

Different ways of using space: traces of domestic and ritual activities at a Late Neolithic settlement at Sormás-Török-földek

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ABSTRACT – *The present paper studies questions of the use of space in various ways on the basis of data obtained from a site at Sormás-Török-földek. The significance of this site lies in the fact that two enclosures were excavated here which differ in character, but which are in a close relationship physically and chronologically. They demonstrate precisely the radical change, which took place in the mode of space-use, representing two important stages of the progression as a result of which the separation of territories used for domestic and ritual activities were physically manifested.*

IZVLEČEK – *V članku predstavljamo različna vprašanja o rabi prostora na različne načine, in sicer na podlagi podatkov iz najdišča Sormás-Török-földek. Najdišče ima poseben pomen predvsem zato, ker sta bili tukaj odkriti dve ogradi, ki imata različne značilnosti, vendar sta v tesni povezavi tako fizično kot kronološko. Predstavljata natanko tisto radikalno spremembo, ki se je zgodila v načinu rabe prostora, in dve pomembni fazi napredovanja, zaradi katerega se kažejo dejanske ločitve prostorov za gospodinjске in ritualne dejavnosti.*

KEY WORDS – *roundel; Late Neolithic; domestic; ritual; archaeo-astronomy*

Introduction

The present paper studies the various uses of space in a Late Neolithic settlement based on data obtained from a site at Sormás-Török-földek, in South-west Transdanubia (Fig. 1.1–2). We try to show, on the one hand, archaeological records related to activities connected with domestic life, and those finds and phenomena, on the other, which cannot be interpreted in secular terms, or notably ritual, which are assumed to be religious in character. The domestic features are common to Neolithic settlements: buildings, pits and ditches with various functions and forms, such as dwellings and smaller buildings (probably of an economic character), fences, sheep-folds, refuse pits, storage pits, large pits for mining clay, fireplaces, ovens, and empty spaces between houses, *etc...*

We primarily investigate ways of using space especially in terms differences between domestic/mun-

dane and sacred/ritual spheres. Analysing the different zones of activity on the strength of finds is not our aim, since most of the material has yet to be processed. Most of the religious features relate to enclosures. As one can see, the settlements of the Sopot and Lengyel cultures, with two round enclosures (roundels) at the Sormás-Török-földek site (Fig. 1.3–4) have yielded enough data to study this problem.

Sormás is a small village in the South-western part of Transdanubia, 6 km west of Nagykanizsa. Sormás-Török-földek (79)¹ lies on the southern side of a North-South oriented natural elevation, about 187m above sea-level. The Mántai Stream borders this elevation to the east. The archaeological site here (710)² is situated on the opposite bank of the stream (Fig. 1.1), on the southwestern slope of another natural elevation, with an elevation above sea-level somewhat lower (184.5m). These two sites are very

¹ Identifying number of the site used in M7 motorway project conducted by the Zala County Museums.

² See footnote No. 1.

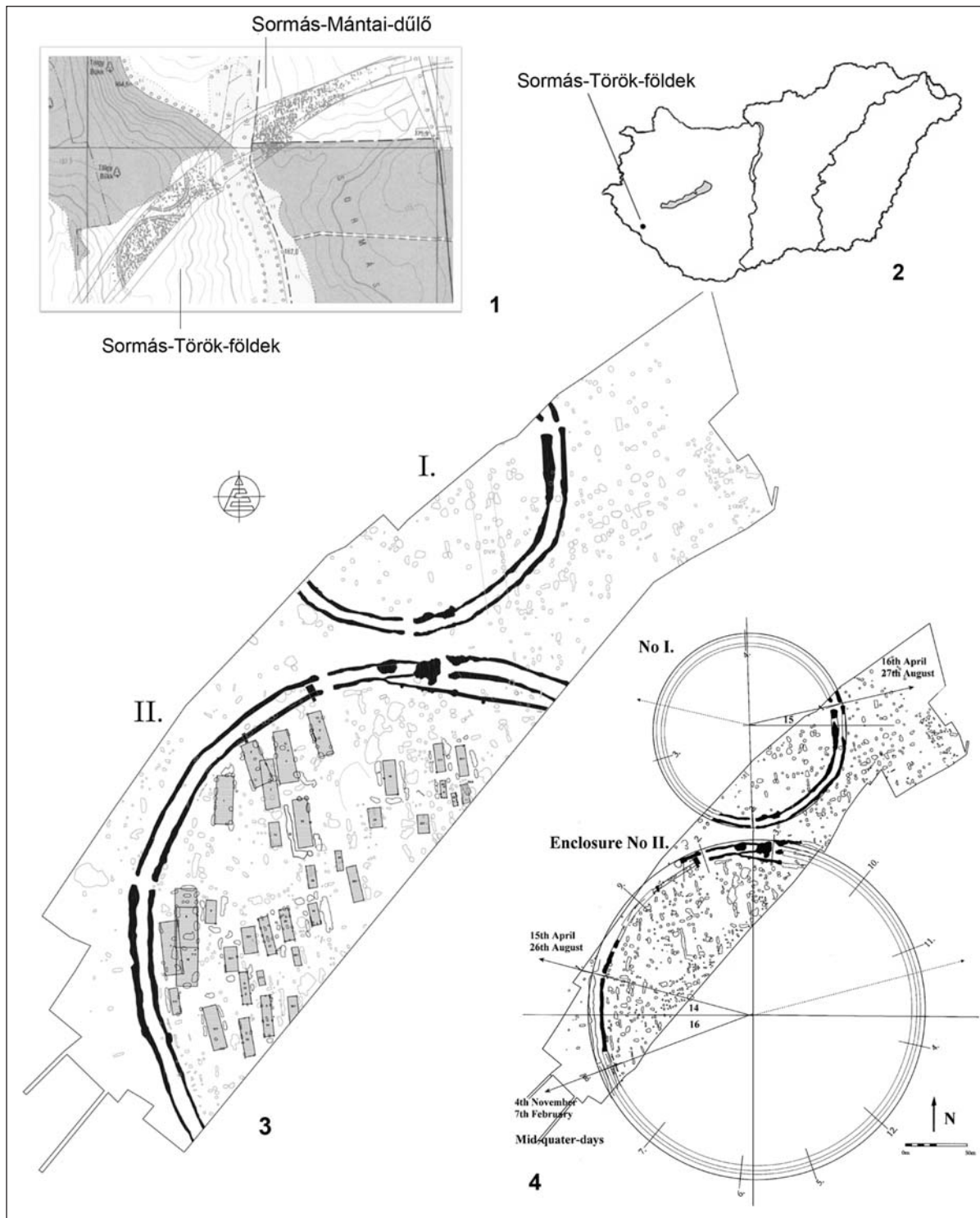


Fig. 1 1 geographical location of the sites at Sormás-Török-földek and Sormás-Mántai-dűlő. 2 geographical location of the site at Sormás-Török-földek, South-western Transdanubia. 3 map showing all the excavated features at Sormás-Török-földek (2002–2003; 2005–2006). 4 reconstructed ground-plans of the two Neolithic Enclosures at Sormás-Török-földek (after Barna and Pásztor 2010).

close to each other not only physically, but also chronologically and culturally.

While the general character of the site has already been described (Barna 2007), we will provide a ge-

neral outline here. The high point of settlement at the site came at the end of the Middle and the beginning of the Late Neolithic period, during the inhabitation of the Sopot and Lengyel cultures. Among other prehistoric cultures, Starčevo and TLPC (Trans-

danubian Linear Pottery) cultures are also represented at the site.

The history of settlement at Sormás-Török-földek

Four different habitation phases can be distinguished in the site. The earliest phase comprised Starčevo culture settlements (the first habitation phase). The Starčevo culture established two different settlements on both sides of the hill at Sormás-Török-földek (Fig. 2)³. The finds of both these settlements can be dated to the beginning of the late phase of the culture (early Spiraloid B phase) (Barna 2010).

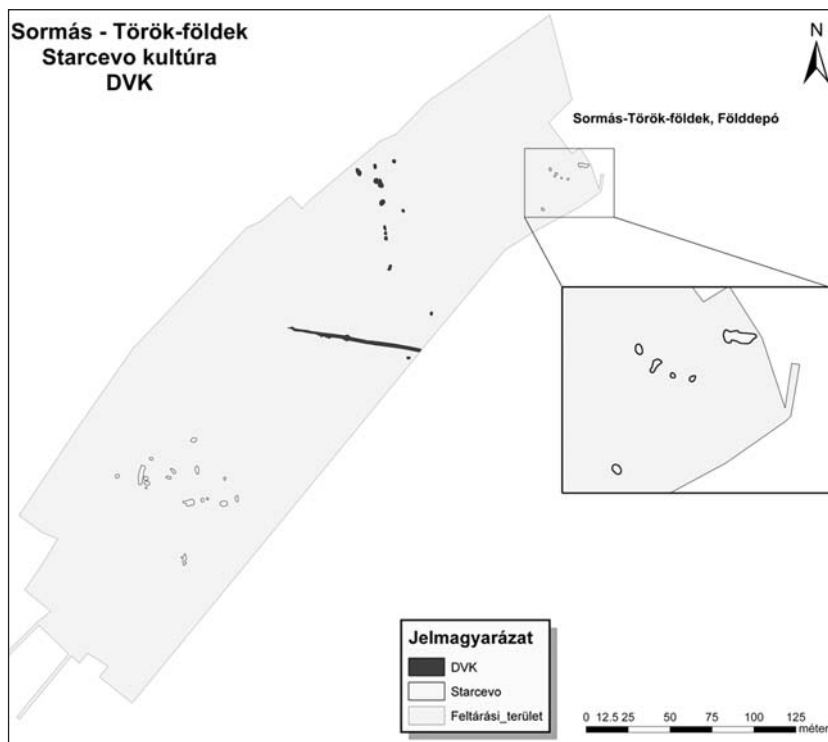


Fig. 2. The site at Sormás-Török-földek during the first and second settlement phases – Starčevo culture TLPC, respectively.

The next occupants were among the people of the Keszthely group of the Central European (Transdanubian) Linear Pottery Culture (TLPC) (the second habitation phase). Only a few settlement features of this phase could be identified – among them various kinds of pit and the site of a long house – since most of the settlement features were destroyed by building activity in later periods (Fig. 2). The location of the house was identified on the basis of the location of pits (the so-called ‘Längsgrube’) on both longitudinal side of the house. This isolated house stood in the southern area of the later enclosure No. I. It was probably part of a homestead. Small, scattered homesteads were also elements of the settlement network of the TLPC, like villages of various sizes (Bánffy 2004a.10). Using the model outlined on the settlement structure of the ALPC by László Domboróczki⁴ (Domboróczki 2009.99–103, Fig. 16; 2010), the big TLPC settlement in the neighbouring site at Sormás-Mántai dűlő may be considered as a *mother* or *central settlement*, and the small one recovered in the site at Sormás-Török-földek may be interpreted as a *satellite* or *daughter settlement*. Being aware of the dense settlement structure of the TLPC in the vicinity of Sormás and in the southern part of Zala coun-

ty, we found this model a well adaptable one. Some sections of the ditches in enclosure No. II date to this habitation phase, especially the straight section in the north-eastern area of the enclosure (Feature 38). It can be seen in the hollow-shaped cross-sections of the ditches and is also supported by the find material recovered here. The nature of the relationship between the long house and this ditch is not yet clear.

The third and the fourth habitation phases are associated with the Sopot (Fig. 3) and early Lengyel (Fig. 4) cultures. These phases were closely linked, as were the two cultures. The cultural and chronological connections between the phases are reflected in the context of the two enclosures. The find material, primarily the pottery, suggests that it is not possible to draw a categorical dividing line between them.

Relative chronology

A general chronology of the Sopot and Lengyel settlements in the site at Sormás-Török-földek has already been published (Barna 2007.366–367). The

³ The maps showing all the excavated archaeological features during different settlement phases were made by István Eke (Hungarian National Museum). Hereby I would like to thank him for his work!

⁴ He outlined a model according to which the settlement structure of the ALPC is constituted of bigger settlements called *mother* or *central settlements* and of small ones encircling the bigger ones. These latter ones are named *satellite* or *daughter settlements*. The bigger settlements are situated 2-3 kilometres from one another, and enjoy the most favourable geographical conditions.

Sopot settlement at the site (third settlement phase) is considered supposed to have been of long duration. The date of occupation partly overlaps with that of the neighboring settlement at Mántai-dűlő, the latest phase probably being somewhat younger. There were at least two Sopot culture inhabitation phases at the Mántai-dűlő site, and three at the Török-földek site (settlement phases 3a1, 3a2 and 3b) (Barna 2010). The chronological difference between the two sites can be seen in the general characteristics of the pottery, primarily in the frequency of red and yellow painted ornamentation. The high number of finds considered to be of ritual character (Fig. 5)⁵ – especially in the Mántai-dűlő – compared to the Slavonian and Croatian Sopot sites, could have been due to a characteristic of the late phase of Sopot culture, and is typical in South-western Transdanubia (see also Petrivente and Sormás-Török-földek). Most of the Sopot figurines are in a seated posture, although at least two standing figurines⁶ (Fig. 5.8a–d) (Barna 2009a) have been identified. At both sites at Sormás, most of the Sopot material finds are of Brezovljani type. The radiocarbon dates for the Sopot features of the site can be found in Table 1.

At the Török-földek site, the longer Sopot occupation may be attested by the relatively greater diversity of house types. Occupation was concentrated within enclosure No. II; the houses of the third settlement phase did not extend over the ditches of the enclosure in any sub-phase. During the heyday of the Sopot settlement, not only single places of houses could be determined, but some household clusters consisting of the unity of a dwelling and a smaller, accompanying building of probably economic function (Barna 2010.Fig. 6.1).

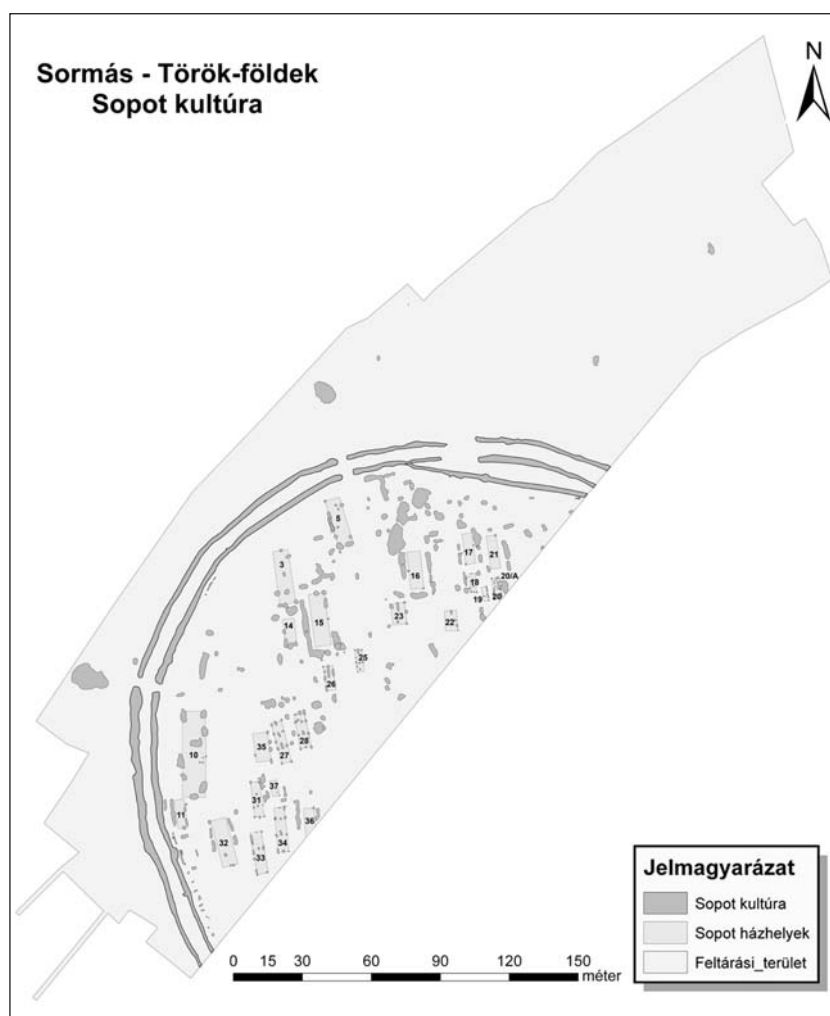


Fig. 3. The site at Sormás-Török-földek during the third settlement phase – Sopot culture.

During the lifetime of the settlement of the early Lengyel culture found at Sormás-Török-földek (fourth settlement phase) at least two sub-phases (sub phase 4a and 4b) can be distinguished. The earlier sub-phase (sub phase 4a) can be identified both chronologically and culturally as the ‘Sé horizon of the Lengyel culture’ after the eponymous site of Sé, Western-Transdanubia (Barna 2010.98–100). Recently, Nándor Kalicz described this period as the formative phase of Lengyel culture or Lengyel 1a (Kalicz 2007.35–36). In this sub-phase, we found among the most characteristic finds a number of Sé-type anthropomorphic figurines (Fig. 7. 5–6, 8–15) and a torso of a Sé-type miniature anthropomorphic vessel (Fig. 7.7a–b). Enclosure No. I was constructed at that time and was used only in this settlement phase. The dwelling-houses of this phase were still being built inside Enclosure No. II.

5 Photos were taken by József Bicskei (Hungarian National Museum). Hereby I would like to thank him for his work!

6 The other piece of find is yet unpublished.

Radiocarbon dates calibrated by the OxCal 4.1 programme and IntCal 09 curve:

Name of the site	Code	BP	Calibrated ages (cal BC)		Sample	Archaeological feature	Bibliography
			1 σ (68,2 %)	2 σ (95,4%)			
Esztergályhorváti	OxA-6274	5730±80	4690–4490	4780–4370	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Esztergályhorváti	OxA-6208	5900±75	4900–4680	4960–4550	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Esztergályhorváti	OxA-6273	5925±65	4900–4710	5000–4610	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Esztergályhorváti	OxA-6271	5970±90	4960–4720	5210–4610	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Esztergályhorváti	OxA-6275	5970±70	4950–4770	5050–4700	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Esztergályhorváti	OxA-6367	6040±55	5010–4840	5210–4780	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Esztergályhorváti	OxA-6272	5990±80	4990–4790	5210–4690	human bone	common grave, Lengyel, formative phase	Bronk Ramsey 1999.202
Sormás–Török-földek	VERA-3538	5855±35	4780–4690	4830–4610	animal bone	Feat. 93 (Lengyel), pit	Barna 2007.367
Sormás–Török-földek	VERA-3539	5865±40	4790–4700	4840–4610	animal bone	Feat. 376 (Sopot), pit	Barna 2007.367
Sormás–Török-földek	VERA-3098	5970±35	4910–4790	4950–4720	animal bone	Feat. 376 (Sopot), pit	Barna 2007.367
Sormás–Török-földek	VERA-3097	5950±35	4900–4780	4940–4720	animal bone	Feat. 259 (Sopot), pit	Barna 2007.367
Sormás–Török-földek	VERA-3535	6065±45	5050–4850	5210–4830	animal bone	Feat. 259 (Sopot), pit	Barna 2007.367
Sormás–Mántai-dűlő	VERA-3101	5985±35	4940–4800	4990–4780	animal bone	Feat. 202 (Sopot), pit	Barna 2007.367
Sormás–Mántai-dűlő	VERA-3103	6045±50	5010–4840	5200–4790	animal bone	Feat. 369 (Sopot, House 7), pit	Barna 2007.367
Sormás–Mántai-dűlő	VERA-3102	6115±35	5210–4980	5210–4940	animal bone	Feat. 316 (Sopot, House 4), pit	Barna 2007.367
Sormás–Mántai-dűlő	VERA-3099	6200±35	5220–5070	5300–5040	animal bone	Feat. 53 (TLPC, Keszthely group), pit	unpublished
Sormás–Mántai-dűlő	VERA-3100	6325±40	5360–5220	5470–5210	animal bone	Feat. 108 (TLPC, older phase), pit	unpublished

Tab. 1. Radiocarbon dates from the sites at Sormás-Mántai-dűlő, Sormás-Török-földek and Esztergályhorváti, Southwestern Transdanubia. Dark grey refers to the TLPC, grey to the Sopot culture, and light grey to the formative phase of Lengyel culture.

The early Lengyel culture settlement is supposed to have been long lasting, and it may be presumed that it survived the initial phase of the culture (sub-phase 4b). This means that the youngest features of the settlement may be dated to the transition between phases Ia and Ib (or even to the beginning of Lengyel Ib) (Fig. 8). It is mainly the features in the territory enclosed by the northern roundel and the features in superposition with the roundel that represent this period. The typical finds of this time horizon – among others – are Olad-type anthropomorphic figurines. Olad-type find material is named after a site at Szombathely-Oladi-plató, Vas County, which is considered to be chronologically the immediate continuation of the Sé site. It is called the 2nd stage of the formative phase (Kalicz 2006; 2007. 37–39; 2009). The find material from this site is still similar to that of the Sé horizon, but there are some significant differences. An outstanding find of this cultural phase is a fragment of a large, mushroom-shaped vessel, richly painted in red and yellow (Fig. 9.9a–d). This vessel is of outstanding importance, since it bears a symbol comprising multiple concentric circles painted in yellow (Fig. 9, 9b); and concentric circles are often interpreted as cosmic or sun symbols.

Absolute chronology. Radiocarbon dates

The radiocarbon dates obtained from the sites at Sormás-Mántai-dűlő and Sormás-Török-földek are collected in Table 1⁷. Some refer to Sopot, and some to the formative phase of Lengyel culture, and two dates refer to the TLPC. The dates of the TLPC (both that of the elder phase and of the Keszthely-group) clearly diverge from the others and are in fit well with data concerning the TLPC published recently by Bánffy and Oross (Bánffy, Oross 2009.234–235). As

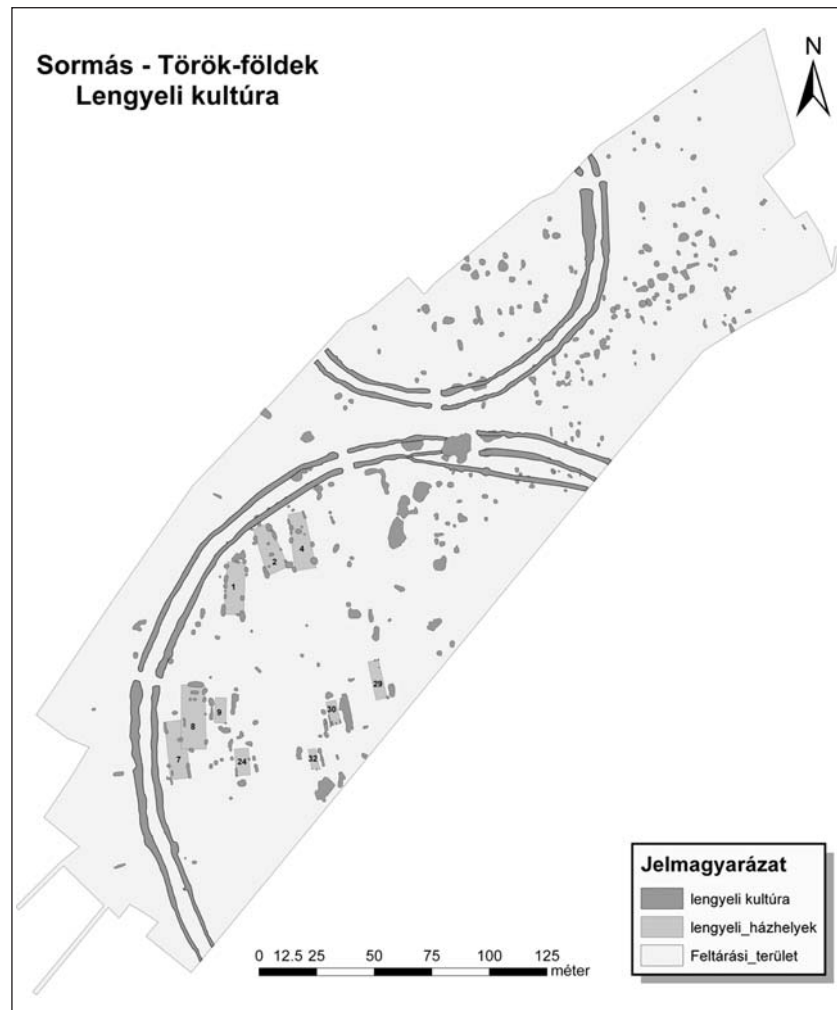


Fig. 4. The site at Sormás-Török-földek during the fourth settlement phase – formative and early phases of Lengyel culture.

can be seen also in the chart (Fig. 10), the dates referring to the Sopot and the Lengyel cultures are very close to each other; some of the Sopot dates cover those of Lengyel culture. This problem has also been noted at other sites in South-western Transdanubia (Kalicz et al. 2007.44). Of the dates that overlap, only the earliest dates of the Transdanubian Sopot culture, which go back to the end of the 6th millennium BC do not fit – as emphasised by N. Kalicz. As for comparative dates referring to the formative phase of Lengyel culture, we use the dates of a unique find assemblage from Esztergályhorváti, in Zala county (Bronk Ramsey 1999.202–203), which is a common grave of the same period (Barna 1996), from which a sequence of seven dates can be constructed (Stadler, Ruttkay 2007.Fig. 1). The early Lengyel cultural context of the common grave was identified on the basis of the ceramic finds in the assemblage (Fig. 11).

7 Hereby I wish to thank Krisztián Oross (Archaeological Institute, HAS) for his useful help.

Archaeological features of domestic character

The archaeological features of domestic character at the Sormás-Török-földek site can be considered typical of a Late Neolithic settlement in Transdanubia, for except the concentric, double round ditch-system (Enclosure No. II) encircling the Sopot settlement. It

is not the erection of a ditch-system itself that is exceptional, but its completely regular, circular ground-plan, and the gates which are oriented in astronomically determined directions (Barna 2007.369–370; Pásztor, Barna 2009.1, kép 1; Barna, Pásztor 2010). These characteristics – among others – suggest that Enclosure No. II might be interpreted not only as a



Fig. 5. Characteristic Sopot finds considered to be of ritual significance. 1–9 Sormás-Mántai-dűlő. 10 Sormás-Török-földek.

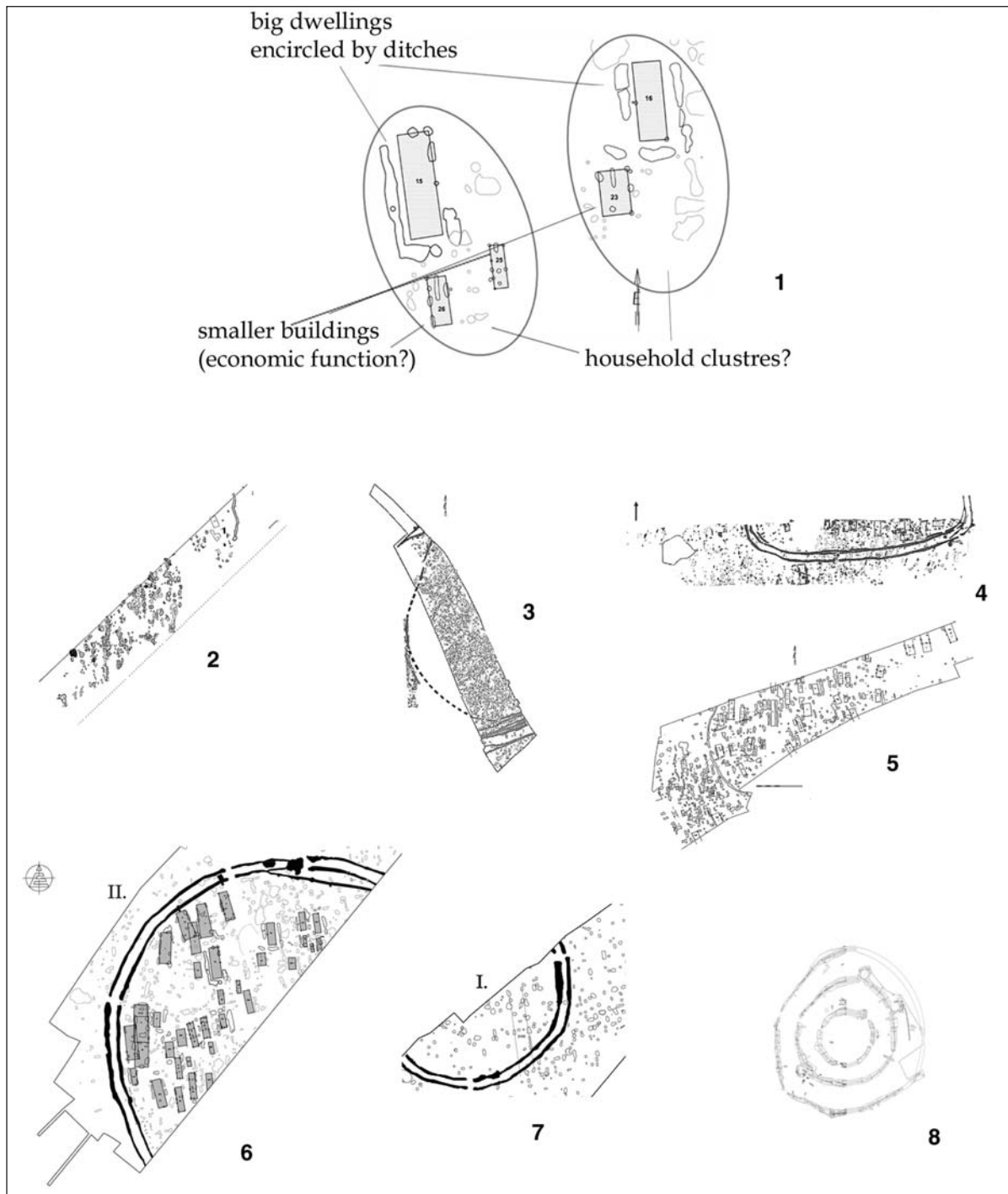


Fig. 6. 1 Hypothetical household clusters at Sormás-Török-földek. Sopot culture (after Barna 2010.Fig. 10.1). 2–8 maps showing all excavated features at Middle and Late Neolithic sites, South-western Transdanubia, representing certain stages of the ‘process of demarcation’. Numbers refer to Table 2.

ditch-system enclosing the settlement (see details below).

Dwellings (Fig. 1.3)

Several types of dwelling houses can be differentiated, some of Sopot and some of Lengyel origin. The exact dating of every house is not yet possible, since the finds are still being processed. It is not our aim

to analyse all the excavated house plans, nor their types, since this work was already done in two other studies; one dealt with the houses of the neighboring Sopot settlement at Sormás-Mántai dűlő (Barna 2009), the other concerning the house types found at Sormás-Török-földek (Barna 2011). All the houses were above-ground, wattle-and-daub structures, with piles of different sizes, with an oblong or slight-

ly trapezoid ground plan. The burned building clay with imprints that were found all over the site are indicative of plastered walls. Any burnt remains of houses were found in their original location, only in secondary position, thrown into refuse pits. The floors of the buildings could not be excavated. Houses could be identified on the basis of diverse structural elements dug into the subsoil (post-holes and foundation trenches). The bigger houses were about 20–25 metres long and 6–9 metres wide. The small buildings were less than 12 metres long and 6 metres wide.

Everyday life focused on the settlement. Regarding its structure, the enclosure, houses and paths through the gates were decisive. It is mainly the path running through gate No. 2 which is important and, unlike the paths running through gates No. 1 and 8, it seems that it remained in use throughout the whole life of the settlement (Fig. 12.3). Each of the other gates (and consequently the paths) probably functioned only in one particular sub-phase. As noted above, all the houses of the Sopot settlement were erected within Enclosure No. II. Furthermore, all the houses of the Lengyel culture were also situated inside the ditches. It is clear from the map showing all the excavated features of the site that the function of Enclosure No. II., at least at first, was to mark the boundary of the Sopot settlement (Fig. 1.3), although with no concrete defensive role – thus it still can be considered as being of domestic character.

Comparing the orientation of the houses of both cultures, different principles can be detected. While the houses erected during the third phase were all oriented North or very close to it, the most frequent orientation is 352°, it seems that the arrangement of the houses built during the 4th phase was ruled by a different principle, alignment with the enclosure. Setting the dwellings in a North-South direction⁸ is not favorable regarding the environmental conditions in the Carpathian Basin; nevertheless, it had a long tradition from the Early and Middle Neolithic (*Bánffy 2004.66–69; Pavúk 1994.68*). When such a conservative principle, or rather the building practice based upon it, alters radically, further changes might be supposed in the background (*e.g.*, changes in world-view, cultural or ethnic changes). The Lengyel dwellings' alignment with the enclosure, with its circular ground-plan, might indicate the growing importance of an idea that the circular enclosures (roundels) represent. The arrangement of the Len-

gyel dwellings in Sormás-Török-földek shows clear and unambiguous signs of attention to the enclosure's layout, but no further rules can be detected, *e.g.*: radial arrangement, like somewhat later in Svodín (*Nemejcová-Pavúková 1995.Beilage 1*) or Polgár-Csőszhalom (*Raczky et al. 2009.Fig. 8*). At the same time, it cannot be excluded that in the Lengyel settlement at Sormás-Török-földek, a very early governing principle has been detected.

The extremely large pits used for clay mining are worth noting, since they show a certain relation to the gates of the enclosures. Three examples have been excavated at the site (Features 23, 909 and 970); they are situated in front of the gates of the enclosures. Two are inside Enclosure No. II, while the third is in Enclosure No. I. They are elliptical or rather irregular in outline. It is assumed that their establishment was in connection with the building activity of the gates or the fortification. As for the fortification, there are no concrete data. In principle, the existence of a fortification cannot be excluded, because the territory between the ditches of the double roundel was empty, or at least there were no contemporaneous features found there.

Differences appeared even in the modes of using the paths in each culture. Whereas during phase 3a1–a2, the path running through gate No. 2 was in use, and during phase 3b another path, the one running through gate No. 1 was used, in the Lengyel period (settlement phases 4a and 4b) no alignments with gates or paths can be detected.

Beside the houses, other types of buildings, probably with economic functions were also recovered. On the one hand, a small structure built up from small, round post-holes, with an incomplete ground-plan should be mentioned here. It may have functioned as a fence or an open sheepfold, which might relate to the keeping of animals in the settlement. On the other hand, traces of steadings may be supposed by the southern end of the big building sites encircled by ditches and pits: they are smaller buildings built up from postholes. A dwelling house, ditches and pits around it, and a steading at its southern end is assumed to have built up together the household clusters. That date to the Sopot culture. The household units provide good examples of the differentiated use of space. The principles underlying the differentiation are economic and practical: the separation of steadings from dwelling-houses in-

8 The orientation of the presumed long house in the territory of Enclosure No. I. is also very close to the North (351°).

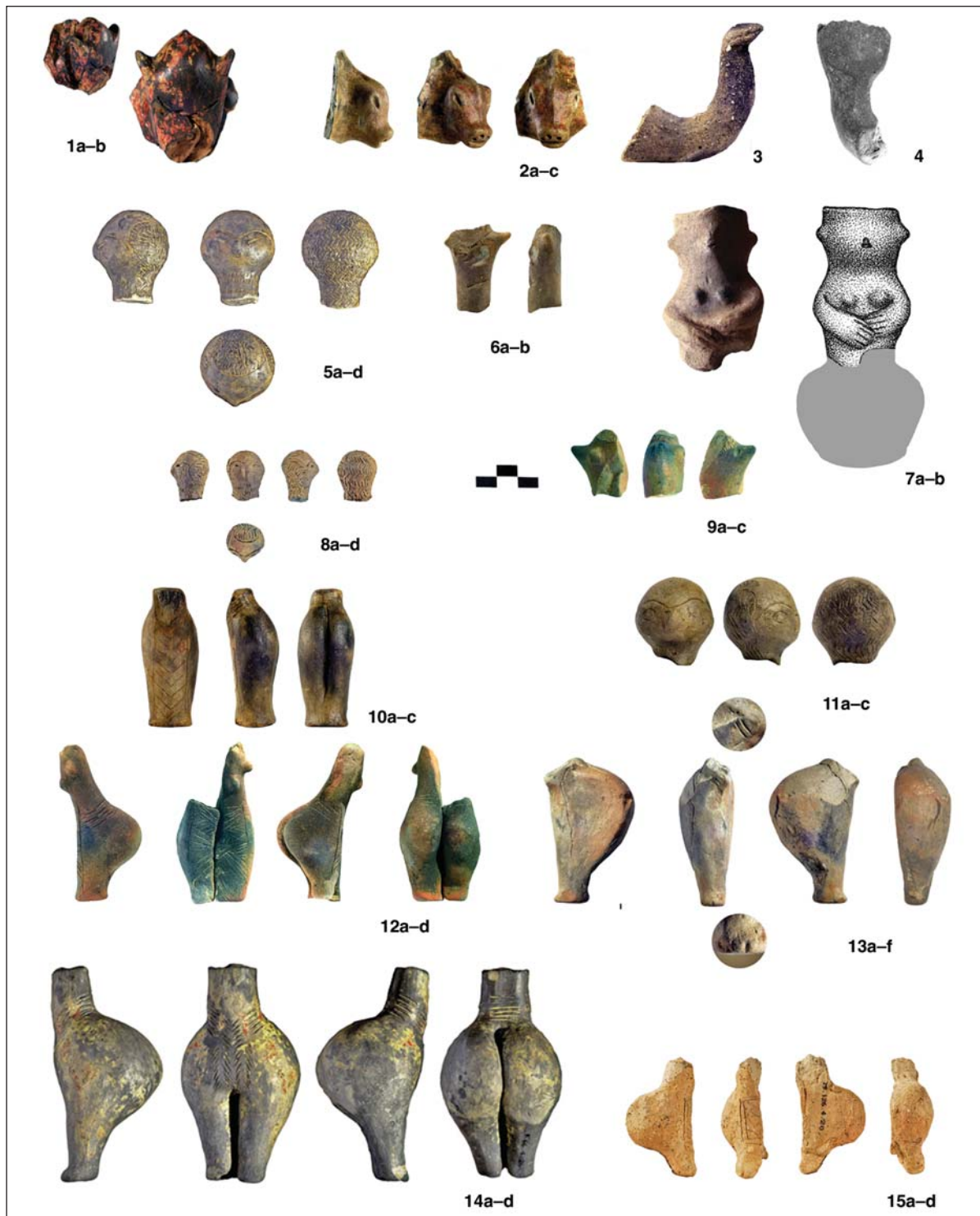


Fig. 7. Characteristic finds considered to be of ritual significance of settlement phase 4a from Sormás-Török-földek. 1-2 applied zoomorphic representations. 3-4 fragments of Svodín type anthropomorphic vessels (after Barna 2009b.Abb. 2, 1-2). 5-6, 8-15 fragments of Sé type figurines. 7a-b fragment and reconstruction of a Sé type anthropomorphic vessel (after Barna in press).

indicates some kind of activity which could not be done inside a house.

A single example of classic storage pits was found in the settlement, north of Enclosure No. II. The conspi-

cuous absence of storage pits may be explained by the custom of storing food inside houses. Food was probably stored inside the buildings, either in big dwelling houses or smaller buildings (steading). In particular, two specific locations may have been used

in this way: after the examples of the Late Neolithic of the Great Hungarian Plain, the rear of houses was used for this purpose (Anders 2009.129). Another potential area of the house is the cellar. In some cases, we may suppose the existence of two-storey houses at Sormás-Török-földek. Two-storey houses are known from Veszprém-Jutasi út (Regenye 2007), Polgár-Csőszhalom (Raczky, Anders 2010.149–150), and Budmerice, Slovakia (Pavúk 2003) of the Lengyel culture. One of the best preserved examples of this house type from the Late Neolithic was excavated at Herpály-Csőszhalom, in Eastern Hungary (Kalicz and Raczky 1984).

Naturally, features of unknown function were excavated at the site, such as small ditches, groups of triple post-holes, pits containing nothing but a little charcoal, etc. These remind us that there remain always some questions without answers. One of these questions relates to the problem of burials. It is not surprising that no cemetery or graves were found at the site, as this is usual in the western territorial group of the Lengyel culture (Kalicz 1998.56). No graves of the Sopot culture were detected. It seems that the settlement was reserved only for the living. Human skeletal remains were excavated in the ditches of the Enclosure No. I. (Features 56 and 31/A1, for particulars see below)⁹.

Archaeological features of possible ritual character

Having reviewed the main elements of the everyday domain, we now discuss the archaeological finds of supposedly ritual character. Most are connected to the enclosures, with two possible exceptions (Features 93 and 638), but they could not be identified with full certainty as sacrificial pits (botroi). Both are Lengyel and are situated in the inner space of the enclosures, and both were situated by paths running through the gates of the enclosures. They share several common characteristics: relatively large dimensions; traces of fire and stratified filling in; rich find material with a lot of painted ware, including exotic or unique finds (bucranium, a whole vessel turned upside down, and so on). A definite interpretation of these features needs further investigations.

The question of the Late Neolithic enclosures (roundels) is complex, principally regarding their function, and it is always subject of heated discussion among

scholars. Notwithstanding the numerous hypotheses, none can be fully confirmed. The possible interpretations have been reviewed several times (Trnka 1991; 2005; Petrasch 1990; Daim, Neubauer 2005; Podborský and Kovárník 2006; Parkinson, Duffy 2007; Raczky, Anders 2010). One possible way to arrive closer to the main point of the discussion is to study the relation between the enclosures and settlement.

We have already seen the close and functional relation between the houses of the settlement and Enclosure No. II. In spite of this, there were no identified remains of buildings in the inner space of Enclosure No. I – discounting a presumed site of a long house dated to the Keszthely-group of the TLPC, which is not contemporaneous with the enclosure.

As Pál Raczky and Alexandra Anders state in some of their latest work (Raczky, Anders 2007.37–38; 2010.145–146), there are visible signs of a special trend at the turn of the Middle and Late Neolithic both in the Eastern and Western areas of the Carpathian Basin, during which different phenomena relating to symbolic-sacred activities appeared in line with ditch-systems or enclosures around the bigger settlements. The site at Polgár-Csőszhalom is an outstanding example of this trend, which the authors call a ‘process of demarcation’, where an area previously separated physically from a settlement by a ditch became distinguished in a more definitive way. Within this isolated area, clear traces of new activities following new rules could be identified. At the beginning of this process, the areas used for domestic and ritual activities were not separated. The classic Lengyel roundels as places of social-ritual activities appeared by the end of this evolutionary progression already separated from territories used for domestic activities. This progression can be well documented in the Middle and Late Neolithic sites excavated in the last decade in Zala county (Fig. 6. 2–8) and exactly in the site at Sormás-Török-földek.

A schematic chart can be seen in Table 2 in which the main characteristics of the Middle and Late Neolithic enclosures recovered in South-western Transdanubia (Zala county) are summarised (Barna 2010). At the earliest site, in the settlements of the TLPC – e.g. in Becsehely (I)-Bükkaljai-dűlő (Kalicz et al. 2007) or Becsehely (II)-Homokos (Barna 2004) – ditches of irregular ground-plans around the settle-

⁹ A complete skeleton of a young woman lied prone on the bottom of one of the extreme big sized pits (Feature 23) (Tóth 2009). It probably dates to the Middle Copper Age and represents the Balaton-Lasinja culture.

ments could be found¹⁰. The cross-sections of these ditches are mostly hollow, and their main function was to enclose the area of the settlement. The earliest ditch excavated in Sormás-Török-földek might have been similar.

At the Sopot culture sites, at the turn of the Middle and Late Neolithic, we can observe a change both in the shape of the ground-plan, and in the cross-section and function of the ditches around the settlements. The ground-plan of the ditch-system of the site at Petrivente-Újküti-dűlő (Horváth, Kalicz 2003, Fig. 1.2; Kalicz et al. 2007) is still irregular, but the cross-sections of the ditches are already V-shaped. The next stage of this evolutionary progression can be recognised in the ditch around the settlement at the Sopot site at Sormás-Mántai-dűlő (Barna 2009, 18–19, Fig. 1.1), which has already some characteristics in common with the roundels of the Lengyel culture: the regular round shape of the ground-plan, the V-shaped cross-section, and the astronomically orientated gate. It cannot be accidental that the orientation of this gate is almost the same as that of gate No. 8 of Enclosure No. II at Sormás-Török-földek (that are set at 13 and 16 degrees) (Pásztor, Barna 2009, 206, Fig. 1.1; Fig. 2.2). In Enclosure No. II at Sormás-Török-földek, three different building phases can be identified: in the earliest phase (settlement phase 3a1) the ground plan is irregular, but the cross-sections of the ditches are already V-shaped¹¹. But in the 2nd building phase (3a2), the shape of the ground-plan was corrected into a regular round form: the two ditches of the enclosure are concentric and both have V-shaped cross-sections. In the light of all these facts, the 2nd building phase of Enclosure No. II. at Sormás-Török-földek can be considered one of the most important stages in the evolutionary progression of the ditches around settlements.

Enclosure No. I illustrates another very important stage. In considering the time of the establishment of the enclosures, it is assumed that only a very short period elapsed between the constructions of the two enclosures, and that Enclosure No. I is the younger of them. This assumption is further supported by the material culture of the two enclosures and some stratigraphic data. It must be emphasised that Enclosure No. I is a typical Lengyel roundel: an isolated space used for special, social-ritual purposes, which is separated from the mundane sphere. As

was already mentioned above, there were no *contemporary* house remains found here.

As a final stage in the progression of Neolithic enclosures in South-western Transdanubia, the triple enclosure excavated at Nagykanizsa-Palin serves as a good example, since it is completely separated from the inhabited area (Tokai 2008; 2010). The separation is so definite, that the settlement in this enclosure is situated on a neighbouring hill-top.

Archaeo-astronomical and geometrical investigation of the roundels

The orientation

Although the orientations of some roundels are assumed to be aligned to the orbit of the moon (Svodín 2(?), Cifer-Pác, Rosenberg (Pavúk and Karlovský 2004), or constellations of bright stars (Immendorf: Gervautz, Neubauer 2005; Steinabrunn: Zotti 2005), the general comparative investigation of the Lengyel roundels supports solar orientation (Pásztor et al. 2008; Barna, Pásztor 2010).

The investigation of the relation between the gates and the sun at the site at Sormás-Török-Földek has revealed some interesting features. The orientations of gate No. 1 of the northern roundel (Enclosure No. I) and gate No. 1 of the southern roundel (Enclosure No. II) signal a standard solar day whereby sunrise (15° NE) and sunset (15° NW) are aligned to these gates. This intentional orientation is also supported by the single gate excavated in the roundel at Sé site, which has the same orientation (15° NE). All these enclosures adhere to the same directional system (Barna, Pásztor 2010) and thus harmonise with the result of the general investigation (Pásztor et al. 2008).

The orientation of gate No. 8 of the southern roundel (Enclosure No. II) is also towards sunset on a special day – the *mid-quarter day* – which might relate an old annual division according to which the turning points and equinoxes of the sun signalled the middle of the seasons, but not their beginning as is the case now. The expressions *Mittersommer* or *midsummer*, for example, are relics of such an old division (Zotti 2005, Abb 3.6).

The only excavated gate of the ditch at the site at Sormás-Mántai-dűlő is aligned in almost the same di-

¹⁰ Radiocarbon dates obtained from that site can be seen in Table 1.

¹¹ As we have already seen, there were an earlier phase of the ditch with a hollow cross section, but it belonged to the TLPC (settlement phase 2 in the site at Sormás-Török-földek).

Period	Culture	Cross-section	Ground-plan	Orientation of the gates	Function	Examples (numbers refer to Fig. 6.)
Middle Neolithic	TLPC	hollow	irregular	no rules	domestic; the settlement border	(1) Becsehely (II)- Homokos (Barna 2004) (2) Becsehely (I)- Bükkaljai-dűlő (Kalicz et al. 2007)
Middle / Late Neolithic	Sopot	V-form	irregular	no rules	domestic/ritual; the settlement border	(2) Becsehely (I)- Bükkaljai-dűlő (Kalicz et al. 2007) (3) Petrivente – Újkúti-dűlő (Kalicz et al. 2007)
	Sopot	V-form	Regular (circular)	astronomically oriented	domestic/ritual; the settlement border	(4) Sormás – Mántai-dűlő (Barna 2009) (5) Sormás – Török-földek, Enclosure No. II.
Late Neolithic	Lengyel (Ia)	V-form	Regular (circular)	astronomically oriented	ritual; separated from the settlement	(6) Sormás – Török-földek, Enclosure No. I.
	Lengyel (II–III)	V-form	Regular (circular); bastions"	astronomically oriented	ritual; separated from the settlement	(7) Nagykanizsa – Palin, Anyagnyerő hely (Tokai 2010)

Tab. 2. Chart summarising the main characteristics of ditches and enclosures in South-western Transdanubia during the turn of Middle and Late Neolithic.

rection. Thus the orientation of these gates might signify the beginning or end of a year or a season counted in an 'alternate' way. Eighteen of the fifty-one roundels investigated (almost one third) have such a gate facing a mid-quarter-day sunrise or sunset (Pásztor, Barna *in press*).

Although early medieval Irish literature might support the existence of an ancient pan-Celtic calendar which divided the year by the mid-quarter days, the earliest evidence for such calendrical divisions comes from the mediaeval period (Hutton 1996.408–411).

While the geometrical features of the ground-plan of the roundels support the assumption of their calendrical function, they cannot be taken as clear evidence. These data, whereby almost one third of the investigated circular enclosures seems to align to a mid-quarter day, however, strengthen the belief that they might have served different functions.

Gate No. 2 of the northern roundel also represents an important direction – true South. All celestial bodies reach the zenith of their daily and annual rotation in the South. This direction is easy to plot, as the sun takes it every day. The significance of North-South is represented not only in the gates, but the positioning of the two roundels relative to each other. They lie on a north-south common axis and the deviation from the precise direction is only 1.6° (Fig. 1.4) (Barna, Pásztor 2010). All this shows how

important the role of the sun might have been for this community. The general location of the Lengyel roundels also strengthens this assumption. They are mostly situated on the southern slope of a gentle hill in order to face the course of the sun through the sky.

If the orientations of the longer axis of the houses are plotted on a chart (Fig. 7.1), clear clustering can be recognised. Most items fall within the range of 345° to 360°, which might signal a preference for the North.

The reason for the small deviation from true North might be that the houses were intentionally built following, the true North, but at the same time with their long axis adjusted to the main path, which setting out of gate No. 2. (Fig. 7.3, 4) heads in the direction of the geometrical centre of the roundel and perpendicular to the direction of the diameter between gate No. 8 and virtual 11. Gate No. 2 has a deviation of about 20° from North, perhaps because of the foundation ceremony of the roundel: the diameter between the gate No. 8 and (virtual) 11 might have been the first one staked out¹² by the *actual sunrise* and then the perpendicular orientation of gate No. 2 was constructed.

All the houses of the different Sopot phases have the same preference for orientation to the North, which proves that this was intentional. However, the Len-

¹² That is the East-West direction.

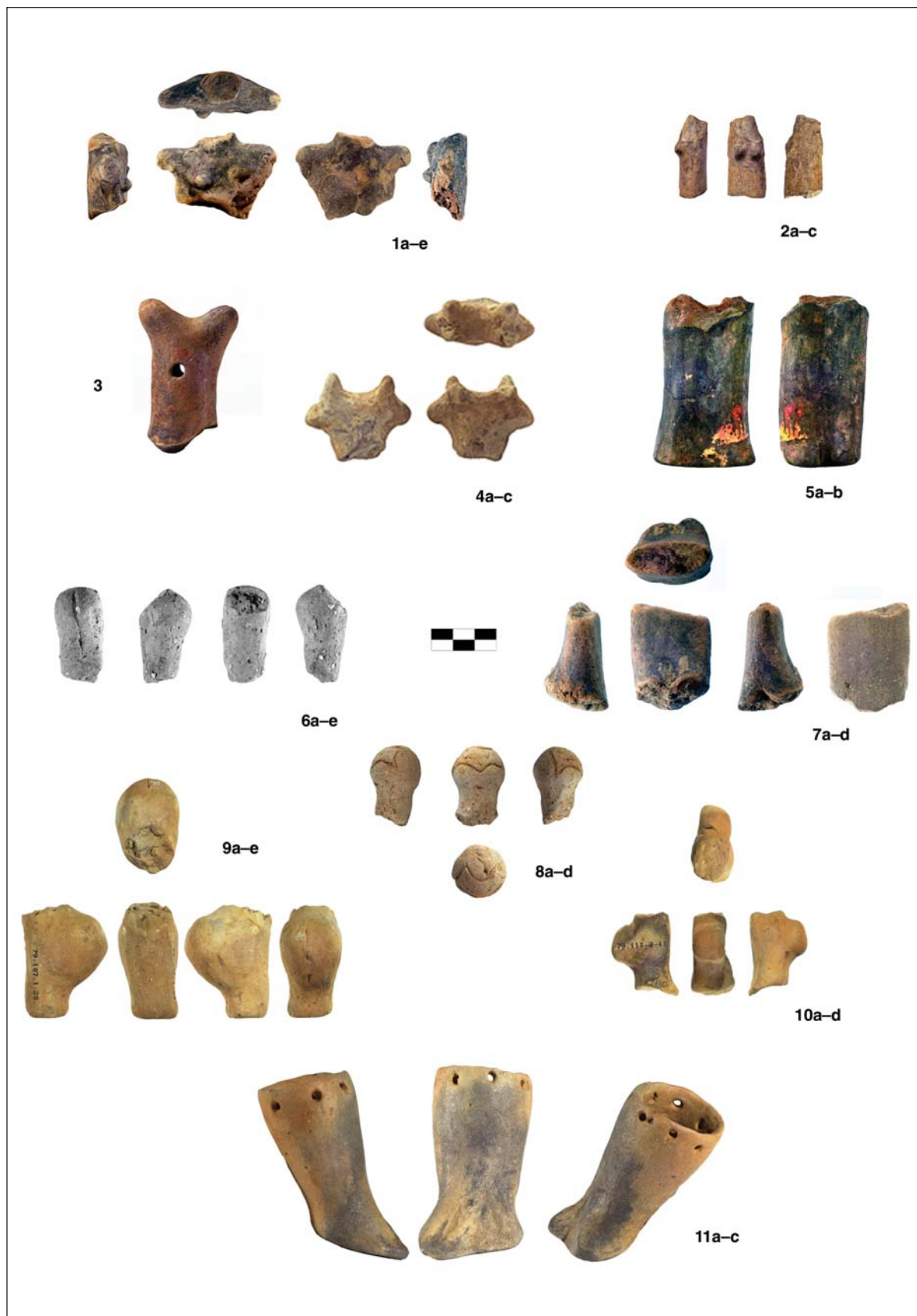


Fig. 8. Characteristic finds considered to be of ritual significance from settlement phase 4b at Sormás-Törökföldek (after Barna 2007; 2007a). 1–2, 6–10 fragments of figurines. 3 stylised animal-headed (?) handle of a lid. 4 animal-headed lid handle. 5 leg fragment of a zoomorphic vessel.

gyel houses during settlement phase 4 were built on a slightly different orientation, which was ruled by the elements/circular layout of the roundel. However, these houses were built so as to avoid crossing the circular ditches and stay inside the circle, probably in order to be protected by its magic power.

The geometrical features of the Lengyel roundels

While the houses were rectangular, the enclosures were circular, which shows something different from the profane, and might signal intention. The circle has so many cosmic-magic-protective meanings from

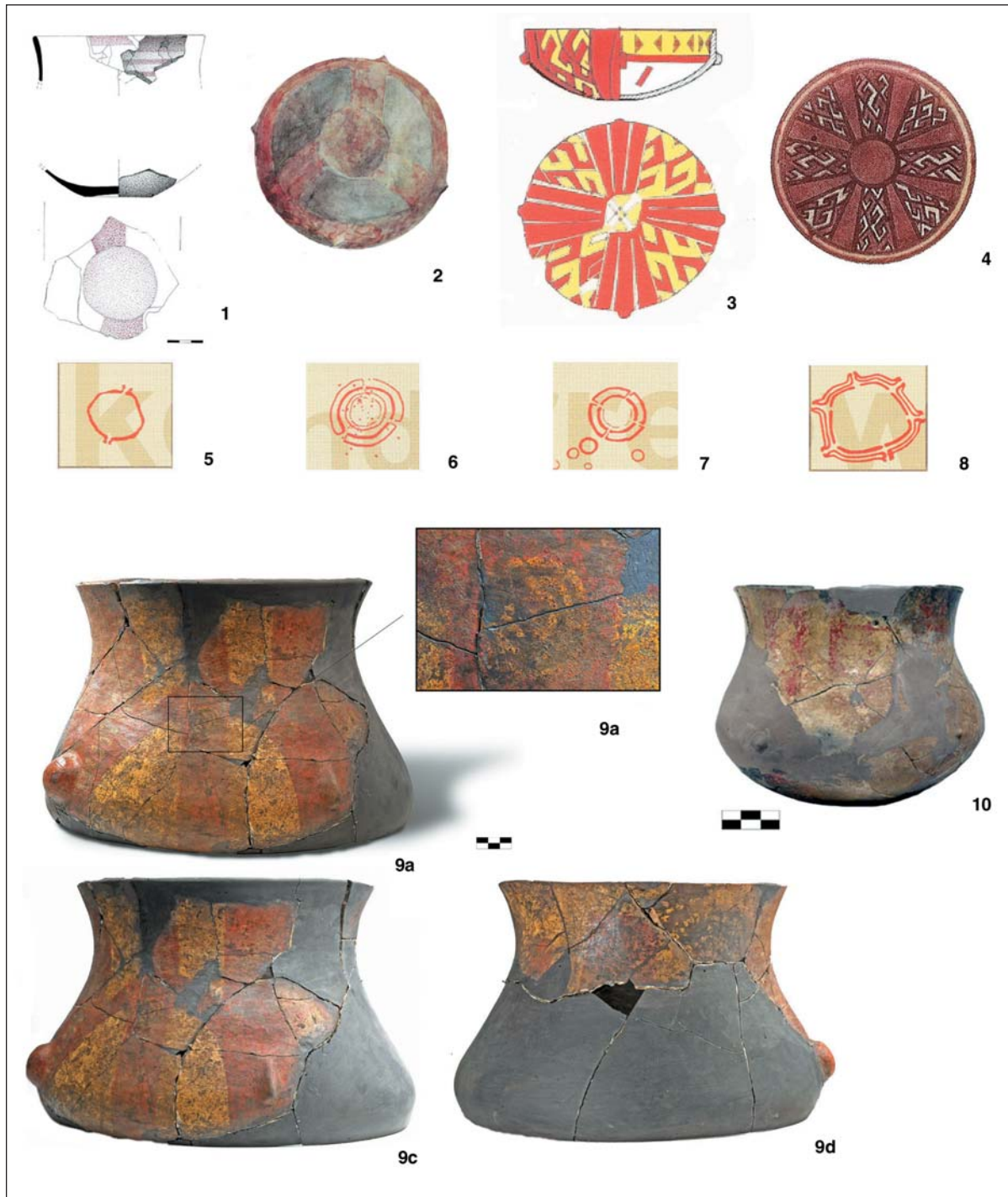


Fig. 9. Presumed symbolic representations on painted ware. 1 Sormás-Török-földek, Enclosure No. 1, Feature 29. (unpublished). 2 Zengővárkony (Dombay 1960.Fig. CXIII). 3 Kamegg (Stadler and Ruttkay 2007). 4 Střelice (Kovárník 2008). 5–8 several variations of ground-plans of Lengyel roundels (after Trnka 2005. Abb. 1.11). 9a–d fragment of a mushroom-shaped vessel painted in red and yellow, Sormás-Török-földek. 10 red painted cup decorated with a ladder motif, Sormás-Török-földek Feature 40.

later records that it must have meant more than a simple spatial demarcation. The diameter of the inner space for most of the roundels falls between 45 and 70m. This means that the communities generally needed an area of 1600–3800m², which might have included 500–1200 people (*Pásztor, Barna in press*).

The proportions of the dimension of a monument can also offer some significant information. A table (Fig. 12.2) shows the ratios of the diameters, the number of roundels having the same ratio and the rate expressed in integers. The border rates – 1,1 and 1,6/1,7 – are the most uncertain, as they do not resolve into whole numbers. There are only a few from these monuments. The earliest roundels in Hungary, two at Sormás-Török-földek and one at Sé, have an equal 1,1 rattoo (see Figure 8.2, grey shaded rows), which might prove the establishment of a shared ideological principle, but in an initial phase. The chart of 58 items proves that the geometrical characteristics of the enclosures with two or more ditches seem to follow a common rule, as the proportions of the diameters have a certain clustering.

For most of the roundels, however, the proportions of the diameters of ditches can be significantly characterised by integers. This also proves the design of the circular enclosures and an effort to raise a monument with harmonised details. In the human subconscious, beauty is strongly based on symmetry and harmonious proportions, on well-proportioned geometric divisions. The proportions for most of the roundels (close to 50%) are 5:4:3 and 7. The last three numbers form the primordial triad; the number seven has religious significance in many cultures and has some astronomical background.

Many roundels have very similar dimensions. This might signal the average population which needed the sacred area, but at the same time it may mark a

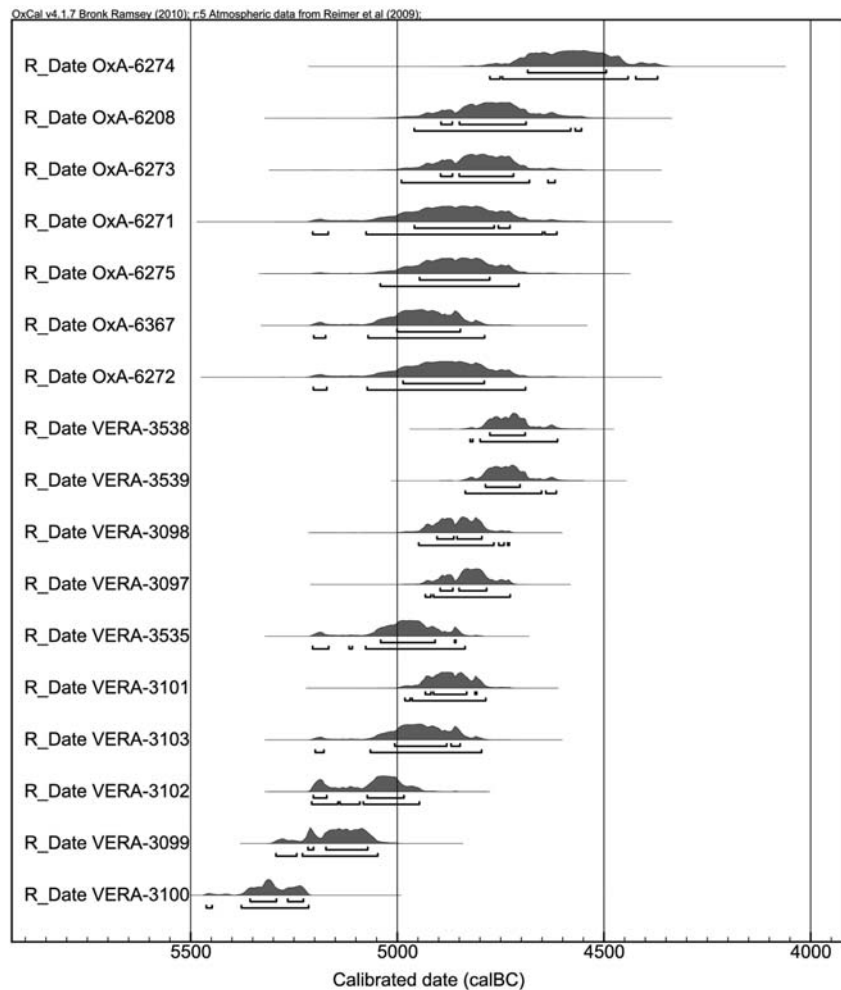


Fig. 10. Radiocarbon dates (calBC) from the sites at Sormás-Mántai-dűlő, Sormás-Török-földek and Esztergályhorváti. South-western Transdanubia.

common diameter, a common step-number for sacred circles. The difference in length might arise from the different step-lengths of the people marking out the ground plan (*Pásztor and Barna in press*).

Lengyel enclosures as spaces for ritual activities

As we have seen earlier, there is a close relation between the function of Late Neolithic enclosures and settlements. Behind the thought of evaluating the Lengyel roundels as social-sacred spaces separated from the mundane sphere, in addition to their physical separation from the settlements, there is also a series of archaeological arguments based on find materials of a ritual character. The site at Sormás-Török-földek, has yielded a lot of data of this type (*Barna 2007.Pl. 5, 6; 2007a; 2009; 2009b; in press*).

The Late Neolithic enclosures, notably the roundels of the early Lengyel cultures, which show a striking similarity in their layout, share a complex symbo-



Fig. 11. Find assemblage of the common grave at Esztergályhorváti, South-western Transdanubia.

lism which is also reflected in their architecture. As was previously proposed also by other scholars (Raczky et al. 2005) the roundels can be interpreted as cosmic symbols. The same can be said of roundel No. I at Sormás-Török-földek. Our interpretation, on the one hand, proceeds from a religion-historical approach and, on the other hand, from archaeological considerations. The religion-historical approach of the enclosures' evaluation is a complex matter, and thus it needs a longer, specific study which we are preparing. Hereinafter, we focus on the archaeological considerations.

It is an often quoted ascertainment that in the areas of the roundels a high concentration of finds can be observed, which are considered to be of ritual character, e.g. small anthropomorphic figurines (Podborský 1985.210; Kalicz 1998.69, 74). The appearance of different phenomena relating to symbolic-sacred activities at larged settlements at the turn of the Middle and Late Neolithic is ascribed to a special trend ('process of demarcation') (Raczky, Anders 2007.37–38; 2010.145). The high concentration of

figurines documented in the site at Sormás-Török-földek may also be connected to the same trend (Barna 2004; 2007.371; 2009.Fig. 1). The above-mentioned statements on the concentration of ritual material, notably the frequency of figurines in the vicinity of the enclosures, have in recent years been questioned by scholars (Bertók et al. 2008.6). These scholars drew their conclusions on the basis of observations made at the site at Belvárdgyula, in South-Eastern Transdanubia, where numerous figurines were collected some distance from the enclosure, even near the boundaries of the Neolithic settlement. In our opinion, this differing archaeological context may be interpreted in two ways: first, it is the different geographical and chronological situations which cause this discrepancy. Secondly, as was later identified at Sormás-Török-földek, a distinction such as 'outside' and

'inside' the enclosure (or far/close to the enclosure) is not reasonable regarding Enclosure No. II, since the whole Sopot settlement was situated *inside* the enclosure (Barna 2010).

At Sormás-Török-földek and also at Sormás-Mántadűlő, further traces of symbolic-sacred activities may be supposed. Here we principally mean the deposition of fragmentary vessels in the outer ditch of Enclosure No. I, and some anthropological finds, such as a human skull and other human skeletal remains, again in the ditches of Enclosure No. I (Barna 2010. 99, Fig. 8.2, 5–6). The practice of burying a *bucranium* in the fill-in of the ditches close to the gates of the enclosures may also be interpreted as a ritual activity; we observed traces of this at both sites at Sormás, too (Barna 2009.Fig. 6.2; 2010.Fig. 6.7). Although enclosures generally lay close to large settlements, their inner spaces are usually empty, free of settlement features. In most cases, enclosures are also physically isolated from settlements, that is, from the mundane sphere. As we have already demonstrated, this consideration can be confirmed at

cially Enclosure No. I) as enclosed spatial units with a religious character having a strong symbolism.

To summarise the main thoughts of this paper, we can state that we found clear evidence of spatial differentiation in the Late Neolithic settlement at the Sormás-Török-földek site. What is important for the moment is that these phenomena have been chronologically determined: we found various kinds of differentiation by the end of the Middle Neolithic (at the Sopot settlement) and then by the beginning of the Late Neolithic (that is, in the Lengyel settlement). The use of space in different ways can be determined by several principles, among which is to separate the territories used for domestic and ritual activities.

Another principle for differentiating space is the separation of the territory of the living and the dead, which is also typical of the Late Neolithic in the Carpathian Basin. Since we found neither a cemetery, nor a single grave in the site, we must suppose that this kind of differentiation occurred at Sormás-Török-földek. The same can be said of the Sopot culture at the Mántai-dűlő settlement. The human skeletal remains excavated in the ditches of enclosure No. I can be interpreted rather as the results of some kind of ritual activity.

A concrete example of the differentiated use of space was detected in the case of the household clusters comprising dwelling, pits and a steading in the Sopot settlement.

At the same time, spaces that were definitely separated physically into the categories of 'domestic or mundane' and 'ritual or sacred' were found only du-

ring the earlier inhabitation phase of the formative Lengyel culture (settlement phase 4a), the active period of Enclosure No. I. It is a typical roundel of the Lengyel culture, with an empty space inside ditches, and was probably used for social and ritual activities. The significance of the site at Sormás-Török-földek lies precisely in the fact that two enclosures were excavated at the site which are of different character, but in a very close relationship with each other physically and chronologically. As regarding their function we can state that they demonstrate exactly the radical change which took place in the mode of use of space. They represent two important stages of the progression as a result of which the separation of territories used for domestic and ritual activities was made physically manifest. Several stages of evolutionary progress can be well illustrated by the big Middle and Late Neolithic settlements excavated in South-western Transdanubia in the last decade. Concerning this evolutionary progress, we conclude that all the changes concerning certain characteristics of the enclosures occurred during the Sopot occupation at the turn of the Middle and Late Neolithic. Secondly, these changes took place in the form of a progression in which three stages can be differentiated. It is remarkable, that the cross-sections of the enclosures were the first characteristics to change – that is, in an unusual way, the formal changes anticipated the functional, which seems somewhat inconsistent. Finally, the perceptible changes in the ground-plans and orientation of the gates of enclosures occur together, at the same time (precisely in the same enclosure – Enclosure No. II at Sormás-Török-földek). This may support the idea that an astronomically determined orientation might be one of the main reasons for the more or less regular, circular ground-plans of the early Lengyel roundels.

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