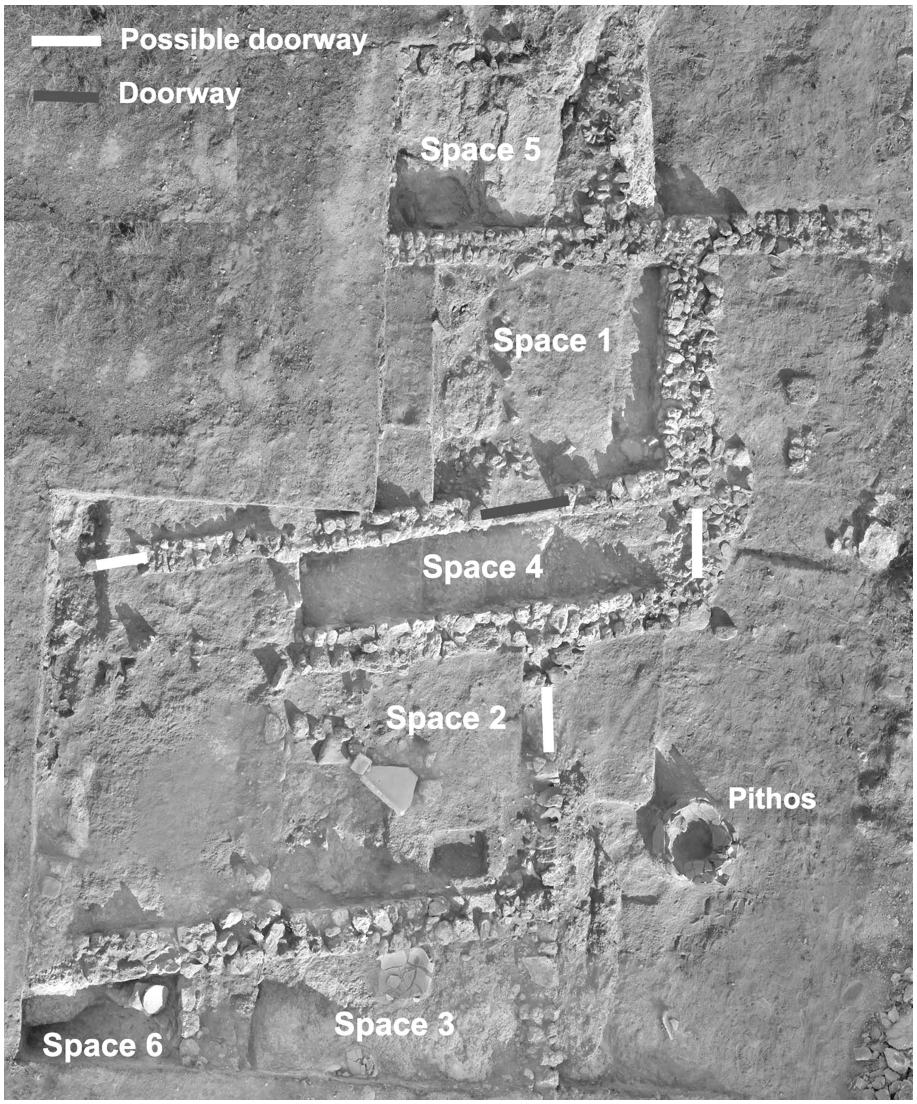

Figure 18: Aerial view of Sector 5 (photo: N. Kress).

It appears that part of the bedrock was cut here at a point where the northern part of the east wall intersects with the north wall of Space 1. The north wall continues east of the east wall of Space 1 which is an indication for another space to the east of Space 1 or 5. Excavation within Space 1 is unfinished and no floor level was reached. The deposit encountered here (as well as in other spaces) comprised patches of reddish earth, probably originating from decayed mud brick.

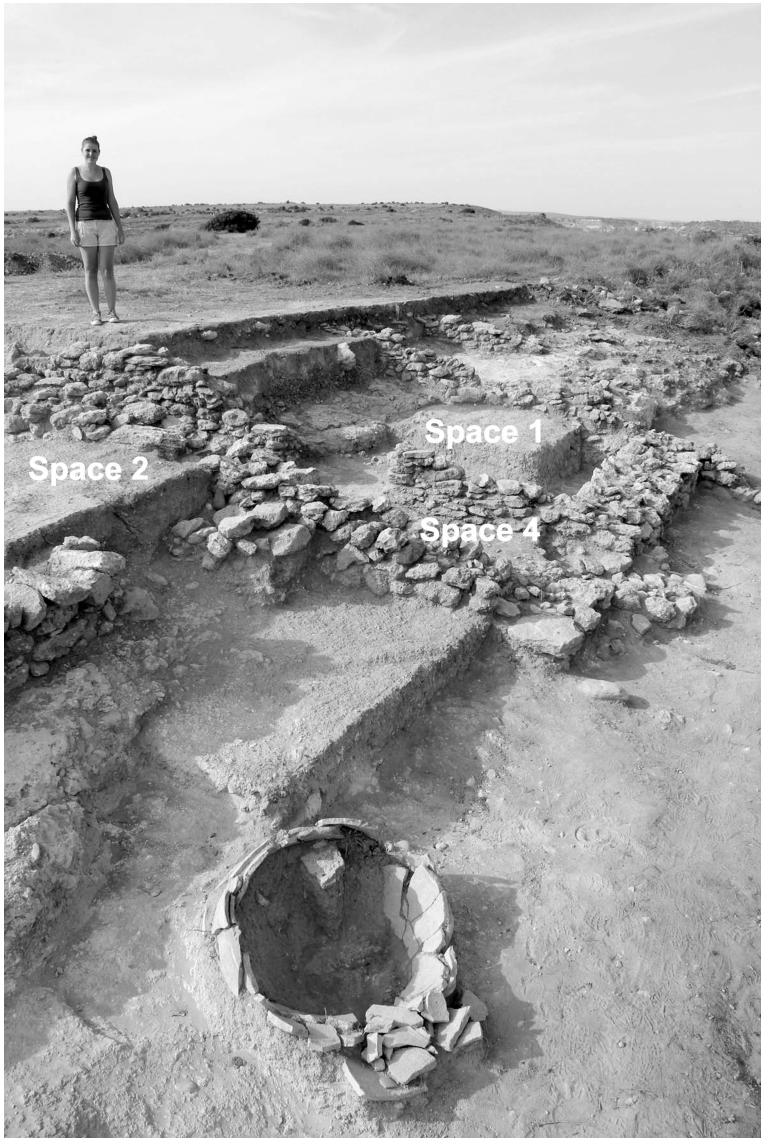

Figure 19: Sector 5 with pithos in situ, view from the south-east (photo: J. Bretschneider).

Space 2

Although its west wall has not yet been exposed, Space 2 measures at least 2.90 m (north-south) × 6.25 m (east-west) (**figure 20**). The east wall – which also continues as the east wall of Space 3 – was built into and against the cut bedrock (*hyposkafon*) and may preserve an entrance in its northern part. The latter wall is relatively narrow – between 0.37 and 0.44 m – but combined with the bedrock emerging west of it, appears to be quite sturdy. The masonry of this

wall is somewhat different than the other walls found in Sector 5 since the boulders used in its lower course – visible on the east side of the wall – are quite large and suggest that this wall buttressed the terrace-like construction on the slope[21]. Thus far the north wall of this space has been traced to about the middle of the space, turning Space 2 into an L-shaped space with two different north walls limiting the unit. But it is also possible that the original west wall was demolished when a modern trench for an electricity cable was dug (cf. **figures 17 and 20**). If so, the area to the west of the trench would have formed an additional space[22]. There are some hints that this space comprised a working platform but this needs confirmation. Part of the floor level was uncovered and yielded an assemblage consisting of 29 metal objects (**figure 21**), all close together, some superimposing others, some fused together by corrosion, some covered with slag. All were lying in a similar direction, east-west, sometimes with the tips pointing east, sometimes pointing west as if they had been contained in something which was no longer preserved. They comprised 26 bronze tools (**figure 22**), including 11 pin-shaped thin needles (the longest 14.2 cm) of which six have a flat, symmetrical trapezoidal tip and four a flat asymmetrical trapezoidal tip. One of these tools has a rectangular ending and can possibly be identified as a chisel. One object is shaped like a tuning fork (8.2 cm long) with the lower half of one leg fixed to the other leg. One piece resembles large arched tweezers and is 26.9 cm long, and there were also three delicate tools of various sizes with tips reminiscent of small arrowheads as well as a long beam-shaped tool measuring 25.2 cm long attached to a pin by a slag. There were also four tools, all with unclear tip, fused to a cylindrical object by copper-iron slag, and two simple pins. Finally, the deposit also included an elegant and complete socketed spearhead, 15.8 cm long with a narrow, leaf shaped blade panning out into a shank with a triangular slit to attach a handle[23]. The 'hoard' also included two pieces of slag and what seems to be a lead object. All metal objects have oxidized and are a little corroded but are in overall good state and are currently being conserved in Nicosia Museum. Close by were several more or less complete ceramic vessels, including a Mycenaean bowl with ring base, half a milk bowl, a two-handled jar with cylindrical neck, a fragment of a miniature vase and a local, handmade cooking pot with low neck and relief cross. All this was comprised in a 2–5 cm thick ash layer but it is as yet unclear whether the deposit was in or just on top of the floor package. The 'hoard' is situated west of a rectangular installation (of ca. 0.55 m × 0.75 m) that was dug ca. 0.10 m into the

[21] The base of the wall has not yet been exposed.

[22] If so Spaces 2 and 4 would show parallels with Room 37 and 40 in Complex H of Sector 2 (Kanta, 2014a, 58–61).

[23] The spearhead resembles type D I (or E) of Steinmann's typology (2012, TF. 4 and 6), a type dated to the Late Minoan II / Late Helladic II B period (Steinmann, 2012, 345).

floor with mud brick borders covered with plaster on the inside and south of a fragmentary whitish basin-like stone installation (of ca. 0.70 × 0.55 m). The triangular-shaped fragment is broken on all sides, except for the narrowest edge which slightly curves downwards instead of having an upstanding rim as the opposite side[24]. The floor of Space 2 consists of a loam and plaster package with a thickness of about 10 cm, which was used to level the uneven bedrock. Underneath the foundations of the east wall was also found a sizable round chunk of iron and copper alloy (slag?) of approximately 2 kg.

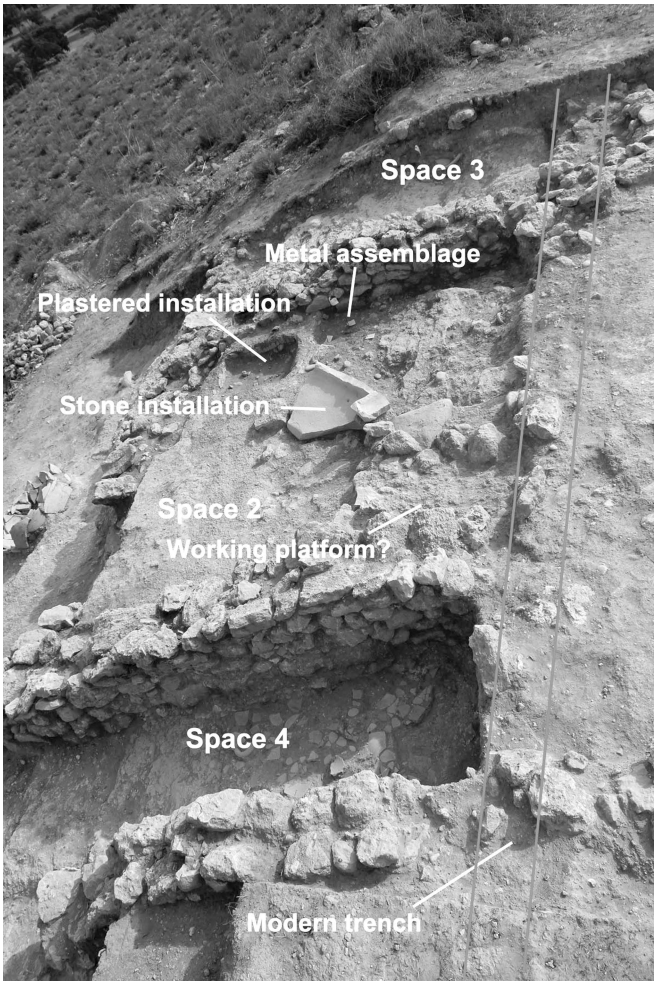

Figure 20: Sector 5: Spaces 2 and 4. View from the north-west (photo: J. Bretschneider).

[24] Several smaller fragments, most likely of the same basin, were found in the proximity of the large piece and in the area just to the west of the modern trench.

Figure 21 : Sector 5, Space 2 : Part of the bronze assemblage in situ (photo : A.-S. Van Vyve).

Figure 22 : Selection of metal objects from Sector 5, Space 2 (photo : J. Bretschneider).

Space 3

Space 3, which measures ca. 4 m × 1.65 m, is located south of Space 2. Its south wall still needs to be revealed. Over the entirety of the space so far excavated bedrock has been reached. On top of this bedrock was a 10 cm thick floor layer of hard-packed earth containing plaster, pebbles and ceramic sherds. Two sizable, undecorated jars were standing in situ on the floor. The floor itself comprised a nearly complete decorated wheel-made spindle bottle, a complete but broken bronze pin as well as a bronze spiral.

Space 4

Space 4 is a long and narrow space, about 1.05 m wide, lodged between two east-west oriented walls (**figure 20**). Its west end remains unclear but the alley-like space already measures about 6 m. The lower or east part of Space 4 has a floor level made of pebbles and bedrock, whereas the higher, western part has a proper floor level on which many sherds of small and middle-sized vessels were found. Both the floor and walls of this space follow the natural slope of the bedrock forming some kind of ramp. The north wall, preserved up to a height of 0.70 m, was built on top of the bedrock which was partly cut in order to install the floor of the space. As already mentioned, it cannot be excluded that the west portion of Space 4 formed part of Space 2 and served for storage. It is also as yet unclear if the east part of Space 4 had an opening or whether the wall is simply badly preserved. Since the level slopes down considerably, the wall remains may also have formed a threshold giving access to the area downslope to the east, where there is possibly a patch of stone floor. Spaces 1 and 4 together seem to form a block which protrudes from the normal north-south line.

Space 5

North of Space 1 is Space 5, which has a north-south width of 1.90 m. An alignment of stones with a north-south orientation built against its south wall, ca. 1 m to the west from the east wall of Space 1, could represent the remains of its east wall whereas the west wall falls outside this year's excavated area. A hearth with an ash layer was partly excavated but much remains unexplored within the section[25]. The space also yielded a large fragment of an open vessel showing part of a stylized bull, provisionally dated to the mature but not final LH IIIB period[26].

[25] For a previously excavated hearth at Pyla, see Kanta, 2014b, 116.

[26] Güntner, 2000, 228; for parallels, see Vermeule/Karageorghis, 1982, Cat. Nr. 5, 41 and 46. We thank Reinhard Jung for drawing our attention to these parallels.

Space 6

Only the north-east corner (ca. 1.95 m × 1.05 m) of this space, west of Space 3, was unearthed. Bedrock is visible both underneath the north and the east walls as well as in the north-west corner of the trench but seems to have been cut away from the centre of the space. Some kind of installation was built in the north-east corner. It consists of a triangular-shaped platform made of small stones and one larger rectangular slab, on top of which was found a round flat stone with a diameter of 0.35 m, resembling a column base. No floor level has been reached so far.

Area to the east

The area downslope of the spaces just described has so far not yielded architectural features, apart from the mentioned prolongation of the north wall of Space 1 for a distance of 3 m towards the east. The remains of a large pithos are in situ east of Space 2. The bottom of this pithos is missing and some body sherds were carefully set against each other, so that some parts had a double body layer. This may suggest a secondary use for the vessel. An alignment of stones, approximately 3 m long, downhill from the eastern limit, may have formed steps or a ramp but needs further exploration.

Area to the West

We started to excavate in the area west of Spaces 2 and 4. Although no floor level was yet found bedrock is apparent in the south-west corner (just north of Space 6). This may imply that the floor level was very near the surface where the excavation ended this campaign.

Preliminary Remarks on the Pottery (Ilaria Caloi)

Rich ceramic assemblages were recovered from all sectors explored during the 2014 campaign, but they were particularly abundant in Sector 4 and especially in Rooms 7, 9, 11 and 13 of this sector. Many of the vases are mendable and include both local products, mainly comprising pithoi but also some pouring and drinking vessels, as well as some obvious imports. The numerous pithoi, which are all mendable, are made in local Plain White Handmade Ware. They are mostly represented by two typical shapes: a biconical profile with high cylindrical neck flanked by two vertical handles[27] and a globular profile with two vertical small handles on the shoulder[28]. There are some interesting specimens displaying an incised wavy line on the shoulder, which have good parallels at

[27] Karageorghis/Demas, 1984, n. 45A, pl. XL; Pilidis, 2000.

[28] Karageorghis/Demas, 1984, n. 107, 126, pl. XXXIX–XL.

Pyla itself[29]. From the shaft of Room 7 comes a remarkable Pastoral Style krater with, on each side, a bull eating leaves from a tree. It is very similar to another Pastoral Style krater from the bottom of the shaft excavated in Room 2 during the 2012 excavation of Sector 4, now restored (**figure 23–24**). It is interesting to note that the motifs depicted inside the bull of the krater from Room 7 find an exact parallel with those painted on a fragmentary krater found during the 1982 campaign, allowing the suggestion that they were produced by the same painter[30].

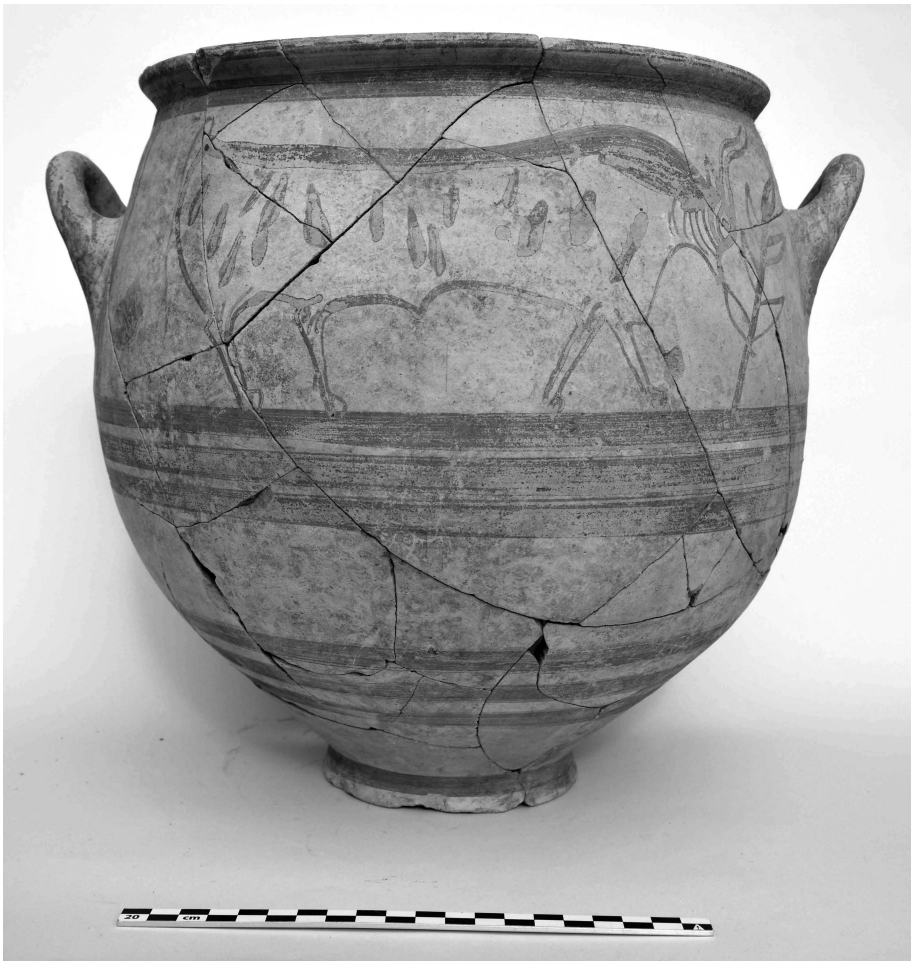

Figure 23 : Pastoral Style krater from Sector 4, Room 2 (photo : J. Bretschneider).

[29] Karageorghis / Demas, 1984, n. 88, pl. XXXIX.

[30] Karageorghis / Demas, 1984, n. 96, pl. XXXV.

Figure 24: Pastoral Style krater from Sector 4, Room 7 (photo: J. Bretschneider).

Rooms 11 and 13 in Sector 4 have also yielded a few interesting vases which seem to be Minoan and Mycenaean imports, as well as several Canaanite jars. Among the Minoan imports is the, at present incomplete but very fine, LM IIIB amphoroid krater, decorated with a spiralform pattern which covers the body of the vase (**figure 25**). Space 2 in Sector 5 also provided an important assemblage of vases including four fragmentary vases of which one is a White Slip II milk bowl, another a White Painted Wheelmade III bowl and two vases are in Coarse Handmade ware. Space 2 yielded what seems a local spindle bottle decorated with a typical LH IIIB linear decoration, also including ripple motif and horizontal parallel lines and bands, quite common on Mycenaean stirrup jars and rhyta (**figure 28**)[31]. A good ceramic assemblage also comes from Space 3.1 in Sector 3 which yielded both local pouring and drinking vessels in Plain White and White Painted Wheelmade wares, as well as vases that may be Minoan im-

[31] For the LH IIIB decoration see Mountjoy, 2008, 97, fig. 73; Mountjoy, 1993, 85.

ports, including a LM III mug rhyton with a whorl shell decoration, a distant cousin of a similar vase found at Sissi but with parallels also elsewhere on Crete, the Dodecanese and the Mycenaean Mainland (**figure 26**)[32]. Most of the ceramic material found during the 2014 campaign is datable to Late Cypriote IIC, corresponding to mature Late Minoan and Late Helladic IIIB. There are few vases which can be attributed to Late Cypriote IIIA early, such as an unusual deep bowl found in Sector 3, Space 3.1 (**figure 27**), which presents the typical LH IIIC bell-shaped profile with flaring rim. It displays a panelled pattern, where the four panels, which are separated by triglyphs, are painted with a scale motif and with two untidily drawn spirals hanging from the rim[33]. Among the local unpainted pottery the most common shapes are *pithoi* and jugs in Plain White Ware and spindle bottles in White Shaved Ware. Milk bowls in White Slip II late are also well attested. They all are of mediocre quality in comparison to previous production and display a decoration which is reduced to characteristic motifs of White Slip II, i. e. simple and parallel brown lines which run horizontally below the rim and in a radiating way on the bottom exterior[34].

The locally produced White Painted Wheelmade Ware III, defined also as Mycenaean IIIB, is well represented by drinking vases and especially by shallow, deep and footed bowls. The first impression is that most containers and pouring vessels are unpainted, whereas painted decoration is mainly found on drinking vases of Mycenaean inspiration. The only local shape for individual use (drinking or eating) which continues to be produced with painted decoration, although simplified, is the White Slip II milk bowl. The persistence of this form is probably connected with its technological characteristics, which make it suitable for heating on a fire[35].

Besides the more common fusion of local Cypriot shapes with Mycenaean-inspired decoration, which is typical of the LC IIB – LC IIIA phases and well-illustrated by the above mentioned spindle bottle (**figure 28**), it is interesting to note the local re-elaboration of Mycenaean shapes, as best exemplified by a pilgrim flask (still in conservation) retrieved from Space 3.1, which displays two curious horizontal handles placed on the body, instead of the more usual vertical neck handles.

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[32] Jusseret, 2012, 142, fig. 6.9, perhaps a product of the Gouves workshop. A. Kanta notes that this particular form of the whorl shell top appears again on an early Late Minoan IIIC amphoroid krater from Milatos; cf. Kanta, 1980, 126 and 274, fig. 52.1,2.

[33] For a characterisation of Mycenaean IIIC early pottery see Gagne, 2007 with bibliography.

[34] Karagheorghis, 2001.

[35] Karagheorghis, 2001.

Figure 25: Possible Minoan imports: an amphoroid krater under restoration from Sector 4, Room 11.

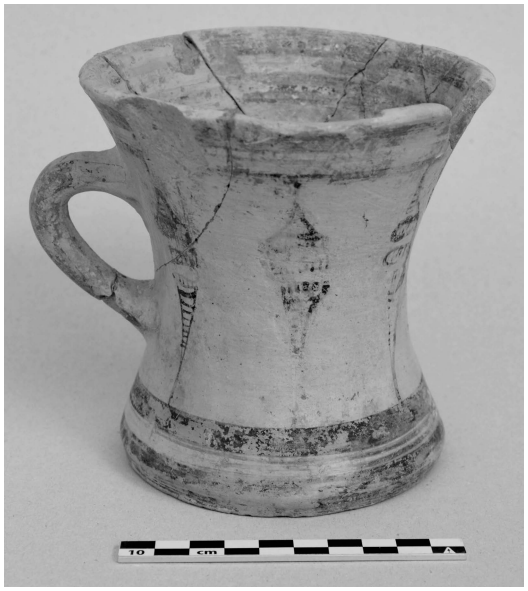

Figure 26: A mug rhyton from Sector 3, Space 3.1 (photos: J. Bretschneider).

Figure 27: A Myc IIIC Early 1 deep bowl from Sector 3, Space 3.1 (photo: J. Bretschneider).

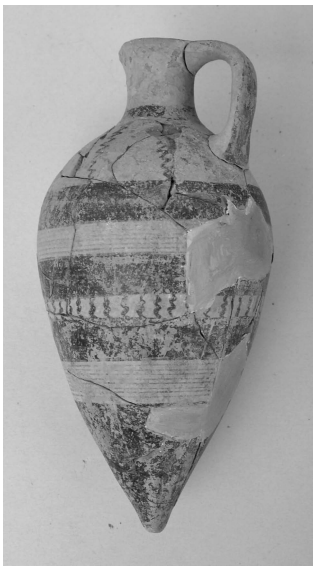

Figure 28: A local spindle bottle imitating a Mycenaean decoration (Myc IIIB) from Sector 5, Space 3 (photo: J. Bretschneider).

Observations on the Environmental Sampling (Irini Papadopoulou)

During the 2014 season, ca. 115 soil samples were collected for flotation and subsequent archaeobotanical analyses. On the one hand, the objectives of the excavation campaign led us to focus our efforts on contexts potentially rich in carbonised botanical material such as hearths and ashy deposits. In addition, soil samples were taken from floor deposits, pit and ditch fills, vessels as well as collapsed roof material in order to examine the presence of plant remains in different types of contexts. On the other hand, Space 7 (Sector 4) was also used to test an alternative archaeobotanical sampling protocol. Its area was divided into 0.50 m squares and 40 litres of soil were collected from each excavation pit. Phytolith samples were also collected separately and systematically. Soil samples collected during the 2014 excavation season will be processed by flotation in 2015.

Conclusions

Excavations along the perimeter of the hill, to the west, but perhaps also to the south-east, have confirmed the presence of a casemate wall. Especially to the south-east the possibility exists of the presence of a bastion-like projection, possibly forming simple towers at strategic points of the hill, such as the angles that give a particularly good view on the surrounding countryside. To a large extent, the discoveries in the central and northern sectors of the plateau confirm Dikaios' (1971, 896) observation that "the north parts [of the plateau are] mostly eroded and […] covered with a thin layer of soil and with rubble". They do suggest that habitation also existed in the centre of the hill rather than being occupied by e. g. fields, gardens or stables and that the LC IIC – LC IIIA settlement probably covered the whole surface of the plateau (c. 6 ha). Their relatively limited conservation, however, does not yet allow to state that similar residences as existing along the casemate wall to the south-east and south-west also existed in the centre. Future work may be able to detect variation in the spatial, functional or ethnic organisation of the site and clarify the potential existence of a central building. The discovery of two roughly pyramidal loomweights – one small in situ, one large in the surface layer – in Trench 3.3 may suggest that a female component was present on the site after all, this against earlier suggestions. The date of abandonment in the beginning of LC IIIA – equivalent to early LH IIIC – has been confirmed, by the mug but especially by the deep bowl from Trench 3.1, which are clearly more advanced than the pastoral kraters and fine amphoroid kraters found in Sector 4, which seem still to be LC IIC or LM/LH IIIB. A considerable part of the decorated pottery, however, seems imported, either from the Mycenaean Mainland or from Crete, as is probably the *hyposkafon* technique. The decorated spindle bottle from Sector 5 is a welcome

addition since it shows that local shapes were also Mycenaenised. The discovery of undisturbed floor deposits in all trenches again underlines the sudden abandonment of the settlement. The discovery of metal objects at different spots as well as the deposit of metal tools, conceivably a hoard, in Sector 5 may be compared with the different hoards that have been found during the earlier explorations of the site, all suggestive of the occupants' intention to return to their homes, which they never did. The new excavations have also confirmed the surprising ethnic mix of material culture at Pyla: a Minoan amphoroid krater together with Cypriote pithoi and Canaanite jars in Sector 4, a Cypriot spindle bottle together with imported deep bowl and mug rhyton from the central plateau Trench 3.1, or a Canaanite jar, Mycenaean stirrup jar, Cypriot storage jar from the north-west trench (3.3), etc. To these may be added the Sardinian, Mycenaean and Hittite vases encountered in previous seasons. In view of the brevity of occupation and localization of the site, many of these objects may be regarded as resulting from possible intensive trade. The discovery of such mixed assemblages in all parts of the site, however, seems to suggest that the inhabitants had already adopted and adapted to a new set of practices. Why and how they did this are questions we would like to see answered during the following campaigns.

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