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Foreword

This number of **Acta Terrae Septemcastrensis** was reserved for the proceedings of the round table: **The Carpathian Basin and its Role in the Neolithisation of the Balkan Peninsula**, held in Sibiu between 18th to 20th of May 2008. From 2005 we discussed at the symposium **A Short Walk through the Balkans: the First Farmers of the Carpathian Basin and Adjacent Regions** (20-22 June 2005, London) that, in Sibiu, to be organized a round table about **The Neolithisation of the Central and South-Eastern Europe**. From reasons that we were out of our understanding the initial formula was modified and we propose, on this way, to study main themes of this round table.

Professor Sabin Adrian LUCA

Sibiu, May 1, 2008

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THE KÖRÖS AND THE EARLY EASTERN LINEAR CULTURE IN THE NORTHERN PART OF THE CARPATHIAN BASIN: A VIEW FROM THE PERSPECTIVE OF LITHIC INDUSTRIES

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Key words: *Mesolithic, early and late Neolithic, lithic industries, Carpathain Basin.*

Abstract: *The presented model of technological development of lithic production in the VIth millenium BC bases on the premise that in a general model of cultural evolution the technological subsystem is determined by other cultural subsystems, first of all by subsistence economy and social relations. The interactions of these subsystems are determined by and part of mutual interrelations with natural environment.*

Introduction

The classical works on the Early Neolithic in the Middle Tisa Basin assumed a sudden breakdown of the expansion of the Körös culture, which only slightly extending to the north-beyond the region of Szolnok. became replaced, further north, by the early Eastern Linear Culture (ELC – Kalicz, Makkay 1977). This boundary was referred to as the „Kunghegyés-Berettyoujfalu" line; the abrupt check of the expansion of the Körös culture on this line was ascribed to the presence of a fairly dense Mesolithic settlement in the northern part of the Carpathian Basin (Kalicz, Makkay 1966). On this basis it was assumed that – on the one hand – the Mesolithic substratum impeded the expansion of the Körös culture, but – on the other hand – when adopting economic and cultural innovations the Mesolithic substratum played a dominant role in the genesis of the ELC (Kalicz, Makkay 1972). Moreover, the fact that the distribution ranges of the Linear Complex and of the Körös culture do not overlap was claimed to be another argument in support of the above understanding of the genesis of the ELC Complex (Kalicz, Koos 2002).

These views were, later, criticized in the light of a number of new facts namely:

1. In the 1980s the discovery by P. Raczky (1983) of the site of Kötelek-Huszársarok on the Tisza, north of Szolnok, where pit 1 provided Körös culture materials, whereas pit 8 yielded materials of the early ELC described as

Szatmar II group. In this way, for the first time, the overlapping range of these two culture complexes on the middle Tisza was demonstrated. At the same time, as P. Raczky noted, the process of emergence of the Early Linear Pottery of Szatmar II type could have been contemporaneous with later phases of the Körös culture in the Hungarian Plain, especially with the materials ascribed by J. Makkay to the Proto-Vinča group (horizon) (Makkay 1982). P. Raczky (1989), too, drew attention to the possibility that the Early Neolithic impulse on the middle and upper Tisza basin arrived from two directions: from the south via the Tisza basin (Alföld variant of the Körös Culture) and from the east, via the Criş culture in north-east Rumania (Partium variant). The two variants differed not only in terms of material culture but also in terms of economy. This aspect in the interpretation of the Körös-Criş influences was also emphasized by A. Sheratt (1982) and J. Korek (1983).

2. The investigations into the reconstruction of the palaeogeography of the Tisza basin conducted by P. Sümegi and R. Kertesz (Kertesz, Sumegi 2001) established that the expansion of the Körös culture in the northern pat of the Carpathian basin was checked not so much by the existence of a hypothetical zone of dense Mesolithic settlement, but by the ecological boundary zone, which was also the northern boundary line of the Körös culture. It is described as the "agroecological" barrier or CEB AEB (the Central European-Balkan Agro-Ecological Barrier). Another important result of Sümegi's palaeogeographical investigations (2006) was establishing the mosaic nature of the environment in the middle Tisza basin in the Atlantic period.
3. The discovery of a complex of Mesolithic sites in the region of Jaszag by R. Kertesz (Kertesz *et al*. 1994) was claimed to confirm the hypothetical presence of dense Mesolithic settlement in the Hungarian Plain beyond the boundaries of the Körös culture. Thus, the models that assumed an essential role of Mesolithic populations in the process of neolithization were to be validated. However, the discoveries in the region of Jaszag cannot be regarded as a proof that Mesolithic settlement persisted until the appearance of the Körös culture: the Mesolithic sites near Jaszag represent only the early, at most the middle phase of the Mesolithic. This leaves a large hiatus between the Mesolithic and the Neolithic in the Tisza/Danube interfluves. Only very few sites in the north-east part of the Carpathian basin can be ascribed to the Late Mesolithic (e.g. Ciumeşti – Păunescu 1970, possibly also the site of Tarnaörs recently investigated by P. Kertesz. These sites do not provide evidence of contacts with the Early Neolithic, on the other hand, the isolation of Mesolithic population from the main routes of raw materials procurement is obvious (Kozłowski 2005). The investigations by P. Sümegi and R. Kertesz (1994) in the Hungarian Plain did not confirm assumptions about the existence of Mesolithic sites deeply buried underneath Holocene alluvia (Chapman 1989, Bartosiewicz 1999). The demographic crisis in the Carpathian Basin in the Late Mesolithic, just as the similar crisis in the eastern Balkans, calls for explanations.

4. Investigations into the economy of the Starčevo-Körös-Criş complex suggest that the population that had reached the Danube and the Carpathian Basin was able to adapt their subsistence economy to local conditions (Lazić 1988). An example are sites in northern Voivodina e.g. Nosa-Biserna Obala (Bökönyi 1974) where as much as 75.4% of faunal remains are wild mammals, birds and fish, while live – stock is only 24.5%. At the Starčevo culture sites in the region of the Iron Gate the faunal composition is similar, for example in phase III of Lepenski Vir (74.5% as compared to 25.5% – Bökönyi 1970), and at Padina B (Clason 1980) this contrast is even greater. At the same time, most Starčevo culture sites are characterized by the domination of domesticated fauna, typical of the FTN (e.g. Divostin: 91.5% of live-stock to 8.4% of wild animals – Bökönyi 1988). The adaptations in the sphere of subsistence economy must have had counterparts in other spheres of material, social and spiritual culture. The process of adaptation can also be seen in the northernmost Körös culture sites in the Tisza basin, but its manifestations are different. At the site of Nagykörü-Cooperative Orchard the fauna retained the Balkan domination of bred and herded stock, mainly goat and sheep (75% NISP), but – simultaneously – wild mammals, birds and fish increase in species variety, indicating *ad hoc* hunting, fowling and fishing (Raczky *et al*. in press).

In recent years sites discovered in the middle Tisza basin north of Szolnok such as Tiszaszölös-Domaháza (Domboroczki 2005) provided a sequence of Körös culture and early ELC (Szatmar II), settlements,. These investigations have confirmed Raczky's previous observations (1983) at Kötelek and documented the continuity between the Körös culture and the ELC.

An increasing number of radiometric dates from sites in the north-east part of the Carpathian Basin confirm that the succession of the Körös and the ELC was chronologically close, and that the spread of the FTN settlement in the Tisza basin (Domboroczki 2003) as well as in Transilvania (Biagi *et al*. 2005, Lazarovici 2006) was relatively fast.

The FTN sites with white-painted ceramics (e.g. Donja Branjevina) considered oldest, are dated at 7080±55 to 6775±60 BP (6100–5500 cal BC), and the south Hungarian sites are dated within a similar time-spars (e.g. Endröd 119 – 6915±45 to 6720±45 BP, Pitvaros – 7060±45 to 6885±50 i.e. in the interval from 6000 to 5700 cal. BC – Whittle *et al*. 2002).

The northernmost sites in the Tisza basin provided, basically, similar dates. The Körös culture features from Tisaszölös-Domaháza were dated at between 7065±40 to 6751±35 BP (i.e. in the interval from 5990 to 5620 cal. BC – Domboroczki 2005). In turn, the dates for Szatmar I group from Mehtelek on the upper Tisza are in the interval from 6835±60 to 6625±60 BP (i, e. 5730–5480 cal. BP), which almost corresponds to the dates for the early Linear Ceramics (Szatmar II) at the northern edge of the Körös culture (Kötelek – 6780±35 and 6630±60 BP i.e. between 5720 to 5530 cal. BC).

The transformation of the Körös culture into the ELC can, thus, be described by the following hypothesis:

1. This process took place in the northern peripheries of the Körös culture, which overlapped with the European-Balkan agro-ecological boundary zone in the north-east part of the Carpathian basin. For this reason the process involved a greater flexibility on the part of the Körös culture people to enable their adaptation to new environmental conditions.
2. Another important determinant of the Körös-Eastern Linear transformation was the fact that in the territory of the formation of the ELC crossed the influences from the south via the Tisza basin and from the east – from the Partium, territory from the Criş culture province. The best evidence of eastern influences are the sites of Szatmar I group such as Méhtelek on the upper Tisza (Kalicz, Makkay 1972, 1977). Their chronology is earlier than the beginnings of the ELC on the middle Tisza and they show similarities with the sites in north-west Romania such as Homorodul de Sus, Suplacu de Barcau or Zauan (Raczky *et al*. in print). Moreover, the sites such as Tiszabezed (Kalicz, Makkay 1977) or Ibrany (Domboroczki 2005) indicate that Szatmar I population moved along the upper Tisza to the west.
3. The continuity between the Körös and the ELC cultures is manifested in a number of spheres of material culture (e.g. ceramics), also in economy, settlement (location of sites in the Heves district – Domboroczki 1997, 2003), in architecture (Kalicz, Koos 1997, Kalicz, Raczky 1981, Domboroczki 2003), and symbolic culture (Kalicz, Makkay 1976, Kalicz, Raczky 1981, Domboroczki 2003).
4. In contrast to the Körös-ELC continuity we cannot point to any links whatsoever of the Early ELC and the Mesolithic (Kozłowski 2001), even less so to any evidence of hypothetical existence of a Late Mesolithic settlement network in the northern part of the Carpathian basin.
5. The innovations in the various cultural subsystems of the ELC are, therefore, the result of adaptational processes leading to internal transformations.

Balkan tradition in flint industries of the FTN

The most typical feature of lithic industries of the pre-linear painted FTN is the use of extralocal raw materials distributed over a large territory. Of special importance was yellow, spotted flint, described as “Banat” or “Balkan” flint. Artefacts from this flint – whose deposit areas are, probably, located in the pre-Balkan platform – are known at sites with the amplitude of distance between them of up to 700 km, across the territory from the Thrace Plain to the Upper Tisza Basin. Both at sites located closer to deposits and at distant sites “Balkan” flint is present in the form of blades or complete tools. The occurrence of artefacts from “Banat” or “Balkan” flint across such an extensive territory documents the existence of a network of contacts and information exchange between the various taxonomic units.

A separate problem is the presence of single obsidian artefacts at numerous sites of the FTN. This obsidian comes – in all likelihood – exclusively from deposits in the Tokaj-Zemplin Range i.e. from the territories outside the range of settlement of the Early Neolithic cultures with Painted Ware (Starčevo-Criş complex). Obsidian artefacts are found at the sites ascribed to the Early Phase (with white-painted ceramics e.g. Donja Branjevina – Karmanski 2005 and Gura Bacului – Lazarovici 2006) or the Late Phase (e.g. Golokut – Kaczanowska, Kozłowski 1984). Obsidian is recorded at sites up to 400 km to the south of deposits, but no relation has been noticed between its proportion and the distance from its outcrops. The distribution of obsidian south of the deposits, indicating the functioning of a network of contacts and various types of exchange, covers similar distances to those of the distribution range of "Banat" or "Balkan" flint. As far as obsidian procurement system is concerned two hypotheses can be considered:

1. the diffusion of obsidian is claimed to have been the effect of exchange with other groups that inhabited areas in the vicinity of deposits. In this case only alleged local Mesolithic groups can be taken into consideration. As we have shown, so far no traces have been found of the existence of Late Mesolithic groups in the Upper Tisza basin that would exploit obsidian. Thus, this hypothesis should be rejected,
2. Körös culture groups obtained obsidian directly at deposit areas despite the fact that these areas were not occupied by Körös Culture. The small number of obsidian artefacts discovered at sites, also the lack of noticeable correlation between obsidian frequency and the distance to its deposits indicate that procurement of this raw material was sporadic and random, during the penetration of new territories before the main advance of the FTN. The Tokaj Mts obsidian which occurs as small nodules was unsuitable for macroblade production.

Lithic industries of the Early Neolithic cultures with painted ware show characteristic low proportion, or even absence, of cores at settlements, the presence of a small number of flakes, but – on the other hand – a high index of blades and tools. Such an inventory structure is repeated at sites in western Bulgaria (Galabnik, Slatina IV, Gradeshnitza A – Gatsov 1993), Serbia (Golokut, Starčevo) and in the Hungarian Plain. The on-site processing of local raw materials was registered only at the site of Donja Branjevina (cores – 5.7%, flakes – 32.7%), but even at this site blades (34.3) and tools (22.1) dominate (Šarič 2005).

The domination of tools and blades over cores and debitage, established at sites of painted ware cultures (Starčevo-Körös), is the effect of a specific system of raw material procurement namely: prepared cores were brought to the settlement and a series of – at the most – several blades were detached in several episodes when needed. The preliminary working of raw material nodules (decortication, platform preparation, crest formation) was carried out outside the settlement area. Sporadically cores prepared for processing may have been traded, although first of all completed blades were exchanged, which were later reworked into tools on-site. This procurement system imposed "thrifty" raw materials economy where even fine

flakes from core rejuvenation were collected and stored in depots as, for example, in the case of a depot from Endröd 39 with about 100 flakes stored in a vessel (Kaczanowska et al.1981). It seems highly likely that such core reduction was carried out by skilled knappers. This is evidenced by straight edges and interscar ridges of blades, large size and slender proportions. To produce blanks like this required considerable skill. Blades were detached by means of a punch, but it is also possible that pressure technique may have been used. It is difficult to determine the dimensions of blade blanks as specimens are mostly broken or reworked into tools. It seems, however, that as a rule blades measured between 10 to 12 cm, although larger specimens are also known e.g. from the site of Szarvas (Starnini, Szakmany 1998 fig. 30) or Battonya (Bacskay, Siman 1987). Among retouched tools blades with lateral retouch are most common. They were registered both at eastern and central Balkan sites e.g. in the Vardar valley (Anzabegovo II–III 40% of tools – E. Elster 1976), in the Thrace Plain (Karanovo II), and in western Bulgaria (Galabnik, Slatina I, Balgarcevo – from 16 to 71% – Gatsov 1993) and Serbia (Divostin, Golokut, Starčevo).

However, in the Iron Gate region some differences in comparison with the Balkan model can be seen. At the site of Cuina Turcului-Dubova three layers contained a specific industry with distinctly local elements. In the literature this industry is interpreted as a local variant of the Starčevo culture (phase IIB, IIA and IIIB) with a microlithic component, allegedly derived from the local Mesolithic (Paunescu 1970, 1987). But typological analysis of lithics from Cuina Turcului-Dubova has shown that – just as at other Starčevo culture sites – this industry is dominated by blades with lateral retouch. Next in size is the group of trapezes and other geometrical forms but made on broad blades. The high proportion of trapezes could be the effect of the adaptation of Neolithic economy to specific ecological conditions in the Danube Gorge rather than a manifestation of persistence of Mesolithic traditions. Just like at Cuina Turcului the lithic industry from Lepenski Vir III is also specific: with a greater role of on-site working of – mainly – "Balkan" flint. This is confirmed by the presence of cores (including a core depot in a vessel – Srejovic 1969) and a fairly high proportion of flakes (69.7%) in comparison with blades (19.8%). Nevertheless, among retouched tools (9.1%) in the entire inventory almost half are retouched blades (Kozłowski, Kozłowski 1982).

Several sites, investigated in recent years, on the middle Tisza at the northern edge of the Körös culture, yielded small series of chipped stones (Tiszaszölös, Nagykörü). Alongside the continuation of Balkan traditions such as: tools with lateral retouch and artefacts made from "Banat" or "Balkan" flint (waxy, spotted) new traits appear at those sites. This is, for example, an attempt at exploitation of raw materials from the Upper Tisza basin e.g. limnoquartzites. Fissibility of this rock is much worse. The deterioration of the technological standard of blade production may have been caused by the use of poor quality raw materials as well as by decline of specialization in lithic production and transfer of this production to the level of individual household clusters.

The Proto-Linear Phase (Szatmar I)

The developmental tendencies in the lithic industry of the Iron Gate variant of the Starčevo culture and in the northern variant of the Körös culture – that make these units different from the Balkan tradition – intensified as the ELC was gradually shaping.

These were:

1. gradual vanishing of specialization and transfer of production to the level of individual household clusters,
2. exploitation of meso-local and local raw materials of much poorer quality, such as obsidian and limnoquartzites which occurred as smaller concretions,
3. general deterioration in the technological standards and transfer from macroblade (also pressure) to "mediolithic" technique, and moreover, relinquishment of careful preparation of core flaking surfaces from postero-lateral crests,
4. less economic core exploitation which is carried out in a single production episode, and replaced exploitation in several reduction episodes,
5. less intensive tool curation replaced by the use of expedient tools.

On the basis of ceramics we can assume that the crucial moment in the transition from Starčevo-Körös-Criş to Eastern Linear complex Szatmar I phase in the Upper Tisza and Samos basin. Its most important site so far is Méhtelek-Nadas (Kalicz, Makkay 1977). The lithic industry from this site displays, well expressed, all the features we have enumerated (Starnini 1994, Kozłowski 2001):

1. On-site lithic production is of considerable importance, documented by the large number of artefacts (1710), many times higher than the frequency of artefacts at the sites of the Starčevo-Körös complex. Among artefacts cores are relatively numerous (6.1%), but flakes are most frequent (59%).
2. At Méhtelek-Nadas there are occasional specimens (0.5%) made from „Balkan" flint, but the most important raw materials are obsidian (60%) and limnoquartzites.
3. Besides ocassional macrolithic blades (and one blade core), mainly from „Balkan" flint, „mediolithic" blades are most frequent, about 4 cm long, split off by direct percussion, possibly with a soft hammer.
4. The dominant group in the structure of retouched tools continue to be bilaterally retouched blades – just like at Balkan sites – although their frequency is smaller than in Körös – ca 26–30%; retouched blades are replaced by retouched truncations (18.6%), retouched flakes (24.1%) and by microliths (16.6%).

In the past the sites such as Michalovce and Lučky used to be assigned to the Proto-Linear phase (Lichardus 1972); today we know that they represent the early phase of the ELC (Šiška 1989). The position of the site of Košice-Červeny Rak (Šiška 1989) is still controversial: it may represent either the northernmost outpost

of the Körös culture or a transitional phase between the Körös culture and the ELC. Lithis artefacts from this site have not been described as yet.

The Early Phase of the Eastern Slovakian Linear Ceramics Complex

At settlements of the Early Phase of the ELC the basic raw material for tool production was obsidian. At sites situated in the Eastern Slovakian Plain it usually accounts for more than 80% of raw materials (Moravany – 88.8% and 95.4%; Slavkovce – 95.4%, Zalužice – 81.5% and 89.5%; Zbudza – 90.6% and 91.9% – Kozłowski ed. 1997). These sites are fairly close to obsidian deposits, no more than 20 km away. Unworked obsidian concretions were brought to settlements. In all likelihood they were collected from the ground surface as there are no traces of mining. A depot of 34 such concretions, weighing from 2.9 kg to 0.10 kg, was discovered in pit E/88 at Slavkovce. The total weight of stored raw materials was 13.5 kg (Kozłowski ed. 1997). Assuming that the calculations done by A. Dzieduszycka-Machnikowa and J.Lech (1976) of potential ability of groups that penetrated deposit areas to carry raw materials are correct, we could estimate that this quantity of obsidian was brought by only 1–2 people. Unworked obsidian nodules were also found at other settlements e.g. at Moravany.

The inhabitants of settlements in the Košice Basin, from the early phase of ELC situated at a distance of 40 to 50 km from obsidian deposits (Čečejovice, Barca III, possibly Košice-Červeny Rak – Kozłowski 1989) favoured limnoquartzites and hornstones for tool production. These materials were brought to settlements as cores in early phases of reduction.

Generally, obsidian transport in the ELC followed certain rules: to settlements situated in the East Slovakian Plain obsidian was supplied from a distance of a little more than 20 km. To the east and north-east of deposits parties in search of raw materials set off from a zone further away (i.e. a procurement zone acc. to the classical definition by C. Renfrew et al.1968). To the south of deposit areas obsidian was the basic raw material at settlements about 80 km from deposits (Füzesabony-Biro 2002). Analysis of obsidian diffusion shows the vital importance of communication routes along rivers, notably along the Tisza basin where some settlements are situated at a distance of 150 km from deposits and where the proportion of obsidian is more than 90% (Szárvas – Starnini, Szakmany 1998).

The nodules of raw material brought to settlements were exploited near dwellings for the needs of a single household. The inventory structure is characterized by a fairly high proportion of cores (less than 10%), the domination of flakes, chips and waste (as much as more than 60%). These specimens were not an intended outcome of processing but are the side-products from core preparation and rejuvenation. Blades are about 20% and tools up to 20%. Local processing is also evidenced by a high proportion of cortical and partially cortical flakes accounting for up to 30% of all flakes (e.g. at Moravany). In early phases (decortication, platform shaping) cores were exploited with a hard hammer, and blades were detached by means of a soft hammer or a punch. Sometimes detachment of blades was undertaken without prior flaking surface preparation – fully cortical blades was

detached starting blade reduction of the core, then, the flaking surface was extended by detaching blades with lateral cortex (Moravany – about 12% of all blades).

Blade blanks are "mediolithic" measuring up to 4.0 cm. Specimens longer than 4.5 cm account at Moravany for only 12%. Although raw material was worked, basically, near each household, yet there were areas within a settlement where core preparation was carried out on a larger scale. These are features (pits) with a large concentration of artefacts, mainly from initial phases of processing. Blade production proper was done elsewhere – possibly in the immediate vicinity of dwellings, probably in the same areas where also hafts of combined tools with obsidian inserts were made (Zbudza, feature 1/85 and 2/92 – Kaczanowska, Kozłowski 1997, Moravany feature 2/99). The appearance of features related, to a greater degree, to the preliminary phase of processing indicate a two-episode cycle of blank production. This could have initiated the process of setting up specialized workshops for the needs of the entire settlement. Workshops like this are known in the youngest phases of the ELP.

Retouched tools account for up to 20% of all artefacts. In the assemblages that are associated with the formation phase of the ELC, tool groups frequently contain retouched flakes (Slavkovce – Kaczanowska, Kozłowski 1997), whereas at somewhat later sites blades with lateral retouch predominate. A higher proportion of end-scrapers than retouched blades and the occurrence of a fairly numerous groups of denticulated tools were recorded only in the Košice Basin (e.g. Čečejovce – Kozłowski 1989). At all sites occur trapezes which in the older literature used to be associated with the influence of local Mesolithic substratum. At present there are no doubts that these are forms that are found in the whole Neolithic: from the Starčevo-Körös complex to the Early Eneolithic, they can hardly function as diagnostic for Mesolithic tradition.

The Late Phase of the evolution of the Linear Complex

In the northern part of the Great Hungarian Plain, in the Košice Basin, in the Eastern Slovakian Plain and in the Prešov Basin the Bükk Culture developed, which N. Kalicz and J. Makkay (1977) believe to have been a local group of the ELP. The exploitation and trade in obsidian used to be linked with the Bükk Culture. Analysis of chipped stone industries of the Bükk Culture has shown that obsidian played a major role at settlements at the distance of as far as 55 km north of obsidian deposits i.e. in comparison with the early phase of the ELP trips to obtain obsidian were undertaken from more distant areas. This was caused by the gradual expansion of the Bükk culture to the north. Moreover, the isolation of the Košice Basin where a greater influx of obsidian is registered had ended. To the south the route along the Bodrog and the Tisza continues to play an important role in obsidian diffusion. However, deposits of local raw materials began to gain in importance, especially those located in the immediate vicinity of settlements such as e.g. limnoquartzites at Boldogkováralja or Arka, or Carpathian radiolarites at the sites in the Prešov Basin. On the one hand, the presence of obsidian at all Bükk culture sites confirms inter-site contacts and a network of exchange within this culture, on the other hand,

advancing process of adaptation to local conditions and natural resources can be seen.

Preliminary working and partially also blade blanks exploitation took place in specialized on-site workshops. At Kašov a long pit (probably associated with a posthouse) yielded remains of at least 4 workshops producing blades (Banesz 1991). Similar features are known as well from Mala Trna and Humenne (Kaczanowska, Kozłowski 2002). Cores from these workshops are conical or cylindrical, with a carefully prepared platform and a flaking surface round the entire circumference. Prior to exploitation crests were shaped. Blades were detached using punch technique, in some cases pressure technique. The size of obtained specimens and regular, straight edges allow assuming that blank production in workshops was carried out by specialized knappers. The longest blades, more than 10 cm long, were taken away from workshops. Majority of specimens that remained was broken pieces. Possibly, they were damaged accidentally in the course of production process, but it is also likely that blade breaking was used to achieve straight profiles when as a rule the thickest, proximal part was broken off.

The presence of workshops that focused on blank production is related to the problem of blade depots at Bükk culture settlements. The literature of the subject connects them with exchange with remote areas and the exceptional role of this culture in obsidian trade. In view of the above we would like to draw attention to several facts, namely:

1. To assign all the obsidian depots to the Bükk culture can be regarded as – to say the least – questionable.
2. At Bükk culture settlements depots of blades made of raw materials other than obsidian were also discovered (Boldogkováralja – limnoquartzites, Sarišskie Michalany – radiolarites – Kaczanowska *et al*. 1993).
3. Use-wear analysis of these depots has established that these were depots of tools which were used for specific functions e.g. wood working. Thus, we can define them as craftsmen's kits.

The Bükk culture inventories exhibit high variability of frequencies of the various retouched tool types. For example, at Humenne blades with lateral retouches dominate and the burin index is high (Kaczanowska, Kozłowski 1998); at the settlement at Šarišskie Michalany the majority are truncations followed by end-scrapers (Kaczanowska *et al*. 1993); at Boldogkováralja truncations and end-scrapers dominate, whereas at Čierne Pole end-scrapers are most frequent. Thus, the tool inventory depends on functional specificity or differing stylistic traditions. At other settlements, wherever larger areas were explored, the increasing role of end-scrapers and truncations, in comparison to older phases, is noticeable. The growing importance of tools with lateral retouch could have been the effect of influence from two centers: the unifying influence of the Vinča culture on the Linear complex (Kaczanowska 1982) or contacts between the western and the eastern Linear units.

It is also possible that changes in tool structure were caused by the changes in subsistence economy.

Conclusions

The presented model of technological development of lithic production in the VIth millenium BC bases on the premise that in a general model of cultural evolution the technological subsystem is determined by other cultural subsystems, first of all by subsistence economy and social relations; the interactions of these subsystems are determined by and part of mutual interrelations with natural environment. The proposed model of technological evolution differs from the linear model characteristic for the neo-evolutionistic and neo-Marxist orientations. In place of the linear evolution, both of social structures and the technology that determined them, we propose an oscillatory model where the initial phase of the FTN – in the first half of the VIth millennium – continues to maintain the high level of technology adopted from the Pre-ceramic Neolithic of the Near East, the corresponding social structure based on specialization and a more advanced task assignment, and possibly – incipients of hierarchical society. About the middle of the VIth millenium BC – when Linear complexes emerged – the inter-group specialization and long-distance exchange vanish, and – in the consequence – the standard of technology deteriorates. It is only at the end of the VIth millenium BC, in the late phase of the ELC, that a revival of elements of specialization can be seen. However, specialization does not occur between regional groups, but only at the level of particular settlements. Nevertheless the revival of specialization is apparent in development of technologies which reach a standard similar to the initial phase of the FTN.

This new leap in the evolution of social structures and technologies in the Bükk culture took place only in the north-east part of the Carpathian Basin. This evolutional leap was not registered in the later phases of the LBK in Central Europe. The Bükk culture, notably its northern variant in the territory of eastern Slovakia, in turn, vanishes suddenly at the turn of the VIth and Vth millennia. S. Šiška (1995) related this phenomenon to hypothetical immigration of Bükk population to the north of the Carpathians – but there is no evidence in support of this hypothesis. It is more likely that the northern variant of the Bükk culture disappeared as a result of a demographic crisis. Consequently, the latest Bükk culture sites on the middle Tisza exhibit isolation which is seen in the use of local raw materials and the gradual deterioration and disappearance of specialization (e.g. Polgar 31).

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References

Bacskay, E., Siman, K. 1987 – Some remarks on chipped stone industries of the earliest Neolithic populations in present Hungary. In: J.K. Kozłowski, S.K. Kozłowski (eds) Chipped stone industries of the early farming cultures in Europe. Archaeologia Interregionalis, Warszawa-Kraków, pp. 107-130.

Bánes, L., 1991 – Neolitická dielňa na výrobu obsidiánovej industrie v Kašove. Východoslovenský Pravek III, pp. 39-68.

Bartosiewicz, L., 1999 – The emergence of holocene faunas in the Carpathian basin: a review. In: N. Benecke (ed.) The Holocne History of the European Vertebrate Fauna. Archaeologie in Eurasien, 6, Rhaden / Westfalen, pp. 73-90.

Biagi, P., Shennan S., Spataro M., 2005 – Rapid rivers and slow seas? New data for the radiocarbon cronology of the Balkan Peninsula. In: L. Nikolova, J. Higgins, Prehistoric Archaeology and Anthrpological Theory and Education, RPRP, 6-7, pp. 43-51.

Biró, K., 2002 – Advances in the study of Early Neolithic lithic materials in Hungary. Antaeus 25, 25-168.

Bökönyi, S., 1970 – Animal remains from Lepenski Vir. Science, 167, 3926, pp. 1702-1704.

Bökönyi, S., 1974 – History of domestic mammals in Central and Eastern Europe. Budapest.

Bökönyi, S., 1988 – The Neolithic fauna of Divostin. In: A.Mc. Pherron, D. Srejović (ed.) Divosin and the Neolithic of Central Serbia. Pittsbourgh, pp. 419-445.

Chapman, J., 1989 – Demographic trend in Neothermal South-East Europe. In: C. Bonsall (ed.) The Mesolithic in Europe, Symposium Edinbourgh, pp. 505-515.

Clason, A., 1980 – Padina and Starčevo: Game, fish and cattle. Palaeohistoria, 22, pp. 142-173.

Domboroczky, L., 1997 – Fuzesabony-Gubakut. Neolithic village from the 6th millenium B.C. In: P. Raczky, T. Kovacs, A. Anders (ed.) Paths into the past. Budapest, pp. 19-27.

Domboroczky, L., 2003 – Radiocarbon data from neolithic archaeological sites in Heves County (North-Eastern Hungary). Agria XXXIX, pp. 5-71.

Domboroczky, L., 2005 – A Körös – kultúra északi elterjedési határának problematikája a Tiszaszölös-Domaháza-Pusztán végzett ásatás eredményeinek fényében. Archeometriai Mühely, pp. 5-15.

Dzieduszycka-Machnikowa, A., Lech, J., 1976 – Neolityczne zespoły pracowniane z kopalni krzemienia w Sąspowie. Wrocław – Warszawa – Kraków – Gdańsk.

Elster, E., 1977 – Neolithic Technology: a case study in lithic analysis for Old Europe, 6500-4000 B. C. University of California, Los Angeles.

Gatsov, I., 1993 – Neolithic chipped stone industries i Western Bulgaria. Kraków.

Kaczanowska, M., 1982 – Aus den Forschungen über die Steinindustrien des Linienbandkeramikkreises, (in) Siedlungen der Kultur mit Linearkeramik in Europa, Nitra, pp. 63-68.

Kaczanowska, M., 1985 – Rohstoffe, Technik und Typologie der neolithischen Feuersteinindustrien im Nordteil des Flussgebietes der Mitteldonau, Warszawa.

Kaczanowska et al. 2002, Kaczanowska, M., Kaminská, L., Kozłowski, J. K., Nowak, M., Vizdal, M. – Badania wykopaliskowe na wczesnoneolitycznej osadzie w miejscowości Moravany we wschodniej Słowacji w latach 1998-2001. Materiały i Sprawozdania Rzeszowskiego Ośrodka naukowego XXIII, pp. 173-197.

Kaczanowska, M., Kozłowski, J. K., 1984-1985 – Chipped stone Industry from Golokut. Rad Vojvodanskih Muzeja 29, pp. 27-31.

Kaczanowska, M., Kozłowski, J. K., 1997 – Lithic industries. In: Kozłowski, J.K., (ed) 1997. The Early Linear Pottery Culture in Eastern Slovakia. Prace Komisji Prehistorii Karpat, I, Kraków, pp. 177-219.

Kaczanowska, M., Kozłowski, J. K., 2002 – Bükk Culture lithic assemblage from Humenné, Eastern Slovakia. Študijné Zvesti Archeologického Ústavu SAV, 34, pp. 65-90.

Kaczanowska, M., Kozłowski, J. K., Makkay, J., 1981 – Flint hoard from Endrőd, site 39 (Körös Culture). Acta Archaeologica Carpathica XXI, pp. 105-118.

Kaczanowska, M., Kozłowski, J. K., Šiška, S., 1993 – Neolithic and Eneolithic chipped stone industries from Šarišské Michal'any, Eastern Slovakia. Linear Pottery, Bükk and Baden Cultures. Kraków.

Kalicz, N., Koós J., 1997 – Eine Siedlung mit ältestneolithishen Hausresten und Gräbern in Nordostungarn. (in) ΑΝΤΙΔΩΡΟΝ Dragoslavo Srejović , Belgrad, pp. 123-136.

Kalicz, N., Koós J., 2002 – Eine Siedlung mit ältestneolithishen Gräbern in Nordostungarn. Preistoria Alpina 37, pp. 45-79.

Kalicz, N., Makkay, J., 1966 – Die Probleme der Linearkeramik im Alföld. Acta Antiqua et Archaeologica, 10, pp. 35-47.

Kalicz, N., Makkay, J., 1972 – Probleme des frühen Neolithikums der nördlichen Tiefebene. Aktuelle Fragen der Bandkeramik. Székesfehévár, pp. 77-92.

Kalicz, N., Makkay, J., 1976 – Frühneolithische Siedlung in Méhtelek-Nádas (Vorbericht). Mitteilungen des Archäologischen Institutes der UAW 6, pp. 13-24.

Kalicz, N., Makkay, J., 1977 – Die Linienbandkeramik in der Grossen Ungarischen Tiefebene. Budapest.

Kalicz, N., Raczky, P., 1981 – Siedlung der Körös-Kultur in Szolnok-Szanda (Vorbericht) Mitteilungen des Archäologischen Institutes der UAW 10-11, oo. 13 -34.

Karmanski, S. 2005 – Donja Branjevina: A neolithic settlement near Deronje in the Vojvodina (Serbia). Biaggi, P. (ed) Societa per la Preistoria e Protoistoria delle Regione Friuli – Venezia Giulia, 10.

Kertész et al 1994 Kertész, R., Sümegi, P., Kozák, M., Braun, M., Félegyházi, E., Hertelendi, E., – Archaeological and Palaeoecological study of an Early Holocene settlement in the Jászság Area. Acta Geographica, Geologica et Meteorologica Debrecina 32, pp. 5-49.

Kertész, R., Sümegi, P., 2001 – Theories, critiques and a model: Why did the expansion of the Körös-Starčevo culture stop in the center of the Carpathian Basin? In: R. Kertész, J. Makkay (eds) From the Mesolithic to the Neolithic. Budapest, Archaeolingua, pp. 225-246.

Korek., J., 1983 – Adatok a Tiszahát neolitikumához. Jósa András Múzeum Évkönyve XVIII-XX, pp. 8-60.

Kozłowski, J. K., 1989 – The lithic industry of the Eastern Linear Pottery Culture in Slovakia. Slovenská Archeológia XXXVII-2, pp. 377- 406.

Kozłowski, J. K., 1997. (ed) – The Early Linear Pottery Culture in Eastern Slovakia. Prace Komisji Prehistorii Karpat, I, Kraków.

Kozłowski, J. K., 2001 – Evolution of the lithic industries of the Eastern LinearPottery Culture. In: R. Kertesz, J. Makkay (ed.), From the Msolithic to the Neolithic. Budapest, Archaeolingua, pp. 247-260.

Kozłowski, J. K., 2005 – Remarks on the Mesolithic in the Northern part of the Carpathian Basin.In: E. Gal, I. Juhasz, P. Sumegi (eds), Environmental Archaeology in North-Eastern Hungary, Budapest, Archaeolingua, pp. 175-186.

Kozłowski, J. K., Kozłowski, – Chipped stone industries from Lepenski Vir.

S. K., 1982 Prehistoria Alpina, 19, pp. 259-294.

Lazarovici, G., 2006 – The Anzabegovo – Gura Bacului axis and the first stage of the Neolithization process in southern-central Europe and the Balkans. In: N. Tasić, C. Grozdanov (eds), Homage to Milutin Garasanin, Belgrade, pp. 111-158.

Lazić, M., 1988 – Fauna of mammals from the Neolithic settlements in Serbia. In: D. Srejović (ed.) The Neolithic in Serbia, Belgrade: The University, pp. 24-38.

Lichardus, J., 1972 – Beitrag zur chronologischen Stellung der östlichen Linearbandkeramik**.** Aktuelle Fragen der Bandkeramik. Székesfehévár, pp. 107-121.

Makkay, J., 1982 – A magyarországi neolitikum kutatásának új eredményei. Budapest.

Păunescu, A., 1970 – Evoluţia uneltelor şi armelor de piatră cioplită descoperite pe teritoriul României, Bucureşti.

Păunescu, A., 1987 – Les industries lithiques du Néolithique ancien de la Roumuanie et quelques considérations sur l'inventaire lithique des cultures du Néolithique moyen de cette contrée. (in) J.K. Kozłowski, S.K. Kozłowski (ed) Chipped stone industries of the early farming cultures in Europe. Archaeologia Interregionalis Warszawa – Kraków, pp. 75-94.

Raczky, P., 1983 – A kora neolitikumból a középső neolitikumba való átmenet kérdései a Közép-és Felső Tiszavidéken. Archeologiai Érteszitő 110, pp. 161-194.

Raczky, P., 1989 – Chronological Framework of the Early and Middle Neolithic in the Tisza Region (in) S. Bökönyi (ed) Neolithic of Southeastern Europe and its Near Eastern Connections, Budapest, pp. 233-251.

Raczky, P., Sumegi P., Bartosiewicz L., Gal E., Kaczanowska M., Kozłowski J.K., Anders A., in print – Ecological barrier versus mental marginal zone? Problems of the northernmost Ķőrős Culture settlements in the Great Hungarian Plain.

Renfrew, C., Dixon, J., E., Cann, I., R., 1968 – Further analysis of Near Easter Obsidians. Proceedings of the Prehistoric Society, NS XXXIV, pp. 319 -331.

Sheratt, A., 1982 – The development of Neolithic and Copper Age settlement in the Great Hungarian Plain. Part I: The regional setting. Oxford Journal of Archaeology I, pp. 287-316.

Srejović, D., 1969 – Lepenski Vir – Nova praistorijska kultura u

Podunavlju. Beograd.

Starnini, E., 1994 – Typological and technological analyses of the Körös culture chipped, polished and ground stone assemblages of Méhtelek-Nádas (North-Eastern Hungary). Atti della Societa per la Preistoria e Protoistria della regione Friuli – Venezia Giulia 8, pp. 29- 95.

Starnini, E., Szakmány G., 1998 – The lithic industry of the Neolithic sites of Szarvas and Endrőd (South-Eastern Hungary): Techno-typological and archaeometrical aspects. Acta Archaeologica Academiae Scientiarum Hungaricae L-4, pp. 279-342.

Sümegi, P., 2005 – Pre-Neolithic development in North-Eastern Hungary. (in) E. Gál, I. Juhász, P. Sümegi (eds) Enviromental archaeology in North-Eastern Hungary, Budapest, Archaeoligua, pp. 15-24.

Šarić, J., 2005 – The chipped stone assemblage. In: S. Karmanski, Donja Branjevina: A neolithic settlement near Deronje in the Vojvodina (Serbia). Biaggi, P. (ed) Societa per la Preistoria e Protoistoria delle Regione Friuli – Venezia Giulia, 10. pp. 57-64.

Šiška, S., 1989 – Kultúra s východnou lineárnou keramikou na Slovensku, Bratislava.

Šiška, S., 1995 – Zur Problematik des Untergangs der Bükker Kultur. Slovenská Archeológia XLIII-1, pp. 5-26.

Whittle et al 2002. Whittle, A., Bartosiewicz, L., Borić, D., Pettitt, P., and Richards, M. – In the beginning: radiocarbon dates from the Early Neolithic in northen Serbia and south-east Hungary. Antaeus 25, pp. 63-117.

Figures

Fig. 1. Mesolithic and alleged Mesolithic sites in North-Eastern part of the Carpathian Basin: 1 – Ciumeşti (Romania); 2 – Kamenitsa 2 (Ukraina); 3 – Kamenitsa 1 (Ukraina); 4 – Uzhgorod 1 ((Ukraina), 5 – Tiszaőrs (Hungary); 6 – Hugyaj (Hungary); 7 – Tarpa (Hungary); 8 – Jásztelek (?) (Hungary), 9 – Barca (Slovakia), 10 – Streda nad Bodrogom (Slovakia).

Fig. 2. North-Eastern part of the Carpathian Basin and adjacent territories in the Early Neolithic.

Fig. 3. Animal bone structure in selected Starčevo-Körös sites.

Fig. 4. Radiometric chronology (calibrated BC) of the main Starčevo-Körös Culture, Szátmar Group and Early and Middle Phase of the Eastern Linear Culture sites.

Fig. 5. FTN sites in the Northern Balkans and in the Carpathian Basin with blades made from "Balkan" (yellow, white spotted) flint.

Fig. 6. FTN sites in the Carpathian Basin with artefacts made from the obsidian of Tokaj-Prešov Upland.

Fig. 7. Ratouched blades from Karanovo-Kremikovci Culture (1, 3 – Galabnik 1 , 2 – Galabnik 3: Bulgaria), and Starčevo Culture (4-6 – Velesnitsa, Serbia; 7, 8 – Golokut, Serbia) (acc.to I. Gatsov and J. Šarič).

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Fig. 12. Number of artefacts in lithic assemblages of the FTN sites in the Northern Balkans and in the Carpathian Basin.

Fig. 13. Slavkovce (Eastern Slovakia). 1-9 – cores from Early Eastern Linear Culture assemblage.

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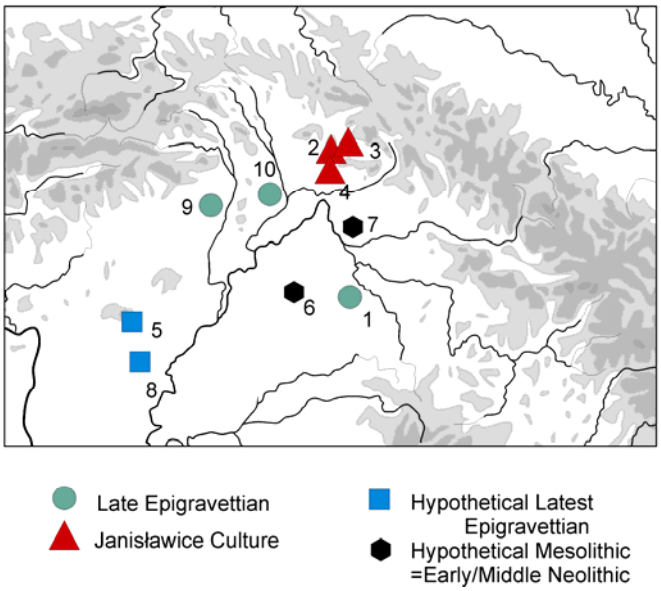
Fig. 17. Radiolarite blade depot of Bűkk Culture from Šarišske Michal'any (Eastern Slovakia).

Fig. 18. Radiolarite blade depot of Bűkk Culture from Šarišske Michal'any (Eastern Slovakia).

Fig. 19. Raw material procurement systems, technology, tool morphology and the relation between lithic production and social structures in the Early and Middle Neolithic in the Northern Balkans and the Eastern part of the Carpathian Basin.

Fig. 20. Oscillating changes in lithic production techniques (red) and their relation to social organization (green) in the Early and Middle Neolithic in the northern Balkans and eastern part of the Carpathian basin.



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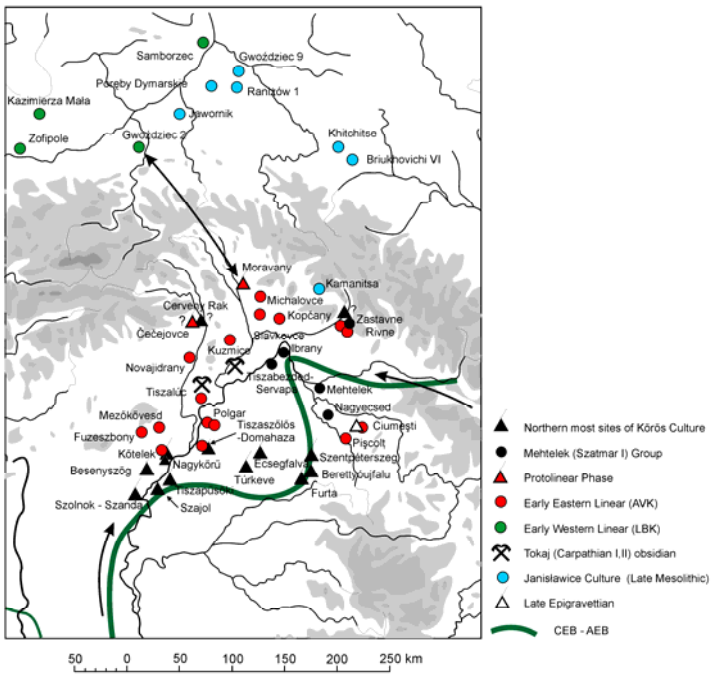

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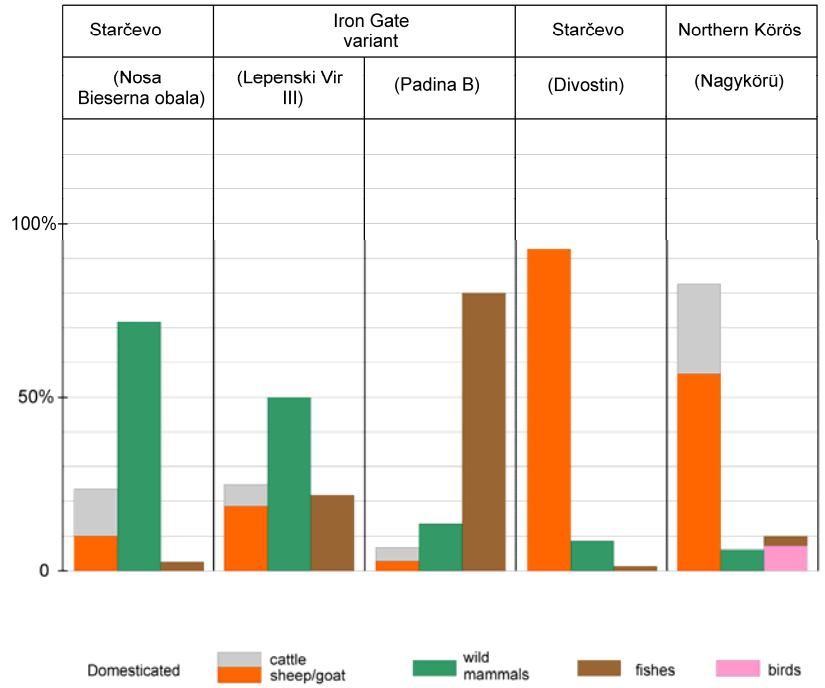

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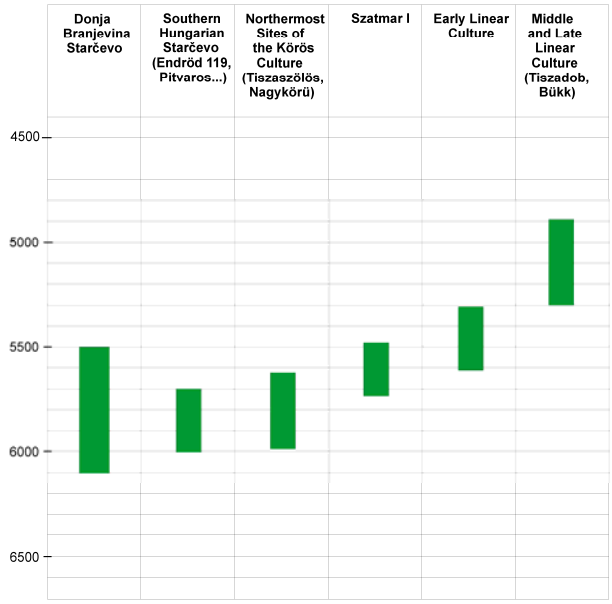

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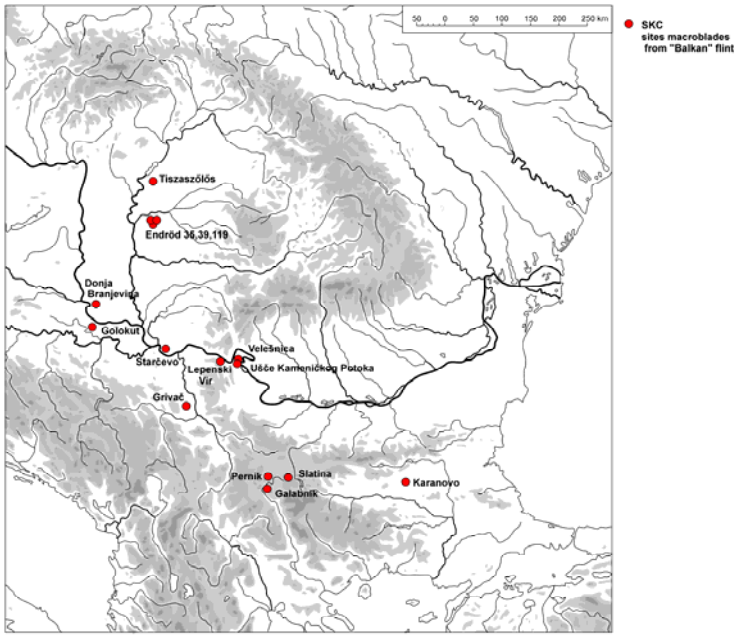

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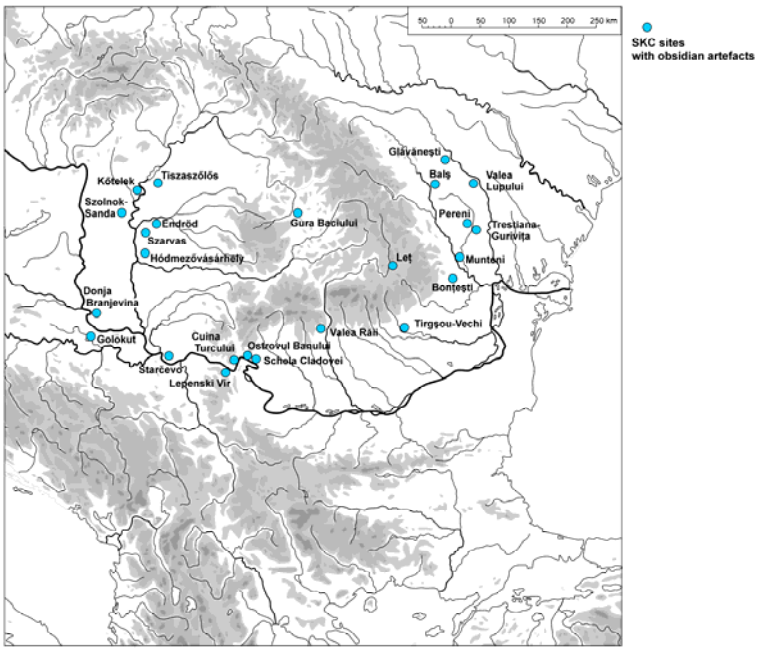

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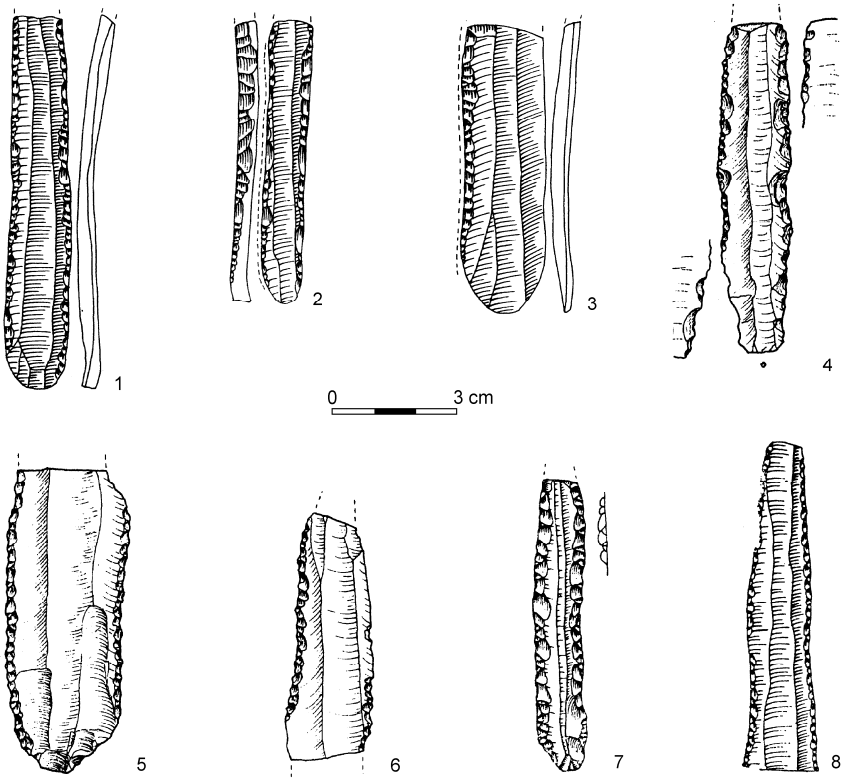

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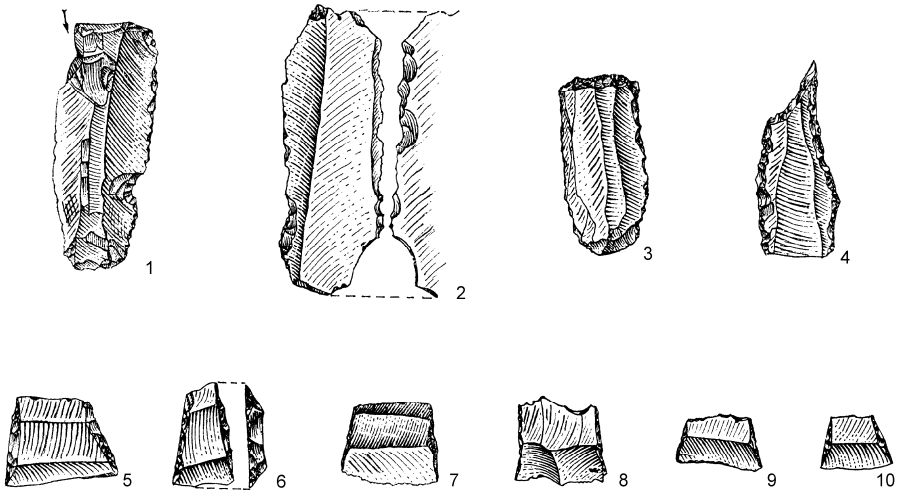

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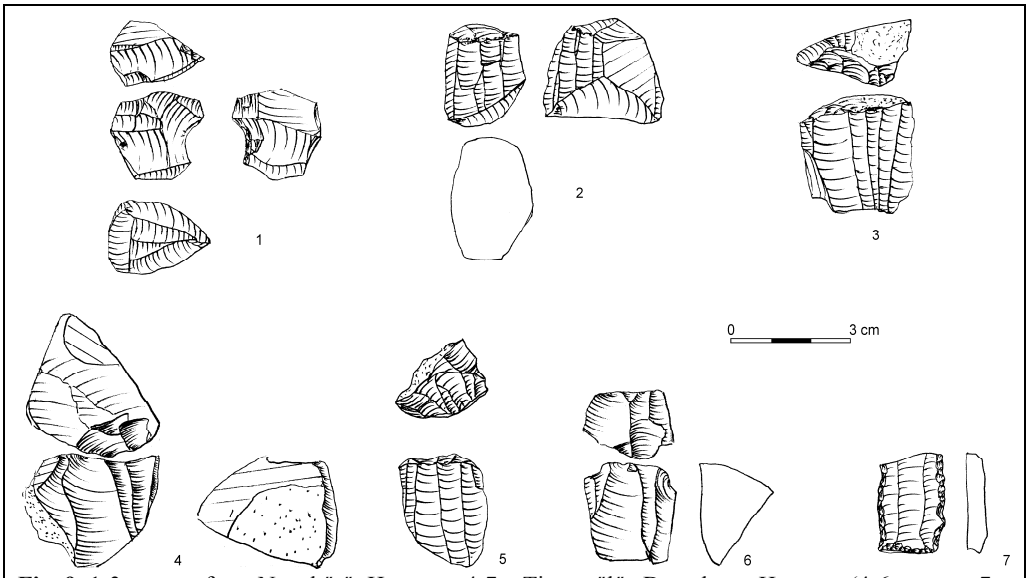

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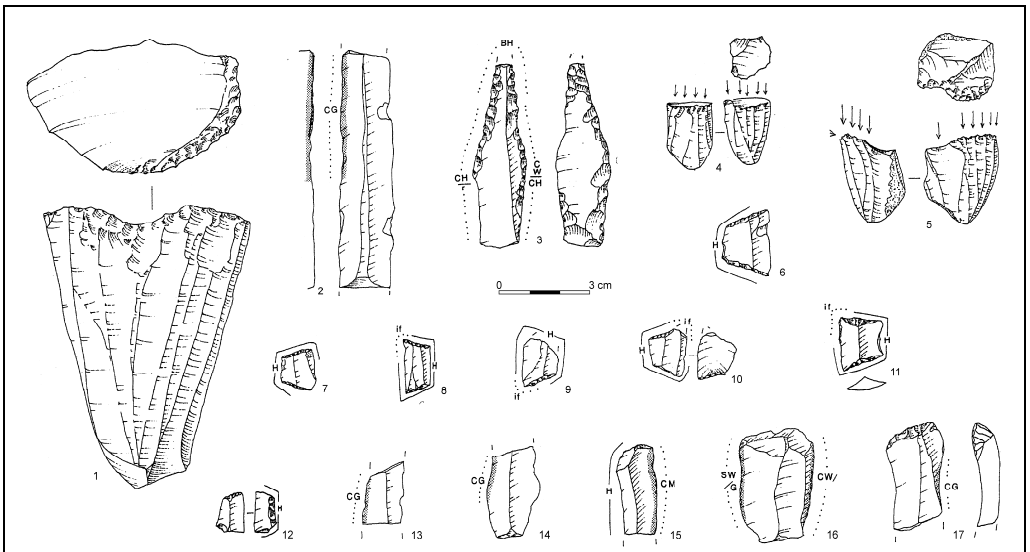

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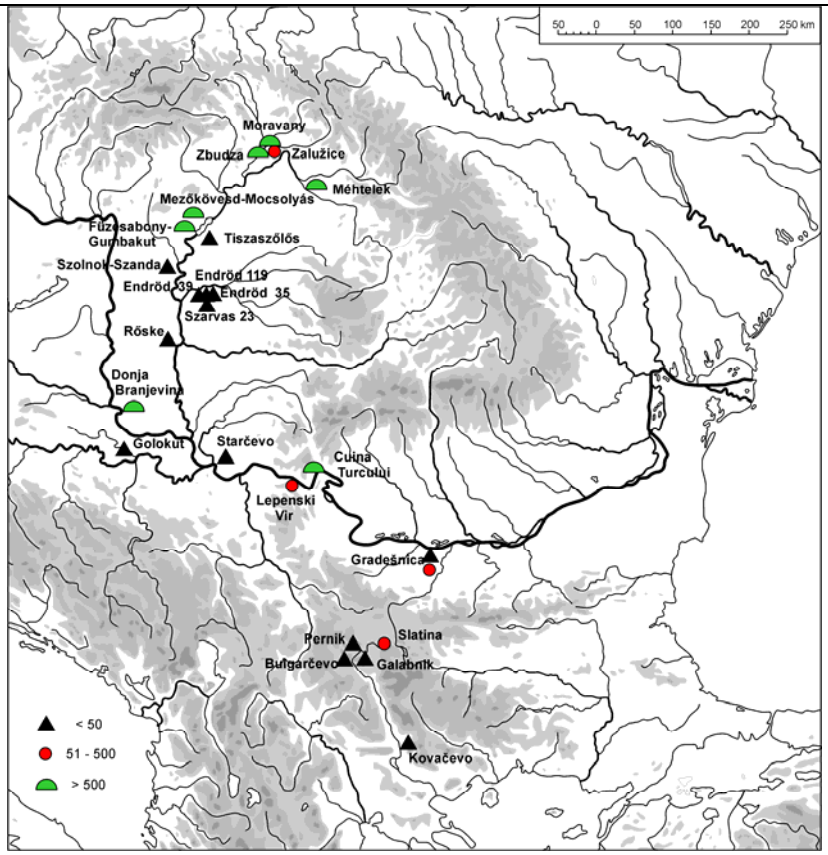

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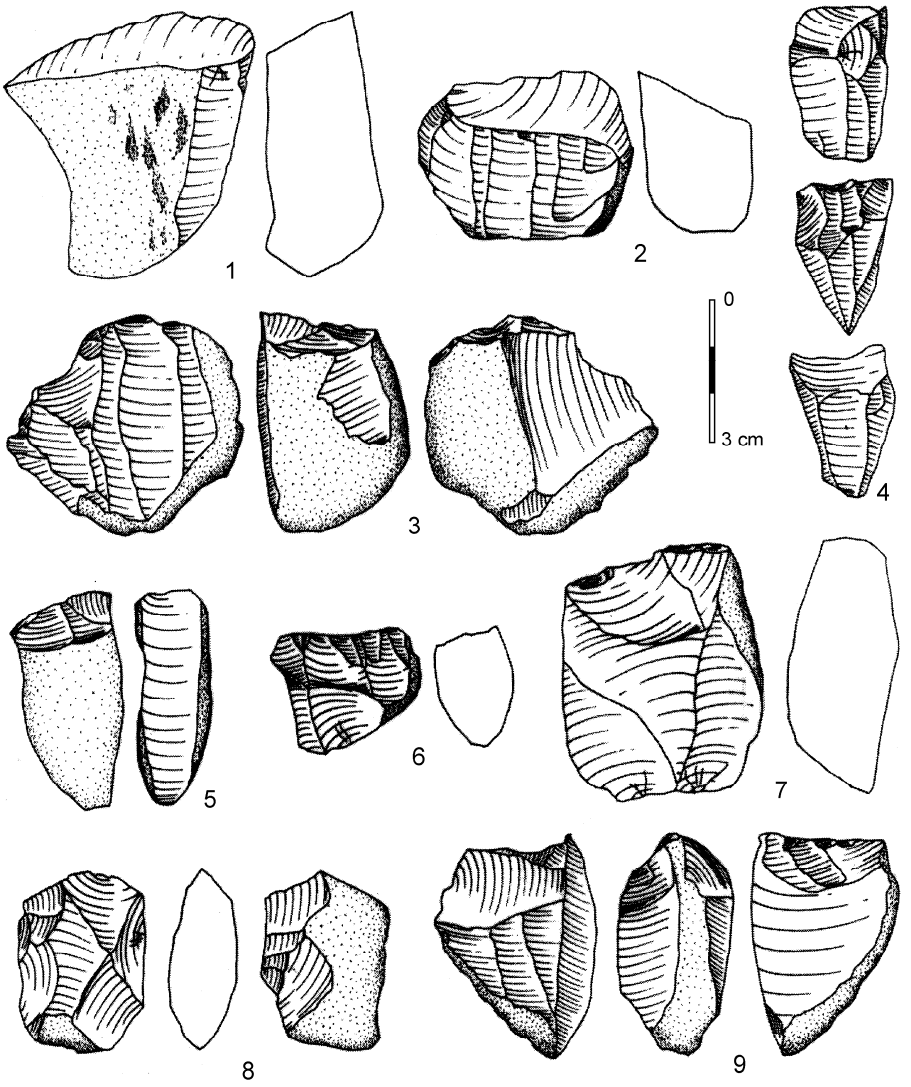

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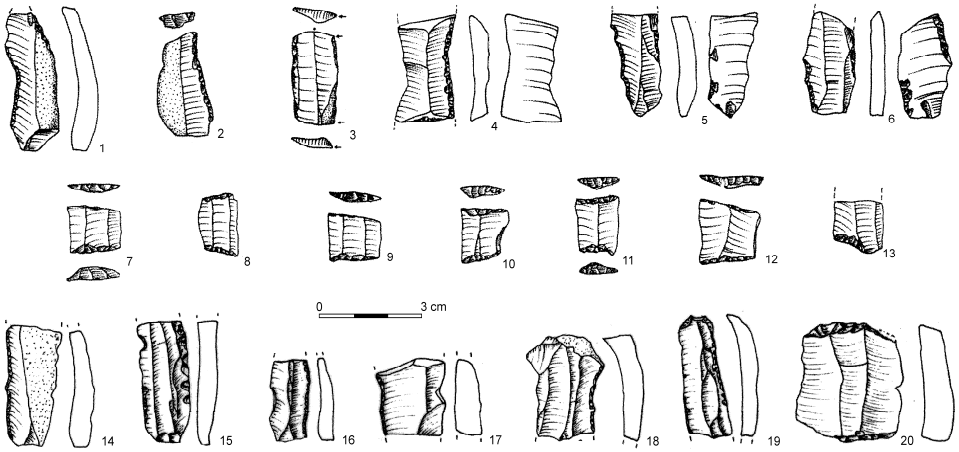

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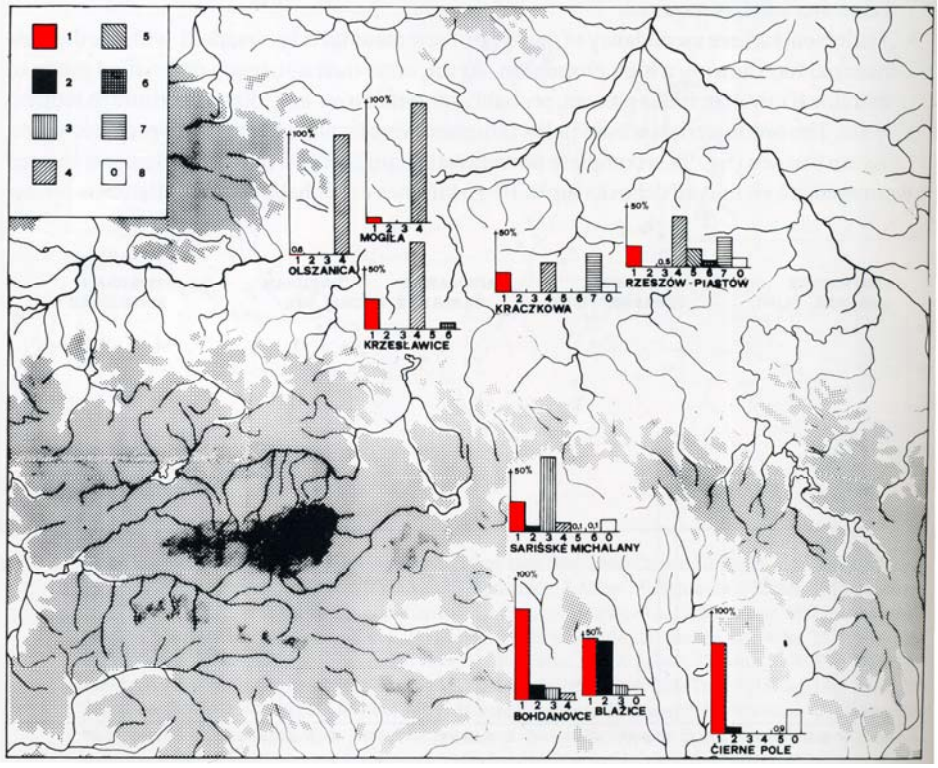

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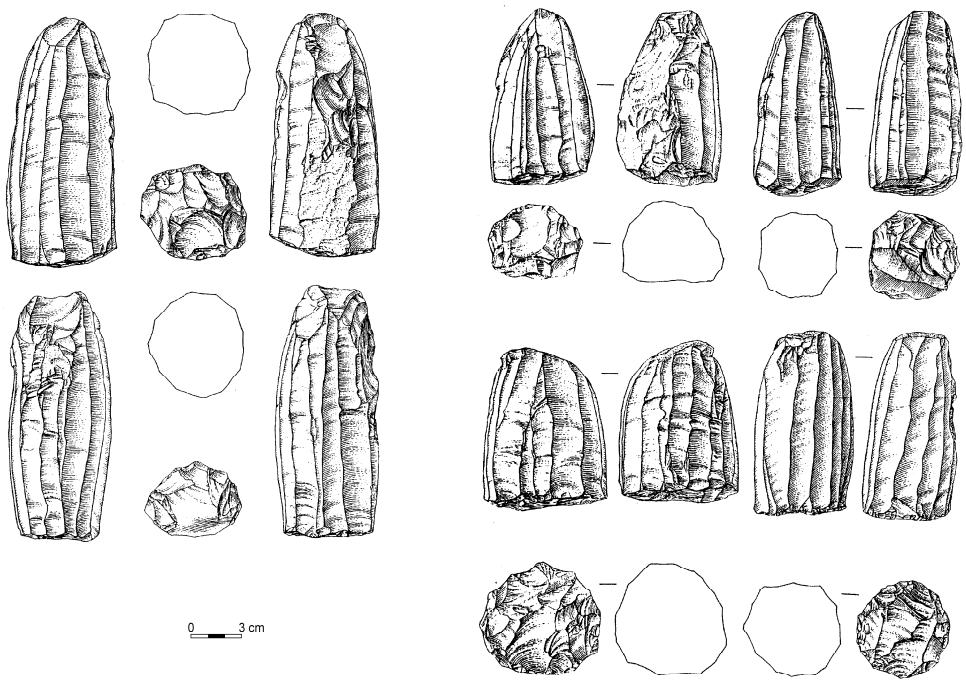

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Fig. 17. Radiolarite blade depot of Bűkk Culture from Šarišske Michal'any (Eastern Slovakia).

Fig. 18. Radiolarite blade depot of Bűkk Culture from Šarišske Michal'any (Eastern Slovakia).

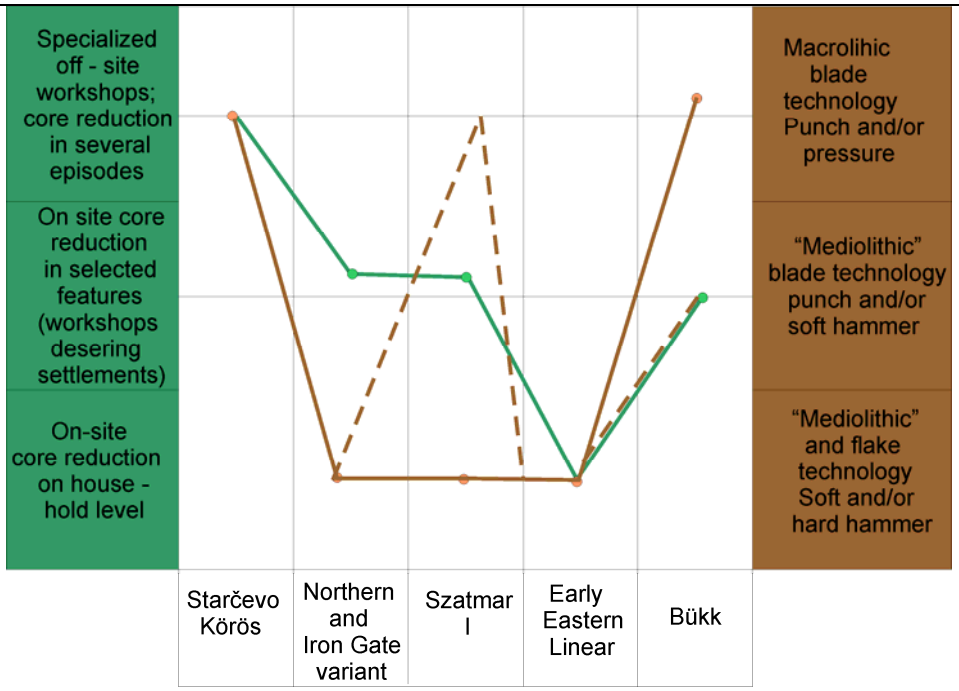

Fig. 20. Oscillating changes in lithic production techniques (red) and their relation to social organization (green) in the Early and Middle Neolithic in the northern Balkans and eastern part of the Carpathian basin.

Fig. 19. Raw material procurement systems, technology, tool morphology and the relation between lithic production and social structures in the Early and Middle Neolithic in the Northern Balkans and the Eastern part of the Carpathian Basin.

		Raw materials	Blanks	Techniq ue	On-site vs off-site reductio n	Raw material supply system	Specialisat ion	Tool structure
5000/ 4900	Bukk Culture	Obsidian or / and limnoquarzites, radiolarites (single raw material dominating or varied raw material structure)	"mediolit hic" blades , single macrobla des	Punch or / and soft hammer (pressure ?)	On-site core preparati on and reductio n	Local/mesol ocal supply system; long distance transcarpath ian exchange	On-site specializat ion: workshops in particular features; Utilised blade depots (equipmen t of specialize d craftmans)	Laterally retouched blades, end-scrapers, burins, truncation s, peduncul ated blades, microliths
5300	Early Eastern Linear	Obsidian,limnoqua rzite, radiolarite, appearance of transcarpathian flint	"mediolit hic" blades; flakes	Direct percussi on, soft/hard hammer	Complet e reductio n cycle on-site	Local/mesol ocal supply system; transcarpath ian contacts with area of the LBK	Full reduction on house-hold level; rare exchange of ready tools and blades	Laterally retouched blades, end-scrapers, truncation s, perforator s, microliths
5400	Szatmar I and Proto-Linear	Obsidian and limnoquarzite. Trace quantities of "balkan" flint.	"mediolit hic" blades few macrobla des flake blanks	Soft hammer	Complet e reductio n cycle on-site	Mesolocal supply system single, long-distance imports	Full reduction on house-hold level	Laterally retouched blades, end-scrapers, truncation s and microliths
5500	Northen and Iron Gate variant of Starcevo-Koros	Obsidian and limnoquarzite/radi olarite. Trace quantities of "balkan" flint	"mediolit hic" blades and macrobla des	Soft hammer and punch	Complet e reductio n cycle on-site	Meso-local supply system. Core depots	Shift to the on-site production	Laterally retouched blades, truncation s and microliths
5700/ 5500 6100	Starcevo-Koros (White painted)	First occurece of obsidian. Extralocal "banat" or "balkan" flint	Macrobla de technolog y.	Advance d core preparati on' punch / pressure techniqu e	Off-side core preparati on. Core reductio n in several episodes . Rare debitage discard	Long-distance exchange network. Prospection of new raw material sources out of settled zone	Specjalisat ion on extra-local level	Laterally retouched blades; few transversa lly retouched tools

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MIGRATIONS AND LOCAL EVOLUTION IN THE *EARLY NEOLITHIC* OF TRANSYLVANIA
THE TYPOLOGICAL-STYLISTIC ANALYSIS AND THE RADIOCARBON DATA[1]

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Key words: *early Neolithic, migration, Central and South-East Europe.*

Abstract: *The spread of Neolithic life as a historical phenomenon is a process which brings about major changes in the lives of human communities. Neolithic communities are different to Mesolithic ones in terms of tools, architecture and technology.*

The earliest Neolithic sites are located in south-western Transylvania (the Haţeg region), in the middle Mureş valley, and along its tributaries and the Someş River (in the Cluj county region). According to the latest information, sites belonging to an earlier stage may also be present along the Someş in north-eastern Transylvania.

New radiocarbon results, typological and statistical observations, indicate that a fully-Neolithic culture appeared in Transylvania around 7200 BP, with artefacts very similar – if not identical – to those of contemporary communities south of the Danube.

The definition of ***Early Neolithic*** *cultural phenomena has become an important subject of debate. In Transylvania and not only here, the term* ***Starčevo-Criş*** *was and is still used to define a cultural phenomenon spread over a long period of time, with four stages of evolution which span from the appearance of the first Neolithic communities to the arrival of the first* ***Vinča*** *communities. The term* ***Pre-Criş*** *deals with the process of Neolithisation, or the first two stages of the* ***Starčevo-Criş*** *culture and it belong to the past from terminological point of view. The stylistic-*

[1] Note: This article was prepared in 2005 for the proceedings of the **A Short Walk through the Balkans: the First Farmers of the Carpathian Basin and Adjacent Regions**, 20-22 June 2005, London. From reasons that depend of human behavior was not yet published. So, for this reason, we will publish it with this occasion. Some aspects reflect the stage of research in 2005.

typological analyses and especially the statistical ones that have been made in recent years force us to consider as most suitable the theory, at least in Transylvania, of a gradual development, in the form a unitary complex closely related to the nearby surroundings at the south of the Danube.

1. The beginning of the Neolithic

The earliest Neolithic of Transylvania is represented by the *Starčevo-Criş* Culture (VLASSA 1966, 9-48; LAZAROVICI 1975: 8-12; 1977: 34-42; 1979: 39-56; 1983: 9-34; 1984: 49-104; 1992: 25-59; 1993; DUMITRESCU *et al*., 1983, 69; URSULESCU, 1984: 90 and following; PAUL, 1989: 3-28). The explanation of the origin of the *Early Neolithic* has oscillated between the autochthonous theory, which presupposes the existence of areas of a primary origin (BERCIU, 1958; 1966: 32; BORONEANŢ, 1968; 1973; 1980; 1996; PĂUNESCU, 1958: 269-271; 1970: 25-26; DUMITRESCU, 1970: 190-191; SREJOVIĆ, 1969; 1971; 1978; GIMBUTAS, 1989; 1997), and that which states the Near East, where the neolithisation process originated, as the source of the European Neolithic, a theory that many archaeologists have agreed with during the last decades.

The way the newcomers spread is dictated by the new regions formed after the end of the last glaciation. This is the only possible explanation, after plotting all the radiocarbon dates linked to the neolithisation process (BREUNIG, 1987: 86). The existence of an *aceramic* or *preceramic* Neolithic cannot be demonstrated for Transylvania. The nearest site, previously supposed to belong to this cultural and chronological horizon (although its chronology is not specified) is Dârţu-Ceahlău (PĂUNESCU, 1958: 269-271; BERCIU, 1958: 91-98), although it was proved to be, in fact, of a later period (VLASSA, 1964: 463-464).

According to Lazarovici's chronological system the first Neolithic communities diffused in Transylvania in three migration waves. The problems related to the first and second migrations are treated in this paper (LAZAROVICI and KALMAR, 1995: 30, 199-200; LUCA *et al*., 2004: 99-103)

The earliest Neolithic sites in Transylvania are those of Gura Baciului I (VLASSA, 1976: 198-264; LAZAROVICI and KALMAR, 1995: 199, 201), Ocna Sibiului-*Triguri* I and II (PAUL, 1989; 1995, 28-68), Şeuşa-*La cărarea morii* (CIUTĂ, 1998; 2000), and Miercurea Sibiului-*Petriş* (LUCA, 2002; 2004; LUCA *et al*., 1998; 1999; 2000a; 2001; 2002).

The most important site seems to be Gura Baciului, near Cluj-Napoca. The first horizon (VLASSA, 1976: 257-269) yielded a cultural assemblage, which can be referred to as phase IA (?) of the *Starčevo-Criş* Culture (LAZAROVICI and KALMAR, 1995: 5, 63, 68-79). The archaeological materials of the first stage (IA) appeared hypothetically in the Romanian sites (LAZAROVICI, 1977: 34; 1979: 17; 1984: 53-55; 2005: 50) without having complexes to demonstrate clearly a phase IA of the *Starčevo-Criş* Culture.

The excavators consider hut H_{2A} to be the oldest discovered at this site and also the most important (LAZAROVICI and KALMAR, 1995: 68-69). Besides hut H_{10}, pit P_{1a}, huts H_8, H_{2A1}, pit P_{11}, hut H_{9B}, pit P_{33}, and H_{2B}, there are some assemblages

recovered from the earliest horizon (LAZAROVICI and KALMAR 1995: 68-69) that N. VLASSA (1976: 257-269) considered contemporary with the *Protosesklo* stage.

Ocna Sibiului-*Triguri* (PAUL, 1989; 1995: 28-68) is particularly important for both its stratigraphic sequence and the material culture assemblages. The three earliest occupation layers (Ia-IIa) belong to the *Protosesklo* horizon. Layer IIb might represent the transitional phase to the Criş Culture (contemporary with Gura Baciului II), while the last two layers (IIIa and IIIb) belong to the *Starčevo-Criş* Culture (PAUL, 1989: 10).

I. PAUL (1989: 11) pointed out that the *Protosesklo* horizon appeared as a "*distinct culture with a quite long evolution*", which he called *Pre-Criş*. This culture was subdivided by him into two regional northern Danube aspects, those of: Cârcea (in Oltenia), and Ocna Sibiului-Gura Baciului (in Transylvania), and into two stages of development (I and II).

Given his opposition to a unitarian evolution of the *Early Neolithic* in the northern Balkans, namely the *Starčevo-Criş* cultural complex (LAZAROVICI, 1992: 27), I. Paul tries to vary the Ist, and partially, the IInd phases of the Lazarovici chronological system through *Pre-Criş* I-II, although this fact has not been demonstrated by the latest discoveries made in Transylvania at Gura Baciului (new excavations carried out by Gheorghe Lazarovici) or Miercurea Sibiului-*Petriş*. In the same time I. Paul could not provide clear observations concerning the dwellings and the pottery evolution on the successive levels of living.

If we consider Transylvania, the term *Pre-Criş Culture* (PAUL, 1989; 1995; CIUTĂ, 1998; 2000; 2001) is based, in our opinion, on too little information (LAZAROVICI 2001: 42-45; 2005), because is based on sites excavated through small trenches and without statistic analysis of the material culture assemblages, as well as proper horizontal and vertical stratigraphies (with the exception of Gura Baciului, Miercurea Sibiului, and Cauce Cave).

This impression has been confirmed by the discovery and the excavations carried out at Miercurea Sibiului-*Petriş*, a site which belongs to the earliest Neolithic of the region. The site was first mentioned when the monograph on the *Petreşti* Culture was published (PAUL, 1992: 141, point 29a). The material belonging to the *Turdaş* and *Petreşti Eneolithic* Cultures, accidentally discovered at the city boundaries, is mentioned in this paper.

2. Pottery statistical analysis (tables 1 to 5)

The archaeological material was studied quantitatively and qualitatively. Description of the ceramic material was carried out, considering the following: shapes, rim variants, bases and handles, decoration (technique and type); sort, blending (mixture), surface treatment or burned and colours of potsherds. The structure was designed in the Bazarh system, in the Department of Prehistory, Cluj University (since 1984). After 1988 the work with the database was carried out by means of a more comprehensive system, "ZEUS" (TARCEA and LAZAROVICI, 1996). In this paper we present only a little part of our statistical work from complexes: B_1 from Gura Baciului; H_1 (B_1), H_{10} (B_{10}) and H_9 (B_9) from Miercurea

Sibiului-*Petriş*; L_1 from Şeuşa-*La cărarea morii* and Cauce Cave. We focus on H_1 (B_1) and H_{10} (B_{10}) from Miercurea Sibiului-*Petriş*. In this study we are presenting only five tables with main characteristics. All of them show a great unity in this first early Neolithic wave confirming absolute dating data. In the same time we can fine differentiate them through some typological characteristics.

We analysed **1245 potsherds**: **188** from B_1 Gura Baciului (LAZAROVICI and MAXIM, 1995: 69-71), **382** from H_{10} and **141** from $H_{1\ at}$ Miercurea Sibiului-*Petriş*, **423** from L1 at Şeuşa-*La cărarea Morii* and **111** from Cauce Cave (Cerişor-*Peştera Cauce*) (Table 1 to 6).

The tables below were made using the ***AplWin*** seriation programme (LAZAROVICI and MICLE, 2001: 121-125) for each table.

2.1 *Description of H_1 (B_1), H_{10} (B_{10}) from Miercurea Sibiului-Petriş*

The site *Petriş* is located some 500 m east of the Miercurea Băi, 50-80 m north of the national motorway Sebeş - Sibiu, at the edge of a long terrace, 4-5 m higher than the flooded meadow of the Secaş River. The archaeological finds are spread on a surface of 300 m. (width) by 80-100m (length) along the terrace parallel to the river.

In 1997, the excavation of the site was carried out in collaboration with the "Lucian Blaga" University and the Brukenthal National Museum, Historical Department (Sibiu). Between 1997 and 2000 a few trial trenches were opened, whose purpose was to check the archaeological sequence of the settlement (LUCA *et al*., 1998; 1999; 2000a; 2001). The excavation revealed the presence of surface dwellings (habitation structures), fireplaces, rubbish pits, foundation ditches, postholes and 5th century AD Gepid period graves.

In 2001 an area 20x20 m. (SI/2001-2003) was opened. In 2001 and 2002 we excavated the *Petreşti* occupation layer, represented by surface dwelling (2 houses), the most recent *Eneolithic* structures of the site (LUCA *et al*., 2002). During the same season the remains of a few surface dwellings, which belong to the ancient *Vinča* horizon (2 structures) were excavated. In 2003, we finished the excavation of the oldest *Vinča* Culture (phase A) layer (5 pit dwellings), other pits and early *Starčevo-Criş* (3 pit dwellings, three other pits). In 2003, we began the excavation of trench S II (15x16 m.), which was completed in 2004 and 2005. At this stage of the research, we suggested that layer Ia represented the first Neolithic horizon of this site, defined by hut H_{10} (2003), a rectangular dwelling, with rounded corners, partially cut, in the north-western corner, by another hut foundation: hut H_1 (1998, 2003) belonging to later stage (Ib layer) of the same culture.

Hut H_{10} / 2003 belong to *Starčevo-Criş* IB Culture

The fine and semi fine potsherds represent almost 83 % in this complex instead of 17% of coarse one with percentages similar to the other complexes analysed in this study

From the potsherds we analysed in this complex, 76% are well burned 49% of potsherds have polished surfaces. The exterior colour of potsherds had the next percentage (this not represent the painting, it is colour of surfaces): 27% of the

reddish colour, the next most common colours being brick (19%), dark brown (11%), whitish brown (10%) and grey (11%). We can also notice a great quantity of cherry-colour pottery (7%). The H_{10} (B_{10}) assemblage is clearly dominated by polished (185 potsherds) or smoothed ceramics (185 potsherds) (see Table 4) in equal proportions.

The study of the ceramic assemblage shows that hut H_{10} (2003) is one of the oldest dwellings of the Romanian Neolithic. This structure was almost entirely excavated. Regarding the pottery, parallels can be found with Gura Baciului (I). It did not show any trace of disturbance by other archaeological complexes. Its deposit yielded some unusual finds, such as, for instance, one single potsherd of well burnished red ware with white-yellowish painted dots, also characteristic of Gura Baciului I. The radiocarbon date for this complex is GrN-28520 = 7050+-70 BP (BIAGI *et al*., 2005: 49).

Hut H_1 / 1997, 2003 belong to *Starčevo-Criş* IC-IIA Culture

This is another very old dwelling discovered at Miercurea Sibiului-*Petriş*, which is more recent than hut H_{10}/2003. Unfortunately it was seriously damaged by the building of hut H_4 / 2003, which belongs to the *Vinča* period. H_1 / 1998 is a large hut, measuring 6x4 m. and, according to its stratigraphic position, belongs to horizon I b, which has been attributed to the SC Culture, period I C or II A.

The pottery is very similar to that of H_{10}: 78% of the vessels are of fine or semi-fine (Table 1), 94% of the potsherds contains chaff (Table 5), 6% of the pottery has sand inclusions, a percentage lower than that in level Ia, 49% of the potsherds are polished (Table 4), while 74% of them are well burned. We have noticed that 14% of the potsherds are highly fired (to the point of vitrification). The colour of their outer surfaces varies (Table 3): the reddish ones represent 13% of the total assemblage, while that of the brick-red ones is higher (23%). A peculiar item was found inside this hut. It is a figurine, 3.7 cm high and 2 cm wide in the shape of a bull's head. The tips of its horns are broken from ancient times. The body is rounded, somewhat thickened, decorated on the front part with deep, parallel zigzag incisions. This stylised object is made of fine pottery with black, well-polished surfaces.

These objects have been published under the name of bucrane idols or labrets (KARMANSKI, 1986, 12, Prilog 1). They are made of clay, stone, bone or other materials (KARMANSKI, 1986: 11). In Romania, they come from *Starčevo-Criş* (phase II A, included) settlements.

These objects belong to the *Starčevo-Criş* Culture, phase IIA (LAZAROVICI, 1983: 13; CIOBOTARU, 1998: 75; DRAŞOVEAN, 2001). The occurrence of this object together with characteristic pottery in hut H_1 suggests that this item is to be referred to the same period of the archaeological complex, which is to SC phase IC-IIA. As a consequence, it is contemporary with Gura Baciului I (a part of the complexes, hut H_8, hut H_{2a1}, pit P_{11}, hut H_{9b}, pit P_{33}, hut H_{10} and hut H_{2b} (LAZAROVICI and KALMAR, 1995: 68-79) or with *Pre-Criş* Ib – pit dwelling 9 at Ocna Sibiului-*Triguri* (PAUL, 1995: 30-31, Abb. 2, 5-6)), Şeuşa-*La cărarea morii* (dwelling 1/ 1997) (CIUTĂ, 1998; 2000) and the cave site of *Cauce Cave* (LUCA *et al*., 2004: 80-103). The

radiocarbon date for this complex is **GrN–28521**= 6920+-70 BP (BIAGI *et al*., 2005: 49).

2.2 ***Description of pit-house B$_1$BG from Gura Baciului***

B$_1$BG belongs to *Starčevo-Criş* IB and the pit contained a large quantity of painted ceramics with white decoration composed of spots, oblique lines, spots in arcades, lines without a precise contour on the light red or dark background of the pot. The majority of the pots were of finer fabric, the sandy monochrome paste having the colours: red, cherry-red and brown. Potsherds decorated with impressions, pinches and prominences are absent, only one fragment with polished lines being found. The materials from this context are defined as *Starčevo-Criş* IB with *Starčevo-Criş* IC elements. At this early stage some very fine paste ceramic fragments appear, decorated by "unsmoothing" or "pseudo-barbotine", actually wadding soft clay applied with the fingers, leaving a row of uneven levels, not being actually a barbotin (ledge applied). The finest potsherds represent, in this complex 31% instead of 39% of semi fine and 30% of coarse one. The B$_1$ Gura Baciului assemblage has an almost double the percentage of coarse and a smaller percentage of fine ceramics compared with the other complexes from these study. The B$_1$ Gura Baciului is different in the high quantity of chaff and sand (where the chaff prevails) in the potsherds mixture (Table 5). Other characteristics (see table 5) difference it from the others complexes analysed in this study and this is the reason the computer seriation process push it at the end of the series. The radiocarbon date for this complex GrA-24137 = 7140+-45 BP (BIAGI *et al*., 2005: 49) and is the oldest from Transylvania.

2.3 ***Description of Cauce Cave assemblage from Cerişor***

This complex is in the mountain area inside of a cave. The existence of a new monochrome horizon *might be* suggested on the basis of the discoveries made at Cauce Cave. A layer with fine, polished pottery exists in this cave, but we could not assign it a clear chronological significance (LUCA *et al*., 2004: 103). The potsherds analysed represents a highest percentage of semi fine ones (57%) (see Table 1). The finest potsherds are in 37% close to the other complexes analysed but the difference is in small amount of coarse one (6 %). The smoothed potsherds are almost double like the polished ones (Table 4). The same pattern like the other complexes is revealed in the Table 5 regarding the mixture.

We must mention that painted pottery has not been found here. The existence of these settlements in Romania is known thanks to the discovery of Iosaş-*Anele* (LUCA and BARBU, 1992-1994). A few Romanian archaeologists would attribute the *Early Neolithic* settlements without painted pottery (Monochrome horizon, following DIMITRIJEVIĆ (1974)) to phase IC-IIA of the *Starčevo-Criş* Culture, a chronological horizon in which the painted ware disappears or is scarcely represented (LAZAROVICI, 1973: 43 – which is also true of phase IA). At present, we know that ceramics with white painted dots characterise phases IB and IC of the *Starčevo-Criş* Culture; the presence of this kind of pottery during other phases of

the same culture might be accidental. At Şeuşa-*La cărarea morii*, pottery with white painted motifs is very rare (3-4 fragments – CIUTĂ, 2000: 67-68, Fig. 25/1-3; the first fragment is still unpublished), although the same paper questions the existence of a Monochrome horizon in Romania (CIUTĂ, 2000: 76).

This Monochrome period of Dimitrijević would represent the second migration period suggested by Gheorghe Lazarovici and Zoia Kalmar, later than Monochrome = Frűhkeramik from Thessaly (LAZAROVICI and KALMAR, 1995: 200; LAZAROVICI, 2001: 42; LAZAROVICI, 2005: 42).

2.4 *Description of L_1/1997 from* Şeuşa-*La cărarea morii*

The dwelling *L_1/1997* is situated at the base of the archaeological occupation from Şeuşa-*La cărarea morii*. It is a house built on a "*stone-floor foundation*" (CIUTĂ 2000, 55). A special category is represented by the exterior surface of a spherical, small pot, painted with white-yellowish dots, on a grey brick-coloured background. The dots are arranged in oblique parallel rows. The painting of the second fragment consists of a row of white dots on a purple background. The third fragment is a brown-reddish rim, with a light coloured band 8 mm wide. Complete pots have not been discovered and only in four cases was it possible to restore the vessels to obtain a full profile (CIUTĂ, 2000: 63). The author assigns this dwelling to the *Pre-Criş* I Culture (Paul's system) or to *Starčevo-Criş* IC Culture (Lazarovici system) (CIUTĂ, 2000: 75). We attribute this dwelling to the IC-IIA phase.

The fine and semi fine potsherds (Table 1) represent almost 83 % in this complex instead of 17% of coarse one with percentages similar to the other complexes analysed in this study.

The radiocarbon date for this complex GrN-28114= 7070+-60 BP (BIAGI *et al*., 2005: 49).

In conclusion, the typological proximity between materials from H_1 and H_{10} (Miercurea Sibiului), L_1 (Şeuşa), B_1 (Gura Baciului) and Cauce Cave is shown in **Tables 1 to 6**. They belong to the same chronological horizon with a closer relationship between B_1 (Gura Baciului), L_1 Şeuşa and B_{10} Miercurea Sibiului. Cauce Cave is individualising through some characteristics but keep close the basics ones. Only the rims of the pot table seriation is working perfect with absolute radiocarbon series (we have the same order) and we abtained a typological series in a chronological order. In all clusters (Table 1 to 6) the complexes are closely one to each other, and shows us a great unity in almost all characteristics. This is a different image compared with complex H_9 (from a later phase –it is described down in the text). Soon will be capable to compare more complexes from all phases of *Starčevo-Criş* Culture and will can to describe finest de differences between complexes and define perfectly each evolution phase.

3. The First Migration

The oldest migration route of the Neolithic communities at the northern Danube, in Romania, can be indicated now for the regions of Oltenia and western Transylvania due to recent stylistic and typological analyses as well as the absolute

chronology. The communities reached the Danube, after having crossed the Timok Valley, followed the route along the Oltenia sub-Carpathians, travelled across the mountains and settled in the area of the middle Mureş Valley, its left tributaries and the Someşul Mic River (Map 1).

Considering the Vardar-Morava route we easily understand why one can reach Oltenia coming from the Timok Valley. Thus it is clear why they chose to settle the higher areas of Oltenia. The hardest part is to prove how they crossed the mountains. Taking into account more recent routes contemporary researchers are tempted to believe that the passages of the Jiu and Olt rivers were used. But these have been opened to travellers since Roman times and the Middle Age (the Jiu and Olt rivers are quite wild in the passages, and was dangerous to cross them).

The route along the northern and southern transverse valleys of the mountains is more credible. In the oral tradition of the latest centuries it is called "the route of the cuckoo" (or more adapted in English "As the crow flies") It was used by villagers to avoid authorities (the distance could be covered with the cattle in three or four days) but in the same time was a way used for transhumance from ancient times. In our days it is still used by shepherds for transhumance process. The first Neolithic people may have used this route. In Transylvania Miercurea Sibiului, Şeuşa, Gura Baciului and Ocna Sibiului settlements are nearby open air salt deposits or salted lands. In the same time for Gura Baciului the percentage of the sheep-goat husbandry complex reach 33.2% and for Şeuşa is increasing to almost 57.1% The cattle husbandry complex represent 41.8% at Gura Baciului and 30.8% at Şeuşa (LUCA *et al*., 2005: 106).. The bone materials from Miercurea Sibiului are in working process but the dates seem to be closed to the previews presented. This shows us shepherd communities who searched salt for their herds. The latest data indicate another possible way of migration through Banat and South Crişana. This new route was revealed after reanalysing the archaeological remains from Lepenski Vir, the radiocarbon dates from Foeni and the materials from Iosaş-*Anele*. The lack of research made this hypothesis almost impossible to demonstrate. All new radiocarbon data suggest that the first phase of the *Starčevo-Criş* Culture (IA-IB) appeared during the last two centuries of the eighth millennium uncal BP, and probably lasted slightly more than 100 years (7200-7000 uncal BP) (BIAGI *et al*., 2005).

4. The Second Migration (Map 2)

The first phase was later followed by another, just after 7000 uncal BP (5900 Cal BC) (BIAGI *et al*., 2005). Some sites continued to be occupied during this phase (Cârcea, Ocna Sibiului, Miercurea Sibiului, Şeuşa, Gura Baciului), others were newly settled. The radiocarbon data of this phase follow those of the preceding one, without any apparent break. The second phase also appears to have lasted about 100 years (BIAGI and SPATARO, 2004: 10; BIAGI *et al*., 2005).

The way of living reveals new access routes during the second migration, by crossing the Poiana Ruscă Mountains after going through Banat. The sheep-goat (ovis/capra) husbandry complex represents at *Cauce Cave* almost 75 % from all

osteological remains, the pig (Sus Domesticus) almost 11.9 % and Bos Taurus only 3.5 %. (LUCA *et al*., 2005: 98).

It was to be expected that something like this would happen, because the number of dwellings suddenly increased covering the northern area of the Mureş River, as well as the area of the Crişul Alb River.

5. The evolution of the Early Neolithic after the third migration

By the end of the *Starčevo-Criş* phase IIB in Transylvania, the so-called "starčevisation" phenomenon begins (PAUL, 1989: 18). The settlement of Ocna Sibiului-*Triguri* lost its importance and did not develop the black painting characteristics of the late horizons of this cultural complex (PAUL, 1989: 21).

The cultural movement influenced Transylvania from west and south-west. The inhabitants of the *Early Neolithic* sites of the middle Mureş River (Miercurea Sibiului-*Petriş* and *Pustia* (Luncă), Orăştie-*Dealul Pemilor*, point X_8, Limba-*Bordane* and others) began to use ceramic decorative elements such as slip, applied decorations, incision or impressed patterns (PAUL, 1989: 21), besides black painting (DRAŞOVEAN, 1989: 42) or altars with stands, or with pierced stands.

These characteristics indicate a wide territory with cultural unity (PAUL, 1989: 24), known as the *Starčevo-Criş* cultural complex. Ocna Sibiului-*Triguri*, IIb and Miercurea Sibiului-*Petriş,* hut H_9 / 2003 (level Ic) belong to this phase.

Coarse pottery accounts for 23% of the potsherds recovered from Hut H_9, with a similar quantity of fine pottery (20%). The percentage of the semi-fine ware is overwhelming (57%). It is almost certain that we are facing a new southern impulse due to the fact that the 35% of potsherds contain sand, sand in small and big grains 75% of the potsherds are well burned and only 23% of them are polished. This slip occurs on 28% of the potsherds, which indicates clearly the beginning of the evolution to the classic stage of the culture. We find the colours (exterior surface of the potsherds) in equal proportions (black, black grey, light brown and dark brown, brown and whitish brown) except for brick-red (28%).

From phase III of Lazarovici typological list of the *Starčevo-Criş* cultural complex, one can easily detect the cultural influences on Transylvania from Banat, the Tisza Plain and from the regions south of the Danube. The first *Vinča* communities appear in Transylvania by the middle of this phase (LUCA, 1995-1996; LUCA *et al*., 2000; 2000b).

To conclude, we can see here, at this stage of research, several cultural horizons, some of them contemporary during the *final Early Neolithic*:

- (1) *Starčevo-Criş* IIIA-IVA communities, such as Orăştie-*Dealul Pemilor-X_8* (LUCA et al., 1998), Hunedoara-*Biserica Reformată* (DRAŞOVEAN, 1989), Miercurea Sibiului-*Pustia (Luncă)* (unpublished material).
- (2) Communities that appeared under the impact of the Polychromic technology, in south-eastern Transylvania. The main settlement of this type is Leţ (ZAHARIA, 1962; 1964).

- (3) Early *Vinča* communities, such as Romos-*La Făgădău* (LUCA, 1995-1996), Miercurea Sibiului-*Petriş*, horizon II and Limba (BERCIU and BERCIU, 1949; CIUGUDEAN, 1978: 50, 52, Fig. 8/3-16((for a synthesis of the early period of development of *Vinča* Culture in Transylvania see LUCA *et al*., 2000; 2000b).
- (4) Communities where *Starčevo-Criş* and *Vinča* materials are set in distinct and successive layers, such as Limba-*Bordane* (CIUTĂ, 2002) and Miercurea Sibiului-*Petriş* (horizon Ia-c - *Starčevo-Criş* and horizon IIa-b - *Vinča*).
- (5) Communities with an evolution towards linear ceramic (LBK) technologies (LUCA *et al*., 2000: 57-63; 2000b: 22-29).

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7. Tables, Maps and Graphics

Table 1 category	Semifine	Fine	Coarse	Total
Cauce	63	41	7	111
L_1 Şeuşa	193	160	70	423
H_{10}(B10)	155	162	65	382
$H_1(B_1)$	52	58	31	141
B_1GB	74	58	56	188
Total	537	479	229	1245

Table 1 – Ceramic categories.

Table 2	B_1GB	Cauce	$H_{10}(B_{10})$	L_1 Şeuşa	$H_1(B_1)$
Painting	20		1	3	
Incisions	2	5		1	
Printing(recording) Imprimare	6	8	2	3	1
Cuting (taieturi)	1	3		2	
Ledging (pseudo barbotin)	7		2	37	2
Tweaks (ciupituri)	4		1	26	
Lobe (alveolare)		4	6	11	7
Application (aplicare)	2	5		32	

Table 2 – potsherds ornamentation technology (decoration).

Table 3	$H_{10}(B_{10})$	$H_1(B_1)$	Cauce	L_1 Şeuşa	B_1GB
Reddish	104	18	8	37	1
Grey	42	9	7	10	10
Dark brown	44	13	22	14	15
Whitish brown	40	26	23	50	9
Brick-red	71	32	16	82	42
Dark-red (Cherry)	26	16	6	48	14
Black	7		3		6
Brown-reddish	1	2	1	16	
Yellowish	18	8	10	85	17
Black-grey	5	1	5	13	7
Light-brown	19	12	10	46	29
Rainbow				1	
Brown	3	1	2	12	7
Ashen - hoary				4	8
Red	1				10
Orange			1		11

Table 3 – potsherd exterior surface colour.

Table 4	$H_{10}(B_{10})$	L_1 Şeuşa	$H_1(B_1)$	Cauce	B_1GB
Ledge	2	52	2		1
Flour-like	6	10		3	
Polished	185	120	56	24	38
Smoothed	185	185	79	65	64
Polished slip	1	14	3	1	10
Coarse	1	5		6	61
Slip	1				12

Table 4 – potsherds exterior smoothing.

Table 5	$H_{10}(B_{10})$	L_1 Şeuşa	$H_1(B_1)$	Cauce	B_1GB
Sand, potsherds and silt	1				
Chaff and silt		1			
Chaff, Sand and gravel		32	1	6	
Sand	24	46	1	3	5
Sand and chaff	327	291	115	58	66
Fine Sand	10	13	5	1	12
Sand and graphite				1	
Coarse sand	5	7		1	9
Chaff and Sand	15	30	18	39	54
Chaff and potsherds		1			1
Sand and gravel		1		1	2
Sand and potsherds			1		5
Sand and silt		1			11
Sand with mica					29

Table 6	B_1GB	L_1 Şeuşa	$H_{10}(B_{10})$	$H_1(B_1)$	Cauce
B	6		1		
N	5	1		1	
M	7	5		1	
K	3	3			
G	1	1	2		
I	1	2	3	1	
V	1			2	2
Y	5	6	11	6	6
E	2	3		2	10
A	1	13	2	1	6
H	1	16	3	3	6
C		2			
P		2			
Z		1			
D			1		
L			1		
Q			2		
S			3		
F		13	4	4	
R			1	1	
J		1		3	1
U				1	1

Table 5 - Rims of the pots table, computer seriation table. The letters correspond to typology in Figure 1.

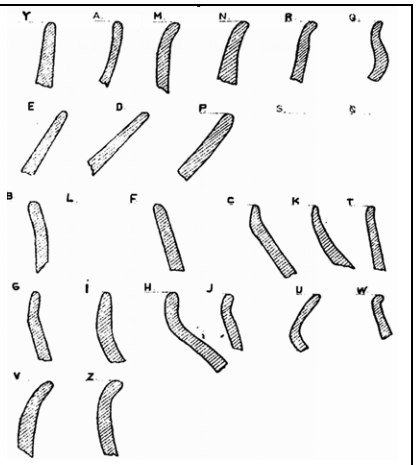
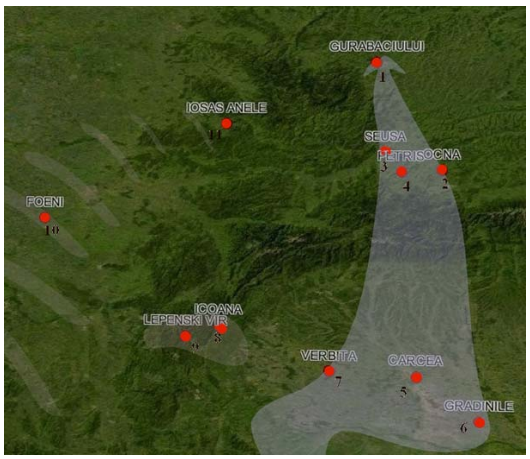
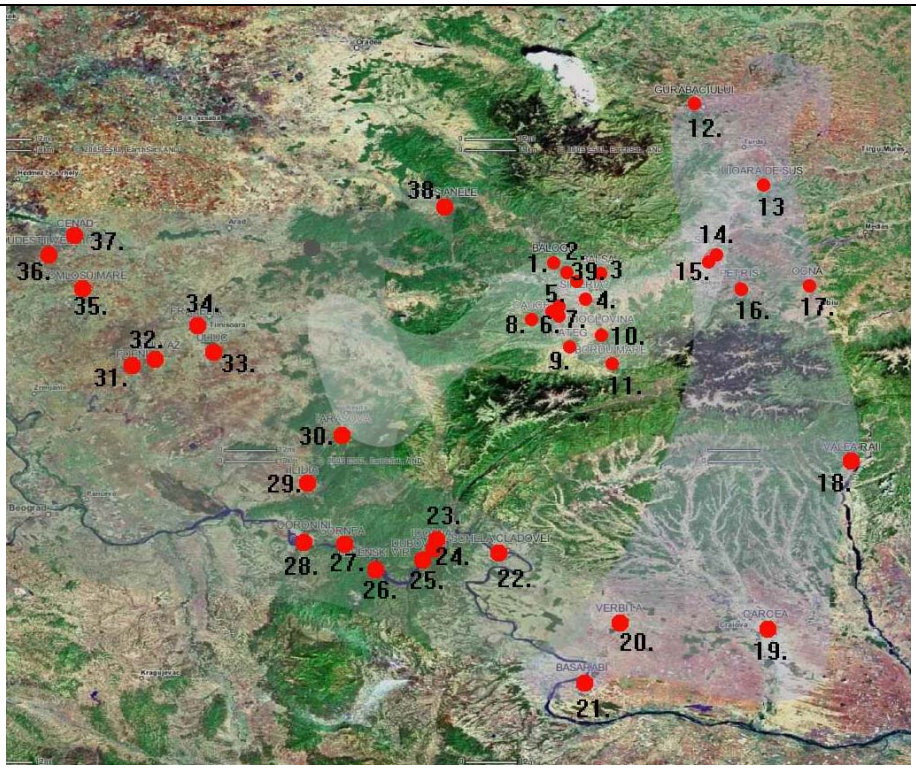


Figure 1 - Typology of the *Starčevo-Criş* Culture (MAXIM, 1999)



1. Gura Baciului
2. Ocna Sibiului
3. Şeuşa
4. Miercurea Sibiului - *Petriş*
5. Cârcea
6. Grădinile
7. Verbiţa
8. Icoana
9. Lepenski Vir
10. Foeni
11. Iosaş- *Anele*

Map 1 – The First Migration traces in the Romanian area.



Map 2 – ***The Second Migration traces in the Romanian area.*** 1. Balogu; 2. Crăciuneşti; 3. Balşa; 4. Simeria(?); 5. Peştisul Mic; 6. Dumbrava(?); 7. Manerău; 8. Cauce; 9. Haţeg; 10. Cioclovina; 11. Ohaba Ponor-*Bordu Mare*; 12. Gura Baciului; 13. Uioara de Sus; 14. Şeuşa-*La cărarea morii*; 15. Limba-*Bordane*; 16. Miercurea Sibiului-*Petriş*; 17. Ocna Sibiului; 18. Valea Răii (Copăcelu); 19. Cârcea; 20. Verbiţa; 21. Basarabi; 22. Schela Cladovei; 23. Ogradena; 24. Icoana; 25. Dubova-*Cuina Turcului*; 26. Lepenski Vir; 27. Gornea; 28. Coronini-*Pescari*; 29. Ilidia 30. Caraşova; 31. Foeni; 32. Giulvăz; 33. Uliuc; 34. Fratelia; 35. Comloşu Mare; 36. Dudeştii Vechi; 37. Cenad; 38. Iosaş-*Anele*; 39. Măgura-*Topliţa*.

8. References

BERCIU, D., 1958 – Neoliticul preceramic în Balcani. *Studii şi comunicări de istorie veche (şi arheologie)*, 9 (1): 91-100.

BERCIU, D., 1961 – Contribuţii la problemele neoliticului în România în lumina ultimelor cercetări. Bucureşti.

BERCIU, D., 1966 – Zorile istoriei în Carpaţi şi la Dunăre. Bucureşti.

BERCIU, D. and BERCIU, I., 1949 – Săpături şi cercetări arheologice în anii 1944-1947. *Apulum*, 3: 1-43.

BIAGI, P. and SPATARO, M., 2004 – New tadiocarbon dates from Criş Culture settlements of Banat and Transylvania (Romania). *Patrimonium Banaticum*, 3: 7-20.

BIAGI, P., SHENNAN, S. and SPATARO, M., 2005 – Rapid Rivers and Slow Seas? New Data for the Radiocarbon Chronology of the Balkan Peninsula. In NIKOLOVA,, L., Fritz, J. and Higgings, J. (eds.) *Prehistoric Archaeology & Anthropological Theory and Education. Reports of Prehistoric Research Projects*, 6-7: 43-51. Salt Lake City, Karlovo.

BORONEANŢ, V., 1968 – Neoliticul timpuriu în zona Porţilor de Fier. *Comunicări*, 7: 1-5,

BORONEANŢ, V., 1973 Recherches archéologiques sur la culture Schela Cladovei de la zone des „Portes de Fer". *Dacia*, 17: 5-39.

BORONEANŢ V., 1980 – Probleme ale culturii Schela Cladovei-Lepenski Vir în lumina noilor cercetări. *Drobeta*, 4: 27-42.

BORONEANŢ, V., 1996 – La 30 de ani de la începerea săpăturilor arheologice de la Schela Cladovei. *Drobeta*, 7: 3-11.

BREUNIG, P., 1987 – C^{14} – Chronologie des vorderasiatischen, südost-und mitteleuropäischen Neolithikums, Fundamenta. Monographien zur Urgeschichte*,* 13: 95-157. Köln.

BRUKNER, B., 1968 – Neolit u Vojvodini. Arheolosko drustvo Jugoslavije*, Vojvodanski Muzej, Belgrade – Novi Sad* Novi Sad.

BRUKNER, B., 2000 – Beitrag zum Studium synchroner Beziehungen zwischen der Karanovo I und der Protostarčevo (Starčevo I) Periode. *Karanovo. Beiträge zum Neolithikum in Südosteuropa*, 3: 287-310. Wien.

CIOBOTARU, D.L., 1998 – Plastica neolitică din aşezarea de la Foeni-Sălaş (jud. Timiş). *Analele Banatului* (serie nouă), 6: 73-82.

CIUGUDEAN, I., 1978 – Noi cercetări arheologice pe teritoriul judeţului Alba (I). *Apulum*, 16: 39-53.

CIUTĂ, M.M., 1998 – O locuinţă de suprafaţă aparţinând neoliticului timpuriu de la Şeuşa-La cărarea morii (com. Ciugud, jud. Alba). *Apulum*, 35: 1-14.

CIUTĂ, M.M., 2000 – Contribuţii la cunoaşterea celui mai vechi orizont al

neoliticului timpuriu din România. Cultura Pre-Criş – descoperirile arheologice de la Şeuşa-La cărarea morii. *Apulum*, 37 (1): 51-101.

CIUTĂ, M.M., 2001 – Contribuţii la cunoaşterea celui mai vechi orizont al neoliticului timpuriu din România: cultura *Pre-Criş* (II). *Apulum*, 38 (1): 9-26.

CIUTĂ, M.M., 2002 – O locuinţă neolitică timpurie descoperită în situl de la Limba-Bordane (jud. Alba). *Apulum*, 39: 1-30.

DRAŞOVEAN, F., 1989 – Cultura *Starčevo-Criş* în bazinul Mureşului mijlociu. *Apulum*, 26: 9-47.

DRAŞOVEAN, F., 2001 – Early Neolithic settlement at Timişoara-Fratelia, In DRAŞOVEAN, F. (ed.) *Festschrift für Gheorghe Lazarovici*. Bibliotheca Historica et Archaeologica Banatica, 30: 33-40. Timişoara.

DIMITRIJEVIĆ, S., 1974 – Das Problem der Gliederung der Starčevo-kultur mit besonder Rucksicht auf den Beiträg der südpannonischen Fundstellen zur Lösung dieses Problems. *Materialj*, X: 59-121.

DUMITRESCU, V., 1970 – Cu privire la cea mai veche cultură neolitică din România. *Studii şi comunicări de istorie veche*, *21, 2*: 187-198.

DUMITRESCU, V., BOLOMEY, A. and MOGOŞANU, M., 1983 – Esquisse d'une préhistoire de la Roumanie, Bucureşti.

GARAŠANIN, M., 1978 – Le néolithisation dans le sud-est et dans le centre de la Peninsule Balkanique, *Godišnjak*, 16: 31-44.

GARAŠANIN, M., 1980 – Les origines du néolithique dans le Bassin de la Méditerranée et dans le sud-est Européen. In KOZŁOWSKI, J.K. and KOZŁOWSKI, S.K. (eds.) *Problémes de la néolithisation dans certaines régions de l'Europe*: 57-72. Ossolineum, Kraków.

GIMBUTAS, M., 1989 – Civilizaţie şi cultură. Editura Meridiane, Bucureşti.

GIMBUTAS, M., 1997 – Civilizaţia Marii Zeiţe şi sosirea cavalerilor războinici, Editura Lucretius, Bucureşti.

JOVANOVIĆ, B., 1967 – La signification de certeins éléments de culte de groupe de Starčevo. *Starinar*, 18: 19-20.

KARMANSKI, S., 1986 – Donja Branjevina, Odžaci.

KARMANSKI, S., 1988 – Nalazi labreta, Odžaci.

KARMANSKI, S., 1988a – Rezultati novijih istraživanja na lokalitetu Donja Branjevina (referati i izveštaji), Odžaci.

KARMANSKI, S., 1989 – Donja Branjevina, Odžaci.

KARMANSKI, S., 2000 – Donja Branjevina. Archaološka Monografia. Odžaci.

LAZAROVICI, GH., 1975 – Unele probleme ale ceramicii neoliticului din Banat. *Banatica*, 3: 7-24.

LAZAROVICI, GH., 1977 – Gornea. Preistorie, *Caiete Banatica series*, V, Reşiţa.

LAZAROVICI, GH., 1979 – Neoliticul Banatului, vols. 1-2. *Bibliotheca Musei Napocensis*, IV, Cluj Napoca.

LAZAROVICI, GH., 1983 – Neoliticul timpuriu din zona Porţilor de Fier (Clisură*)*. *Banatica*, 7: 9-34.

LAZAROVICI, GH., 1984 – Neoliticul timpuriu în România. *Acta Musei Porolissensis*, 8: 40-104.

LAZAROVICI, GH., 1992 – Aşezarea neolitică timpurie de la Zăuan şi câteva dintre problemele privind neoliticul timpuriu din Balcani. *Acta Musei Napocensis*, 16: 25-59.

LAZAROVICI, GH., 1993 – Les Carpates Meridionales et la Transylvanie, In KOZŁOWSKI, J. (ed.) *Atlas du Néolithique Européen, L`Europe Orientale 1*. ERAUL, 45: 243-284. Liége.

LAZAROVICI, GH., 2001 – Despre locul descoperirilor de la Şeuşa în neoliticul timpuriu din sud-estul Europei. *Bibliotheca Musei Porolissensis*, 4: 37-47.

LAZAROVICI, GH., 2005 – Culturile Pre-Criş I, Pre-Criş II şi Postcriş I, Postcriş II. *Acta Terrae Septemcastrensis*, 4: 23-78.

LAZAROVICI, G. and KALMAR, Z.M., 1995 – Gura Baciului. Monografie Arheologică, *Muzeul Naţional de Istorie a Transilvaniei*, Cluj-Napoca.

LAZAROVICI, G. and MICLE, D., 2001 – Introducere în Arheologia informatizată, *Bilbiotheca Historica et Archaeologica Universitatis Timisensis*, III, Timişoara.

LUCA, S.A., 1995-96 – Die *Vinča*-Siedlung aus Rumess. Die A-Phase der *Vinča*-Kultur in Siebenbürgen. *Sargetia*, 26: 45-62.

LUCA, S.A., 1999 – Aspecte ale neoliticului şi eneoliticului din sudul şi sud-estul Transilvaniei. *Apulum*, 36: 5-33.

LUCA, S.A., 2002 – Eine zoomorphe Statuette aus der Jungsteinzeitlische Siedlung von Reussmarkt / Miercurea Sibiului / Szerdahely-Petriş. *Cultură şi civilizaţie la Dunărea de Jos*, 9: 96-106.

LUCA, S.A., 2004 – O statuetă zoomorfă stilizată descoperită în staţiunea de la Miercurea Sibiului-***Petriş*** (Jud. Sibiu, România) şi câteva opinii despre începutul neoliticului timpuriu din Transilvania*, Istros*, 11: 3-26, Brăila.

LUCA, S.A. and BARBU, M., 1992-94 – Aşezarea neolitică de la Iosaş-Anele (jud. Arad). *Sargetia*, 25: 13-24.

LUCA, S.A., ROMAN, C. and BĂICOANĂ, M., 1997 – Materiale arheologice din peşteri ale judeţului Hunedoara (I). *Corviniana*, 3: 17-32.

LUCA, S.A. and GEORGESCU, A., 1998 – Miercurea Sibiului-*Petriş*. *Cronica cercetărilor arheologice*, 1998: 44, Bucureşti.

LUCA, S.A. and – Miercurea Sibiului-*Petriş*. *Cronica cercetărilor*

GEORGESCU, A., 1999 *arheologice*, 1999: 64, Bucureşti.

LUCA, S.A., CIUGUDEAN, H., ROMAN, C. and DRAGOTĂ A., 2000 – Faza timpurie a culturii *Vinča* în Transilvania. Repere ale orizontului cronologic şi cultural. *Angustia*, 5: 37-72.

LUCA, S.A., CIUGUDEAN, H. and ROMAN, C., 2000b – Die frühphase der *Vinča*- Kultur in Siebenbürgen. Anhaltspunkte des chronologischen und ethnokulturellen horizontes. *Apulum,* 37 (1): 1-50.

LUCA, S.A., GEORGESCU, A. and SUCIU, C., 2001 – Miercurea Sibiului-*Petriş*. *Cronica cercetărilor arheologice*, 2001: 143.

LUCA, S.A., GEORGESCU, A., GONCIAR, A., BATIUK, S. and SUCIU, C., 2002 – Miercurea Sibiului-*Petriş*, *Cronica cercetărilor arheologice*, 2002: 204.

LUCA, S.A., ROMAN, C. and DIACONESCU, D., 2004 – Cercetări arheologice în Peştera Cauce (I), *Bibliotheca Septemcastrensis*, IV, Sibiu 2004.

LUCA, S. A., ROMAN, C., DIACONESCU, D., CIUGUDEAN, H., EL SUSI. G. and BELDIMAN, C., 2005 – Cercetări arheologice în Peştera Cauce (II), *Bibliotheca Septemcastrensis*, V, Sibiu 2005.

MATSANOVA, V., 1996 – Cult objects from the Early Neolithic site at the town Rakitovo. *Poročilo o raziskovanju paleolitika, neolitika in eneolitika v Sloveniji*, 23: 105-127.

MAXIM, Z., 1999 – Neo-Eneoliticul din Transilvania – date arheologice şi matematico-statistice. *Bibliotheca Musei Napocensis*, XIX, Cluj-Napoca.

MILOJČIĆ, V., 1949 – Chronologie der jungeren Steinzeit Mittel- und Südosteuropas. Berlin.

MILOJČIĆ, V., 1959 – Ausgrabungen in Thessalien. *Neue Deutsche Ausgrabungen im Mittelmeergebiet und im Vordern Orient*: 225-236, Deutsches Archeologisches Institut, Verlag Gebr.Mann, Berlin.

MILOJČIĆ, V. and ZUMBUSCH, V., 1971 – Die Deutschen Ausgrabungen auf der Otzaki-Magula in Thessalien. Das Frühe Neolithikum, I-II, Bonn.

PAUL, I., 1989 – Unele probleme ale neoliticului timpuriu din zona carpato-dunăreană. *Studii şi comunicări de istorie veche (şi arheologie)*, 40 (1): 3-28.

PAUL, I., 1992 – Cultura Petreşti, Editura Museion, Bucureşti.

PAUL, I., 1995 – Vorgeschichtliche Untersuchungen in Siebenbürgen, Alba Iulia.

PĂUNESCU, A., 1958 – Locuirea neolitică de la Dârţu-Ceahlău. *Studii şi*

comunicări de istorie veche (şi arheologie), 9 (2): 269-271.

PĂUNESCU, A., 1970 – Evoluţia uneltelor şi armelor de piatră descoperite pe teritoriul României, Bucureşti.

PĂUNESCU, A., 1979 – Cercetările arheologice de la Cuina Turcului-Dubova (jud. Mehedinţi). *Tibiscus*, 5: 11-56.

PAVÚK, J., 1993 – Beitrag zur Definition der Protostarčevo-Kultur. *Anatolica*, 19: 231-238.

ROODENBERG, J.J., THISSEN, L. and BUITENHUIS, H., 1990 – Preliminary Report on the Archaeological investigations at Ilipinar in NW Anatolia. *Anatolica*, 16: 61-144.

STANKOVIĆ, S., 1991 – Bull representation in the Early Neolithic. *Starinar*, 40-41 (1989-1990 (1991)): 35-42.

SREJOVIĆ, D., 1969 – Lepenski Vir, Beograd.

SREJOVIĆ, D., 1971 – Die Anfänge des Neolithikums im Berich des mittleren Donaurames. *Actes du VIII^e Congres International des Sciences Préhistoriques et Protohistoriques*, I (3): 252-262, Beograd.

SREJOVIĆ, D., 1978 – Néolithisation de la région des Portes de Fer. *Godišnjak*, 16: 21-29.

TARCEA, L., and LAZAROVICI, GH., 1996 – Zeus, sistem pentru gestiunea şi prelucrarea datelor arheologice, *Acta Musei Napocensis*, 31 (1): 683-689.

TASIĆ, N., 1973 – Neolitska Plastika. Beograd.

URSULESCU, N., 1984 – Evoluţia culturii Starčevo-Criş pe teritoriul Moldovei. *Suceava County Museum*, Suceava.

VLASSA, N., 1964 – În legătură cu neoliticul timpuriu de la Dârţu-Ceahlău. *Acta Musei Napocensis*, 1: 463-464.

VLASSA, N., 1966 – Cultura Criş în Transilvania. *Acta Musei Napocensis*, 3: 9-48.

VLASSA, N., 1976 – Neoliticul Transilvaniei. *Bibliotheca Musei Napocensis*, 3, Cluj-Napoca.

ZAHARIA, E., 1962 – Considerations sur la civilisation de Criş à la lumière des sondages de Leţ. *Dacia Nouvelle Série. Revue d'archéologie et d'histoire ancienne*, 6: 5-51.

ZAHARIA, E., 1964 – Consideraţii asupra civilizaţiei Criş în lumina sondajelor de la Leţ. *Studii şi comunicări de istorie veche*, 15 (1): 19-44.

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TELEORMAN VALLEY. THE BEGINNING OF THE NEOLITHIC IN SOUTHERN ROMANIA

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Key words: *early Neolithic, Teleorman Valley, diffusion, white painted pottery.*

Abstract. *This article presents the recent archaeological researches in Teleorman Valley, focused on the Early Neolithic habitation. For first time in Muntenia the recent researches have attested traces of a habitation belonging to the Early Neolithic. Chronologically these discoveries are synchronous with discoveries from the West side of the Olt Valley from Cârcea and Grădinile.*

This paper provides data analysis about the beginning of the Neolithic in Southern Romania, focused the recent archaeological researches in Teleorman Valley.

In 1865, J. Lubbock used the "Neolithic" term by giving it a technical meaning to distinguish the Paleolithic (the chopped Stone Age) from the Neolithic (the polished Stone Age). In time, the Neolithic became an age of deep changes in human society. A new way of life appeared, the main characteristics of which represented the basis for all future societies: agriculture, crafts, permanent settlements, architecture and spiritual life.

From the archaeological point of view, this period, placed at the beginning of the Neolithic, bore different names: Proto-Sesklo, Protostarčevo, Precriş (Paul 1989, Ciută 2005), Starčevo-Criş I (Lazarovici 1984), or more specifically, the cultural group Gura-Baciului-Cârcea (Dumitrescu 1974; Vlassa 1980), Cârcea-Grădinile (Nica 1991, 1995). Every culture, every cultural group was divided in phases, sub-phases, and periods within a complex network of chronological synchrony.

The new way of life was first attested in Oltenia region, Southern Romania. The research carried out by M. Nica in the '70s and '80s revealed an area heavily inhabited at the beginning of the Neolithic (Nica 1976, 1981). The Neolithic had been brought from the South, more precisely, from Thessaly, from the Protosesklo culture area, by a population that had followed the Struma-Isker Valleys up the Danube, from where they had got in Oltenia through Jiu and Olt Valleys (Nica 1995: 11-28).

The researches from Cârcea and Grădinile revealed the first Early Neolithic settlements on the west side of the Olt River. Later, their list would be completed by other discoveries to Verbiţa, Vlădila, Şimnic, Studina and Banu Măracine. The author, M. Nica named those discoveries "the Cârcea cultural group", with two

variants, Cârcea, in the lower basin of the Jiu River and Grădinile in the basin of the Olt River (Nica 1991, 1995).

Cârcea "La Hanuri" (Coşoveni commune, 9 km South-East from Craiova) is placed at the border between the upper and lower Jiu River terrace, on both sides of the Cârcea River (Figure 1/2). The site was destroyed, on a surface about 30x30 m having been discovered 9 Neolithic complexes. The Neolithic level had a thickness of 50-70 cm. The Neolithic features are represented by pit-huts or agglomerations of potsherds and bones, "which might be considered as being remains of surface huts". According to the ceramic typology, M. Nica identified three levels. The vessels were painted in white on a red background, but also they had cherry or brown colors on orange background. The decorative motifs were represented by dots, lines, networks, triangles, spirals. The ceramics was also decorated with incisions and impressions. The painted ceramics is extremely scarce (0.15% in level III) (Nica 1976).

Grădinile "La Islaz" site is placed at the basis of the little river that flows through Grădinile commune, 20 km South of Caracal town and about 15 km west from the Olt Valley (Figure 1/2). At Grădinile there have been discovered a few complexes, both pits and dwellings, in a cultural level of 40-50 cm thickness. The dwellings consist of agglomerations of potsherds, bones, stones, building material and hearth remains. The painting is white on a red background or red or black on a light background. The motifs are similar those from Cârcea, such as dots, lines, networks and triangles. There are also decorated potsherds with impressions and incisions. Fragments of small altar tables, decorated with excised triangles, incisions and applications they are present too. The typology includes semi-spherical, curved and conical shapes with annular or lobed small pedestal base, and vessels with high, outwardly tilted rims (Nica 1981).

For a long time, Muntenia (Vallachia) had been considered out of the initial Neolithic starting process, the reasons for which having been the configuration of the ancient environment, the Black Sea Neolithic transgression for Dobrogea and South-Western Muntenia or, more probably, the lack of researches. The settlements belonging to Starčevo-Criş culture appeared later in the area between the Olt and Vedea Rivers, as well as in the area of the Carpathian Hills (Teodorescu 1963). The 30 sites belong to the Early Neolithic, but not to the earliest (Cârcea-Grădinile), this one being absents so far from the territories East of the Olt River. The discoveries revaluation together with the new discoveries revealed a new image of the Early Neolithic in Muntenia (Mirea 2005).

The recent researches from the Teleorman Valley brought useful information about the beginnings of the Neolithic in Southern Romania. Those researches were undertaken within Southern Romania Archaeological Project (SRAP), an agreement between the National History Museum, the Teleorman County Museum and Cardiff University (Bailey et al. 1999, 2001) (the project has been founded by the *British Academy*, the Society of *Antiquaries of London*, the *Cardiff University*, the *Romanian Ministry of Culture* and the *Teleorman County Council* and has been directed by Dr. Douglass W. Bailey, Head of *Cardiff Archaeology*, *Cardiff*

University and Dr. Radian R. Andreescu, researcher with the *National History Museum*, Bucharest). One of the most important researched sites of this project is Măgura-Buduiasca (Figure 1/1). The site, discovered in 2001, is placed on the lower, North-Western terrace of the Teleorman River, near Alexandria town, about 60 km east from the Olt River, and about 45 km north from the Danube River. The research objective is the Neolithic habitation, belonging both to the Early Neolithic (Starčevo-Criş culture) and to the Late Neolithic (Dudeşti and Vădastra cultures) (Andreescu, Bailey 2002, 2004, 2005).

Recent researches attested, first time in Muntenia, traces of a habitation belonging to the Early Neolithic, chronologically synchronous with discoveries from the West side of the Olt Valley from Cârcea and Grădinile. The researched area, situated about 300 m from the actual river flow, looks like a prominence on the secondary Eastern terrace of the Teleorman River (Andreescu et al. 2007).

Few sections had been made on the Eastern side of the site (Figure 2). When archaeological features had been identified, some of the sections were enlarged. One feature is represented by the remains of a surface dwelling (Figure 3). Its dimensions could not be accurately traced because it was strongly affected by modern works. The floor, better preserved on the south side, with a thickness of 2-5 cm, had been made of little fragments of calcareous white-grey soil, directly on the yellow-grey soil, archaeological sterile. A kiln had been identified on the south side, most of which destroyed by medieval and modern pits.

The archaeological materials, like the assembly of potsherds, animal bones and stones, were massed on the north side, not directly on the floor, but about 20-30 cm above it. The deposition pattern suggests that the dwelling had been abandoned and later reused as a garbage pit. The degree of fragmentation of ceramic potsherds, the eroded surface showing a long exposure, the presence of animal bones and shells also imply this fact. Some pits of different sizes, oval shapes, are other Neolithic features. They had been used as garbage pits.

The archaeological materials are composed of agglomerations of potsherds, animal bones, shells, stones, bones and flint fragmentary tools, massed in the lower parts of the pits.

The lithic material is composed of a series of tools and flakes, most of which had been made of flint. From flint there had been made: blades, blade fragments, some having luster traces (sickle blades), and scrapers, all in a various chromatic scale: yellow-grey, white-grey, grey, brown, black-brown (Figure 4). There are also three pieces of black obsidian, two blades and a scraper. There had been found isolated pieces of quartz and quartzite.

The bone tools are represented by awls, needles, small chisels, spatulas and lutes (Figure 5).

In general, the pottery is characterized by the presence of a reduced number of vessels or complete forms. The closed forms are represented by spherical vessels, prominent in the lower part, with a square or annular bottom, of different sizes. Usually the fine category has a polished surface, in nuances of red and brownish-red (Figure 6), but also in black, black-brownish, beige or grey.

There are also fragments that come from bigger-sized vessels, meant for goods storage, which belong both to the undecorated, coarse category and to the fine one, having the surface painted in the above-mentioned chromatic nuances (Figure 7/1, 2).

The opened forms are illustrated by bowls with straight, alveolate lips. The ceramic is coarse, with a rough exterior surface, but polished and painted on the interior (Figure 7/3, 5, 6).

Quite rarely present, the decoration is made by plastic applications, vertically perforated buttons, alveolate girdles and prominences (Figure 7/4, 8/1, 2). Incised decoration can rarely be found, as well as the decoration made by impressions (Figure 8/5, 6).

The ceramics painted in white appears in a low percent, about 1%. The background color is obtained by burning or by painting. The decorative motifs are: parallel lines, lines disposed in networks or zigzags, semi-circles and points. The same white painting is to be found in every complex (Figure 9/1-9; Figure 10).

The pottery fabric analysis shows that the main mineral inclusion is the quartz in clear and milky varieties. There are, also, feldspar, iron oxide siltstone, calcareous siltstone and pyroxene (van As, Jacobs 2006).

It is interesting point out that, after the analyses on the technology of pottery fabric, analyses done on lots belonging to Măgura settlement and which also belong to the entire Neolithic sequence in the area (Starčevo-Criş, Dudeşti, Vădastra), we have found out a technological continuity along the time, changes having been done only with respect to the shape and the decor of the vessels (van As, Jacobs, Thissen 2004: 126; 2005: 67; van As, Jacobs 2006). Moreover, the analysis of Boian and Gumelnita ceramic sets, taken out from closely nearby settlements has proved that there are mostly the same technological elements. (van As, Jacobs, Thissen 2006: 146). In fact, the analysis of some samples (thins sections) belonging to early Neolithic Romanian settlements (Banat and Transylvania) and also from Serbia (Voivodina and Slavonia) proved that the potters manufactured the ceramics using the same "recipe": non-calcareous clay, which contains alluvial sand, with various inclusions (quartz, moscovite mica, polycrystalline quartz, feldspar, plagioclase, pyroxene) and organic material (cereals chaff). Despite the typological diversity the pottery is homogeneous (Biagi et al. 2005: 45).

A fragment of a wooden, open-shaped vessel represents a special discovery, considering the perishable material of which it was made. It is a rim fragment from an open vessel, probably a bowl (Figure 9/10).

There have also been identified fragments from rectangular “altars”, with four legs, some decorated with "wolf tooth" and white filled (Figure 11/8), and others decorated with lines and incised points.

The anthropomorphic plastic art is illustrated by some fragments from different figurines (Figure 11/1-3). The head of a figurine can be noticed, with an oval shape and with medially prominent nose, while a conical prominence suggests the chin (Figure 11/1) (Andreescu, in press).

The zoomorphic plastic art is represented by some pieces, such as: a bovine figurine, almost completely preserved, another fragment of a bovine figurine of a bigger size, and an ovine head very realistically modeled (Figure 11/4, 5).

A clay labret - bucrania or zoomorphic amulet - (Figure 11/6) and a clay nail (Figure 11/7) are the indicators for this very early Neolithic horizon (Elenski 2004b).

The early Neolithic discoveries from Măgura can be inserted into a larger context of the similar discoveries from the Lower Danube. On the basis of the discovered materials, their might be connections between the lower basin of the Olt River and the basins of the Iantra and Rusenski Lom Rivers.

The researches developed, during the last decade and a half, in the north-central Bulgaria created a different image about the early Neolithic, as well as about its origin in this part of Europe. There is one hypothesis that suggested the Anatolian origin, get across through Marica Valley and Polyanitsa Plain in the east side of the Balkans (Elenski 2004a: 71). This hypothesis contradicts the traditional one, meaning the Central-Balkan variant, which explain that the Neolithic populations, having come from Thessaly, followed the valleys of the Struma and Isker towards the North and, then, along the Danube, following its streams, reached the East, up to the Rusenski Lom basin (Figure 1/2). The penetration had been a rapid and strong one, across a large geographical area and the early settlements (belonging to the so-called Monochrome phase), even if singular and isolated, strikingly possess the same ceramics, similar from the technological and typological viewpoint (Todorova 1995: 83). In fact, the hypothesis of an extremely rapid diffusion of the Neolithic in the Central Balkans area, where the hydrographic network had played an important role, has been reiterated by recent series of ^{14}C dates, but also on the basis of the pottery fabric, of the presence of some specific objects: stamp seals, labrets and bone spatulas (Biagi et al. 2005: 45). Therefore we could explain, at least as a working hypothesis, according with the present stage of the researches, the early Neolithic discoveries in Măgura. Further researches, associated with multi-disciplinary studies and a series of ^{14}C dates, might offer new information about the beginning of the Neolithic in this part of Southern Romania.

References

Andreescu, Bailey 2002 – R. R. Andreescu, D. W. Bailey, *Măgura-Lăceni-Vitănești, (com. Măgura, com. Orbeasca, sat Lăceni, com. Purani, sat Vitănești, jud. Teleorman. Punctele: Lăceni „Valea Cioroaica", Măgura (CLA 2), Măgura-Bran (CLA 001), Măgura-Buduiasca (TELEOR 003), Vitănești (TELEOR 007)*, in *Cronica Cercetărilor Arheologice din România, Campania 2001*, CiMeC-Institutul de Memorie Culturală, București, 2002: 195-199.

Andreescu, Bailey 2003 – R. R. Andreescu, D. W. Bailey, *Măgura, com. Măgura, jud. Teleorman. Punct: Măgura - Buduiasca, TELEOR 003*, in *Cronica Cercetărilor Arheologice din România, Campania 2002*, CiMeC-Institutul de Memorie Culturală, București, 2003: 189-190.

Andreescu, Bailey 2004 – R. R. Andreescu, D. W. Bailey, *Măgura, com. Măgura, jud. Teleorman. Punct: Măgura - Buduiasca, TELEOR 003*, in *Cronica Cercetărilor Arheologice din România, Campania 2003*, CiMeC-Institutul de Memorie Culturală, București, 2004: 184-189.

Andreescu, Bailey 2005 – R. R. Andreescu, D. W. Bailey, *Măgura, com. Măgura, jud. Teleorman. Punct: Măgura - Buduiasca, TELEOR 003*, in *Cronica Cercetărilor Arheologice din România, Campania 2004*, CiMeC-Institutul de Memorie Culturală, București, 2005: 224-234.

Andreescu *et al*. 2007 – R. R. Andreescu, P. Mirea, P. Zaharia, A. Bălăşescu, R. Valentin, C. Haită, D. W. Bailey, S. Mills, L. Thissen, A. van As, L. Jacobs, *Măgura, com. Măgura, jud. Teleorman, Punct: Buduiasca-Boldul lui Moş Ivănuş, TELEOR 003*, in *Cronica Cercetărilor Arheologice din România, Campania 2006*, CiMeC-Institutul de Memorie Culturală, București, 2007: 226-228.

Andreescu in press – R. R. Andreescu, *Valea Teleormanului. Considerații asupra plasticii antropomorfe*, in Studii de Preistorie, IV, in press.

van As, Jacobs 2006 – Abraham van As, Loe Jacobs, *Fabric analysis of pre-Criş pottery from TELEOR 003*, intern report, 2006.

van As, Jacobs, Thissen 2004 – A. van As, L. Jacobs, L. Thissen, *Preliminary data on Starčevo-Criş and Dudeşti pottery from Teleor 003, Teleorman River Valley, Southern Romania*, in *Leiden Journal of Archaeological Ceramic Studies*, 20, 2004:

121-127.

van As, Jacobs, Thissen 2005 – A. van As, L. Jacobs, L. Thissen, *Vădastra pottery from Teleor 003, Teleorman River Valley, Southern Romania: a preliminary report*, in *Leiden Journal of Archaeological Ceramic Studies*, 21, 2005: 61-68.

van As, Jacobs, Thissen 2006 – A. van As, L. Jacobs, L. Thissen, *Preliminary data on Boian and Gumelnița pottery from Teleor 008 and Măgura-Bran respectively, Teleorman River Valley, Southern Romania*, in *Leiden Journal of Archaeological Ceramic Studies*, 22, 2006: 137-147.

Bailey *et al.* 1999 – D.W. Bailey, R.R. Andreescu, S. Mills, *Southern Romania Archaeological Project. Preliminary Report 1998*, School of History and Archaeology, Cardiff University, 1999.

Bailey *et al.* 2001 – D.W. Bailey, R.R. Andreescu, S. Mills, S. Trick, *Southern Romania Archaeological Project. Second Preliminary Report*, School of History and Archaeology, Cardiff University, 2001.

Bailey *et al.* in press – D. W. Bailey, P. Mirea, L. C. Thissen, S. Mills, R. Andreescu, *On the early Neolithic in Southern Romania: context, results, and agenda for research*, in Studia Prehistorica.

Biagi *et al.* 2005 – P. Biagi, S. Shenna, M. Spataro, *Rapid Rivers and Slow Seas? New data for the Radiocarbon Chronology of the Balkan Peninsula*, in L. Nikolova and J. Higgins (eds.), *Prehistoric Archaeology and Anthropological Theory and Education. RPRP*, 6-7, 2005: 41-52.

Ciută 2005 – M. Ciută, *Începuturile neoliticului timpuriu în spațiul intercarpatic transilvănean*, seria *Bibliotheca Universitatis Apulensis*, Ed. Aeternitas, Alba Iulia, 2005.

Dumitrescu 1974 – Vl. Dumitrescu, *Arta preistorică în România*, Ed. Meridiane, București, 1974.

Elenski 2004a – N. Elenski, *Cultural Contacts of North-Central Bulgaria with Thrace and the Marmara Area in the Early Neolithic*, in V. Nikolov, K. Băčvarov and P. Kalcev (ed.), *Prehistoric Thrace*, Sofia-Stara Zagora, 2004: 71-79.

Elenski 2004b – N. Elenski, *Frühneolitische zoomorphe Figurinen aus dem Zentralen Nordbulgarien*, in V. Nikolov and K. Băčvarov (ed.), *Von Domica bis Drama. Gedenkschrift für Jan Lichardus*, Sofia, 2004: 17-24.

Lazarovici 1984 – Gh. Lazarovici, *Neoliticul timpuriu în România*, in *Acta Musei Porolissensis*, Zalău, VIII, 1984: 49-104.

Mirea 2005 – P. Mirea, *Consideraţii asupra locuirii Starčevo-Criş din sud-vestul Munteniei*, în *In Honorem Silvia Marinescu-Bîlcu, CCDJ*, XXII, 2005: 37-52.

Nica 1976 – M. Nica, *Cârcea, cea mai veche aşezare neolitică de la sud de Carpaţi*, in *SCIVA*, 27, 4, 1976: 435-463.

Nica 1981 – M. Nica**,** *Grădinile, o nouă aşezare a neoliticului timpuriu în sud-estul Olteniei*, in *AO*, 1,1981: 27-39.

Nica 1991 – M. Nica, *Le groupe culturel Cârcea-Grădinile dans le contexte du Néolitique balkanique*, in *Zbornik Narodnog Muzeja*, Beograd, XIV, 1:103-112.

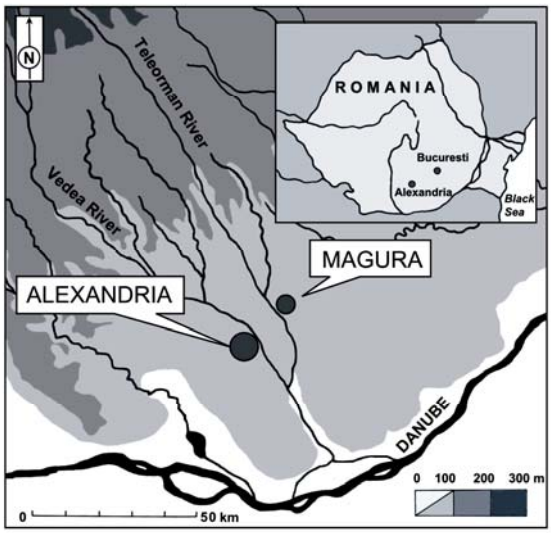
Nica 1995 – M. Nica**,** *Le groupe culturel Cârcea-Grădinile dans la contexe neolithique balcanique et anatolien*, in *AMN*, XXXII, I, 1995: 11-28.

Paul 1989 – I. Paul**,** *Unele probleme ale neoliticului timpuriu din zona carpato-dunăreană*, in *SCIVA*, 40, 1989: 4-27.

Teodorescu 1963 – V. Teodorescu, *Cultura Criş în centrul Munteniei (pe baza săpăturilor arheologice de la Târgşorul Vechi)*, in *SCIV*, XIV, 2, 1963: 251- 268.

Todorova 1995 – H. Todorova, *The Neolithic, Eneolitic and Transitional Period in Bulgarian Prehistory*, in D.W.Bailey and I. Panayotov (ed.), *Prehistoric Bulgaria*, monographs in World Archaeology, No. 22, Prehistory Press, Madison, Wisconsin, 1995: 79-98.

Vlassa 1980 – N. Vlassa, *Din nou despre poziţia stratigrafică şi cronologică a orizontului "Gura Baciului I"*, in *Marisia*, X: 691-697.



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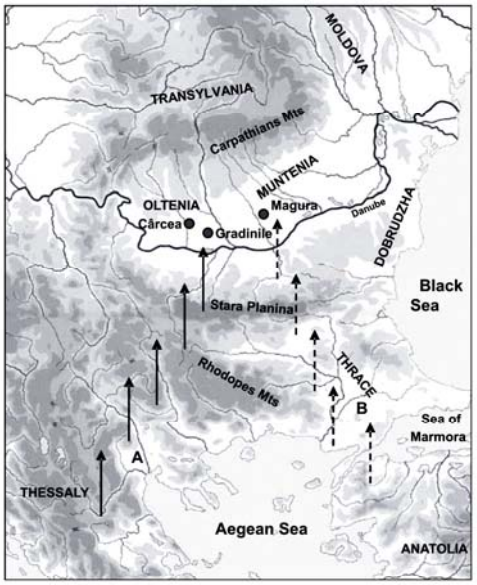
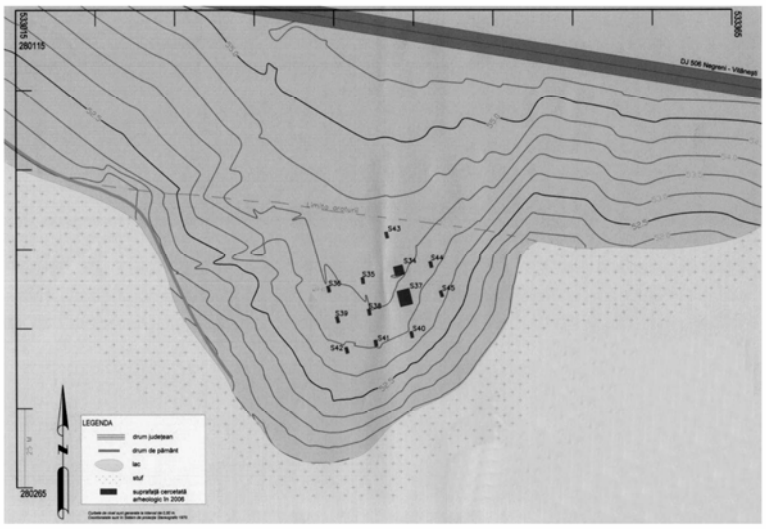


2

Location of Măgura settlement (1).
The virtual ways of early neolithic comunities penetration towards the Danube area (2).

Figure 1

1



2

Măgura settlement. South-east side (1). General plan of excavation from 2006 (2).

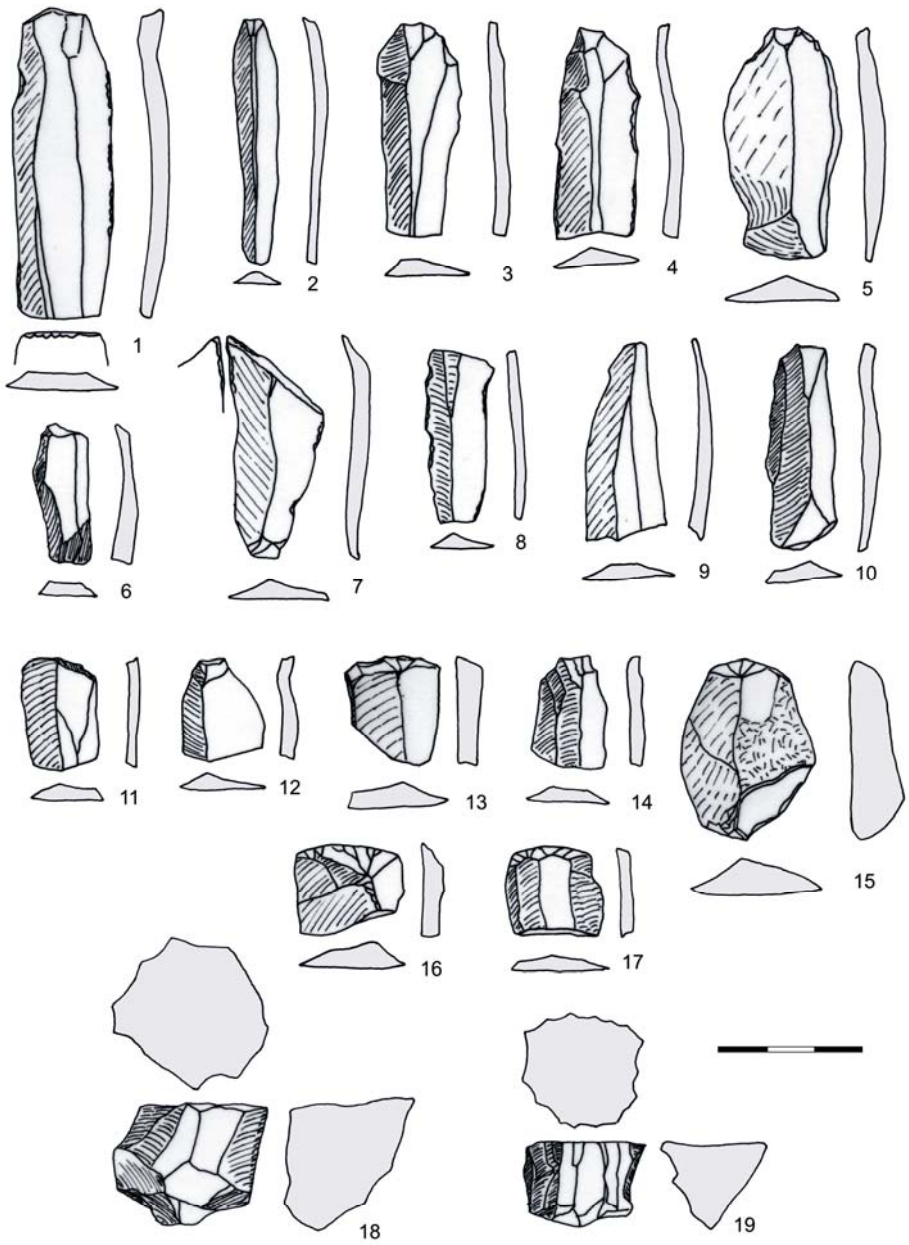
Figure 2

1

2

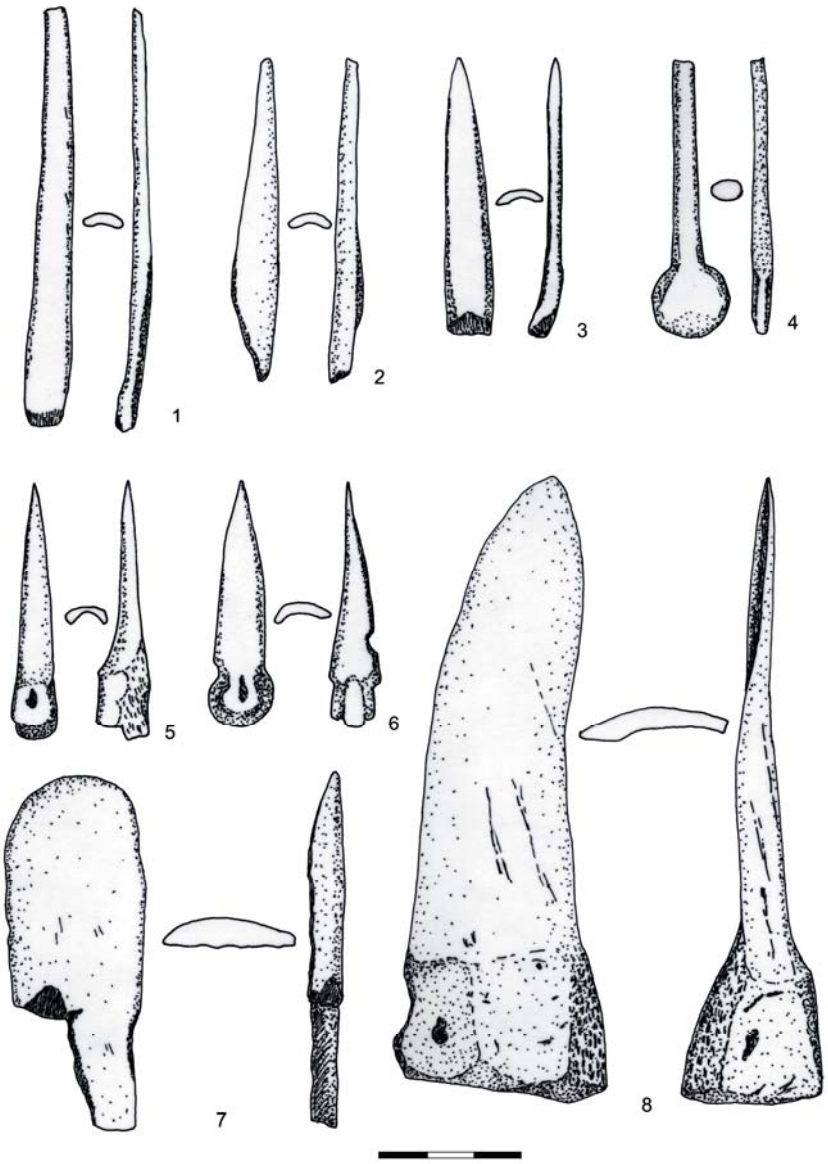
The remains of a surface house (1). Details with broken pots „in situ" (2).

Figure 3



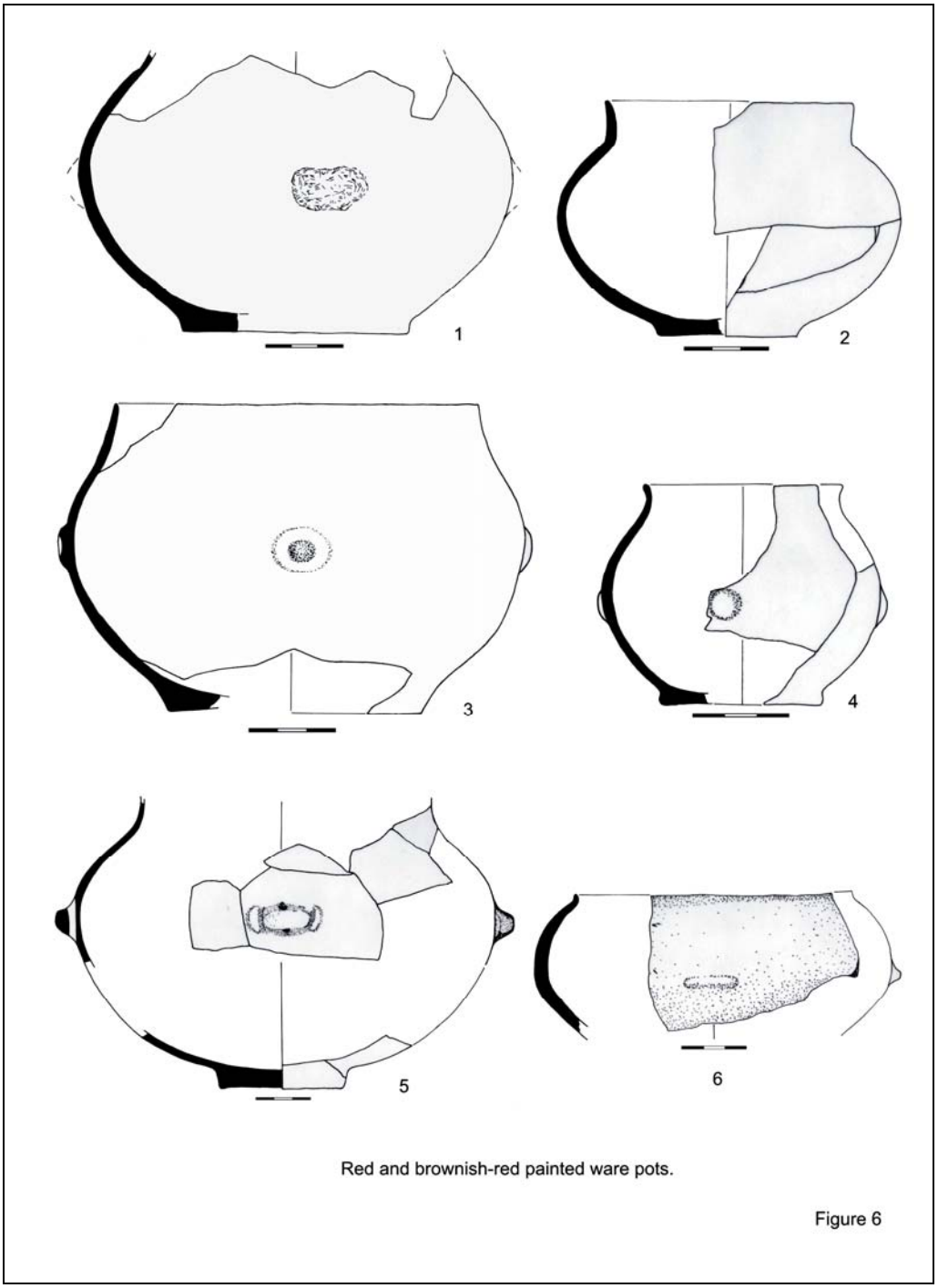
Silex made tools: blades and segments of blades (1-2, 7-12), sickle blade (6), scrapers (13-17) and cores (18, 19).

Figure 4



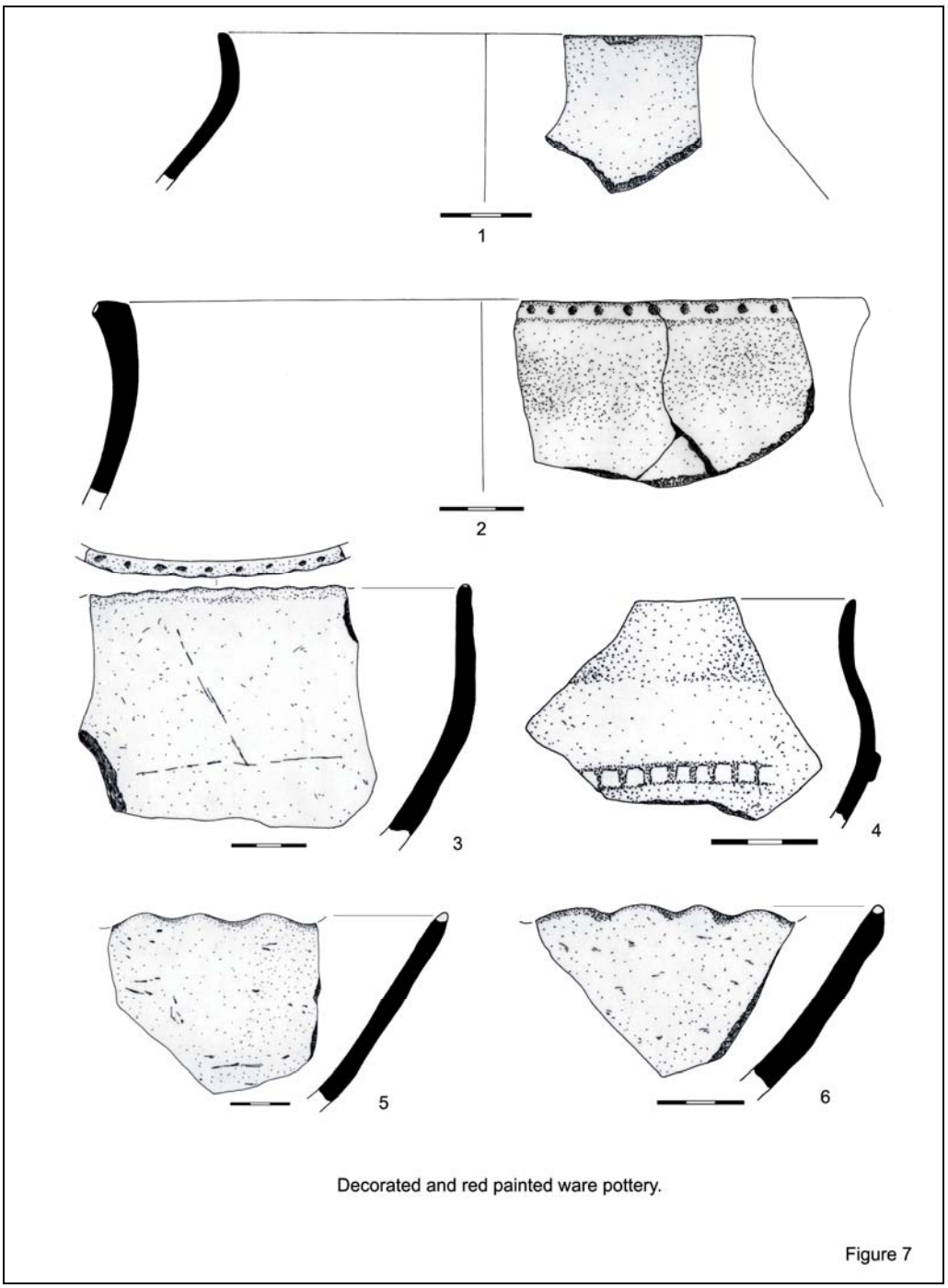
Bone made tools: pricks (1-3, 5, 6), needle (4), small chisel (7) and lute (8)

Figure 5



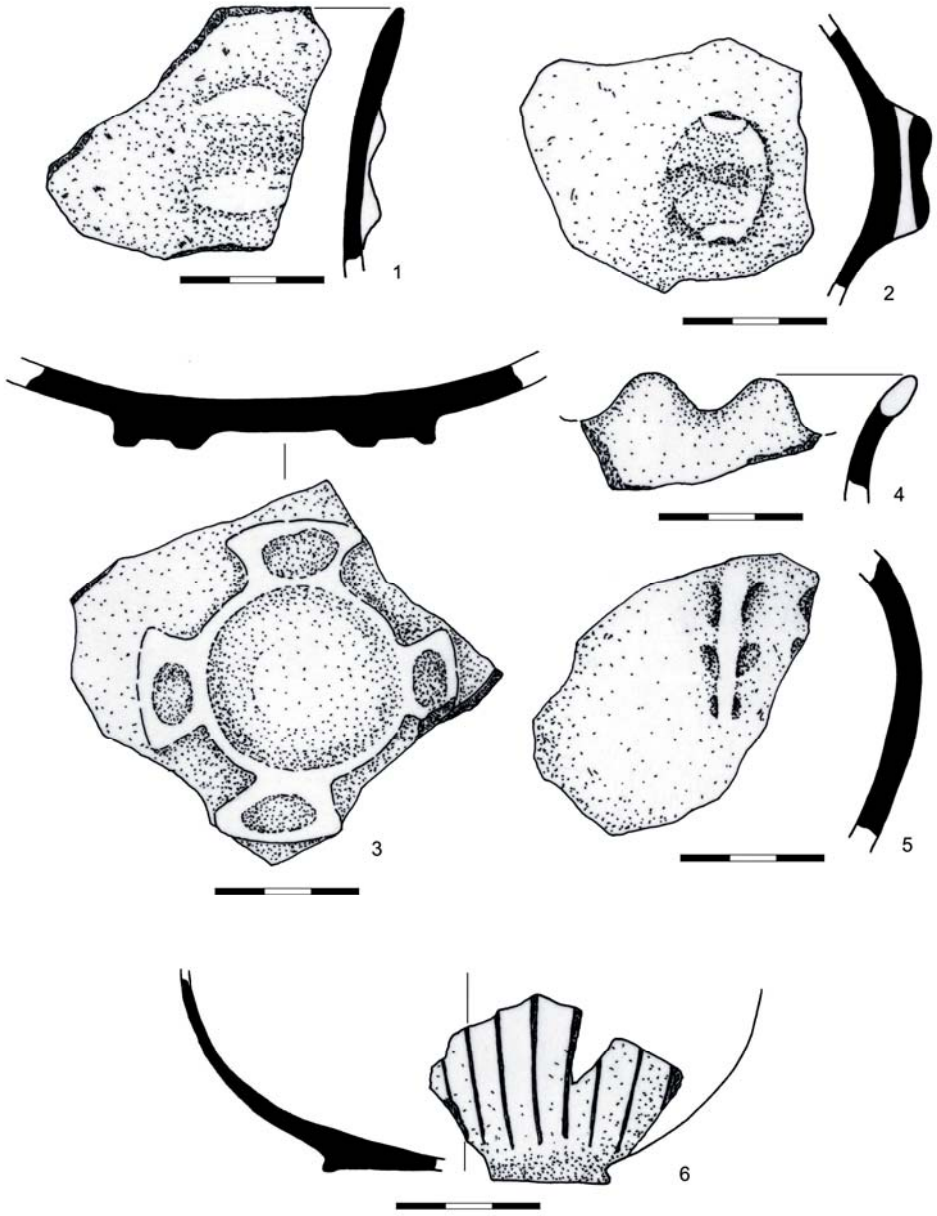
Red and brownish-red painted ware pots.

Figure 6



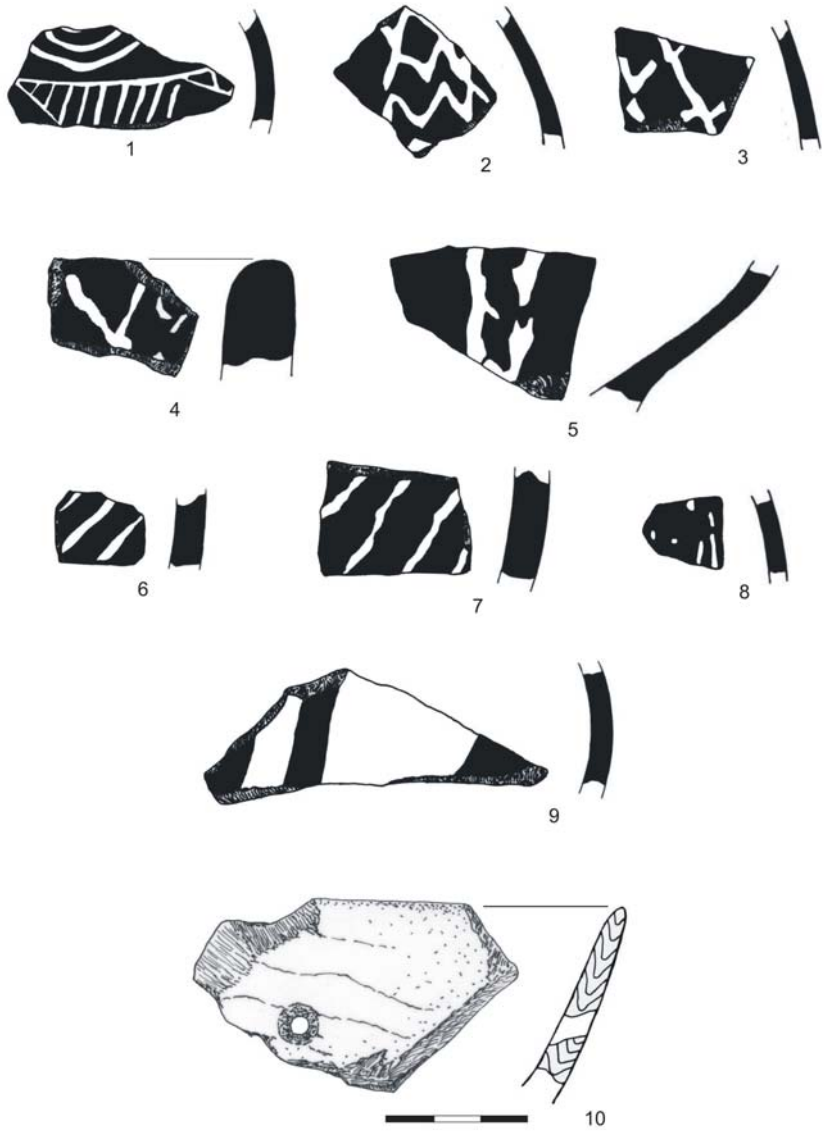
Decorated and red painted ware pottery.

Figure 7



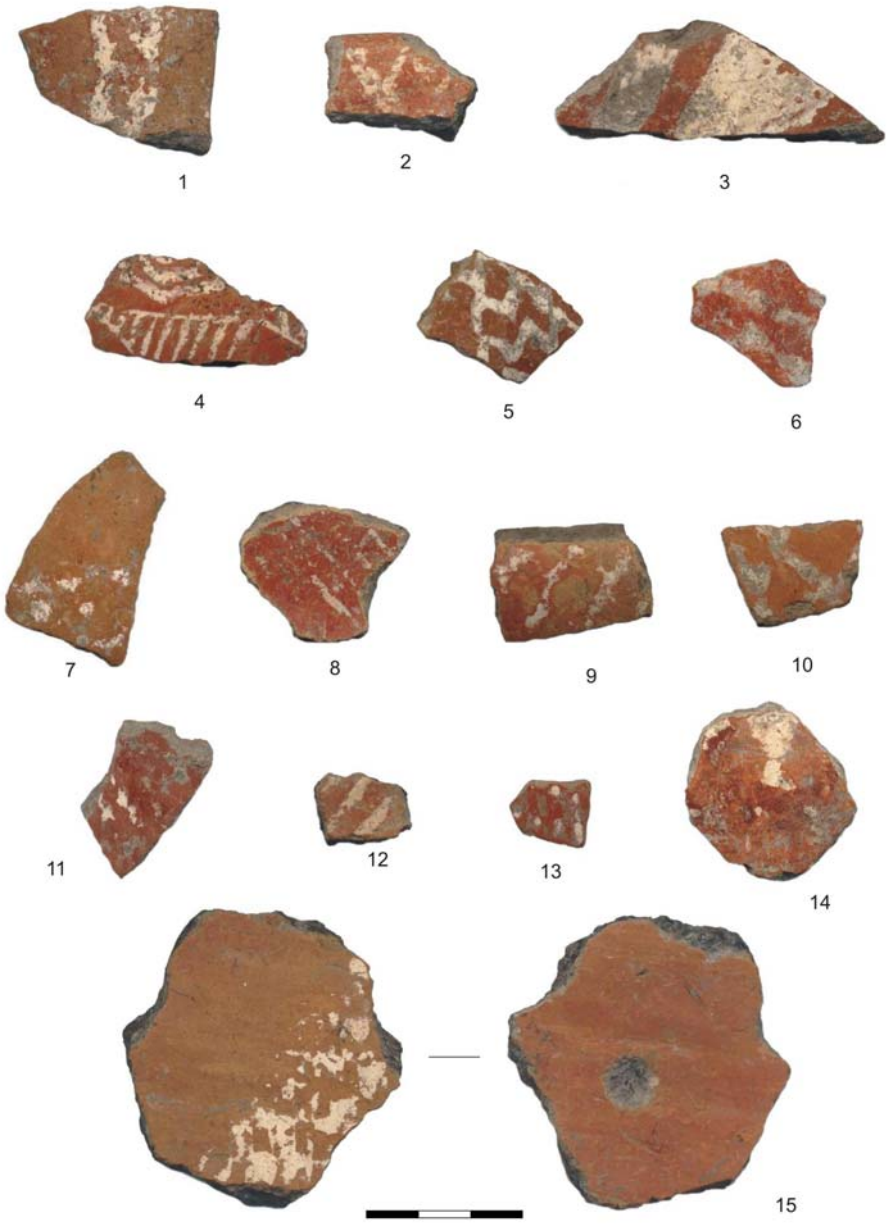
Decorated and red (1-5) or brown (6) painted ware pottery.

Figure 8



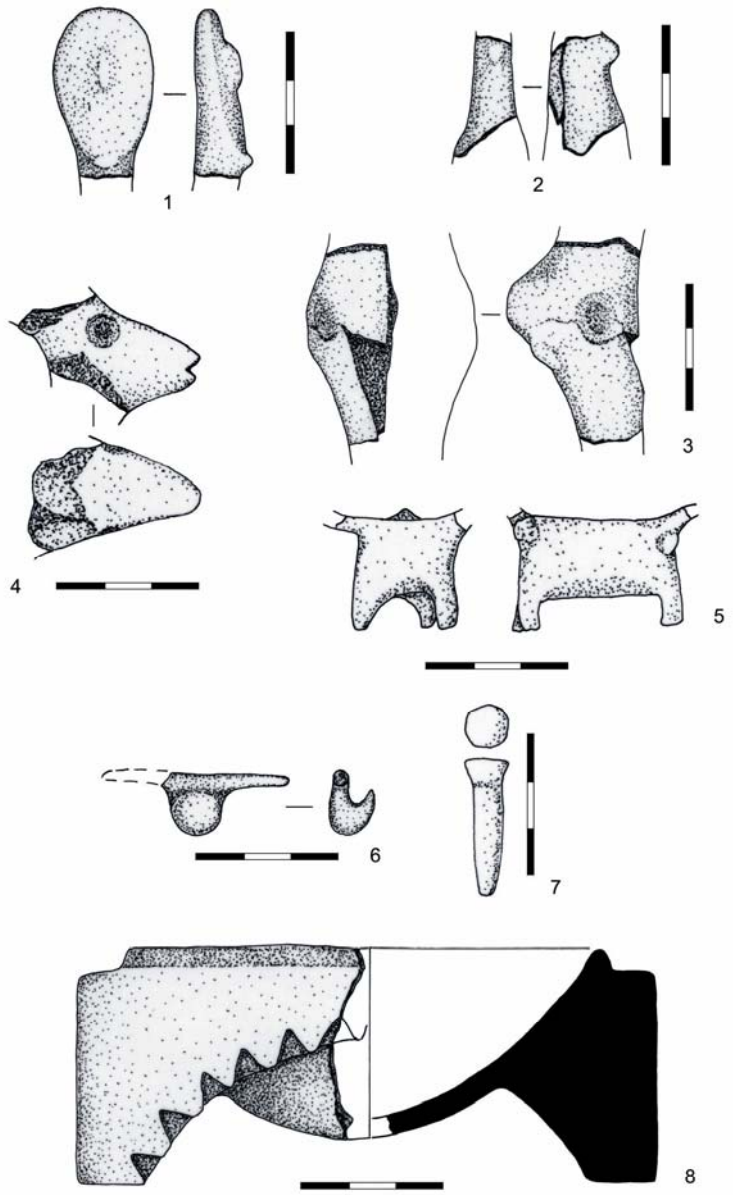
White on red painted ware pottery fragments (1-9). Wooden made pot fragment (10).

Figure 9



White on red painted ware pottery fragments (1-9).

Figure 10



Antropomorphic figurines fragments (1-3). Zoomorphic figurines fragments (4, 5).
Clay made „labret" or „bucrania" (6) and „nail" (7). Altar fragment (8).

Figure 11

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PALÉOTECHNOLOGIE ET NÉOLITHISATION DANS LA PARTIE SUD DE LA TRANSYLVANIE, ROUMANIE: L'INDUSTRIE DES MATIÈRES DURES ANIMALES DE LA CULTURE STARČEVO-CRIŞ DANS LE SITE MIERCUREA SIBIULUI-„PETRIŞ", DÉP. DE SIBIU

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Mots-cléfs: *bois de cerf, industrie osseuse, os, outils, parure, Préhistoire, Roumanie, Starčevo-Criş, technologie.*

Résumé: *L'ouvrage analyse un lot de 18 objets (outils, parure et pièces techniques) travaillés en matières dures animales (os et bois de cerf) découvertes pendant les fouilles menées en 2002-2005 dans le site de Miercurea Sibiului-„Petriş" et attribués à la culture Starčevo-Criş, phases/sous phases IB-IC et IC-IIA. On étale toutes les données concernant les objets: contexte de la découverte, état de conservation, morphométrie, description intégrale – morphologie, les paramètres de la fabrication (l'étude technique des étapes du débitage, du façonnage, les traces d'utilisation). On a décelé des nouveaux types ou types rares pour l'industrie osseuse du Néolithique ancien de la Roumanie parmi se trouvent un percuteur sur humérus distal de bovinés et un pendeloque courbe en bois de cerf ou pièce de ceinture – Gürtelhaken.*

Contexte. Les recherches archéologiques systématiques menées dans le site de Miercurea Sibiului-„Petriş" (MSP) pendant plusieurs années (1997-2005) ont mis en lumière l'existence des trois séquences d'occupation pendant la Préhistoire (Néo-énéolithique) attribuées au cultures Starčevo-Criş, Vinča et Petreşti. L'inventaire récupéré des complexes (fosses, logements demi souterraines et huttes) et des niveaux hors de complexes contient une grande quantité de matériaux ostéologiques et des artefacts en matières dures animales. Il s'agit de pièces découvertes pendant les fouilles (2002-2005) et de pièces identifiées par nous dans la masse des matériaux squelettiques. La grande majorité des artefacts proviennent de 13 complexes (fosses, logements demi souterraines et huttes), dont 7 complexes ont été attribués à la culture Starčevo-Criş: 6 logements demi souterraines (B1, B4, B10, B17, B19, B20) et une fosse (G21). Leur inventaire a livré 15 pièces. Autres 3 pièces ont été récupéré parmi les artefacts du niveau. Pour la culture Vinča on a 5 complexes: 3 logements demi souterraines (B5, B12, B15) et 2 huttes (L11, L14). Dans leur inventaire ont été identifié 19 pièces, 8 autres étant retrouvé dans le niveau. Pour la culture Petreşti on a exploré un seul complexe (L1) d'où

proviennent 5 artefacts (Luca *et alii* 2005; Luca *et alii* 2006 ; Beldiman, Sztancs 2006; El Susi 2006).

Objectifs. Dans le contexte plus large de l'étude systématique de l'industrie préhistorique des matières dures animales de Roumanie la démarche présente a pour but une approche plus détaillée sur les artefacts en matières dures animales découvertes dans le site MSP et appartenant à la culture Starčevo-Criş. Dans l'intention d'élargir le cadre des approches multidisciplinaires des vestiges du site les matériaux ont été mis à notre disposition par le chef du projet le Prof. Dr. Sabin Adrian Luca; on lui exprime une fois de plus nos très vifs remerciements. L'étude se poursuit en appliquant les paramètres actuelles du cadre méthodologique du domaine (Beldiman 2007; Beldiman, Luca *et alii* 2004; Beldiman, Sztancs 2005a – avec la bibliographie; Beldiman, Sztancs 2005b; Beldiman, Sztancs 2005c): classification typologique, description, morphométrie, étude technique, hypothèses sur la fonction et l'insertion des artefacts dans les activités divers des groupes humaines. Parmi les avantages offertes par l'approche détaillée des artefacts Starčevo-Criş de MSP on peut mentionner: • l'augmentation des effectifs attribués au Néolithique ancien et spécialement au plus anciennes étapes de la néolithisation des régions situées au Nord du Danube; • la chance d'identifier et de définir nouveaux types et/ou sous types; • l'étude typologique et technologique poussée sur un très ancien lot d'objets en provenance des régions placées dans l'intérieur de „l'Arc carpatique" (Transylvanie); • la possibilité de corréler les données de la diagnose archéozoologique (El Susi 2006) et celles de l'étude de l'industrie osseuse; • l'attribution précise aux phases et sous phases de la culture Starčevo-Criş et la datation radiométrique; • la possibilité de déceler et définir de repères spécifiques – méthodologiques, typologiques, paléotechnologiques, paléoéconomiques, chrono-culturelles aptes à offrir des jalons pour les études des autres lots du même époque et culture; • l'approche extensive et quasi exhaustive multidisciplinaire du site et l'intégration des données sur l'industrie osseuse dans l'ambiance paléotechnologique et paléoéconomique générale du site et de la culture (Beldiman, Sztancs 2005a; Beldiman, Sztancs 2006).

Méthodologie. L'ouvrage fait partie de la récente série de publications des auteurs, qui a pour but l'approche systématique des lots d'artefacts de l'industrie préhistorique des matières dures animales de Roumanie. La méthodologie est celle appliquée dans la thèse de doctorat de l'auteur principal et c'est inspiré de la conception des Cahiers de *Fiches typologiques de l'industrie osseuse préhistorique*, édités par Henriette Camps-Fabrer (Beldiman 2007; Beldiman, Sztancs 2005b; Beldiman, Sztancs 2005c – avec la bibliographie). Les aspects spécifiques de la méthodologie visent: • les critères et la structure du répertoire typologique (catégories typologiques/ groupes typologiques/ types/ sous types/ variantes/ sous variantes; • la structure du répertoire des découvertes, de la fiche d'objet, du vocabulaire contrôlé; • la description exhaustive en appliquant le vocabulaire contrôlé; • la morphométrie; • l'étude technologique qui suive les étapes de la «chaîne opératoire» de la fabrication et de l'utilisation: débitage et façonnage;

aménagements des attributs spécifiques, analyse et interprétation des traces macroscopiques et microscopiques de fabrication et d'utilisation.

Le traitement statistique des données et l'étalage en formule tabellaire permet de formuler des conclusions concernant: • les spécificités des matériaux étudiées par culture et par phase: éléments communes et situation peu fréquentes voir uniques; • le rapport entre la tradition et l'innovation; • la définition des repères chronologiques et culturels (fossiles indicateurs); • les contacts et influences etc.

Documents. Provenance. Associations. Dans le site MSP l'occupation attribuée à la culture Starčevo-Criş se concrétise dans le niveau I ayant deux sous niveaux: Ia (sous phases IB – IC de la culture Starčevo-Criş) et Ib (sous phases IC – IIA de la culture Starčevo-Criş). Les matériaux ont été mis à notre disposition par le Dr. Luca en plusieurs reprises (septembre 2003, août 2005 et janvier 2006). Ils se conservent dans les collections de l'Université «Lucian Blaga», Faculté d'Histoire et pour l'Étude du Patrimoine «Nicolae Lupu» et du Musée National Brukenthal de Sibiu. B10 a livré le nombre plus grand de pièces par complexe (4). Les associations des types dans les complexes comportent 2 – 5 types illustrant contextes de fabrication, utilisation, stockage et abandon: B1 (I A9 + I C4); B4 (I F10 + I B1); B10 (I A15 + I B1); B19 (I A7 + I A9) (voir les tableaux nos. 1-4). L'auteur des fouilles nous a précisé sur la base des critères stratigraphiques et typologiques (de la vaisselle en céramique) l'appartenance des complexes au phases/sous phases. Sur la base de ces attributions on a structuré ensuite le répertoire et l'analyse technologique de l'industrie osseuse. Malheureusement on n'a puisse intégrer dans la présente démarche les données sur les autres catégories de matériaux qui peuvent compléter l'ambiance paléotechnologique du site (industrie lithique taillée et polie, meules et percuteurs etc.) (Luca *et alii* 2006).

Répertoire. Pour l'identification précise et permanente de chaque artefact on a appliqué les conventions suivantes: l'abréviation du nome du site est MSP; le numéro du niveau Starčevo-Criş est I; on a puisse obtenir ainsi le sigle MSP/I. Chaque objet a son propre numéro dans la série, attribué après la classification par catégories, groupes, types et sous types (exemple: MSP/I 3). Dans cette étape de l'analyse (étant donnée l'effectif réduit) il est superflu à départager les artefacts par sous niveaux (Ia – Ib). Le répertoire contient les 18 fiches des objets qui offrent toutes les données issues des observations, prélèvement et analyse des paramètres spécifiques quantifiables (typologie, morphologie, morphométrie, étude technique). Sur cette base on a rédigé la synthèse présentée à l'occasion présente (Beldiman 2007; Beldiman, Sztancs 2005a – avec la bibliographie).

Typologie. Dans l'effectif des artefacts attribué à la culture Starčevo-Criş (N = 18) on a décelé: 3 catégories typologiques (I Outils; III Parure; V Divers), 6 groupes typologiques (I A Pointes; I B Lissoirs; I C Percuteurs; I F Cuillers-spatules; III B Pendeloques; V A Pièces techniques) et 9 types. La catégorie des outils (I) bénéficie de la meilleure visibilité quantitative dans le lot (16 pièces parmi dominent les pointes diverses et les lissoirs). À l'occasion de cette étude on a décelé des nouveaux types ou types rares pour l'industrie osseuse du Néolithique ancien de la Roumanie: percuteur sur humérus distal de bovinés; pendeloque courbe en bois de

cerf (ou pièce de ceinture? – Gürtelhaken?) (Beldiman 2007; Beldiman, Sztancs 2006).

Morphométrie. Les paramètres dimensionnels (exprimés en mm) sont inséré dans le tableau no. 6. On observe que le seule groupe typologique relativement expressif dans ce point de vue est celui des pointes (I A) mais son effectif est malheureusement réduit ce qui ne permet pas aboutir à des conclusions sur l'analyse statistique; selon les classes de longueur définies conventionnellement les plus fréquentes sont les pointes petites (51-100 mm, N = 6 pièces) – tableau no. 7.

Étude technique. On prend en vue l'analyse des paramètres de la paléotechnologie des matières dures animales (identification spécifique et anatomique → fabrication → utilisation → abandon). On observe (en anticipant sur les conclusions) que l'industrie osseuse de la culture Starčevo-Criş a une faible expressivité paléotechnologique. Cet aspect caractérise aussi autres cultures représentées dans le site MSP ou ailleurs (Vinča, Petreşti etc.), étant déterminé par l'application stéréotype des schémas de transformation standardisés relativement simples basées sur procédées élémentaires et ayant un faible degré de combinaison.

Sur l'aspect de la provenance spécifiques sont attestées 3 espèces qui ont fourni matières premières pour la fabrication des artefacts: bovinés (*Bos taurus*), bovidés (*Bos primigenius*); ovicaprines (*Ovis aries/Capra hircus*); cervidés – cerf (*Cervus elaphus*) – voir tableau no. 5. Par espèces on constate: la présence dominante des bovinés, suivis par les ovicaprines et le cerf. On note la fréquence de l'utilisation des os longs (métapodes, os longs indéterminés) tandis que autres sont plutôt rares (côtes, humérus) (Beldiman, Sztancs 2006).

Fabrication – le débitage. Le débitage a pour but le prélèvement d'un ou plusieurs fragments de matière première et l'obtention de la forme brute de l'objet. Dans le cas spécifique du lot de MSP cet étape documente l'application des 4 procédées techniques simples, comme: la percussion directe et la fracture par flexion; le fendage; l'entaillage. Le rainurage des deux cotés semble être une solution appliquée relativement souvent pour le débitage des métapodes de bovinés. Toute à la fois, ces solutions techniques se combinent parfois dans des schémas plus complexes (ayant deux-trois composantes) (Beldiman, Sztancs 2005a – avec la bibliographie; Beldiman, Sztancs 2005c; Beldiman, Sztancs 2006).

Fabrication – le façonnage. L'emmanchement. Les procédées techniques du façonnage sont plus diversifiées par rapport à celles du débitage. On a eu pour but l'obtention de la forme générale de l'objet et l'aménagement des détails morpho-techno-fonctionnelles spécifiques. Les procédées de façonnage décelées sur les objets étudiés sont: abrasion multidirectionnelle – axiale, oblique, transversale (Aa/Ao/At) (12 cas); la retouche (Rt) (2 cas); réaménagement par abrasion de la partie active fracturée probablement durant l'utilisation (Rm) (2 cas: la pointe MSP/I 3 et le lissoir MSP/I 8); traitement thermique (TrT); excavation de la *spongiosa* du bois de cerf (Sc) et polissage des surfaces (Fn) (un cas chaque). Il n'y a pas de pièces perforées. Très souvent on fait appel à l'abrasion multidirectionnelle (Aa/Ao/At) comme procédée de base du façonnage. Les procédées de façonnage sont appliquées en formule unique ou combinée dans les schémas ayant 2-3

composantes (Aa/Ao/At + Rm; Rt + Aa/Ao/At; Rt + Aa/Ao/At + Rm; Rt + Aa/Ao/At + TrT; Aa/Ao/At + PD/C). En ce qui concerne l'emmanchement on observe le petit nombre des outils composites fixés probablement dans la manche (durant leur utilisation, car il n'y a pas de manches préservées). Les lissoirs sur fragments d'os longs (type I B1, 2 pièces) ont été prévus avec des manches en bois ou en bois de cerf étant fixés en variante axiale positive. Pour les données relatives au façonnage et l'emmanchement voir le tableau no. 8 (Beldiman, Sztancs 2005a – avec la bibliographie; Beldiman, Sztancs 2005c; Beldiman, Sztancs 2006).

Traces et fonction. Utilisation. Les traces d'utilisation décelées sont: extrémités distales (actives) fortement lustrées et émoussées (pointes); fracture de la partie active par flexion (pointes); micro retouches (lissoirs sur fragments diaphysaires d'os long) et traces d'impact avec surfaces des objets dures (pierre?). Sur deux pièces on constate le réaménagement de la partie active/distale après la fracture (la pointe MSP/I 3 et le lissoir MSP/I 8) aussi bine que l'utilisation d'une pointe après la fracture de sa partie active (fortement lustrée) (MSP/I 4). Ces traces d'usage se combinent en nombre variable sur une seule pièce et expriment les modifications courantes des parties actives (PA) des pointes, des lissoirs et du percuteur sur humérus. Pour les données sur l'utilisation et la fonction hypothétique voir le tableau no. 8 (Beldiman 2007; Beldiman, Sztancs 2006).

Occupations. Données sur la paléoéconomie. En ce qui concerne le rôle fonctionnel des objets étudiés et l'insertion de l'industrie des matières dures animales dans la paléoéconomie de l'époque, on peut conclure, hypothétiquement, que les artefacts ont servi à: • perforer et/ou assembler du cuir ou des matériaux textiles, aussi bien qu pour le tissage et la vannerie – pointes diverses; • préparation des peaux et façonnage du bois – lissoirs sur éclats diaphysaires d'os longs; • taille et façonnage des matériaux lithiques – le percuteur sur humérus distal et le retouchoir; • modelage-façonnage de la vaisselle en céramique – les lissoirs sur métapodes; • consommation de la nourriture (céréales bouillis) – les cuillers spatules. Importantes par leur nombre sont les matières premières qui attestent la fabrication domestique non spécialisée des artefacts comme les pointes, les lissoirs en os, les manches ou autres objets en bois de cerf. Les contextes de la découverte illustrent l'ambiance *intra-site* de fabrication, stockage et abandon des artefacts en matières dures animales. Les manifestations symboliques (parure) sont représentées par une rare pendeloque courbe en bois de cerf – fragment d'axe (ou pièce de ceinture? – Gürtelhaken?). Ces constatation augmentent la valeur documentaire des pièces de MSP. Le répertoire typologique des objets analysés est compatible avec le spécifique des activités économiques routinières dans les sites d'occupation permanente de la population néolithique; l'élevage, la consommation des bêtes et la fabrication continue des artefacts en matières organiques dures (os) et tendres (cuir, fibres) sont des réalités qui apparemment trouvent leur expression dans la présence des artefacts analysés. On ajoute aussi les occupations „complémentaires": fabrication des artefacts lithiques, en bois, en argile etc. (Beldiman, Luca *et alii* 2004; Beldiman, Sztancs 2005a; Beldiman, Sztancs 2005b; Beldiman, Sztancs 2006).

Conclusion. L'effectif étudié des artefacts en matières osseuses de MSP compte 18 pièces. L'ouvrage étale toutes les données disponibles concernant les objets: contexte de la découverte, état de conservation, morphométrie, description intégrale – morphologie, les paramètres de la fabrication (l'étude technique des étapes du débitage, du façonnage, les traces d'utilisation – décelées à l'œil nu et au binoculaire). À l'occasion de cette étude on a décelé des nouveaux types ou types rares pour l'industrie osseuse du Néolithique ancien de la Roumanie: percuteur sur humérus distal de bovinés; pendeloque courbe en bois de cerf (ou pièce de ceinture? – Gürtelhaken?). L'effectif réduit disponible et le recours à des «schéma opératoires» simples, standardisés, impliquant des procédées élémentaires, ayant une bas degré de combinaison sont les causes responsables, en perspective de l'approche paléotechnologique, pour l'expressivité relativement faible du lot analysé. Les procédées de fabrication décelés sont celles habituelles pour l'ambiance paléotechnologique de l'époque: la percussion directe, le rainurage bilatérale, l'abrasion multidirectionnelle. En ce qui concerne le rôle fonctionnel des objets étudiés et l'insertion de l'industrie des matières dures animales dans la paléoéconomie de l'époque, on peut conclure, hypothétiquement, que les artefacts ont servi: pour perforer et/ou assembler du cuir ou des matériaux textiles; pour le tissage et la vannerie – pointes diverses; pour la préparation de peaux et pour le façonnage du bois – lissoirs sur éclat diaphysaires d'os longs; pour la taille et le façonnage des matériaux lithiques – le percuteur sur humérus distal; consommation de la nourriture (céréales bouillis) – les cuillers-spatules. Importantes par leur nombre sont aussi les matières premières qui attestent la fabrication domestique des artefacts comme les pointes et les lissoirs en os. Les manifestations symboliques (parure) sont représentées par une pendeloque courbe en bois de cerf – fragment d'axe (ou pièce de ceinture? – Gürtelhaken?). L'étude ne fait pas recours à l'analyse des données sur le contexte de la découverte des objets (associations des artefacts divers dans les complexes), ni des données extensives sur la faune du site (qui ne sont pas encore toutes disponibles pour nous), ce qui pourrais probablement offrir des indices supplémentaires sur la fabrication des artefacts sur place. Les conclusions de cette étude sont limitées par les effectifs réduits et par l'absence d'autres informations sur l'ambiance technologique de la culture Starčevo-Criş dans le site. Les artefacts en matières dures animales de MSP ont permis d'appliquer le protocole d'analyse intégrale à des matériaux de Roumanie datent du Néolithique ancien, c'est-à-dire un des plus anciens lots de Roumanie. Toute à la fois cette approche a permis de mettre en lumière des nouveaux types ou des types rarement attestés jusqu'à maintenant dans ce genre d'industrie au Néolithique ancien et de déceler l'utilisation combinée des plusieurs solutions techniques de fabrication. Ainsi on a pu envisager hypothétiquement le déroulement de quelques activités économiques routinières dans le site. Les artefacts de MSP illustrent les paramètres essentiels de l'industrie des matières dures animales au début du Néolithique en Transylvanie et quelques aspects de l'ambiance paléotechnologique spécifique de l'époque.

Bibliographie

Beldiman 2007 – Beldiman C., *Industria materiilor dure animale în preistoria României. Resurse naturale, comunităţi umane şi tehnologie din paleoliticul superior până în neoliticul timpuriu*, Asociaţia Română de Arheologie, Studii de Preistorie – Supplementum 2, Bucureşti.

Beldiman, Luca *et alii* 2004 – Beldiman C., Luca S. A., Roman C., Diaconescu Dr., Cerişor, com. Lelese, jud. Hunedoara. Industria materiilor dure animale. In: M.-V. Angelescu, I. Oberländer-Târnoveanu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice din România. Campania 2003. A XXXVIII-a Sesiune naţională de rapoarte arheologice, Cluj-Napoca, 26-29 mai 2004*, CIMEC, Bucureşti, p. 85-94, 469-475.

Beldiman, Sztancs 2005a – Beldiman C., Sztancs D.-M., Industria preistorică a materiilor dure animale din „Peştera de la Cauce". In: în S. A. Luca, C. Roman, Dr. Diaconescu, H. Ciugudean, G. El Susi, C. Beldiman, *Cercetări arheologice în Peştera Cauce (II) (sat Cerişor, com. Lelese, jud. Hunedoara)*, Universitatea «Lucian Blaga» Sibiu, Institutul pentru Cercetarea şi Valorificarea Patrimoniului Cultural Transilvănean în Context European, Bibliotheca Septemcastrensis V, Sibiu, p. 155-254.

Beldiman, Sztancs 2005b – Beldiman C., Sztancs D.-M., Cerişor, com. Lelese, jud. Hunedoara. Raport final privind studiul industriei materiilor dure animale. In: I. Oberländer-Târnoveanu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice din România. Campania 2004. A XXXIX-a Sesiune naţională de rapoarte arheologice, Jupiter-Mangalia, 25-28 mai 2005*, CIMEC, Bucureşti, p. 112-120, 479-489.

Beldiman, Sztancs 2005c – Beldiman C., Sztancs D.-M., Şeuşa, com. Ciugud, jud. Alba. Date privind industria preistorică a materiilor dure animale. In: I. Oberländer-Târnoveanu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice din România. Campania 2004. A XXXIX-a Sesiune naţională de rapoarte arheologice, Jupiter-Mangalia, 25-28 mai 2005*, CIMEC, Bucureşti, p. 370-374, 499-507.

Beldiman, Sztancs 2006 – Beldiman C., Sztancs D.-M., Miercurea Sibiului-„Petriş". Industria preistorică a materiilor dure animale. In: M.-V. Angelescu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice din România. Campania 2005. A XL-a Sesiune naţională de rapoarte arheologice, Constanţa, 31 mai-3 iunie 2006*, CIMEC, Bucureşti, p. 224-229, 493-498.

El Susi 2006 – El Susi G., Miercurea Sibiului-„Petriş". Cercetări faunistice. In: M.-V. Angelescu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice din România. Campania 2005. A XL-a Sesiune naţională de rapoarte arheologice, Constanţa, 31 mai-3 iunie 2006*, CIMEC, Bucureşti, p. 223-224.

Luca *et alii* 2005 – Luca S. A. *et alii*, Miercurea Sibiului-„Petriş", „Luncă". In: I. Oberländer-Târnoveanu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice*

din România. Campania 2004. A XXXIX-a Sesiune naţională de rapoarte arheologice, Jupiter-Mangalia, 25-28 mai 2005, CIMEC, Bucureşti, p. 239-240.

Luca *et alii* 2006 – Luca S. A. *et alii*, Miercurea Sibiului-„Petriş". In: M.-V. Angelescu, Fl. Vasilescu (coord.), *Cronica cercetărilor arheologice din România. Campania 2005. A XL-a Sesiune naţională de rapoarte arheologice, Constanţa, 31 mai-3 iunie 2006*, CIMEC, Bucureşti, p. 222-223.

Liste des figures

Fig. 1. MSP. Culture Starčevo-Criş: pointes et lissoirs en os.

Fig. 2. MSP. Culture Starčevo-Criş: cuillers-spatules en os; ébauches, matières premières – os et bois de cerf; pendeloque ou pièce de ceinture/crochet en bois de cerf; percuteur en os.

Tableau no. 0. Abréviations.

Aa	Abrasion axiale	**Lăț.**	Largeur
AF	Abrasion fonctionnelle	**M**	Manche
Ao	Abrasion oblique	**MC**	Métacarpe
At	Abrasion transversale	**MP**	Métapode
B	Bovinés, logement demi souterraine (voir contexte)	**MSP**	Miercurea Sibiului-„Petriş”
C	Complexe	**MT**	Métatarse
CD	Calibre distal	**OC**	Ovicaprines
Cn	Bois de cerf	**OL**	Os long
Cr	Entaillage	**PA**	Partie active
Crb	Cerf	**PD**	Partie distale
Cs	Côte	**PD/C**	Percussion directe/entaillage
D	Dent	**PD/D**	Percussion directe/fendage
Db	Débitage	**PD/F**	Percussion directe/fracture
Diam.	Diamètre	**PI**	Percussion indirecte
E	Espèce	**PM**	Partie mésiale
ED	Extrémité distale	**PP**	Partie proximale
Em	Emmanchement	**Pr**	Pression
EP	Extrémité proximale	**PS**	Partie du squelette
Fç	Façonnage	**Ra**	Raclage axial
FADP	Emmanchement axial distal positif	**Rm**	Réaménagement
FI	Face inférieure, fracture d’impact (voir le contexte)	**Rt**	Retouche
FL	Fracture latérale	**S**	Section, suidés (sanglier) (voir contexte)
Fn	Polissage	**Sc**	Evidage
FS	Face supérieure	**Sfr**	Foret
G	Fosse	**Şa**	Rainurage
Gros.	Epaisseur	**T**	Type
H	Humérus	**Tc**	Emoussement
I	Indicatif	**TrT**	Traitement thermique
IMDA	Industrie des matières dures animales	**TT**	Sciage transversal
Int.	Intérieur	**TU**	Traces d’utilisation
L	Longueur, lustre	**ULB**	Université «Lucian Blaga» Sibiu
L tot.	Longueur totale		

Tableau no. 1. MSP. IMDA – Typologie.

Code type	Type
I A7	Pointe sur demi métapode d’ovicaprines
I A7 a	Pointe sur demi métapode distal d’ovicaprines
I A9 a	Pointe sur demi métapode distal d’os long d’herbivore de grande taille
I A9 b	Pointe sur demi métapode proximal d’os long d’herbivore de grande taille
I A15	Pointe sur fragment de cote
I B1	Lissoir sur fragment d’os long
I F10	Cuiller-spatule trapézoïdale, ayant la section de la partie proximale plate/biconvexe
I C4	Percuteur sur humérus distal
III B11	Pendeloque en forme de crochet?
V A2 b2	Matières premières – bois de cerf, andouiller

Tableau no. 2. MSP. IMDA – Typologie et distribution des pièces par complexes et phases/sous phases.

Type	Indicatif	Complexe	Coordonnées	Culture/phase/

				Sous phase
I A7 a	MSP/I 1	B20	SII 2003 -0,75-0,85	Starčevo-Criş IC-IIA, sous niveau Ib
I A7 a	MSP/I 2	B17	SII 2003 Carré 137 -1,05-1,25	Starčevo-Criş IB-IC, sous niveau Ia
I A7 a	MSP/I 3	B19	SII 2003 Carré 152 -1,05-1,15	Starčevo-Criş IB-IC, sous niveau Ia
I A7	MSP/I 4	B19	SII 2003 Carré 144 -0,75-0,85	Starčevo-Criş IB-IC, sous niveau Ia
I A9 b	MSP/I 5	B19	SII 2003 Carré 144 -0,85-0,95	Starčevo-Criş IB-IC, sous niveau Ia
I A15	MSP/I 6	B10	MS 42 2003	Starčevo-Criş IB-IC, sous niveau Ia
I A15	MSP/I 7	B10	MS 42 2003	Starčevo-Criş IB-IC, sous niveau Ia
I B1	MSP/I 8	B10	MS 42 2003	Starčevo-Criş IB-IC, sous niveau Ia
I B1	MSP/I 9	Sous niveau	SII 2003 Carré 139 -0,75-1,00	Starčevo-Criş IC-IIA, sous niveau Ib
I F10	MSP/I 10	B10	MS 42 2003	Starčevo-Criş IB-IC, sous niveau Ia
I F10	MSP/I 11	G21	SII 2005 -0,40-0,60	Starčevo-Criş IC-IIA, sous niveau Ib
I A9 a	MSP/I 12	B1	?	Starčevo-Criş IC-IIA, sous niveau Ib
I F10	MSP/I 13	B4	SII 2003 Carré 53	Starčevo-Criş IC-IIA, sous niveau Ib
I B1	MSP/I 14	B4	SI 2002 B4 1/2 NV -0,65	Starčevo-Criş IC-IIA, sous niveau Ib
I B1	MSP/I 15	B4	2002 B4 1/2 NV -0,65	Starčevo-Criş IC-IIA, sous niveau Ib
I C4	MSP/I 16	B1	?	Starčevo-Criş IC-IIA, sous niveau Ib
III B11	MSP/I 17	Sous niveau	SII 2003 -0,75-0,85	Starčevo-Criş IC-IIA, sous niveau Ib
V A2 b2	MSP/I 18	Sous niveau	SII 2005 Carré 139 -0,75-1,00	Starčevo-Criş IC-IIA, sous niveau Ib

Tableau no. 3. MSP. IMDA – Distribution quantitative des groupes typologiques et des types.

Types	Culture Starčevo-Criş	Effectif total groupe
I A7	1	8
I A7 a	3	
I A9 a	1	
I A9 b	1	
I A15	2	
I B1	4	4
I C4	1	1
I F10	3	3
III B11	1	1
V A2 b2	1	1
Total	18	18

Tableau no. 4. MSP. IMDA – Distribution quantitative des types par complexes.

Type	Indicatif	Contexte (complexe, niveau)								Effectif total
		B1	B4	B10	B17	B19	B20	G21	Niveau	

										type
I A7	MSP/I 4					1				1
I A7 a	MSP/I 1						1			1
I A7 a	MSP/I 2				1					1
I A7 a	MSP/I 3					1				1
I A9 a	MSP/I 12	1								1
I A9 b	MSP/I 5					1				1
I A15	MSP/I 6			1						1
I A15	MSP/I 7			1						1
I B1	MSP/I 8			1						1
I B1	MSP/I 9								1	1
I B1	MSP/I 14		1							1
I B1	MSP/I 15		1							1
I C4	MSP/I 16	1								1
I F10	MSP/I 10			1						1
I F10	MSP/I 11							1		1
I F10	MSP/I 13		1							1
III B11	MSP/I 17								1	1
V A2 b2	MSP/I 18								1	1
Total		2	3	4	1	3	1	1	3	18

Tableau no. 5. MSP. IMDA – Distribution quantitative des matières premières (espèces/parties du squelette).

Espece	Partie du squelette	Culture Starčevo-Criș
B	Cs	5
B	H	1
B	MP	3
B	OL	3
Crb	Cn	2
OC	MP	4
Total		18

Tableau no. 6. MSP. IMDA – Morphométrie (mm)*

Type	Indicatif	L tot.	L	EP/PP	PM	PD/ED	LPA	CD
I A7 a	MSP/I 1	*78*/76		13,5/10	8/3		*26*/24	3/2
I A7 a	MSP/I 2	*73*/70,5		15/10	10/4,5		*20*/18	7/3
I A7 a	MSP/I 3	60		14/11	8/3,5		18	3/2,5
I A7	MSP/I 4		52	7,5/5			*19*/17	4,5/3,5
I A9 b	MSP/I 5		98	22/16	8,5/6			
I A15	MSP/I 6		109		20/3,5		53	6/2
I A15	MSP/I 7		60,5	16/3	13/4,5			
I B1	MSP/I 8	98		6/6	15/11		FI 30; FS 10	
I B1	MSP/I 9	87		23/7	32/8	*20*-13/5		
I F10	MSP/I 10	120		8/2,5	24/3,5	27/3		
I F10	MSP/I 11		55					
I A9 a	MSP/I 12		172	29/21	22/12			
I F10	MSP/I 13	101		14/4	22/5,5	27/4		
I B1	MSP/I 14	104		19/9	42/11	28/12		
I B1	MSP/I 15		110	15/7,5	35/11,5	28,5/11		
I C4	MSP/I 16		120			lăț. 110; gros. 105		
III B11	MSP/I 17		41					
V A2 b2	MSP/I 18	190		33/32	29/28	21/19		

* En caractères italiques: paramètres présumés (reconstitution graphique).

Tableau no. 7. MSP. IMDA – Classes de longueur du groupe typologique I A (pointes).

Culture	Classes de longueur (effectif)				
	I (10 – 50 mm)	**II (51 – 100 mm)**	**III (101 – 150 mm)**	**IV (151 – 200 mm)**	**V (201 – 300 mm)**
	Petite		**Moyenne**		**Grande**
Starčevo-Criş	–	3	–	–	–
Total	–	3	–	–	–

Tableau no. 8. MSP. IMDA – Typologie et répartition des matières premières. Débitage. Façonnage. Traces d'utilisation. Fonction présumée.

T	I	C	PS	E	Db	Fç	Em	TU
I A7 a	MSP/I 1	B20	MP	OC	PD/D	Aa/Ao		Tc, L
I A7 a	MSP/I 2	B17	MP	OC	Şa, PD/D	Ao/At		Tc
I A7 a	MSP/I 3	B19	MP	OC	PD/D? Şa?	Aa/Ao/At, Rm		Tc
I A7	MSP/I 4	B19	MP	OC	PD/D? Şa?	Aa/Ao/At		Tc, L, FL
I A9 b	MSP/I 5	B19	MP	B	Şa, PD/D	Aa/Ao/At, TrT?		Tc, L, FL
I A15	MSP/I 6	B10	Cs	B	PD/D	Aa/Ao/At		Tc, L
I A15	MSP/I 7	B10	Cs	B	PD/D	Aa/Ao/At		FL
I B1	MSP/I 8	B10	MP	B	PD/D	Rt, Ao/At, Rm		Tc, FI
I B1	MSP/I 9	Sous niveau	OL	B	PD/D	Rt, Ao/At		–
I F10	MSP/I 10	B10	Cs	B	PD/D	Rt, Aa/Ao/At		Tc, L, AF
I F10	MSP/I 11	G21	Cs	B	PD/D	Aa/Ao/At		Tc, L
I A9 a	MSP/I 12	B1	MP	B	Şa, PD/D	–		–
I F10	MSP/I 13	B4	Cs	B	PD/D, PD/F	Rt		–
I B1	MSP/I 14	B4	OL	B	PD/D	–	M; FADP	–
I B1	MSP/I 15	B4	OL	B	PD/D	Rt	M; FADP	–
I C4	MSP/I 16	B1	H	B	PD/D	–		FI
III B11	MSP/I 17	Sous niveau	Cn	Crb	PD/C	Sc, Aa/Ao/At, Fn		L
V A2 b2	MSP/I 18	Sous niveau	Cn	Crb	PD/C, PD/F	–	–	–

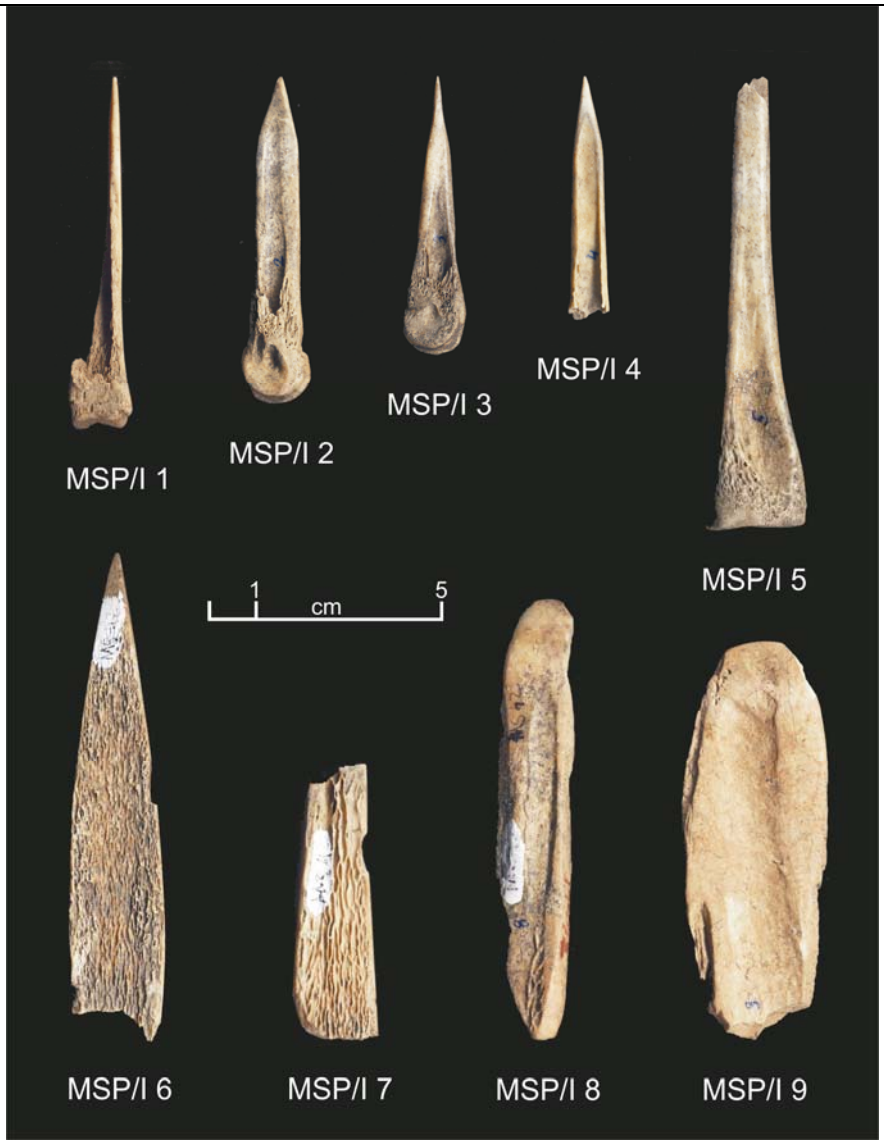

Fig. 1. MSP. Culture Starčevo-Criș: pointes et lissoirs en os.

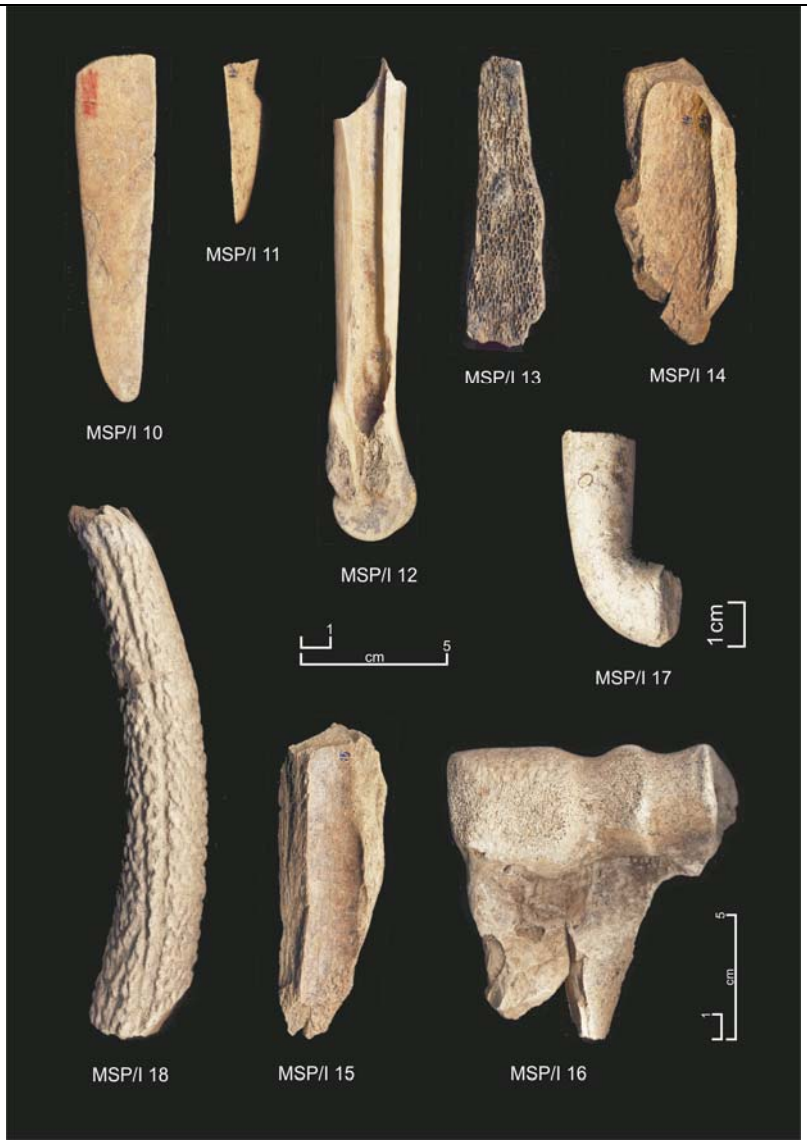

Fig. 2. MSP. Culture Starčevo-Criş: cuillers-spatules en os; ébauches, matières premières – os et bois de cerf; pendeloque ou pièce de ceinture/crochet en bois de cerf; percuteur en os.

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THE COMPARATIVE ANALYSE OF FAUNAL SAMPLES FROM SITES DATED IN STARČEVO-KÖRÖS-CRIŞ CULTURE – PHASES IB-IIA FROM TRANSYLVANIA AND BANAT

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Key words: *Neolithic, faunal samples, Transylvania and Banat, Romania.*
Abstract: *In our regions the first Neolithic communities introduced a husbandry supported by caprovines, containing also, cattle, pig and dog. Having in view the new environmental conditions favorably to bovine breeding, over time a switch over towards cattle exploitation could happened. Positively, towards the end of the final phases of the Starčevo-Criş culture the prevalence of cattle in husbandry becomes certitude.*

The archaeological researches retaken or started in sites integrated to the earliest Neolithic phases in the Banat Plain and south-west Transylvania allowed the sampling of new faunal materials in the last decade; the analyses of the most recent records concerning the animal exploitation in settlements dated in *Starčevo-Körös-Criş Culture (phases* IB-IIA) (Lazarovici, Lazarovici, 2007, cited for dating of sites) in addition to older data is the goal of our article. The hypotheses have a provisional character both the excavations carry on in many sites and the samples, sometimes not quite numerous, partially cover the envisaged territory.

Overall we talk about 11,886 animal bones produced by seven sites, three of them being located in the Banat and four ones in Transylvania. The quantitative evaluation puts forward particularly the sample from Foeni-*Gaz* including 7,561 remains. Samples of 1,000-1,200 fragments have been collected by now at Miercurea Sibiului-*Petriş* and Şeusa-*Cărarea Morii,* the other sites producing less than 700 bones. The samples collected from the mentioned settlements count much more remains, but just the mention amounts exemplify the *Starčevo-Körös-Criş* IB-IIA fauna.

As with the spatial scattering, Foeni-*Gaz* (Ciubotaru, 2004 (researcher of the site); El Susi, 2001, p. 15-18) and Foeni-*Sălaş* (Greenfield, Draşovean, 1994, p. 45-86) are located on natural mounds in the Timiş plain, that includes the floodplain of the Timiş, Bega, Moravița and Bârzava rivers, with altitudes of 80-90 m that gradually decline towards the NE. The hydromorphic soils, besides the very high water table caused frequent flooding and seasonal formation of swamps in the area. The environment was wet and swampy until recent times (Oprea, 1965, p. 252-253). The zone is deforested excepting some spots of woodland originating in modern times. Dudeştii Vechi (El Susi, 2001, p. 18-24) is located in the north-western corner of the Banat, in a low area also. Pojejena-*Nucet* (El Susi, 1991, p. 20-24) lays

on the lowest terrace of the Danube (flooded at present), in a small depression, a region with a highest bio-geographical potential.

Table 1. The species frequencies (as fragments) in Neolithic sites from Transylvania and Banat.

Taxon	Dudeştii Vechi	Foeni-*Gaz*	Pojejena-*Nucet*	Şeusa-*Cărarea Morii*	Miercurea Sibiului-*Petriş*	Cauce-Cave	Gura Baciului IB-IIA level
Bos taurus	22.9	34.4	43.3	30.8	55.5	3.5	40.1
Ovis / Capra	25.7	40.4	7.1	57.1	28.9	75	37.1
Sus domesticus	5	5.1	0.9	7.1	1.3	11.9	1.8
Canis familiaris	1.7	0.3		0.2	0.1		
Cervus elaphus	23.5	7.3	28.1	1.4	5.2	3.8	11.3
Capreolus c.	2	4.1	1.9	3	2.3	2.1	4.1
Sus scrofa	12	2.7	10.9		0.6	1.1	1.8
Bos primigenius	6.4	4.9	3.8	0.2	6		3.8
Lepus europaeus					0.1	2.1	
Ursus arctos	0.3					0.5	
Castor fiber	0.5	0.1	0.5				
Vulpes vulpes		0.2					
Meles meles			2.4				
Martes martes		0.1					
Felis silvestris		0.1					
Lynx lynx			0.5				
Equus ssp.			0,5				
Domestics	**55.3**	**80.2**	**51.3**	**95.2**	**85.8**	**90.4**	**79**
Wilds	**44.7**	**19.7**	**48.6**	**4.7**	**14.2**	**9.6**	**21**
Total sample	**515**	**7,561**	**302**	**1,086**	**1,243**	**727**	**452**

The settlements from Transylvania developed in areas favorable to living and adequate, both as geo-morphological position or their potential of resources, for the essential needs of the animal farming. All the sites are positioned on river terraces, in uplands, at the junction between plains and plateaus or eves piedmont regions (Ciută, 2005, p. 192). So the Cauce cave (Luca et allii, 2005, p. 95-155) is located in the western part of the Poiana Ruscăi Mountains, on the right side of the rivulet Runcu valley at 1.5 km farthest from Cerişor village. The gentle local climate due to Mediterranean influences and a diversified flora and fauna favored a long habitation of the cave during prehistory and history times. Gura Baciului is located in a

piedmont zone, in the north-east of Gilău Mountains, on a terrace oriented SSE, nearby the Suceag rivulet. The area is isolated, defended against winds and little accessible. Miercurea Sibiului is placed in a depression lying between the piedmont of Cindrel-Şureanu Mountains and Secaşelor Plateau, on a terrace of Secaşul Mare rivulet. As well, on a high terrace of a left sideways stream of Mureş river is located the Şeuşa site (detailed information about bio-geographical location of these and other Neolithic sites from Transylvania in Ciută, 2005, p. 44-54). It seems that the older phases (circa 500 years) of the *Starčevo-Körös-Criş* Culture developed in the specific climate of the Boreal (Cârciumaru, 1996, p. 18) meanwhile the oak and hazelnut forests already covered the plateau regions and the pine and spruce fir woods reached the hilly regions. That time the climate was drier and a little colder (Cârciumaru, 1996, p. 132).

THE SPECIES FREQUENCIES IN SITES

Although the forenamed samples are unequally as number of fragments and originate in sites scattered on a vast territory, we tried to stress common / or uncommon patterns, several criteria being used: bio-geographical placement, rapports between taxoni, domestic / wild ratio, age-class distribution. So, we note that domestic mammal segment prevails in almost samples according domestic: wild ratio. The wild mammal segment has different percents, many times the environment determining a special behavior concerning species. Sometime the rule does not match. Few sites emphasize a reduced percent of the game (below 5 %), the domestic segment almost totally covering the food supplying of the communities; is the case of Cauce (9.6 %) and Şeuşa (4.7 % wild mammals) sites.

In the other extreme place are positioned the settlements with an increased game rate, 40 % beyond, e.g. Dudeştii Vechi (domestic / wild ratio – 55.3 / 44.7 %) and Pojejena-*Nucet* (51.3 / 48.6 %). If the former site is placed in the lower plain of the Banat, the second one is the Danube Valley, both of them in different locations without links each other. Maybe both areas offered a mixture of specific resources in the VIth mil. BC. Environments discrepancies (well sketched at present) maybe were attenuated in the past, displayed both by the different rate of the taxoni or the variety of game. Such as red deer is quoted with high percentages both in the Banat Plain or the Danube Valley (23 % at Dudeştii Vechi and 28.1 % at Pojejena-*Nucet*). Similar percents show the wild swine (12-11 %) and roe deer (2 %) in both locations. By contrary the aurochs reached a reduced frequency at Pojejena-*Nucet* (2.2 %) and a higher one in the Banat Plain (6.4 % at Dudeştii Vechi). An intermediate category includes sites (the others) with an important but variable hunting rate (10-30 %), never dominant. They are placed in a large range of biotopes: low region – Foeni-*Gaz* (19.7 %); sub-mountainous region – Gura Baciului (21 %) or plateau – Miercurea Sibiului (14.2 %). Thereupon, an evaluation of domestic/ wild rapport in accordance with the geographic situation displays sometimes contradictory data even for sites with similar locations. We mention again those settlements as Foeni-*Gaz* and Foeni-*Sălaş* (Greenfield, Draşovean, p. 73) characterized by a hunting rate no more than 20 % as compare to Dudeştii Vechi with an increased rate of the game, up to 42-44 % (also in the upper layer

belonging to a later phase of the Starčevo-Criş culture the same increases hunting rate was found, sample unpublished). In the light of these preliminary data we suppose that the natural resources offered by environment were evaluated and integrated in the communities' economies in different ways. Also unequal samples could produce these variations.

Table 2. Species frequencies (as frgm.) at Gura Baciului.

	pit house 2a	pit house 1	pit house 8	pit house 10	pit 2a	pit 18 b	pit house 20	pit house 23	Total	
St. Criş / phase	I A	1A-I B	I C-IIA	I C-IIA	I C-IIA	I C-IIA	II A	II A	Frgm.	%
Bos taurus	10	53	25	18	3	4	3	11	127	38.3
Ovis / Capra	4	31	37	18	2	1	16	11	120	36.1
Sus domesticus	2	1	3	3					9	2.7
Domestics	16	85	65	39	5	5	19	22	256	77.1
Cervus elaphus	2	11	13	14	2		3	3	48	14.5
Capreolus c.		8	3	2				1	14	4.2
Sus ferrus		2		1			1		4	1.2
Bos primigenius		7	1	1				1	10	3
Wilds	2	28	17	18	2		4	5	76	22.9
Sp. determined	18	113	82	57	7	5	23	27	332	100
Bos / Cervus	3	11	5	4	1		2		26	
Ovis / Capreolus	1	2		1					4	
Unio sp.				2					2	
Splinters	5	4	1	28					38	
Total sample	27	130	88	92	8	5	25	27	402	

In case of Transylvanian sites, in almost all cases the hunting percent doesn't exceed 20 %, even if the sites developed in uplands, exemplifying 21 % is rate at Gura Baciului, the placement in a sub-mountainous region influenced the faunal composition in a lesser measure. Again an exception is Cauce, a site located in a mountainous milieu that produced just 9.6 % wild mammals remains; certainly the cave habitation conditions determined a special type of archaeological accumulation; that one contained mostly bones of small size (small bodied animals as pig, caprinae) originating in juvenile animals (El Susi, 2005, p. 96-101), the

bones of large bodied animals were simply one left in another place. In this manner we tried to explain the peculiar accumulation of bones in that site. A lower hunting rate (14.2 %) was estimated at Miercurea Sibiului, site placed in a lower zone.

Domestic mammals

Talking about the main species frequencies exploited for the duration of sites function interesting results were obtained. **Cattle** remains clearly dominate the samples from Pojejena-*Nucet* (Danube Valley) – 43 %; at Foeni-*Sălaş* is noted with 52 % (Greenfield, Draşovean, p. 78), by contrary at Dudeştii Vechi and Foeni-*Gaz* they total no more than 33-34 % (Table 1). In Transylvanian sites, clearly prevail at Miercurea Sibiului with 55.5 %. An ambiguous situation was found at Gura Baciului; so at a first sight the cattle percent as fragments is about 40.1 %, the small ruminants ranking the second with a closed value – 37.1 % (Tables 2-3). As individuals the situation reverses, the caprinae dominate by 33 %, followed by cattle with

Table 3. Species frequencies (as individuals) at Gura Baciului.

	pit house 2a	pit house 1	pit house 8	pit house 10	pit house 2a	Pit 18 b	pit house 20	pit house 23	Total	
St. Criş / phases	I A	1A-I B	I C-IIA	I C-IIA	I C-IIA	I C-IIA	II A	II A	MNI	%
Bos Taurus	2	11	5	4	1	2	2	3	30	32
Ovis / Capra	2	7	6	6	1	1	5	3	31	33
Sus domesticus	1	1	2	1					5	5.3
Domestics									66	70.3
Cervus elaphus	2	4	2	2	1		2	1	14	14.9
Capreolus c.		3	2	1				1	7	7.4
Sus ferrus		1	1	1			1		4	4.2
Bos primigenius		1		1				1	3	3.2
Wilds									28	29.7
Total individuals									94	100

32 %.The situation is rather the effect of taphonomic conditions in stratum, the cattle and sheep bones preserving in different ways. Thereto, the sheep bones originating mostly in young and sub-adult individuals many pieces destroyed; the accentuated splitting of the bones (a characteristic of this sample) generated a large amount of "undetermined sample". So many bias factors were implied. By contrast, cattle bones better preserved, increasing the chance to determine much more, even if most of them suggested juvenile exemplars. Barely numerous samples can clarify

this question. Returning to cattle dominance, the lowest percent 3.5 % is recorded at Cauce, maybe the milieu disagreed with bovine rising.

The sheep/goats to some extent dominate both at Foeni-*Gaz* (40.4 % versus 34.4 % cattle value) and Dudeştii Vechi (25.7 % versus 22.9 % cattle value); with 25 % are quoted at Foeni-*Sălaş.* Significant high values reach at Cauce (75 %) and Şeuşa-*La cărarea morii* (57.1 %). At Miercurea Sibiului they rank the second with 28.9 %, an increased value even if cattle dominate the statistics. **The pig** exploitation is reduced in almost all sites, as a characteristic of the oldest phases of the Neolithic in our regions. Their rate falls below 7 %, despite the geographical location. With 11.9 % is noted at Cauce, the value suggesting propitious conditions of living in the forested area of the site. **The dog** had a minor role in the communities' life as the reduced frequencies (below 1 %) show. As for the dog meat consumption the date are ambiguously. Few complete bones preserved, most part of them was broken, being collected from waste pits; cut marks were not recognized on long bones. In exchange, at Dudeştii Vechi (personal data, unpublished yet) were identified some braincases broken in the frontal-parietal region for extracting the brain, perhaps.

Wild mammals

The outcomes of faunal analyses show the disparate importance of the hunting in the communities' life. An oversight on domestic/wild ratio in each settlement previously was done. The samples structure emphasized the diversity of the wild fauna regardless of site location. Among wild mammals the most exploited grouping is that of artiodactyls including the red and roe deer, aurochs, wild swine; they represented the main meat source and raw materials, antlers, bones, skin. The group regularly appears in each assemblage no matter its size. The most hunted mammal is the **red deer**, even if its percent fluctuates from sample to sample. As the fauna information shows it was the most common element of the wild fauna, with increased density throughout prehistory, largely spread both in low and uplands. By and large in the lowland sites of the Banat it reaches variable percents: 23.5 % at Dudeştii Vechi and 7.3 % at Foeni-*Gaz*. The most increased value – 28.1 % is normally attained at Pojejena-*Nucet.* In Transylvania*,* merely at Gura Baciului totals 11.3 %, in the other sites below 5 %. To some extent its values might suggest the different forestation rate around settlements. From this point of view, it seems that the Banat plain had forested parts akin to Danube Valley. Contrasting, the surroundings of Miercurea Sibiului site were covered by semi-arid vegetation with few spots of forest, especially in the oldest habitation phase. In this context the aurochs rate - 6 % go beyond the red deer value (5.2 %). Gura Baciului being placed in a sub-mountainous region records a higher value of the red deer – 11 %, the roe deer and aurochs reaching up to 4 %. At Cauce the red deer was of little amount in the community diet judging by it percent - 3.8 %. **The wild swine** records up to 12 % in the Banat and below 2 % in the others. The reach water table from that region associated with typical vegetation favored a large population.

Usually the **roe deer** percent lowly fluctuates, between 2-4 %, in most cases a correlation with the red deer percent being established.

A second grouping of hunted mammals includes the **brown bear** and **hare**, important meat and fur sources, both species being accidentally captured. The former species reaches below 1 %, being identified at Dudeştii Vechi and Gura Baciului. Its incidence at Gura Baciului is justified by the site placement, astonishing in exchange, its occurrence at Dudeştii Vechi, site located farthest of the Banat uplands. As repeatedly mentioned it was pretty frequent both in up and lowlands during prehistory. The **hare** reaches below 2 % everywhere, its bones missing at Foeni, Şeuşa.

Of little amount the group of small and big carnivorous, rodents completes the listing of hunted mammals. Accidentally hunted, for fur and to reduce their predator action, they had a minor economic role. Were included in this category: **beaver** (identified just now at Dudeştii Vechi, Foeni-*Gaz*, Pojejena-*Nucet*), **fox** (Foeni-*Gaz*), **badger** (Pojejena-*Nucet*). Bones of **bobcat** and **wild horse** (?) (El Susi, 1991, p. 22) were found at Pojejena-*Nucet***.** As with **marten** it was identified just in sites from the Banat.

Table 4. The frequencies of animal classes.

	Pojejena-*Nucet*	D. Vechi-niv I	Foeni-*Gaz*	Şeuşa	M. Sibiului	Gura Baciului I	Cauce
Mammals	93.7	86.8	12.7	98.1	99.8	99.7	99.9
Birds		1			0.2		
Reptiles		0.4					
Fish	3.6	2.5		0.1			
Mollusks	2.7	9.3	87.3	1.8		0.3	0.1

Birds Few remains of birds were preserved in our samples; according to faunal data, the capture of birds was occasionally, sporadically and to some extent practiced, aside fishing and gathering. Bird remains were identified just at Dudeştii Vechi and Miercurea Sibiului.

Fishing and mollusks gathering Neither these activities are satisfactory reflected by faunal samples, though the sites were founded in the vicinity of aquatic sources. In case of fish samples neither its bones not preserved, nor the traditional hand-collecting method biased the sample size. By chance some fish vertebrae or other visible bones at collecting were determined. Fish bones were identified at Dudeştii Vechi, Pojejena and Şeuşa only. By the side of fishing, other seasonally activities would had practices as tortoise capture (mostly at Dudeştii Vechi). The mollusks gathering is characteristic mainly to community at Foeni-Gaz, 87.3 % is the percent of the shells (Unio ssp.). A similar case is Foeni-Sălaş, where six species of snail were determined, 99 % of them came from the common snail (Helix sp.). It is specified also, that the snails as a good source of carbohydrates could replace for grains (Greenfield, Draşovean, 1994, p. 74). In Transylvanian sites the rate of these remains is minor.

AGING DATA

Cattle Analyzing the age-class profiles in each case seemingly results were got. As a dominant trend is the increased quota of young and sub-adults animals in almost all sites. At Cauce and Şeuşa this class records up to 80 %. In most cases the animals killed aging less 2-3 years total 40-60 %. Just at Foeni-*Gaz*, the percent of sub-adults is 33 %. The adult quota varies between 20-57 % (Table 5). The percent of animals kept to an advanced stage (reproduction, milk) fluctuates as it follows: 9-15 % in the Banat Plain, 20-35 % at Gura Baciului and 26.7 % at Miercurea Sibiului. At Pojejena, Cauce and Şeuşa mature individuals were not identified. Thereupon, cattle were bred chiefly for meat, 50 % of the total protein necessary was provided by bovines. Certainly the existence of some individuals exploited many years after they reached maturity would imply the milk using in consumption. Concerning the sex ratio, at Miercurea Sibiului the male/female ratio is 11/6, suggesting a preference for male killing, mostly before or sooner after their body maturity accomplished. Obviously economic judgment conditioned the culling of males for killing, keeping the females for by-products.

Table 5. Cattle kill-off patterns.

Site	Infans	juvenile	sub-adult	Adult	mature
Foeni-*Gaz*		14.2	19	57.1	9.5
Dudeştii Vechi		7.7	30.8	46.1	15.3
Pojejena-*Nucet*	22.3		44.4	33.3	
Miercurea Sibiului	5.4	17.9	25	25	26.7
Cauce	20	40	20	20	
Şeuşa	20	40	20	20	
Gura Baciului I	40		40		20

Caprinae A similar scheme to that of cattle was obtained in case of small ruminants. So the young and sub-adult exemplars dominate the statistics with 60-75 % in almost all sites, excepting Gura Baciului with 57.6 %. Perhaps in this case, an economy focused on small ruminant implied a cautiously exploitation of species. Overall the quota of adult and mature animals varies as it follows: 21-37 % adults and 11-14 % matures in the Banat Plain sites. Mature individuals were not presumed at Pojejena-*Nucet*. The percent of adults is 19.6 % at Miercurea Sibiului; few exemplars lived to old age, 8 %. The most increased value of matures was found at Gura Baciului, 30.7 %. At Şeuşa were not identified mature exemplars, in exchange their number is reduced at Cauce.

Suids were kept for meat, but their importance in diet is reduced as compare to the later epochs. The kill-off patterns indicate a value of 50-90 % young and sub-adult exemplars. Also adult animals were identified everywhere excepting the Cauce sample. Their percent vary between 50 % (Şeuşa, Dudeştii Vechi) and 16.7 % (Gura Baciului).

Table 6. Sheep-goat kill-off patterns.

Site	Infans	juvenile	sub-adult	adult	mature
Foeni-*Gaz*		35.5	28.9	21.4	14.2
Dudeştii Vechi		18.6	33.3	37	11.1
Pojejena-*Nucet*	25		50	25	
Miercurea Sibiului	23.9	19.6	28.3	19.6	8.6
Cauce	28.9	26.7	11.1	33.3	
Şeuşa	17.6	23.5	29.4	29.4	
Gura Baciului I	30.7		26.9	11.5	30.7

Table 7. Pig kill-off patterns.

Site	Infans	juvenile	sub-adult	adult/mature
Foeni-*Gaz*		50	16.7	33,3
Dudeştii Vechi		16.7	33,3	50
Miercurea Sibiului	25		50	25
Cauce	50	10	30	
Şeuşa	25	25		50
Gura Baciului		83.3		16.7

Conclusions

Closing, the earliest Neolithic communities from the Banat Plain exploited in different ways the natural resources offered by surroundings (fish, mollusks, birds, reptiles, wild mammals), without doubt a seasonally exploitation of these resources is supposed. Accordingly, the oldest habitation from Dudeştii Vechi characterizes by a sustained hunting, by the side of a seasonal exploitation of aquatic resources. Of domestic species segment, a special attention was done to small ruminants, cattle ranking the second in diet. The pig exploitation was insignificantly. An economy focused on caprinae and aquatic products (totaling 87 %) characterizes the Foeni-Gaz community. The hunting played a minor role in supplying. The same increased role of aquatic resources is noted at Foeni-Sălaş too, but cattle are dominant among domestics (Greenfield, Draşovean, 1994, p. 74). Thus, the cited sites, with the exception of Foeni-Sălaş, developed animal economies sustained principally by caprinae; for all that cattle reached important values (20-30 %), as compare to sites from Macedonia, Thessaly. Certainly the climate was propitiously to cattle living. The environment from Danube Valley would have been more propitious to cattle and hunting than to small ruminant exploitation. In this context could be explained the high rate of cattle and wild mammals at Pojejena-*Nucet*. With regard to sites from Transylvania, two types of animal husbandry were emphasized. Some sites display a clear dominance of caprinae such as Şeuşa, Cauce, Gura Baciului (the last

site distinguishes by an increased ratio of cattle). An economy sustained by cattle (over 50 % dominance) is noted at Miercurea Sibiului, only.

In our regions the first Neolithic communities introduced a husbandry supported by caprovines, containing also, cattle, pig and dog. "The comparatively high cattle and low pig ratio distinguishes the animal husbandry from that of the early Neolithic of the Southern Balkans and put it into the northern type" (Bökönyi, 1992b, p. 79), typical to our regions. Having in view the new environmental conditions favorably to bovine breeding, over time a switch over towards cattle exploitation could happened. Positively, towards the end of the final phases of the Starčevo-Criş culture the prevalence of cattle in husbandry becomes certitude.

Bibliography

Bökönyi, 1989 – Bökönyi Sandor, Animal Remains, în Gimbutas Maria, Winn Sh., Shimabuku D., Achilleion. A neolithic settlement in Thessaly, Greece, 6400-5600 B.C., *Monumenta Archaeologica*, 14, Los Angeles, 19889, 315-332

Bökönyi, 1992 – Bökönyi Sandor, Animal remains of Mihajlovac- Knepište; An Early Neolithic Settlement of the Iron Gate Gorge, *Balcanica*, 23, p. 77-87

Cârciumaru, 1996 – Cârciumaru Marin, *Paleoetnobotanica. Studii în preistoria şi protoistoria României*, Iaşi, 201 p.

Ciubotaru, 2004 – Ciubotaru Dan Leopold, Şantierul de la Dudeştii Vechi (Jud. Timiş), Cronica Cercetărilor Arheologice. Campania 2003, Cluj-Napoca, 2004

Ciută, 2005 – Ciută Marius, *Începuturile neoliticului timpuriu în spațiul intracarpatic transilvănean, Bibliotheca Universitatis Apulensis*, XII, Alba Iulia, 2005

El Susi, Bindea, 1995 – El Susi Georgeta, Bindea Diana, Raport preliminary asupra materialului faunistic din aşezarea neolitică timpurie de la Gura Baciului, jud. Cluj, *Acta MN*, 32/1, p. 181-189

El Susi, 2000 – El Susi Georgeta, Determinarea resturilor faunistice dintr-o locuință neolitică timpurie de la Seuşa - "La cărarea morii" (jud. Alba), *Banatica,* 15/1, p. 49-59

El Susi, 2002 – El Susi Georgeta, Cercetări arheozoologice preliminare în situri Starčevo-Criş timpurii din Câmpia Banatului. Fauna de la Foeni-Gaz şi Dudeştii Vechi (Jud.Timiş), *Analele Banatului,* 9/2001, p.15-40

Greenfiel, Draşovean, 1994 – Greenfiel Haskel John, Draşovean Florin, Preliminary Report on the 1992 excavations at Foeni-Sălaş: an early neolithic Starčevo-Criş settlement in the Romanian Banat , *Analele Banatului*, 3, p. 45-86

Lazić, 1988 – Lazić Milica, Fauna of Mammals from the Neolithic Settlements in Serbia, Srejović D., *The Neolithic of Serbia*, Belgrad, p. 24-38

Lazarovici, Lazarovici, 2007 – Lazarovici Magda Cornelia, Lazarovici Gheorghe, Arhitectura neoliticului şi epocii cuprului în România, *Bibliotheca Archaeologica Moldaviae*, IV, Iaşi, version on CD

Luca et alii, 2004 – Luca Sabin, Roman Cristian, Diaconescu Dragoş, *Cercetări arheologice în peştera Cauce*, vol I, Sibiu, 2004

Luca et allii, 2005 – Luca Sabin, Roman Cristian, Diaconescu Dragoş, Ciugudean Horia, El Susi Georgeta, Beldiman Corneliu, *Cercetări arheologice în peştera Cauce*, vol II, Sibiu, 2005, p. 95-155

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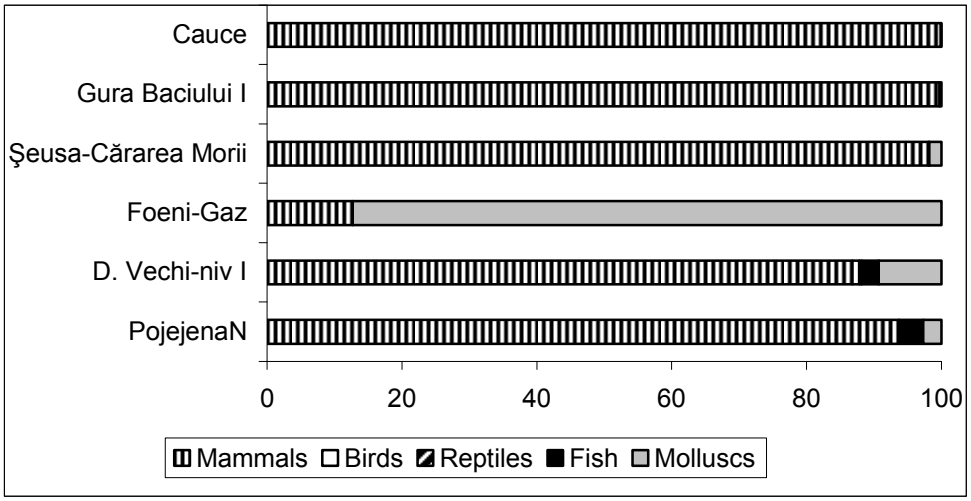

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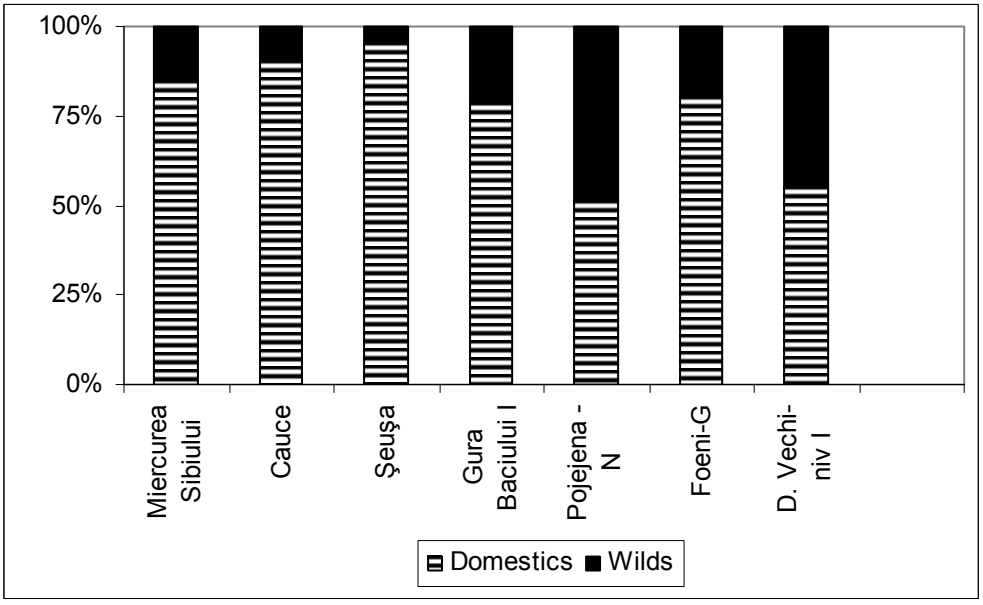

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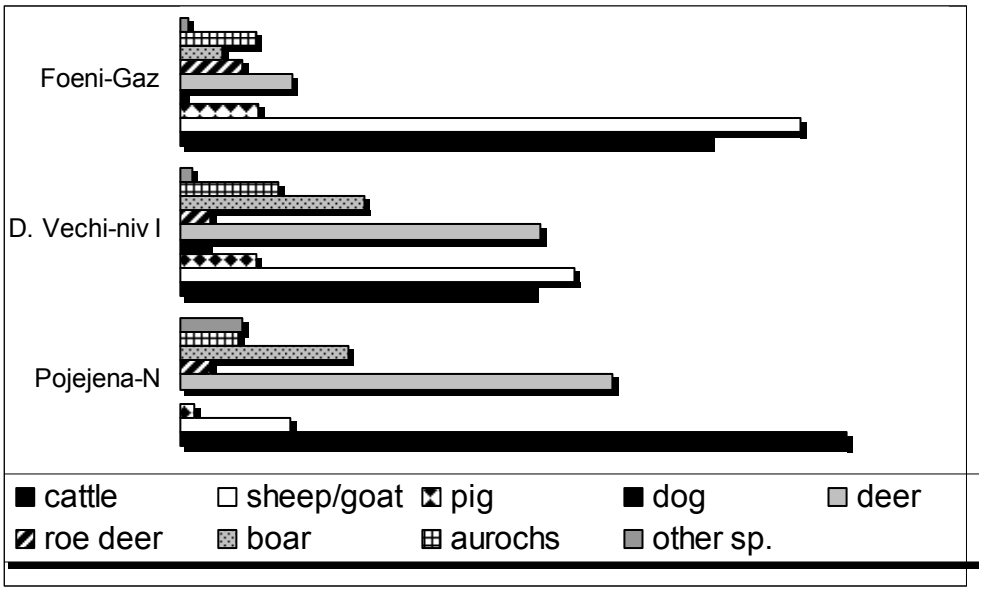

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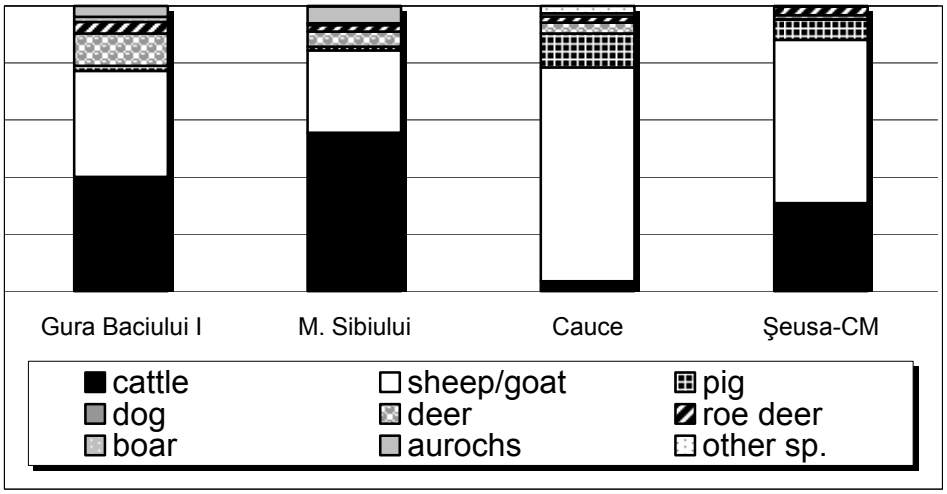

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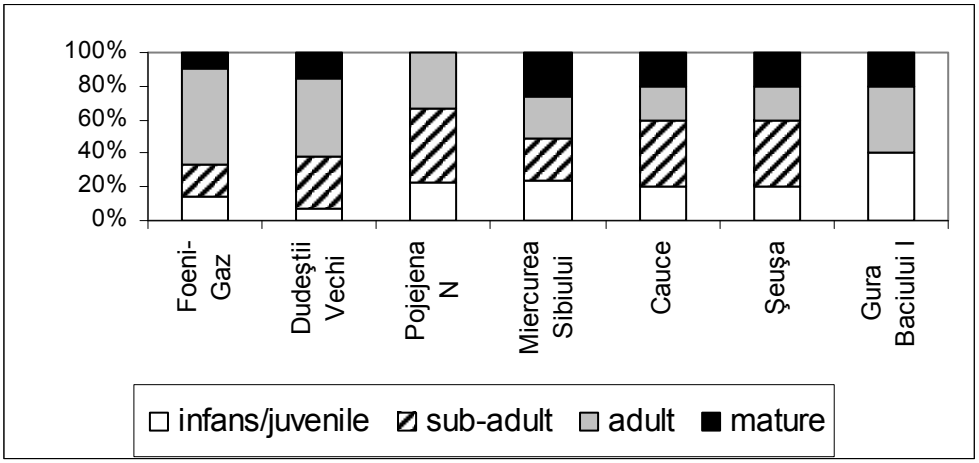

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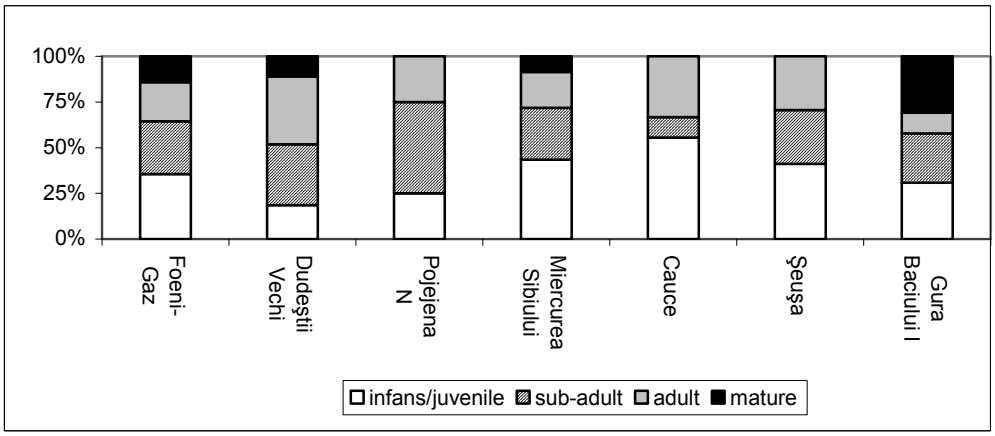

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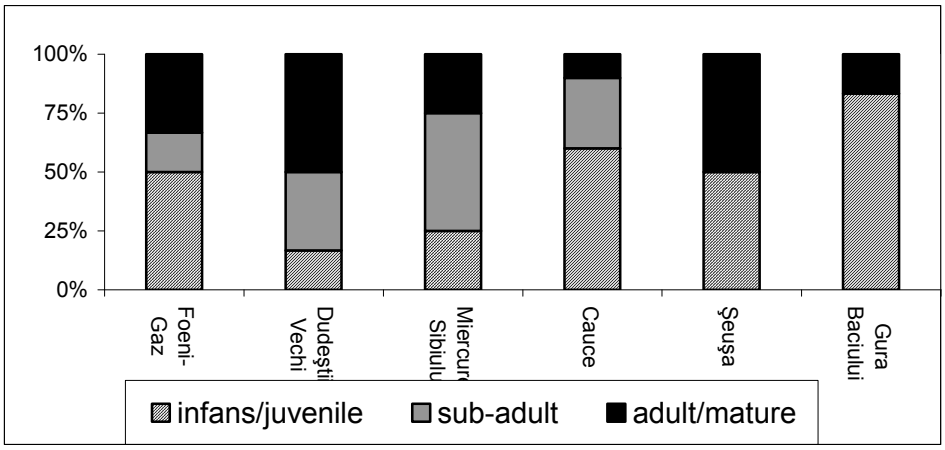

Fig. 7.

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LE „MODÈLE ENKIDU" ET LE CONCEPT DE „RÉVOLUTION" NÉOLITHIQUE

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Kez words: *Neolithic, cultural revolution.*
Abstract: *The authors propose us a new theory about the process of Neolithisation through the „Model Enkidu".*

Le passage vers le mode de vie néolithique, par l'ampleur de ses conséquences sur tout le déroulement de l'histoire de l'humanité, représente l'un de plus importants moments de l'histoire de la civilisation, si non même le plus important, parce qu'il a ouvert à l'homme moderne la perspective de la formation de son trait comportemental définitoire, celui de producteur. C'est aussi le motif pourquoi la découverte du mode de vie néolithique représente l'un des thèmes préférés de la recherche préhistorique.

Le plus souvent, dans le cadre de ces recherches, on a essayé trouver un modèle unique, universel valable, pour toutes les situations dont les différentes zones sont passées au nouvel mode de vie. En fait, il y a une diversité de situations, provoquées par les conditions locales, par le moment et les circonstances historiques de la transition, aussi bien que par les disponibilités natives de chaque groupe en ce qui concerne l'adaptation aux changements, plus vite ou plus lente, totale ou partielle.

C'est pourquoi, nous considérons que dans le gros plan des débats concernant les voies du passage vers le néolithique il ne doit pas trouver les tentatives de combattre quelques théories ou hypothèses antérieures sur la néolithisation, afin d'imposer, par contraire, les opinions personnelles, mais de présenter et d'étudier plusieurs cas historiques concrets par lequels on a réalisé le passage vers le néolithique, en diverses zones du monde. Ultérieurement, sur la foi de cette base de données concrètes, on pourrait éventuellement émettre quelques généralisations, dans le cas de la répétition de quelques situations analogues.

Dans ce sens, même le terme de néolithisation ne peut pas être appliqué, à notre avis, aux régions où on a découvert, pour la première fois, graduellement, le nouveau mode de vie, ainsi qu'il est le cas des zones orientales du bassin méditerranéen. Dans ces situations, nous croyons qu'il est préférable de parler, pas de néolithisation, mais de la ***découverte du néolithique***. La néolithisation suppose des situations quand un mode de vie déjà existant est imposé ou assimilé par

l'acculturation; donc, elle est, chronologiquement, ultérieure à la découverte du néolithique.[1]

Nous voulons spécialement y arrêter sur les situations moins abordées, qui pourraient être expliquées par une réévaluation de l'ancien concept de la „révolution néolithique". Il s'agit de celles situations où une communauté ou un individu a réalisé le passage du mode de vie paléolithique (la soi-disante „économie de pillage") à celui néolithique („économie de production"), pendant une génération, donc dans un laps historique court. De telles situations sont plus difficilement saisisables à la voie archéologique, bien que, ainsi que nous montrerons, il y a des preuves dans ce sens. D'autre part, l'existence des changements brusques s'inscrit à la logique de l'histoire, les cas de „transition" d'un âge historique à l'autre, pendant l'existence d'une génération, étant très nombreux (voir, par exemple, la situation actuelle des pays européens de l'ancien système socialiste).

On considère que la respective situation, y préconisée pour le passage au néolithique, n'est pas seulement un modèle théorique, mais on trouve aussi des points d'appui dans la littérature antique. Ainsi, nous croyons que la description d'un tel cas se trouve dans la connue „Epopée de Gilgamesh", avec la référence à l'évolution de l'héros Enkidu[2]. Celui, par l'intervention divine, transposé en réalité avec l'aide des hommes civilisés de Ourouk, se transforme, dans un temps très court, d'un sauvage, qui vivait de cueillette, dans la même manière des animaux, dont il se mélangeait[3], dans un homme appartenant au monde civilisé, qui est devenu l'ami et le compagnon d'armes du roi Gilgamesh. La transformation se réalise par l'influence de quelques éléments „convaincants" (comme nourriture préparée, boisson, plaisirs raffinés de l'amour, vêtement, le soin du corps, logement, etc.)[4], qui l'ont déterminé d'abandoner brusquement l'ancien mode de vivre et d'adopter un autre type de comportement.

Cette situation, de transformation rapide d'un sauvage dans un homme qui adopte les valeurs de la civilisation de son temps, peut être dénommée le „modèle Enkidu", tenant compte du fait que c'est le premier cas de ce type, décrit amplement dans la littérature universelle. Il doit souligner que cette transformation est regardée comme un act de volonté divine, étant accompagnée d'offrandes apportées aux dieux (voir le moment de l'arrivée d'Enkidu en Uruk)[5]. D'ailleurs, même dans le processus de la „civilisation" d'Enkidu on souligne que les „bienfaits" lui offerts sont en quantités qui dépassent le normal, l'ordinaire, ainsi qu'il montre le chiffre

[1] N. Ursulescu, *Problema neolitizării*, in: Academia Română, *Istoria Românilor*, I (coordonateurs: M. Petrescu-Dîmboviţa, Al. Vulpe), Bucureşti, 2001, p. 115.

[2] Dans notre analyse nous avons utilisé l'édition roumaine, soignée par Virginia Şerbănescu et Al. Dima (Bucarest, 1966), traduction selon la version française de René Labat, Paris, 1961.

[3] *Ibidem*, p. 35, 39, 50-51.

[4] *Ibidem*, p. 39-41, 50-51.

[5] *Ibidem*, p. 54.

magique indiqué – sept[6], dont on sait que celui-ci représente un nombre du surnaturel, de la divinité[7].

Dans le cas du processus de néolithisation, ce modèle se base sur la pouvoir de l'exemple d'une communauté agricole qui s'établisse dans une zone où vivaient des groupes de chasseurs et de pêcheurs. Bien sûr que les relations entre les deux groupes avec des types de comportement totalement différents n'ont pas été seulement pacifiques, ainsi que montre, par exemple, quelques squelettes trouvés à Schela Cladovei, ayant des points de flèches fichés, qui ont provoqué, probablement, leur mort[8]. On peut aussi accepter l'intégration dans la nouvelle communauté de quelques individus de l'ancienne population, qui ont conservé quelques coutumes, surtout en plan spirituel (voir, par exemple, le cas des tombes de l'habitat Starčevo-Criş très ancien de Gura Baciului, avec de grosses pierres sommairement sculptées, rappelant les têtes sculptées en pierre de la culture Lepenski Vir)[9].

De tels membres de quelques communautés paléolithiques de chasseurs, qui ont survécu au conflit avec les nouveaux venus, se sont pu adapter, assez rapidement, en contact avec les communautés néolithiques établies aux environs où ils ont été intégrés au cadre de celles-ci, au nouveau mod de vie, par l'assimilation de quelques éléments utilitaires et de spiritualité, spécifiques au néolithique, en changeant fondamentalement le comportement.

Donc, ces „modèle Enkidu" propose de mettre en lumière les situations de changement brusque, où une personne, à la naissance, appartenait à la société paléolithique et, à la fin de la vie, elle était déjà intégrée à la société néolithique.

On considère que l'existence de telles situations sollicite aussi une éventuelle réévaluation du concept de la „révolution" néolithique, proposé par V. G. Childe[10]. Introduit dans un moment quand n'il y avaient pas des découvertes qui attestent l'existence d'une longue période du néolithique préceramique, le terme suggérait, en fait, que dans la vie des communautés mésolithiques/épipaleolithiques, en même temps avec la découverte du mode de vie basé sur la production, on a produit un changement fondamental.

Mais, tenant compte surtout de l'aspect chronologique, les exégèses modernes sur le problème de la néolithisation ont rejeté, dans le dernier temps, le terme de

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[6] "Enkidu a possédé six jours et sept nuits la fille du plaisir" (*ibidem*, p. 39, 49); "il a bu de sept fois le contenu d'une cruche" (*ibidem*, p. 51).

[7] Matila C. Ghyka, *Filosofia şi mistica numărului*(traduction selon l'édition française, Paris, 1952), Bucureşti, 1998, p. 21; N. Ursulescu, *La valeur sacrée des nombres dans l'Énéolithique de Roumanie*, in: *Actes du XIV*ème *Congrès UISPP, Université de Liège, Belgique, 2-8 septembre 2001*, Section 9 – Section 10, BAR International Series 1303, Oxford, 2004, p. 325-331.

[8] V. Boroneanţ, *Recherches archéologiques sur la culture Schela Cladovei de la zone des Portes de Fer*, Dacia, XVII, 1973, p. 5-39.

[9] Gh. Lazarovici, Zoia Maxim, *Gura Baciului*, Cluj-Napoca, 1995, p. 186-187.

[10] V. G. Childe, *Făurirea civilizaţiei* (l'édition roumaine de *Man Makes Himself*), Bucureşti, 1966, p. 82-115; idem, *De la preistorie la istorie* (l'édition roumaine de *What Happened in History*), Bucureşti, 1967, p. 60-76.

„révolution néolithique”[11], parce que, sur la voie archéologique, on a attesté l'existence d'une longue période où on a accumulé, au fur et à mesure, dans le cadre de la société paléolithique, une série d'éléments spirituels et d'ordre économique, qui deviendront spécifiques au néolithique.

Une réévaluation de ce terme doit partir justement de son double sens: soit que celui de transition brusque vers le nouveau mode de vie, soit que celui de changement fondamental du mode de vivre, mais sans une limitation chronologique.

Dans le cas des communautés qui ont découvert pour la première fois le mode de vie néolitique, le terme de „révolution” n'a pas justification du point de vue chronologique, il s'agisant d'un long processus évolutif; cependant, il peut être utilisé, figurativement, en tant que changement fondamental.

Dans l'autre cas, y pris en discussion, celui d'adoption de nouveau mode de vie par de quelques représentants de l'ancienne société paléolithique, on considère que le terme de „révolution” néolithique peut être accepté, tant sous l'aspect figuratif (concernant la modification fondamentale du système d'existence) que sous l'aspect chronologique aussi, dans la situation de l'adoptation rapide, pendant la durée d'une vie, conformément au scénario y dénommé le „modèle Enkidu”.

[11] Kent V. Flannery, *Childe the evolutionist: a perspective from Nuclear America*, in: *The archaeology of V. Gordon Childe. Contemporary perspectives* (ed. D.R. Harris), London, 1994, p. 101-120; Paul-Louis van Berg, *Il n'y a pas eu de revolution néolithique*, in: *Legéniede l'homme des origins à l'écriture* (éd. J.-M. Cordy), Abbaye Saint-Gerard de Brogne, 1995, p. 89-95.

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SETTLING DISCOVERY CIRCUMSTANCES, DATING AND UTILIZATION OF THE TĂRTĂRIA TABLETS[1]

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Gheorghe Lazarovici[3]

Key words: *Neolithic, symbols, "Danube script", Tărtăria, Romania.*

Abstract: *In conclusion on this point, the social life of the inscribed tablets and the other cultic artifacts has two phases: before and after the dead of Milady Tărtăria. With regards to the first phase, in the present article we advanced some hypothesis regarding the cultic inventory with correlate liturgies and sovereign mysteries among them we pointed out the presence of speaking or singing figurines. We also observed that only the tablets are entire and interred as complete items, while all the other cultic objects have been submitted to an intentional and methodical breaking procedure and deposited as incomplete items. In a process that transforms matter into being, it is possible that some figurines were manufactured at the time of Milady Tărtăria's death and were used in rituals to represent the newly dead and then broken and sacrificed tying the living into the power of the neo-ancestor and by doing so asserting a claim of continuity and belongings. Besides some artifacts might have been surrounded by taboos and other might have been employed in rituals that nowadays are considered of "black magic". These occurrences pose new questions about the identity of the buried person and about the possible connections with the tablets and their signs.*

1. Tărtăria finds evidence a possible European Neolithic writing

The three inscribed[4] tablets discovered in 1961 at the settlement of Tărtăria (near Turdaş, in Romania, Alba county; viz. *Moga 1995*) are *the* icon of the *Danube Script* and the *Danube Civilization.* Evidence of same and similar signs had been known and investigated since the archaeological excavations carried out in late 19th and early 20th century at the important prehistoric sites of Turdaş (Romania, Alba County), Vinča (Republic of Serbia), and others. However, it was the recovery of the three Transylvanian finds to kindle a wave of controversy regarding both the

[1] This article displays some results of the "Tartaria Project" promoted by the *Prehistory Knowledge Project* at EURO INNOVANET and carried on by the authors.

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[4] Sings are incised, not impressed as claimed by some authors (viz for instance *Tringham 1971: 114).*

spatial incubators and temporal sequence of Southeastern European prehistoric civilization. They also made real the *possibility* that Neolithic and Eneolithic cultures of Southeastern Europe might have expressed an early form of writing predating the Near East regions by 1000-2000 years. Therefore, the centre of the ideas about writing or the signs used for it might not have been Mesopotamia and this invention could have been developed much earlier than about 3300 BC.

Image 1. Tărtăria tablets.

We use "Danube signs" / "Danube script" as general terms for the rudimentary system of writing related to the Neo-Eneolithic civilization which flourished along the great Danube basin (the Danube civilization); "Vinča signs" / "Vinča script" as strictly limited to the Vinča culture which developed in the central area of the Danube civilization. This terminology is coherent with the challenge to demonstrate that "early civilization" status can no longer be limited to the regions which have long attracted scholarly attention (i.e. Egypt-Nile, Mesopotamia-Tigris and Euphrates, the ancient Indus valley), but it must be expanded to embrace the Neo-Eneolithic civilization of the Danube basin. The script is only a mark – although important – of the high status of this civilization. The Danube script originally appeared in the central Balkan area and had an indigenous development. It quickly spread to the Danube valley, southern Hungary, Macedonia, Transylvania, and northern Greece. It had a cousin script in Cucuteni-Tripolje area (*Merlini 2004c*). The Danube script flourished up to about 3500 BC when a social upheaval took place: according to some, there was an invasion of new populations, whilst others have hypothesized the emergence of new elite. At that time, the script eclipsed (*Merlini 2003, 2004a: 51-63*).

One cannot understand the virulence and centrality of the discussion on the Tărtăria tablets if one does not consider that the ante was strategic: the effectiveness in dating of the C14 analysis and on its basis the "reconstruction of the archaeological chronology in general" (*Neustupný 1968b: 32*). With regards to this issue, it is worth to remember that at the time of the Tărtăria discoveries the

beginning of the Starčevo-Criş culture was estimated about three millennia after the present findings i.e. 3400 BC (*Grbić 1955: 25, 27; Benac 1958: 41, and others*) and the C14 dating method was still rather imprecise. The radiocarbon method, developed by Willard F. Libby of the University of Chicago and widely used in the fifties, for example ignored the influence of the changes of Earth's magnetic field upon the production of radiocarbon.

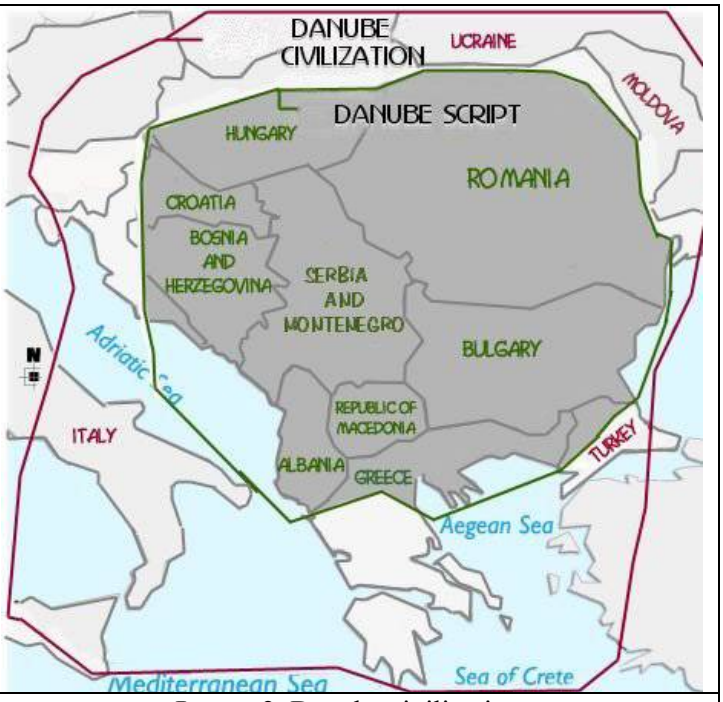

Image 2. Danube civilization.

In such a fluid und unsettled situation the Tărtăria tablets played the role of a unique occasion in which some scholars tried to introduce C14 dating as a standard method while others sought to discard it as useless and misleading. Still in 1965 Vl. Milojćić and in 1967 Sinclair Hood, discussing the Transylvanian finds as a gluttonous occasion for rejecting the C14 date for the Vinča culture, observed that C14 dates for cultural stages in historical Egypt, Mesopotamia and the Aegean were often accused of being too late (contrary to the Vinča date), because they did not consider their correction on the basis of the influence of Earth's changing magnetic field on the production of radiocarbon (*Milojćić 1965; Hood 1967*).

2 An archaeological investigation without end

Tărtăria is a rural Transylvanian village of 5,000 inhabitants. The Neolithic settlement of Tărtăria-*Groapa Luncii* is located near the railway station "Tărtăria", on a small promontory 300-350 meters long and 150 wide which is 15 meters high on the Mureş river and is orientated E-W. Some time ago, a branch of the Mureş river flowed under this mound receiving fresh water from a small stream and other springs, all sourcing out from the high terrace of the settlement river which was very much eroded in time by floods. The Tărtăria mound is located inside an intensely cultivated area. Unfortunately amateurs don't have to take pains in

rummaging the soil to unearth out shards, fragments of statues, remains of altars, etc.

Image 3. Site of Tărtăria.

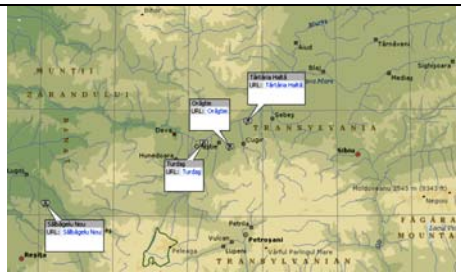

Image 4. Map with Tărtăria site location.

The prehistoric settlement mound of Tărtăria-*Groapa Luncii* is just 500 m. far from another Neolithic settlement, Balomir–*Gura Văii Cioarei (Vlassa 1967: 404-408; 1969: 513-540; 1976: 114-118),* famous for one of the first evidence of utilization of metals (*Vlassa 1976: 118)*. it is also not very far from the copper and gold deposits of Zlatna region and some 18-20 kilometers from two important Neolithic settlements: Turdaş and Alba Iulia-*Lumea Nouă*.

Tărtăria-*Groapa Luncii* is a main Neolithic site with the cultural strata approximately from one to three meters thick with pit-houses in sector section G from N. Vlassa, reaching a depth of four meters in some places. It was investigated in five stages by various scholars.

The site was discovered on the 15th July 1906 by Endre Orosz who asserted that it was contemporaneous with the Turdaş settlement and characterized by high-pedestalled bowls and painted pottery (*Orosz 1908*). In the 1930s Tărtăria-*Groapa Luncii* became well known when Marton Roska (University of Cluj) accidentally discovered some Neolithic objects similar to that of Turdaş (*Roska 1942: 21 n. 77*). The settlement was for the first time systematically investigated during the war years 1942-3 by Kurth Horedt although the archaeologist carried out only an informative dig, excavating a limited area in the north-western sector of the settlement[5] and writing a brief preliminary report exclusively for limited circulation (*Horedt 1949*).[6]

Nicolae Vlassa (archaeologist of the National History Museum of Transylvania at Cluj) did a survey excavation in 1961 accompanied by Iuliu Paul and Attila Laszló (*Vlassa 1962.23-30; 1963. 485-494; 1976. 28-43*). His main purpose was to study in detail the stratigraphy of the neighboring site of Turdaş using information from the culturally paralleled Tărtăria-*Groapa Luncii*. In fact, the enormous collection of Turdaş finds accumulated in the past by Transylvanian museums

[5] Areas A, B, C, D, E and F.

[6] Gheorghe Lazarovici has recently re-discovered Horedt's excavation journal and he is analyzing them.

lacked any stratigraphic detail and the artifacts inventory had been made only by their typological and stylistic features. A stratigraphic analysis of the Turdaş culture was no longer possible in the eponymous settlement because it has been carried away by the Mureş River, but it was still available in Tărtăria-*Groapa Luncii*, which belonged to the same culture.

Finally, Iuliu Paul (University of Alba Iulia) carried out the last systematic investigation in 1989 continuing with the excavation in the north-western area of the settlement and extending the research both to the central and eastern area of it. In particular he dug 50 cm. from Vlassa's trench recovering the fire place and many pits going down from the upper levels but not the ritual pit. Unfortunately, he did not publish the report.

The excavations at Tărtăria-*Groapa Luncii* have uncovered four layers. According to the traditional stratigraphy, the deepest layer, thin and interrupted, has Starčevo-Criş[7], Vinča A, Vinča B1, Alföld Linear pottery (*Makkay 1974/5: 14*). The third from bottom to top, 1 m. depth was a Vinča B occupation and presents surface dwellings (*Vlassa 1976: 29*). The second was considered by Vlassa belonging to the Petreşti-Turdaş culture (*Vlassa 1976: 30*). The upper stratum was ascertained to the Coţofeni culture related to the Baden and other cultures, probably Indo-European populations that replaced the Neolithic and Eneolithic inhabitants throughout Southeastern Europe (*Winn 1981: 185*).

We made a revision of plan and profile in Lazarovici and Merlini 2005-2006. We will reassume it in the paragraph 10.

3. The Tărtăria tablets as problematic archaeological artifacts

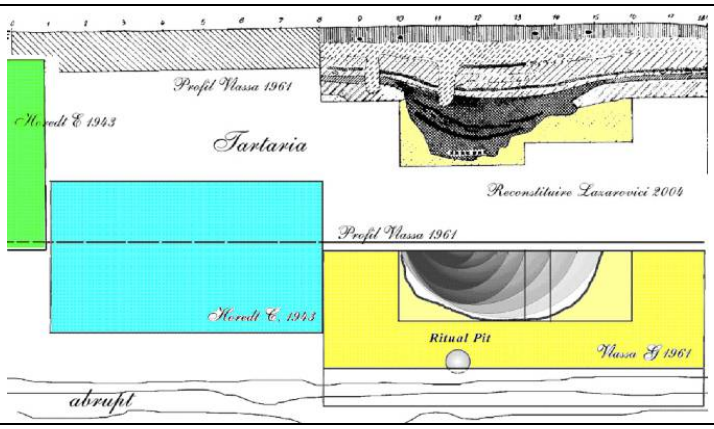

Image 6. Stratigraphy by Lazarovici and Merlini.

[7] Remains of this culture are pointed out by the presence of hashed chaff used as a cleanser (Luca 2003.24).

In 1961, Vlassa recovered from a pit three little, inscribed plates of baked clay together with a pile of offerings which were associated with the bones of a mature human being, estimated to be 35-40 years old (*Vlassa 1963: 492*). The excavator immediately cautioned that "the find being quite recent, we can as yet offer only some general remarks about its meaning and importance" (*Vlassa 1962: 27*). However, year after year he published the same content of the preliminary report (*Vlassa 1963, 1970, 1976, 1977*). Also after 14 years, he continued to alert the reader to the circumstances that he was offering only some general remarks because of the novelty of the discovery.

Here is in synthesis the suggestive scenario outlined by the archaeologist in charge (*Vlassa 1962; 1973; 1976, 1977*):

I. a cultic offering composed by objects and bones laid on the bottom of a ritual pit which was located in the deeper layer (*Vlassa 1963: 490*), in the sterile loess, from the first and oldest cultural level (*Vlassa 1976: fig. 3.4; 1977: 13*);

II. the bones appeared "scorched and disjointed, some of them broken" and they belonged to a mature individual about 35-40 years old;

III. the pit was evidently a *ritual pit* or "*magical-religious complex"* filled of ashy earth"; the pile of objects found at the bottom of it was a "sacrificial offering";

IV. the discovery was "the only magical-religious complex… of this kind in the Turdaş culture areas";

V. Regarding the human bones, N. Vlassa wrote "Near the small heap in which all these objects lay, scorched and disjointed bones, some of them broken, belonging to an individual about 35-40 years old were found" (Vlassa 1963, p. 492);

VI. the scorched, broken and disjointed bones were concluded to be "the remains of a sacrifice, accompanied by some kind of ritual cannibalism" (*Vlassa 1963: 492; 1976: 31*);

VII. two of the tablets are rectangular, one is round. The first tablet "has the form of an irregularly rectangular plate, measuring 5.2 x 3.5 x 1.6 cm."[8] The second, similarly shaped and slightly convex in section, "bears a round hole and measures 6.2 x 3 x 0.9 cm."[9] The third, "discoid and pierced by a round hole measures 6.1 x 6 x 2.1 cm."[10] Signs are inscribed on the tablets only on one face. The archaeologist made note in the excavation report that one tablet "bears a (hunting?) scene, and the two others extremely curious signs placed on several rows" (*Vlassa 1963: 490*);

VIII. the signs incised on rows on the tablets "may be taken for a rudimentary writing… at least the rudiments of an ideographic notation" (*Vlassa 1963: 492*).

IX. the hoard of offerings which accompanied marked plates and human bones consisted of 26 burned-clay statuettes – or their fragments - with triangular head and

[8] Actually it measures 5.3 x 3.6 x 1.15 cm.
[9] Actually it measures 6.3 x 3.15 x 0.85 cm.
[10] Actually it measures 6.1 (height) x 6 (large) x 2.1 cm.

cylindrical-or-prism-shaped body, two Cycladic-like alabaster idols and a spondylus shell bracelet; the pile of offerings accounted in total 32 objects, tablets included.

At the time of the discovery, the excavator evidently did not consider the pit important enough. Although *Antiquity* maintained that the Tărtăria finds have been "carefully published" by him[11], there are certain inadequacies in his report and the tablets are not certainly dated archaeological artifacts from four points of view:

I. the rumors on their find circumstances;
II. the gossip about their radiocarbon-dating;
III. their unsure stratigraphy inside the pit;
IV. the uncertain location of the pit inside the stratigraphy of Vlassa's dig.

I. The rumors on the find circumstances of the tablets

As any evocative icon with uncertain origin, legends proliferate on the find circumstances of the tablets implying quite polarized point of view on temperament and professionalism of the excavator. As stated by some scholars, Vlassa was not present at the time of the historical discovery, which happened just some hours before the closing down of the excavation. The workers packed the last unearthed finds and he recovered the important und unexpected pile of ritual objects only in the laboratory of the museum. Many years ago, N. Vlassa talks about this circumstance with Gh. Lazarovici.

According to other scholars, Vlassa was too professional to depart from his excavation on the last day and they propose another version. In August 1961, Vlassa and Paul were together excavating at Tărtăria-*Gura Luncii*. During the digging Vlassa claimed to have urgent tasks at home, then disappeared for a long time. Paul decided do not go on alone at digging Tărtăria and moved to an excavation at Pianul de Jos. Subsequently Vlassa came back to Tărtăria opening a new trench in another area of the settlement. After a month, he presented the tablets inserted inside the stratigraphic sequence already sorted out for the archaeological site of Răhău.

Attila Laszló who excavated at Tărtăria with Vlassa as student, does not remember when, where and how Vlassa recovered the tablets. However, Vlassa told to Gh. Lazarovici about his discovery and Vlassa and László have drawn the profile in section H. Therefore, a third wave of scholars maintains that Vlassa ran across the tablets re-organizing the collection of artifacts found by Baroness Zsófia Torma in Near East and kept at Cluj museum. Test of the assertion should be into a claimed missing page in Torma's Notebook: the folios with the drawings of the mythical tablets.

According to a fourth wave of scholars, the tablets could be a modern fake underwent or made by Vlassa. In the latter case, it was the way to success for a

[11] In the introductory note to Hood' article (*Antiquity*, XLI, 1967: 99).

young archaeologist who was in a corner because of impediments in university career.

The only certain points behind the flourishing of several legends are the high amount of poison circulating in Romanian archaeology and the fact that Vlassa ever declined the discussion on the essential issue of the find circumstances of the tablets as well as their stratigraphic location. He also refused to carry on new excavations at Tărtăria-*Groapa Luncii*. However, our judgment should not be hasty. His serial deny to clarify the discovery frame might not be evidence of the worst legends. The archaeological thriller might have another plotter, which challenges more Vlassa's professionalism then ethic, as one can verify below.

II. *The gossip about radiocarbon dating*

Regarding the legends about the supposing dating of the tablets with the radiocarbon, a directly analysis can notice that some little fragments have been taken away from their back. In fact, even up to now the legend of a Russian analysis made in the early 1960s is still circulating. Most of the scholars are very cautious about the Russian rumors and never mention a direct C14 analysis on the tablets. For example Marija Gimbutas states in *The Goddesses and Gods of Old Europe* that "By *analogy* (italics are our) with calibrated radiocarbon dates for early Vinča layers *at other sites* (italics are our), the date of the lowest occupation level cannot be later than the early fifth millennium" (*Gimbutas 1982: 87*). Other researchers (*Bărbulescu 2001; Halloran 2002*) are less prudent claiming the results of a direct radioactive carbon dating of the tablets. Some novelists have even less caution and on the basis of the dreamed up C14 analysis they claim that the tablets mention Enki and Ur of the Annunaki gods but at least 1,000 years earlier then the correspondent Sumerian cuneiform texts (*Gardner 2000*).

The fact is that the tablets have never been analyzed by radiocarbon and they cannot be submitted to this analysis any more. After the discovery, the tablets were soft and appeared covered with calcareous deposits due to the humidity in the pit. A well-meaning but hasty restorer (Josif Korody) confused a matter mixed with calcium, as in fact the tablets are (pulverized live calcium mixed with water in order to bind clay, sand, and different minerals), with a calcium crust due to the moisture of the pit. Therefore, he put them under hydrochloric acid treatment that removed not only the surface calcium as a slip but also destroyed their internal structure. In a late article, Vlassa wrote to have noticed the emblematic signs only after the cleaning of the tablets. In order to harden them, he impregnated them in a vacuum autoclave with extractable organic material thereby submitting them to a baking process (*Vlassa 1972: 371*). Nobody knows at what temperature and how long they had been baked even if is not possible it was more then 150^0, because nitro/chemical liquid used for impregnation blow up. We will look at these data in a deeper way in the paragraph questioning if the tablets could be a modern fake. For the moment, we will limit the analysis to the fact that after the heat treatment the

pieces of Tărtăria will *never* be able to pass the carbon 14 test: the thermic stress has compromised the clay's basic quality indispensable for carbon analysis (*Masson 1984: 115*).

There are not any photos of the tablets before the chemical and thermic treatment and Vlassa did not explain the circumstances of the mishap neither in the preliminary excavation report nor in the subsequent articles. He refused to discuss this issue ever with his close colleagues and friends. In his publications, he only noted that the tablets were "poorly burnt" (*Vlassa 1963: 492*). In fact, the reddish color characterizing them could have been due to the accidental burning in the museum. Some scholars review the tablets as unbaked (*Tringham 1971: 114; Whittle 1996: 101*) and others as baked (*Renfrew 1973: 67*), but we do not understand on which documental basis they formulate these opposite statements on an unknowable point.

The unfortunate accident and the reticence to discuss it hurt not only Vlassa's reputation, but also that of the tablets and of the *Danube Script.* Indeed, some scholars started to claim that the inscribed objects were out of any chronology and context: they might have been found by Vlassa in the museum while putting in order the Zsófia Torma's collection or might be simply a modern fake.

III. *The unclear stratigraphic position of the tablets inside the pit*

Even if the general stratigraphy of the excavation at Tărtăria-*Groapa Luncii* has been reported with precision by Vlassa, the stratigraphy of the tablets inside the pit is *unsure*. The only little information one has is from the preliminary excavation report (*Vlassa 1962*) and its English version published one year later on the magazine *Dacia* (*Vlassa 1963*). As some scholars have already observed, Vlassa's publications did not include any sectional drawing of the pit reproducing *in situ* either the remarkable hoard of bones and artifacts or how they appeared at the time of their discovery at the bottom of the pit (*Whipp 1973: 148*). Neither did they contain data about the dimensions of the pit or other important information on it, nor the circumstances of the dig, nor the exact location of the findings (*Masson 1984: 114*). The only existing evidence is a dark and low quality, but unambiguous, photo in which an arrow points "to the 'ritual pit', dug in the yellow loess, where the idols and the clay tablets were found" (*Vlassa 1963: 487 fig. 3, n.* 4). In this photo, one can also discern another important problematic element not mentioned by Vlassa: i.e. the funnel-shaped pit is not entire but guillotined by the excavators.

At that time (1961), in Romania the cross section excavation was not used in any archaeological investigation. Viz. for example the monograph on Hăbăşeşti (*Vl. Dumitrescu et alii 1954: pl. V*, or for the other next 83 pits: *11-169*), or that one on Truşeşti (where there are drawings neither for the monumental altar, nor for the sanctuary made by the excavator of the complexes; the later reconstructions have been made by *Lazarovici M. 2002; 2004: 47-64, fig. 1, 3, 27*).

Image 7. Photo position of the pit.

If at the moment of the discovery Vlassa did not consider the pit containing the tablets important enough to make an illustration of a cross section of it accompanied by a complete photographic record, after having recognized that the tablets were inscribed by signs of writing he spent more consideration on the hypothesized Mesopotamian influences in Transylvania than on the description of the excavation and its findings.

IV. *The uncertain location of the pit inside the stratigraphy of Vlassa's dig*

If the stratigraphic position of the tablet within the pit is not sure, neither is the stratigraphic position of the pit itself. According to the archaeologist in charge, it was found in the yellowish clay of the first layer under the level Turdaş-Petreşti (after Vlassa it is Vinča A3/B1).[12] However, the difficulties with regards to the stratigraphic data are evidenced by J. Makkay' mistake when, putting together on a larger plan Vlassa´s sections and those made by K. Horedt (*1949: fig. 3*), has wrongly located the ritual pit near the south profile of the trench (*Makkay 1990 fig. 1*).

[12] See the stratigraphy of the showcase in Cluj museum: image 8.

Contrariwise, the correct position of the ritual pit was reconstructed by Lazarovici in the northern border of this G trench profile (*Lazarovici and Merlini 2004, fig. 3*), as evidenced in the above-mentioned image 6.

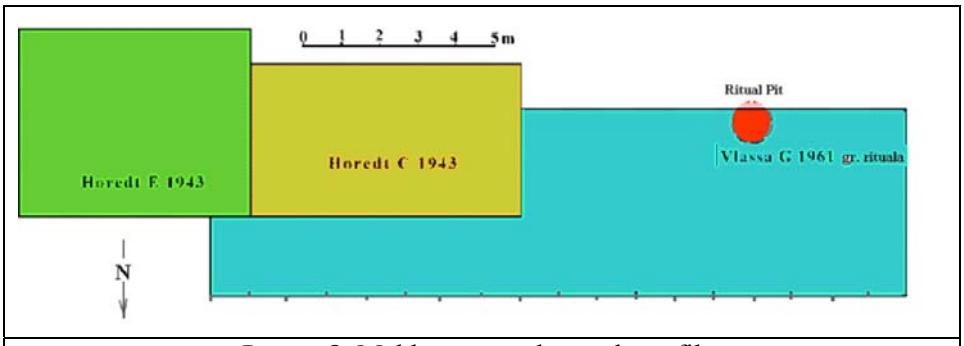

Image 8. Makkay wrongly south profile.

In conclusion, four weak points of Vlassa framework make the Tărtăria tablets dubiously dated archaeological artifacts: the rumors on the circumstances of their discovery and sign recognition; the gossip on their presumed radiocarbon dating; their unsure stratigraphy inside the pit; and the uncertain stratigraphic location of the pit itself. Vlassa's inadequacies have induced many scholars to be skeptic about the information communicated by him regarding the layer where the pit was located, the position of the tablets inside it and even their belonging to the Tărtăria settlement (See, for example, *Berciu 1967; Dumitrescu 1969a: 92; Neustupný 1968a; 1968b: 35; Tringham 1971: 114; Whipp 1973: 148; Hood 1973: 148; Milisauskas 1978: 129-130; Comşa 1982: 82-85; 1987; Zanotti 1983*).

4. The controversy on the chronology of European prehistory found a hub in the Transylvanian tablets

4.A In search for a "deus ex machina" to resolve the crucial issue of the chronology of European prehistory and its synchronization with other civilizations

From the time of their recovery, the inscribed Tărtăria tablets became the focal point in a fierce debate over: a) origin and chronology of writing; b) the chronology of the European prehistory and its synchronization with the other civilizations; c) the diffusionist paradigm according to which *Ex Oriente Lux*; d) the location of the cradle regions of civilization in Europe.

In fact, since their discovery the Transylvanian finds have occupied a unique and often contentious position in European prehistory, because of the dispute over: a) the assertion that their symbols could express a form of writing; b) the dating of the European script and the inconsistency between the absolute and relative chronology because, according to the carbon 14 method, the Danube script predated

the earliest Sumerian cuneiform and Egyptian hieroglyphics for at least one millennium; c) the evidence of a local evolution of Neo-Eneolithic cultures which reduces the importance of migration processes and diffusions from Near East; d) the possibility that the Neo-Eneolithic civilization of the Danube Valley has to be placed in a leading position in European cultural affairs (*Merlini 2003*).[13]

Concerning the dating of the tablets, paradoxically the Tărtăria evidence cracked the skepticism of some scholars over the spectacular claim that the Neo-Eneolithic Danube Civilization used an early form of writing and at the same time reinforced that of others. Vlassa explained that the tablets at Tărtăria came from the loess. However to which cultural horizon does it belong? Due to the uncertain setting of the tablets inside the ritual pit and the not certain location of the pit inside the stratigraphy of the excavated trench, scholars dated them on the basis of their similarity in typological features with other artifacts, the resemblance of their signs with the signs of the already known ancient literacy, and the correspondences between the objects recovered in the ritual pit with other known objects. The result was quite surreal because scholarship assigned to the layer where tablets have been found a very large range of options, sailing from the Middle Neolithic to the Late Neolithic to the Eneolithic up to the Bronze Age. Listing them from the earliest to the latest cultural horizon:

- the early Vinča (*Garašanin and Nestor 1969: 22*);
- Vinča A (*Vlassa 1976: 33*);
- the high developed Vinča A (*Milojčić 1965: 264, 268*);
- Vinča A or Vinča B (*Bognár-Kutzián 1971: 140*);
- Vinča A3, A/B1 (*Lazarovici Gh. 1977: 19-44; 1979: 123; 1989: 81, tab. 1*)
- phase A of Vinča-Turdaş culture (*Masson 1984*);
- Vinča A or Vinča B1 (*Hood 1967: 110*);
- the late period of Vinča-Turdaş B1-2 (*Berciu 1967: 162 note 55*);
- first half of Vinča B1 *(Makkay 1968: 276);*
- Vinča-Turdaş B1-2 (*Makkay 1974/5: 27*);
- Vinča B2 (*Dimitrijević 1969: 94*)
- Turdaş-Petreşti (*Tringham 1971: 114)*
- Baden-Coţofeni (*Neustupný 1968b: 32; Dumitrescu 1969: 99-100 and 588-599; Zanotti 1983*).

If the discordance in assigning a culture to the tablets and the ritual pit was quite extensive, not less wide was the disagreement in giving a date to the related culture. For example, the objects found together with the tablets have been easily associated with the early Vinča by numbers of experts and Milojčić stated that the

[13] For a survey see *Merlini 2004a: 51-63*.

slit eyes of the clay figurines[14] supported a date for the tablets in the Vinča A (*Milojčić 1965: 264, 268*). If radiocarbon dating evidence for the Vinča period had been accepted, then the tablets and their inscriptions should have been dated c. 4200-3900 BC (*Tringham 1971: 114),* or about 5000 BC (*Neustupný 1968b: 32),* or considered "genuine early Vinča artifacts of the fifth millennium BC" (*Gimbutas 1982: 88* with a dating of 5300-5000 BC), or of the latter half of the sixth millennium BC (*Haarmann 1990: 76*): one or two millennia before the dawn of the Sumerian civilization. However, it was an unacceptable conclusion for many scholars who went in search of a much more traditionally comfortable dating. Applying the archaeological connections known at that time (Uruk IV-Jemdet Nasr), they settled the tablets from about 2900-2700 BC (*Vlassa 1976: 33*) to 2500 BC (*Hood 1967: 110*).

Consequently, the Transylvanian tablets have brought into sharper focus the discrepancy between dates based upon radiocarbon method and those based upon archaeological correlations (upgraded to "historical evidence"[15]): the chronological gap was too large and the two options totally irreconcilable. If the radiocarbon dating was truthful, the Tărtăria tablets could not be squared with the Jemdet Nasr period even if one accepted a very early date for it, being much earlier than it. If the Vinča culture was correlated with the Jemdet Nasr period, radiocarbon dating was not only useless but also misleading (*Milojčić 1965: 268*).

We have to frame this crossroads within a period when the proponents of the new radiocarbon chronology moved to attack and the defenders of the traditional, conventional chronology were in defense. Indeed, the latter were open to direct criticism from radiocarbon regarding concerning not only the Balkans and the supposed links with the Aegean early Bronze Age on which Milojčić grounded his chronology, but also other European areas. These difficulties "suggested that the traditional chronology might be seriously in error in the Balkans" (*Renfrew 1973: 68*) regarding the estimated dates, the durations of cultures, the idea that the historical process is based on sequential series of archaeological cultures, the diffusionist paradigm according to which the first farmers spread agriculture across the globe sowing seeds also for most of today's languages and system of writing.

The pivotal role of the Tărtăria tablets in the controversy about radiocarbon dating evidence transformed them in a sort of *deus ex machina* able to solve the crucial issue of the chronology of European prehistory and its synchronization with the other ancient civilizations. Vlassa believed that the tablets offered him the possibility to establish cultural and chronological synchronization between Europe and the Near East (*Vlassa 1962; 1964; 1965 etc*.). His opinion on this subject has been confirmed by distinguished scholars such as Milojčić, who constantly have claimed the invalidity of carbon 14 dates (*Milojčić 1965*), and Falkenstein

[14] Illustrated by Vlassa 1963, 489, fig. 6.
[15] Viz for example *Neustupný 1968: 3*4.

(*Falkenstein 1965*). This view was also sustained by J. Makkay (*Makkay 1967; 1969; 1971; 1984 and 1990*), and Hood (*Hood 1967: 99-102 and 1968*) who considered the Tărtăria tablets as evidence of a short chronology drift from Orient for the Danube Neolithic. At the opposite pole, other archaeologists employed the tablets to champion the long chronology using radiocarbon dating for the Neolithic in Southeastern Europe. Under the irreconcilable controversy on dating, there was the heated debate on the entire relationship between the Balkans and the prehistoric Aegean and Near East.

The range of the published opinions about the dating of the tablets and the interpretation of the signs borne by them, as well as their origin, can by synthesized on the basis of five factors (for a detailed survey see *Merlini 2004a; 2004b*):

i. the dating of the tablets to the Vinča-Turdaş phase or, to be correct, to the Vinča culture after new C14 dates[16] and archaeological evidence[17] according to which the appearance of Turdaş group is coeval to Vinča B2-Vinča C and its entire evolution is synchronic with Vinča C1-C2 (after Vl. Milojčić's periodisation, *Luca S.A. 2001: 96, 114, 118*). Therefore the Turdaş group belongs to the Late Neolithic[18] (*Lazarovici Gh. 1979: 71; 1979: 123; 1989: 81, tab. 1*; *Luca S. A. 2001: 139-143*; *Lazarovici M. 2005*; *Lazarovici, Merlini 2004; 2005; Lazarovici M. 2005*);

ii. the radiocarbon dates for the South-eastern Neolithic in Europe;

iii. the idea that the Tărtăria tablets could bear signs of writing or not;

iv. the autochthonous or foreign nature of the Tărtăria signs, e.g. the supposed existence of similarities between the Transylvanian signs and the Turdaş and Vinča marks and/or the earliest Mesopotamian pictographic signs;

v. the native or foreign origin of the Tărtăria tablets.

In the next paragraphs, we will resume and reorganize the controversy because it is still vital.

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[16] According to S.A. Luca the oldest Turdaş level at Orăştie is situated between 4768-4582 CAL BC (*Luca S. A. 2001: 142*). Lazarovici M. considers this data in a quite good relation with those obtained for Vinča C1-C3, C3-D1 or D sites in Serbia and coeval with those for Vinča C2-C3 from Vinča Belo Brdo established by W. Schier between 4980/4800-4600 BC *(Schier 1996*) .

[17] All sites belonging to this group contain Vinča C materials (Turdaş, Lumea Nouă etc.). See for example the reprint of Martin Roska's discoveries (*Lazarovici Gh., Maxim Z. 1996: 223-267*), or the publication of the archaeological materials from Turdaş or Orăştie (*Luca S. A. 1997; 2001*).

[18] In this case the chronological sequence is Vinča A (A1, A2, A3, or A1, A2, A/B), Vinča B (B1, B2, B2/C) and Vinča-Turdaş (I, II) and not anymore Vinča-Turdaş A, or B as used in the even recent past.

4.B Viewpoint 1: the tablets are ascribed to the Vinča-Turdaş or Vinča period, but the radiocarbon dates for the Neolithic in the Southeastern Europe are contested

Several archaeologists held as unambiguous the excavation context and the dating of the tablets to the Vinča-Turdaş or Vinča period on the basis of the traditional relative chronology and refuting at the same time as invalid the (corrected and uncorrected) radiocarbon dates for the Neolithic in South-eastern Europe (*Milojčić 1965: 261-8; Hirsch 1968-1969: 203; Brentjes 1971: 23-4*). According to this instance the tablets could be ascertained to the Vinča-Turdaş A period (*Milojčić 1967)* or to the Vinča-Turdaş B1 (*Makkay 1968*), i.e. to the Vinča-Turdaş I an II in current and proper way. In any case, they are considered more or less contemporary with the earliest Mesopotamian written signs and many questions raise. Do their signs have essential connections with the pictographic writing of Jemdet Nasr period? Do they bear marks of a script or not? Were they indigenous or imported?

The discoverer of the tablets suspected immediately that the signs incised on rows on the tablets "may be taken for a rudimentary writing… at least the rudiments of an ideographic notation" (*Vlassa 1963: 492*). In his unpublished PhD thesis, he specified that: "The absolute news relate with the tablets is the grouping of the signs that we have on two of the tablets that confer a rudimentary aspect of 'writing'. It is also true that in the area of the Turdaş-Vinča culture we have hundred of isolated signs or grouped (2-3 only), especially on the bottom of the pots or on idols" (*Vlassa 1977: 13*).

Vlassa maintained that if the grouping of the signs represents a form of writing, then a Near Eastern origin of it has to be sought. Indeed, he believed that area the source of almost all cultural developments and considered the idea of prehistoric Europeans developing writing on their own and before their micro-Asiatic prototypes a too unlikely possibility to take seriously.[19] Therefore, he tried to catch the direct or indirect influence of Mesopotamian "high culture" on the organized and well-developed grouping of signs on the Transylvanian tablets. He thought to have found that the signs on the archaic tablets of the record deposits of Uruk IV (3500-3200 BC) and Jemdet Nasr (3200-3000 BC), where writing was thought to have been invented, had the closest analogies to that ones from the Tărtăria tablets. *Many* Transylvanian signs "are seen identical or very similar" to those of Uruk-Warka IV and *some* of them "look like those on the Jemdet Nasr tablets" (italics is from us). The hunting (?) scene "resembles that on an archaic cylinder at Ur"

[19] "Even if we will operate with the long historical chronology of the Ancient Orient, the postponement vis a vis of the C14 data of the Vinča-Turdaş is about a millennium. It is inadmissible to imagine that the pieces from Tărtăria (and many other Middle Neolithic Transylvanian objects that have an "oriental" nuance) are older then their micro-Asiatic prototypes; in the Orient, the historical chronology is supported by very solid arguments; the absolute data of this chronology coincide with those provided by C14 (*Vlassa 1977: 1*4).

(*Vlassa 1963: 492*). Following this line of reasoning, he suggested that since the Mesopotamian tablets dated from that period, the European counterparts would appear around 2900-2700 BC. Half millennium was considered a sufficient time lag for the Near Eastern innovation to have reached Transylvania: "the necessary time for the circulating of such pieces – or the cultural influence which gave them birth – down to the Mureş valley". It was a date "admitted by most researchers for Vinča A" and according to Vlassa it "corresponds exactly to the date which *as a matter of fact* can put forward for the first layer at Tărtăria, even if the tablets were not extant" (*Vlassa 1963: 494*).

Then Vlassa, who was not a specialist in Near East history, noted that to lower "the date of Uruk-Warka IV and Jemdet Nasr… seems lately to be the general trend". Following this mainstream tendency, he reached "for the end of the first layer at Tărtăria a date which would mark *just the beginning of the Vinča B1 phas*e, as we already stated when we characterized the said layer (2600 BC)" (*Vlassa 1963: 494*).

It was natural that taking place an unusual discovery and with astonish novelty not explained at that time by local antecedents or parallels, Vlassa turned the mind to an external influence, filiation or imitation. Of course, he also observed that many of the over three hundred signs on the shards of Turdaş are identical to those on Tărtăria tablets. However, he did not concluded about a local origin of them and the continuity in time of similar marks occurring in Neolithic sites of Southeastern Europe, but he introduced the question of the place from which the bearers of the Turdaş culture came with an implicit answer: the Near-East (*Vlassa 1963*).

In the 1960s and 1970s Vlassa's hypothesis was confirmed by distinguished scholars (*Milojčić 1965, Popović 1965, Renfrew 1966, Hood 1967: 99-102 and 1968; Makkay 1969, 1971, 1984 and 1990*). A number of experts on early systems of writing observed close or probable typological connections between the Tărtăria signs (and the Turdaş group of signs) and the early pre-cuneiform Mesopotamian script, in the 'proto-literate' period of Sumer (*Gelb 1967: 488; Grumach 1969: 258; Edzard 1969: 220; Hrouda 1971: 103*). They enlisted: a) parallels in the shape of a number of signs; b) their incision on tablets; c) their incision on tablets similar to the Mesopotamian ones (*Makkay 1973: 1-5*). They maintained to have established the best parallels have with the very end of Uruk IIIb pictographic tablets (*Makkay 1968: 276*).

The Jemdet Nasr period (Uruk III-II) was at that time ascribed before or after 3000 BC by the relative chronology to the century (*Porada 1965*) and after 3000 BC by the C14 analysis (*Moorey 1966*). As observed above, to Vlassa and to many other scholars some centuries seemed to be a proper time-lag for the invention of writing – or at least for the captivating effect of its magic signs - to spread out from Near East to Transylvania, therefore he dated the tablets about 2900-2700 BC (*Vlassa 1976: 33*). Makkay considered the tablet to be coeval "with pictographic or

pottery signs", ascribing them to the first quarter of the third millennium (*Makkay 1974/5: 27*) and more precisely between 2900 and 2800 BC (*Makkay 1973: 1*). Some scholars considered the date for the beginning of the Vinča culture after 2500 BC (*Hood 1967: 110*). According to this chronology, the Tărtăria tablets have been included within the cultural horizon of comparable tablets in Crete: possibly before 2000 BC, but more probably as late as 1750 BC, while the idea of writing on clay tablets might have be introduced into Crete from Syria at the beginning of Early Minoan II (c. 2600 BC) or before (*Hood 1967: 110*).

Many scholars agreed with the very short chronology established by Hood, but unfortunately, it has been based on a complete misunderstanding of the stratigraphy published by Vlassa. In fact, he confused: a) the pit fillings with a hut infill; and b) the find spot of the tablets with a hearth (*Whipp 1973: 148; Hood 1973: 148*). Careless of it, a number of researchers strictly maintained the conjectured existence of a correlation between the early pictographic Mesopotamian script of literacy and the Transylvanian signs. They argued that if the Sumer tablets were not much earlier than 3000 BC, the Transylvanian ones should be later, rejecting the "anomalies" of radiocarbon dating (although calibrated) from the Vinča culture based on "lurking imperfections in the method" and debating if the Tărtăria marks could be considered signs of writing or merely writing-like signs (*Vlassa 1963: 485-494; Hood 1967: 99-113; Makkay 1968: 272; Makkay 1969: 9-27; Vlassa 1972: 372; Hood 1973: 149; Young 1973: 72-79; Vlassa 1976*).

The leading position was established by A. Falkenstein, responsible for the publication of the tablets from Uruk, who pointed out a strict correlation with Uruk III B, which belonged to the same cultural horizon as those of Jemdet Nasr, and argued that the signs were definitely Sumerian. Falkenstein's line of reasoning was based on four pilasters:

a) the Tărtăria signs, especially those on the rounded tablet, are highly comparable with those on the early tablets from Uruk III and Jemdet Nasr as the scholar synthesized in a chart (*Falkenstein 1965: 271*); the Near East connections are particularly clear in the case of the symbolic hunting scene on the undrilled tablet, which was a more naturalistic representation and resembled the well documented Mesopotamian seals impressions;

b) some signs appear to have been derived from Mesopotamian marks for numerals;

c) both the Transylvanian and the early Mesopotamian tablets show no occurrences of the wedge-shaped instrument employed for cuneiform writing;

d) the shape of the rectangular tablets (relatively flat) and the system of dividing groups of signs by means of incised lines occurred also in Mesopotamia.

Establishing these connections, Falkenstein dated the Transylvanian signs around 2900-2700 BC and tried to establish parallels between them and the signs

from the most ancient pre-cuneiform Sumerian documents found at Jemdet Nasr, Tell el-Far'ah, and Uruk. Unfortunately, he did not consider or did not care to consider as important some counterarguments about the same issues:

a) the Tărtăria design shows striking resemblances not only to the Predynastic Mesopotamian writing, but also to other ancient script;

b) in the case of numerals, on the Uruk tablets the whole shape of the sign is sunk in the clay with a round-ended stylus, while at Tărtăria the equivalent signs are incised in outline;

c) in Mesopotamia only few larger rectangular tablets are relatively flat and there are also very few small circular tablets to compare with the Transylvanian one;

d) in addition, the string-holes on two of the Tărtăria tablets have no parallels among the early tablets of Mesopotamia (*Falkenstein 1965: 269-273*).

It is significant to note that the tablets from Uruk III and Jemdet Nasr do not bear a merely primitive stage of writing, because they display signs which are not only ideographic but also contain a phonetic element. In this occurrence signs stand for words and not for objects, animals or structures which they literally represent, and signs with recognized sound values are combined together to make words (*Diringer 1962: 21*). Then the main question regarding the marks on the Tărtăria tablets became, could they represent a similarly advanced stage of writing or had they just a superficial resemblance without any writing implications to early Mesopotamian tablets? (*Hood 1967: 104*).

The group of scholars inclined to maintain a strict correlation between the Tărtăria signs and the Mesopotamian proto-writing considered the supposed graphic influence in the framework of a more general cultural strong drift from the Near East, which occurred at the point of transition from the fourth to the third millennium BC or during the third millennium BC (it depends on the author). Within Southeastern Europe, the Vinča-Turdaş culture was considered the most markedly affected (*Makkay 1973: 1*). Müller-Karpe pointed out that human representation in relief was common practice in Mesopotamia and that it occurred in Southeastern Europe only at Turdaş possibly because of Near Eastern influences (*Müller-Karpe 1968: 307*). Makkay investigated the advent of cylinder seals in Europe as result of a strong influence from the cylinder seals of the Jemdet Nasr and Predynastic periods. According to him, in the Final Neolithic the knowledge of making cylinders or cylinder seals was possibly bridged on the European continent by early settlements on the Cycladic Islands and via the export of obsidian from Melos to as far as Thessaly and Thrace. The small fragment of light-colored trachyte tuff with engraved signs found by Torma at the Transylvanian site of Nádorválya (*Torma 1882: 44, pl. IV, 7; Vlassa 1970: 21, fig 19*) was considered the

most distant example of a cylinder seal made locally under the indirect influences of the Mesopotamian ones (*Makkay 1974/5: 26*).[20]

This group of researchers believed that the idea of a local independent invention of a Southeastern European Neolithic system of writing was an absurd because of the lack of complex phenomena and processes indispensable to the invention of writing as listed for example by Gelb (*Gelb 1967: 488*): developed agriculture, full metallurgy, cities with large public buildings and monumental art (*Makkay 1974/5: 23*). Therefore, they emphasized a Sumerian influence not only in the sphere of writing but also in economic affairs (i.e. the presumption of the exploitation of copper and gold deposits in Transylvania by Sumerian prospectors and the know-how on metallurgy). Having taken into account the Southeastern European Neolithic phenomena in general under Anatolian and Near Eastern umbrella, they propounded the influence of the earliest Sumerian writing system maintaining also that Europe adopted latterly inventions of the other e.g. the chariot, the pottery wheel (*Makkay 1974/5: 23*).

In conclusion, the viewpoint of an eastern-west drift of culture diffusion during a period included between 3100 and 2500 BC was based on four pillars: a) the identification of typological connections between the two systems of signs; b) the existence of a general cultural influence from the east; c) the difference in level of economic, social and cultural development; d) the adoption by Europe of some inventions from the Near East at a later date.

Following this line of reasoning the questions became, when and how the inventory of signs of literacy, the system of writing, and the technique to write on clay tablets was transmitted. Was there some form of southern colonization of the Balkans during this remote period? Alternatively, was the transmission done only by indirect methods? According to Hood, "In Romania…the first spread of writing or of signs derived from it may have been in a strictly religious or magical context… It is not impossible that the missionaries of an earlier religion from the East brought a first knowledge of writing during the 3rd millennium BC" (*Hood 1967: 111*). Although most of the scholars considered unlikely that the tablets were drafted by a Sumerian hand or in the Sumerian language of early Mesopotamia, dozens of amateurs offered their outlandish translations employing Sumerian sounds (*Tonciulescu 1996: 9-15; Moisoiu on line*).

Most of the scholars who accepted the Vinča-Turdaş or Vinča horizon for Transylvanian tablets and were puzzled by the correspondences between the oldest European inscription and early Sumerian signs preferred to recognize the parallels only in shape, but not in meaning. The design on the Tărtăria finds, especially on

[20] In opposition Renfrew considered the five cylinder seals found at Sitagroi as product of a local inspiration and made thousand years earlier that those of the Jemdet Nasr period *(Renfrew 1972: 215*).

the rounded one, is so similar to writing on early Mesopotamian tablets that they must have derived, even if indirectly, from it. However, the original signs might have lost their authentic functions having been merely copied and used as symbols of a religious or magical character without understanding what the Levantine signs actually meant (*Gelb 1967: 488; Hood 1967: 111; Makkay 1968: 286-287; Makkay 1969: 9-27; Makkay 1974/5: 25*).

The hypothesis that the Tărtăria tablets represent only a writing-like design was based on the argument that the signs of literacy did not occur together in the same groups on them as they did on the Mesopotamian tablets. Two signs that occur separated but in adjacent groups on the Tărtăria discoid tablet, are joined together on some of the Jemdet Nasr tablets to compose the name of a god: EN-GI. Nevertheless, the presence of signs of literacy could reflect awareness that they were marks of great power, combined with ignorance of the significance of writing (*Hood 1967: 104-5; 1968*). "The tablets, in all probability, are mere imitation of original Mesopotamian ones, made with a magic purpose without any real understanding, possibly by a person who saw the usage of such tablets somewhere, between Southern Mesopotamia and South-eastern Europe, without a real knowledge, however, of the art of writing… It is well-known that the apotropaic power is specially felt among illiterate people" (*Makkay 1974/5: 24*).

A fertile imagination was put in motion, in order to make up for the incongruence rose from the variety in dating, or to establish chronological correspondences, or to justify conjectures on the relationship between the Danube region and the Mesopotamia, or to explain signs considered graphic imitations with magic purpose and their deposition in a ritual pit. Hood applied Cyrillus and Methodius mission of evangelization along the Danube to the Neolithic Southeastern Europe and Sumerian times. According to him, the Tărtăria tablets, found in a ritual context and resembling the early tablets of Crete and Mesopotamia, could harmonize with Vasić's idea that the Vinča ruling class consisted of mining prospectors-cum-witch-doctors from the south engaged in the exploitation of the mineral resources of the Middle Danube region keeping a hold over their native subjects by means of religion and magic (*Vasić 1929*). Popović made complex exegesis of the epic of Gilgamesh in order to find traces of a Sumerian colonization of Transylvania and, therefore, a rationale for the ritual deposition at Tărtăria (*Popović 1965*). Gelb attributed the tablets to Sumerian traders familiar with writing, or to a not better specified inhabitant of Transylvania who had a vague idea of Sumerian documents and aped them (*Gelb 1967: 489*). Merchant adventurers moving along the routes connecting the Middle and Lower Danube, the Cyclades, Anatolia, and Mesopotamia may have been the go-between. Makkay assumed that the gold of Transylvania made merchants from the Near East, Anatolia and Eastern Aegean establish contacts with that European area and pointed out that the ancient gold producing site of Zalatna in György valley is near Turdaş and Tărtăria. He presupposed that the mines in Anatolia could no longer satisfy the sudden increase

in the demand for gold by the Mesopotamian city-states therefore the request was channeled – possibly via the entrepreneurial merchants of the Cycladic islands – to the efficient Transylvanian mines (*Makkay 1974/5: 27*).

If most of the detractor of C14 dating method worked on comparative evidence assuming a connection between the Transylvanian signs and Mesopotamian signs, a minority supposed the former had other than vague parallels with the latter being simply a local development, independent from near-eastern stimulus (*Renfrew 1970: 51-52*).

4.C Viewpoint 2: both Vinča-Turdaş or Vinča assumption of the tablets and radiocarbon dating for the Southeastern European Neolithic are acknowledged

If the above-mentioned standpoints were based on the negation of any reliability of C14 for dating, at the opposite pole other scholars acknowledged to be valid both the Vinča-Turdaş and Vinča ascertainment of the tablets and the radiocarbon dating of Neo-Eneolithic cultures in Southeastern Europe. In general, they dated the inscribed tablets to c. 5300 BC, predating the early Mesopotamian pictographic written signs (*Masson 1984*). However, are the Tărtăria tablets actually bearing written signs? Are there connections between their signs and the later writing system of Jemdet Nasr period? Have the Transylvanian artifacts been locally processed?

Concerning the first question, the acceptance by some experts of the radiocarbon dating caused the waning of their interest in the possibility that Southeastern Europe might have expressed a form of writing in Neo-Eneolithic times. The invention of an *ars scribendi* was held so unthinkable that the simple *possibility* of it was ignored and its evidence given very scant attention. If the European signs are actually so ancient, they should be considered decorations, ownership / manufacturer marks, or simple scratches.

According to Renfrew, it is "very possible that the signs on the tablets are a local invention… The similarities of some of the signs with those incised on the Vinča period pottery at Tordos, Banitsa and Vinča itself would suggest that they have to do with the Vinča culture or the Balkan copper age. (However) to call these Balkan signs 'writing' is perhaps to imply that they had an independent significance of their own, communicable to another person without oral contact… (Contrariwise they) seem to have functioned essentially within an oral tradition, as mnemonic aids to a chant which had to be learned by other means… And the marks on plaques or 'tablets', which can be plausibly associated with some ritual purpose, are likely to have had at most a mnemonic value, if indeed they were anything more than invocations, carrying a meaning only at the moment they were made… So that, while…these Balkan signs have an independent origin and held a real meaning for those who made them, to talk of writing, without careful qualifications, may not be appropriate" *(Renfrew 1973: 67, 68, 176, 186).*

At the opposing pole, other scholars considered the Tărtăria tablets as the earliest attestations of an old European script. A religious tradition of literacy flourished in Southeastern Europe and covered a span of time from the late sixth to the mid-fourth millennia BC (*Todorovič 1971; Gimbutas 1972a: 113; 1972b: 47; 1973: 12; 1974; 1989, 1981; Masson 1984; Haarmann 2002*). However, there are any resemblance and connections between the European system of writing and the Near East one?

According to most of these scholars, the establishment of a new cultural chronology for Southeastern Europe (accurately determined according to the dendrochronological method) has facilitated the assessment of the relationship of *ars scribendi* between Europe and Mesopotamia in the direction of the exclusion of any influence from Sumerian culture. First, they emphasized the two thousand year time gap between the earliest European inscriptions and the oldest Sumerian writings of the late fourth millennium BC. Second, they gave attention to the fact that any resemblance between the Transylvanian finds and those from the Near East was simply incidental (*Berciu 1967: 162; Renfrew 1969: 28-29; Renfrew 1972: 7*). Any stylistic connection with the earliest Mesopotamian signs of writing was considered merely occasional or illusory and the techniques of incising differed between Europe and Mesopotamia. About the tablets from Tărtăria, Masson stated, "Leur aspect matériel ainsi que le caractère des gravures excluent la possibilité d'une importation proche orientale" (*Masson 1984: 116, note 75*). Third, they upheld the local origin of Transylvanian finds and marks. Fourth, they underlined the confirmation of an independent emergence of writing in Europe (that is, without Sumerian influences) by some orientalists (e.g. *Helck 1979: 12*).

We remind that in Europe the first tablets appeared in the last phase of Stačevo-Criş culture, coeval with Vinča A, at Perieni, Glăvăneşti *(Ursulescu 1998: 102-103, 27-1, 2; Lazarovici, Merlini 2004; 2005: 206, fig. 4*).

Establishing a new calibrated chronology for Southeastern Europe, many scholars considered that the origin of the tablets and their signs could not be traced back directly to the earliest Mesopotamian pictographic literacy and did not explore any significant relationship between the two cultures worried of a drift arguing that writing originated in Southeastern Europe and spread towards Near East. Other experts were puzzled by the similarities of the signs in the oldest inscriptions of Neo-Eneolithic Europe with early 'proto-literate' Sumerian signs and were inclined to associate it with a drift from the west to the east (*Haarmann 2002*). Therefore, they started to ask whether the ancient European tradition of writing might have provided impulses to the Mesopotamian tradition in its formative process (e.g. *Rice 1994: 83*).

4.D Viewpoint 3: the tablets are reconcilied with radiocarbon dates, but they might be intrusive from the upper strata

Considering the Tărtăria tablets a significant boost to "some *fanatics* (italics is our)" according to whom "all the carbon 14 dates obtained from archaeological sites are invalid or too early", another wave of scholars made an effort to move the polarized discussion away from accepting radiocarbon evidence or archaeological resemblances/correlations. They tried to demonstrate that the tablets had a problematic nature because they did not belong to the context with which they had been connected: the Vinča culture. The pit could have be disturbed and unsealed, therefore it might not have been dug down from the Vinča strata, or the tablets might have intruded from the upper layers which occurred in the Tărtăria site (Turdaş-Petreşti or Coţofeni).

Ruth Tringham and Sarunas Milisauskas (Milisauskas 1978: 129-130) asserted that the pit *may* have been dug near the Turdaş layer, but not from it. According to them, it is possible that the tablets are from another cultural horizon and another location of the site: from "one of the later habitation levels … from outside the area of the Turdaş settlement". This suggestion was sustained noting that "signs similar to those on the tablets were incised on the bases of pots which have been excavated especially at the top of the Turdaş-Petreşti level at Tărtăria, and in Yugoslavia in Vinča-Pločnic assemblage, for example at Banjica and Vinča" (*Tringham 1971: 114*).

In 1967 V. Dumitrescu was the first to express doubts on the Vinča-Turdaş dating of the sacrificial pit and its contents presupposing they belonged to much later, to the Coţofeni cultural horizon c. 2900-2500 BC as the anchor evidences *(Dumitrescu 1969a: 92, 99-100, 588-589*). Then he challenged the authenticity of the tablets and, if they were authentic, the "cult" complex at Tărtăria should belong to the Coţofeni culture *(Dumitrescu 1972: 93 fol.*). However, after some time he abandoned the thesis that tablets are not authentic placing them again into the Coţofeni culture (*Dumitrescu 1973: 469 fol.*). M. Garašanin in *Praistorija* judged Vlassa's information on the discovery as "unchallengeable" (*Garašanin 1973 I: 127*), but he subsequently changed mind and considered the Transylvanian artifact to be more recent.

The following year after Dumitrescu, the Coţofeni-gate was re-launched by Neustupný and then by Roman (*Roman 1969: 68*). Neustupný asserted that all the layers contained a chronologically mixed complex and pointed out that the clay 'idol-shaped pendant'[21] extracted from the layers in which the tablets were found resembled the "anchor ornament" common in the context of the Early Bronze age of the Aegean area and also in the Late Chalcolithic Coţofeni culture, more or less synchronous with Jemdet Nasr culture (*Neustupný 1968a; 1968b: 35*). In a note on *Antiquity,* David Whipp recovered the suggestion of a bronze age deposit pointing

[21] Illustrated by Vlassa 1963: 489 fig 6, n. 5, but unexplicabling considered unpublished by Neustupný.

out certain deficiencies in Vlassa's account of the discovery and suggesting, in agreement with the views of some scholars such as Neustupný (*1968b: 32-35*) and Berciu (*1967*), that the tablets came from a pit whose surface was not sealed by subsequent layers (*Whipp 1973: 148-149*).

Some scholars divorced the ritual pit from its archaeological context and made free interpretations trying to solve the inconsistency between absolute and relative chronology (i.e. the problem of the "anchor", generally considered as belonging to the Coţofeni level). David G. Zanotti advanced the possibility that the tablets were intrusive from the upper strata most likely connected with the Bronze Age presence on the site, in particular with the Baden-Kostolac culture. This would date the tablets to be between 5,400 and 5,000 years ago, or contemporary with the Uruk IV and Jemdet Nasr periods in Mesopotamia and would make their signs compatible with the Sumerian analogies detected by Adam Falkenstein in 1965 and Sinclair Hood in 1967 and 1968. In the Zanotti assumption, Vlassa actually found the inscribed artifacts in a pit dug from the Vinča-Turdaş level, but in fact they had been buried in a very superficial stratum on the steep north-western slope of the mound which was characterized by a mixed archaeological context. The tablets could have been intrusive from that upper stratum and could have been a product of the trade or the reflux movement of tribes returning to the Aegean (*Zanotti 1983: 212*). This vision was challenged by Lazarovici, Maxim (*1991*).

In conclusion, the belonging of the pit and its pile of object to later deposits overcome the tendency to disregard C14 method for dating and reconciled the tablet to it by disregarding Vlassa's account.

4.E Viewpoint 4: the authenticity of the tablets is questioned

This afore mentioned group of specialists challenged the authenticity of the Tărtăria tablets claiming that they were not discovered by Vlassa at the prehistoric settlement of Tărtăria, but in the basement of Cluj museum. They might be held in one of the boxes in his custody which contained the Turdaş findings of Baroness Zsófia von Torma (Berciu 1967; Comşa 1982: 82-85; 1987, who disputed information and pictures published by Vlassa). According to other experts, they were simply a modern fake.

After some years of heated discussion, the controversy remained blocked although still fluid. Because of the lack of new information regarding the tablets and their signs, the polemic petered out. The Tărtăria finds remained locked in a caveau of the National History Museum of Transylvania at Cluj seen as a National treasure to be preserved from any further investigation. After 1961, a limited excavation took place at Tărtăria without any archaeological evidence giving new crucial information. Some Romanian scholars better assessed the available material and the stratigraphy (*Lazarovici 1977b, 1981: tab. 1; Lazarovici 2003a; Lazarovici Gh.,*

Maxim 1991), but their research, which narrowed down only in part the range of archaeological probabilities, has not been widely read. Some scholars observed that a C14 date derived from the bones in the ritual hoard would prove interesting (*Whipp 1973: 148*). Nevertheless, nobody went in search of them. The debate extinguished itself because of the dearth of information and the impossibility of reconciling or going over such incompatible opinions expressed categorically.

Unfortunately there was not, and there is not still today, an objective judgment on the tablets and their signs having they played a key role in the international archaeological debate exclusively to the extent in which they become a battlefield for another specific issue, i.e. the acceptability or not and the level of acceptability of radiocarbon chronology. Parallels drawn between Turdaş-Tărtăria and Jemdet Nasr served exclusively as chronological baseline (*Vlassa 1963; Milojčić 1965; Falkenstein 1965; Makkay 1969, 1974/75, 1990; Kalicz and Makkay 1977*). For a number of scholars the dating of the tablet to a late period was instrumental to promote other Neolithic scripts designated as the oldest in Europe or even in the world (*V.I. Georgiev 1969: 32-35; B. Nikolov and V.I. Georgiev 1970: 7-9; B. Nikolov and V.I. Georgiev 1971: 289*). G.I. Georgiev and V.I. Georgiev for example argued the signs on the Karanovo seal, Gradešnica platter, and other Bulgarian artifacts to be the first written record in human history and the Tărtăria tablets as Coțofeni finds (*G.I. Georgiev and V.I. Georgiev 1969)*.

We want to present new information on the Tărtăria finds articulating them in the following questions:

- Which actually are the objects belonging to the ritual complex?
- Could the tablets be a modern fake?
- Could they come from another Transylvanian site, from another region of the Danube civilization, or even from Near East?
- Could the tablets be analyzed with C14?
- Which is the actual date of the tablets? The issue of the radiocarbon dating of the human bones found with the tablets
- Might the tablets be intruders into the Vinča layer from later and higher levels, e.g. Petreşti, Baden-Kostolac or Coțofeni?
- Where is the precise localization of the cultic pit and the pit house?
- Can we reconstruct the stratigraphy of the excavation layers?
- Why both ritual objects and human bones are present inside the pit?
- Which kind of ritual happened at Tărtăria? The enigma of the charred human being, the cultic sacrifice, and the cannibalistic ritual
- Which was the identity of the buried person?
- The distinctiveness of the ritual complex as a consecrated grave of a novel ancestor, and not as a votive pit full of offerings

- Are the Transylvanian tablets a device of a sacred script for initiates?

The basic evidence for our reconstruction, answering to these questions, will come from the remains themselves and not from a more or less plausible and coherent framework.

5. The objects belonging to the ritual complex

Vlassa published only 11 of the impressive finds belonging to the ritual complex, tablets included, while in the inventory of the museum he addressed 12 objects as belonging to the "groapa rituala".

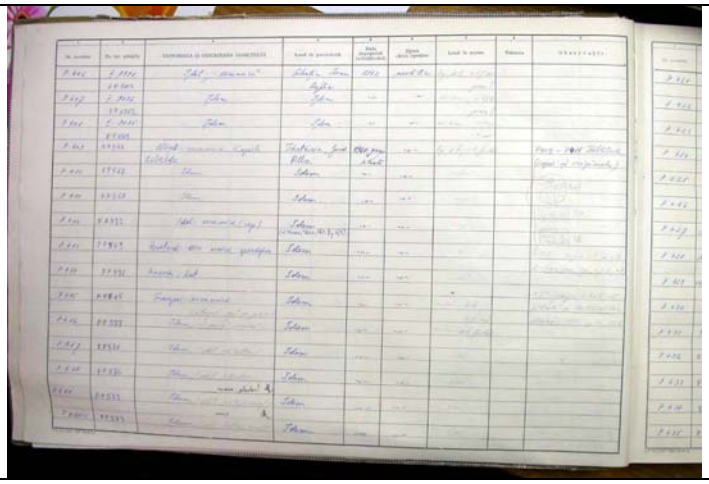

Image 9. Museum's inventory.

The other objects are still now unpublished and the main regret is that most of them are not even findable. In the National History Museum of Transylvania at Cluj the showcase dedicated to the Tărtăria ritual complex displays only 10 artifacts: the copies of the three tablets, five clay figurines, one alabaster statuette and the bracelet.

Making a systematic research in the storage rooms of the museum in order to find the missing artifacts belonging to the ritual grave, we have found one more object which can be surely ascertained to the pit and one unsurely, but presumably. All the pieces are broken, intentionally and possibly ritually, and deposited in the pit as incomplete items. Only the tablets are entire and bedded as complete items.

***5.A Ritually broken objects**:*

I) *A fragmented figurine (head and shoulders)*[22]

Image 10. Tartaria showcase.

Image 11. Fragmented figurine.

The first figurine is schematically shaped and has one truncated arm. The head is rectangularoid. The mask is triangular and shows features typical of Vinča A art canons: two long strokes for eyes, prominent nose, and an elaborate coiffure at the top of the head made by parallel grooves within triangular patterns.[23]

The statuette is 7.2 cm high and 7.0 cm. large, arms included. It is possibly a male due to the absence of breasts and the typology of hairstyle. The matter is quite fine, with little shards embedded inside. It was fired at higher temperature than the prismatic figurine that we analyze below, but for less time and it is still gray colored inside. This figurine was heavy restored and impregnated wit lacquer, but it is still possible to glimpse the original brawn color and the angoba on the surface. The statuine was covert by red ochre and then with yellow one.[24]

[22] The inventory number is P420, considered merely a head. It was published in Fig. 6.1 from *Vlassa 1963*.

[23] The inventory number is P412. It was published in Fig. 6.2 in *Vlassa 1963*.

[24] It is very clear on the mask.

Image 12. Yellow and red.

Image 13. Had and hair.

The mask is 3.2 cm. high and 3.0 cm. large at the top. It is asymmetric towards its left as the other figurines from the ritual grave are. The rectangularoid head has an extension in depth of 2.5 cm. The craftsman made at first the big triangle, then 7 lines inside it and the remaining decorations which might represent the hair.

Only one of the truncated arms was broken, the other is original.

In Danube civilization, figurines have been found with one or two features in common with this Tărtăria figurine, but not completely comparable. Similar triangular masks are known from Vinča settlement at 8.5, 8.4 and 8.1 meters deep (*Vasić 1936 III Pl: V, 18, XII, 53, XX, 103*), Gornea, in Vinča A phase (*Lazarovici 1979 pl. XX/A4, B1-4*), Zorlenţu Mare, Vinča A3-B1 (*Ibidem XX/D1-3, 9; H1*), Vinča B2 (*Ibidem XXI/J 9,17*) and B2/C (*Ibidem XX/B17*), at Balta Sărată, Vinča B1 (*Lazarovici 1979, XX/I 5-6*)[25], Parţa, Banat culture – Vinča B (*Ibidem XXI/G7,*

[25] There are five figurines with a triangular mask similar to Tărtăria one.

10, 11), Liubcova, Vinča C (*Ibidem XXII/1*), Turdaş (*Roska 1941: Pl. 138,10*)[26], Jela (*Winn on-line a: fig. 2 e-f*), Ruginosu.

Similar eyes have been discovered in Vinča B1 phase at Liubcova; in Vinča B2-C at Selevac (*Tringham R., Kristić D., Selevac. 1990: 406 fig. 11.7d*).[27]

Two statuettes from Zorlenţu Mare, situated half way between Turdaş and Vinča, have parallels with the Tărtăria statuette concerning features of both eyes and arms (*Comşa and Rauţ 1969: Fig. 3, 6*). They could be synchronized with the Vinča B1-B2 phase.[28]

II) *A clay statuette, prismatic in shape, deliberately fractured*.[29]

A second fragmented figurine has a prismatic shape. The fragment is deeper then large, measuring 6.6 x 3.5 x 3.8 cm. The original height was 16-25 cm. Excluding a high-pedestalled bowl, this is the biggest object belonging to the ritual grave. After the head dimensions, it might be a part from a house altar.

Image 14. Prismatic idol.

A second fragmented figurine has a prismatic shape. The fragment is deeper then large, measuring 6.6 x 3.5 x 3.8 cm. The original height was 16-25 cm. Excluding a high-pedestalled bowl, this is the biggest object belonging to the ritual grave. After the head dimensions, it might be a part from a house altar.

The material is not very fine and includes some little sherds[30] behind the head and on the right side of the neck.

[26] The figurine is from Vinča A3-B1 culture. Only the mask is similar. The head is triangular.

[27] From east area, house 1.

[28] They could not be synchronized with Vinča A2-B culture as Comşa and Rauţ did, because they have been discovered in layers 2 and 4.

[29] The inventory number is P412, considered merely a head. It was published in Fig. 6.2 from *Vlassa 1963*; *Maxim 1991, 177, Kat. 96*.

Image 15. Sherds.

Image 16. Finger imprint.

The statuette was hard fired for a long time and uniformly cooked. It was not finished with hands, but with a wooden tool which was also utilized to engrave the decorations. It was not polished, but just clean with hands or leather. In the incisions, on the body, on the mask and on the right eye there are traces of a black color. Eyes have been made pressing fingernail and fingertip. On the left eyebrow and on the top of the head there are traces of a red painting. On the left side, on the same part on the mask and seldom on the body there are traces of yellow ochre painting. It is not very clear if the statuette has female or male gender: the lines of

[30] One contains more mica than the others.

the breasts are not evident at all, but according to our contemporary standard it is wearing female accessories (probably earrings) and clothes (a striking tunica with Vs patterns in front and on back).

The head was not modeled separately from the pillar-shaped body therefore the face is on the upper front of it. It is obvious that it is wearing a mask, due to the marks of its application on the face, the large stroke-fissures for eyes, and the pentagonal flat shape of the face. The craftsman started to drill a hole on the far lower area of the mask, but then changed mind and the cavity is only hint.

Image 17. The figurine was painted.

The mask has been deformed under a deliberate torsion from its right to left similar to a knock that hurt it when the clay was still soft. The twisting had the nose as centre, de-squared the oblong fissure for the eyes from the same line of horizon (its left eye is higher then the right), but it did not distorted in the same measure the outline of the mask. Was the deformed shape of nose and eyes due to the intention of representing a particular mythical personage? In ethnographic record several masks occur which, employed in ceremonial rituals, depict mythological beings, the spirits of dead ancestors as well as deities and other beings believed to possess

power over the living. Alternatively, was the disfigured mask wore by the statuette from Tărtăria, as well as its fragmentation, a mark of the passing away of a person (perhaps the human being who has been buried with the ritual pile of objects)? Or was even it the result of a practice that we nowadays consider typical of malevolent actions made during "black magic" rituals?

Other symbolic elements are evident on the figurine from Tărtăria. At first, it was completely painted, mainly in red and partly in yellow. It is not without significance that the mask is bicolor and pigmented with incrusted painting.

Close examination of the statuette reveals eight holes through six perforations made before firing. Two and two punctures are communicant and one can easily image the statuette wearing two large circular earrings or be suspended over an altar. Two deep perforations have been made obliquely on the back of the head and, possibly, they were in original three. The craftsman was not very sure about angulation and direction of the perforations and made more than one attempt. Very interesting are the holes over the armpits which were possibly filled with a stick in order to raise and sustain orante arms which have been broken during a ritual or just to permit the change of a type of arm with another.

There is an obvious connection between the above-mentioned symbolic features of the figurine and the fact that it was deliberately broken, but it is very hard to find it out.

Image 18. Arms.

Pentagonal mask and slit eyes of the prismatic figurine are reminiscent of those on figurines from early Vinča. Milojčić claimed on this basis that they support the date for the tablets to the Vinča A culture (*Milojčić 1965: 264, 268*).

According to Makkay, such impressive parallels are known from Turdaş (*Roska 1941: Pl. 138,5, 11*) that he speculated they have been fashioned by the same craftsman and, noticing the very early date of this typology figurine at Vinča (*Vasić 1936 III: Pl. VI, 22*), he conjectured that it could has been a prototype for the Mureş examples (*Makkay 1974-1975: 18*).

Unfortunately, most of the statuettes cited by Makkay have not prismatic shape.

III) *A fragment of an idol face* [31]

A partial naturalistic human face has been considered a potshard (an anthropomorphic pot with a human face), maybe a container for holy liquid, by Vlassa or a fragment of a lid by other authors (*Makkay 1969*). However, it is actually the upper part of a cylindrical figurine. The statuette is wearing an oval mask typical of the Vinča A art criteria. It measures 4.1 cm. x 3.55 cm. and presents two long strokes for eyes (indicative of a mask). Similar finds have been found at Zorlenţu Mare, Vinča B1-B2 *(Lazarovici 1979, XX/D5; H7, 11-12)*.[32]

Image 19. Human face.

The figurine from Tărtăria exhibits a hole positioned under the mask, upon the chin. Is it clue of the presence of speaking or singing figurines at Tărtăria ritual grave? The human face of the cylindrical statuette is nowadays delocalized in another section of the showcase and not with the other objects of the ritual grave.

IV) *A half bracelet*[33]

A bracelet, made of spondylus shell, measures 8.7 cm. in diameter and is 0.8 cm. thick. It was imported from the Aegean see.

The making is standard and the object was not very well polished. Although a very invasive restoration process, it is possible to discern that the bracelet fits a minute wrist, was worn for a long time and has been deliberately broken during a ritual, in the defleshment process, or due to the secondary burial of the person who was buried with the tablets. In fact, it was broken down exactly in the middle with an abrupt action.

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[31] The inventory number is P 416. It was published in Fig. 6.3 in Vlassa 1963; Maxim 1991, 177, Kat. 95.

[32] According to Makkay (*Makkay 1974-5: 18*) similar artifacts have been discovered at Turdaş (*Roska 1941: Pl. 102, 14, 19; Pl. 103, 18*) but they are all lids.

[33] The inventory number is P413. It was published in Fig. 6.4 in *Vlassa 1963*; *Maxim 1991, 177, Kat. 90*.

Image 20. Broken bracelet.

Image 21. Intentionally Broken bracelet.

Spondylus gaederopus shell was a typical luxury good in Neo-Eneolithic times with routes from South to Central Europe (*Childe 1949: 118*; *1964: 87*; *Pittioni 54.1: 20, 51-52*; *Quitta (18) 1960,2: 166-67*; *Raczky 1948: 96-98*; *S. Vencel 1959: 739-742* verifying 111 sites; *Horedt K. 1970: 103-104, fig. 7 map*), in Vinča culture at Botoš necropolis (*Nandriş 1976: 64*), in Greece (*Theochares 1973: 188, fig. 116 map*)

V) *Horns of consecration of a goat as pendant*[34]

Among the pile of the objects, there is a fragment of an "idol-shaped pendant" in form of an "anchor" as the term has been conventionally used, although any connection with a figurine-shape and with sailing or fishing is highly improbable. Discarding both the anthropomorphic and aquatic suggestions, at the first sight the artifact gives the impression to have been used for holding lightweight material in the weaving process as in Greece at Sitagroi (phase V), Servia, Ayios Mamas, and Dikili Tash. Following Elser description, it is not difficult to image the shank of this artifact suspended by a cord or thong slipped through the single hole from a post while "the high upswing of the arms suggests that these could have held supplementary weft threads, reeled off a spindle and then fed from the anchor to the loom" (*Elster 2003: 243*).

[34] The inventory number is P414. It was published in Fig. 6.5 in *Vlassa 1963*; *Maxim 1991, 177, Kat. 97*.

Image 22. Anchor.

It is also significant to indicate that the object is grey with a yellow angoba, quite refined, very well polished with a bone or a stick, and has a lot of fine sand in its composition. It is reasonable to suppose, as Vlassa did, that it was warn as pendent.

The low consumption of the holes testifies that it was not put on for a long period.

The artifact is 5.7 cm. high and 6.2 large.

The diameter of the "neck" is 2.5 cm. and the diameter of the hole is 0.627 cm.

However, which kind of pendant is an anchor-like shape? We suppose that they were horns of consecration of a goat.

Image 23. Puncture not parallel to arms.

VI) *A miniaturized phallus-type statuette*[35]

A mignon phallus-type statuette is wearing a mask with a high crest, prominent nose, and large stroke-fissures for eyes. It is 3.8 cm. high. The body is 1.2-1.3 cm. in diameter (it is

[35] The inventory number is P419 but on the figurine it was wrongly written 413. It was published in Fig. 6.6 in *Vlassa 1963*; *Maxim 1991, 177, Kat. 93*.

elliptic).

Image 24. Little phallus.

Image 25. Face of the little phallus

The mask is 1.7 cm. in length and it is asymmetric towards its left as the other figurines from the ritual grave are. The cylindrical statuette was finished with hands and not with a tool.

For the mask and cylindrical shape see for comparison Zorlenţu Mare, Vinča B1 (*Lazarovici 1979, pl. XX/2+3, H4*) and Vinča B2 (*Ibidem XXI/B5*), and Parţa, in the Banat culture (*Ibidem XXI/GG1, 3, 11*).

VII) *A statuette of phallus type*[36]

A large figurine of phallus type is possibly one of the "statues with … cylindrical-or-prism-shaped body", according to Vlassa. The cylindrical statuette is typical of Vinča art criteria. Similar pieces have been found in Vinča A at Gornea, (*Lazarovici 1979, pl. XX/A 4, 10-11,15*), and in Vinča B1/B2 at Zorlenţu Mare (*Ibidem XX/D2*) and Balta Sărată (*Ibidem XX/K5)*.

The statuette from Tărtăria was schematically molded from middle fine clay mixed with some fine mica, but rough made, polished only with hands, and refined with a stick of wood which has also been employed to trace the decorations. It was fired at high temperature. The color is brown-read. We recovered traces of a yellow slip on the body. Its left part is black because it was put inside ashes. The figurine is 8.2 cm. tall and it is clearly of female gender due to clues of a breast on its right. The face is round, less high then large (4.2 cm. x 4.4 cm.), set on the top of the body at an angle of 45 degrees (*Makkay 1974-5: 18*) and it is asymmetric towards its left as the other figurines from the ritual grave are.

[36] The inventory number is P418. It was published in Fig. 6.8 a and b in *Vlassa 1963*; *Maxim 1991, 177, Kat. 92*.

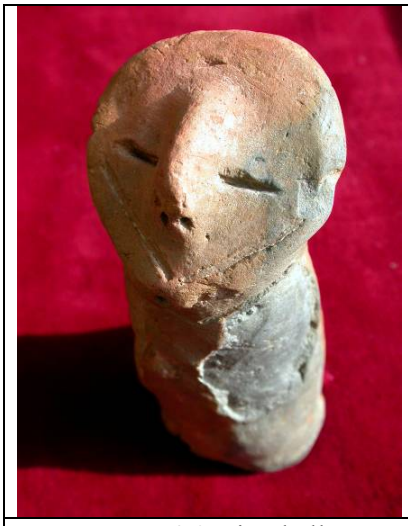

Image 26. Big phallus.

The presence of a mask is indicated by large stroke-fissures for eyes, marks where the mask is hanging at the face, and the V ornament along the jaw with analogy at Gornea in Vinča A culture (*Lazarovici 1979, XX/A4*), in Vinča A3-B1 at Zorlenţu Mare (*Ibidem XX/D9*) and Balta Sărată (*Ibidem XX/I 5*). Two holes are discernable at both side of the mask, possibly for earrings or to give the figurine the possibility to be suspended. Two deep cavities mark the nose, which is very prominent. There is a large hole positioned on the far lower part of the mask resembling an opening mouth. It was made before firing and still now it is possible to distinguish yellow soil inside. Are we in presence of a speaking or singing figurine, as the mignon phallus?

Originally it had arms, but they have been intentionally broken. The bottom is minute but it is sumptuous and the buttocks are well marked.

Cylindrical statuettes are well known in Vinča A or early Vinča B1 cultures but parallels are not complete for the range of features of the Tărtăria piece. Phallus statuettes have been found at Gornea and Zorlenţu Mare (*Comşa and Rauţ 1969: Fig. 1, 1,4-6, 8-10; Fig. 3, 8*), Turdaş (*Roska 1941: Pl. 137,13; 138, 7*)[37], Vinča (*Vasić 1936 III Pl: X, 38; XIII, 62*)[38], Potporanj (*Bruckner 1968: Pl. IV. 1*)[39], and Žabalj in the Voivodina (*Bruckner, Jovanović, Tasić 1974. Fig. 42)*. See also *Kalmar-Maxim 1991* and *Luca 1991: 177-231.*

VIII) *An alabaster figurine*[40]

On a deliberately broken object made of gray alabaster and with a little part in marble, one can see human features: a statuette wearing a mask of Vinča A or B type.

Vlassa annotated, among the artifacts of the pit, two alabaster idols "of the Cycladic type with may have analogies with the Aegean world's plastic". However, the existence of such stone and marble figurines is well known also in early Vinča

[37] Nevertheless, in the first case the eyes are different and the mask is nor rounded as at Tărtăria statuette. The second figurine is more or less similar to the Tărtăria one.

[38] At a dept of 8.9 and 8.4 meters.

[39] The cylindrical shape is the only feature shared by Potporanj and Tărtăria figurines.

[40] The inventory number is P417. It was published in Fig. 6.7 in *Vlassa 1963*; *Maxim 1991, 177, Kat. 94*.

culture. See for example the scepter from Gornea, belonging to the Vinča A phase (*Lazarovici 1979, XX/C1*).[41]

Image 27. Speaking-singing mouth.

The Tărtăria statuette is 10.5 cm high and 0.75 cm. thick. Having being cut in vertical, its original thickness should has been 1.5 cm. A figurine which can be confused for an alabaster idol of Cycladic type was brought to light in the older diggings too, from K. Horedt (*Vlassa 1963: 492 and foot-note 12, 493/494, fig. 11*).

5.B Entire objects

IX-X-XI) The three inscribed tablets[42]

5.C Another cultic object from the pit

According to an oral communication mentioned by Höckmann, the 28 figurines were found in the pit among the sherds of a clay vessel (*Höckmann: 1968: 65, 66*) and, after a revision of the material from Tărtăria, Vlassa mentioned two channeled fragments of great importance coming from the bottom level of his excavation and not mentioned in the preliminary report (*Vlassa 1969. Fig. 8-9*). We do not know the final destination of them because they had not an inventory number, but other eight fragments are incorporated in a high-pedestalled bowl reconstructed and kept in the Cluj museum and with parallels in the early Vinča culture (*Vlassa 1969. Fig. 5; Maxim 1991, 177, Catalogue 86*). Checking the inventory of the museum, we discovered that the object was positioned inside the range of the finds from the ritual grave: P 415.

Actually, Vlassa recovered a fragment of a typical Vinča A3 bitronconic vessel – fine, well executed, in blacktopped technique, hard fired, and very well polished - from which he discretionally recreated a high-pedestalled bowl. The blacktop should be 4 cm. less high, therefore its tallness should be around 24 cm. The cup is 16 cm in diameter at the mouth and exactly half (8 cm.) high. It is capable of 1.9 liters. The base is 10.6 cm. in diameter and the feet 4. The cup has two protuberances which are not perforated as in other occurrences.

[41] Another intentionally broken figurine considered "a marble idol of Cycladic type" has been found at Tărtăria by Horedt in 1943. The discovery happened in trench B at a depth of 200-222 cm. It has inventory number IN 14.877. The figurine is 11 cm. high. Hips are very large: 6.1 cm, whereas shoulder are 5.0 cm. and middle bust 4.3 cm.

[42] The respective inventory numbers are: P 409 for the discoid piece; P 410 for the perforated rectangular piece; P 411 for the undrilled rectangular piece.

The blacktop was very used during its life and then intentionally broken with a tool such as a maze or a stone working from inside. Maybe it was the cup employed during the ceremony after the dead of the person buried at Tărtăria, afterward ritually fragmented, and in part widespread.

Image 28. Alabaster figurine.

XII) *A high-pedestalled bowl in blacktopped technique*

Image 29. Tartaria Cupa.

Concluding the presentation of the objects found in the pit, we want to put to light that it would be very important to have a complete publication of them and of the pieces from the Tărtăria settlement, because they are a key element in dating the magic-religious complex due to the problems in the stratigraphic data. Nevertheless, many questions arise. The first regards the pile of objects. Why have all the artifacts been deliberately broken? Why was the head of the statuettes always saved? A ritual mask is worn by all the figurines, but why it is always asymmetric towards left? There are clues of black magic at Tărtăria deposition?

Other queries come up concerning the relationship between the tablets and the other cultic finds. Why are the tablets the only pieces deposited intact? They were affected by calcium, but not the other objects. Were the two piles of artifacts discovered separate by Vlassa? In this case, the tablets cannot be dated by direct association with the Vinča statuettes.[43] Nevertheless the best parallels indicate a similar date for the Tărtăria pit and its finds, their belonging to the central territory of the Danube civilization, i.e. the Vinča area, and their fitting to the early phase of the Vinča culture (*Makkay 1974-5: 18; Lazarovici 1977; 1981; 1991: 93*). We have also to make a note of the not complete stylistic resembling with other objects from the same cultural complex, if we do not limit the comparison to a single or a couple of features.

The crowd of the queries on the Transylvanian wonder is directly connected to Vlassa's reticence. Why his publications account 32 finds from the pit, but he put only 12 of them in the register of the museum's inventory and published information and photos about no more than 11 artifacts in connection with the magic-religious complex? And why did he include the pedestalled cup into the ritual pit, according to the inventory of the museum and his personal communication, but he decided to publish it separately and to locate it apart in the showcase?

The next step of the present article will be the investigation of the fact that the Tărtăria tablets are dubiously dated archaeological artifacts.

6 Are the *famous* Tărtăria tablets *in-famous?*

According to some scholars, the tablets could be a modern imitation. It is easy, although not enough, to answer that a direct analysis of the fake pieces made in Transylvania are straightforward to recognize because they are rough making.[44]

Other scholars judge the inscriptions just a Vlassa's "game". And there are those who are suggesting, in no uncertain terms, that he was a counterfeiter. According to this point of view, as archaeologist Vlassa had the skills for a perfect forgery and one has to talk not about the "famous Tărtăria tablets", but the "in-

[43] This question was posed by Zanotti (*Zanotti 1983: 87*).
[44] See also Masson 1984 on this point.

famous one". Regarding this point is significant, although not decisive, to collect the testimony of Vlassa's colleagues that he started to study the topic of the tablets not before but after the Tărtăria discovery.

According to a third wave of scholars, the tablets are not from Tărtăria. They could come from another Transylvanian site, from another region of the Danube civilization, or even much farer (e.g. from Near East) and have been erroneously attributed to Tărtăria. In *Istorie Veche,* V. Dumitrescu underlined some likenesses between the circular tablet and pieces from von Torma's collection, observed that this assembly has been spilt up in various museums of the region, and challenged as superficial and not very likely Vlassa's interpretations on the tablets and the objects of von Torma's collection, as well as the direct analogies he established between Transylvania and Mesopotamia (*Dumitrescu 1972: 93 foll.*).

Other scholars expressed the persuasion that the tablets come from another site of Danube region. For example in *Studijne Zvesti* V. Dumitrescu ascertained them to the Cucuteni style and technique (*Dumitrescu 1969: 92*).

According to the last grouping of scholars, the Tărtăria tablets could have arrived from Near East.

7 New evidence from the chemical and mineralogical analysis

If the aspect of the objects as well as style and technique of the incisions exclude the possibility that the tablets have been imported from Near East, what about the other two hypothesis regarding their foreign origin? Can we determine the origin of their matter?

In order to establish some firm points, the *Prehistory Knowledge Project* asked Lucreția Ghergari and Corina Ionescu to study the tablets under the microscope at the Faculty of Geology, Geological Department of Cluj University. On this occasion, it was observed that the pieces showed a "chestnut reddish color" as stated by Vlassa (*Vlassa 1963: 492*) and that they are crystallized, to the point of looking like tuff. Vlassa also observed that the tablets were "poorly burnt" and advanced the possibility of a secondary burning. "In the museum vacuum autoclave", was his secondary thought?

Vlassa asked to E. Stoicovici (Babeş-Bolyai University, Cluj) a chemical and mineralogical analysis of the tablets and idols from the cult pit. The main result was that all have the same chemical-mineralogical composition (*Vlassa 1977: 14*). Our analysis confirms that all the tablets have the same type of material which contains a very small quantity of clay and a lot of sand with different minerals. The manufacture of the tablets from local material proves they were not imported.[45] At the most, they could come from other areas of the same region. According to our geological analysis, the sand has crystals of quartz typical of the mountain 20-25 km. west from Tărtăria and very well known in Neolithic times for the gold mines.

[45] This observation is consistent with Winn 1981: 186.

The sand of the tablet bearing the hunting scene is less fine than the one of the other two.

According to the analysis of mixture and paste, the tablets cannot be analyzed by C14 method not only due to thermic stress, but above all because they are made mainly of sandy clay. They contain too little carbon; therefore, it is impossible to determine their isotopic chronology.

On the surface of the pieces there seems to be a high concentration of calcium carbonate. Only a grass fiber was discovered and it is located on the superior part of one tablet.

This fiber was covered with a clay stratum and with a carbonate scab. However, the original slip has been modified by the untoward baking and, consistent with the microscope analysis, by an acid bath the tablets suffered at Cluj museum just after their discovery. As we have anticipated, in fact the tablets had been left for a while in a hydrochloric acid bath for the cleaning of the calcareous deposit from the surfaces.

The chemical process did not affect only the surface. Since the mixture of the material contained many calcium carbonates, numerous cracks appeared during the process of cleaning.

Image 30. Grass fiber.

Because the artifacts are mainly made of limestone, although the treatment with hydrochloric acid was intended to clean only their surface it deeply affected the calcareous inclusions and the binding of the material. In fact Vlassa thought that the abundant calcium was due to the humidity in the pit and did not had in mind the possibility that the tablets have been made of some sort of "Neolithic cocciopesto" very famous in Roman times (mixture of lime, sand and pieces of brick or potsherds, used for pavements and the plaster of walls).

After the pieces had been cleaned by the restorer in the hydrochloric acid bath and many small cracks appeared, the pieces have to be conserved. For this purpose, they were covered with a special fluid (nitro-varnish and diluents) and placed in a

drying chamber at a low temperature for the deep penetration of same fluid. This treatment affected all the three pieces. The tablet bearing the hunting scene was clean more intensely than the other two.

Image 31. Calcar areas destroyed.

Now we have all the elements necessary to answer to the question why were the tablets affected by calcium and not the other objects: it was not because they have been recovered separate by Vlassa, but because the tabled have calcium inside and it went on their surface. If the chemical action cleaned the surface of the artifacts, at the price to ruin their internal structure, calcium is still now exiting and, in a number of years, the Transylvanian tablets will be covert again by a white surface. The process is very clear comparing the photos made by Lazarovici in 2000 and the photos made by Merlini in 2006.

To reanalyze the tablets a thin section analysis of them would be necessary, but it will be very difficult since the pieces belong to the "treasure" category as Romanian cultural heritage and they follow special rules for preservation and investigation

8. The age of the human bones found with the tablets: 5370-5140 BC (calibrated)

For 42 years, nobody has considered that the tablets were accompanied by human remains which are still preserved in Cluj, in the basement of the National History Museum of Transylvania. Under the patronage of the *Prehistory Knowledge Project,* in October 2003, we went in search of the bones and found them. Then we asked for an anthropometric analysis of them from the University of Iaşi and sent a sample of them to Rome to the Laboratory of the Department "Scienze della Terra" of La Sapienza University for a C14 analysis.

Image 32. Human remains.

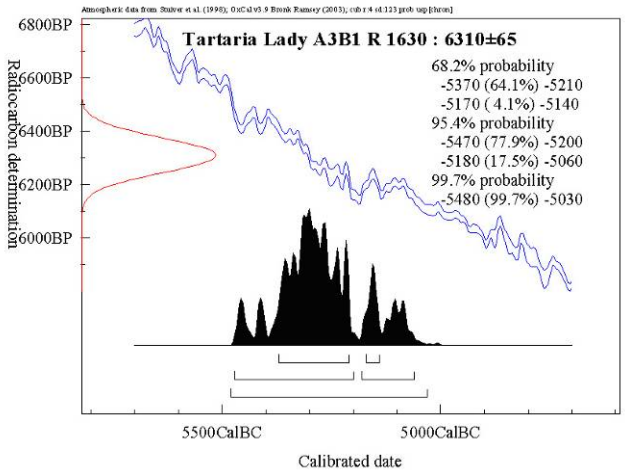

Image 33. Human bones dating.

The uncalibrated age of the C14 analysis made by the Laboratory of the Department "Scienze della Terra" of La Sapienza University has been converted in the corresponding calibrated age using the data and the procedures reported in Stuiver Minze and Reimer Paula J. (*Stuiver and Reimer 1993*). The results are: Rome – 1631 (human bones): 6310 ± 65 yr BP (calibrated 5370-5140 BC) (*Merlini*

2004a: 289; Merlini on line). Therefore the earliest attestation to a European script comes from Transylvania.

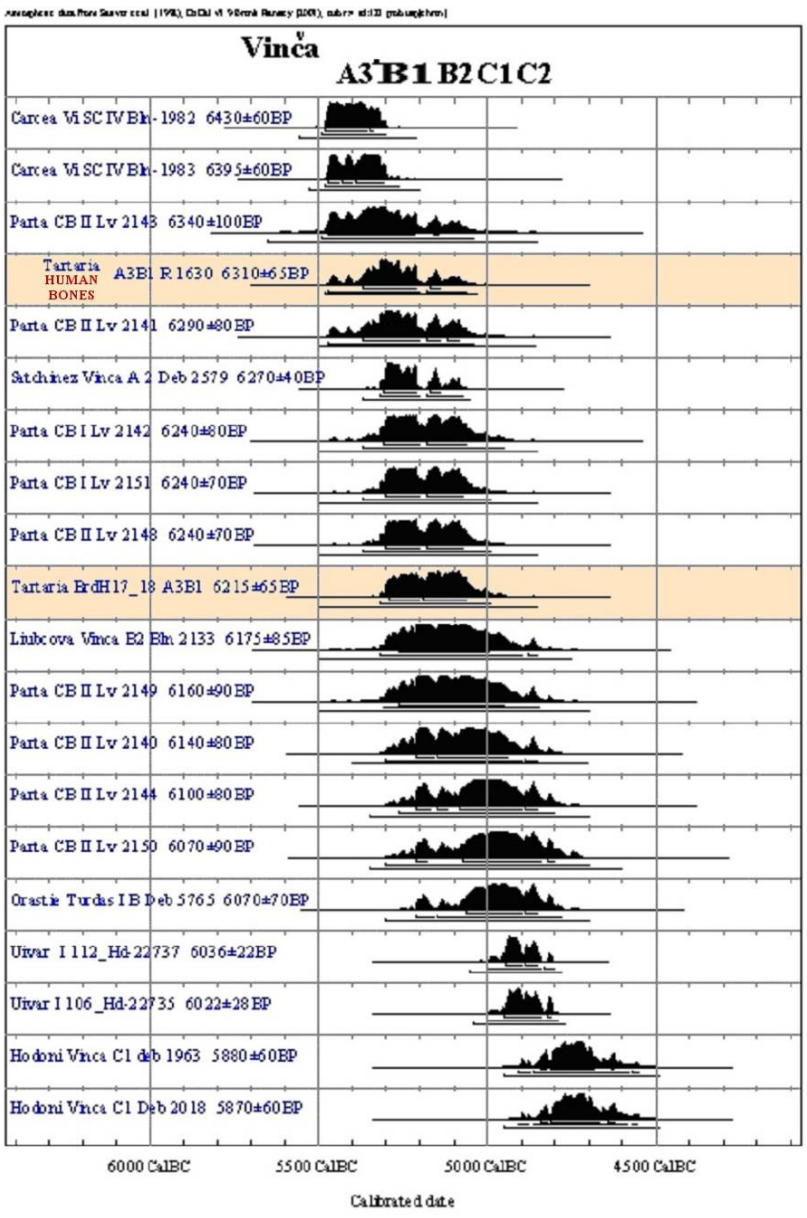

Image 34. Absolute Chronology of Early Vinča.

If one compares the cronostratigraphic sequence of Transylvania and Banat sites with the C14 age of the human bones discovered by Vlassa in the ritual pit, one

can place Tărtăria complex into the early Vinča period (*Lazarovici Gh., Merlini 2004*). They might belong to Starčevo-Criş IVA discoveries (contemporary with Vinča A2), as those from Cârcea, Banat culture I (*Mantu 1998a; 1998b; 2000; 2002*) or to early Vinča as those from Liubcova, Orăştie, Turdaş I and Uivar (*Mantu 1995; 1998a; 1998b; 2000; Laszló 1997; Schier and Draşovean 2004*).

Vlassa connected the ritual pit containing the tablets with a pit house he has found nearby *(Vlassa 1962; 1964 fig. 8, 11*). Indeed, if one examines the excavation levels one notes that: a) the pit house goes from the $10^{th}/11^{th}$ level of excavation to the 16^{th} / 17^{th}, while the ritual pit could have been positioned between the base of layer 11^{th} and layer 14^{th} (fig. 17), but level 12^{th}-18^{th} are part of pit-house n. 2; b) the distance between the two structures is only 70-90 cm; c) and they belong to the same archaeological complex. We verified the close relationship between the ritual pit and the pit house by comparing the radiocarbon data of the human bones from the former and the animal bones from the latter. As mentioned above the radiocarbon date for the human skeleton is *level h11*, *Rome – 1631 = 6.310 ± 65 yr BP (1σ, 5.370 - 5.140 Cal BC).* The radiocarbon date for the animal bones found at the bottom of the pit house is *level h16+h17, Rome – 1655 = 6215 ± 65 yr BP (1σ, 5.280-5.060 CAL BC)* and the radiocarbon date for a mixed cultural level from the cleaning of the profile and by the excavation made by Horedt*, Rome - 1630 = 6200 ± 65 BP (1σ, 5.260-5.050 CAL BC).* Radiocarbon data sustains that the ritual pit and the pit house are coeval.

9. Why the tablets cannot be intruders into the Vinča layer from later and upper levels

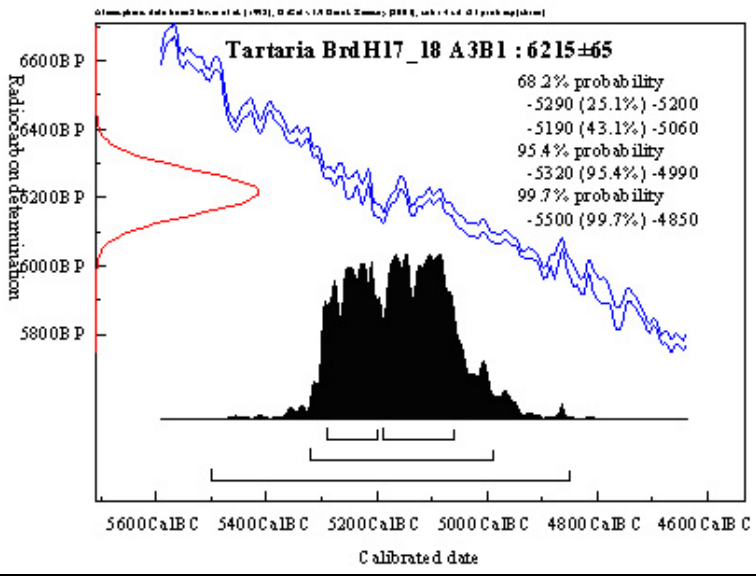

Image 35. Dating bones of the pit house base.

As noted in § 4, some scholars, perhaps in an effort to explain the incongruity of the signs on the tablets with their expectations, have insinuated that they were intruders into the Vinča layer from later and higher levels. Challenging their assumptions, how can we assert that bones and tablets are synchronous?

First, let we point out again that these scholars are following an obsolete chronology. They do not realize that the Turdaş culture they refer to was born at the beginning of the fifth millennium BC on a Vinča B grounding and developed after the Vinča C migrations with the concomitant social shock and cultural collision. On the basis of the new excavations carried out at Turdaş and Orăştie one has to consider this cultural group more recent than the Tărtăria human being and belonging to the Late Neolithic at the time of Tisza, Stoicani-Aldeni and Pre-Cucuteni cultures.[46]

Second, even if the present-day position of the pit on the sloping edge of the mound could mean that some of its upper portion had been eroded through time, the key point is the establishment of the epoch when it might have happened. Let me consider how the tablets' intrusion occurred in the Zanotti's reconstruction. In hope of ascertaining the true location of the Tărtăria tablets, he attempted to recreate via computer the area of trench G (where the tablets were found) as it was prior to the 1961 dig. Using a combination of map enlargements, sections and Vlassa's original photographs, he hypothesized the proximity of the ritual pit to the original surface prior the excavation. However, in his artificial and untested study he did not realize that the river once ran underneath the settlement and had eroded a side of it. The very steep bank still proves this and the line of the ancient course can be traced beneath. This natural phenomenon gave to the slope a different inclination from that presumed by Zanotti. His reconstruction of the sediments is only valid not before but *after* the Vlassa excavation; surely it looked different four thousand years ago, by the time of Baden-Kostolac culture.

Gheorghe Lazarovici and Zoia Maxim did a topographic survey on this controversial point. They evidenced that, if nowadays the high terrace of the Mureş river shows a very abrupt bank eroded by the flood in the area of about 200 m. with the trenches made by Kurt Horedt, Nicolae Vlassa and Iuliu Paul, in Neolithic times the settlement did not have an eroded tell shape, but it laid on a terrace whose limit was at a distance of minimum 10-15 meters from it.

[46] Radiocarbon data for Turdaş culture are: Turdaş, pit house 1/1993: Deb-5775 5790±70 BP, (4734-4549 CAL B.C.), pit house B2/1994: Deb-5765±70 BP (5044-4895 CAL B.C.); Orăştie – Dealul Pemilor, pit house 1/1992-1993: Deb-5762 = 5825 ±60 BP, (4768-4582 CAL B.C.) and pit house 2/1994 : Deb-5775 = 5790±55 BP (4734-4582 Cal B.C.). See Luca, 2001, 140-142, pl. VI-IX.

Image 36. The old river way.

Lazarovici and Maxim' reconstruction is on tune with Makkay's one: "It should be mentioned that on the photographs of the two profile walls of area G no such a sudden slope of at least 2 m is visible; on the contrary it can be postulated that both the levels and the surface were horizontal" (*Makkay 1974/5: 14*).

The conclusion is that the feature of the pit and the tablets' position were not disturbed by the Baden-Kostolac pit (30-40 cm) which is supposed by Zanotti to have cut as deep as 2 meters. The leakage angle of the reconstructed slope by Zanotti measures around 45° but in reality it is 70-80°; a fact which indicate that the erosion was natural and intense as shown in image 38 where "Vlassa G" indicates the trench in which the ritual complex have been found (*Lazarovici Gh. and Maxim 1991: 22*).

Basing on these evidence Lazarovici and Maxim criticized the Zanotti doubts in very harsh terms, considering them "unreasonable or naive" and his remarks to be "childish and untrue".

Milisauskas's latest work (*Milisauskas 2002*) carefully avoids to taking part in the controversy.

Makkay challenges the hypothesis of the destruction of the upper portion of the ritual pit both by human disturbing or digging and by natural erosion. Concerning the first point he explains that there are no traces of damage of the pit. Even if it could be, they occurred only contemporaneously or immediately after the deposition of the tablets: "The original 'mouth' of the pit thus could have been disturbed only by a digging contemporary with the *lower* (Tordos) level or originating from the time immediately after it (i.e. before the Tordos-Petreşti level).

There is no trace however of that, nor is it mentioned by the excavator, and if there were, it would confirm the dating of the pit to a period earlier then the Tordos-Petreşti level". The same conclusion is also valid if the destruction of the mound of the pit would be consequence of natural erosion. "In the case of a horizontal leveling (i.e. in Tărtăria), erosion may only destroy the current uppermost layer, i.e.

before later (e.g. Petreşti or Coţofeni) layers are deposited on it" (*Makkay 1974/5: 14*).

Image 37. The location of the ritual pit.

One should also consider that the ritual pit is too narrow and funnel-shaped to allow a falling down of a hoard composed by the tablets and the associated 29 artifacts. As Vlassa stated in his unpublished PhD dissertation: "The diameter (of the pit), 40 cm, shows that is impossible to believe that the pit belong to the Coţofeni culture, which was ca. 4 m up" (*Vlassa 1977: 13*).

Vlassa also reminded, "We do not know any Coţofeni site that contains Turdaş type idols, alabaster Cycladic idols, or signs of Turdaş type on the shards (*Vlassa 1977: 14*). A key argument for the changing of the dating challenging Vlassa's stratigraphic position of the complex was the presumed Early Bronze age of the "anchor". Nonetheless, Neustupný did not cite any parallels to back his claim (*Neustupný 1968a; 1968b*) and in fact Vlassa pointed that this piece is similar to the "anchor" pieces from the archaic period (beginning of the "azzura") at Poliochni and in the surroundings has many analogies with the Vinča ones (*Vlassa 1972: 368, n. 5; 1977: 14*). Makkay (*1974/5: 16*) and Lazarovici Gh.-Maxim (*1991*) documented that if this object had little to do with the "anchors" or hooks (viz *Elster 2003*) of the early Aegean Bronze Age or Coţofeni period, several similar artifacts have been found in the Neo-Eneolithic of Southeastern Europe.

Finally yet importantly, we crossed two photos made by Vlassa: south profile of G trench with the pit house and north profile of G trench with the ritual complex. One can see the dark, thick and undisturbed layer 0.5 m above the mouth of the pit but at least 1 m. under the Coţofeni level (fig. 26 and fig. 18, recovering *Vlassa 1963 fig. 3,* 4). Relating these photos by following the same line of the profile, one can check, although with some difficulties, that the pit was dug from the lower layer into the virgin soil as stated by the excavator. In the PhD dissertation, he maintained, "The deepness of the pit…shows that is impossible to believe that it could belong to the Coţofeni culture, that was ca. 4 m up. We also remember that

the Turdaş level of our excavation was covered by a fired adobe platform belonging to a surface dwelling from the level II (Turdaş-Petreşti) and on top of it was another similar platform from the level III (Petreşti- Turdaş)" (*Vlassa 1977*: 13).

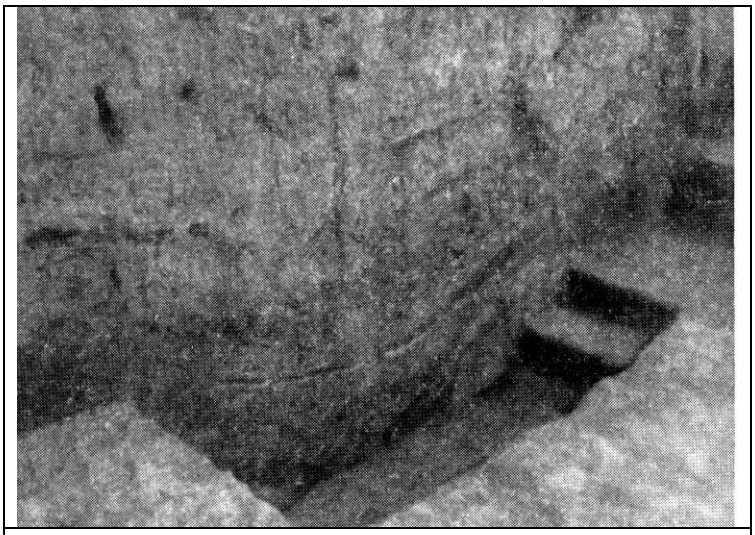

Image 38. Photo Pit House.

We think that a part of the pit (ca. 1/3, 1/4) was destroyed during K. Horedt or N. Vlassa excavations. This could be observed in one of the Vlassa's photos, which offer information regarding the depth and the size of the destroyed pit. Because of this, some pieces and bones might be absent.

10. The localization of the cultic grave and the pit house. Our reconstruction of the stratigraphy of the excavation layers

Now we can answer to the question regarding the localization of the cultic pit and the pit house because we are able to infer the perspective of Vlassa's two photos we have above mentioned and published.

We can also understand why the archaeologist in charge did not put the ritual grave inside the stratigraphy of the excavation made at Tărtăria. First, the drawing was made the day *before* the conclusion of the digging at a distance of around 150 cm. from the place where the pit was discovered the following and last day. Second, he underestimated the importance of the discovery before the recognition of the incised signs in the laboratory.

In conclusion on this point, metabolizing N. Vlassa's information we can reconstruct the profile of the excavation layers from trench G.

1. The first level of habitation (Vlassa's Turdaş layer) contains pit-houses and perhaps surface dwellings. It belongs to the Vinča culture, phases A2-A3. The term "Turdaş" is a anachronism. In the years 1961-1963 the term referred to M. Garašanin's chronologic system, according to which Turdaş – Vinča is the Old phase, contemporary to Vinča A şi B, and Vinča – Pločnik is the recent Vinča C-D phase. The Turdaş settlement belongs to phase Vinča B2/C, C1-C2 at Lazarovici (1977b; 1981; Lazarovici – Merlini 2004; 2005; C.-M. Lazarovici, Gh. Lazarovici

2006, p. 117 ff.; p. 477 ff., 568 ff.). After studying and publishing the materials from Turdaş from P. Bela's and M. Roska's sections (Lazarovici – Kalmar/Maxim 1991a p. 124 ff.; Lazarovici Gh., Maxim Z. 1996) and Adrian Sabin Luca's digs, as well as the C14 dating (Luca 1993; 1996a; 1966b; 1998c; 1998-1999; 2001; C.-M. Lazarovici 2006), Turdaş is dated to the Vinča C phase. The Vinča A2-A3 settlement was fortified (see below the settlement catalog index).

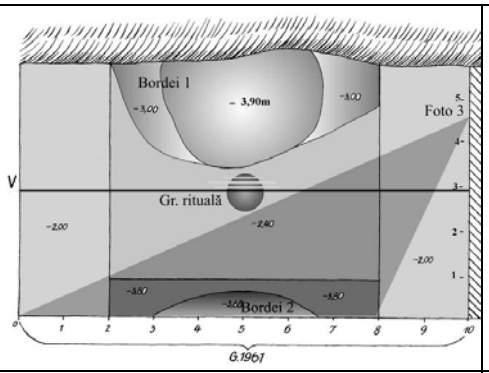

Image 39. Localization cultic pit and pit house.

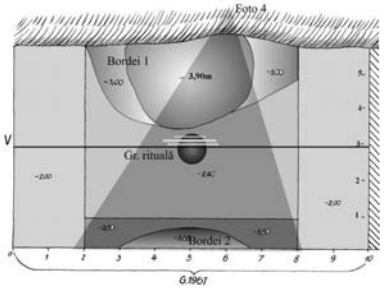

Image 40. Localization cultic pit and pit house.

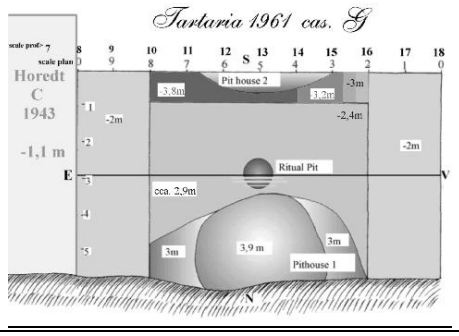

Image 41. Localization cultic pit and pit house.

2. The second level, named by Vlassa *Turdaş - Petreşti*, actually belongs to the Vinča B phase, a time during which the settlement extended and changed to surface dwellings. Numerous ceramic imports appear during this time, about 3%, in the cultural group Lumea Nouă, CCTLNZIS complex, phase II. The settlement extended at this time to about 7-8 Ha (see the catalog index) (C.-M. Lazarovici, Gh. Lazarovici 2006, p. 477 and following).

3. The third level, which Vlassa named *Petreşti – Turdaş,* belongs to the Petreşti culture, phases AB.

4. The materials discovered by K. Horedt, most of them inedited, were collected at great depth and mixed (0,30 – 0,60 cm), for which reason the materials can only be separated typologically. Even so, they allow for establishing the extent of the settlement in various phases.

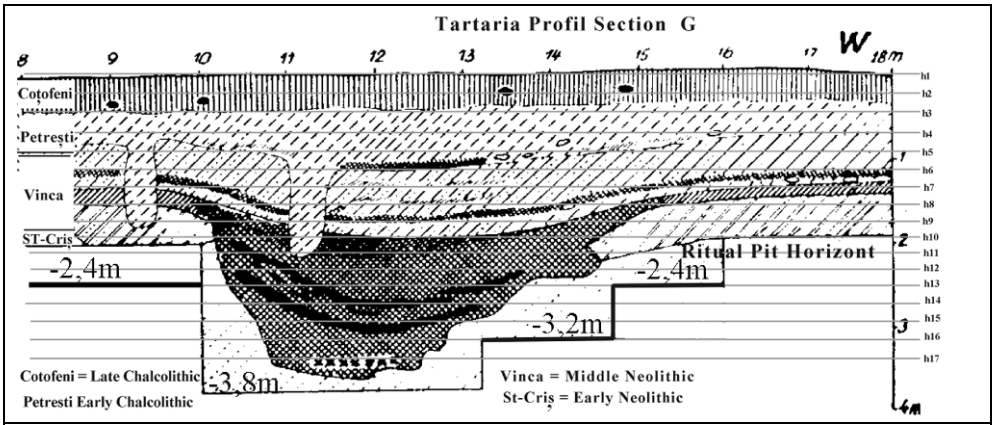

Image 42. Stratigraphy trench G.

Here is the stratigraphy after our revision (*Lazarovici Gh., Merlini 2005-2006*):

H11↑ excavation level Starčevo-Criş II and Vinča A3; level of the ritual pit

H10↑ excavation level Vinča A3 + materials from pit house (nr. 2.3) maybe the pit house 1.

H9↑ excavation level Vinča A3/B1 + materials from pit house (nr. 2. 3)

H8↑ Horizon from excavation of pit house nr. 2 and + materials from pit house (nr. 2)

↓H12-H13 excavation level, pit house 2.3 + 2.2, Vinča A3/B1

↓H14-H15 excavation level, pit house 2.2, Vinča A3/B1

↓H16-17 excavation level, pit house 2.1 Level with C14 data (Rome 1655, 6210 ± 65), Vinča A3/B1

H7↑ excavation level Vinča B1 + materials from Vinča A3

H6↑ excavation level Vinča B1 and CCTLNI – Lumea Nouă group

H5↑ excavation level Vinča B2 and CCTLNI – Lumea Nouă group mix with Petreşti AB.

11. The enigma of the charred human being, the cultic sacrifice and the cannibalistic ritual

As we have already mentioned, in Vlassa excavation report the pit was filled with earth and ash, the bones laid at the bottom appeared "scorched and disjointed, some of them broken" and they were supposed to be associated with the three clay tablets covered with strange signs and a small pile of offerings. These three key observations directed him to interpret the pit as a "magic-religious one"; bones, tablets and objects as a "sacrificial offering"; the human being as a Great Priest or a Shaman that was cremated during a sacrificial ritual (*Vlassa 1962*).

The Vlassa hypothesis is based on unstable archaeological ground but is less eccentric than many scholars think. At first, his impression that the bones have been burned might be related to the spongy and foamy aspect of some of the big ones,

with holes and swellings. Not having in mind to make the anthropological analyze, N. Vlassa did not washed the bones.

Regarding the human sacrifice, this ritual was occasionally practiced in the Transylvanian Neolithic to ask for the protection of superhuman forces. There is much archaeological evidence that reveals, in a very concrete way, the sacrificial practices. A not so rare custom was to execute a human being as a foundation sacrifice when a new building of any importance was started: the burial at the base of the pillar in Căscioarele sanctuary was probably of this kind and also the child-corpse interred under a Turdaş dwelling after a bloody sacrifice. In the latter case, the sacrifice of a pure and perfect creature as a child was a necessary step to consecrate the building.

However in the Danube civilization we have also the opposite pole: a malformed child[47] five or six years old was curled up in a basket - hands and feet tied forcing him into a contracted posture - and buried in a little pit on the top of the tell of Hârsova. It was found in 1993 during an archaeological program of French-Romanian collaboration between the Ministry of Culture/Francophone, (Directorate of Cultural Inheritance and Sub directorate of Archaeology) and the Romanian Ministry of Culture. From the preserved excrement found about the rectum, the researchers deduced that this was undoubtedly a deliberate death. The corpse was located among the foundation trenches, along the support posts of a large building. Are we in the presence of a foundation ritual connected with a sacred voluntary act of eugenics? According to the French-Romanian team this hypothesis is supported by evidence at other tells.

Confident to have under observation the burned remains of a sacrificial ceremony, the excavator jumped to the unproven conclusion that a cannibalistic ritual had taken place in Tărtăria (*Vlassa 1976: 31*). This hypotheses was based on a week circumstantial evidence, but not weird because there is documentation on a few cannibalistic ceremonies in order to communicate with gods and spirits in the Danube civilization. For example only a few kilometers from Tărtăria, at Orăştie, there have been found remains of roasted human bones and crushed big bones for extracting the marrow. Two skullcaps have been cut just over the ocular arcade to hold them on the palm and use for libation. In this case, the bones have not been used as food but as a tool (*Luca 2001*).

At Parța, Banat culture, level 6, there are many cases of foundation offerings in the buildings, especially in the sacred ones. In the foundation of the east wall of House P8, dwelling next to the Sanctuary 2 (with a monumental bust idol inside), 3 small pots with bones have been find (*Lazarovici et alii 2001: 111*). We have also discovered fragments of human jaws in level 7a, pit house 30, and in the hut 29 (*Ibidem: 88, 275*) and human bones in other pits too. In the river border, eastward from the site, on the bottom of pit III (a Tiszapolgár pit house, of 1,50 x 1,30 m), under the plastered floor, a quarter of a human skull (man) was discovered (*Lazarovici et alii 2001: 275*).

[47] With a deformation of the skull and spinal column.

At Scânteia, site of Cucuteni A3, many human bones, 173 fragments, have been discovered in the area of the houses or pits, fired or not (*M. Lazarovici, D. Botezatu, L. Ellis, S. Țurcanu 2003: 297-306*). In 1999 at Bolgrad (Northwestern Black Sea area) was fund by Newcastle University a large fragment of a human skull, among potsherds and animal bones, in a semi-subterranean dwelling belonging to the Gumelnița Culture. Preliminary examinations at the Laboratory of the Institut de Palaeontologie Humaine, have shown the occurrence on the surface of the skull of three artificially perforated holes and grooves indicative of cannibalism (*Dolukhanov 2000*). It was previously mentioned the burial site of a child unearthed at the Hârsova tell. Ritual cannibalism is suggested by the discoverers because of the scattered human bones discovered among the remains of meals and various refuse in domestic waste zones.

Some scholars challenged the Vlassa interpretation of a cannibalistic sacrifice and suggested that the Tărtăria human being was probably a priest, a shaman, a spirit-medium or a high dignitary (*Chapman 1983*) who had died in a fire and was buried with ritual articles he valued while alive. Other scholars speculated that he was the supreme priest and he had been burnt as he finished his serving time, according to the Sumerian tradition, as a sacrifice honoring the great God Saue (*Tonciulescu 1996*).

What happened really in Tărtăria? A sacrificial ritual, a cannibalistic ceremony, or a conflagration? Not any of them, for the following four reasons (*Merlini 2004b*).

Firstly, in the case of both ritual and secular cannibalism it is possible to find some selected remains (in particular from head, arms, legs). In the excavation at Scânteia (Moldavia, Romania) some remains of the skullcap and of the arms have been found (Lazarovici M. personal communication). In Iclod, a buried beheaded man held a portion of his skullcap on his hand. Regarding Tărtăria bones, we have found too wide a range of them and many are useless as food (i.e. ribs, hip-girdle and vertebras). Moreover, we didn't fin any skull fragments.

Secondly, in a banquet the bones are scattered on the ground among the remains of meals, sometimes refuse in domestic waste zones, or crushed by dogs. In Tărtăria, they were packed and accompanied by ritual and high status artifacts.

Thirdly, the bones were broken in a natural way and not, for example, crushed to extract the marrow as that one found at Orăştie.

Finally, the bones are not burnt. Not at all. The fragments of the big bones have traces of spongy / foamy and are of a dark brown color. Therefore, it was legitimate to suppose it was the consequence of thermic stress suffered by them during their history. It could have implied the partial or total carbonization of the collagenous converting it, by charring, into elementary carbon. We asked chemical and anthropological expertise. Chemical tests at the Laboratory of the Department "Scienze della Terra" of La Sapienza University of Rome have on the contrary excluded processes of converting the bones into carbon. The dark brown color is due to the absorption of oxygen hydrate and insoluble humates coming from the burial place.

Image 43. Bone fragments.

Only one bone, belonging to an animal, shows traces of scorching and it was mixed in amongst the human bones, which do not have evidence of burning (*Lazarovici Gh., Miu 2004*). Animal and human bones might have been placed together during the inhumation process, possibly in relation to rituals concerning the worship of a person who possessed some special and / or secret knowledge and became a revered and terrific ancestor.

Our working hypothesis is that the charred-like color of the big bones and the "exploded" appearance of some part of them are also due to their discarnation process. We do not think that a body preparation happened as an excarnation by processor corpse dismemberment[48], because we did not find any clear sign of knife, razor, blade, bird beak or claw or animal fang. The act of depriving or divesting of flesh was made by the simple decomposition of the body on the first burial stage or exposing it to natural events although in this phase of the research we cannot exclude a very delicate mechanical bone cleaning of soft tissues, using for example fingernails as the tribe Chokta did in North America.[49]

The little bones of the individual belonging to the tablets have an off-white color such as those from the chest and the shoulder-blade. This coloring might be related to long exposure under the sun's rays during the defleshing process (*Lazarovici Gh., Merlini 2004*). Similar situations and rituals have been recognized

[48] In the same area, excarnation was typical of the Late Coţofeni culture (in tumulus, Lazarovici, Meşter 1995).

[49] In a South American tribe Bororo the primary funeral takes place on the second - third day after death. The body is buried not far from water, 14 days later it is exhumed, the flesh is removed from bones; and then, during a feast, the skeleton is decorated and prepared for the final secondary burial. One of the decarnation methods in the tribes of North Australia is described by W. Chesling: "The deceased is painted and dressed, then buried in the earth or placed on a special stage, or affixed to a tree. Later on, the deceased's relatives pick up the bones and keep them until they find it possible to place them into a grave pillar decorated with ornaments. In an Arnchemland region, bones are extracted from the body, and flesh is eaten out...". Decarnation also took place in the tribe Chokta of the southern part of North America; it was a duty of a specially chosen man to clean the bones of a deceased tribesman in 2-4 months after death with his fingernails. The flesh was burned and the bones ultimately buried within a year.

from the end of the Coţofeni culture up to the Early Bronze Age (*Lazarovici Gh., Kalmar/Maxim 1987-1988*; Lazarovici Gh. 1998; for the discarnation of Tărtăria bones viz *Merlini 2004b*). Our hypothesis has been supported by the anthropological expertise of Georgeta Miu from the Center of Biological Research which belongs to the Romanian Academy, Iaşi branch (*Lazarovici Gh., Miu 2004*).

If the bones are not charred, also the other two traditional hypotheses fail: an accidental death by fire or a cultic sacrifice of the corpse by fire.

12. The puzzle of the corpse's identity

In general, the bones found into the ritual pit are supposed belonging to an adult man considered to be a priest, a shaman, or a high dignitary on the basis of the associated artifacts and the cremation ritual designed for a very special person.

Nevertheless, the anthropometric analysis that the *Prehistory Knowledge Project* asked to the Centre for Anthropological Research of Romanian Academy of Science at Iaşi ascertained that the bones belong to a female, very ill and very old for the standards of that times. If one wants to go on with the image of a ritual pit and a cultic context, one should start to talk about the Tărtăria priestess, shaman-woman or dignitary-woman. In this phase of the research we prefer to talk about "Milady Tărtăria" and to indicate her as a "revered holy woman" as well as a terrific one with a pivotal role in an inclusive community capable of only moderate formations of leadership and policy (*Merlini 2004a: 289*).

Let us try to outline an identikit of Milady Tărtăria on the basis of the anthropometric analysis made at Iaşi by Georgeta Miu.

Sex and age.

The skull and pelvis are missing (from the latter there are only some fragments), so that sex and age determination of the subject has some limitations. Based on metric and morphological features of the long bones (entire or fragmentary) and others (collar bone, vertebras, talus, heel bones, and fragments of the belt bones from pelvis area) we consider that she is a female of 50-55 years old. The age was estimated based on: resorption of the spongy tissue, the aspect of the pubic area and some particular pathological degenerative processes of some bones.

The height.

The height is 147 cm, indicative of a small woman. It was calculated on the basis of classical known methods (radius, cubitus and tibia length).

The anthropological type.

Our analysis and conclusions are based on the small height of the subject and on the gracile features of the bones. We remind that skull and face bones are missing.

Based on the available data we believe that all this features indicate the Mediterranean type.

Image 44. Distorted femur.

Paleopathologic aspects.

A degenerative process of the bones has been identified on the right femur (the cervix and the head of the femur). This degenerative-arthritis process contributes to the modification of the diaphysis aspect (the bone is thicker and shorter) and have caused an anchylose for the femoral articulation as seen in the image which compare the Tărtăria femur and a distorted one.

It is possible to observe the same degenerative process on three dorsal vertebras (maybe 6th, 7th, and 8th): the body of the vertebras is half than a normal one in size because of the destruction of the tissue (on the right side).

This kind of malformation did not cause neurological lesions. It is possible that this degenerative process affected also the ribs related to these vertebras (some fragments show this process). The lower part of the articular surfaces of the pubis shows a similar destruction process.

We do not know the origin of these bone lesions, but they are associated with a quite high process of osteoporosis. All these degenerative processes may have produced great pain and it is probable that the pain must have been a commonplace experience for Milady Tărtăria for the last 10-15 years of her life.

Image 45. Distorted vertebra.

But her death can be related to other reasons.

The osteoporotic (osteoporosis) degenerative process which was affected Milady Tărtăria wasn't a simply 'silent process' that typically affects post-menopausal women and involves loss of bone mass but probably an acquired disease. A supplementary expertise done by Dinu Oneț, radiologist and physician at the Neuro-surgery Clinics of Cluj-Napoca, suggests some explanation for this kind of deformity. Radiological expertise and clinical analogies indicate at least three possibilities: *gummatous osteoperiostitis, osteomelite or tuberculosis*. We do not exclude a form of *syphilis,* an ancient, endemic and not necessary venereal disease *(Dennie 1962; Baker and Armelagos 1988; Marcsik 1994; Hershkovitz et al. 1995; Merlini 2004b*).

Osteoperiostitis are skeletal lesions of infectious origin which commonly appear on the major long bones, especially the tibia (*Steckel, RH, JC Rose, et al. 2002: 142-155*). They are found as plaque-like deposits from periosteal inflammation, swollen shafts, and irregular elevations on bone surfaces (*Ortner and Putschar 1985*). Most lesions are non specific but they often are caused by *Staphylococcus* or *Streptococcus* organisms. Osteoperiostitis has proven very informative about patterns and levels of community health in the human past (*Larsen 1997*).

Pyogenic osteomyelitis (bone inflammation) is the most common kind of pathology seen in ancient skeletons and it is usually the result of infections of microorganisms that produce pus (*Mays, Taylor 2002*).

Tuberculose osteo-arthritis is a very ancient disease**,** caused by a bacillus (mycobacterium tuberculosis) that probably predated the genus *Homo.* In Europe the earliest evidence of T.B. in humans was found in the region of Heidelberg (Germany), where a young male (5000 BC) was discovered with pathological evidence of tuberculosis of the spine and the 3rd and 4th thoracic vertebrae collapsed (*Herzog 1998*).[50]

Regarding syphilis, endemic or non-venereal syphilis (treponematosis being caused by treponema pallidum or what is commonly refereed to as *bejel*) and venereal syphilis are not the same diseases. In both cases skeletal involvement is extensive and ultimately fatal; however, their mode of transmission is quite different. The venereal form of the illness is transmitted by sexual contact, while the non-venereal from of it is transmitted by skin contact, occurring mostly in childhood (*Ortner and Putschar 1985*). The origin of syphilis is an ongoing debate, but early evidence of it was revealed by an Italian burial[51] and a Polish one (*Carter 1998: 532*)[52]. Even though gummatous osteoperiostitis, pyogenic osteomyelitis, tuberculosis and endemic syphilis behave differently[53], the symptoms of each are quite similar and they affected Lady Tărtăria in her early age.

The posture

[50] Tuberculosis, according to most medical historians, originally became a medical problem when man began domesticating cattle and other mammals which carry a form of the disease known as bovine tuberculosis. The consumption of infected meat and milk products eventually let to the transmission of the disease to the human population.

[51] The discovery in 1992 of syphilis in a tomb at the Pantanello Necropolis (Metaponto) proved that that disease had existed in Europe 2,500 years ago. The presence of syphilis was detected by the examination of human remains. Sclerotic hyperostosis (the thickening and pocketing of the cranial wall) was an effect of this disease (Carter 1998).

[52] For decades syphilis was thought to have been introduced into Europe by returning crew of Christopher Columbus, following his voyage to Haiti in 1492, as epidemics of this disease were unrecorded in Europe before then but spread across the continent from Spain soon after his return (Dennie 1962). Current osteoarchaeological evidence, however, supports the theory that the disease existed in both the Old and the New worlds prior to Columbus' voyage and that the syphilis of the 15th century was probably the adaptive transmutation of a New World non venereal disease brought back to Europe by returning sailors. When it reached Europe, non venereal syphilis transmuted and became a particularly virulent venereal disease (Baker and Armelagos 1988). Before these epidemics, syphilis was simply not diagnosed as a separate disease and was often confused with leprosy. There was a reference to "venereal" leprosy and "hereditary" leprosy in the 13th and 14th century. But leprosy is not spread by sexual intercourse and not passed from infected mother to infant, syphilis is. (See also Hershkovitz, Rothschild, Wish-Baratz and Rothschild 1995; Marcsik 1994. The history of tuberculosis and syphilis in ancient Egypt is outlined of in Armelagos and Mills 1993).

[53] For example, syphilis of bone is commonly symmetrical, pyogenic osteomyelitis is less so and articular surface lesions of tuberculosis are usually asymmetrical unlike other forms of arthritis. (See "Last Lecture: Paleopathology" in *Anthropology* 156, Spring 2002).

Milady Tărtăria limped on her right leg since her youth because of her thicker, anchylosed and shorter right femur and leg. She had a posture forming a > (an arrow) because of the degenerated, decalcified and fragile spine. She had also the tendency to angle towards the right because a scoliosis had deformed the right side of her chest and her right shoulder. There is an unpublished Neolithic figurine kept at the National Museum of Athens that can give an idea of the Milady Tărtăria.

13. A consecrated grave of a novel ancestor and not a ritual pit or a votive deposit

Now that we have accumulated more evidence about Tărtăria, let us go a little deeper into the relationship between the revered and terrific holy woman, her abode, the ritual pit, the cult inventory, and the tablets.

With reference to the intricate interactions between the first three elements, following the same lines of plane at the north and south profile of the Vlassa excavation it is possible to relate fig. 27 (depicting the north profile of G trench and the ritual pit) to fig. 38 (regarding the south profile of G trench and the pit house). The results are synthesized by fig.47, which connects in the same image the ritual pit and the pit house; therefore, the two structures were not only contemporaneous but also belonged to the same archaeological complex under the same roof and were functionally connected.

In Neo-Eneolithic times, it was not infrequent throughout Southeastern Europe that household activities occurred in areas nearby pit houses. We suppose that Milady Tărtăria lived in the pit house and kept the sacral inventory inside the "ritual pit", a sort of box with magic tools, which was in fact located under the same roof and possibly provided magical protection of the abode. The cult associations are important because they connect the inscribed tablets and the ritual paraphernalia, and relate both these to a building with a special function. Indeed they make a little more intelligible the functional relationship among ritual pit, pile of liturgical artifacts among which tablets bearing signs and dwelling under the framework of an passionate magic-religious life with elaborate symbolism and intense ceremonialism developed by a small early farming community with a not very marked social hierarchy.

Scholars are divided on the existence of temples, sanctuaries and community altars in those times because some still maintain that liturgies were held solely within the household field.[54] Milady Tărtăria's dwelling possibly evidences another

[54] The monumental bucrania found at Gomolava (Brukner, 1988, 33, 3/7-8; Lazarovici et alii, 2001, I.1, 275-276, 297-298: fig. 250/1-2, 250/3), Vinča (M. Garašanin, 1958, 20; D. Garašanin, 1968, fig. 28; Babovic, 1984, cat, 212; Staljo, 1986, cat 218), the monumental human heads found at Fafos, Predionica (Staljo, 1979, cat. 264) and Zorlenţu Mare (fig. 29, in House 4) the existence of sanctuaries, sanctuaries and communitarian altars (Lazarovici Gh, Lazarovici M. 2003). The presence of several communitary sanctuaries at Magiare, Vrbska Humka (in Macedonia at Vinča A - Starčevo- Criş level, information Garašanin, 1981, 1984; Sanev, 1988, 9-10), Parţa and Kormadin at Mânăstioara – *Cetăţuia,* Vrancea

kind of sacral layout neither a temple or a shrine (completely dedicated to religion) nor an ordinary dwelling (where the sacred space was limited to a fireplace/oven and/or an altar). In the Tărtăria dwelling, a substantial area might have been devoted to and specialized for magic-religious rituals while the rest might have been associated to daily life, nevertheless a daily life which was at full time and with every action connected to the spiritual path of the initiate. We postulate the existence of special abodes belonging to old holy ladies, often related to the numerology of the 7.

Image 46. Milady.

Such hypothesis is sustained by two religious discoveries from Poduri and Isaiia (in Moldavia, Romania) both containing 42 pieces (*Lazarovici Gh., Merlini 2004*). Milady Tărtăria's home might be been a structure comparable with the present-day ashrams of sadhus[55] in Hindu culture: dwellings with a living as well as a retreating room with a large corner area consecrated to liturgies or with a second room set apart and specialized for cult.

A crucial point for the interpretation of the function of the tablets and their signs is that Vlassa and most of the scholars consider the pit a cultic sacrificial hallow filled with a votive hoard, a dedication deposit, or a pile of offerings. In fact it was a cultic pit during the life of Milady Tărtăria but after her dead it became a ritual grave. Her bones underwent through a defleshing process that could have required a period of between some months to 6/7 years. After the stripping of the flesh bones and part of her tools might have been returned to where

district (Romania orientale), Căscioarele (Romania meridionale) evidences the existance of religious structures. Several clay models of Trypillian houses and temples have been found, which help to reconstruct (reproduce) ancient architecture. An interesting collection of clay temples has been collected by Sergej Platonov of late. Literally, these finds corrected our notion about prehistoric architecture of Old Europe between 4200-3500 BC. One of them represented rectangular in plan building on platform, based on six strong pillars. The roof of the temple is semicircular, frontons are decorated with a crescent, which is similar to bull (or cow?) horns. The entrance to the temple is represented as an arc, decorated with five images of crescents. The walls are decorated with antropomorphous pillars and spiral snake symbols. The model was covered by red paint, and an incised ornament was enchased with white paint. On other models roofs were painted, it looks like they were covered by rush floor-mates. The best example of a communitary altar is the sanctuary at Kormadin, Vinča C level (Jovanović, 1960; 1991 and bibl.; 1991; Sandars, 1968/1985, 203, fig. 179b). In the Sanctuary at Kormadin (fig. 50) the cult furniture, including decorated boxes with places for offerings, columns, monumental idols, walls decorated with sacred symbols is related to a naology as at Parța (Lazarovici et alii, 2001).

[55] A holy man, sage, in general with ascetic style of life.

Milady Tărtăria had spent her life. It is possible that during this time-lag the house was abandoned. We can relate the first filling levels to this period (*Lazarovici Gh., Merlini 2004*). It means that pit and pile of objects should not be in a straightforward manner and promptly read through the categories of giving directed to an other-worldly power and for supernatural returns (votive deposition) but primarily through the category of death liturgies socially significant and reflecting the social standing of deceased need. Consequently at Tărtăria the human body constituted a form of dedication and a means to facilitate communication with superpowers *only* though distinctive dead liturgies and burial in a sacralised space.

The shape and the extent of the ritual grave did not permit the deposition of a *buried person* and this fact confirms that the human bones had been put there after the *defleshing* process. The Tărtăria pit could be evidence of a secondary burial. Did a double funeral rite occur with the deposition of the disarticulated skeletal remains, the tablets, and the core part of every associated object? If one follows the Krum Bačvarov's suggestions about Bulgarian Neolithic on the secondary burial as a conclusion of a two-stage process of post-mortem body treatment, the Transylvanian reburial was based on some kind of public rite of devotion or initiation (*Bačvarov 2003*). The context of a previously occupied site suggests that the deposition in a pit was possibly associated with socialization of the dead and ancestor worship constituting an exchange between the living and the neo-ancestor aimed at consecrating or at least symbolizing the continued significance of a distinctive ancestral place. The deposition of the hoard in a house apparently reinforced the principle of concentration of finds and ritual in the domestic domain, but one has to remember the above-mentioned particularities of Milady Tărtăria's dwelling.

At Tărtăria the two principles of fragmentation (the bodily dismemberment and the deliberate breakage of objects, and the sharing of both kinds of fragments among people) and accumulation (grouping and interring together in a set the emblematic parts of the body and the artifacts) worked together thereby reinforcing distinctive social relations and identity (on a household, ancestral lineage or community level?).

Georgeta Miu has observed that the skull and many small bones are missing, in particular those from palms, feet, and pelvis even if from the last some fragments remain. The absence of fragile bones might be the result of a natural process of defleshing and disarticulation (*Lazarovici Gh., Meşter M. 1995; Lazarovici Gh. 2000*). But what about the other bones? Fragments of them might have been utilized to connect the most recent ancestor, Milady Tărtăria, with her living kinsfolk or/and might have been passed on to enchain a third party. The relationship by means of fragmentation and socialization processes might have involved not only the revered and terrific holy woman's tools but also her skeletal material.

At the present, we are unable to explain the absence of the skull bones. In many cases of corpse decarnation, skull bones as well as teeth still exist even if the small bones of the face have disappeared. Therefore, we presume that the absence of the bones from the cranium might be related to its relocation due to the skull cult (our

opinion and bibliography, *Lazarovici Gh.-Maxim 1995*). Nevertheless we have to check once more the documentation from the older excavations, made by Horedt and Vlassa, to be sure that some bones have not been mixed in with other materials or misplaced at the moment of clearing the profile (fig. 38). The last possibility is supported by Vlassa's photos, where one observes that the pit was truncated (fig. 27) (*Lazarovici Gh., Merlini 2004*).

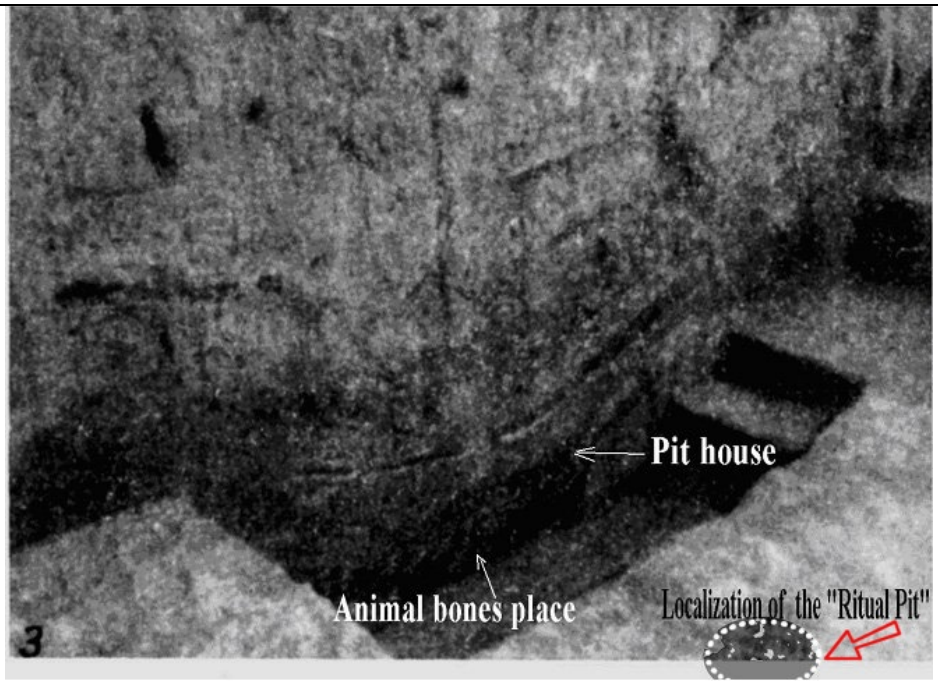

Image 47. Pit house and ritual pit.

14. Milady Tărtăria and her casket with magic tools

The social life of cult inventory has two phases: before and after the dead of Milady Tărtăria. With regards to the first phase one can observe that the most of the artifacts belongs to different cults related to fertility and fecundity and their sovereign mysteries (the female divinity and her hypostasis: Mother Earth, Fertile Mother, giver and taker of life, holy darkness of the womb, divinity of pregnancy, protector of life, mistress of animals and plants etc.). Extremely sacred objects, they have possibly been surrounded by taboos (as highlighted by the results of overlapping two of the tablets) and employed in an elaborate cycle of rituals involving every stage in cultivation, preparation for war, ritual initiation, death. These formalized ceremonies have probably been accompanied with song, dance, and music. Every figurine of the ritual pit is wearing an elaborate mask which possesses, impersonates and expresses its resident power during ceremonial rituals:

a mythological being, an animal spirit, the spirit of a dead, a human or totem ancestor as well as a deity and another being believed to possess power over the living. The context portrays Milady Tărtăria as a cult leader and perhaps a full-time specialist. Of course, questions pose more questions. One can note at a glimpse that some figurines have a phallus-like shape, but why have they been modeled in such a particular form?

We have already noticed that the artifacts were not "items of faith" deposited in an act directed at communication with or concerning supernatural powers in hope of a return (magic protection, success, health, the flourishing of crops, animals or family) but deposited in a funerary complex in connection with death rituals and that some of them were broken, intentionally or unintentionally, and buried as incomplete items, while others are entire and interred as complete items. After Milady Tărtăria's death, her liturgical tools were possibly broken during a ceremony. It is of course theoretically possible that these objects might not have been necessarily ritually "killed" but broken accidentally or by misuse, but one has to observe that the presence of magic-religious, exotic, not functional, and more or less precious items would mark a very unusual pattern of a discard collection. Secondly, the figurines made of clay have been deliberately divided in two parts, retaining the entire upper part (head included), for burial in the pit. Therefore, they have been submitted to an intentional and methodical breaking process. Closed eyes and absence of mouth are peculiar of some of them and are both traits that remind the dead. In a process that transforms matter into being, it is possible that that some figurines were manufactured at the time of Milady Tărtăria's death and used in rituals to represent the newly dead. Once the spirit of the person was free or during the secondary reburial process, the figurines could have been broken and sacrificed tying the living into the power of the neo-ancestor and by doing so asserting a political claim of continuity and belongings.

The deposition of the statuettes as incomplete items was due not to the fact that they were discarded as refuse because of their broken state but to a fragmentation ritual which could be connected: a) to the rupture of the relations between their owner and the divinity; or b) to an enchainment procedure enacted through the fracturing of some objects in fragments which were shared among kinsfolk, acquaintances and associates in order to establish a magic relationship between the newly dead and the living; or c) to the spread of some fragments throughout the settlements and the fields to guarantee fertility (*Chapman 2000; 2001*). The core part of every sacral tool was not dispersed but collected in a hoard associated with the tablets and buried in the ritual pit during a devotion or initiation ceremony or simply kept apart.

If some fragments of the intentionally broken figurines may have been circulated among the living in order to enchain the ancestor and people with the same ancestor solidifying the group at the same time, it is important to observe that the deposited parts of the whole are so distinctive that the whole is obviously represented. And why are the inscribed tablets are the only entire artifacts? This

interaction between fragments, parts as whole, and complete items is an important issue for future exploration.

15. Transylvanian tablets and the sacred script for initiates

The problem of the signs from the tablets and what do they mean is a very complex subject. Tărtăria markings are believed by a growing number of scholars to be a very early form of writing and not just symbols but the interpretation of them is far from being elucidated. If some researchers are daring to give a definite meaning to those signs, the tablets are some sort of Rorschach test where people project into the inkblots the fantasies they already have in their mind. In any case, the new archaeological data we are presenting in this article compel us to develop some semiotic considerations about the genetic code of the emblematic signs of Tărtăria (*Merlini 2001; 2002a; 2002b; 2004a; 2005*).

At first the Tărtăria tablets evidence that the Danube script was mainly a sacred system of writing employed in liturgies and in expressing magic-religious beliefs. It was not primarily used for commercial transactions or for recording administrative documents, but for communicating with the super-human forces. In fact inscriptions have been often found on objects – such as tablets as well as clay female figurines, votive offerings (sometimes *ex-votes*), libation vases, miniature vessels, spindle whorls, seals, temple models, and loom weights – all connected with a religious context.

The Tărtăria tablets attest also that the Neo-Eneolithic communities of the Danube basin were just at the first stages of the development of a script of literacy. It is a very archaic system of writing and possibly not capable of encoding extended speech or long narratives because phonetic elements are not or are too limitedly rendered in writing. It consists probably of a mix of logograms, ideograms, pictograms and only some phonetic elements occasionally and marginally marked. The connection with the conceptual sphere is much stronger than the connection with the phonetic sphere. Other ancient writings of this type are the Elamite script, Indus script, the hieroglyphs of the Phaistos disc, the Chinese writing on oracular bones, and the Olmecs glyphs.

If 7,300 years ago the Danube script was in *statu nascenti* and a considerable part of it was a key element of the religious-mythical system, consequently its signs had often the same outlines of sacred symbols, in particular the geometrical and abstract ones, from which they had derived. This every so frequently originates confusion into the researchers employed to crack Danube script code, but witnesses at the some time that numbers of signs of this system of writing have their origin from the sacred language of symbols.

The religion was a system of symbols and texts by which human beings communicated with their culturally defined universe characterized by super-human

powers as well as human powers. Common models of ritual action[56], embedding symbols and texts[57], realized the extra-human and inter-human communication, mediating also between the individual's conflicting needs for self-expression and self-containment.

The Tărtăria tablets point out the mainly cultic, initiation-ritual nature of the Danube script. Indeed many meanings might be esoteric and revealed only on the occasion of specific initiations (*Lazarovici Gh., Merlini 2004*). The question of the non-visibility of some texts is indicative of magical associations and sacral meaning of the Danube script connected with initiation processes. It is not for accident that texts were sometimes on a non-visible portion of the ritual tools. For example the magic-religious inscriptions positioned along four rows on the Gradešnica platter were visible only when it was moved, stored, or transported, but not when in use. During the rituals, they faced the ground possibly for the giving and the taking of earth-forces. Was the non-visibility not only a supplementary symbolic meaning but also an integral part of the symbolic message and a necessary condition for setting symbols and inscription into motion? (*Merlini 2005*). Also the cultic, discoid medallion recently found at Turdaş and belonging to the level of the Turdaş grup had been used with its inscription facing the ground. In this case, the inscribed artifact was located in the middle stratum of a pit among the ashes of a deep steep dwelling, maybe a granary or a shaman's habitation, and accompanying six vessels containing cereals (*Luca 1993; Merlini 2004a*).

Concerning the Tărtăria tablets, it is noteworthy to consider the possibility of overlapping the two tablets which both bear a round hole and are divided into cells. Indeed the hole on the rectangular tablet fits perfectly the hole on the circular one and the former tablet perfectly covers the upper register of the latter with their cells in perfect alignment. This could mean that the two tablets have been worn as necklaces one over the other as pendant and the resulting compound between the rectangular and circular tablets may have created a relationship of overt (seen) and esoteric (hidden) signs (i.e., the signs on the upper register of the circular tablet would have been covered). The fact that the two punctured tablets could have been utilized as superimposed exoteric and esoteric amulets is indicative of the magical associations of the script (see *Makkay 1968: 286; Hood 1967: 111; Reiner 1960: 148 ff.*). Was the sacred assemblage particularly in use during initiation ceremonies? (*Merlini on line, Lazarovici Gh., Merlini 2004*). If this was the case, it does not facilitate any attempts to decipher the incised signs since one is dealing with texts which challenge the un-expressible, which not only reveal but also conceal and sidetrack, and finally which indicate something to mean something else.

[56] For ritual action I mean not only formal rituals performed by consecrated professionals, but also many acts of everyday household life which were imbued by religious-mythical significance and incorporated utilitarian and symbolic functions (Viz. *Nikolova on-line* who researched three case studies in depth: spinning and spindle-whorls, ornamented pottery and burials in the villages).

[57] Victor Turner even considers the rituals as aggregations of symbols (1975:59).

Image 48. An amazing superimposition.

Conclusions

Our investigation reconstructed quite clearly the discovery circumstances of the Tărtăria tablets:

- In Romanian historical context where the cross section excavation was at that time not used in any archaeological investigation, Vlassa sketched the stratigraphy of the trench dig at Tărtăria but did not put the ritual grave inside it because: firstly the drawing was made by him and Attila Laszlo the penultimate day of the excavation campaign at a distance of around 150 cm. from the place were the pit was unearthed the subsequent and last day: and secondly he undervalued the discovery before the recognition of the incised signs in the laboratory.
- The tablets were wet, soft and covered with limestone.
- Confusing a sort of "Neolithic cocciopesto" (pulverized live calcium mixed with water in order to bind clay, sand, and different minerals) with a presupposed calcareous crust and thinking that the abundant calcium was due just to the humidity inside the pit, the restorer put the tablets under a hydrochloric acid treatment, removing not only the superficial calcium as a slip but also destroying their internal structure from the surface.
- Vlassa noticed the incised signs and realized the importance of the discovery only after the cleaning of the tablets.
- In order to contrast the fragility of the pieces, due to many cracks that appeared during the process of cleaning with hydrochloric acid, Vlassa decided to impregnate the tablets in a vacuum autoclave baking them. Nobody knows how long and at what temperature they were baked, but it should not have been over 100-150 degrees to avoid ruining them.
- After having recognized that the tablets were inscribed by signs of writing and having well in mind the arguments of the critics on stratigraphic data, in the last period Vlassa listed 5 scholars against his interpretation overwhelmed by 30 who "supported and completed" his point of view as well as TV and radio programs,

press articles and the presence of the inscribed tablets in school books (*Vlassa 1977: 15-18*). Considering to have carefully published his discovery, he spent more efforts on the hypothesized Mesopotamian influences in Transylvania than on the description of the excavation and its findings.

Re-publishing the artifacts found in the sacral grave with the tablets, we verified that they and the tablets belong to the same assemblage and challenged some scholars' insinuations, perhaps in an effort to explain the incongruity of the inscribed signs with their expectations on dating, that the tablets were intruders into the Vinča layer from higher and later levels. Indeed the stratigraphic situation that we settled up allows a direct association between the tablets and the other finds. Also the best typological parallels indicate a similar date for the tablets and the other objects, their fitting to the early phase of the Vinča culture, and their belonging to the central territory of the Danube civilization, i.e. the Vinča area, although a not very high stylistic resembling of the Tărtăria figurines with others from the same cultural complex if we do not limit the comparison to a single or double feature.

Our analysis of mixture and paste of the tablets under the microscope rejects the hypothesis that they could be a modern or ancient forgery, as well as a Near East import. We verified that all the tablets are made of the same material which is from local sources and contains a very small quantity of clay and a lot of sand. Therefore they can not be analyzed by C14 method not only due to the suffered thermic stress, but above all because they mainly contain sandy clay. Having the tablets been made of a sort of "Neolithic cocciopesto", the acid bath they suffered at Cluj museum did not affected just their surface, but deeply ruined the calcareous inclusions and the binding of the material. If the chemical action cleaned the calcareous deposit from the surface of the artifacts, at the price to ruin their internal structure, a high concentration of calcium carbonate is still now present inside the tablets and it is slowly exiting at a point that in a number of years they will have been covert again by a white surface.

The C14 analysis assigned an age of 6310 ± 65 yr BP (calibrated 5370-5140 BC) to the human bones recovered with the tablets in the ritual grave. Therefore it confirms the placing of Tărtăria complex into early Vinča culture as the discoveries from Liubcova, Orăştie, Turdaş I and Uivar, or into the Starčevo-Criş IVA culture (contemporary with Vinča A2), as those from Cârcea, Banat culture I (*Lazarovici Gh., Merlini 2004)*. Metabolizing N. Vlassa's information and making some graphic inferences, we made a complete revision of the discovery circumstances establishing the precise localization of the ritual grave and setting up the stratigraphy of the trench were it has been unearthed.

The analysis of the human remains allows us to challenge the mythical and consolidate scenery that a human sacrifice, a cremation during a sacrificial ritual, a

cannibalistic ceremony, or a conflagration occurred in Tărtăria. The pit could be evidence of a secondary burial as a conclusion of a two-stage process of post-mortem body treatment. A double funeral rite occurred with the deposition of the disarticulated skeletal remains together with the tablets and the core fragments of every associated object, during some kind of public rite of devotion or initiation possibly associated with the socialization of the dead and the worship of the deceased person who possessed some special and/or secret knowledge and became a revered and terrific ancestor.

In fact the anthropometric examination ascertained that the bones belong to a very special person: a female, Mediterranean type, very old for the standards of that times (an age of 50-55), very ill and in pain (due to a degenerative-arthritis process causing malformation since her early age), limping on right leg and having a posture forming a > (an arrow) since her youth. Crossing the analysis of the human remains with the ritual pit and cultic context, we can indicate her as a "revered holy woman" with a pivotal role in an inclusive community: "Milady Tărtăria".

The radiocarbon data sustains that the sacral pit containing the tablets is coeval with a nearby pit house. Archaeological evidence establishes that ritual pit and pit house are contemporaneous, belong to the same complex being under the same roof and are functionally connected. Milady Tărtăria, a cult leader and perhaps a full-time specialist, lived in the pit house and kept her liturgical artifacts among which the inscribed tablets inside the "ritual pit", a sort of box with magic tools. If scholars are divided between those who maintain the existence of temples, sanctuaries and community altars in Neolithic age and those who limit the presence of liturgies within the domestic domain, Milady Tărtăria's dwelling evidences another kind of sacral layout neither a temple or a shrine (completely dedicated to religion) nor an ordinary house (where the sacred space is limited to a fireplace/oven and/or an altar), but a dwelling with a substantial area devoted to and specialized for magic-religious rituals and the rest associated to daily life, nevertheless a daily life plug-in with the spiritual path of the initiate. We postulate the existence of special abodes belonging to old holy ladies, often related to the numerology of the 7.

A crucial point for interpreting meaning and function of the tablets and their signs is that the pit is not – as commonly considered – a sacrificial pit full of offerings but a ritual grave. In fact it was a cultic pit during the life of Milady Tărtăria but after her dead it was transformed into a consecrated grave and during a ceremony her remains as well as key fragments of her tools returned where she had spent her life. Therefore pit and pile of objects, inscribed tablets included, should not be promptly read, as generally done, as offered "means of faith" to facilitate communication with an other-worldly power or in hope of supernatural returns (votive deposition) but primarily through the category of socially significant death liturgies and burial: reflecting the social standing of deceased need, performing ancestor worship, constituting an exchange between the living and the neo-ancestor,

and make holy or at least symbolizing the continued significance of a distinctive consecrated space. At Tărtăria the two principles of fragmentation (the dismemberment of the revered body and the deliberate breakage of magic objects, then the sharing of both kinds of fragments among Milady Tărtăria's living kinsfolk as well as passing on to a third party) and accumulation (grouping and interring together in a set the emblematic parts of the body and the artifacts) worked together thereby enchaining the most recent ancestor with the living persons and reinforcing distinctive social relations and identity.

In conclusion on this point, the social life of the inscribed tablets and the other cultic artifacts has two phases: before and after the dead of Milady Tărtăria. With regards to the first phase, in the present article we advanced some hypothesis regarding the cultic inventory with correlate liturgies and sovereign mysteries among them we pointed out the presence of speaking or singing figurines. We also observed that only the tablets are entire and interred as complete items, while all the other cultic objects have been submitted to an intentional and methodical breaking procedure and deposited as incomplete items. In a process that transforms matter into being, it is possible that some figurines were manufactured at the time of Milady Tărtăria's death and were used in rituals to represent the newly dead and then broken and sacrificed tying the living into the power of the neo-ancestor and by doing so asserting a claim of continuity and belongings. Besides some artifacts might have been surrounded by taboos and other might have been employed in rituals that nowadays are considered of "black magic". These occurrences pose new questions about the identity of the buried person and about the possible connections with the tablets and their signs.

The last query is: if the Tărtăria tablets are so ancient to be employed by some scholars as the icon on the *possibility* that South-eastern Europe developed in Neo-Eneolithic times its own system of writing which predated the Near East regions by 1000-2000 years, are we certain that that they are actually bearing written signs? Are we confident to consider them the earliest attestations of an old European form of writing and not mere bearers of symbols? In this article we presented some working hypothesis on the genetic code of these emblematic signs, but this complex issue is the key question for the future investigation.

Bibliography

AA.VV. 2002 "Last Lecture: Paleopathology", *Anthropology* 156 Spring, http://www.anthro.ucdavis.edu/courses/s02/ant156/Lecture%2014.htm

Armelagos G. J., James O. Mills 1993 "Palaeopathology as Science: the Contribution of Egyptology. *Biological Anthropology and the Study of Ancient Egypt,* edited by W. V. Davies and R. Walker. London: British Museum Press.

Bačvarov K. 2003 *Neolitni pogrebalni obredi. Intramuralni grobove ot Bulgarskite zemi v konteksta na Jugoiztochna Evropa i Anatolia.* Sofia: Bard.

Baker B.J., Armelagos G. J. 1988 "The Origin and Antiquity of Syphilis". *Current Anthropology* 29, 5: 703-738.

Bailey D. W. 2000 *Balkan prehistory. Exclusion, incorporation and identity*. London and New York: Routledge.

Barbulescu C. N. 2001 *Primele forme ale scrierii de pe mapamond sunt rezultatul dezvoltarii unui popor civilizator.* http://www.nouaromanie.ro/redescoperirea%20romaniei_files/primele%20forme.htm

Benac AL. 1958 Crvena Stijena. *Glasnik XIII : (41).*

Berciu D. 1967 *Romania Before Burebista.* Thames and Hudson**.** London

Bocchi G., Ceruti M. (eds). 2002 *Origini della scrittura - Genealogie di un'invenzione*. Bruno Mondadori. Milan.

Bognár-Kutzián I. 1971 "Prehistoric relations between Hungary and the Balkans", *Studia Balcanica* 5, Sofia.

Brentjes B. 1971 "Die Entwicklung im vorderen Orient vom 9.-4. Jahrtausend", In Fr. Schlette (ed) *Evolution and revolution im Alten Orient und in Europa*, Berlin.

Bruckner B. 1968 *Neolit Vojvodini*, Beograd-Novi Sad.

Bruckner B., Jovanović B., Tasić N. 1974 *Preistorjia Vojvodine,* Novi Sad.

Carter J. (ed.) 1998 *The Chora of Metaponto: The Necropoleis.* (2 volumes), Austin, TX: University of Texas Press.

Chapman J. 1981 "The Vinča Culture of South-East Europe", *BAR International Series*, n. 117.

Chapman J. 1983 "Meaning and illusion in the study of burial in Balkan prehistory". In *Ancient Bulgaria*, edited by A. Poulter Volume

1, Nottingham: University of Nottingham Press.

Chapman J. 2000 *Fragmentation in Archaeology: People, Places and Broken Objects in the Prehistory of South Eastern Europe*, London.

Chapman J. 2001 "Intentional fragmentation in the Neolithic and copper age of south east Europe: incised signs and pintaderas", in Draşovean F. (ed.), *Festschrift für Gheorghe Lazarovici*, Timisoara.

Childe V.G. 1927 "The Danube Thoroughfare and The Beginnings of Civilization In Europe", *Antiquity*: 83, 88e.

Comşa E. 1987 *Neoliticul pe teritoriul României.* Bucharest.

Comşa E, Rauţ O. 1969 "Figurines anthropomorphes appartenant á la civilisation de Vinča, découvertes á Zorlenţul Mare". *Studii şi comunicări de istorie veche (şi arheologie),* 20 : 1, Bucharest.

Deimel A. 1947 *Sumerisches Lexikon* (3rd ed. Rome).

Dennie C. C. 1962 *A History of Syphilis,* Springfield: CC Thomas.

Dimitrijević S. 1969 *Neolit I Eneolit u Slavoniji*, Vukovar.

Diringer D. 1962 *Writing*. Thames & Hudson, London.

Dolukhanov P. 2000 "Scythia before the Scythians: environment and social evolution of prehistoric North pontic area", *INTAS-UA 95-0271 research project*, Newcastle: Newcastle University, Department of Archaeology.

Dumitrescu V. 1969a "Betrachtungen zur chronologischen Ansetzung der Cucuteni-Kultur im Verhältnis zu den Nachbarkulturen", *Študijné Zvesti* AUSAV 17: 87-103.

Dumitrescu V. 1969b "A propose d'une récente synthèse sur la chronologie préhistorique du Proche Orient, de la Méditerranée et de l'Europe",*Studii şi comunicări de istorie veche (şi arheologie),* 20, Bucharest.

Dumitrescu V. 1972 Actes du II Congrès International de Et. Sud-Est Européen, Athènes, 7-13 mai 1970 Tome II, Athènes.

Dumitrescu V. 1973 "A propose d'une nouvelle synthèse concernant l'époque néo-énéolithique du Sud-Est est du Centre-Est de l'Europe", *Dacia* 17 : 292-310.

Edzard D.O. 1969 Allgemeine Grundlagen der Archäeologie, *Handbuch der Archäeologie*, hrsg. Von U. Hausmann, München.

Elster E. S. 2003 "Tools of the spinner, weaver, and mat maker." In Ernestine S. Elster and Colin Renfrew (eds.). *Prehistoric Sitagroi: Excavations in Northeast Greece 1968–1970. Volume 2: The Final Report*, University of California/ The Cotsen Institute of Archaeology, Los Angeles.

Evans A. 1909 *Scripta Minoa I*, Oxford University Press, Oxford.

Falkenstein A. 1965 "Zu den Tafeln aus Tartaria." *Germania* 43: 269-273.

Garašanin M. 1961 "Pontski i stepski utikaji u Donjem Podunavlju i na Balkanu na prelazu iz neolitskog u metalno doba", *Glasnik Zemalskog Mezeja u Sarajevu*, n. 15-16, 1960.

Garašanin M. 1973 *Praistorija na tlu Srbije*, Beograd.

Garašanin M. 1984 " Vinča und die Vinča -Kultur im Neolithikum Südosteuropas", in *Vinča y Prahisttoriji i srednjem veky*, Belgrade.

Garašanin M., Nestor I. 1969 "Les peuples de l'Europe du Sud-Est á l'époque préromaine". *Actes du Premiere Congrès Internationale des études balkaniques et sud-est européennes*. Vol II.

Gardner L. 2000 *The Realm of the King Lords.* London: MediaQuest.

Gelb I. 1967 "On the Tartaria tablets", *Nestor* 112, 1 April.

Georgiev G. I. 1967 "Beiträge zur Erforschung des Neolithikums und der Bronzeit in Sudbulgarien", *Archaeologia Austriaca* 42: 90-144.

Georgiev G. I. 1972 "Die Gemeinsamkeit der Kulturen Südbulgariens und Nordgriechenlands während des Neolithikums und der Frühbronzezeit", *Acta on the 2nd International Colloquium on Aegean Prehistory*, Athens.

Georgiev, V.I. 1969 "Un sceau inscrit Ac l'epoque Chalcolithique trouvé en Thrace", *Studi Micenei ed Egeo-Anatolic*i 4 X: 32-35.

Georgiev G.I., Georgiev V.I. 1969 "Nadpis't v'rkhu kr'glija pecat ot Karanovo Najdrevnata pismenost v Evropa" (L'inscription du sceau circulaire de Karanovo--la plus ancienne écriture d'Europe), *Arkheologija* XI: 4-13.

Gimbutas M. 1972a "Excavation at Anza, Macedonia", *Archaeology* 25.

Gimbutas M. 1972b The Neolithic cultures of the Balkan Peninsula" in *Aspects of the Balkans, continuity and change*, The Hague.

Gimbutas M. 1973 "Old Europe c. 7000-3500 BC: the earliest European civilization before the infiltration of the Indo-European peoples", *The Journal of Indo-European Studies* 1.

Gimbutas M. 1974 *The Gods and Goddesses of Old Europe: 7000-3500 BC,* Thames and Hudson/ University of California Press (2nd ed. 1982*)*. London and Berkeley.

Gimbutas M. 1989 *The Language of the Goddess*, San Francisco: Harper & Row.

Gimbutas M. 1990 "Symbols and sacred images of Old Europe", Le Cron Foster M., Botscharow L. (ed), *The Life of Symbols*, San Francisco.

Gimbutas M. 1991 *The Civilization of the Goddess*, San Francisco, HarperSanFrancisco.

Gimbutas M. 1999 *The Living Goddesses (*Dexter M. ed*)*, Berkeley.

Grbić M. 1955 Vorklassische Keramik des Mittleren Balkans. *Starinar V-VI:*

25, 27.

Grumach E. 1969 Allgemeine Grundlagen der Archäeologie, In Von U. Hausmann (ed.) *Handbuch der Archäeologie*, München.

Haarmann H. 1990 *Universalgeschichte der Schrift*, Frankfurt-New York.

Haarmann H. 1995 *Early Civilization and Literacy in Europe. An Inquiry into Cultural Continuity in the Mediterranean World*, Berlin and New York: Mouton de Gruyter.

Haarmann H. 2002 "On the formation process of Old World civilizations and the catastrophe that triggered it" *European Journal for Semiotic Studies* 14 (3,4).

Haarmann H. On line "Sign Inventory of the Old European Writing". *Prehistory Knowledge Project* http://www.prehistory.it/mappadeisegni1i.htm [1st ed. 1995], Rome.

Halloran J. A. 2002 *Sumerian Language Page.* http://www.sumerian.org/sumerfaq.htm#s52

Harmatta J. 1966 *Antic Tanulmanyok* 13, 2: 235-236.

Helck W. 1979 *Die Beziehungen Ägyptens and Vorderasiens zur Ägäis bis ins 7 Jahrhundert v. Chr*, Darmstadt.

Hershkovitz, I., Rothschild B. M., Wish-Baratz S., Rothschild C. 1995 "Natural variation and differential diagnosis of skeletal changes in Bejel". In O. Dutour, G. Palfi, and J. Berato, and J.P. Brun (eds.) *The Origin of Syphilis in Europe,* Centre Archeologique du Var, Toulon: 81-87.

Herzog H. 1998 "History of Tuberculosis", *Respiration* 65: 5-15.

Hirsch H. 1968-1969 "Der Tontafelfund von Tartaria", AFO 22.

Höckmann O. 1968 *Die menschengestaltige Figuralplastik der südosteneuropäischen jungsteinzeit und Steinkupferzeit, Münstersche Beiträge zur* Vorgeschichtsforschung Bd. 3-4, 1 Teil: Text, 2. Teil: Katalog und Tafeln, Hildesheim

Hood M.S.F. 1967 "The Tartaria Tablets". *Antiquity* 41: 99-102.

Hood M.S.F. 1968 "The Tartaria Tablets". *Scientific American*, vol. 218, 5: 30-37.

Hood M.S.F. 1973 Response to Whipp *Antiquity* 47(186): 147-149.

Hodder I. 1990 *The domestication of Europe. Structure and contingency in Neolithic societies*, Oxford University Press. Oxford/Cambridge, Mass.

Horedt K. 1949 "Săpături privitoare la epoca neo şi eneolitică". *Apulum* III: 44-69, 1947-1948 published in 1949.

Horedt K. 1970 *Istoria comunei Primitive*, Bucureşti, 1970.

Hrouda B.1971 *Vorderasien. I. Handbuch der Archäeologie*. München.

Katicic R. 1976 *Ancient languages of the Balkans*, vol. 1. Mouton, The Hague and Paris.

Jaritz K. 1967 *Schriftarchäologie der altmesopotamischen Kultur*, Akademische Druck- u. Verlagsanstalt, Graz.

Langdon 1928 *Pictographic Inscriptions from Jemdet Nasr*. OECT (Oxford Editions of Cuneiform Texts) 7, n. 372, Oxford.

Larsen CS. 1997 *Dioarchaeology: interpreting behavior from the human skeleton*, Cambridge University Press, Cambridge.

László A. 1979 *Datarea prin radiocarbon în arheologie*, Bucharest.

Lazarovici Gh. "Cultura Vinča A in Banat." *Acta Musei Napocensis* VII: 473-487.

Lazarovici Gh. 1977 "Periodizarea culturii Vinča în România", *Banatica*, 4, 1977: 19-44.

Lazarovici Gh. 1979 *Neoliticul Banatului.* Cluj-Napoca: Bibliotheca Musei Napocensis.

Lazarovici Gh. 1981 "Die Periodisierung der Vinča Kultur in Rumänien. Gewidmet dem Andenken an Vladimir Milojčić", in *Prähistorische Zeitscrift*, 56, 2: 169-196, Berlin.

Lazarovici Gh. 1986 *Gura Baciului – monografie arheologică*, Cluj-Napoca.

Lazarovici Gh. 1991 *Cultura Vinča în România*

Lazarovici Gh. 2000a "The eye-symbol, gesture, expression". *Tibiscum X,* Caransebeş: 115-122.

Lazarovici Gh. 2000b "The eagle – the bird of death, regeration – resurrection and messenger of the gods. Archaeological and etnological problems*." Tibiscum* X, Caransebeş: 57-68.

Lazarovici Gh. 2003a "Sacred Symbols in Neolithic Cult Objects from the Balkans". In *Early Symbolic System for Communication in Southeast Europe*, edited by L. Nikolova, BAR International Series 1139, Vol. I: 57-64, Oxford.

Lazarovici Gh. 2003b "Pâinea, grâul şi râşnitul sacru în neolitic"*, Tibiscum*: 65-86.

Lazarovici Gh. 2004a Simboluri sacre pe obiectele de cult. Semnificații. *Festschrift für Florin Medeleț zum 60.Geburstag*: *17-59.*

Lazarovici Gh. 2004b "Database for spiritual life, signs and symbols". *Signs of civilization: international symposium on the Neolithic symbol system of southeast Europe,* The Institute of Archaeomythology and the Serbian Academy of Sciences and Arts, Novi Sad.

Lazarovici Gh. et alii 2001 *Parța. Monografie arheologica*, vol. 1 e 2*,* Editura Waldpress, Timişoara.

Lazarovici Gh., "Necropolele tumulare din Munții Petrindului şi Dealul

Maxim Z. 1987-1988 Feleleacului". *Acta Musei Napocensis, 24-25: 997-1009.*

Lazarovici Gh., Maxim Z. 1991 *Tărtăria,* Muzeul de Istorie al Transilvaniei, Cluj-Napoca.

Lazarovici Gh., Kalmar/Maxim Z. 1991a *Aspectul Turdaş,* în *Vinča în Transilvania,* în *Cultura Vinča în România,* Timişoara, 1991, p. 122-124.

Lazarovici Gh., Maxim Z. 1995 *Gura Baciului. Bibliotheca Musei Napocensis*, XI, 1995, Cluj-Napoca.

Lazarovici Gh., Maxim Z. 1996 *Marton Roska's Excavation from Turdaş and their Results,* în *The Vinča Culture, its Role and Cultural Connections*, Timişoara, 1996, p. 223-267.

Lazarovici Gh., Merlini M. 2004 "New archaeological data referring to Tărtăria tablets", *Symbols and Symbolism,* 11th Neolithic Seminar, 4th -7th November, Ljubljana.

Lazarovici Gh., Miu G. 2004 *New Data about Anthropological Analysis from Tărtăria Skeleton* Symp. Iaşi, ms.

Lazarovici Gh., Meşter M. 1995 *Săpături şi prospectări în necropolele tumulare din zona Cheilor Turzii, 1992-1994,* în *Cercetări arheologice în aria nord - thracă,* 1995, p. 86-105.

Lazarovici Gh., Miu G. 2004**

Lazarovici M. 2004 "Sanctuarele Precucuteni-Cucuteni", in *Arheologia Moldovei*, 25: 47-68.

Lazarovici M. 2004 2006 "Absolute Chronology of the late Vinča culture in Romania and its role in the development of the Early Copper Age" volume for. M. Garasanin, Belgrade.

Lazarovici M. 2004 in press "The Sanctuaries of the Precucuteni-Cucuteni cultures", under print in *Arheologja*, Kiev.

Lazarovici M., Botezatu D., Ellis L., Țurcanu S. "Noi resturi de oase umane în aşezarea cucuteniană de la Scânteia (1994-2003)", in *Arheologia Moldovei* XXVI, 2003: 297-306.

Luca S.A. 1991 *Katalog in Cultura Vinča în Romania*, Timişoara.

Luca S. A. 1993 *A new special discovery from Turdaş*, în *Banatica,* 12, 1993, p. 21-24.

Luca S. A. 1996a *Eine Rituelle Anlage in Turdaş Luncă, (Kreis Hunedoara),* în *Forscungen VL*, 39, 1-2, Bucureşti, p. 123-126.

Luca S.A. 1997 "Aşezări neolitice pe valea Mureşului (I). Habitatul turdăşean de la Orăştie-Dealul Pemilor (punct X_2)", *Bibliotheca Musei Apulensis* IV*, Alba Iulia*: 147-152.

Luca S.A. 2001 Aşezări neolitice pe valea Mureşului (II). Noi cercetări arheologice la Turdaş-Luncă. I. Campaniile anilor 1992-1995, *Bibliotheca Musei Apulensis*, 17, pgs. 272, Editura

Economică, Bucharest 2001.

Luca S.A. 2003a "New discoveries of the Neolithic and Aeneolithic fine arts at Tărtăria and Lumea Nouă, Alba County, and matters concerning their typology and chronology". *Acta Terrae Septemcastrensis II,* Sibiu*:* 18-42.

Luca S.A. 2003b Luca S.A. 2003b "Anmerkungen für die geschichtlichen entdeckungen bezüglich der Archäologischen niederlassung aus Turdaş-Luncă (bezirk Hunedoara) / Observaţii cu privire la istoricul cercetărilor referitoare la situl arheologic de la Turdaş-Luncă (jud. Hunedoara)", *Banatica*, 16, Reşiţa: 77-102.

Luca S.A. 2005 *Repertoriul arheologic al judeţului Hunedoara*, Alba Iulia, pgs. 165.

Makkay J. 1968 "The Tartaria Tablets". *Orientalia* 37: 272-289.

Makkay J. 1969 "The Late Neolithic Tordos group of sings". *Alba Regia* X, *Székesfehérvár:* 9-49.

Makkay J. 1971 "A chalcolithic stamp seal from Karanovo, Bulgaria". *Kadmos*, X: 1-9.

Makkay J. 1973 "Shrine with bucranium. A tentative interpretation of the Tartaria sign 3,5", *Kadmos* XII, 1: 1-5.

Makkay J. 1975/75 "Some stratigraphical and chronological problems of the Tartaria tablets", *MittArchinst* 5, Budapest.

Makkay J. 1984 *Early stamp seals in South-East Europe* Akadémiai Kiadó*,* Budapest.

Makkay J. 1990 *A tartariai leleteck*, Akadémiai Kiadó*,* Budapest.

Mantu C. M. 1995 "Câteva consideraţii privind cronologia absolută a neo-eneoliticului din România". *SCIVA 46, 3-4*: 213-235.

Mantu C. M. 1998a "The Absolute Chronology of the Romanian Neolithic and the Neolithic and Aeneolithic/Chalcolithic Periods. The State of the Research". *Actes du colloque C14 Archéologie, Lyon*: 225-231.

Mantu C. M. 1998b Absolute Chronology of Neolithic Cultures in Romania and Relations with the Aegeo – Anatolian World*.* In M. Otte *(ed.) Prehistoire d'Anatolie. Genèse de deux mondes*, *ERAUL, 85, I*: 159-174.

Mantu C. M. 2000 "Relative and Absolute Chronology of the Romanian Neolithic". *Analele Banatului*, *Serie nouă, Arheologie-Istorie, VII-VIII, 1999-2000, Edit. Mirton Timişoara*: 75-105.

Mantu C. M. 2002 *The Absolute Chronology of the Romanian Neolithic and Aeneolithic/Chalcolithic Periods. The State of the research*, *Dava International*, n. 5, http://www.iatp.md/dava/Dava4/mantu_4/mantu_4.html

Mantu C. M. 2003 Pre-Writing Signs on Neo-Eneolithic Altars. In L. Nikolova (ed.), *Early Symbolic System for Communication in Southeast*

Europe, BAR International Series, 1139, Oxford, Vol. I: 57-64.

Mantu C. M. 2004 "Signs and symbols in Cucuteni culture". *Signs of civilization: international symposium on the Neolithic symbol system of southeast Europe,* The Institute of Archaeomythology and the Serbian Academy of Sciences and Arts, Novi Sad.

Marcsik A. 1995 "Data to the epidemiology of syphilis in ancient populations in Central Europe. In O. Dutour, G. Palfi, J. Berato, J.P. Brun (eds.) *The Origin of Syphilis in Europe,* Centre Archeologique du Var : 233-236, Toulon.

Marler J. (ed.) 1997 *From the realm of the ancestors. An anthology in honor of Marija Gimbutas*. Manchester, CT: Knowledge, Ideas & Trends.

Masson E. 1984 **"**L'écriture dans les civilisations danubiennes néolithiques**".** *Kadmos* 23: 89-123.

Mays S., Taylor G. M. 2002 "A first prehistoric case of tuberculosis from Britain". *International Journal of Osteoarchaeology*, Volume 13, Issue 4: 189-196.

Merlini M. 2001 *Signs, inscriptions, organizing principles and messages of the Balkan-Danube script*. Rome: Prehistory Knowledge Project, http://www.prehistory.it/scritturaprotoeuropai.htm

Merlini M. 2002a "A Neolithic Writing System in Southestern Europe". *World IFRAO Congress*, Skopje.

Merlini M. 2002b "Inscriptions and messages of the Balkan-Danube script. A semiotic approach" *Dava International* 6, http://www.iatp.md/dava/Dava6/Merlini__6_/merlini__6_.html

Merlini M. 2004a *La scrittura è nata in Europa?* Avverbi Editore, Rome.

Merlini M. 2004b "Milady Tărtăria" *Dacia magazine* 14: 11-17.

Merlini M. 2004b "Challenging some myths on the Tărtăria tablets, icons of the Danube Script". *Signs of civilization: international symposium on the Neolithic symbol system of southeast Europe,* The Institute of Archaeomythology and the Serbian Academy of Sciences and Arts, Novi Sad.

Merlini M. 2004c **"**Did Precucuteni and Cucuteni cultures develop a script?" *World Congress of the Trypilhan Civilization,* Kyiv.

Merlini M. 2005 "The "Danube Script" and the Gradešnica Platter (A Semiotic Study Based on Most Recent Autopsy of the Bulgarian Item)", *Reports of Prehistoric Research Projects* Vol. 6-7.

Milisauskas S. 1978 *European Prehistory*. Academic Press. New York, Boston, Dodrecht, London, Moscow.

Milisauskas S. 2002 *European Prehistory*. Academic Press. New York, Boston, Dodrecht, London, Moscow.

Milojčić V. 1965 Die Tontafeln von Tartaria und die absolute Chronologie des mitteleuropaschen Neolithikums. *Germania* 43, 2: 261-268.

Milojčić V. 1967 "Prekeramisches Neolithikum auf dem Balkanhalbinsel" *Germania* 38.

Moga V. and H. Ciugudean (eds.) 1995 *Repertoriul arheologic al jusetului Alba,* Muzeul National al Unirii Alba Iulia, Bibliotheca Musei Apulensis II, Alba Iulia.

Moisoiu Radu D. on line "Primul horoscop din lume - tăbliţa rotundă de la Tărtăria?", *Revista Dacia Nemuritoare*.

Moorey P.R.S. 1966 *Iraq*, XXVIII, 1966: 40.

Mosso A. 1910 *The dawn of Mediterranean Civilization*, T. Fisher Unwin, London.

Müller-Karpe H. 1968 *Handbuch der Vorgheschichte* II. Jungstein-zeit, München.

Neustupný E. 1968a "Absolute chronology of the Neolithic and Eneolithic periods in central and south-eastern Europe." *Slovenska Archeologia* vol. XVI: 19-60.

Neustupný E. 1968b "The Tartaria tablets: a chronological issue". *Antiquity* 42: 32-5.

Nikolov B. 1986 "Singnes sur des ouvrages en ergile de l'epoque préhistorique en Bulgarie occidentale. *Studia Praehistorica, 8,* Sofia*:* 166-183.

Nikolov B., Georgiev V. I. 1970 "Débuts d'écriture du Chalcolithique dans les terres bulgares", I-II *Archaeologia 12, 3*, Sofia.

Nikolov B., Georgiev V. I. 1971 "Débuts d'écriture du Chalcolithique dans les terres bulgares", *Studia balcanica*, Sofia.

Nikolova L. on-line The Everyday Life and the Symbolism in the Prehistoric Balkans. *Position Papers,* http://www.semioticon.com/virtuals/symbolicity/everyday.html

Orosz E. 1908 *Újabban fölfedezett erdélyi őstelepec* (Prehistoric sites in Transylvania discovered recently), Erdélyi Múzeum 25: 259, Kolozsvár.

Ortner D. J., Putachar W. G. J. 1985 *Identification of Pathological Conditions in Human Skeletal Remains.* Smithsonian Institute Press. Washington D.C.

Owens G. A. 1999 "Balkan Neolithic Scripts" *Kadmos* 38: 114-120.

Paul I. 1981 "Der gegenwärtige Forschungsstand zur Petreşti-Kultur".

Prähistorische Zeitschrift, 56, 2: 197-234, Berlin.

Paul I. 1992 *Cultura Petreşti*. Bucharest.

Paul I. 1995 *Vorgeschichtliche Untersuchungen in Siebenburgen.* Alba Iulia: *Bibliotheca Universitatis Apulensis I.*

Paul I. 2002 "The "Mythogram"From Ocna Sibiului". *Prehistory Knowledge Project*, http://www.prehistory.it/fase2/paul.htm

Petrie W. M. F. 1900 *Royal Tombs*, I : 32 and passim.

Popović V. 1965 "Une Civilisation égéo-orientale sur le moyen Danube", *Rev. Arch*. 1965: 2,1.

Porada E. 1965 in Ehrich, *Chronologies*, chart p. 176.

Raczky P. 1982 "The Prehistory of Szolnok County through Archaeological Finds. Crossroads of many Races", Szolnok, 1982: 96-98.

Reiner E. 1960 "Plague Amulets and House Blessings." *Journal of Near Easter Studies* 17 no. 1: 148-155.

Renfrew C. 1966 "The Tărtăria tablets", *Nestor* 108: 469-470.

Renfrew C. 1969 "Autonomy of the SE European Copper Age", *Proceedings of the Prehistoric Society*, XXV, 12-47, Cambridge.

Renfrew C. 1970 *The place of the Vinča culture in European Prehistory.* Ybornik Narodnog Muyeia, Belgrad, VI, 1970: 45-57.

Renfrew C. 1971 "Carbon 14 and the prehistory of Europe". *Scientific American* 225, 63-72.

Renfrew C. 1972 *The emergence of civilization. The Cyclades Islands and the Aegean in the Third Millennium B.C.,* London.

Renfrew C. 1973 *Before civilization. The radiocarbon revolution and prehistoric Europe*. Penguin Books. London and New York.

Rice M. 1994 *The archaeology of the Arabian Gulf c. 5000-323 BC*, London.

Roman P. 1969 "Precizări asupra unor probleme ale neoliticului Transilvan" *Revista Muzeelor,* 6, 1, Bucharest.

Roska M. 1941 *A Torma Zsófia-Gyüjtemény*. Cluj.

Roska M. 1942 *Érdély régészeti repertoriumá* I Cluj.

Rudgley R. 1998 *Lost civilisations of the Stone Age*. Arrow. London and Sydney.

Sandars N. K. 1968 *Prehistoric art in Europe*, Harmondsworth.

Schier W. 1996 "The relative and Absolute Chronology of Vinča: New Evidence from the Type Site", in Fl. Draşovean (ed.), *The Vinča culture, its role and cultural connections*: 141-162, Timişoara.

Schier W. 2002 "Vorschiftliche Zeichenszstem im Neolithikum Südosteuropa (6-5. Jt. V. Chr.)". *Schrift*: 24-30.

Schier W. Draşovean F. "Vorberischt über die rumänisch-deutchen Prospektion und Ausgrabungen in der befestigten Tellsiedlung von Uivar, jud.

2004	Timiş, Rumänien" (1998-2002), *Prähistorische Zeitschrift*, 79, 2: 145-230, Berlin.
Schmidt H. 1902	*H. Schliemann's Sammlung trojanische Altertümer,* Berlin.
Schmidt H. 1903	*"Tordos",* Zeitschriftfúr Ethnologie, n. 35.
Sinn U. (ed.) 2002	*Schrift, spräche, Bild Klang. Entwicklungstuffen der Schrift von der antike bis in die Neuzeit, Nachrichten,* MvWM, 4, Würzburg.
Society for the promotion of Hellenic studies 1904	*Excavations at Phylakopi in Melos*, Suppl. Paper n 4.
Starović A. 2004	*Signs of civilisation*, catalogue, Novi Sad.
Steckel R.H., Rose J.C., et al. 2002	"Skeletal health in the western hemisphere from 4000 BC to the present." *Evolutionary Anthropology* 11(4): 142-155.
Stuiver M., Reimer P.J. 1993	"Extended 14C database revised Calib. 3.0 14C age calibration program". *Radiocarbon* 53 (1): 215-230.
Theochares D. (ed.)1973	*Neolithic Greece,* Athens.
Thomas H. L. 1967	"Near Eastern, Mediterranean and European Chronology", *Lund*, 37.
Todorovič J. 1971	"Written signs in the Neolithic cultures of Southeastern Europe", *Archaeologia Iugoslavica*, vol. X, Belgrade.
Tonciulescu P. L. 1996	*De la Tartaria la Tara Luanei*, Bucharest.
Tringham R. 1971	*Hunters, Fishers and Framers of Eastern Europe 6.000-3000 B.C.* Hutchinson University Library. London.
Tringham R., Kristić D., 1990	*Selevac. A Neolithic Village in Yugoslavia*, Los Angeles.
Torma Z. 1879	"Neolith kökorszakbeli telepek Hunyad megyében", (Contribution to the Prehistory of Hunedoara county), *Érdély Múzeum*, 129-155, 190-211, Cluj.
Torma Z. 1902	"A tordosi östelep", in G. Téglás (ed.) *Hunyadvármegye Története (I, Hunyadvármegye földejének története az őskortól a honfoglalásig*), Budapest 1: 23-30.
Ursulescu N. 1998	*Începuturile Istoriei pe treitoriul României,* Ed. Demiurg, Iaşi.
Ursulescu N. 2004	Nouvelles données concernant les croyances magiques des communautes de la civilisation Précucuteni (énéolithique ancien) de l'est de la Roumanie. *Actes du XIV- emme Congrès UISPP*, *section 9-10*: 323-348.
Vasić M. 1910	"Die Hauptergebnisse der präistorischen Ausgrabung in Vincha im Jahre 1908", *Prähistorishe Zeitschrift II*.

Vasić M. 1929 "The Excavations at Vinča", *The Birmingham Post*, 27th-28th November.

Vasić M. 1932 *Preistoriska Vinča I*, Belgrade.

Vasić M. 1936 *Preistoriska Vinča II-III-IV*, Belgrade.

Vencel S. 1959 *in Acheologicke Rozhledy, XI, 5*: 739-742.

Vlassa N. 1962 "Probleme ale cronologiei neoliticului transilvaniei în lumina stratigrafiei aşezări de la Tărtăria". *Studia Universitatis Babeş-Bolyai*, Series Historia, 2: 23-30.

Vlassa N. 1963 "Chronology of the Neolithic in Transylvania in the Light of the Tartaria settlements stratigraphy." *Dacia* VII: 485-494.

Vlassa N. 1965 In *Atti del VI Congresso Internazionale delle Scienze Preistoriche e Protostoriche*, *vol. II*: 267-269. Rome.

Vlassa N. 1967 "Unele probleme ale neoliticului Transilvaniei". *Acta Musei Napocensis* 4: 403-424, Cluj.

Vlassa N. 1969 "Einige Bemerkungen zu Fragen des Neolithikums in Siebenbürgen", *Študijné Svesti AUSAV* 17: 513-540.

Vlassa N. 1970 "Kulturelle Beziehungen des Ne Vorderen Orient." *Acta Musei Napocensis* VI: 3-39, Cluj.

Vlassa N. 1971 Contribuţii la Problema racordării cronologiei relative a neoliticului Transilvaniei la cronologia Orientului Opropiat. *Apulum*, *IX*: 21-63.

Vlassa N. 1972 "La zone balkano-asiatique et la Transylvanie", *Acta Musei Napocensis* 9: 367-373, Cluj.

Vlassa N. 1974 "Neue Beiträge Zur Frage orientalischer Einflüsse im Neolithikum Siebenbürgens." *Praehistorische Zeitschrift* 49:181-192.

Vlassa N. 1976 *Neoliticul Transilvaniei.* Bibliotheca Musei Napocensis*, 3*: 161-197, Cluj-Napoca.

Vlassa N. 1977 *Contribuţii la problemele Neoliticului Transilvaniei*. Phd. Thesis.

Whipp D. 1973 "The Tartaria tablets" *Antiquity* 47(186): 147-149.

Whittle A. 1996 *Europe in the Neolithic. The creation of new worlds*. Cambridge University Press. Cambridge.

Winn S. 1973 *The Signs of the Vinča Culture: an Internal Analysis; Their Role, Chronology and Independence from Mesopotamia.* Ann Arbor, Michigan: University Microfilms.

Winn S. 1981 *Pre-writing in Southeastern Europe: The Sign System of the Vinca Culture ca 4,000 BC.* Calgary, Alberta: Western Publishers.

Winn S. 1990 "A Neolithic Sign System in Southeastern Europe." In *The Life of Symbols*, edited by Mary Le Cron Foster and Lucy Jayne Botscharow. Boulder, Colorado: Westview Press.

Winn S. 2004 *From Vinča Script and academic scepticism to Danube Script and the ritual use of sings,* Symp *Signs of civilisation*, Novi

Sad Juny 2004. m.s.

Winn S. on line a — The Old European Script. Further evidence, Economic and religious stimuli. *Prehistory Knowledge Projects,* Rome.

Winn S. on line b — The Inventory of the Danube Script (DS), *Prehistory Knowledge Projects,* Rome. http://www.prehistory.it/ftp/inventory/danube_script/danube_script_01.htm

Young L.M. 1973 — "The Tartaria tablets", *Antiquity* 20, 7-8 July-August.

Zanotti D. G. 1983 — "The position of the Tartaria tablets within the Southeast European Copper Age". *American Journal of Archaeology* 87, 2: 209-213.

Figure captions

1. The group of the three inscribed tablets from Tărtăria.
2. The region where the Danube Civilization and the Danube Script flourished seven millennia ago. It should be considered that the Danube Script (framed in green) was used only in the core area of the Danube Civilization (framed in red).
3. The site of Tărtăria-*Groapa Luncii*.
4. The location of the prehistoric settlement of Tărtăria-*Groapa Luncii*.
5. The setting of the localization of the excavations.
6. The Tărtăria stratigraphy with the location of the ritual pit. Profile of the trench G made by N. Vlassa and the different levels of excavation.
7. The ritual pit on the north profile of G trench as projected in the photo profile of N. Vlassa.
8. The place of the ritual pit after J. Makkay and others is wrongly located on the south profile.
9. The page of the inventory of the National History Museum of Transylvania at Cluj which lists 12 objects under the address “groapa rituala”.
10. The group of the Tărtăria artefacts in a showcase of the National History Museum of Transylvania at Cluj.
11. Intentionally broken male figurine with truncated arms, rectangularoid head and triangular typical Vinča A mask.
12. The statuine was covert by red ochre and then with yellow one.
13. The craftsman made on the rectangularoid head of the figurine the big triangle, then 7 lines inside it and the remaining decorations which might represent the hair.
14. Deliberately broken feminine figurine of prismatic shape.
15. The material of the prismatic figurine is not very fine and includes some little sherds behind the head and on the right side of the neck.
16. Eyes of the prismatic statuette have been made pressing fingernail and fingertip.
17. The prismatic figurine was completely painted, mainly in red and partly in yellow.
18. The holes over the armpit were possibly filled with a stick in order to raise and sustain orante arms or to permit the change of a type of arm with another.
19. A partial naturalistic human face which has been mistaken for a fragment of a pot or a lid with human face.
20. A deliberately broken bracelet made by a very perishable material.
21. The point where the bracelet was intentionally broken in two parts.
22. A fragment of a pendant in form of horns of consecration of a goat.

23. The "anchor" found at Tărtăria has the perforation running parallel and not orthogonally to the arms. Therefore, it is a very unproductive suspended object for the weaving process, but could have been warn as pendent.

24. A minute phallus-type figurine.

25. The asymmetric mask of the mignon phallus-type figurine.

26. A large figurine of phallus type.

27. A large hole is positioned on the far lower part of the mask of the massive phallus type figurine resembling an opening mouth. Are we in presence of a speaking or singing figurine?

28. An intentionally broken alabaster figurine.

29. The blacktop possibly recovered by Vlassa inside the ritual grave.

30. Organic mixture from modeling, final stage.

31. Detail of the round tablet with some calcareous areas destroyed by acid treatment.

32. The tablets were accompanied by human remains which are still preserved in Cluj, in the basement of the National History Museum of Transylvania.

33. Diagram of data obtained from the human bones belonging to the ritual pit.

34. Absolute Chronology of Early Vinča.

35. Diagram of data obtained from the animal bones found at the base of the pit house.

36. The river once ran underneath the settlement and had eroded a side of it. The very steep bank still proves this and the line of the ancient course can be traced beneath.

37. Location of the excavations made by Horedt, Vlassa and I. Paul on the slope.

38. The pit house. South profile of G cassette made by N. Vlassa (photo by N. Vlassa).

39. The prospective of Vlassa's photo n. 3 in *Vlassa 1963: 487, fig. 3*.

40. The prospective of Vlassa's photo n. 4 in *Vlassa 1963: 487, fig. 3*.

41. The localization of the cultic pit and the pit house.

42. Our reconstruction profile with excavation layers of trench G based on information from N. Vlassa.

43. The fragments of the big bones bone are of a dark brown color and some parts of them have an "exploded" appearance as if they had being burnt; but this was not the case. The inscription on the box: OS (Romanian for bones); GRI (= groapa rituala i.e. ritual pit).

44. A degenerative process of the bones has been identified on the right femur.

45. Distorted vertebra.

46. A Neolithic figurine kept at the National Museum of Athens that can give an idea of Milady Tărtăria

47. Our reconstruction of the connection between the ritual grave an the pit house on the basis of a revision of a Vlassa's photo.

48. Two tablets have been wear as pendant one over the other.

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DEVELOPMENT OF POTTERY STYLE ON THE LBK SETTLEMENT OF BALATONSZÁRSZÓ–KIS-ERDEI-DŰLŐ IN HUNGARY

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Key words: *Neolithic, early and late LBK, Central Europe, Hungary.*
Abstract: *Ihis site provides an exceptional opportunity to study intra-site processes, and can become a starting point for the elaboration of models that can be applied to a larger area as well.*

An extensive Neolithic settlement was unearthed at the Balatonszárszó–Kis-erdei-dűlő site in five excavation seasons between 2000 and 2003 and in 2006.[1] Kis-erdei-dűlő can be found southeast of the village of Balatonszárszó, on a plateau that seems especially suitable for human occupation. The territory reaches the lower hills along the lake, and the deep valleys to the south, east and west provide an exceptional defence system for the inhabitants. The unearthed part of the site lies 2-2.5 km from the southern shore of Lake Balaton at 145 to 160 m above sea level.

The archaeologists of the Somogy County Museums conducted field surveys before the investment-led archaeological excavations along the track of highway M7.[2]

The features of the Neolithic settlement occupied a territory of about 10-11 ha. The site was investigated in an east-west direction down to the edges of the plateau. The edges of the prehistoric settlement were, however, reached neither in the north nor in the south.

The traces of 48 timber-frame buildings of the Central European Linear Pottery Culture (LBK) were discovered (Fig. 1). The 43 buildings of the Neolithic site comprise a coherent settlement with groups of houses arranged in rows. 5 more houses were situated north of them at a larger distance from each other: three buildings were found in the northeastern part of the excavated area, while two houses were found between the northeastern group and the large southern settlement area. The structure of the houses matched that of the houses described from countless sites of the Central European LBK.

A ca. 160 m long section of a Neolithic ditch with five entrances was also unearthed at the southern edge of the site. The traces of a peculiar post structure were observed in the ditch. 43 Neolithic burials were also discovered within the

[1] Belényesy et al 2002; Oross 2004; Oross 2004a; Oross 2004b.

[2] First Károly Belényesy and later Krisztián Oross led the excavations of the Archaeological Institute of the Hungarian Academy of Sciences.

Neolithic settlement, which were randomly distributed in the features between the houses.

Pottery classes

The majority of the material from Balatonszárszó is made up by pottery. Here I would like to sum up the primary typological observations. Later on I will attempt to compare the changes of pottery styles with the structure of the settlement.

The typological method consists of the categorization of a given group of objects – in this case, the ceramic material from the excavated part of a Middle Neolithic settlement – into formal classes and the determination of the relationships between them. The elements of a formal class can be arranged into series correlated with their (ideal) first appearance. More exactly: these categories form temporally changing – expanding, narrowing, expiring or interrupted – sequences.[3]

The usefulness of such basic principles of categorization is beyond doubt in this case: instead of predefined, closed typological series it enables the identification of changing patterns in each category. Typological categories are hierarchical groups whose levels change from those close to basic geometric forms to more complex ones in the case of pottery shapes, and change from simpler to more complex ones in the case of decoration. There are a number of special factors that influence the study of typological series.

The sum of the examined sequences is temporally limited. It is impossible to study the whole chronological series of certain formal classes, since – according to the absolute dates – the ceramic products of the site do not represent the whole LBK sequence.

The sum of the examined sequences is spatially limited. The ceramic material discovered does not represent the whole spectrum of ceramic products from the site, since not the whole settlement was excavated. Furthermore, it is clear that only a fraction of the original ceramic material is preserved.

Categories of vessel shapes

When determining the formal categories of the ceramic material from Balatonszárszó, surfaces of revolution are very useful: vessels can be categorized into spherical or conical (truncated conical) shapes. When organizing the vessel shapes into series, however, beside the schematic description the proportions of the vessels and specific metric data have to be taken into consideration as well.

From a metric point of view, open shapes[4] are those, whose largest diameter coincides with the diameter of the rim. Among surfaces of revolution, truncated cones and spherical caps (in their higher version: hemispheres) represent this category.

Among truncated conical shapes both regular cones and shapes with slightly curving walls are frequent. Conical shapes show a serial pattern when examining

[3] Kubler 1962.

[4] Schmidgen-Hager 1993, 37.

the ratio of height and diameter. Their metric data suggest series of vessels with similar shape but different size.

Closed shapes are those, whose largest diameter does not coincide with the diameter of the rim. With regard to basic shapes, spherical and complex (in the case of Balatonszárszó, only biconical) forms are attested in the material.

Of course, a large portion of the spherical vessels are not completely regular; some are distorted vertically (elongated spherical shape) or horizontally (flattened spherical shape). The measurable height of the spherical vessels from Balatonszárszó is on average the 80% of the height of the complete sphere. These data cannot be arranged into series like the conical shapes; instead, a pattern of fairly distinct sets can be detected. Smaller vessels 8 to 10 cm high with incised decoration form a closed group, while the data of larger vessels, usually decorated with knobs and cordons, are more scattered.

Inverted and everted rims – that slightly change the basic forms – appear in numerous versions in the material. Inverted rims are known in both concave and convex versions.

The shape of vessel bases is rather simple: beside the slightly rounded and sharply edged, simple versions, bases without emphasized edges, are frequent as well.

Versions of solid or hollow pedestals are also attested frequently, including cylindrical and truncated conical versions as well. Some have round, triangular or rhomboid perforations.

On the basis of these three aspects – basic form, measures, and the formal traits of the vessels – a coherent system of formal types can be created.

Open forms

Open forms include truncated cone shaped vessels, vessels with curving walls (and truncated conical shape) and spherical cap shaped vessels. Conical vessels and vessels with curving walls appear in closed or open versions according to the ratio of the diameter of the rim, height, and diameter of the bottom (Fig. 3.: 6-10; Fig. 4: 13). These can basically be described as “tumbler”, “bowl” and “cup”. Almost all types of incised decoration appear on their surface.

Spherical cap shaped bowls form a less varied class; a rather common type are bowls with incised decoration on the inside (Fig. 5.: 2). Flat bowls with sharply edged base or small legs are rarer.

Closed forms

Closed forms can be divided into spherical and biconical basic forms. The elongated spherical forms are usually “coarse ware” storage vessels with thicker walls. They appear in medium – 20-25 cm high – and large – 28-40 cm high – size as well. Beside the ones with straight rim and a handle or knob decoration, another important group is that of “amphorae” with continuous funnel shaped or cylindrical neck. Small – 8-10 cm high – vessels, usually with incised decoration, are the closest to a regular spherical shape (Fig. 6.: 5). Medium and large flattened spherical shaped vessels (“cooking pots” and “storage vessels”) appear with inverted rim (Fig. 3.: 1).

Biconical vessels usually belong to the small and medium – 10-15 cm high – category. They are mostly decorated with combinations of simple lines and are sharply carinated (Fig. 2.: 4-7). A common version, however, has a rounded belly line (Fig. 3.: 2; Fig. 4.: 9).

Decoration

Decorative motifs are phenomena that can be handled separately from – or as complementary to – formal categories. They can be classified based on their technique and partly on their arrangement on the vessel.

Impressed decoration

Finger and nail impressions (pinched decoration) can be found both arranged in lines and covering the whole surface (Fig. 3.: 4). Finger or nail impressions (in the latter case in the shape of short cuts) appear in horizontal or vertical versions, according to the direction of the impression. Impressed decoration created by the impression of the end of reed or the hollow stem of another plant is rather rare. Densely placed vertical or oblique incisions (Fig. 2.: 2), or ones arranged in a line from the bottom to the rim of the vessel, are common.

The most frequently represented category is made up of linear decoration incised with a sharp or blunt tool, or impressed with a blunt tool. They are attested both alone and in relation with other lines, in pairs (forming bands). Linear motifs can be divided into groups according to their arrangement and endings. They can be line segments, their combinations running around the vessel or forming closed ornaments, or can be decorative motifs made up of various linear elements filling the vessel surface.[5]

Line segments (Fig. 4.: 13) are often used as complementary motifs, combined with ornaments running around the vessel, while long straight lines mainly appear on truncated cone shaped vessels (Fig. 3.: 6, 10). The most frequent version of incised decoration at Balatonszárszó is the motif made up of intertwining standing or lying S-shaped elements. The two versions can also be combined. Incised motifs running around the vessel are continuous horizontal lines covering the whole circumference of a vessel. A rare version has wavy lines (Fig. 3.: 2, 7, 9). Straight and zigzag motifs appear in three versions. The simple version can be interrupted by impressed dots (so-called Notenkopf Ware; Fig. 4.: 5, 12) or by short incisions (Zseliz Ware). The most frequent motif of the spectrum of incised decoration is the system of spirals made up of lines running around the whole vessel (Fig. 6.: 3). These are attested exclusively on spherical vessels and large, truncated cone shaped vessels with curving walls.

Bands made up of two or more parallel lines connected by a special motif (e.g. cross-incision: Fig. 6.: 2, 4, 6-8; or painting: Fig. 6.: 1) can be separated from simple linear motifs. The system of bands is very similar to that of lines, and they can be divided into the same categories as well: band segments, bands running around the vessel and filling the whole surface.

[5] Pavlů 1972, 132.

Stroke burnished decoration was applied rarely and exclusively on truncated cone shaped bowls. It appears in the form of alone-standing line segments, line bundles and lattice filling the surface.

Wide, channelling-like decoration is characteristic for coarse ware (Fig. 3.: 5).

Appliqué decoration

The material from Balatonszárszó contains only cordons completely covered with finger impressions. They are characteristic for large spherical vessels. The version running all around the vessel is usually placed on the shoulder and is combined with knobs.

The simplest forms of knobs are hemispherical, conical or cylindrical. Oval ones are also frequent, and occur both in simple and double versions (Fig. 3.: 1, 5). Knobs raised upwards form a special group.

A separate group is made up by appliqué, knob-like ornaments, which are in fact unique representations of animal heads and human hands.

Handles include horizontal and vertical examples. Some are more closed and have two perforations. The more open ones can be horizontal and vertical as well (Fig 2.: 3).

Painting and inlay

The application of crusted paint and the inlay of stoneseed (Lithospermum) are generally characteristic for the material of Balatonszárszó.[6] Painting is mainly applied to fill band decoration (Fig 6.: 1); the sole exception is the very rarely attested red paint covering the whole surface of a vessel. Red paint is also combined with some of the motifs filling the vessel surface. The combination of red and yellow paint occurs on spherical cap shaped bowls with internal decoration, as a filling of incised wavy bands. Stoneseed inlay is common in the inside of all forms of incised lines or bands, and basically forms a line of white dots in a black background (bitumen-like glue). It is usually combined with red paint. It can also appear in the intersection of Zseliz style bands.

The arrangement of decorative motifs

The basic rules of the arrangement of decorative motifs are provided by surface symmetries. The material of Balatonszárszó is characterized by the predominance of tripartite symmetries. Incised ornaments filling the surface and intertwined line segments mostly appear in groups of three. Because of their three knobs, biconical vessels look triangular in shape from above. Double and quadruple symmetries are characteristic for knobs. The ornaments of bowls with internal decoration also have a quadruple arrangement.

Spatial and chronological patterns in the site

The distribution and combinations of the types delineated above show a peculiar pattern when mapped on the site. Since the number of cases is rather large, it may happen that certain types that connect assemblages, but are attested in smaller numbers, do not show up properly in the statistics.

[6] Marton 2004, 85.

The most immediately observable association of types at Balatonszárszó is when they appear in the same feature at the site. With regard to the whole site, a strong connection between the material of the long pits along the houses ("Längsgrube") and other features in their immediate surroundings can be assumed.[7] This model is confirmed by joining pottery fragments from various features (Fig. 5). Of course, the material from these pits may not be entirely coeval; some discrepancy is possible, even if all the superpositions between the features are known.

Thus, the study of the association of types is based on the unity of the houses and the features connected to them. This principle assumes a connection between two features in which the same type appears. From the point of view of such a study, those features are the most important that yielded both types that appear only in one context, and types that appear in one other combination as well. Elements appearing in many different contexts can indicate relationships, they are, however, not suitable for establishing temporal sequences. The material from Balatonszárszó can be divided into Patterns - combinations of vessel types that show a distinct spatial distribution as well.

Pattern I

Pattern I can be separated not only on the basis of the combination of finds, but also through its spatial distribution within the site. This material was found mainly in the northern part of the site, including the area of three houses. Since long pits along these houses could not be observed, the combination of types was examined in the material of other pits and pit complexes located in this area (Fig. 1). Vessel types found here are not attested in the other parts of the settlement.

The pottery has primarily organic temper (mostly chaff), but sand-tempered, usually polished, material is also common. The determination of their ratio is problematic, since due to surface abrasion mostly only secondary surfaces were preserved.

The most characteristic finds are biconical vessels – deep bowls and their sharply carinated versions, decorated with deeply and widely incised, curving or straight line segments, impressed dots and lying S-motifs (Fig. 2.: 4-7). Conical vessels are also frequently attested, often standing on conical pedestals.

Oblique incisions are common on coarse ware (Fig. 2.: 2). Pinched decoration is rare.

Pattern-burnished linear or lattice decoration appears both on the inside and outside of conical vessels.

Large spherical vessels appear frequently both with inverted rim and with cylindrical neck. Such large, coarsely worked vessels usually bear knobs and cordons, but vertical or curving channelling and sprinkled barbotine are also frequent. Variants with cylindrical neck, however, also have incised decoration: the larger ones were decorated with linear motifs similar to those on biconical vessels.

[7] Pavlů et al. 1986, 310-312; Boelicke 1982, 18.

The smaller versions of vessels with cylindrical neck almost always display a combination of incised spirals or meanders covering the whole surface (Fig. 2.:1, 3).

The material of Pattern I belongs to the early phase of LBK.[8] It can be correlated with the earliest phase of Bicske-Galagonyás[9] and the finds from Budapest-Aranyhegyi út.[10] Similar finds are known from Becsehely I and II,[11] and the material of Nitra / Nyitra[12] and Bíňa / Bény[13] in southwestern Slovakia is also identical. On the southern shore of Lake Balaton, features with similar finds were discovered at Balatonszemes-Bagódomb.[14]

Pattern II

The combinations of Pattern II were also found in a spatially bounded area, in features immediately south of the area of Pattern I. Although they were found in a relatively greater distance from each other, a pit complex surrounding a house on the edge of the excavated area (Fig. 3) and a few other pits yielded a characteristic material that differed from Pattern I in many aspects. Nevertheless, many of the finds show a strong connection with the types of Pattern I.

Shared traits include burnished and channelled motifs (Fig. 3.: 5), and the manufacture of the vessels is also identical to that of Pattern I. Beside simple, straight or semicircular line segments (Fig. 3.: 3, 6, 10), pinched decoration is frequent as well (Fig. 3.: 4).

The most distinguishing trait is the presence of series of impressed dots under the rim (Fig. 3.: 1) and incised wavy lines (Fig. 3.: 7, 9). This latter motif is common on rounded biconical shapes as well (Fig. 3.: 2) which are probably the typological continuation of the similar finds of Pattern I.

Based on the above-mentioned special decoration, the finds of Group II can be assigned to the younger phase of early LBK.[15] They can be compared to the materials from Milanovce/Nyitrakiskér and Hurbanovo/Ógyalla.[16] Similar finds are known from the settlements at Neckenmarkt/Sopronnyék and Strögen Phase 2 and 3.[17]

Pattern III

The finds of Pattern III are transitional in many respect and – as opposed to the previous ones – were found only in smaller areas, basically in a few buildings and the features associated with them in the southeastern part of the excavated area, and in the material from the ditch as well (Fig. 1). They differ from the material of

[8] Quitta 1960; Kalicz 1980, 1993, 1994, 1995; Pavúk 1980; Lenneis 1989; Cladders 2001.

[9] Makkay 1978, 28.

[10] Kalicz-Schreiber, Kalicz 1992, 51.

[11] Kalicz 1980, 26; P. Barna 2004, 35.

[12] Pavúk 1980, 12.

[13] Pavúk 1980, 10.

[14] Bondár et al. 2000, 99.

[15] Pavúk 1994a, 135.

[16] Pavúk 1980, 47.

[17] Lenneis, Lüning 2001, 171.

Patterns I and II in a number of fundamental characteristics, although a few elements of the preceding groups appear here as well.

The material is still characterized by incised line segments (Fig. 4.: 2-4, 6, 8, 13), and fragments of spherical vessels with spiral or meandric motifs covering the whole surface are attested as well (Fig. 4.: 1, 10).

A closer connection with the preceding group is indicated by the presence of channelled decoration and rounded biconical vessels with wavy lines (Fig. 4.: 9).

This latter type is a transitional form that fits into a general developmental trend from biconical forms towards spherical vessels usually with incised decoration.[18]

Exemplars with the finely incised ornamentation of the late LBK (Keszthely style) – continuous line below the rim, and the combination of a main and a complementary motif running around the whole vessel – show a very distinct decoration and manufacture (Fig. 4.: 7).

The material of these features also contains Notenkopf Ware, although its ratio is low (Fig. 4.: 5, 12). The manufacture of Notenkopf sherds does not seem to differ from that of the other material in these contexts, consequently it is impossible to decide whether these are real imports from the distribution area of Notenkopf Ware, or local imitations.

One single black burnished fragment of a solid pedestal (Fig. 4.: 9) is, however, an import from the Vinča culture.

The material of the group can be compared to the early Notenkopf finds of Bicske-Galagonyás,[19] despite the fact that there Notenkopf Ware is predominant, while it is present only in small numbers at Balatonszárszó. Similar transitional material, but characterized with Notenkopf Ware is also known from Győrszemere–Tóth-tag.[20]

Pattern IV-V

The difference between the material of Patterns IV and V is significant, but only statistical. Most areas of the site yielded finds that belong to these two combinations of finds (Fig. 1).

It is clear that the number of new elements that make their first appearance in these assemblages is higher than in the previous phases. The fabric of fine ware is sandy. Small spherical vessels with deeply incised motifs running around the whole vessel or with ornament filling the surface are new as well (Fig. 5.: 3, 5, 6; Fig.: 6.: 1, 3, 5). This group is also charaterized by the more widespread use of red paint and inlay, and the appearance of face pots (Fig. 5.: 1) as well.[21]

A distinguishing feature of Pattern IV is the rarity of pottery with cross-incised lines and bands. The latter is attested mainly on bowls with internal decoration (Fig. 5.: 2, 4). The finds of Group IV were found in a large portion of the southern part of the excavated area.

[18] Modderman 1988, 112; Cladders, Stäuble 2003, 492.
[19] Makkay et al. 1996. 62.
[20] Rezi-Kató 1993, 20.
[21] Marton 2004, 86.

The material shows the characteristics of the Keszthely group[22], which is known from the southern part of Transdanubia. Pottery with cross-incised band decoration, however, belongs to Zseliz style material.[23] The presence of a small amount of Zseliz style pottery could be observed at a number of other sites that belong to the Keszthely group, e.g. in the material of Kustánszeg or Petrivente.[24]

The pottery of Pattern V (Fig. 6) could be observed in the area of many house groups, primarily on the southern and western edge and in the centre of the excavated area (Fig. 1). It differs form the previous group only in the higher ratio of Zseliz type pottery beside the Keszthely style incised ware: it makes up more than 50% of the incised decorated material (Fig. 6.: 2, 4, 6-8). A few features yielded sherds with red-and-yellow paint as well.

Summary

The division based on the chain correlating pottery types obviously has to be confirmed or modified through statistical analysis. The chronological interpretation of the settlement structure also cannot be solely based on the distribution of typological categories: a framework must be created on the basis of the data of multiple analyses that is dynamic enough to help understand the changes within the settlement. The primary chronological evaluation of the available data, however, cannot be omitted, even if these allow only suggesting a relative chronological sequence within the site:

- Elements characteristic for the earliest LBK[25] were not found at Balatonszárszó.
- The earliest finds of the site display the features of early LBK; they were recovered in an easily delineatable area in the northern part of the site (Pattern I).
- The material characteristic for the younger phase of early LBK – primarily rounded biconical vessels with incised wavy lines – is present only in smaller numbers and was found on the northeastern edge of the excavated area (Pattern II).
- The structures with early Keszthely and Notenkopf Ware material in the southern, densely covered part of the excavated area may form a settlement nucleus (Pattern III).
- The southern part of the site is characterized by the even spread of Keszthely type material, in many cases combined with some Zseliz elements (Pattern IV).
- Houses and groups of houses can be observed, in the material of which the ratio of Keszthely and Zseliz style pottery is roughly the same (Pattern V). Such combinations were found in the southeastern and western part of the site.

The fundamental changes in the structure of the settlement – the stark difference between the rather dispersed distribution of buildings and features in the northeastern part and the more densely settled southern part – can be easily

[22] Kalicz 1991, 8.
[23] Pavúk 1969, 295; Pavúk 1994, 145.
[24] Kalicz 1991, 19; Horváth, Kalicz 2003, 19.
[25] Bánffy 2004, 263; Stadler 2005, 270.

associated with the ceramic sequence. The two different areas can be correlated with the characteristic finds of the earlier and later LBK phases. Thus, this site provides an exceptional opportunity to study intra-site processes, and can become a starting point for the elaboration of models that can be applied to a larger area as well.

BIBLIOGRAPHY

Bánffy 2004 - *Bánffy, E., The 6th Millenium BC boundary in Western Transdanubia and its role in the Central European Neolithic transition (The Szentgyörgyvölgy-Pityerdomb settlement),* in Varia Archaeologica Hungarica, 15, Budapest, 2004.

Belényesy et al 2002 - *Belényesy, K., Marton, T., Oross, K.,* Balatonszárszó-Kiserdei-dűlő, in Honti, Sz., Belényesy, K., Gallina, Zs., Kiss, V., Kulcsár, G., Marton, T., Nagy, Á., Németh, P.G., Oross, K., Sebők, K., Somogyi, K., A tervezett M7-es autópálya Somogy megyei szakaszán 2000-2001-ben végzett megelőző régészeti feltárások. Előzetes jelentés II. (Rescue Excavations in 2000-2001 on the Planned Route of theM7 Motorway in Somogy County. Preliminary Report II.), *Somogyi Múzeumok Közleményei 15, 2002,* p. 9-15.

Boelicke 1982 - *Boelicke,U.,* Gruben und Häuser: Untersuchungen zur Struktur bandkeramiascher Hofplätze, in *Siedlungen der Kultur mit Linearkeramik,* Internationales Kolloquium, Nitra, p. 17-28.

Bondár et al 2000 - *Bondár, M., Honti, Sz., Kiss, V.,* A tervezett M7-es autópálya Somogy megyei szakaszának megelőző régészeti feltárása (1992-1999). Előzetes jelentés I., in *Somogyi Múzeumok Közleményei,* 14, 2000, p. 93–114.

Cladders 2001 - Cladders, M.: Die Tonware der Ältesten Bandkeramik. Untersuchung zur zeitlichen und räumlichen Gliederung, in Universitätsforschungen zur Prähistorischen Archäologie, 72, Bonn, 2001.

Cladders, Stäuble 2003 - *Cladders, M.; Stäuble, H.,* Das 53. Jahrhundert v. Chr.: Aufbruch und Wandel, in, Eckert, J., Eisenhauer, U., Zimmermann, A. (Hrsg.), *Archäologische Perspektiven. Analysen und Interpretationen im Wandel. Festschrift für Jens Lüning zum 65. Geburtstag.* Internationale Archäologie, Studia honoraria, 20, Rahden/Westf, 2003, p. 491-503.

Horváth, Kalicz 2003 - *Horváth, L., Kalicz, N.* Újkőkori település feltárása Petriventén (Zala megye), Excavation of a Neolithic site at Petrivente (Zala county), in *Régészeti kutatások Magyarországon, 2001, Archeological Investigations in Hungary 2001,* p. 5-29.

Kalicz 1980 - *Kalicz, N.:* Funde der ältesten Phase der Linienbandkeramik in Südtransdanubien, in *Mitteilungen des Archeologischen Instituts der Ungarlandischen Akademie der Wissenschaften,* 8-9, 1978-79, p. 13-46.

Kalicz 1991 - *Kalicz, N.,* Die Keszthely-Gruppe der Transdanubischen (Mitteleuropäischen) Linienbandkeramik im Lichte der Ausgrabung in Kustánszeg (Westungarn), in *Communicationes Archaeologicae Hungariae,* 1991, p. 5–32.

Kalicz 1993 - *Kalicz, N.,* The early phases of the Neolithic in Western Hungary (Transdanubia) in *Poročilo o Raziskovanju Paleolitika, Neolitika in Eneolitika v Sloveniji,* 21, Ljubljana., p. 85–135.

Kalicz 1994 - *Kalicz. N.,* A dunántúli (közép-európai) vonaldíszes kerámia legidősebb leletei és a korai Vinča kultúra (Die ältesten Funde der transdanubischen [mitteleuropäischen] Linienbandkeramik und die frühe Vinča–Kultur), in Lőrinczy, G. (ed.), *A kőkortól a középkorig. Tanulmányok Trogmayer Ottó 60. születésnapjára. – Von der Steinzeit bis zum Mittelalter. Studien zum 60. Geburtstag von Ottó Trogmayer,* Szeged, Csongrád Megyei Múzeumok Igazgatósága, p. 67–84.

Kalicz 1995 - *Kalicz, N.,* Die älteste transdanubische (mitteleuropäische) Linienbandkeramik. Aspekte zu Ursprung, Chronologie und Beziehungen, in *Acta Archaeologica Academiae Scientiarum Hungaricae,* 47, Budapest, p. 23–59.

Kalicz-Schreiber, Kalicz 1992 - *Kalicz-Schreiber, R.., Kalicz, N.,* Die erste frühneolithische Fundstelle in Budapest, in *Balcanica*, 23, Beograd, p. 47–76.

Kubler 1962 - Kubler, G., The Shape of Time: Remarks on the History of Things, New Haven/London, 1962.

Lenneis 1989 - *Lenneis, E.:* Zum Forschungsstand der ältesten Bandkeramik in Österreich, in *Archäologisches Korrespondenzblatt,* 19, 1989, p. 23-36.

Lenneis, Lüning 2001 - *Lenneis, E., Lüning, J., Die altbankeramischen Siedlungen von Neckermarkt und Strögen,* in Universitätsforschungen zur Prähistorischen Archäologie, 82, Bonn, 2001.

Makkay 1978 - *Makkay, J.,* Excavations at Bicske. I. The Early Neolithic – The Earliest Linear Band Ceramic*,* in *Alba Regia,* 16, 1978, p. 9–60.

Makkay et al 1996 - *Makkay, J., Stanini, E., Tulok, M., Excavations at Bicske-Galagonyás (part III). The Notenkopf and Sopot-Bicske cultural phases,* in Società per la Preistoria e Protoistoria

della Regione Friuli-Venezia Giulia; Quaderno 6, Trieste, 1996.

Marton 2004 - *Marton, T.,* Material finds from Balatonszárszó, Neolithic settlement: connections within and without the TLPC territory, in *Antaeus,* 27, 2004, p. 81–86.

Modderman 1988 - Modderman, P. J. R., The Linear Pottery Culture: diversity in uniformity, in Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek in Netherland, 38, 1988, 63-139.

Oross 2004 - *Oross, K.,* Das neolithische Dorf von Balatonszárszó (Forschungen zwischen 2000-2002) in, *Antaeus*, 27, Budapest, p. 61–80.

Oross 2004a - *Oross, K.,* Balatonszárszó, Kis-erdei-dűlő, in *Régészeti kutatások Magyarországon, 2002, Archeological Investigations in Hungary 2002,* 2004, p. 177.

Oross 2004b - *Oross K.,* Újkőkori telepkutatások Balatonszárszó, Kis-erdei-dűlő lelőhelyen 2000-2003 között (Neolithic settlement investigations at the Balatonszárszó, Kis-erdei-dűlő site between 2000 and 2003), in *Régészeti kutatások Magyarországon, 2003*, 2004, p. 17-25.

Pavlů 1972 - *Pavlů, I.,* Das linearkeramische Ornament in der Entwicklung der böhmischen Linearkeramik, in Fitz, J., Makkay, J. (hrsg.), *Aktuelle Fragen der Bandkeramik,* Székesfehérvár, 1972, p. 131-142.

Pavlů et al 1986 - *Pavlů, I., Rulf, J., Zapotocká, M., and collaborators,* Theses on the neolithic site of Bylany, in *Památky Archeologické*, 77/2, 1986, p. 288-

Pavúk 1969 - *Pavúk, J.,* Chronologie der Želiezovce-Gruppe, in *Slovenská Archeológia,* 17:2, 1969, p. 269–367.

Pavúk 1980 - *Pavúk, J.,* Ältere Linearkeramik in der Slowakei. *Slovenská Archeológia,* 28:1, p. 7–90.

Pavúk 1994 - *Pavúk, J., Štúrovo. Ein Siedlungsplatz der Kultur mit Linearkeramik und der Želiezovce-Gruppe*, in Archaeologica Slovaca Monographiae, 4, Nitra, 1994.

Pavúk 1994a - *Pavúk, J.,* Zur relativen Chronologie der älteren Linearkeramik, in *Jósa András Múzeum Évkönyve,* 36, 1994, p. 135-149.

P. Barna 2004 - *P. Barna, J.,* Becsehely – Homokos. Előzetes az M7 gyorsforgalmi út 71. sz. lelőhelyén feltárt neolitikus telep kutatásáról (1999 – 2000) (Becsehely–Homokos. Preliminary Report on the Exploration of the Neolithic Settlement at site 71 of M7 Motorway (1999–2000)), in *ΜΩΜΟΣ, 2, Őskoros Kutatók II. Összejövetelének konferenciakötete.* Debrecen, 2004, p. 33–44.

Quitta 1960 - *Quitta, H.,* Zur Frage der ältesten Bandkeramik in Mitteleuropa, in *Praehistorische Zeitschrift*, 38, 1960, p. 1–38, 153–188.

Rezi-Kató 1993 - *Rezi-Kató, G.,* Adatok a Sokoróalja újkőkorához (Beiträge zum Neolithikum von Sokoróalja), in *Communicationes Archaeologicae Hugaricae,* 1993, p. 5-26.

Schmidgen-Hager 1993 - *Schmidgen-Hager, E., Bandkeramik im Moselthal.* in Universitätsforschungen zur Prähistorischen Archäologie, 18, Bonn 1993.

Stadler 2005 - *Stadler, P.,* Settlement of the Early Linear Ceramics Culture at Brunn am Gebirge, Wolfholz site, in *Documenta Praehistorica,* 32, 2005, p. 269–278.

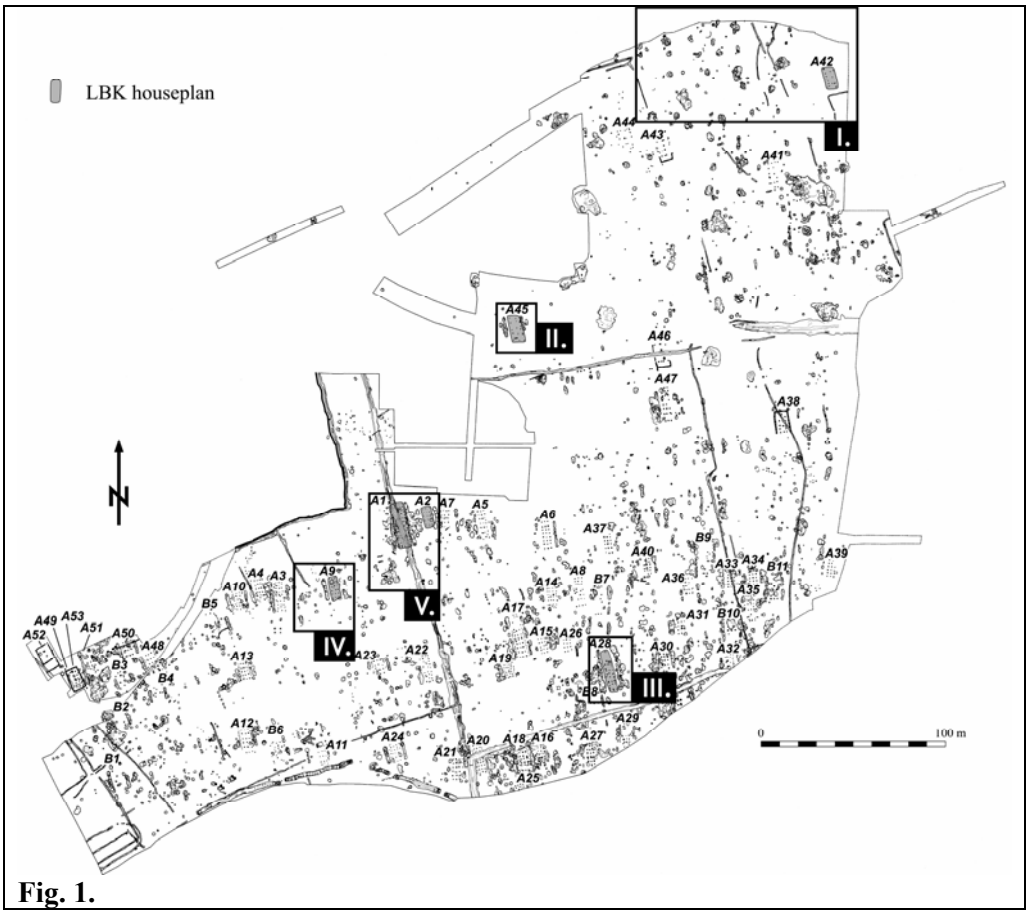


Fig. 1.

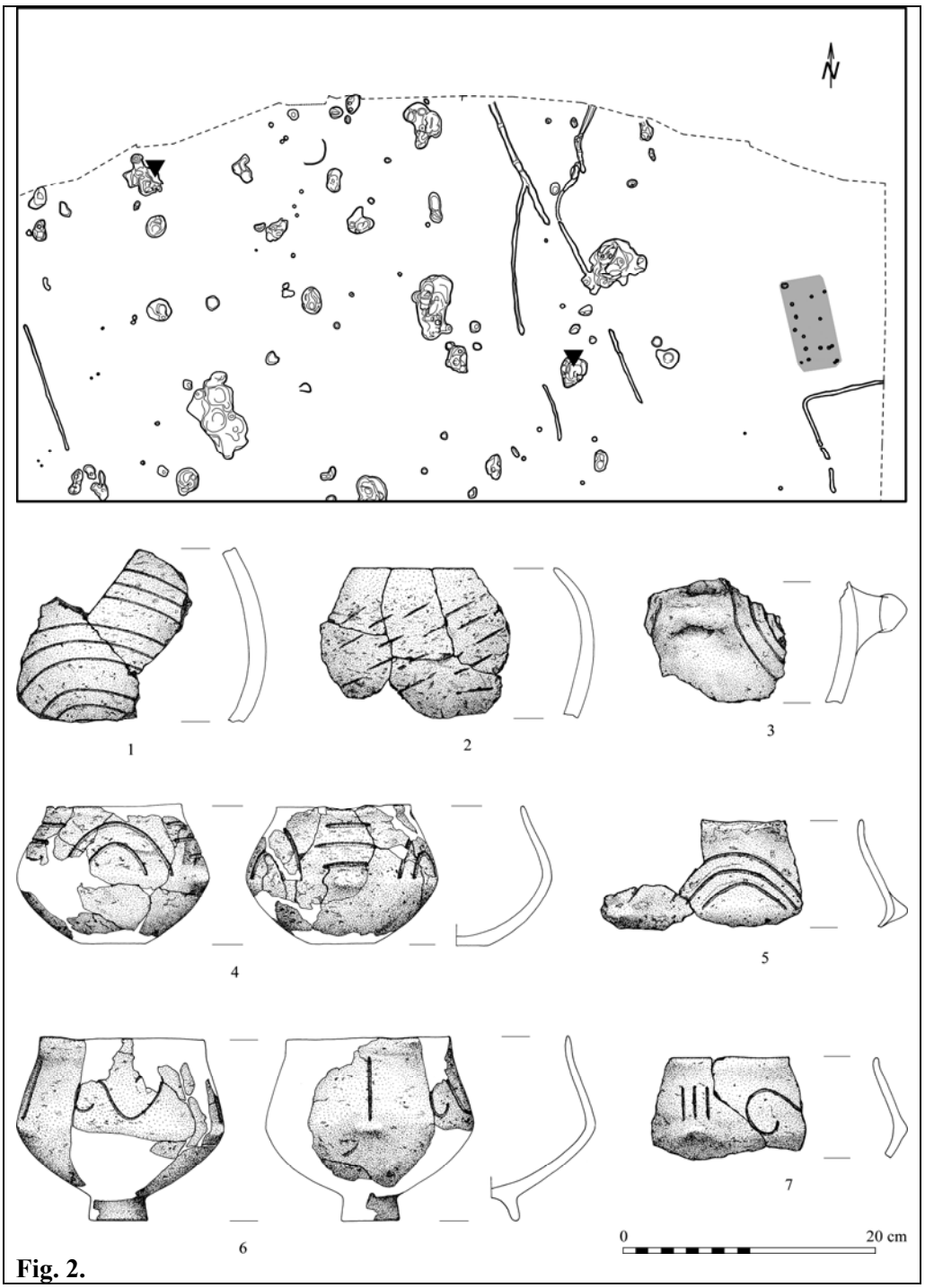


Fig. 2.

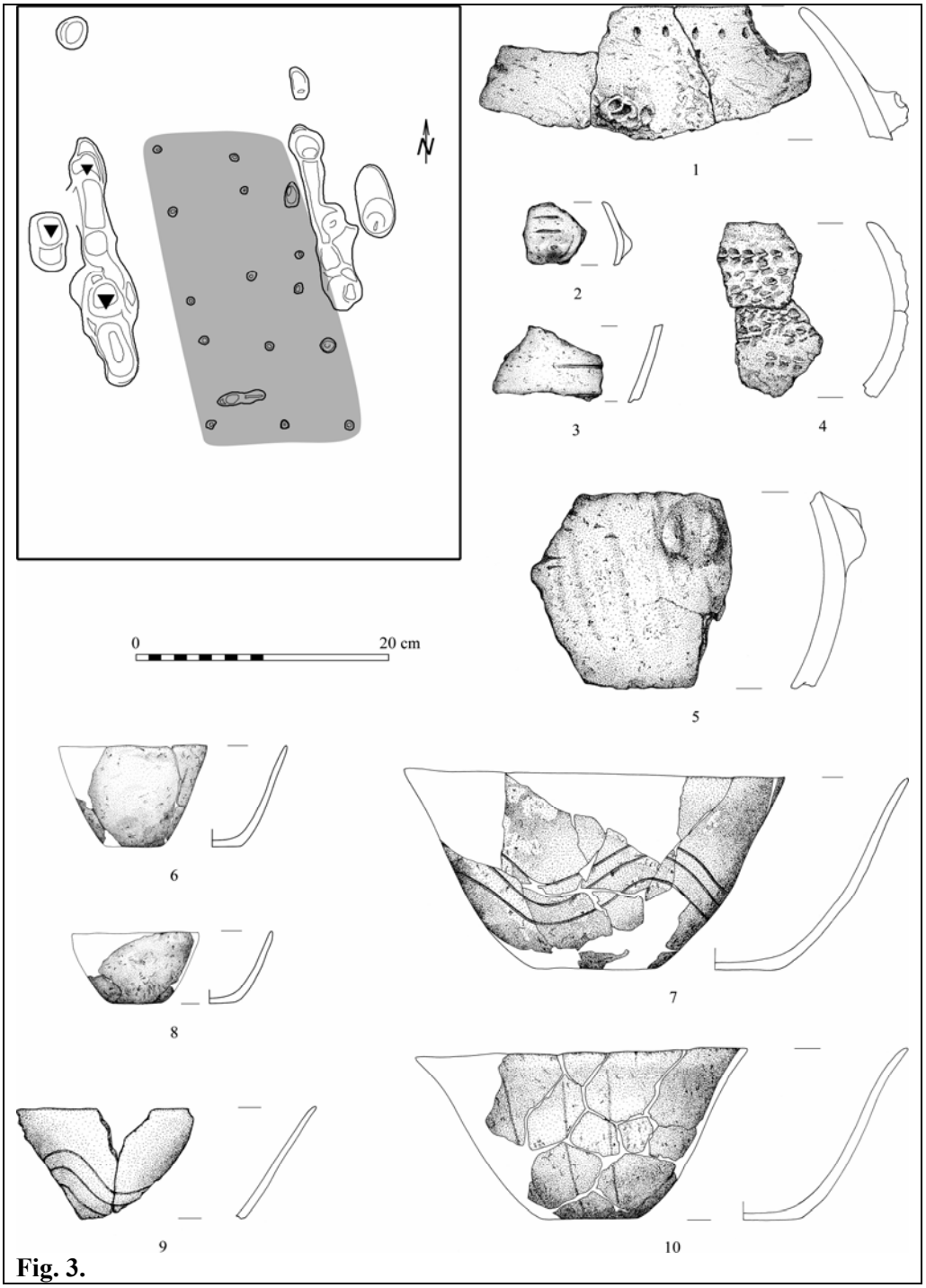


Fig. 3.

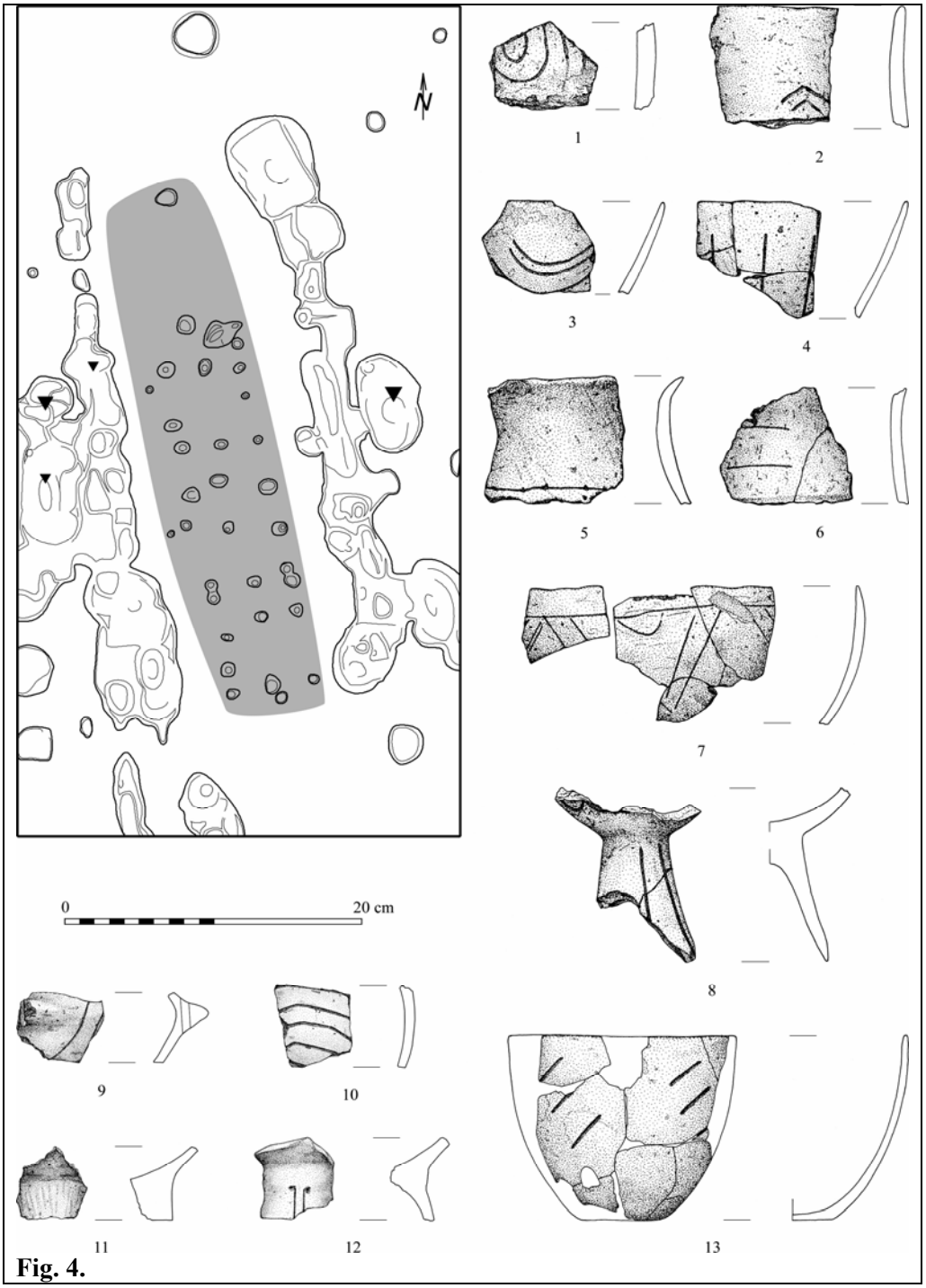
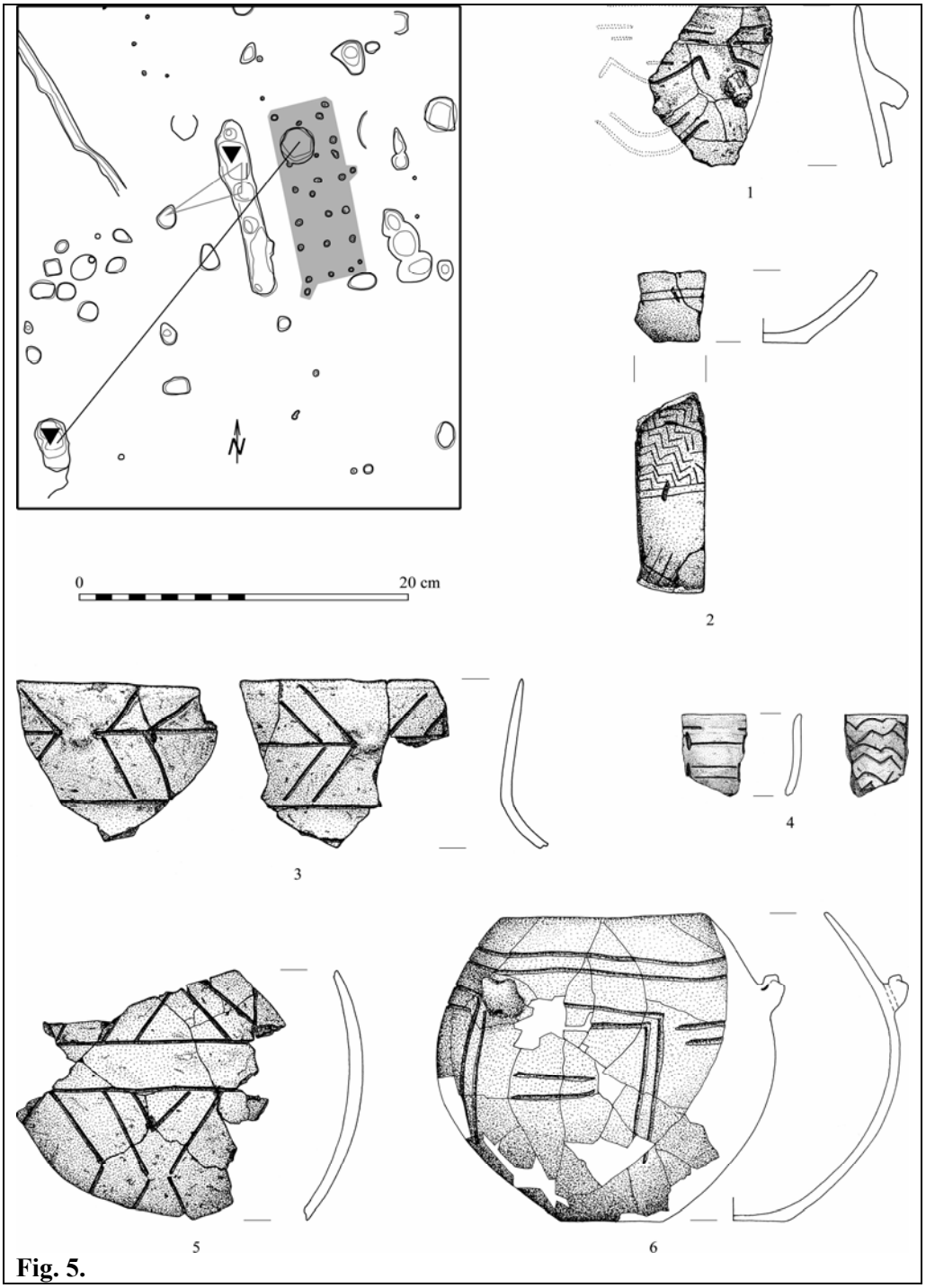


Fig. 4.



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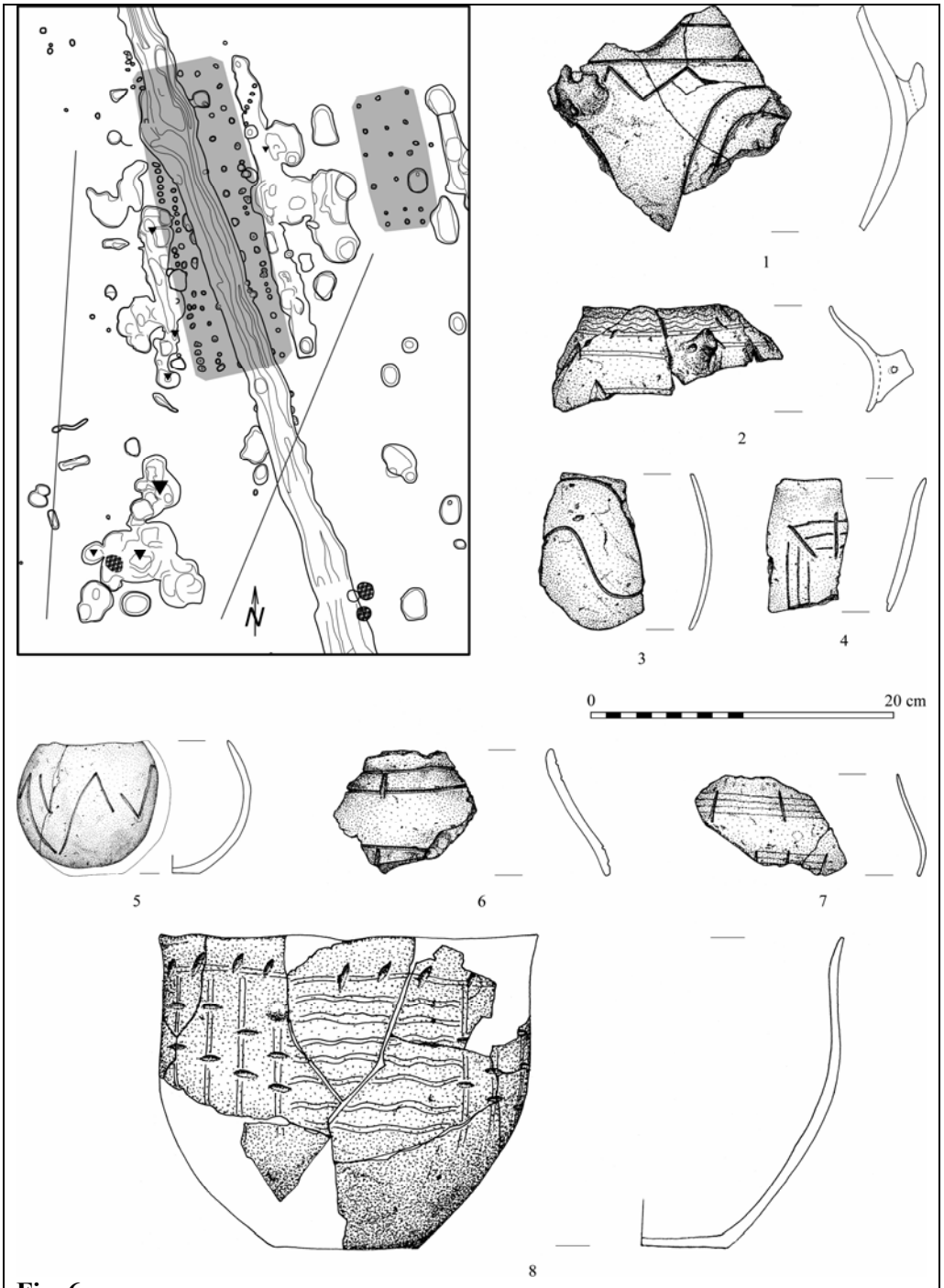

Fig. 6.

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EXPERIMENTAL ARCHAEOLOGY THE CONSTRUCTION OF A FIRE INSTALLATION (HEARTH) ON THE MODEL OF THOSE DISCOVERED AT PĂULENI CIUC – CIOMORTAN "*DÂMBUL CETĂȚII*", HARGHITA COUNTY

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Key words: *Neolithic, experimental archaeology, Transylvania, Romania.*
Abstract: *The experiments took place simultaneously with the archaeological researches from Păuleni Ciuc – Ciomortan, in August and September 2006.*

Our experiments consisted in the construction of a fire installation (hearth with a stone made pavement) and its utilization inside the archaeological camp, both for heating and food preparing.

The experiments took place simultaneously with the archaeological researches from Păuleni Ciuc – Ciomortan, in August and September 2006.

The prehistorical settlement from Păuleni Ciuc is known under the name of Ciomortan or *Şoimeni*. The settlement is situated at about 8 km north-east from Miercurea-Ciuc city and at about 1 km north-east from *Şoimeni* village, in the place called by the villagers *Várdomb (Dâmbul Cetății)*.

The settlement has oval shape, with a surface of about 60 (north-south) x 90 (east-west) m. The site's emplacement in this point was well chosen by the prehistorical communities. The settlement is well hidden between the hills of the west slope of the Ciucului Mountain and it offers a good visibility over the Ciuc Valley.

The settlement was discovered in the interwar period by Al. Ferenczi who included it in the repertory of dacian fortresses from Transylvania. Between 1956, 1960 and 1967 archaeological researches were made here by Székely Zoltán (Székely, 1970, 71; Zaharia, 1995, 151-152).

The settlement was inhabited in the Early Copper Age (*Cucuteni-Ariuşd* and *Bodrogkeresztur* Cultures), in the Late Copper Age (*Coţofeni Culture) and in the Middle Bronze Age (*Costişa - *Ciomortan* and *Wietenberg Cultures*).

Between 1999 and 2006 the director of The Museum of Eastern Carpathians from Saint George, Mister Valeriu Cavruc, coordinated the archaeological researches (Cavruc, 2000, 99; Cavruc, 2000a, 173-176; Cavruc, 2001, 55-75; Cavruc, 2002, 89-95; Cavruc, 2003, 129; Cavruc, 2005, 81-123; Janovits, 1999, 121-150; Comşa, 2000, 173-176; Cavruc, Dumitroaia, 2000, 131-154; Cavruc, Rotea, 2000, 155-172; Cavruc, Buzea, 2002, 41-88).

Types of stone made pavement discovered at Păuleni Ciuc-Ciomortan.

The Cucuteni-Ariuşd eneolithical inhabitancy

House No. 4. Before building the hearth the eneolithical layer was deepened (old humus), and then a bed of flat stones was arranged (pavement). The hearth had a circular form with the diameter of about 2-2, 2 m (Pl. I/3, 4). Around the hearth there have not been discovered remains of a pit, so that we can consider that the hearth was covered with a construction. Probably the hearth was situated under the free sky, in the same way as hearths of big dimensions are situated sometimes. In that situation we can't talk about a simple domestic hearth, but, very probable, about a watch hearth belonging to some hunters' troops or to those who had to guard domestic animals (Lazarovici et al, 2000, 103).

House No. 16. The hearth was arranged on a stone made pavement and it had a circular shape, with a diameter of more than 1,6 m. The hearth was constructed, as well as in House No. 4's case, by deepening into the eneolithical layer, represented here by the ruins from House No. 5.

A small part from the hearth's superior side representing the fine daub was kept. The pavement instead was dense, it had a bulkiness of more than 0, 2-0, 3 m and it was compound from flat stones, probably detached from the local rock (Pl. I/2). After they were destroyed, the stones which were part of the pavement were spread. (Lazarovici, Buzea, 2005, 27).

In the space between House No. 21 and House No. 24, there were discovered the remains from two hearths. The first was partially placed over the house's floor. Probably it had a rectangular shape with the dimensions of 1.4 x 1 m and it was formed of an agglomeration of great stones (Pl. I/5). The second hearth was formed of an agglomeration of flat stones. Probably it had a rectangular shape, with its kept dimension of 1 x 0.7 m (Pl. I/6). The pavement's kept bulkiness was of about 0.1 m. The hearth's fine daub was destroyed in the past.

Middle Bronze Age. Wietenberg inhabitancy

House No. 8. On the stepping level, approximately in the house's centre, there have been discovered two fire hearths, with circular shapes and daubed surface (Pl. I/7). The first one was arranged on a pavement of stones and ceramic fragments (Pl. I/8), and it had the diameter of 0, 6 m (Cavruc, Buzea, 2002, 46, pl. VII).

House No 10. Two fire hearths were discovered, placed relatively in the centre of the house. They were arranged with daub of fine clay, on a stone and ceramic fragments structure. The first one was kept fragmentary, from the daub dust remains; the circular shape was reconstituted, with a diameter of 0, 6 m. The second

hearth was situated south of the other one and it had a circular shape with a diameter of 1, 1 m (Cavruc, Buzea, 2002, 48, pl. XV).

Experimental Archaeology

In Romania experimental archaeology was very little used, even if it can offer explanations and it can suggest interpretations on frequent riddles encountered during archaeological researches. Years ago, during some archaeological researches, some experiments were made but they only followed aspects as ceramic moulding and burning. A stone hatchet was made, for the first time, at Poduri, and a house was also built, following the model of the houses known in the area of Cucuteni cultural complexes (Monah et al, 2003, 65).

At Cucuteni, inside the Experimental Archaeological Park, tools and houses were realized through experimental archaeology (Petrescu-Dîmboviţa, Văleanu, 2004, 337, fig. 310-319). In 2004 there were 120 years since the experimental archaeology was discovered. The majority of specialists from our country and from abroad, preoccupied of this culture, met at Piatra-Neamţ, during The International Symposium „*Cucuteni 120 de ani de cercetare – Timpul Bilanţului*". They were invited to Cucuteni, where there have been made a series of experiments which tried to cover almost all the aspects of eneolithical material life (food and salt producing, products preservation, etc). With that occasion two houses that were built after the model of the cucutenian ones were deliberately set on fire.

An ample study named „*The reconstitution of prehistorically technologies and installations for ceramics burning"* was realized by Felix-Adrian Tencariu, from "Al.I. Cuza" University, Iaşi. The experiments took place at Cucuteni and Isaia, simultaneously with the archaeological researches from 2003 and 2004 campaigns. The author's research report has two distinct parts, determined by the two fundamental objectives of the project. First of all, archaeological and ethnographical literature was researched, with the purpose of centralizing prehistorical and traditional techniques and technologies of ceramics burning, and, secondly, the main objective, was their experimentally reconstitution (Tencariu, 2005, 2).

Our experiments

Our experiments consisted in the construction of a fire installation (hearth with a stone made pavement) and its utilization inside the archaeological camp, both for heating and food preparing.

Used materials

Clay

The clay was identified near the settlement, on the shore of Nyirpataka brook (Pl. I/1). The clay was yellow and it contained a lot of impurities (little stones, mud, etc). It was transported inside the camp by using plastic recipients. The clay was stored for a few days in a big plastic recipient fool with water and kept *to rise* (Pl. III/1, 2). From time to time, it was kneaded with hands, feet and modern tools (spade or shovel). For this experiment we considered as necessary to take the clay from a place nearby the settlement. Other sources of clay were not searched for in the area (this thing will be accomplished in a future experiment).

The necessary water for the experiment was taken from the Nyirpataka brook, which, with no doubt, represented the main source of water in prehistory too. In our days the inhabitants from Păuleni-Ciuc commune use the water from this brook because it has a very good quality.

The clay used for the hearth's smoothing was mixed with sand from the river (also brought from a place nearby) and with ashes (from the old hearth placed in the archaeological camp).

Before mixing the clay, in order to construct the hearth, a small quantity of clay was gathered separately, (about 1 kg) with the purpose of making pottery. To do that, sand and pounded pottery was used as degreasing substances.

The stones (the hearth's pavement)

The hearth's pavement belonging to Cucuteni-Ariuşd settlements, discovered and researched in 2006 (25, 26 and 27 Complexes) was disassembled; some of the stones from the pavement were brought in the camp to be used in our experiment. These stones have different dimensions and shapes, some of them are flat (detached probably from the local rock) and others are almost round (probably river boulder).

The wood

Nearby the settlement there is coniferous forest (fir tree, spruce fir, pine). Although we are at an altitude of over 800 m yet, the fir forest is preponderant. Only at an altitude of over 900 m appears the leaf bearing forest, especially beech forest. These changes of the forest disposal appear because that area is a valley.

In our experiments for making and maintaining the fire, we used both dry and green wood.

The heart's construction

The place where the new hearth was located is situated near by the archaeological camp. Because the ground was in a light slope, it needed to be levelled (the levelling was made by using modern tools, spade and shovel) (Pl. II/1, 2).

After obtaining a flat surface on the ground the stones from the heart's pavement were arranged. The stones were arranged in a circular shape with the diameter of about 1m (the pavement's bulkiness did not pass over 0,2m). The remaining space between the stones was filled with earth (Pl. II/3-7). The earth from the hearth's pavement was watered and left at the sun to dry for a day (Pl. II/8).

The next day the clay was placed uniformly over the stone made pavement so that all of the stones to be covered. As a matter of fact a part of the daub reached at the edge of the hearth, over the ground (Pl. III/3, 4). In a first stage the levelling of the hearth's surface was made only by hand (Pl. III/5). We noticed the fact that the heart's daub didn't have the look that we wished for (it wasn't fine). We decided to prepare an amount of clay without impurities and we mixed it with fine sand. The clay was placed on the hearth's superior part and it was well smoothened with a piece of dry wood (a spatula made from a fir tree) (Pl. III/6). After smoothing, the hearth was left to dry at the sun for a day.

On the third day, we arranged on the hearth a pile of light fuel (compound from dry and small fir and spruce fir branches) and we burnt it (Pl. III/7, 8). Because the

fire didn't cover the whole surface of the hearth, the embers were moved with the help of some sticks made from a green piece of wood. This preceding of moving the fire all over the hearth's surface was repeated all day long.

On the fourth day, we placed on the hearth a great quantity of fuel compound from fir and fir tree wood, cracked from tree trunks (Pl. IV/1). The wood was burnt until the hearth's surface became hard (Pl. IV/2). We noticed the fact that the hearth's daub cleaved here and there, and that it took the shape of a „*honey comb*" or of a „*mosaic*" like the hearths discovered *in situ* after the archaeological researches.

In practice, after the arrangement of this stone made pavement hearth, the other hearth used until then in the camp (without pavement) was abandoned.

The hearth's utilization. Auxiliary experiments

Pottery

After removing the clay's impurities, the clay was well kneaded and mixed with fine sand and pieces of very fine-pounded pottery. Only five of those left in the archaeological camp started to make pottery and ceramic objects. We must mention the fact that four of those interested in manual pottery making, practiced this „*handicraft*" for the first time in their life.

Each of us tried to make forms as simple as possible (glasses with the shape of a truncated cone or cups) but also others, more complicated (an amulet and an anthropomorphous idol). Each one of these pieces was made by hand, moulding only one portion of clay (Pl. IV/3, 4).

Using wetted hands we made the bulkiness uniformity of the vessel's walls. Each ceramic object was then well smoothed and kept out to dry for some hours. After the pieces were dry we passed on to their smoothing. Some of the pieces were decorated with incisions, realized by using sharp tools made from wood or bone (Pl. IV/5). The ornamental motifs were formed of simple lines, incised strips, stitching and excised lines.

Because we were reaching at the end of our archaeological campaign, after the stage of ornamenting the pottery, all the objects were left out to dry (Pl. IV/6). The object's drying was a fast one because they were kept out without being protected from sun, wind or strong humidity.

The polishing of the vessel (for both aesthetical and practical purpose) was realized when the objects were dry. The vessel's walls were lightly wetted from time to time and then, with the help of some fine stones and „polishers" made by us from fir tree branches, every object was polished. The polishing activity took place at night, around the fire hearth, during more hours of work (Pl. VI/2). The polishing quality resulted from our skills, some pieces took a „*metallic aspect*" and others remained only well smoothed (Pl. VI/3).

In order to use the hearth we have built, as a last stage, we decided to burn in free air all the objects we manufactured. For this purpose, on the constructed hearth, we placed a great quantity of fuel compound of coniferous wood (fir tree and spruce fir), which was burnt for obtaining a great quantity of embers (Pl. VI/1).

After 2-3 hours in which the fire was supplied with wood we obtained a quantity considered by us to be sufficient to begin the burning the objects (Pl. VI/4). On one side of the hearth the ember was put away with a stick and a glass (with spherical base and straight lips) was placed on the hearth with its face down, in order to observe the quality of the burning. The other vessel and pieces were thrown directly into the ember. The vessel didn't break because it had small dimensions.

After approximately 1 hour, the vessel became incandescent. In the evening, the team supplied the hearth permanently with wood. The vessel was left in the ember till the next morning (Pl. VI/5).

All the wood burned, forming a dense stratum of ember and ashes over the ceramic objects. We tried to take off the ceramic objects with our hands, but it was impossible because they were still incandescent. Yet, with some sticks, the pieces were taken out from the fire and they were left to cool near the hearth (Pl. VI/6). Only one piece broked during the burning, an antropomorphous idol moulded from a single piece of clay, with its feet pasted together, and its arms disposed in cross, with a thin neck and with a circular shaped flat head). The piece braked around its neck and its head was hard to find between the remains of ember and ashes.

Archaeologically it was observed that the majority of antropomorphous idols discovered in the settlements of the Cucuteni-Ariuşd-Tripolie Culture have their head broken from the past (Monah, 1997). The burning of idols is usually an oxidating one, but we do not exclude the possibility that in the past the burning could have been made in free air, even on hearths. The pottery had a good enough burning and its colours were light brown (some of them were even brown-yellowish), only the glass with spherical base, which was placed with its face on the hearth, had its interior brown towards black.

When we filled the glasses with water we observed that their walls soaked immediately. Even if, functionally, the ceramics we made couldn't be used (especially for liquids consumption), in a decorative aspect it represented a success, taking into account that this experiment was made by our team for the first time, without having any knowledge about the art of pottery.

The clay's composition varies from a geographical area to the other, the existence inside it of other substances, except of those which are elementary (aluminium dioxide, silicium dioxide and molecular water), offers different characteristics about the composition's plasticity, colour and burning temperature (Anghel, 1998, 133; Anghel, 2000, 171).

This type of burning was experienced in other archaeological experiments. Free air burning, above all assumed (because one cannot state precisely if fire hearths, very frequent, had this purpose too) has the impediment that it is directly influenced by the atmospherically conditions, thus resulting a direct burning, as well between the vessels from one stage as on a singular piece, depending on its position in the fire. We placed some vessel on a hearth; we covered them with wood and burnt them for approximately three hours, supplying permanently the fire. After approximately one hour, the vessels became incandescent, but already a part of them were cracked or broken. After the burning process was complete, we saw that

only a quarter from the total amount of vessels remained untouched (intact), the other being rejects, either on the account of some manufacture errors, either because of the sudden increase or the great fluctuations of the temperature. Those which were whole showed a good enough burning; they had different colours, black, grey, brown, or even red spots (Tencariu, 2005, 20)

By all means in Cucuteni Culture the apogee of knowledge's about the ceramics technology and its burning techniques were reached. We state that, thinking about the fact that during the evolution of the technology in our history till the electrical oven was invented, except for the materials used in construction, the type of oven used for the ceramics burning, with two rooms disposed vertically, with a grate, remained the same and it is being used in our days by traditional potters (Tencariu, 2005, 15).

Food preparing

Vegetables and fruits were baked directly on the hearth by simply moving the ember from one part of the hearth to the other by using a stick.

In order to bake bread, we acquired from the village a quantity of about 2 kg of wheat. First it had to be grinded (Pl. IV/7, 8). The wheat grinding was realized with the help of some original tools (grinders and twinkles), which were discovered in the complexes belonging to the Cucuteni-Ariuşd-Tripolie eneolithical inhabitancy.

With those stone made grinders and twinkles (Pl. V/1), two ladies, after working for almost four hours, succeeded to grind a quantity of about 1/2 kg of flour mixed with husk. That activity proved to be tormenting, being followed, in both ladies cases, by muscular fever and by peeling off of their hands.

The flour mixed with husk was also mixed with salt and water (Pl. V/2), obtaining some flat „*bread*", with a circular shape (Pl. V/3, 4).

This "bread" was put after that on the well-heated hearth and kept there to bake for about a half of an hour (Pl. V/5). From time to time they were turned over with a wood made spatula (Pl. V/6). Once baked, the „*bread*" was eaten by the research team members, and it was considered to be very tasteful (Pl. V/7, 8).

Preliminary observations (remarks)

The fire installation (the hearth). Based on this experiment we noticed the fact that hearths constructed this way keep the heat around them much better.

The ember is very well kept until the next day, when one can make the fire only by putting some dry wood over the coals from the ashes remained on the hearth. Fruits, vegetables and "*bread"* (flour mixed with water and salt) were cooked on the hearth, by simply moving the ember from one side to the other with the purpose of being consumed inside the camp. In the rainy season, near the hearth, day and night, took shelter and slept the camp's dog, because there it was warmer.

The fact that the cucutenians preferred this type of hearths with pavement is do to the fact that summer nights (but especially the winter one's) in the Ciuc Valley are cool, and in order to keep the heat for a longer period of time this kind of constructions were needed.

Even we, with all our modern equipment, preferred this type of hearth, both for heating and cooking.

At the end of the archaeological campaign, in September 2006, the ashes which remained around the hearth were spread and the hearth was covered with sod for the purpose of following its "behaviour" in the future (Pl. VI/7, 8).

We intend to use this hearth in our future archaeological campaign.

Food preparing

We intend, in our future archaeological campaign, to grind a much bigger quantity of wheat, in order to obtain bread or flat loaf. The wheat grinding will be realized by using a grinder of great dimensions (60 x 40 x 20 cm), which was discovered in an eneolithical house. The grinder's surface is concave, do to its frequent utilization in the past. We will also use hand twinkles of great dimensions to make headway grinding. We will only use pure flour, separated from the husk.

We appreciate our attempt to produce "*bread"* only with the help of tools and methods used in the past as being useful. The fact that in every eneolithical house researched at Păuleni Ciuc – Ciomortan, were discovered numerous grinders and twinkles (some of them whole and others kept fragmentary), we can state that this activity was a very important one inside the cucutenian settlements.

Abbreviations

Aluta – Revista Muzeului Național Secuiesc, Sfântu Gheorghe.
Angustia – Revista Muzeului Carpaților Răsăriteni, Sfântu Gheorghe.
Marmația – Revista Muzeului Județean Maramureş, Baia Mare
BCSS – Buletinul Cercurilor Ştiințifice Studențeşti, Alba Iulia
RPSS – Revista de Politica Ştiinței şi Sociometrie

LITERATURE

Anghel, 1998 – Anghel D., *Aspecte generale ale tehnologiei prelucrării ceramicii.* In: *BCSS* (1998), 133-139.

Anghel, 1998 – Anghel D., *Influența condițiilor de ardere asupra ceramicii.* In: *BCSS* (2000), 171-171.

Cavruc, 2000 – Cavruc V., *Noi cercetări în aşezarea de la Păuleni (1999-2000)*. In: *Angustia* 5 (2000), 93-102.

Cavruc, 2000a – Cavruc V., *Repertoriul Arheologic al județului Harghita*. Sfântu Gheorghe (2000).

Cavruc, 2001 – Cavruc V., *Legături între Moldova şi S-E Transilvaniei în bronzul mijlociu*. In: *Cultura Costişa în contextul epocii bronzului din România*. Piatra Neamț (2001), 55-75; 120-128.

Cavruc, 2002 – Cavruc V., *Noi considerații privind grupul Ciomortan*. În: *Angustia* 7 (2002), 89-98.

Cavruc, 2003 – Cavruc V., *Păuleni-Ciomortan*. In: *Noi Descoperiri arheologice în sud-estul Transilvaniei.* Catalog de Expoziție, Sfântu Gheorghe (2003), 129-149.

Cavruc, 2005 – Cavruc V., *The Ciomortan Group in the light of New-Researches*. In: *Marmatia* 8/1 (2005), 81-123.

Cavruc, Buzea, 2002 – Cavruc V., Buzea D., *Noi cercetări privind epoca bronzului în aşezarea Păuleni (Ciomortan). Campaniile din anii 2001-2002. Raport preliminar*. In: *Angustia* 7 (2002), 41-88.

Cavruc, Dumitroaia, 2000 – Cavruc V., Dumitroaia G., *Descoperirile aparținând aspectului cultural Ciomortan de la Păuleni (Campaniile 1999-2000)*. In: *Angustia* 5 (2000), 131-154.

Cavruc, Rotea, 2000 – Cavruc V., Rotea M., *Locuirea Wietenberg de la Păuleni (campaniile 1999-2000)*. În: *Angustia* 5 (2000), 155-172.

Comşa, 2000 – Comşa A., *Date antropologice referitoare la osemintele umane aparținând epocii bronzului, descoperite la Păuleni*. In: *Angustia* 5 (2000), 173-176.

Janovits, 1999 – Janovits I., *Noi perieghеze din depresiunea Ciucului*. In:

Angustia 4 (1999), 121-150.

Lazarovici et al, 2000 – Lazarovici G., Luca S.A., Suciu C., Buzea D.. *Descoperirile Cucuteni-Ariuşd de la Păuleni (Ciomortan).* In: *Angustia* 5 (2000), 103-130.

Lazarovici, Buzea, 2005 – Lazarovici G., Buzea D., *Descoperirile Cucuteni-Ariuşd de la Păuleni Ciuc – Ciomortan „Dâmbul Cetății". Campaniile 2003-2005. Raport preliminar.* In: *Angustia* 9 (2005), 25-88.

Monah, 1997 – Monah D., *Plastica antropomorfă a culturii Cucuteni-Tripolie,* Piatra Neamț (1997).

Monah et al, 2003 – Monah D., Dumitroaia G., Monah F., Preoteasa C., Munteanu R., Nicola D. *Poduri-**Dealul Ghindaru**. O Troie în Subcarpații Moldovei,* Piatra Neamț (2003).

Petrescu-Dîmbovița, Văleanu, 2004 – Petrescu-Dîmbovița M., Văleanu M.C., *Cucuteni-**Cetățuie**. Monografie Arheologică*, Piatra Neamț (2004).

Tencariu, 2005 – Tencariu F.A. *Arheologie experimentală. Reconstituirea tehnologiilor şi instalațiilor preistorice de ardere a ceramicii.* In: *RPSS* (2005), 1-31.

Székély, 1970 – Szekely Z., *Cultura Ciomortan*. In: *Aluta* (1970), 71-88.

Zaharia, 1995 – Zaharia E., *Cultura Ciomortan*. In: *Comori ale epocii Bronzului din România. Treasures of the Bronze Age in Romania*. Bucureşti (1995), 151-152.

Plate I. Păuleni Ciuc – Ciomortan „*Dâmbul Cetății*", Harghita County
1, Archaeological settlement „Dâmbul Cetății"; 2-6, Cucuteni – Ariuşd Culture; 7-8, Middle Bronze Age (Wietenberg Culture). 1. General view upon the site (view from the east); 2. House no. 16 – Hearth with stone made pavement; 3, 4. House no. 4 – stones from the heart's pavement; 5. House no. 24 – fire installation close to the house; 6. Traces of the hearth with stone made pavement; 7. House no. 8 with two fire hearths; 8. House no. 8 – stone made pavement of the hearth no. 1).

Plate II. Păuleni Ciuc – Ciomortan „*Dâmbul Cetății*", Harghita County
1. The hearth's location in the archaeological camp; 2. The ground levelling; 3-8. Arranging the hearth's stone made pavement.

Plate III. Păuleni Ciuc – Ciomortan „*Dâmbul Cetății*", Harghita County
1, 2. The preparation of the clay; 3-5. Covering the stone made pavement with a clay stratum; 6. Smoothing the hearth; 7, 8. Wood burning on the hearth.

Plate IV. Păuleni Ciuc – Ciomortan „*Dâmbul Cetății*", Harghita County
1, 2. Wood burning and their spreading all over the hearth; 3-5. The decoration of the pottery; 6. The natural drying of the pottery; 7, 8. The manual grinding of the wheat by using the grinder.

Plate V. Păuleni Ciuc – Ciomortan „*Dâmbul Cetății*", Harghita County.
1. The manual grinding of the wheat and flour obtaining; 2. Dough preparation (flour mixed with salt); 3, 4. The obtained bread; 5, 6. Bread baking on the hearth; 7. Baked bread; 8. Bread tasting.

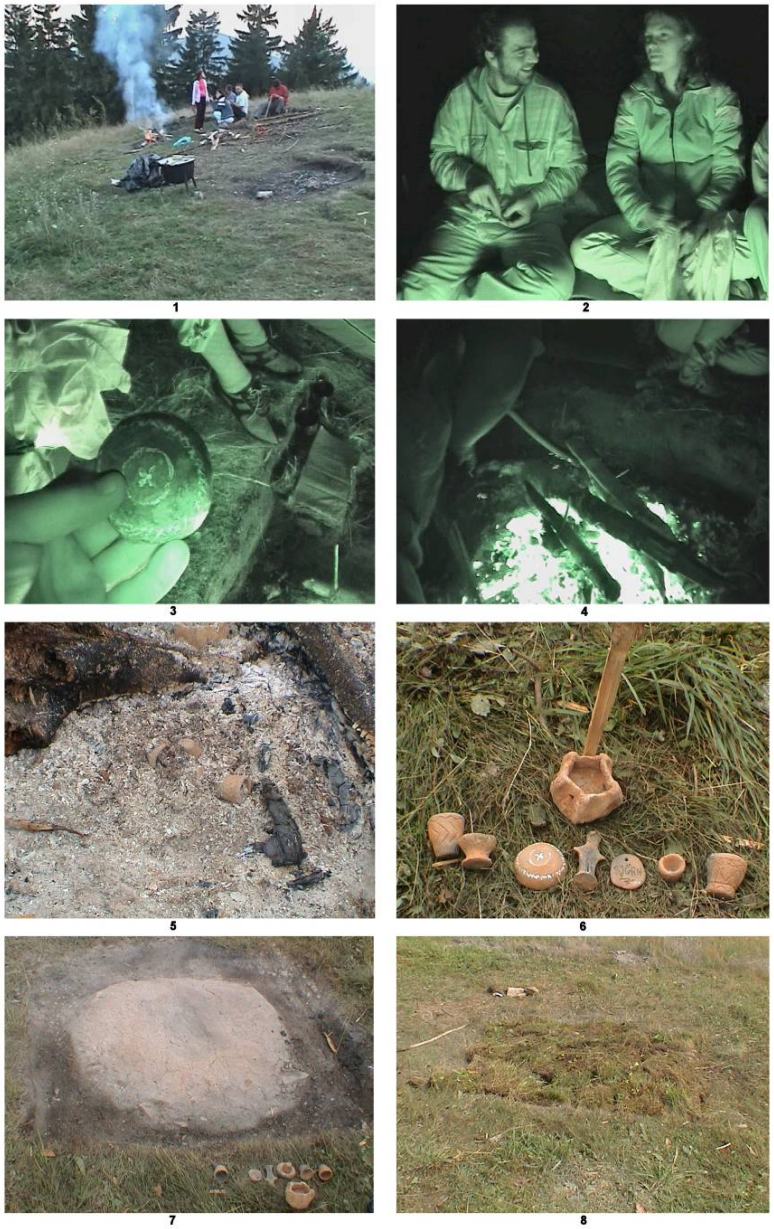

Plate VI. Păuleni Ciuc – Ciomortan „*Dâmbul Cetății*", Harghita County
1-3. The activity of pottery polishing took place around the hearth; 4. The hearth's preparation for the pottery burning; 5. Burnt pottery on the hearth; 6. Pottery obtained as a result of the experiment; 7. Fire hearth after the ash was removed; 8. The hearth preservation after our team departed from the archaeological camp.