The Zakynthos Archaeology Project. Preliminary report on the 2012 season

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Abstract

During the summer campaign of 2012, five test trenches were excavated at the site of Lithakia-Kamaroti on the island of Zakynthos, Greece. This site had been discovered during previous campaigns of the Zakynthos Archaeology Project. The excavations show that the archaeological remains near the top of the hill are severely destroyed due to rearrangements of the landscape. Nevertheless, the remains of a Late Bronze Age house were excavated. This house confirmed the impression that a Mycenaean site of some importance is located at Lithakia-Kamaroti. In addition, there were indications for agricultural use of the site in the Classical or Hellenistic period.

Keywords

Zakynthos – landscape archaeology – Mycenaean archaeology – archaeological survey – ancient agriculture.

Introduction

Already during the non-systematic 2005 pilot survey that preceded the Zakynthos Archaeology Project, a notable concentration of archaeological material was discovered in the area of Lithakia-Kamaroti.[1] This area was investigated more systematically by archaeological survey during the campaign of 2009.[2] These investigations showed that in a landscape with abundant, but scattered archaeological remains, Lithakia-Kamaroti constituted a sizable area with several distinct concentrations of finds from various periods. Material dating to the Late Bronze Age appeared to be especially abundant.

[1] Van Wijngaarden et al. 2005, 67-68.
[2] Van Wijngaarden et al. 2009-2010, 71-78.

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From the beginning, the Zakynthos Archaeology Project has had as one of its aims limited research by excavation in order to support the archaeological surface survey.[3] The large concentration of finds and the diachronic nature of the surface record at Lithakia-Kamaroti make the site an excellent candidate for such targeted excavations. The hill of Kokkala (Figure 1), on the slopes and top of which the main concentration of finds was attested, is the property of several landowners. We were fortunate that one of the owners agreed to let us conduct test excavations.

The fieldwork was carried out during a five week campaign from Monday 18 June to Friday 20 July 2012. During this campaign, five trial trenches were excavated. In addition to the excavations, some intensive field survey was carried out in an area near Limni-Keriou, which we had not been able to do during the 2009 campaign. Geomorphological research was also carried out, and the study of finds from previous campaigns continued.[4] Also, geological samples to support the ceramic analysis were collected in different parts of the research areas.

Lithakia-Kamaroti

The hill of Kokkala at Lithakia-Kamaroti (Figure 1) is situated in the south-western part of Zakynthos, c. 2 km north-east of Limni-Keriou. The hill rises to 82 m above sea level. The western and southern slopes of the hill are fairly steep, while the northern and eastern sides slope more gently. To the north, the hill borders on a significant landslide, while to the east, the slope ends abruptly at a cliff 10-20 meters above sea-level. The hill consists of Miocene limestone covered by Holocene sediments.[5] The virgin soil of the hill consists of layers of silty clay loams on sandy clays that cover the bedrock. Nowadays, the hill of Kokkala is cultivated with olive trees on small terraces. Aerial photographs from 1934, 1945 and 1960 show that the olive trees were planted after the Second World War.[6] The same photographs also indicate that large-scale changes to the landscape did not occur since 1934; the area has not been very much affected by modern agriculture.

[3] For the Zakynthos Archaeology Project as a whole, see Van Wijngaarden et al. 2005, 2006, 2007, 2008, 2009-2010, 2010-2011, 2013. Also, see www.uva.nl/archaeology-zakynthos.

[4] A full report on the archaeology of Lithakia-Kamaroti and its significance for the Late Bronze Age at Zakynthos is currently being prepared by Bart Bogaard and Gert Jan van Wijngaarden. The report presented here constitutes only a preliminary assessment.

[5] Kati & Scholle 2008. The geomorphological description of the hill at Lithakia-Kamaroti is based on Goudriaan 2010, 4-5.

[6] For the research on historical aerial photographs within the Zakynthos Archaeology Project, see Stoker 2010.

Figure 1. Kokkala hill at Lithakia Kamaroti

During the survey of 2009, the hill was systematically covered by field walking, with full collection of finds.[7] Find densities were high (Figure 2) and the fragmentation rate of the pottery appeared to be somewhat less than elsewhere on Zakynthos. The, for Zakynthos, abundant number of diagnostic finds were mostly from the Mycenaean period. These finds complemented those made in 2005, among which was a stone cut spindle-whorl or *conulus*.[8] The finds were concentrated around the lower, southern part of the summit and the large plateau just below. At the lower part of the summit, various wall remains are visible at the surface, of which some appear to constitute a structure of a more or less square or rectangular shape. In addition to the Mycenaean finds, prehistoric pottery that may pre-date the Late Bronze Age was found.[9] Also, there was some pottery dating to Archaic, Classical and Hellenistic to Roman periods.

The fields that were accessible for test excavations covered the terraces on the southern slope. Unfortunately, the enigmatic 'square structure' was not in the area of available for excavation. The trenches were laid out on the large

[7] Van Wijngaarden et al. 2009-2010, 75-78.
[8] Van Wijngaarden et al. 2005, 67, pl. IIIa.
[9] Much of the prehistoric pottery consists of coarse wares, often with a dark-grey to black core and orange to red exterior. This type of pottery is notoriously difficult to date without clear stratigraphy. See, for example, Wardle 1977, 173 and fig. 9 (assigned to Iron Age); Tartaron 2004, 71-84; Lima 2013, 40-42.

plateau immediately south of the top and on terraces on the south slope of the hill (Figure 2). According to our permit, the trenches could not exceed 25 m^2. In addition to the excavations a programme of cleaning and study of terrace edges was conducted in parts where walls had collapsed.

Trench A

A trench measuring 2.5 x 10 m was laid out on the southern edge of the plateau in a north-south direction. Below the topsoil, a fill of field stones became visible, which was subsequently removed. The thick fill of medium-sized to large stones yielded Mycenaean pottery, but also tiles, pieces of bone and grinding stones. The tiles appeared to be of Classical-Hellenistic date, which would fit well with the fragments of black-gloss pottery that were part of the deposit. The stone fill appears to belong to a re-arrangement of the hill during the Classical-Hellenistic period, by which the large plateau was created. The presence of tiles and pieces of bone and a human tooth suggest the presence of tile graves from the same period.

In the central part of the trench, a double-faced wall running NW-SE was attested (Figure 3). It was made of well-laid, but unworked field stones, all of similar size. The width of the wall was 0.70-0.80 m. and it was preserved to a maximum height of 82 cm. Pieces of mud brick, which had been found during the removal of the stone fill, may once have belonged to the wall.

South of the wall, a floor packing was attested, which consisted of small stones in a light brown, hard soil. This packing was 21-32 cm thick. On the floor, and in the top of the packing, there was a concentration of Mycenaean pottery, among which were large fragments of a stemmed bowl (FS 305), several deep bowl (FS 281) or krater (FS 284) fragments, a krater rim (FS 7) and kylix stems (Figure 4). A first assessment indicated that the pottery associated with the upper floor fell within a chronological range of LH IIIB2-LH IIIC early.

Below the upper packing of the floor, a second packing was attested, which was made of a harder, grey soil and somewhat larger stones. This packing was 30-38 cm thick. The material found in the packing was somewhat more heterogeneous than that from the layer above (Figure 5). The handle of a krater (FS 281) and a deep bowl rim (FS 284) probably date to LH IIIB or LH IIIC early. But there was also a ringless base of a possible LH IIB-IIIA alabastron and a disk of a LH IIIA stirrup jar. Also, a beautiful flint blade and bronze nodule were found. It is not clear whether this lower packing represents the remains of an earlier floor, or whether it is a lower packing of the same floor above. The chronological range of the finds associated with the lower packing is LH II-LH IIIC early.

Below the lower packing, bedrock appeared at a depth of c. 1 meter below the surface. This was substantially higher than the area north of the wall, where

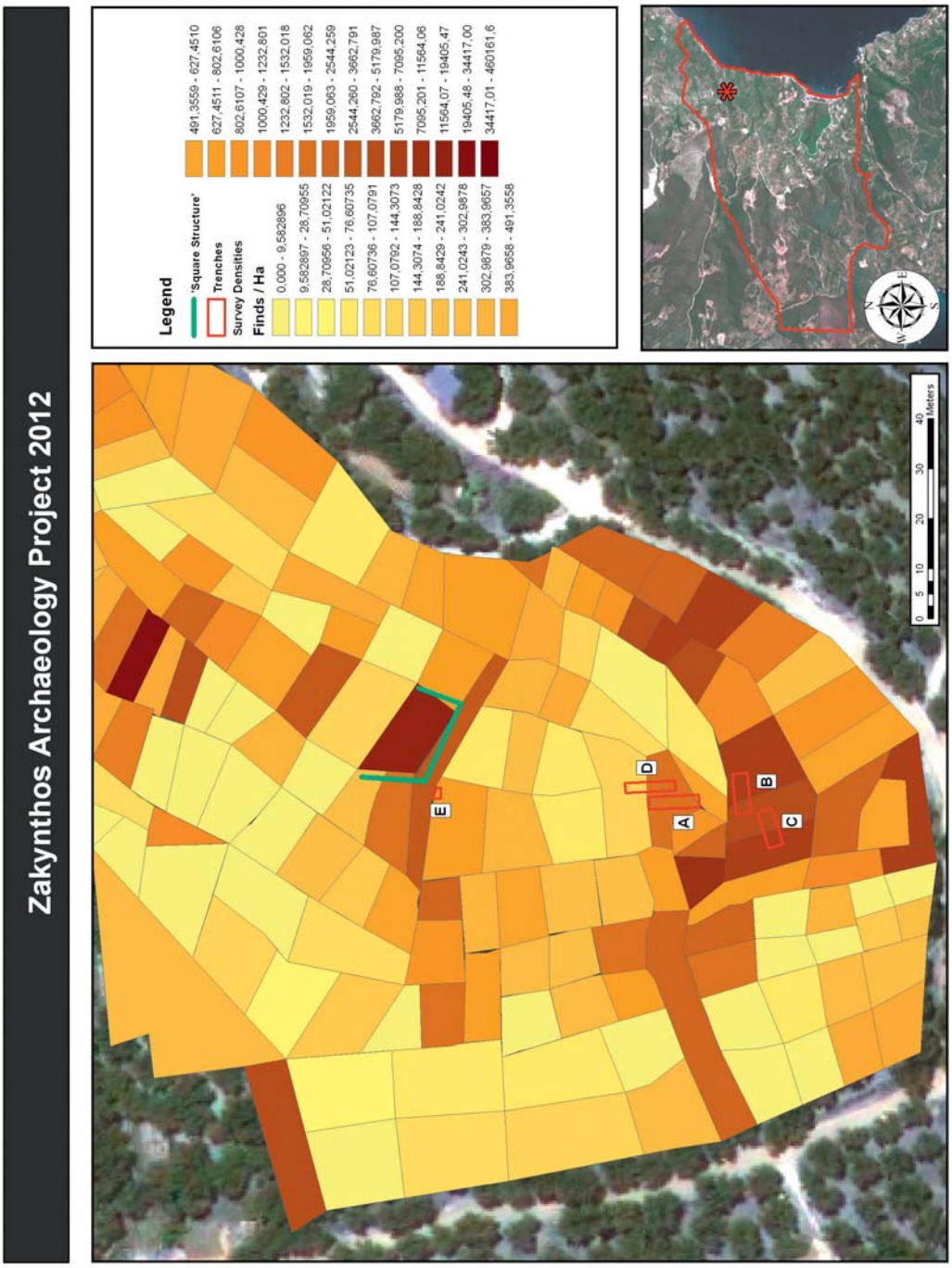

Figure 2. Density map of survey at Kokkala hill, indicating the excavated trenches in red. The so-called 'square structure' is marked in green.

Figure 3. Wall from the Mycenaean period in Trench A

Figure 4. Pottery associated with the upper floor (Unit 5016).

bedrock appeared below the thick stone fill at a depth of c. 1.70 m. It appears that the bedrock was deliberately cut to accommodate the wall. The Mycenaean structure was built in a depression against the slope, which may explain the considerable and possibly double packing, which served to raise the floor to the level of the surface at the time.

The trench showed no clear destruction layer, but, after its abandonment, the house and the depression surrounding it were filled in with field stones. The tiles and pottery among the fill indicate that this filling occurred during Classical-Hellenistic times.

Trench B

Trench B was situated one terrace lower than Trench A, in a field that had yielded particularly high densities of finds during the survey. The trench was 4 x 6 m and orientated southwest-northeast (Figure 2). Immediately below the topsoil bedrock

Figure 5. Pottery associated with the lower floor packing (Unit 5018).

appeared in the greater part of the trench. Bedrock on Kokkala hill consists of tough green-yellow clay loams.[10] However, in the south-western part of the trench a fill of ceramics, bone and stones was visible.

This deposit was excavated and yielded a large amount of Mycenaean pottery. A few pieces of pottery probably belonging to earlier periods (Neolithic-Middle Helladic) were also found, as well as some lithic artefacts. The majority by far of the pottery, however, consisted of Mycenaean fine ware. About 73% of the pottery in the deposit was decorated, which is a very high proportion in comparison to other settlement sites.[11] Among the decorative motives, there were various unusual types, such as the small 'windmill' or rosette (Figure 6). This motive resembles

[10] Goudriaan 2010, 4-5.
[11] At Nichoria, for example, 40-50% of the LH IIIA2-LH IIIB2 fine wares were not decorated. See Dickinson, Martin & Shelmerdine 1992, 501.

Figure 6. Decorated Mycenaean fragment from the slope deposit in trench B (unit 6004); photograph by A. Dekker

Figure 7. Fragment of a LH I-II Vapheio cup decorated with a tangent spiral with blobs (FM 46) from the slope deposit in trench B (unit 6007); photograph by A. Dekker

best a Minoan way of decorating,[12] suggesting that it may be a Minoan import or a local product inspired by Minoan decorative types.[13]

The deposit of decorated pottery covers a wide chronological range. Among the earliest decorated finds, is a large fragment of a LH I-LH IIA Vapheio cup (FS 224) (Figure 7). Part of a spout of a LH II bridge-spouted jar (FS 101-103) was also found.[14] Small goblets (FS 254) that can be attributed to LH IIB were present as well. The majority of the diagnostic pottery appears to date in the LH IIIA-LH IIIB range, with numerous kylikes (FS 256-257) and stemmed bowls (FS 305). Interestingly, and in contrast to trench A, decorated fragments that clearly belong to LH IIIC were absent in the deposit.

Even though a stirrup jar disk was found in the deposit, the majority by far of the pottery in the deposit came from open shapes and, in particular, from drinking vessels: goblets, kylikes, kraters and cups. Several jugs were also present. Considering the high number of decorated drinking and dining vessels and the animal bones in the deposit, we initially thought that we were excavating the remains of a rubbish pit.[15] However, clear edges of the deposit could not be attested. Instead, the deposit appears to be the remains of a cleaning operation in which the inventory of a structure was pushed down the slope. This inventory may be associated with the structure that we found in trench A, just a few meters away, but it may also have belonged to a structure of which remains are no longer there.

[12] The 'windmill' caused quite a stir among the Dutch excavators. The authors thank Penelope Mountjoy for identifying the type of hatching of the 'arms of the ars of the windmill' as a Minoan type of decorating. For parallels, see Hallager & Hallager 2003, pl. 49: no. 71-p (LM IIIB2); Pl. 88 484-P1100 (LM IIIB2); Andreadaki-Vlasaki & Papadopoulou 2005, 383: no. 371 (LM IIIC).

[13] The continuing study of the pottery will include chemical provenance analysis.

[14] The authors thank S. Rückl for the identification.

[15] Cf. Thomas 2011.

Trench C

Trench C was situated one terrace below Trench B in an area with a fairly high density of survey finds. Immediately below the topsoil, the tough green-yellow clay loams appeared that constitute the bedrock of the hill. Some finds were made in the topsoil, among which was a high proportion of decorated Mycenaean fragments. Most finds could, preliminarily, be dated to the Bronze Age. However, a small piece of a black-gloss cup was also found. In general, the pottery from the topsoil layers compares well to that found in the trenches higher up the hill, indicating that the pottery is the result of slope erosion.

Trench D

The cleaning of the terrace sections where agricultural walls had collapsed showed that on the eastern slope of the hill there were no substantial parts with a soil deposit that could contain archaeological remains. For this reason, a trench was set out adjacent to Trench A, in order to clarify the position of the Mycenaean structure (Figure 8). The trench was 2 x 10 m and oriented north-south.

Figure 8. Trenches D (left) and A (right) during excavation

Immediately below the topsoil in the northern part of the trench the characteristic bedrock appeared. In fact, only directly adjacent to the stone fill of Trench A an archaeological deposit was discovered. The excavation of this deposit yielded a great number of finds, mostly Mycenaean decorated pottery.

The wall that was found in trench A was not attested in trench D, suggesting that it must end or make a turn in the baulk below trenches A and D. The stone deposit above the trench A wall was excavated in trench D, showing the rearrangement of the area in Classical-Hellenistic times. Trench D shows the severity of this rearrangement quite clearly.

Trench E

Below the so-called 'square structure', which is situated to the north of our excavation field, there is a large field wall, which appears to incorporate various sections that may be of ancient date. In order to investigate the foundation of this wall, a small trench was set out against it. It was impossible to investigate a stretch of wall itself, since it fell completely outside the field in which we were permitted to do excavations.

The small trench of 1 x 1.5 m showed that below the section of wall next to which it was located, there was no older, ancient wall such as the ones visible outside the allotted fields. The wall was clearly founded on bedrock, which was higher than the current surface of the plateau, which made it clear that at some point in time soil has been removed from the excavation plateau. Possibly, this soil removal is one of the causes of the severely destroyed nature of the Mycenaean archaeological remains to the south.

Survey

The intensive archaeological survey of 2009 ended in the area west of Limni-Keriou near a concentration of archaeological artefacts, among which was prehistoric material and some Hellenistic-Roman finds (C in figure 11). Moreover, somewhat to the south a concentration of ancient tiles had been attested (B in figure 12). In 2012, the relationship between these two concentrations and their wider context could be investigated. To this aim, field survey was carried out in the area around the hill, which is, simply, referred to as *Lofos*.

A total of 65 tracts were surveyed, resulting in c. 115 finds. Among them were only 3 lithic objects, a relatively low number in comparison to the survey of previous years. It is clear that the two concentrations of finds attested in 2009 are spatially separated from each other. The valley between the two concentrations hardly yielded any archaeological finds. Interestingly, the concentration of tiles on

Lofos hill seems to extend somewhat southwards on the saddle that connects the hill with the opposite slopes. The preliminary dating of the tiles suggests that some type of settlement occupied the hill during Hellenistic-Roman times.

Discussion

The test excavations at Lithakia-Kamaroti were aimed to acquire more insight into the nature of the site and its chronology. It is clear that the hill of Kokkala has been re-arranged extensively in the past. In addition to modern ploughing and the construction of terrace walls, the stone fill and associated finds in the excavation trenches show a significant rearrangement of the hill in the Classical-Hellenistic period, during which the natural slope of the hill was changed by adding a fill. The earlier Mycenaean remains that probably had been visible until that time were removed during this rearrangement. The only Mycenaean remains that have survived this substantial rearrangement, were those placed in a natural depression, which was filled in with stones and debris.

The corner of the plateau which was thus created coincides with field walls in the lower plateaus. Aerial photographs show that these field walls connect at rectangular angles (Figure 9). The field walls probably are modern, but several of them are clearly built on older walls (Figure 10), which, at this point cannot yet be dated with security. Our guess is that these field walls follow the same direction as the rearrangement of the Classical-Hellenistic age, which would then constitute a system of terraces. The various grinding stones that were found in trenches A and D also point to an agricultural use of these terraces. The creation of an extensive plateau for agricultural use during Classical-Hellenistic times by means of terrace walls indicates that terracing was indeed a method practiced in antiquity to deal with hill slopes for agricultural produce.[16] The plateau is probably related to concentrations of tile and Classical-Hellenistic finds to the north and northeast, which may represent homesteads during this period.

The rearrangement of the landscape in Classical-Hellenistic times has severely damaged the remains of the Mycenaean occupation that was there before. Nevertheless, part of at least one building has been discovered during the excavations. It is interesting that this structure was situated at a high point on the southern slope of the hill, above a steeply sloping section. Its position resembles that of the 'square structure' that is situated to the north of our excavation plateau. It is difficult to assess the nature of the newly discovered structure. However, it is clear that a remarkably high proportion of the excavated finds is of decorated pottery,

[16] Cf. Price & Nixon 2005; Bevan & Conolly 2011. See also http://www.filaha.org/bibliography_terraces.html (accessed on 12 June 2013).

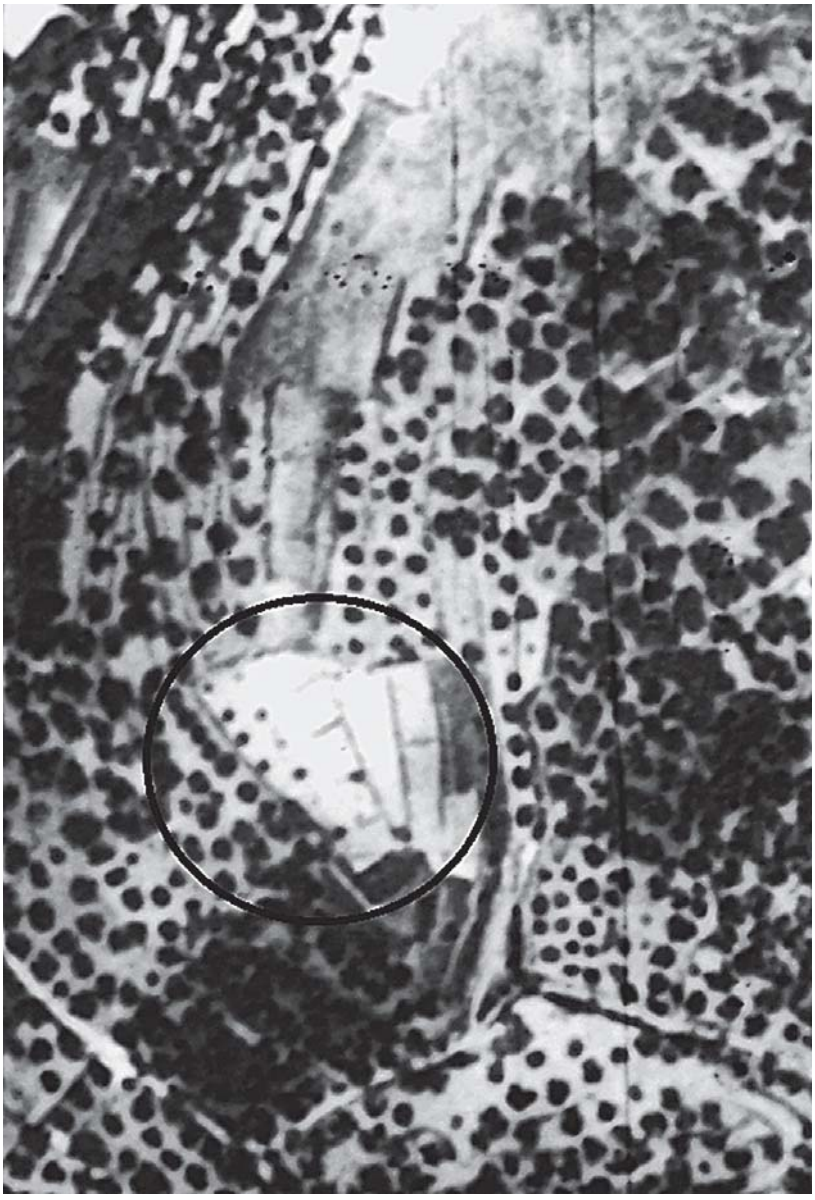

Figure 9. The hill of Kokkala on an aerial photograph from 1934. The circle indicates the excavation area (cf. Figure 2)

Figure 10. Terrace wall on the western slope of Kokkala hill that incorporates parts of older walls

in particular drinking vessels. It may be that the building had some type of specific function to do with drinking and dining. It should be remarked that clear élite connotations, such as seals, frescoes or metals have not been found.

The excavations and the study of the collapsed terrace walls have given us clear indications about the areas where archaeological deposits in situ can be expected at the site: near the 'square structure' and near the newly discovered building. The geophysical research in 2009 showed that the western slope of the hill contained relatively thick soil deposits above the bedrock where archaeological remains also can be expected. During the construction of a small agricultural road on the western slope in 2010, many archaeological finds were exposed, among which was part of a stretch of wall that was probably ancient. In contrast, the study of the sections at destroyed parts of terrace wall show that there are no archaeological remains left on the lower southern slope and on the eastern slopes of the hill. It must be remarked that further to the north-west and to the south of the excavation area, there are additional concentrations of finds, which have not yet been investigated.[17]

[17] Van Wijngaarden et al. 2009-2010, 71-75.

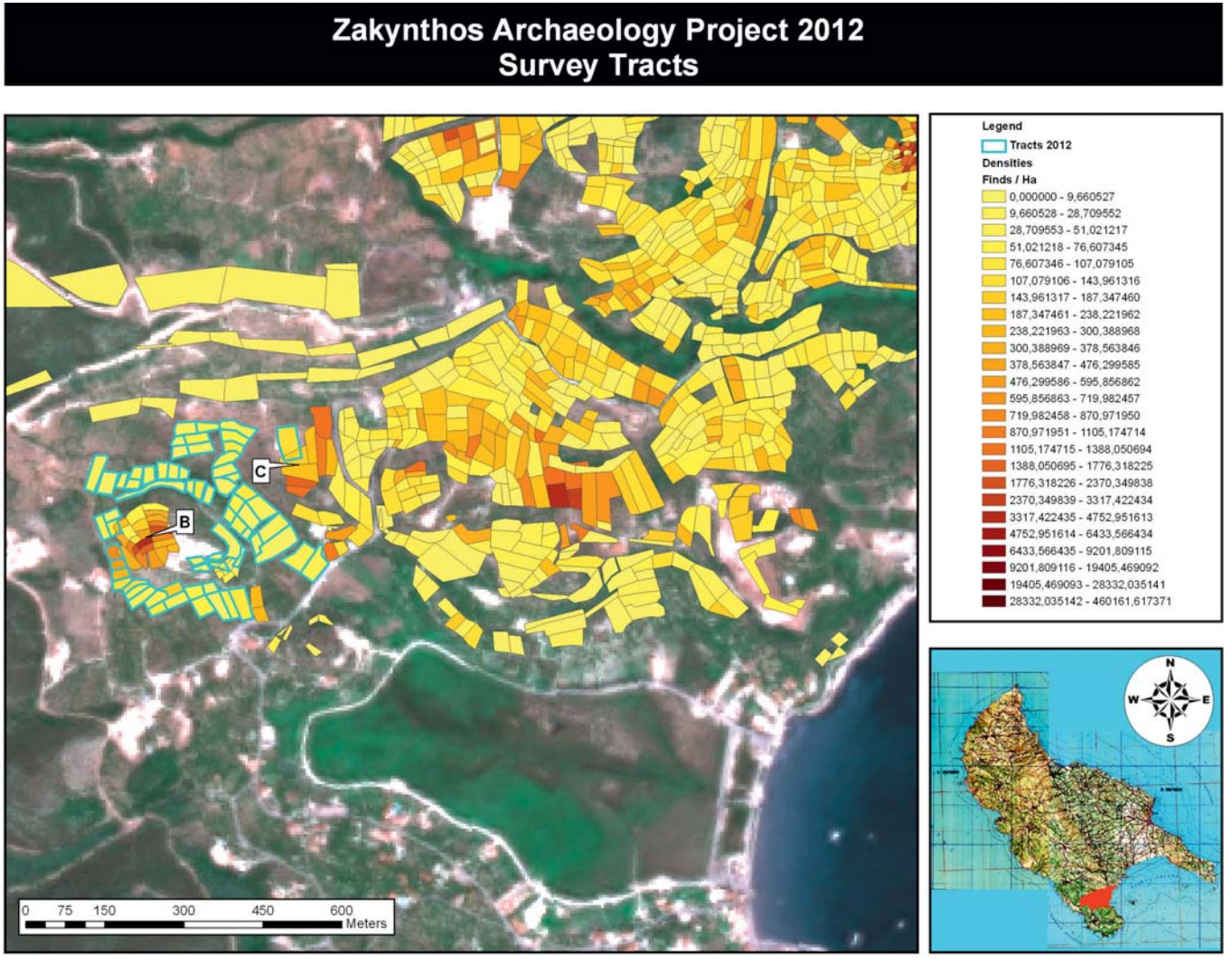

Figure 11. Density map of the surveyed area near Limni Keriou. The 2012 tracts are indicated in blue

The hill of Kokkala at Lithakia-Kamaroti is not the only excavated Mycenaean site on Zakynthos.[18] In 1934, the British archaeologist Sylvia Benton excavated settlement remains at Vasilikos-Kaloyeros (LH I-IIIB) and at the promontory of Alikanas-Akroterion (LH III).[19] Moreover, she investigated a well at Katastari in which she attested Mycenaean pottery.[20] In comparison to these settlements, the house remains investigated at Lithakia-Kamaroti may be somewhat later, since it yielded finds attributable to LH IIIC (early). However, the presence of earlier Mycenaean finds at Kamaroti and the fact that several finds at the other settlements are simply qualified as 'LH III', indicate that the habitation in all these places overlapped chronologically.

The Mycenaean house at Lithakia-Kamaroti is contemporary to the Mycenaean cemetery excavated at Kambi in the north-western part of the island, which consisted of 14 pit graves with finds ranging from LH IIB-LH IIIC early.[21] Clearly, Kambi is too far away to be directly related to Lithakia-Kamaroti. Elsewhere on the island, several individual built Mycenaean tombs have been investigated,[22] the nearest of which is the small built tomb at Keri, some 55 km from our site.[23] The Keri tomb contained the remains of two persons and LH II-IIIA1 pottery, which would be earlier than the excavated house of the 2012 campaign, but could coincide with the earlier phases of habitation at the site.

As is the case with all other sites at Zakynthos with Mycenaean material, the geographical position of Lithakia-Kamaroti appears to be determined by the nearby sea and the presence of a good harbour not far away.[24] Even though the study of the Mycenaean materials from Lithakia-Kamaroti is still in the early stages, it is clear that in terms of chronology and location the site provides valuable information on the Mycenaean landscape at Zakynthos.

Preliminary results of the 2012 season

The 2009 survey at Lithakia-Kamaroti had already shown that there was an important archaeological site on and around the hill of Kokkala. The test trenches dug in 2012 enable us to understand in more detail the chronology, nature and spatial extent of this site. In addition, the pottery that has been found stratigraphically enables us to asses much better the pottery found during the field

[18] For an overview, see Von Stein & van Wijngaarden 2010.
[19] Benton & Lorimer 1933-1934; Benton & Lorimer 1939.
[20] Benton 1931-1932.
[21] Agallopoulou 1973; Mountjoy, 1999, 480-483; Souyoudzoglou-Haywood 1999, 121.
[22] Van Wijngaarden 2005, 72-73.
[23] Agallopoulou 1973, 212.
[24] Van Wijngaarden, Avramidis & Kontopoulos 2014.

survey in all three of our research areas on the island. The preliminary results of the excavation campaign are:

- Remains of a Mycenaean settlement are present on the hill of Kokkala at Lithakia-Kamaroti. At present there are indications for at least two buildings: the 'square structure' on the top of the hill and a newly discovered building in trench A.
- The remains of the Mycenaean building that have been excavated consist of a wall and an associated floor. It is probable that there were two phases in the use of the building, probably both dating within a LH IIIB-IIIC horizon.
- Considering the small section excavated and the ample presence of Mycenaean pottery dating to LH I-LH IIIA, it is highly likely that there was an earlier Mycenaean presence at the site than that represented by the excavated building.
- Among the finds directly associated with the newly excavated structure and from the trenches nearby there is a remarkably high proportion of decorated fine wares, notably Mycenaean drinking cups and dinner vessels. Possibly, practices involving drinking and dining were carried out in this building.
- Large parts of the hill appear to have been destroyed by re-arrangements of the landscape and by agricultural practices. On the southern and eastern slopes of the hill, there are no longer any archaeological remains in situ. However, on the top near the 'square structure', in the area of trenches A and D and on the western slopes of the hill, archaeological remains in situ can be expected.
- In Classical or Hellenistic times, the landscape at the hill of Kokkala was rearranged to create an agricultural plateau. This plateau was probably related to farmsteads in the area of Lithakia-Kamaroti.
- The survey shows that the two find concentrations west of Limni-Keriou were not connected and, therefore must be considered as separate concentrations.
- The concentrations of tiles at the hill referred to as Lofos near Limni-Keriou extends somewhat to the south. This concentration appears to be the remains of some type of Hellenistic-Roman settlement.

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