

Offsite studies at Pietrele, Măgura Gorgana: flat settlement formation around a Copper Age tell site in the Lower Danube

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ABSTRACT

The Lower Danube region provides an opportunity to study the spatial organization of Copper Age tell settlements. In this short paper, we will try to explore the areas outside the tell site itself, and provide new evidence for the settlement organization in the outer settlement area. Essentially, the new data generated by geophysical prospection, which was later confirmed by trench excavations, brought into discussion the presence, variety and the character of outer settlement features encountered in the immediate environment of a Gumelnița tell in Pietrele, circa 4600/4550 to 4300/4250 BC.

The exploration of the flat site might have ramifications for how we think human interactions and networks took shape in the vicinity of Copper Age tell settlements. In order to approach these issues, the first part of the paper deals with the definitions and problems, the second and the third part deal with the contexts themselves as uncovered in two trenches in the outer settlement. The final part provides a brief outlook and puts the ramifications of the features discussed into a broader perspective.

KEYWORDS

Copper Age, KGK-VI, Lower Danube, Tell settlement, Flat settlement

Introduction

The word ‘tell’, which originally derives from the Arabic language, essentially indicates a multi-layered, stratified settlement site. In other parts of the Old World, tells are also referred to as gre (Kurdish), tepe (Farsi), magoula (Greek) or höyük (Turkish). While terms that suggest a similar meaning do exist in the western languages (such as “settlement mound” in English or “Siedlungshügel” in German), initial exploration of multi-layered settlements in the Arabic speaking parts of Mesopotamia (Layard 1854) and the considerable interest generated by these sites¹ have led to the acceptance of tell as a common denomination for these type of archaeological sites in a wider region including Southeastern Europe. Tell sites in Southeastern Europe, much like their Mesopotamian or Anatolian counterparts, constitute a major focus in prehistoric research², for those dealing with a range of questions related to prehistoric settlement, their formation, inner structure and chronology. The study of stratified sites, including those defined as tells, carries significance for the archaeological

1 For a selection of studies dealing with the *tell* settlements in Near East: see Braidwood 1937; Adams 1965; 1981; Adams, Nissen 1972; Wright et al. 1974; Wright 1981; Wilkinson, Tucker 1995; Wilkinson 2003; and the references therein.

2 For a selection of studies dealing with the *tell* settlements in Southeastern Europe: see Todorova 1978; 1982; Nikolov 1988; Kotsakis 1999; Rosenstock 2006; 2009; Gogâltan 2004; 2005; 2010 and the references therein.

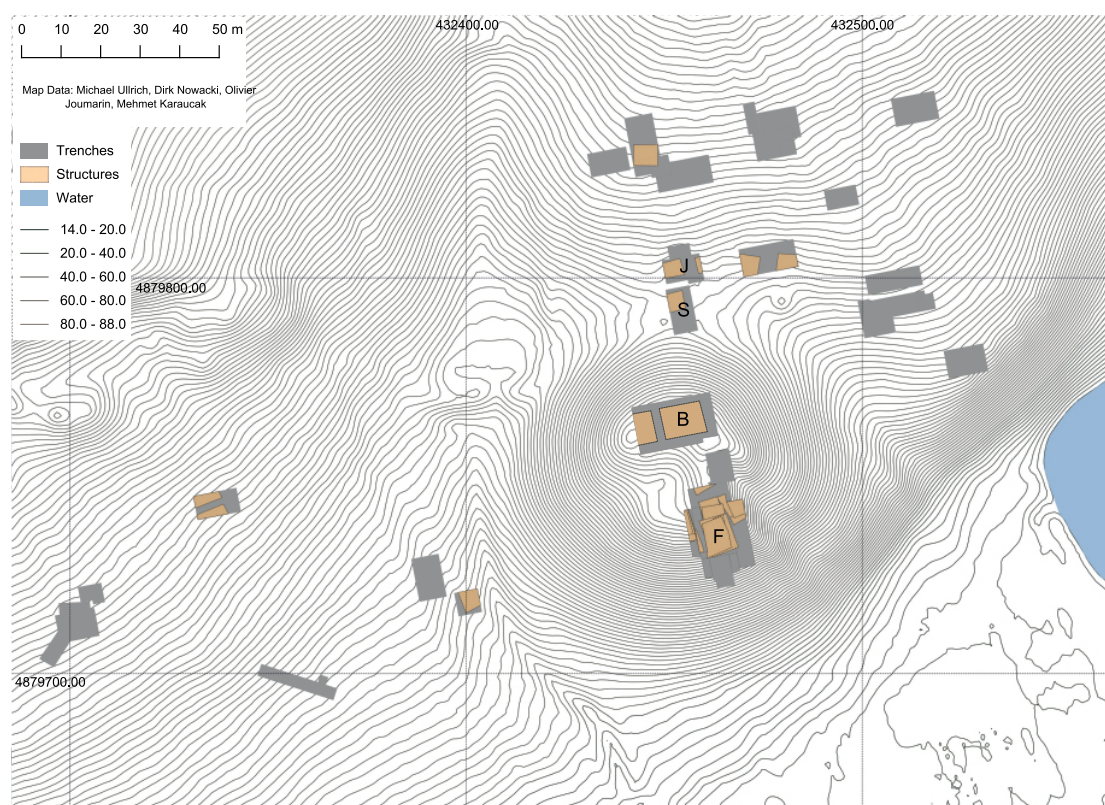


Fig. 1. General plan of the site and the location of trenches (plan M. Karaucak)

Обр. 1. Общ план на обекта и местоположение на сондажите (план М. Караукак)

research, since they form as a result of a repeated settlement activity within a certain span of time on limited space. In this respect, stratified sites permit researchers to investigate human behavior as a process and study the associated patterns within a time frame.

The formation and inner structure of tell settlements have been subject to intensive studies. The repeated practice of construction on the same place resulted in considerable accumulations of deposit. The build-up of structural remains within the confines of a limited area eventually led to the formation of mound-like settlements in the landscape. While the general characteristics of tells differ geographically and chronologically, the presence of mound-like settlements in the landscape has been relatively easy to detect by archaeologists, and consequently, archaeological fieldwork was focused from the early times on excavating these tells and recording their complex stratigraphy. Much of the research was initially driven by the attempts to record the stratigraphic relationships encoded within these tells. Thus, the archaeological finds were recovered from varying strata and the material was sorted chronologically on the basis of the stratigraphic model. The question of what kind of features can specifically be expected in the vicinity of a tell, however, presented bigger challenges and required intensive fieldwork with alternative research strategies.³ Prior to the widespread application of geophysical prospection methods, only limited information was available regarding the surrounding area of the tells. In Southeastern Europe, Henrieta Todorova's excavations in Northeastern Bulgaria can be considered among the earliest attempts which included the near vicinity of tells in a systematic research program.

³ See Ball et al. 1989; Wright et al. 2006; Wilkinson et al. 2007; Al Quntar et al. 2011; Ur et al. 2011 for studies that deal specifically with the outer settlement formations around *tell* sites.



Fig. 2. The burnt structure in trench J (photo S. Hansen)
Обр. 2. Изгорялата структура в сондаж J (снимка S. Hansen)

During the excavation of tell sites in the region, such as Poljanica, Ovcarovo and Goljamo Delcevo, test trenches as well as larger exposures were made in order to locate and study the corresponding burial sites (Todorova 1982, 106-108; 143; 163-165; 174). Even though the excavations in the area outside the tell yielded little information regarding the presence of contemporary settlement activity, the methods were integrated into the research strategy. Later work in Durankulak for instance, which also included the areas around the tell, uncovered the remains of a Neolithic settlement of the periods Hamangia I-III at Nivata.

Changes in perception only gradually became manifest, largely by the support from geophysical prospection methods. Geophysical prospections in Polgár-Csőszhalóm (Raczky et al. 1994, Pl. VI), Uivar (Schier et al. 2004, 150-154) and Pietrele were among the first

attempts to explore and document the surrounding area of tells on a larger scale in South-eastern Europe. In Pietrele, an area of roughly 2.5 ha was investigated with a Fluxgate-Gradiometer and a large number of features were identified over the entire prospection area by Baoquan Song and his team in 2004 (Hansen et al. 2005, 342-346). These features included 5-6 m wide anomalies, which looked comparable to the anomalies generated by burnt structures on the settlement mound. Furthermore, the orderly layout of anomalies in parallel stripes suggested the existence of a flat settlement around the tell. The remaining question was whether these features were contemporary with the occupation of the mound, or they were the products of an independent settlement activity that took place within a different time span. In order to resolve this problem, a series of trenches were excavated in the surroundings of the mound during the campaigns 2009-2016 (Hansen et al. 2010; 2011; 2012; 2015; 2017). The offsite excavations confirmed the presence of a surrounding flat settlement, and through an extensive AMS ^{14}C dating program (Hansen et al. 2012, 59-60; 2017 in press; Reingruber 2015, 308-311) the contemporaneity of occupation on and off the tell site was established. According to the present ^{14}C dates, although the earliest levels at the tell have not been reached at the time this paper was written, a time range between 4550-4250 BC seems to be the likely period that covers the settlement activity on the tell. The dates obtained from outer settlement features, despite an early onset, are distributed within the same range, therefore demonstrating the coexistence of these settlement units.

Through consecutive campaigns in Pietrele since 2002, a total area of 401 m² on the tell and 802 m² on the outer settlement have been exposed. In this paper we briefly present the results from two trenches excavated in the outer settlement area, which have contributed significantly to our understanding of the settlement organization and site formation processes of Pietrele (fig. 1).

Trench J

One of the first trenches to be excavated outside the settlement mound was trench J in 2009-2010 (Hansen et al. 2010, 46-47; 2011, 50-51). Located within a distance of 50 m from the center of the tell, this area was chosen to be investigated due to the presence of a large, regularly shaped anomaly to the north of the tell, on a relatively flat portion of the northward slope. To our surprise, the cultural layers in this area were sealed by a thick deposit of colluvium, which seems to have developed after the abandonment of Copper Age occupancy at Pietrele, possibly as a result of the erosion at the upper parts of the slope, or directly from the terrace. The colluvium consists of dark, almost blackish top soil and it contains a large quantity of mixed archaeological material, such as ceramic sherds and burnt kerpić fragments. However, at around 1.60 m depth, fragments of construction material and pottery vessels appeared in a cluster, signaling that the colluvial deposit was through. Further work in this concentration revealed the upper part of a clay installation, much like the examples known from the tell.⁴ Similar installations encountered in trenches B and F at the tell were, as a rule, always constructed within the residential structures, on most cases attached to the inner surface of one of the main walls. This was the first indication for a residential structure off the tell, and as we progressed deeper around the installation, we were able to observe traces of a burnt structure within the area of exposure (fig. 2, 9).

⁴ See for example: Hansen et al. 2004, 9, Fig. 8; Hansen et al. 2006, 13, Fig. 18; Hansen et al. 2011, 65, Fig. 36-37.



Fig. 3. Food processing installation inside the burnt structure in trench J (photo M. Karaucak)
Обр. 3. Инсталация за преработка на храни в рамките на горялата структура в сондаж J
(снимка М. Karaucak)

Fig. 4. Remains of two burnt structures in trench J (photo S. Hansen)
Обр. 4. Останки от две изгорели структури в сондаж J (снимка S. Hansen)



The burnt structure, to which the above mentioned installation belongs, was partially exposed within the limits of the trench, therefore, its full size and extents are unfortunately not clear. It is oriented on a roughly north-south axis, and no inner partition or division of the rooms was observed. The northern and eastern walls, although not preserved in solid form, were detected by the clay plasters along their inner faces. A clay bench with east-west orientation is built next to the installation, along the same northern wall. A poorly preserved oven with several renewal phases is situated just south of the installation, next to the eastern wall. Although we were not able to detect a preserved floor within the inner area of the structure, a large concentration of secondary burnt and fragmented vessels marked that the floor level of the structure which lies around 30 cm below the upper part of the installation. The ceramic fragments, some of which belong to large storage vessels (pithoi) (Hansen et al. 2011, 52-53), spread across the entire northern part of the structure, mainly clustered over and around the clay bench and in the area of the installation. Later work in this area revealed that the bench had a socket, which was used in order to support the storage vessel. The base of the vessel, as it was found, was placed firmly in this socket, probably in order to provide extra support for the heavy vessel. The installation next to the bench seems to consist of two separate chambers, divided by a thin clay partition wall, with an opening facing the oven to the south. The larger chamber seems to be used for food processing, suggested by the presence of two massive grinding slabs. A row of thin posts on the back of the northern side of the installation was probably part of the construction which attached the installation to the northern wall of the structure (fig. 3).

Another burnt structure is situated 5 m further east, however, we were only able to expose it along a narrow stripe. Although most of the structure is situated under the eastern profile, it was possible for us to partially trace its western wall and recover some of its inventory, such as grinding stones, bone tools and ceramic vessels (fig. 4). It is worth noting that the location preferences for the structures or the arrangement of construction plots in this part of the outer settlement display a similar pattern to those observed on the tell.⁵ While these two structures are embedded within the same stratigraphic unit, due to the limited exposure of the structure we were not able to retrieve datable material, and therefore we are not able to support this argument with ¹⁴C evidence.

The most unexpected result during our initial work at the outer settlement was the presence of an older unburnt structure stratified under the burnt western structure. The unburnt structure is oriented more or less on the same axis, and displays a similar internal arrangement with the upper burnt structure (fig. 5-6, 10). Despite being preserved up to only a few centimeters, the eastern wall of the structure and the plasters on its inner face were clearly visible. The wall seems to have been constructed with rammed earth or clay as a massive block, since no trace of post-holes were detected along the wall, which has been followed approximately for 3.20 m, until the point where it was cut by a small pit in the south. The northeastern corner of the wall was also preserved and here the continuous plasters on the inner face suggested that the installation was constructed and attached to it after the wall had been erected (fig. 7). The installation seems similar with the newer structure's installation in regard to its construction, however, the find concentration within the installation suggests a different function for this unit. While the newer installation from the burnt structure contained two massive grinding slabs and storage vessels, implying food process-

⁵ Trench M, which was also excavated in 2010, exhibited a similar situation with two houses constructed on plots that lay within 5-6 m distance (Hansen 2011, 51).



Fig. 5. The unburnt structure in trench J (photo M. Karausak)
Обр. 5. Неизгорената структура в сондаж J (снимка М. Караусак)



Fig. 6. The unburnt structure and the tell in the background (photo M. Karausak)
Обр. 6. Негоряла структура и селищната могила на заден план (снимка М. Караусак)



Fig. 7. The eastern wall of the unburnt structure (photo M. Karaucak)

Обр. 7. Източната стена на неизгорялата структура (снимка М. Karaucak)

Fig. 8. The installation inside the unburnt structure (photo M. Karaucak)

Обр. 8. Инсталацията във вътрешността на негорялата структура (снимка М. Karaucak)



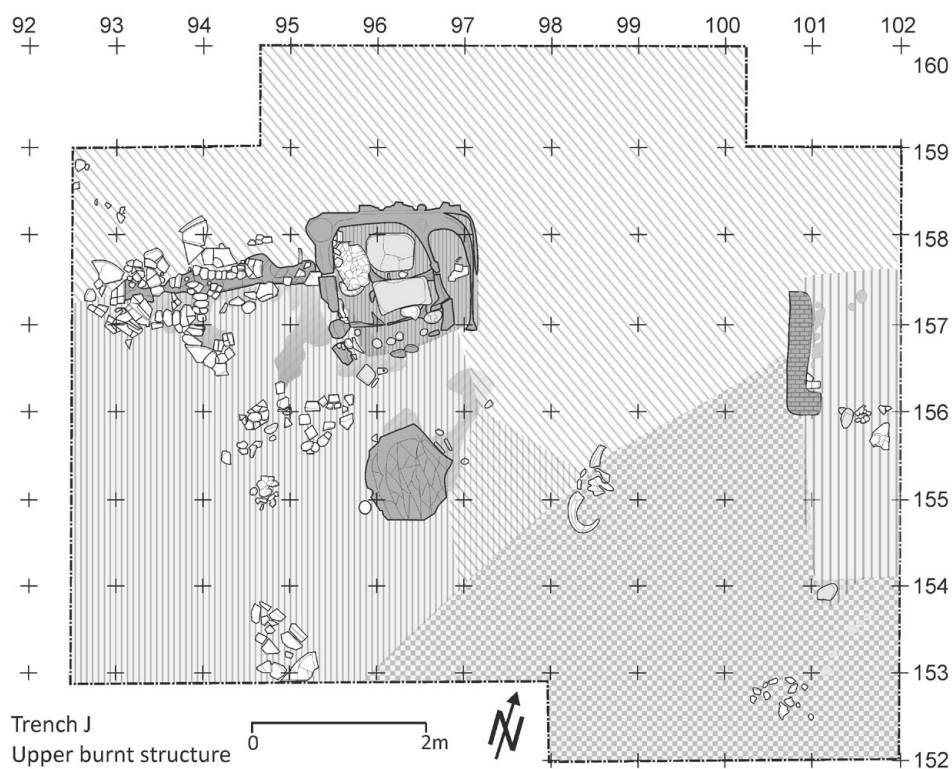


Fig. 9. Plan of the burnt structure in trench J (digitalization S. Brummack)

Обр. 9. План на горялата структура в сондаж J (дигитализация S. Brummack)

Fig. 10. Plan of the unburnt structure in trench J (digitalization S. Brummack)

Обр. 10. План на негорялата структура в сондаж J (дигитализация S. Brummack)

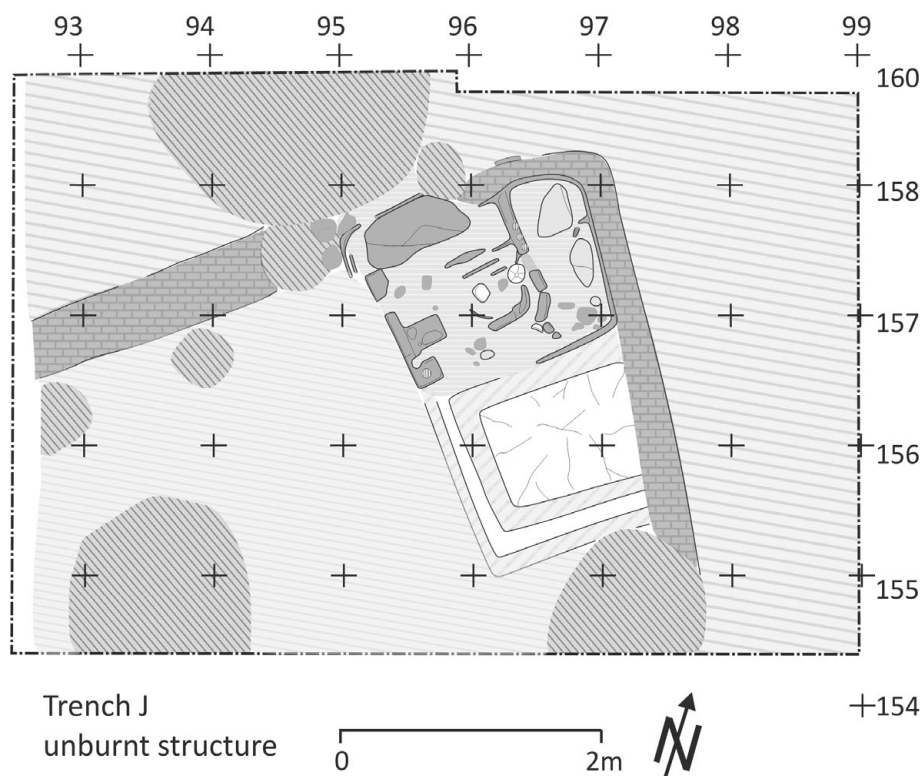




Fig. 11. Sloping, compact burnt kerpiç layer below the thick colluvium in the northern part of trench S, viewed from south (photo M. Karaucak)

Обр. 11. Наклонен, компактен горял кирпичен пласт под дебел колувиален пласт в северната част на сондаж S, от юг (снимка М. Караукак)

ing activities, the inventory of the older installation consists of small grinding stones and tools, such as stone axes and an antler hammer-axe as well as numerous worked stones and a flint blade. These finds, together with the absence of storage vessels point towards a craft-related activity for the older installation (fig. 8). The unburnt structure, just like the burnt structure above, had a clay bench running along the northern wall. The part where the clay bench connected with the installation was unfortunately cut by an intrusive pit from the upper layer. Unlike the upper burnt structure, it was possible to follow the floor inside the unburnt structure. This floor, consisting of a thin layer of packed clay, was preserved more or less uniformly within the structure, except for a number of small pits cutting through it. One of these pits, roughly 1.5 m diameter, contained several large mammal bones, worked and unworked pieces of bone, antler and horn, small sized stones besides an antler harpoon and an animal figurine, which lay directly above the concentration.

Trench S

Trench S is situated directly between the tell and trench J, in a slight depression between the slope of the mound and the surface rising to the north. The surface level of the area under investigation varies slightly due to the sloping surface from north to south, towards the tell. An exposure of 12.5m x 6m area in north-south orientation was opened in order to verify a geophysical anomaly. Due to the position within a depression compared



Fig. 12. Pottery concentrations in trench S in situ below the kerpić layer, isometric 3d model visualization (3d model M. Karaucak)

Обр. 12. In situ керамични струпвания в сондаж S под кирпичения слой, визуализация на изометричен 3d модел (3d модел M. Karaucak)

to the ambient surface, a thick deposition of colluvium had been accumulated. The upper, black and very compact agriculturally affected horizon was approx. 0.50 m thick. It contained a deposit in which prehistoric, medieval and recent material without any recognizable order or specific features were mixed. Underneath the upper level, up to 1.50m deep, compact colluvium was situated. As with the upper deposit, the rather thick layer disclosed no traces of distinguishable features within the extent of the trench. This layer is visible in the profiles above the layer with the burnt kerpić debris (fig. 11). Taking into account the available work time, the extent of the area of the trench had to be reduced to 10.5m x 4m, and subsequently further to ca. 20m² in the north. After excavating several levels of the colluvium, the first features of debris of burnt kerpić pieces appeared and disclosed themselves clearly from the deposit in the northern part of the trench. In respect to the original surface level, a minimum of 1.6m colluvium accumulated on top of the kerpić. Because the surface of the debris showed a slope downwards in direction to the south, the accumulation of soil over this feature exceeded in some parts two meters. The soil accumulation and the layer of burnt debris effectively sealed material remains underneath, too. It appeared from the extent of the kerpić layer, which covered approx. 16m², that its margins have not been reached by the trench and the burnt layer was observed to reach into the northern, eastern and western profiles, respectively. Following the removal of the upper and northernmost

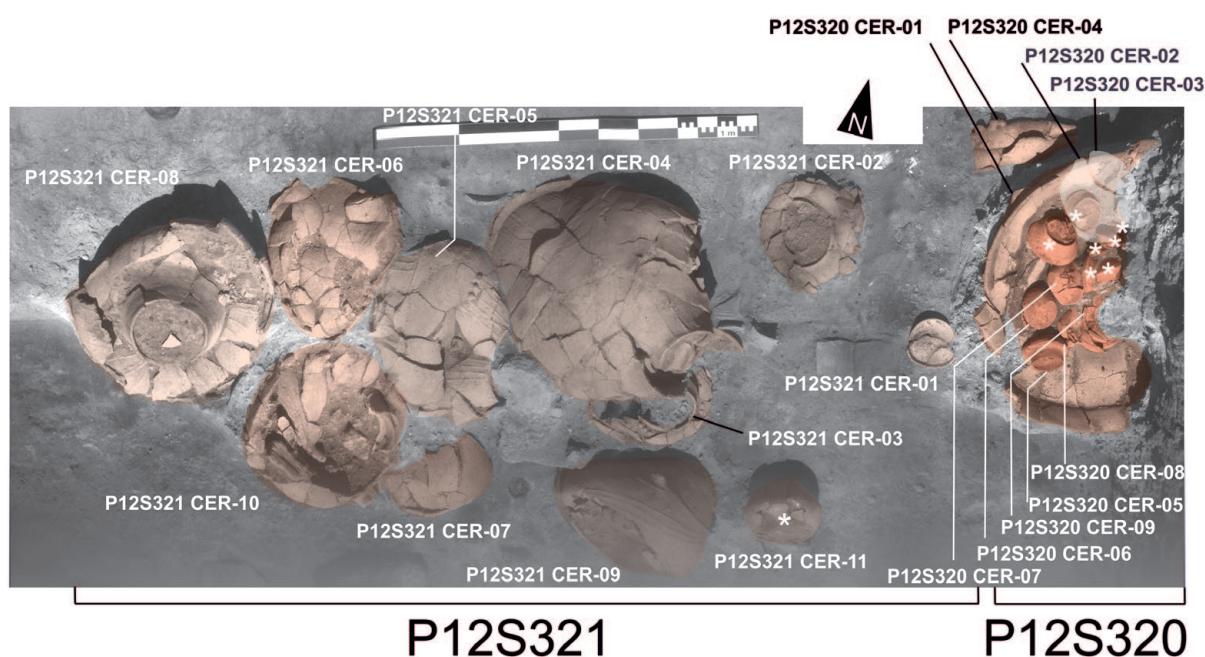


Fig. 13. Embedded cup in storage vessel P12S321 CER-11 exposed during recovery (photo D. Narimanishvili)

Обр. 13. Вградена чаша в съд за съхранение P12S321 CER-11, намерена по време на възстановяването (снимка photo D. Narimanishvili)

Fig. 14. False colored image of the pottery concentrations in Trench S in situ (photo S. Brummack)

Обр. 14. Подправено цветно изображение на керамичните струпвания в сондаж S, in situ (снимка S. Brummack)



debris, a fine cleaning exposed two distinct features of ceramic concentrations underneath the *kerpić* layer (fig. 12)⁶. An eastern and western pottery concentration could be distinguished. The western concentration, composed of ten storage jars, one plate and a cup within the body of CER-11⁷ *in situ*, was designated feature P12S321. Careful recovery exposed not only the aforementioned vessel which had an intact cup embedded in it (fig. 13) but also another vessel (P12S321 CER-06), which still contained carbonized cereals.⁸ Judging by the east-west alignment of the storage jars, a very orderly placement was indicated. Of course, the impact of debris was not entirely without effects upon the objects buried underneath.

When a ceramic container is damaged by heat and pressure, the vessel can bend (offset), be compressed (upset), or break (pieces split off), in any combination. Offset damage requires a very hot temperature to occur. The damage can be limited to nose, neck, middle body, the base or be more complete in character. However, all vessels of this complex were either standing upright on their bases ca. 2.4 – 2.6m below the surface (CER-01; CER-02; CER-03; CER-08; CER-10) or were fallen on their side (CER-04; CER-05; CER-06; CER-07; CER-09; CER-11 & CER-12). Exposure to pressure caused the upset failure of CER-08 close to its upper neck, and quite possibly affected the position of other vessels as well (fig. 14).

East of this complex another pottery concentration was found, which was composed of one anthropomorphic vessel, a large, deep, graphite painted, carinated bowl with- as finally established- at least 24 other small vessels inside (mostly cups), and was designated feature P12S320. Due to the burial of the assemblage with a compact, thick, burned debris right on and partially amid the concentration, a “closed context” had been created. During initial attempts to clean the concentration, it became apparent that within the assemblage three distinct aspects could be distinguished:

- Two vessels within the upper debris, slightly above the pottery concentration within the bowl and separated from it by a layer of burnt debris.
- A deep carinated bowl with the majority of small cups tightly packed together inside.
- An anthropomorphic vessel outside the bowl at about the level of its base, covered by debris.

The complexity of the assemblage demanded that the material was not to be uncovered at once, but be exposed and recovered in several, successive steps. Among the upper levels of the burnt *kerpić* debris, and around 6-10 cm above the concentration of cups inside the bowl, two ceramic objects were found. A small jar (P12S320 CER-02) with its lid (P12S320 CER-03) was uncovered after removing the debris. Both objects suffered compression damage. The lid was also found partially tilted out of alignment from the jar and relocated slightly more to the north. The jar's body suffered upset failure caused by compression and/ or impact but remained resting within the package of debris standing on its own base, rather than being scattered around in pieces.

6 The publication of the recovered pottery is under preparation (Hansen et al. 2017), therefore, we will limit our outlines here to a detailed description of the *in situ* contexts only.

7 Vessels which are identified as complete- or potentially complete during the excavation or later, during the restoration are given CER- numbers. Note that only CER-numbers as identified on the field are reproduced here.

8 Two cereals produced shortlived AMS samples from this feature: MAMS-31450 BP:5404 ± 26 and MAMS-31451 BP:5399 ± 26 implicate a combined dating of 4330-4240 calBC (95.4%). The long dating interval is caused by the presence of a pronounced Whiggle in the INTCAL13 calibration curve at this range, causing two resultant *a posteriori* probability densities to form.

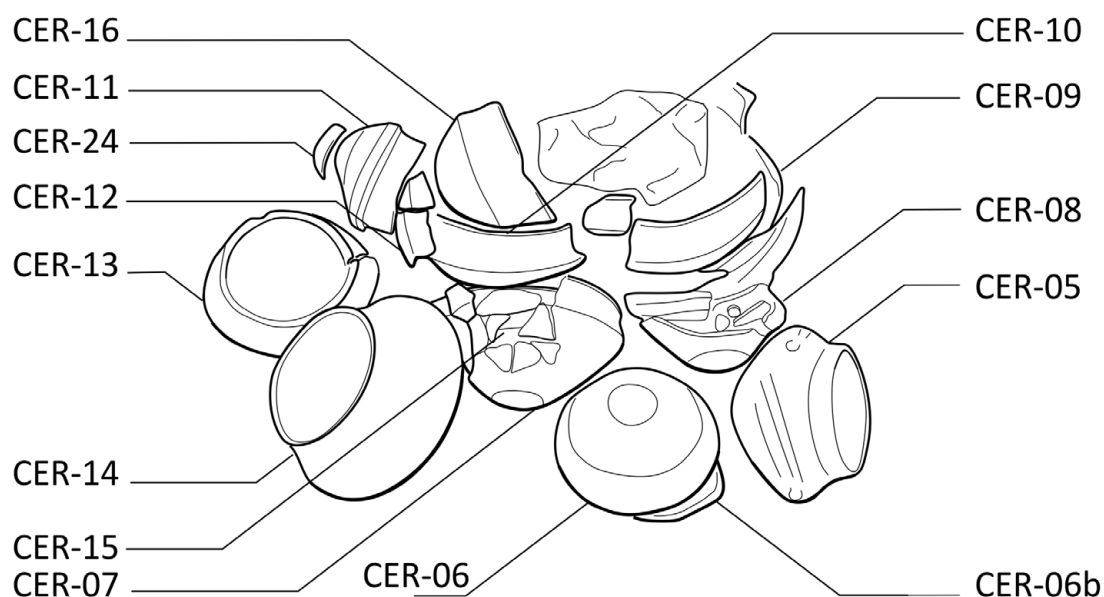


Fig. 15. Sketch of the outer layer of the pottery concentration inside the deep carinated bowl (drawing S. Brummack)

Обр. 15. Скица на външния слой на керамичната концентрация в дълбоката купа с прелом (рисунка S. Brummack)



Fig. 16. In situ detail of the pottery concentration designated as feature P12S321 with the anthropomorphic vessel laying in the front (photo M. Karaucak)

Обр. 16. In situ детайл на керамичното струпване, обозначено като структура P12S321 с антропоморфен съд, разположен отпред (снимка M. Karaucak)

The main concentration of the assemblage is composed of one trapezoid-shaped lid, a large carinated and graphite painted bowl with a large number of small cups tightly packed together inside the bowl. In the outer row of vessels, only one cup (P12S 320 CER-13) was still resting on its base. P12S 320 CER-14 and -CER-05 had fallen on their sides but both remained intact. The small cup P12S320 CER-06 was found upside down and rested on a lid (-CER-06b), which owing to the unique trapezoidal shape, is not believed to have belonged originally to this cup. Once the removal started, more cups appeared. At first, the intact vessels of the outer row were removed, followed by the southern half with the removal of the top debris, and two fragmented vessels underneath (P12S320 CER-09 and P12S320 CER-08) (fig. 15). The next step included the removal of the southern half of the concentration. On the side of the remaining northern half of the assemblage, P12S320 CER-07 appeared to rest on its side and despite being largely complete, was broken in several pieces, some of which became loose. Due to the poor resolved stability of the fragments we had to consider and finally undertake the preemptive recovery of -CER-07. After removing some fragments of its surface, another intact cup appeared inside P12S320 CER-07 which was designated CER-15. Both objects were removed accordingly and the concentration was again cleaned. Thus, the view which indicated how the remaining northern half of the uncovered vessels was organized returned useful insights about how exactly four of the cups (CER-16, CER-10, CER-17 and CER-18) were stacked together (fig. 17). P12S320 CER-16 was inserted into -CER-10 but was uncovered being tilted out of the horizontal into a vertical position. P12S320 CER-10 on its own was inserted in yet another cup (-CER-17). The latter rested with its base against the base of CER-18, which was lying upside down. Considering the possibility that the impact of the debris may have caused some rearrangement of the vessels, the order in which the material was found, can still be considered *in situ*. Placement of the vessels was eased by their shape, which allowed them to be stacked together. After removing these vessels and the two cups P12S320 CER-11 and P12S320 CER-12 behind them further to the north, there were still a number of cups left unaccounted for. At the base of the bowl yet more cups appeared. All of these cups were placed, similar to P12S320 CER-18, upside down and rested on their rim. Except for one cup (-CER-25), they were found in one level. In an outer row, and more to the west than the other we found CER-19 and, a bit more to the north, CER-20. CER-21 to CER-24 were aligned south to north in one line within the approximate center of the bowl. There was no layer of soil separating these vessels from the bowl P12S320 CER-01. Finally, P12S320 CER-25 was laying on and between and CER-21 and CER-22. Despite the careful removal of all vessels and the bowl CER-01 from the profile, no vessels were observed in the eastern half of the bowl, situated within the profile. But because this area was not further excavated, it remains probable that the context is incomplete.

During the cleaning around the pottery concentration of the bowl, a completely preserved anthropomorphic vessel was uncovered northwest of and partially underneath the large bowl laying with its face on the surface (compare fig. 16). It appeared to be separated by the bowl and its content by upto 10 cm thick, fine grained but very compact, layer of burnt kerpić debris. The question of whether or not the vessel has been buried by the same debris event as the bowl's pottery concentration therefore could not be resolved based upon stratigraphic observation alone. Taking into account that the base level of the deep carinated bowl was within 1 cm of the same elevations as the anthropomorphic vessel as well as within the range of elevations associated with the plates and storage jars of feature 321, this is assumed to be the case. The publication of this object is forthcoming (Hansen et

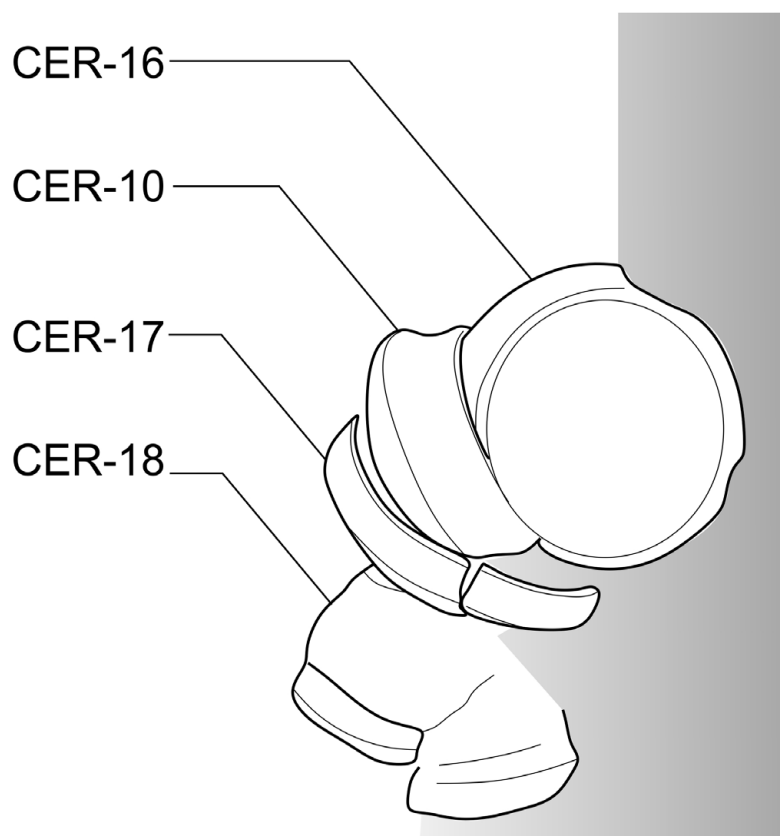


Fig. 17. Sketch of the inner layer of the pottery concentration inside the deep carinated bowl (drawing S. Brummack)
Обр. 17. Скица на вътрешния слой на керамичната концентрация в дълбоката купа с прелом (рисунка S. Brummack)

Fig. 18. Eastern half profile with the sloping burnt layer and the imprint of the carinated bowl after removal of all objects (photo M. Karaucak)

Обр. 18. Източната половина на профил показващ наклонен горял слой и отпечатък на купата с прелом след отстраняване на всички предмети (снимка М. Карауцак)



al. 2017 *in press*).

No further intact pottery concentrations were recorded in the southern area below the burnt debris. Apart from the complete vessels, material was recovered in this stage from the ashy, burnt soil matrix. In the southern part of the trench, and under the burnt debris, the fragment of a second anthropomorphic vessel was found. After both pottery concentrations were recovered, the profile allowed an assessment of the debris situation. The position of the bowl enclosed and sealed by the burnt kerpić debris can be seen in the negative on the profile as well as a pronounced, ca. 20cm deep step in the profile of the debris (fig. 18). After clearing of the vessels, poorly preserved remains of a 20cm thick clay wall or bench could be observed ca. 2.8-2.9m underneath the surface in which four large and two small post-holes were identified, (fig. 19). This wall or bench corresponds in its position and alignment to the step seen in the profile. Underneath the remains of this structure, a loamy, unburnt layer was observed in the planum at the approximate depth of 3.4m below the surface. The only marking feature in this level was an east-west oriented, 50 cm wide, very straight edged sand alignment representing the margin to the burnt features in the north.

Discussion and perspectives

To summarize the results from the outer settlement area of Pietrele, we can begin by defining a time frame for the occupational activity in this area. The earliest ¹⁴C dating from the site indicates that the area was already inhabited during the Late Neolithic period (ca. 5200-5000 BC). The ¹⁴C also indicates that, both the *tell* and the flat settlements were synchronously abandoned at around 4250 BC. Apart from a single burial context, which can be dated to the late 4th Millennium BC (Hansen et al. 2015:19), the area seems to be devoid of any activity until the Early Medieval period (Dridu culture) (fig. 20).

The recent excavations at Pietrele, outside the *tell*, do not only help us understand the occupation history of the site better, but also cast some doubts on the previously held assumptions on population density and organization of settlement systems in the region during the 5th Millennium BC. The evidence from Pietrele reveals that the tell, instead of representing the whole settlement unit, was only a distinctive part within a much larger settlement. While the tell itself covers an area of roughly 0.7 ha, the size of the surrounding flat settlement is estimated as a minimum 5 ha (Hansen 2015, 276). If an average estimate of 220 people per hectare (Duffy 2015, 94) is accepted, the tell would have likely been inhabited by 154 people, while such a density figure might imply that the flat settlement around it could have been populated by around 1100, raising the total population estimate for Pietrele to 1254.⁹ Consequently, the identification of a contemporary flat settlement in Pietrele validates the question whether or not the other tell sites in the region were arranged in a similar setup. In case that this presumption is true, it would indicate a more intensive habitation of the area and larger, more populous settlements in the region during the 5th Millennium BC.¹⁰

9 The estimate given here should be regarded as preliminary. A finer estimation will be possible as more data is obtained from the outer settlement area.

10 Although studies related to paleodemography and population dispersals are rare in the Southeast European prehistory, a notable exception is Henrieta Todorova's 1978 work, where she attempted to estimate the population sizes of tell settlements, as well as a general estimate for the entire territory of present day Bulgaria during the 5th Millennium BC. However, since the recent results from Pietrele confirm the presence of a much larger settlement area, we believe that such attempts to reconstruct the population sizes in the region

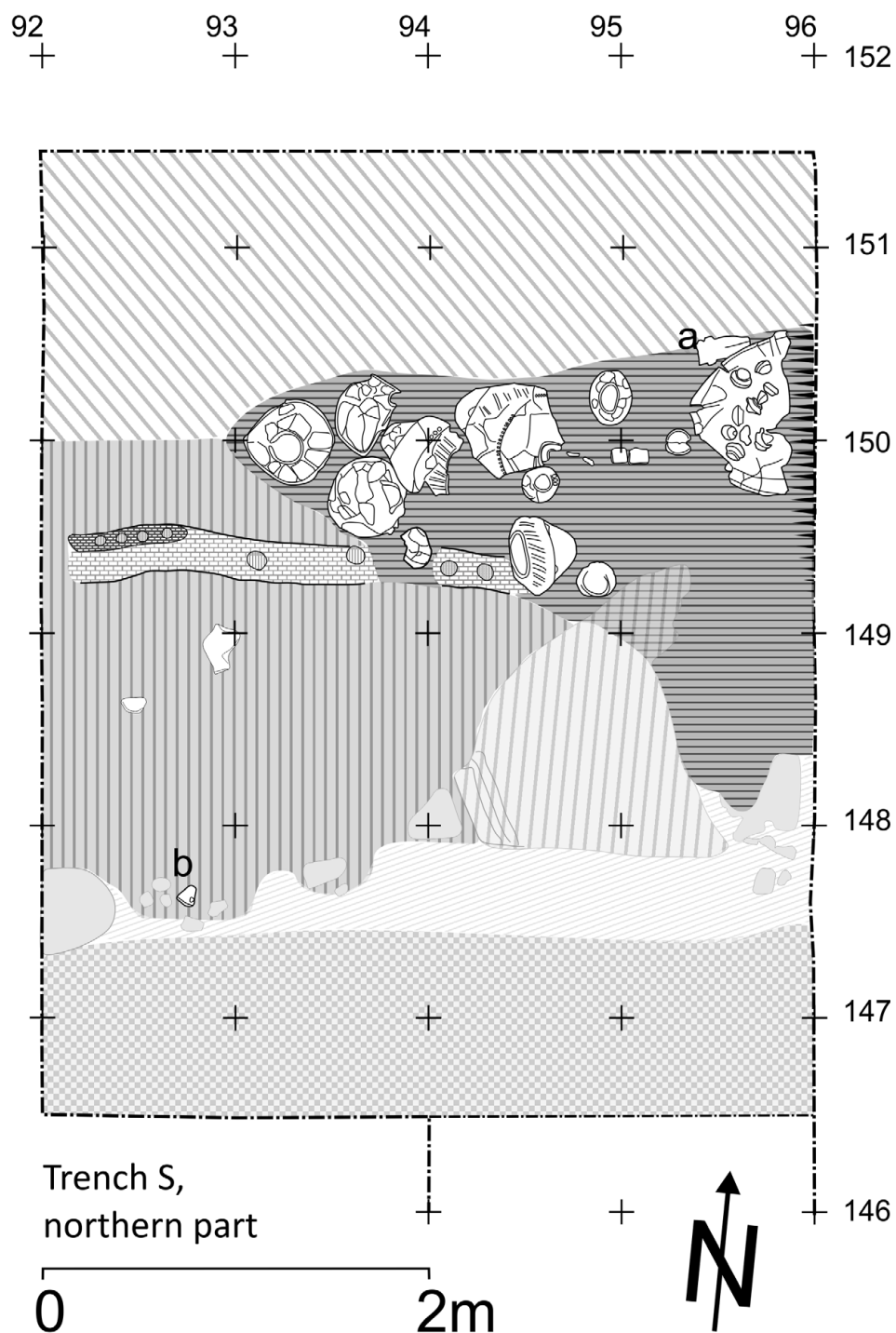


Fig. 19. Plan of the northern part of trench S. "a" and "b" designate the location of the anthropomorphic vessel and the fragment belonging to the second vessel (digitalization S. Brummack)

Обр. 19. План на северната част на сондаж S. "а" и "б" обозначават местоположението на антропоморфния съд и фрагмента, принадлежащ на втория съд (дигитализация S. Brummack)

Other questions that follow these observations are: how does this specific arrangement of living space relate to broader issues such as the economic and social structure of the tell communities? Or, is there any connection between the social and economic inequality and the segregation of residential areas? So far, the results from Pietrele do not allow us to formulate simple answers to these questions. While the distribution of metal finds seems to generate a sharp contrast between the tell and the outer settlement area (metal finds are much rarer in the outer settlement), the distribution of other categories of small finds, as well as the high quality graphite painted pottery counterbalances this situation with no apparent differentiation. Specialization of households in certain practices seems evident in the outer settlement as well as on the tell. The distinctive composition of inventories from structures located in trenches B and F on the tell, with an emphasis on hunting-fishing in F and weaving-textile production in B has been noticed (Hansen 2015, 276). From this perspective, a similar distinction can be made between the inventories of J and S, as strong indications of food processing and storage in trench J are contrasted by an emphasis on food serving and consumption in trench S.

Upon a closer look, the ceramic inventory in trench S represents a unique combination for this site which may demand further discussion. In addition to storage containers, a large number of small cups have been recorded as placed carefully –partly stacked together inside a graphite painted bowl. Contrary to other contexts, no processing installations were recorded in this trench. Although it cannot be ruled out that such an installation may have existed in the areas which have not been excavated so far, another distinct interpretation can be postulated which emphasizes the concept of food consumption and sharing. According to Dietler (Dietler 1996; Dietler 2001) food sharing and food distribution requires containers for the preparation and consumption of the food. Because pottery as a container is well-preserved in the archaeological context, attempts to detect such practices in the archaeological context are not entirely elusive (Dietler 2001, 72). Following the definitions suggested by Polly Wiessner (Wiessner 2001, 116f.), three of the four aspects of feasting (space, food, aim and the form of display) can be shown in the archaeological context of trench S:

Feasting involves an aggregation of people, therefore, space is required for feasting. The size of groups which participate in the feasting may range from a minimum of two to thousands of people. The availability of space within the confines of the tell is less pronounced than in the outer settlement, as evidenced by the free space between the structures in J. Because feasting involves the sharing or distribution of food, the presence of food and consumable liquids or the presence of serving vessels can be indicators. Food remains were identified inside the storage vessel CER-06 of feature 320 as carbonized cereals. Consumption of liquids, although the liquids themselves are not preserved, are indicated by the presence of a large number of cups in feature 321. According to Wiessner, most feastings are held for a specific reason which may be inferred from the artifacts. Unlike the pottery concentrations in the tell or trench J, which were strongly correlated with a processing installation, no evidence for such an installation has been found in S.

Furthermore, according to Wiessner, feasting usually involves a form of display. Objects suited for display purposes indeed are recorded in Trench S by the presence of an anthropomorphic vessel and another sherd which belongs to the facial part of a similar ves-

should now be reconsidered in accordance with the new data.

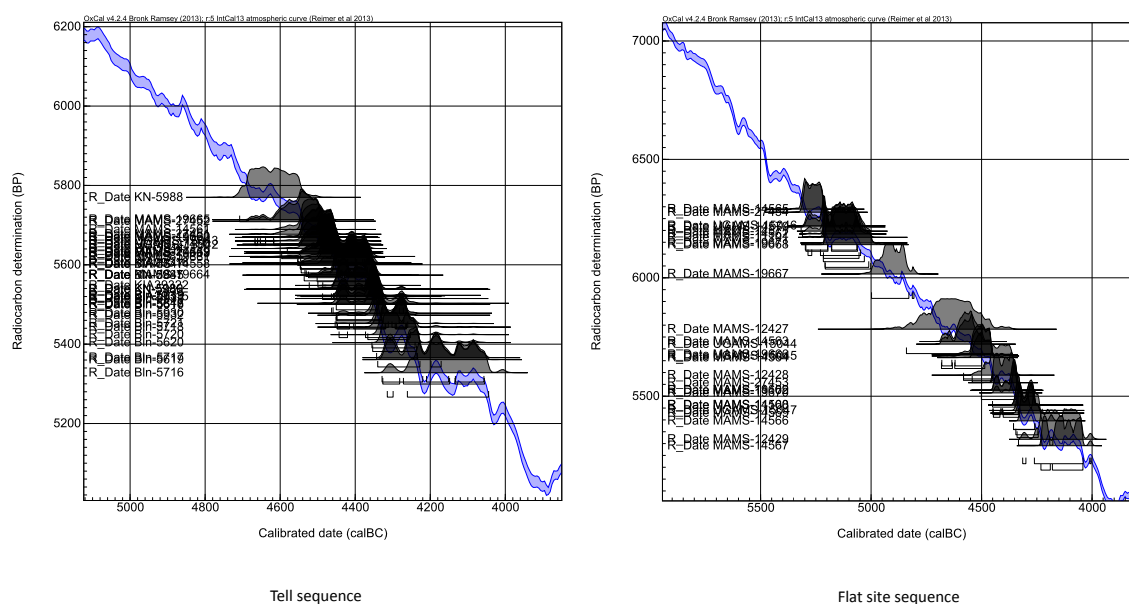


Fig. 20. ^{14}C curve plots for the tell and outer settlements (graphic M. Karaucak)

Обр. 20. С14 криви за селищната могила и външните селища (графика М. Караукак)

sel (Hansen et al. 2017) This observation may carry significance, because anthropomorphic vessels, -unlike anthropomorphic figurines- have been extremely rare among the large find complexes uncovered on the *tell*.

Conclusions

The results from trenches J and S in the outer settlement of Pietrele should be considered as parts of one whole together with the results from tell. Many aspects of the structures and the use of physical space seem comparable between the tell and outer settlement, such as different functions and practices observed within separate households, general characteristics of the architecture, as well as the preference for constructing each generation of structures on the same plot. The stratification of two structures in trench J within the same plot corresponds well with the arrangement of living space on the tell. Likewise, the inventories from J and S point towards a functional differentiation between households in the outer settlement, as observed in the households located on the tell. Furthermore, the potential evidence for feasting in S, might indicate a differentiated use of space between the tell and the flat settlement, with specifically designated spaces for such practices.

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References

- Adams, R. McC. 1965. *Land Behind Baghdad. A History of Settlement on the Diyala Plains*. Chicago: University of Chicago Press.
- Adams, R. McC. 1981. *Heartland of Cities, Surveys of Ancient Settlement and Land Use on the Central Floodplain of the Euphrates*. Chicago: University of Chicago Press.
- Adams, R. McC., Nissen, H.J. 1972. *The Uruk Countryside. The Natural Setting of Urban Societies*. Chicago - London: University of Chicago Press.
- Al Quntar, S., Khalidi, L., Ur, J. 2011. Proto-Urbanism in the Late 5th Millennium BC: Survey and Excavations at Khirbet al-Fakhar (Hamoukar), Northeast Syria. *Paléorient* 37.2, 151-175.
- Ball, W., Tucker, D., Wilkinson, T.J. 1989. The Tell-al Hawa Project: Archaeological Investigations in the North Jazira 1986-87. *Iraq* 51.1, 66.
- Braidwood, R.J. 1937. *Mounds in the Plain of Antioch. An Archaeological Survey*. Oriental Institute Publications 48. Chicago: University of Chicago Press.
- Dietler, M. 1996: Feasts and commensal politics in the political economy. Food, power and status in prehistoric Europe. In Wiessner, P. Schiefenhövel, W. (eds) *Food and the status quest. An interdisciplinary perspective*. Anthropology of Food & Nutrition 1. Oxford: Berghahn Books, 87-125.
- Dietler, M., 2001. Theorizing the feast: rituals of consumption, commensal politics, and power in African contexts. In Dietler, M., Hayden, B. (eds) *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*. Smithsonian Books 1. Washington, DC: Smithsonian Institution Press, 65-114.
- Duffy, P.R. 2015. Site size hierarchy in middle-range societies. *Journal of Anthropological Archaeology* 37, 85-99.
- Gogâltan, F. 2004. Tell-uri in Orientul Apropriat și Bazinul Carpatic. O scurtă privire comparativă asupra habitatului preistoric. *Acta Terrae Septemcastrensis* 3, 43-117.
- Gogâltan, F. 2005. Tell-uri in Orientul Apropriat și Bazinul Carpatic. O scurtă privire comparativă asupra habitatului preistoric II. *Acta Terrae Septemcastrensis* 4, 79-129.
- Gogâltan, F. 2010. Die Tells und der Urbanisierungsprozess. In Horejs, B., Kienlin, T.L. (eds) *Siedlung und Handwerk. Studien zu sozialen Kontexten in der Bronzezeit*. Beiträge zu den Sitzungen der Arbeitsgemeinschaft Bronzezeit auf der Jahrestagung der Nordwest-deutschen Verbandes für Altertumsforschung in Schleswig 2007 und auf dem Deutschen Archäologenkongress in Mannheim 2008. Bonn: Dr. Rudolf Habelt, 13-47.
- Hansen, S. 2015. Pietrele – A Lakeside Settlement, 5200-4250 BC. In Hansen, S., Raczky, P., Anders, A., Reingruber, A. (eds) *Neolithic and Copper Age between the Carpathians and the Aegean Sea*. Archäologie in Eurasien 31. Bonn: Habelt, 273-295.
- Hansen, S., Dragoman, A., Benecke, N., Görsdorf, J., Klimscha, F., Oanta-Marghitu, S., Reingruber, A. 2004. Bericht über die Ausgrabungen in der kupferzeitlichen Tellsiedlung

- Magura Gorgana bei Peitrel in Muntenien/Rumänien im Jahre 2002. *Eurasia Antiqua* 10, 1-53.
- Hansen, S., Dragoman, A., Reingruber, A., Gatsov, I., Görsdorf, J., Nedelcheva, P., Oanta-Marghitu, S., Song, B. 2005. Der kupferzeitliche Siedlungshügel Pietrel an der Unteren Donau. Bericht über die Ausgrabungen im Sommer 2004. *Eurasia Antiqua* 11, 341-393.
- Hansen, S., Dragoman, A., Reingruber, A., Benecke, N., Gatsov, I., Hoppe, T., Klimscha, F., Nedelcheva, P., Song, B., Wahl, J., Wunderlich, J. 2006. Der kupferzeitliche Siedlungshügel Pietrel an der Unteren Donau. Bericht über die Ausgrabungen im Sommer 2005. *Eurasia Antiqua* 12, 1-62.
- Hansen, S., Toderas, M., Reingruber, A., Gatsov, I., Georgescu, C., Hoppe, T., Nedelcheva, P., Prange, M., Wahl, J., Wunderlich, J., Zidarov, P. 2007 Pietrel, Magura Gorgana. Ergebnisse der Ausgrabungen im Sommer 2006. *Eurasia Antiqua* 13, 43-112.
- Hansen, S., Toderas, M., Reingruber, A., Gatsov, I., Klimscha, F., Nedelcheva, P., Neef, R., Prange, M., Price, T.D., Wahl, J., Weninger, B., Wrobel, H., Wunderlich, J., Zidarov, P. 2008. Der kupferzeitliche Siedlungshügel Magura Gorgana bei Pietrel in der Walachei. Ergebnisse der Ausgrabungen im Sommer 2007. *Eurasia Antiqua* 14, 19-100.
- Hansen, S., Toderas, M., Reingruber, A., Becker, N., Gatsov, I., Kay, M., Nedelcheva, P., Prange, M., Röpke, A., Wunderlich, J. 2009. Pietrel: Der kupferzeitliche Siedlungshügel "Magura Gorgana" und sein Umfeld. Bericht über die Ausgrabungen und geomorphologischen Untersuchungen im Sommer 2008. *Eurasia Antiqua* 15, 15-66.
- Hansen, S., Toderas, M., Reingruber, A., Gatsov, I., Kay, M., Nedelcheva, P., Nowacki, D., Röpke, A., Wahl, J., Wunderlich, J. 2010. Pietrel, "Magura Gorgana". Bericht über die Ausgrabungen und geomorphologischen Untersuchungen im Sommer 2009. *Eurasia Antiqua* 16, 43-96.
- Hansen, S., Toderas, M., Reingruber, A., Nowacki, D., Norgaard, H., Spanu, D., Wunderlich, J. 2011. Die kupferzeitliche Siedlung Peitrel an der Unteren Donau. Bericht über die Ausgrabungen und geomorphologischen Untersuchungen im Sommer 2010. *Eurasia Antiqua* 17, 45-120.
- Hansen, S., Toderas, M., Reingruber, A., Wunderlich, J., Benecke, N., Gatsov, I., Marinova, E., Müller, M., Nachev, C., Nedelcheva, P., Nowacki, D., Röpke, A., Wahl, J., Zäuner, S. 2015. Pietrel an der Unteren Donau. Bericht über die Ausgrabungen und geomorphologischen Untersuchungen im Sommer 2011. *Eurasia Antiqua* 18, 1-69.
- Hansen, S., Toderas, M., Wunderlich, J., Beutler, K., Benecke, N., Karaucağ, M., Müller, M., Nowacki, D., Price, T.D., Ritchie, K., Steiniger, D., Vachta, T. 2017. Pietrel am 'Lacul Gorgana'. Bericht über die Ausgrabungen in der neolithischen und kupferzeitlichen Siedlung und die geomorphologischen Untersuchungen in den Sommern 2012-2016. *Eurasia Antiqua* 20, 1-116.
- Kotsakis, K. 1999. What Tells Can Tell: Social Space and Settlement in the Greek Neolithic. In Halstead, P. (ed) *Neolithic Society in Greece*. Sheffield: Sheffield Academic Press, 66-76.
- Layard, A.H. 1851. *A Popular Account of Discoveries at Nineveh*. London: John Murray.
- Link, T. 2006. *Das Ende der neolithischen Tellsiedlungen. Ein kulturgeschichtliches Phänomen des 5. Jahrtausends v. Chr. Im Karpatenbecken*. Universitätsforschungen zur prähistorischen Archäologie 134. Bonn: Dr. Rudolf Habelt.
- Nikolov, V. 1988. Liste der erforschten Siedlungen und Gräberfelder der Karanovo VI-Periode in Bulgarien. In Fol, A., Lichardus, J. (eds) *Macht, Herrschaft und Gold. Das Gräberfeld von Varna (Bulgarien) und die Anfänge einer neuen europäischen Zivilisation*. Saarbrücken: Stiftung Saarländischer Kulturbesitz, 267-273.

- Raczky, P., Meier-Arendt, W., Kurucz, K., Hajdú, Zs., Szikora, A. 1994. Polgár- Csőszhalom – A Late Neolithic Settlement in the Upper Tisza Region and its cultural connections (Preliminary Report). *Jósa András Múzeum Évkönyve* 36, 231-240.
- P. Raczky, P., Meier-Arendt, W., Anders, A., Hajdú, Z., Nagy, E., Kurucz, K., Domboróczki, L., Sebők, K., Sümegi, P., Magyari, E., Szántó, Z., Gulyás, S., Dobó, K., Bácskay, E., Biró, K., Schwartz, C. 2002. Polgár-Csőszhalom (1989-2000): Summary of the Hungarian-German Excavations on a Neolithic Settlement in Eastern Hungary. In Rüstem, A., Blum, S.W., Kastl, G. (eds) *Mauerschau* Band 2. Festschrift Manfred Korfmann. Remshalden-Grunbach: Verlag Bernhard Albert Greiner, 833–860.
- Raczky, P., Anders, A. 2010. The times they are a-changin': revisiting the chronological framework of the Late Neolithic settlement complex at Polgár-Csőszhalom. In: Šuteková, J., Pavúk, P., Kalábková, P., Kovár, B. (eds) *Panta Rhei. Studies in Chronology and Cultural development of South-Eastern and Central Europe in earlier Prehistory presented to Juraj Pavúk on the occasion of his 75. birthday*, *Studia Archaeologica et Mediaevalia* XI, 357-358.
- Reingruber, A., Hansen, S., Toderas, M. 2010. Monumental Living: Pietrele Near the Lower Danube River in the 5th Millennium BC. in Kiel Graduate School "Human Development in Landscapes" (eds) *Landscapes and Human Development: The Contribution of European Archaeology*. Universitätsforschungen der Prähistorischen Archäologie 191. Bonn: Dr. Rudolf Habelt GmbH, 171-181.
- Reingruber, A., Hansen, S., Toderas, M. 2011. The Fast Formation of A Tell: Pietrele Near the Lower Danube River In the 5th Millennium Bc. in Bojadziev, Y., Ignatova, S. (eds), *The Golden Fifth Millennium. Thrace and its Neighbour Areas in the Chalcolithic*. Sofia: National Institute with Museum-BAS, 115-129.
- Reingruber, A. 2015. Absolute and Relative Chronologies in the Lower Danube Area during the 5th Millennium BC. in: Raczky, P., Hansen, S., Anders, A., Reingruber, A. (eds) *Neolithic and Copper Age between the Carpathians and the Aegean Sea. Chronologies and Technologies from the 6th to the 4th Millennium BCE*. Chronologies, Lithics and Metals. Budapest 31.03.2012-2.04.2012, Archäologie in Eurasien 31. Bonn: Dr. Rudolf Habelt GmbH, 301–324.
- Rosenstock, E. 2006. Early Neolithic tell settlements of South-East Europe in their natural setting: A study in distribution and architecture. In Gatsov, I., Schwarzberg, H. (eds) *Aegean – Marmara – Black Sea: the Present State of Research on the Early Neolithic*. Proceedings of the Session held at the EAA 8 the Annual Meeting at Thessaloniki, 28th September 2002. Langenweissbach: Beier & Beran, 115-127.
- Rosenstock, E. 2009. *Tells in Südwestasien und Südosteuropa. Untersuchung zur Verbreitung, Entstehung und Definition eines Siedlungsphänomens*. Remshalden: Verlag Greiner & Bernhard.
- Schier, W., Draşovean, F., Becker, H., Fischer, E., Rösch, M., Kadereit, A., Scharl, S., Suhrbier, S., Spohnholz, B., Tillmann, A. 2004. Vorbericht über die rumänisch-deutschen Prospektionen und Ausgrabungen in der befestigten Tellsiedlung von Uivar, jud. Timiş, Rumänien (1998–2002). *Prähistorische Zeitschrift* 79.2, 145-230.
- Todorova, H. 1978. *The Eneolithic Period in Bulgaria in the Fifth Millennium B.C.*, BAR International Series (supplementary) 49. Oxford: British Archaeological Reports.
- Todorova, H. 1982. *Kupferzeitliche Siedlungen in Nordostbulgarien*. München: Verlag C.H. Beck.
- Ur, J., Karsgaard, P., Oates, J. 2011. The Spatial Dimensions of Early Mesopotamian Urbanism: The Tell Brak Suburban Survey 2003-2006. *Iraq* 73, 1-19.

- Wiessner, P. 2001. Of Feasting and Value. Enga Feasts in historical Perspective (Papua New Guinea), in: Dietler, M., Hayden, B. (eds) *Feasts. Archaeological and Ethnographic Perspectives on Food, Politics and Power*. Washington DC: Smithsonian Institution Press, 115-143.
- Wilkinson, T.J. 2003. *Archaeological Landscapes of the Near East*. Tucson AZ: University of Arizona Press.
- Wilkinson, T.J. 2007. Archaeology in the Land of Charchemish: landscape surveys in the area of Jerablus Tahtani, 2006. *Levant* 39.1, 213-247.
- Wilkinson, T.J., Tucker, D.J. 1995. *Settlement Development in the North Jazira, Iraq – A Study of Archaeological Landscape*. Iraq Archaeological Reports 3. Warminster, England: Published for the British School of Archaeology in Iraq and the Department of Antiquities & Heritage, Baghdad, by Aris & Phillips.
- Wright, G.E., Redman, C.L., Perrot, J. 1974. The Tell: Basic Unit for Reconstructing Complex Societies of the Near East. In Moore, C.B. (ed) *Reconstructing Complex Societies. An Archaeological Colloquium, Bulletin of the American Schools of Oriental Research. Supplementary Studies* 20, 123-143.
- Wright, H.T. 1981. The Southern Margins of Sumer, Archaeological Survey of the Area of Eridu and Ur. In Adams, R. McC. (ed) *Heartland of Cities, Surveys of Ancient Settlement and Land Use on the Central Floodplain of the Euphrates*. Chicago: University of Chicago Press, 295-347.
- Wright, H.T., Rupley, E.S.A., Ur, J.A., Oates, J., Ganem, E. 2006. Preliminary Report on the 2002 and 2003 Seasons of the Tell Brak Sustaining Area Survey. *Les Annales Archéologiques Arabes Syriennes* 49-50, 7-21.

Офсайт проучвания на Пиетреле, Магура Горгана: открито селище в близост до халколитната селищна могила на Долен Дунав

Свен Брумак, Мехмет Карауджак

(резюме)

След новите данни от геофизичните изследвания в околностите на селищната могила Пиетреле, бяха започнати сондажни разкопки, за да се потвърди наличието и естеството на специфични структури в непосредствена близост от могилата, датирана около 4600/4550 – 4300 г. / 4250 cal BC.

В сондаж J, разположен приблизително на 50 м от топографски и геофизично установения северен периметър на могилата, са намерени останки от изключително добре запазена изгоряла къща. Те са на 1.6 м под повърхността, а под тях се разкриха останки на друга, неизгоряла постройка. И двете структури съдържат глинена инсталация и перваз („пейка“), както и пещ. Архитектурните елементи са насложени стратиграфски на приблизително едно и също място, но са с различна ориентация.

По същия начин в сондаж S, под изгоряла структура е открит *in situ* характерен керамичен ансамбъл. Той е съставен от подредена група от зърнохранилища (на за-

пад) и голям брой чаши, поставени в широка купа (на изток), която е в близост до антропоморфен съд. Съхранеността на находките позволява да се направят наблюдения за първоначалното им местоположение, както и да се формулират въпроси, свързани с тафономията.

Направените при тези разкопки открития потвърждават предишните ни хипотези за наличието на външно селище, отделено от селищната могила. Инвентарът от разкопките в сондажи J и S разкрива функционална диференциация между домакинствата във външното селище, което е установено и за самата могила. Свидетелствата за угощения в сондаж S, биха могли да означават диференцирано използване на пространството в могилата и равнинното/ външното селище, както и обособени места за специфични практики.

Най-ранните C_{14} дати от външното селище показват, че общата площ е била обитавана още през късния неолит (около 5250–5000 г. пр. Хр.). Датите от интензивно обитаване на селищната могила през халколита показват, обаче, хронологична секвенция от 4600/4550 до 4300/4250 cal BC. Кратките епизоди на обитаване, регистрирани в сондажи J и S са синхронни с къснохалколитното обитаване на селищната могила. И накрая, голяма серия от радиовъглеродни дати по метода на ускорена спектрометрия на масата (AMS) потвърждават, че могилата и външното селище са били едновременно изоставени около 4300/4250 cal BC.