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DWELLINGS AND THEIR NEAREST SURROUNDINGS IN THE 4TH MILLENNIUM BC IN THE EASTERN CARPATHIAN AREA: A CASE STUDY FROM THE GORDINEȘTI II-STÎNCA GOALĂ SETTLEMENT

ABSTRACT

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Investigation into the construction of dwellings, their spatial arrangements, and the nearest surroundings is highly relevant in studying the functioning of an archaeological phenomenon. During the recent years of excavation undertaken at the Gordinești II-*Stînca Goală* site, we have revealed the remains of at least two dwellings and their economic surroundings that on the whole may be referred to as household clusters. In this paper, we would like to focus on one of them (House no. 1). Our main goal is to present not only the key attributes of the dwelling but also the results of the spatial analysis of features and artefacts found inside and outside of it. Based on those data, we can suggest that this dwelling consisted of two functionally varied rooms. This inference seems to be also relevant in the broader sense; it can expand the general knowledge related to issues relating to the household clusters usage in the Eastern Carpathian area at the end of the 4th millennium BC.

Keywords: Late Eneolithic, Gordinești, Moldova, settlements, dwellings, household cluster

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INTRODUCTION

Investigation into the construction of dwellings, their spatial arrangements, and the nearest surroundings is highly relevant in studying the functioning of an archaeological phenomenon. During the excavation campaigns undertaken at the Gordinești II-*Stînca goală* site in 2016-2019, we revealed and thoroughly documented the relics of at least two dwellings and their directly adjacent economic zones. These dwellings, together with their surroundings, may even be considered as basic units of production referred to as household clusters (*e.g.* Grygiel 1986; *cf.* Flannery 1976; Kent 1984; Jongmsma and Greenfield 2003).

Analysis of these units seemed to be crucial from the perspective of the general significance of the Gordinești II-*Stînca goală* settlement for the perception of the historical and cultural circumstances in the Eastern Carpathian area at the end of the 4th millennium BC. An assessment of the issue related to the specific types of dwellings for this period and, last but not least, their internal organization within the settlements showed that we are dealing with a more complicated puzzle. Thus, in this paper, we would like to focus more closely on one of these dwellings (House no. 1) excavated in 2016-2018. Our goal is to present the key attributes of the dwelling and some results of the spatio-functional analysis of the features and artefacts found in the context of the whole household cluster.

SITE LOCATION AND HISTORY OF RESEARCH

The settlement that we present in this study is located in the Prut-Dniester interfluvium in Northern Moldova on the south-eastern edge of the Gordinești village, Edineț District (48°08'24.25" N; 27°09'34.58" E). It is situated on an elongated and flattened limestone promontory (*c.* 500 m long and *c.* 100-120 m width) surrounded by the deeply eroded canyon of the Racovăț River, the left tributary of the Prut River (Fig. 1). The remains of the settlements occupy its western part, which is heavily damaged by modern deep ploughing that preceded tree planting. Based on the spatial distribution of artefacts on the promontory surface and the results of a magnetometer survey (Przybyła *et al.* 2017, 49-58; Sîrbu *et al.* 2018, 28-30), we are able to determine the size of the settled area, which is *c.* 5 ha. This living space was enclosed on the east with an artificial defence system in the form of a wall and a ditch (Sîrbu *et al.* 2018, 31-33; Sîrbu *et al.* 2019a).

The site was discovered and first excavated in 1971 by V. Dergachev. During that field campaign, which was focused on verification of the cultural layers, two trenches covering an area of 147 sq.m. were dug. Admittedly, no household clusters were identified during this investigation, but it is worth emphasizing that rich assemblages of material such as pottery and many other artefacts made of clay, flint, stone, bone and horn were discovered (Dergachev 1973, 90-100). A few years later, in 1977, the site was also visited by V. Markevici and V. Bikbaev in order to verify and confirm the previous discoveries.

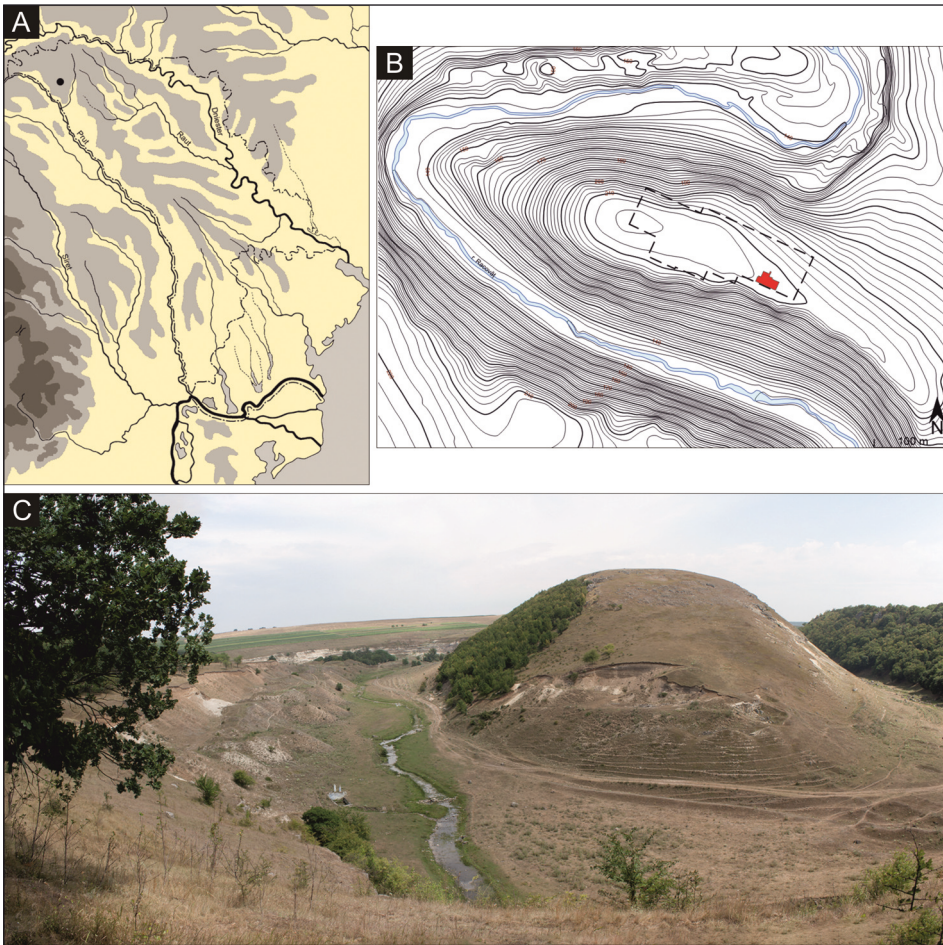


Fig. 1. A – Gordinești II-Stînca goală site on the map of the Republic of Moldova; B – Trenches III-IV and Caseta A on the topographic plan of the site; C – photo with promontory view from the north-west

Since 2016, invasive field work has been conducted at the site. In the first season we focused on the excavation of the Trench conditionally called no. III (in continuation of the other two investigated in 1971 by V. Dergacev), which covered the south-western corner of Trench II (1971). It is oriented along the NE-SW axis and delimited by a 1 m wide baulk. Trench III was divided into five sectors (A, B, C, D, E) and has an area of about 90 sq.m. (Sîrbu *et al.* 2017a; Sîrbu *et al.* 2017b, 25-27; Sîrbu *et al.* 2019, 103-126). The main goal of the following campaign in 2017 was in turn to decipher the real range of the dwelling remains that had been partially recognized in the previous season. Therefore, in the south-eastern corner of Trench III, Trench IV was set-out, it was delimited by a control baulk

0.5 m wide, divided into two Sectors (A and B), with an area of about 40 sq.m. (Sîrbu *et al.* 2019). In 2018, we continued the research on Trench IV that was extended by a part called 'Caseta A' with a size of 18 sq.m. (see Fig. 2, 2018). This work was aimed at completing the data obtained during the 2017 season by unveiling a cluster of burnt daub registered in the north cross-section of Trench IV (Sîrbu *et al.* 2019).

RESULTS OF THE EXCAVATION CAMPAIGNS

During our first excavation campaign (2016), after removing the humus soil with a thickness of about 25-30 cm, a layer composed of dark brown soil mixed with plenty of gravel appeared. Archaeological material was discovered across practically the entire surface of the trench. A compact concentration of burnt daub (with dimensions 2.2×1.7 m) was revealed near the south-western corner (Fig. 2; 3; A). It was interpreted then as a prospective surface of the remains of a dwelling. Going further, fragments of burnt daub with wood imprints were found scattered throughout the southern perimeter of Trench III. Apart

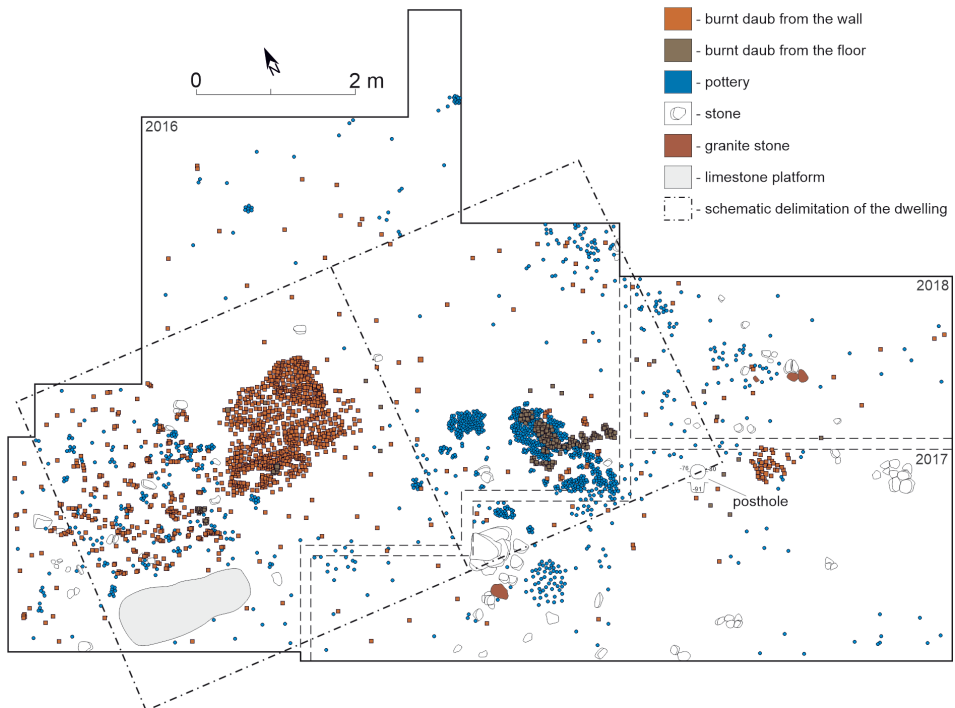


Fig. 2. Gordinești II-Sîrnca goală site. Plan with materials discovered *in situ*

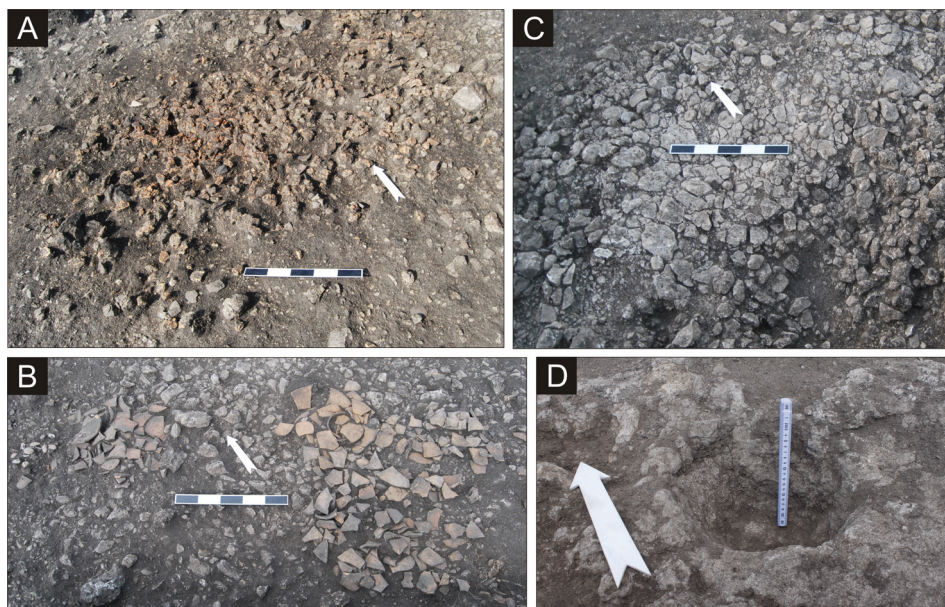


Fig. 3. Gordinești II-*Stînca goală* site. A – concentration of burnt daub; B – concentration of pottery sherds; C – limestone platform; D – posthole

from the compact burnt daub remains with an admixture of organic temper, fragments that contained sand were also found *in situ*. Finding these fragments practically in the same perimeter where the fragments of walls were discovered allowed their identification as remains from the floor.

Another kind of *in situ* concentration of material, comprising hundreds of sherds from several broken vessels was discovered near the south-eastern corner (Fig. 2; 3: B). Interestingly, multiple carbonised grains were also found in this place, they were, however, located directly beneath the mentioned pottery.

Furthermore, a quite puzzling structure was unveiled in the south-eastern side of the presumed dwelling (Fig. 2; 3: C). It was a limestone platform with a smooth surface (see Sîrbu *et al.* 2017b, Fig. 1: E). The anthropogenic origin of this feature seems to be very likely as it was visibly different from the adjacent natural limestone background.

After completing excavations from 2016, it was still not possible to establish precisely the dwelling's boundaries. The soil, which was mixed with a large amount of gravel, plus the erosion processes prevented its better delimitation.

In 2017, as in the previous campaign, after removing the humus with a thickness of about 20-35 cm, we came upon brown soil mixed with gravel. This layer was black, loose and mixed with pebbles as well as small and medium-sized pieces of clay found in some parts of the trench. During the field work, the presence of a dense concentration of pottery

and flint artefacts was revealed *in situ*. Additionally, one compact accumulation of burnt daub with dimension of 55-75 cm was unveiled in the northern part of the Trench IV. The breaks of the individual pieces were brownish-yellow, and they were tempered with chaff. Some of them were $19 \times 9 \times 6.5$ or $11 \times 7 \times 3.5$ cm in size. If we consider the fact that there are imprints of branches (about 2-2.5 cm in diameter) in the burnt daub, then these fragments can be identified as a part of a wall (see Fig. 2, 2017).

At a distance of about 1 m west of the above-mentioned accumulation of burnt daub and approx. 45 cm below the ground surface, one posthole in the shape of a circle was revealed (Fig. 2; 3: D). It had a diameter of 50 cm and was dug directly into the limestone bedrock up to a depth of 30 cm. This feature is particularly interesting in the context of the characteristic cluster of stones registered in the south-western part of the Trench IV. Their location in relation to various components of the dwellings seems to suggest that they could have reinforced a wall.

During the third field campaign in 2018, we observed the same stratigraphic pattern as before. It was clearly visible that below the humus soil, there was a layer of granulated chernozem with a dry texture mixed with a small number of fragments of burnt clay, stones, and other artefacts. An agglomeration of pottery was found right in the centre of the 'Caseta A'. Moreover, it is worth mentioning that some massive pieces of granite stone, 28×18 cm (see Fig. 2, 2018) and numerous amorphous pieces that had separated from them as a result of thermal processes were also present. Interestingly, we can see traces of processing and polishing on some sides of this granite stone. In fact, *in situ* archaeological materials were discovered over the entire eastern surface of 'Caseta A'. This may be a possible continuation of the dwelling surface that was identified in the previous campaigns.

THE SURFACE OF THE DWELLING AND ITS NEAREST SURROUNDINGS. A RECONSTRUCTION ATTEMPT

The detailed analysis of the data obtained during three field campaigns may allow us to formulate some suggestions regarding the construction of House no. 1 (or more appropriately, household cluster no. 1) and its internal and external arrangement. In this study the information on the spatial distribution of *in situ* artefacts such as burnt clay, ceramics and flint artefacts is crucial. Based on this type of spatial data and computer reconstruction, we can carefully assume that the excavated dwelling was rectangular in shape and consisted of two functionally varied rooms. Its main long axis was oriented southwest-northeast.

As the spatial analysis indicates, most of the burnt daub fragments with distinct wood imprints were preserved inside the first of these rooms with dimensions of about 5.60×5.80 m. Based on the imprints oriented parallel to the lateral walls of the room (see Fig. 4), we presume that the concentration of the burnt daub, discovered *in situ*, is related to the wall that was inserted to separate the two rooms. Additionally, numerous remains of wild

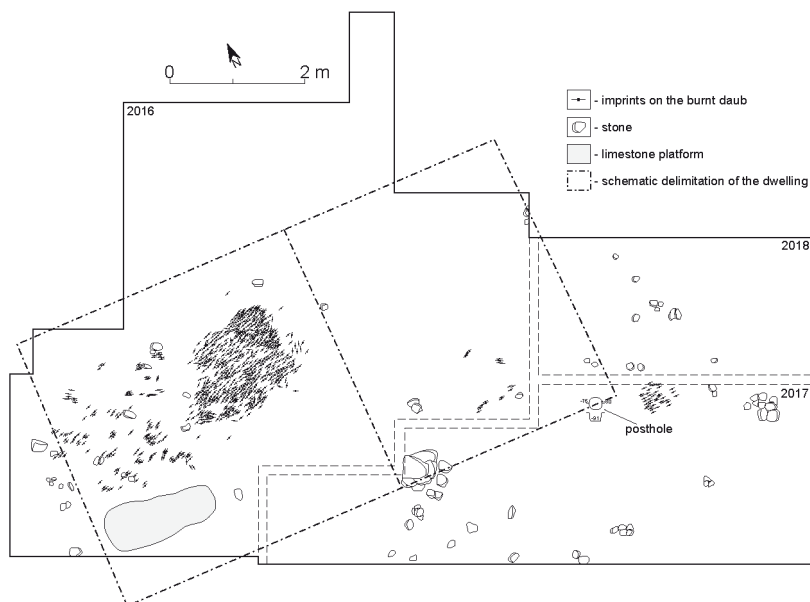


Fig. 4. Gordinești II-Stînca goală site.
Orientation of the imprints on the burnt daub fragments of the wall

and domestic fauna were also found in this part (see Fig. 5) (Croitor and Sîrbu 2017, 215-219). Thus, according to the obtained data we can assume that this space was intended for living.

We might suppose that the second of these rooms was used in a quite different way. This part of the dwelling, which was 5.60×4.60 m, should be interpreted rather as household space, where most of the everyday activities were done. The function of this room may be confirmed by the discovered postholes and distinctive agglomeration of stones (see Fig. 2; 3: C, D; excavations in 2017). The perimeter of this room was determined using the spatial distribution of the *in situ* accumulation of pottery as well as numerous objects related to the loom (circular and conical loom weights, spindles). It is worth stressing that most of the flint artefacts (including axes and chisels) were discovered in the context of this space.

In addition to determining the general range of the dwelling surface, which was possible especially thanks to the use of graphic reconstruction, we also focused on the issues concerning shaping its economic surroundings. Therefore, we recorded the exact locations of all the flint chips in order to obtain information on the activities related to the processing of flint. Based on the observed spatial patterns, it is clearly visible that this flint waste was distributed in the perimeter of the second room and outside of it (see Fig. 5).

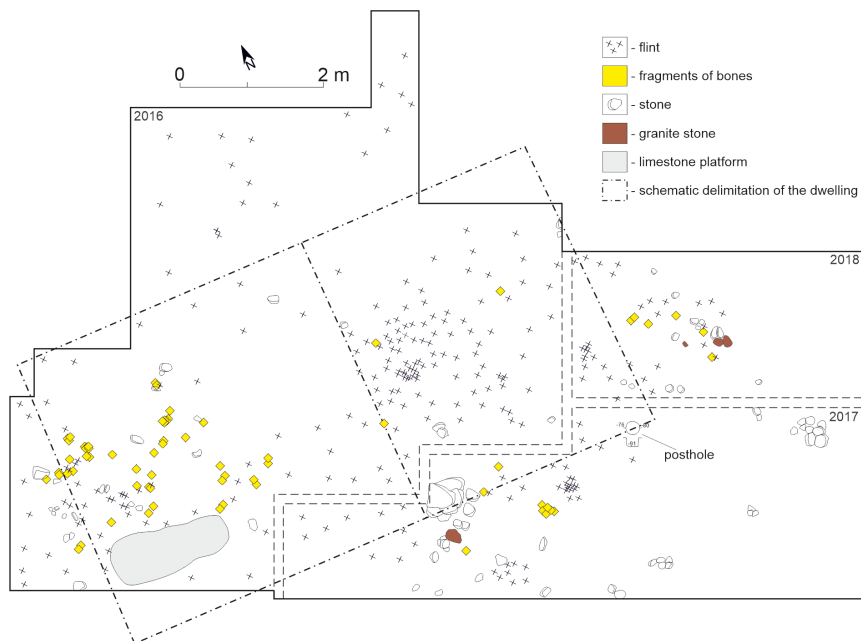


Fig. 5. Gordinești II-Stînca goală site. Concentration of flint artefacts and bone fragments

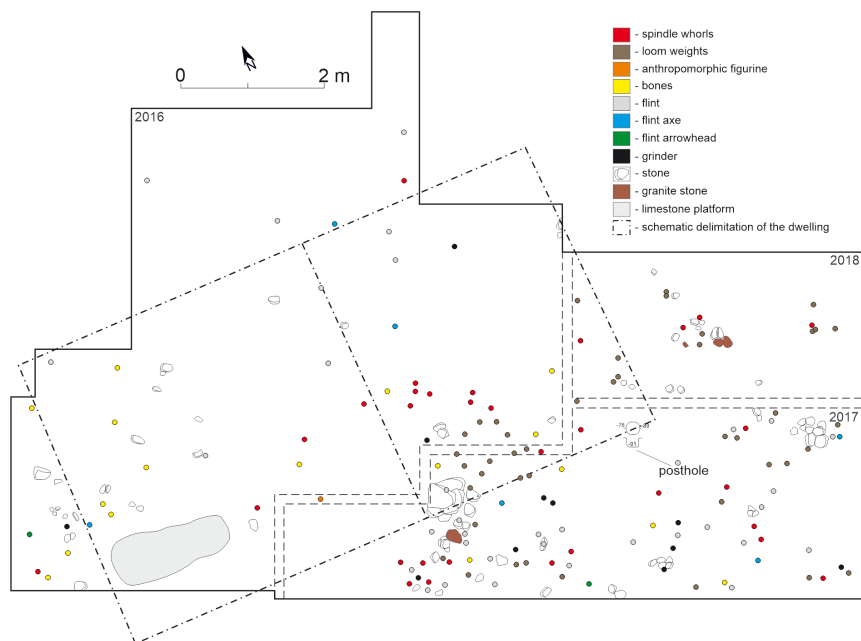


Fig. 6. Gordinești II-Stînca goală site. Distribution of the inventoried pieces

Analyzing the distribution of the whole assemblage of excavated material, we can see that most of the finds were concentrated in the context of the perimeter of the second room (see Fig. 6). This is another valuable argument that may support the correctness of seeing the dwelling as having been divided into two functionally diverse rooms. Moreover, it seems that we should also highlight the presence of an economic zone next to the dwelling, more precisely near the second room. As we mentioned in the introduction, such dwellings together with their economic surroundings may be considered as basic units of production and referred to as household cluster (*e.g.* Grygiel 1986; *cf.* Flannery 1976; Kent 1984; Jongsma and Greenfield 2003). We can assume that the inhabitants of the excavated dwelling could have actively used the space outside its boundaries, most probably the zone adjacent to its southern and eastern walls.

However, precise determination of its specificity is difficult due to some circumstances, for instance the high degree of erosion of the settlement's surface. Therefore, it is currently impossible to assess the exact range of the household cluster unit, however based on the geophysical data (Przybyła *et al.* 2017) and some preliminary tests done in the other part of the settlement, we can safely presume that this kind of economic unit was not so extensive.

RADIOCARBON DATING

An essential part of our investigation was also to determine the absolute chronology of House no. 1 and its nearest surroundings. Radiocarbon dates were obtained for carbonised grains (three samples) and animal bones (three samples) discovered within the reconstructed household space (Table 1). The first of these samples (*Triticum sp.*) was collected near the south-eastern corner of the Trench III directly beneath the concentration of hun-

Table 1. Gordinești II-Stîncă goală site. List of radiocarbon dating. Calibration based on tools of OxCal v.4.4. (Bronk Ramsey 2017) with calibration curve: IntCal20 (Reimer *et al.* 2020).

No.	Site	Lab code	Species	BP	68.2% (1 σ)	95.4% (2 σ)	References
1	Gordinești II-Stîncă goală	Poz-83658	<i>Triticum sp.</i>	4480±35	3331-3097	3346-3028	Rybicka <i>et al.</i> 2020; Sîrbu <i>et al.</i> 2020
2	Gordinești II-Stîncă goală	Poz-83659	<i>Triticum sp.</i>	4480±35	3331-3097	3346-3028	Rybicka <i>et al.</i> 2020; Sîrbu <i>et al.</i> 2020
3	Gordinești II-Stîncă goală	Poz-83660	<i>Triticum sp.</i>	4475±35	3331-3094	3344-3026	Rybicka <i>et al.</i> 2020; Sîrbu <i>et al.</i> 2020
4	Gordinești II-Stîncă goală	Poz-83728	<i>Bos Taurus</i>	4430±35	3313-2936	3330-2922	Rybicka <i>et al.</i> 2020; Sîrbu <i>et al.</i> 2020
5	Gordinești II-Stîncă goală	PLD-36215	<i>Capra hircus</i>	4425±25	3262-2939	3320-2925	Sîrbu <i>et al.</i> 2020
6	Gordinești II-Stîncă goală	PLD-36214	<i>Cervus elaphus</i>	4315±20	2922-2897	3010-2888	Sîrbu <i>et al.</i> 2020

dreds of pottery sherds. They produced two identical dates of 3311-3097 BC and one 3331-3094 BC (68.2%) (Table 1). The subsequent absolute dates, however, were obtained for animal bones (*Bos Taurus*, *Capra hircus* and *Cervus elaphus*) identified in the context of western part of dwelling. Their calibrated values are: 3313-2936 BC, 3262-2939 BC, and 2922-2897 BC respectively (68.2%) (Table 1). These six dates suggest that the House no. 1 and its nearest economic zone could have existed in the period of c. 3300-2900 BC (68.2%). However, we should point out that the end of this time range is actually the result of one outlier data (PLD-36214: 4315±20 BP) obtained for an animal bone of *Cervus elaphus* (Table 1). Its real value should be verified in the following studies on the absolute chronology of the entire settlement of Gordinești II-*Stînca goală* (cf. Sîrbu et al. 2020, 130).

SOME CONSIDERATION REGARDING THE TYPE/TYPES OF DWELLINGS OF THE HORODIȘTEA-GORDINEȘTI CULTURAL GROUP

In most cases, full understanding of the forms and/or functions of prehistoric buildings is rather difficult due to their fragmentary state of preservation. Considering the settlement patterns of the Cucuteni-Tripolye culture, we can undoubtedly observe the fact that the technique of building the dwellings developed during the evolution of this culture. These changes seem to be related to functional issues. In this such a concept, it can be accepted that the formal syntagma follows function (Trebsche 2009, 507).

In one of his works, P. Trebsche presents and evaluates five methods that allow interpretations of the characteristics of prehistoric dwellings: a) *Ad hoc* interpretations, these are mostly made implicitly and should be replaced by systematic approaches; b) equalization of building types with functions, this method has limits because functional equivalents have to be considered; c) conclusions by analogy, they depend mostly on the choice of objects for comparison; d) circumstantial evidence, time-consuming and expensive techniques of excavation and sampling as well as careful studies of taphonomy are necessary; e) contextual analyses may easily result in circular arguments (Trebsche 2009, 507). We can use them in our considerations regarding House no. 1 in the Gordinești II-*Stînca goală* settlement. The analysis based on these five methods can provide a much clearer and more informative picture that is, at least, close to prehistoric reality and given our contemporary interpretation.

The typical dwellings of the Cucuteni-Tripolye culture are represented by rectangular structures of varying sizes. Among the relatively well-preserved relics of these dwellings there are primarily remains of burnt daub *ploschadka* (house remains), and therefore such elements are usually the starting point for determining their basic parameters (Kruts 2003, 74).

It is obvious that any attempts to reconstruct dwellings are based on analyses and interpretations of burnt daub remains. Thus, depending on their state of preservation, they

can provide information about the shape and size of the dwelling, the nature of its floor and walls, and the construction materials used. On the other hand, they leave room for speculation when it comes to the spatial arrangements of dwellings as well as their resistance structure (László 2007, 103).

We must point out that while there is enough specialized literature devoted to the issues concerning the architecture of dwellings in the Cucuteni-Tripolye culture, knowledge is still quite limited and insufficient in the case of the Horodiștea-Gordinești cultural group. This is primarily due to the lack of comprehensive large-scale research that would create a general picture of the distribution of dwellings within the settlements. It should be noted that dwellings were discovered only in 15 out of 232 currently mapped settlements: Horodiștea-Dealul Mălăiște – 4 (Dumitrescu 1934, 112-120; Dumitrescu 1945, 127-163; Dinu 1977); Erbiceni-Dealul Sărăturilor – 15 (Dinu 1977; Dumitroaia 2000, Fig. 2) and Dealul Mănăstirea – 1 (Dinu 1977); Cîrniceni-Pe Coastă – 12 (Alaiba and Grădinaru 1995, 64-80; Dumitroaia 2000, Fig. 3); Trinca-Izvorul lui Luca – 3 (Levițki 1997; Levițki 1997a, 213-274); Fetești II – 1 (Larina 1986; Larina and Sîrbu 2014, 189-199); Hancăuți I-La Frasin – 2 (Bikbaev 1987); Tsviklovtsi-Greada – 3 (Movsha 1970a, 129, ris. 1; Chernysh 1982, 227); Mali Dorohostai I – 3 (Konoplia 1990, 205-213); Listvin-Gostrii gorb – 10 (Peleshchishin 1997, 56-90); Holyshch-Zamchisko – 7 (Peleshchishin 1973, 321; 1974, 326, 327); Vinniki-Zhupan – 1 (Diachenko *et al.* 2019, 27); Pechora – 1 (Chernysh 1959, ris. 17); Sandraki-Pagurok – 1 (Lagodovskaia 1953, 77; Lagodovska 1956, 118-129). It should be, however, mentioned that the data on the dwellings in Cîrniceni-Pe Coastă are confusing and incomplete. Out of the 12 dwellings, the data refers to, only four have characteristics similar to surface constructions (Alaiba and Grădinaru 1995, 64-80; Dumitroaia 2000, Fig. 3).

According to specialists, the small number of known dwellings is directly related to the low degree of verification of the excavations carried out (Dumitroaia 2000, 54). Based on the available data, it is possible to highlight two types of dwellings for the Horodiștea-Gordinești: surface dwellings and dwellings with deep base (Dergachev 1980, 52, 120; Chernysh 1982, 227; Movsha 1985, 239). Some sources, however, also provide information about three types: surface dwellings with burnt daub *ploschadka*, semi-dugout and dugout dwellings (Dergachev 1991, 18-26; Dergachev and Manzura 1991, 13).

Considering the state of preservation, House no. 1 at the settlement of Gordinești II-*Stînca goală* seems to correspond to the surface dwellings of the burnt daub *ploschadka* type, which is known in Russian literature as a reduced *ploschadka* (*редуцированная площадка*) (Dergachev 1991, 21; Dergachev 1980, 52, 120; Dergachev and Manzura 1991, 13) and in Romanian (see Dumitroaia 2000, 54; Lazarovici and Lazarovici 2007, 313, Alaiba 2007) as the dwelling in cucutenian tradition (locuțe de tradiție cucuteniană).

We cannot say that both syntagms are suitable not only for delimiting the dwelling(s) that we recognized in Gordinești II-*Stînca goală*, but also for dwellings in other settlements. We should take into account a number of aspects related to the correct documenta-

tion of *in situ* artefacts, topographic specificity, soil character, and last but not least, the climatic factors. Reconstruction of the form of House no. 1, its internal arrangement and surroundings helps to understand how the architecture of buildings was transformed by adapting to the specific context of time.

In general, the large settlements declined during the preceding period, *i.e.* Tripolye CI and they were not in use in phase Tripolye CII/2. The process of degradation of the so-called *ploschadka* could have been one of the elements of the broader transformations that take place at the end of the 4th millennium BC in the Eastern Carpathian area (*e.g.* Der-gachev 1980; Zinkovskiy 2013, 96).

Another opinion regarding the disappearance of the *ploschadka* is also related to climatic change that began, according to some specialists, during the Cucuteni A-B phase, and the weaker dwellings from the Cucuteni B phase might have resulted from the beginning of exhaustion of agricultural land, which forced those communities to change their location more often (Florescu 1966, 23, 24; Marinescu 1969, 7, 8). The observation could also be supported by a less consistent cultural layer in the Cucuteni B phase settlements and by a large number of single-level sites. Huts and dwellings with a circular plan seem to be only sporadic occurrences and cannot be considered typical for the Cucutenian communities from the Eastern Carpathian forest-steppe (Monah and Cucuș 1985, 45).

SUMMARY AND CONCLUSIONS

Summarising the data presented above, we can underline once again that House no. 1 discovered and examined in 2016-2018 represents the category of cultural phenomenon specific to the end of the 4th millennium BC. The results of the detailed spatial analysis of this unit, both its interior and exterior, allow us to observe some interesting facts. For instance, the continuation of some older traditions of Cucuteni-Tripolye architecture and spatial organization can be noticed, while on the other hand, there is clear evidence of major changes in the organisation of settlement patterns in the Prut-Dniester interfluvium. The transformations inside the settlement structures were probably the results of broader and more complicated factors, both internal and external. It is possible to relate this to the increasing mobility of Late Eneolithic communities at the end of the 4th Millennium BC in South-Eastern Europe.

Although the results described here represent the initial stage of our research, they may significantly impact expanding the general knowledge of the Late Eneolithic settlements strategies not only in the Prut-Dniester interfluvium, but also in the entire region of the Eastern Carpathian area. This also can be confirmed by the yet unpublished results of the latest research (2019) in the context of household cluster no. 2 in the western part of the Gordinești II-*Stînca goală* site.

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