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The Carpathian Basin and its Role in the Neolithisation of the Balkan Peninsula

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CONTENT

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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.

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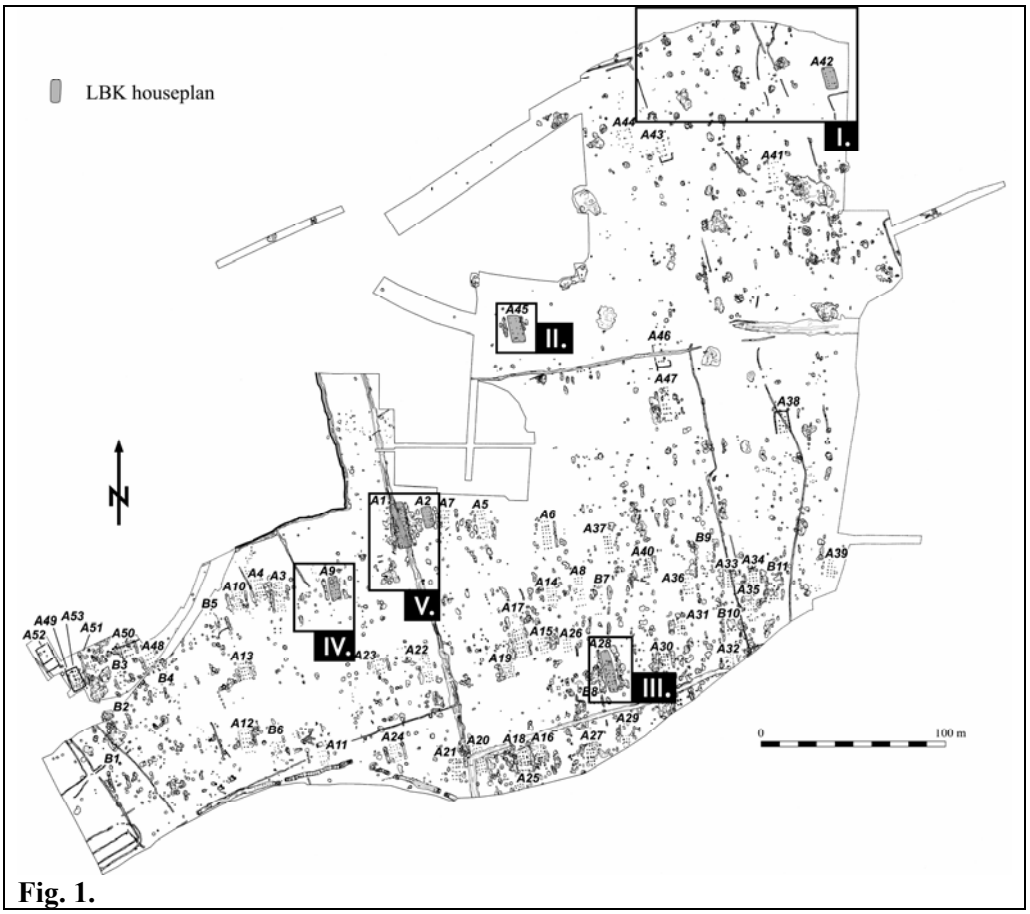


Fig. 1.

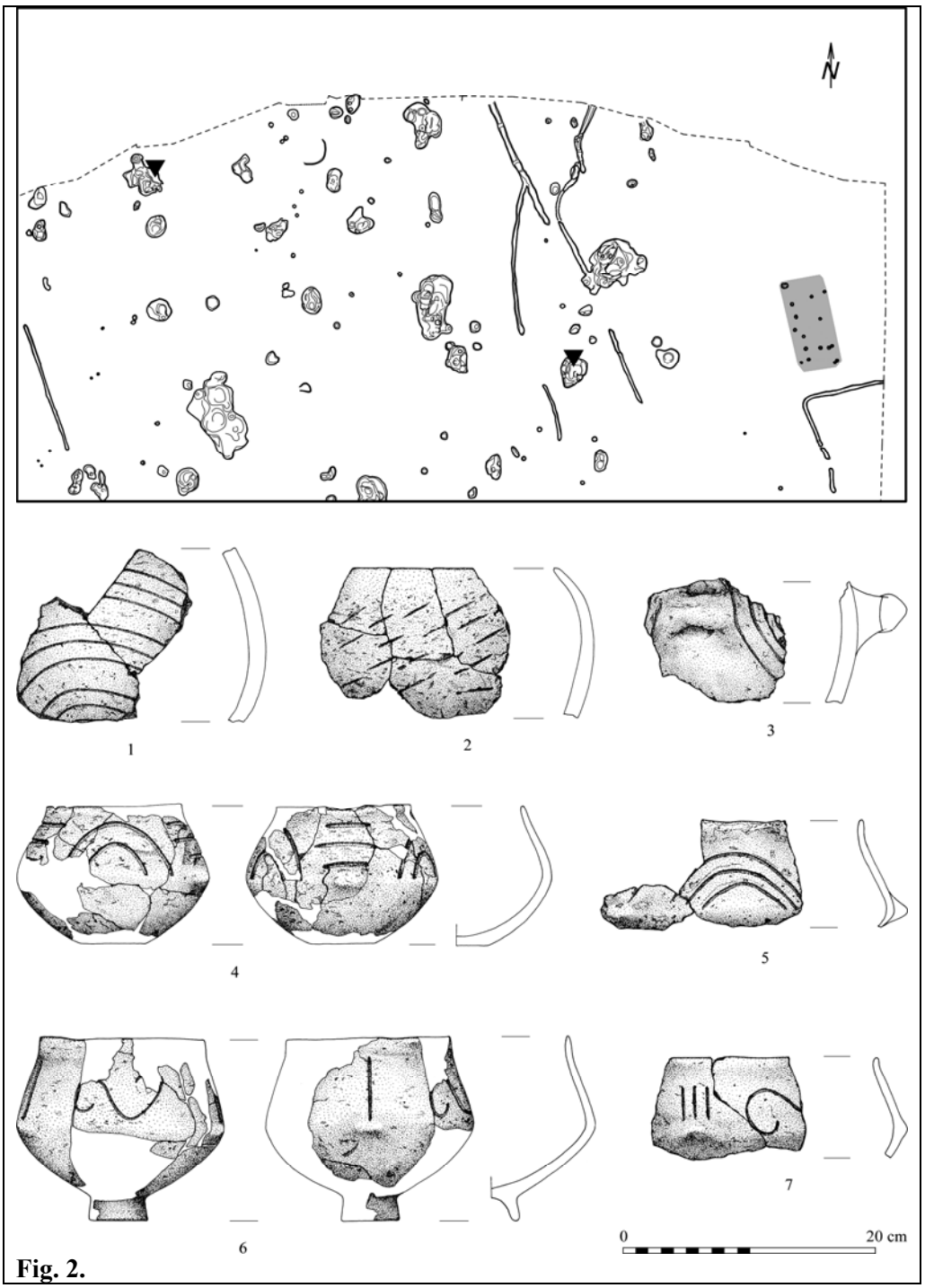
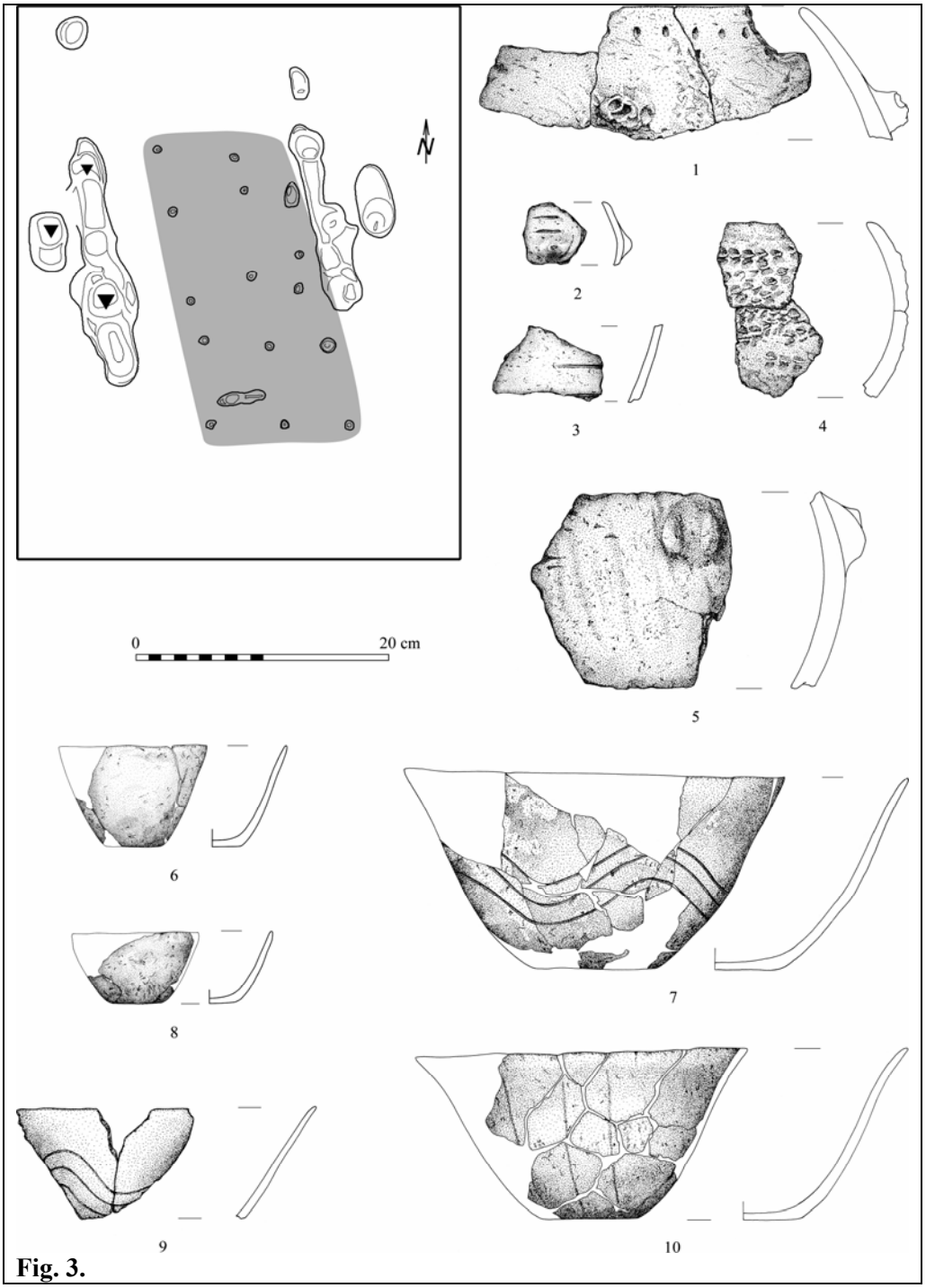


Fig. 2.



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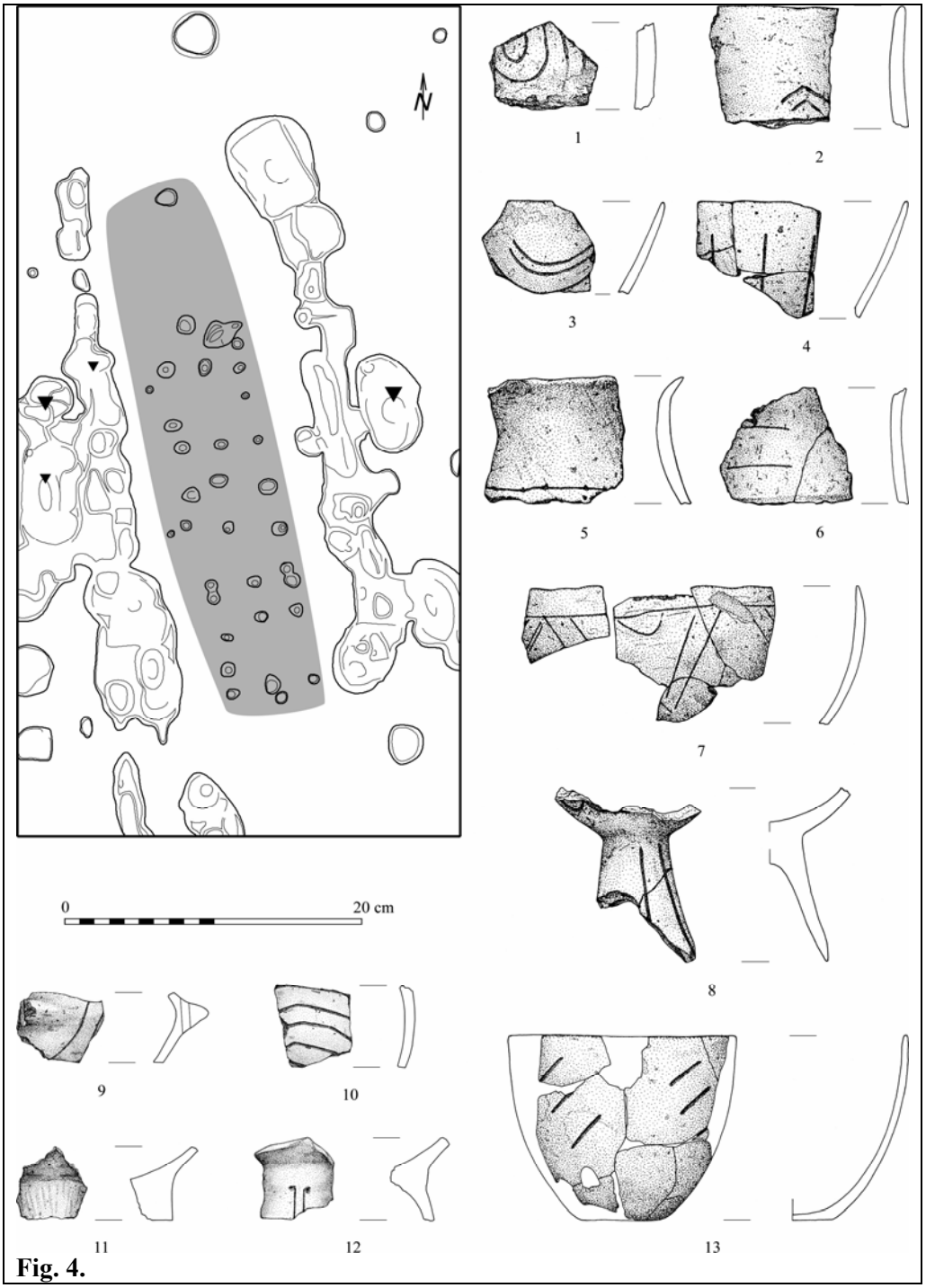

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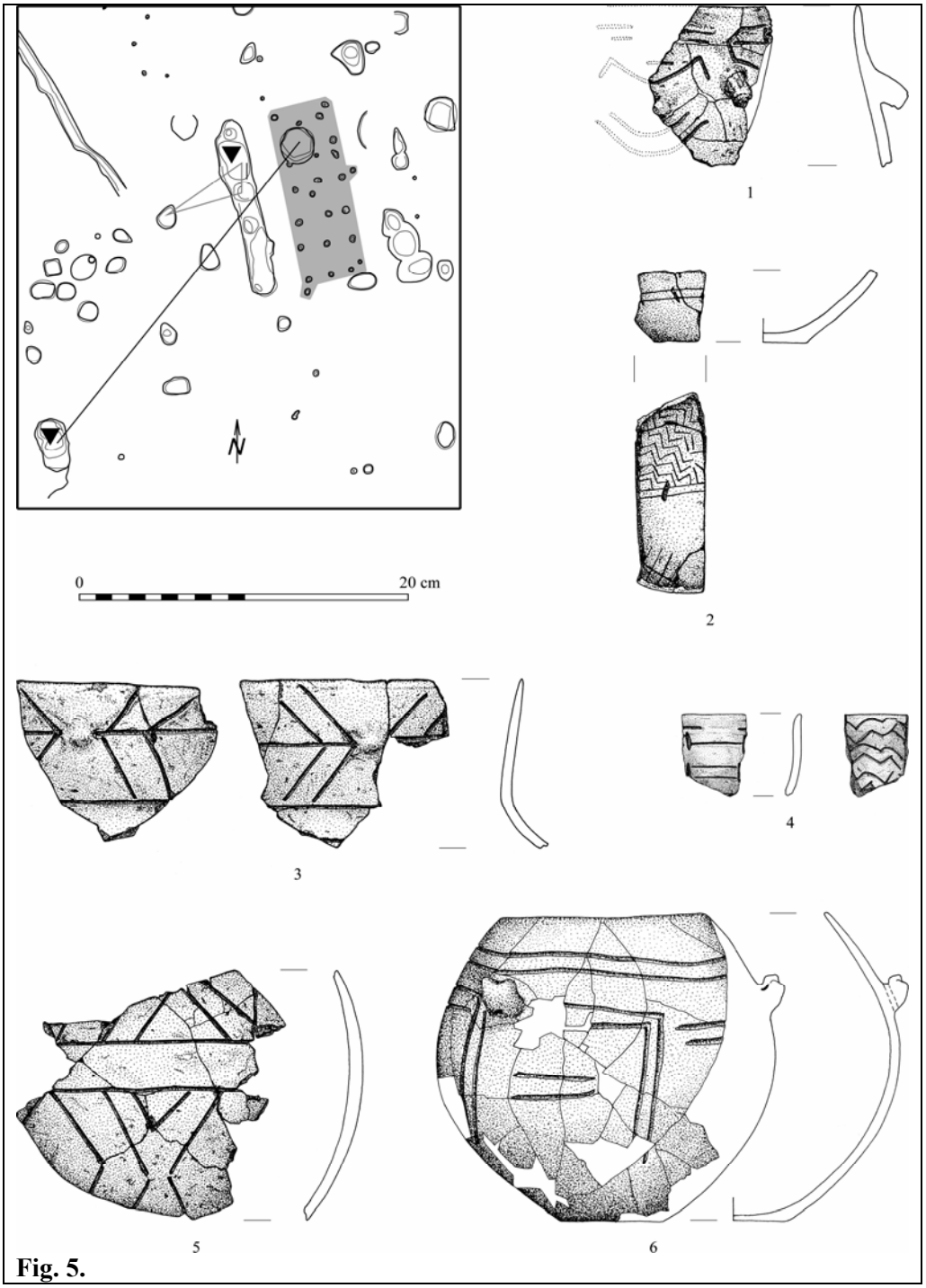

Fig. 5.

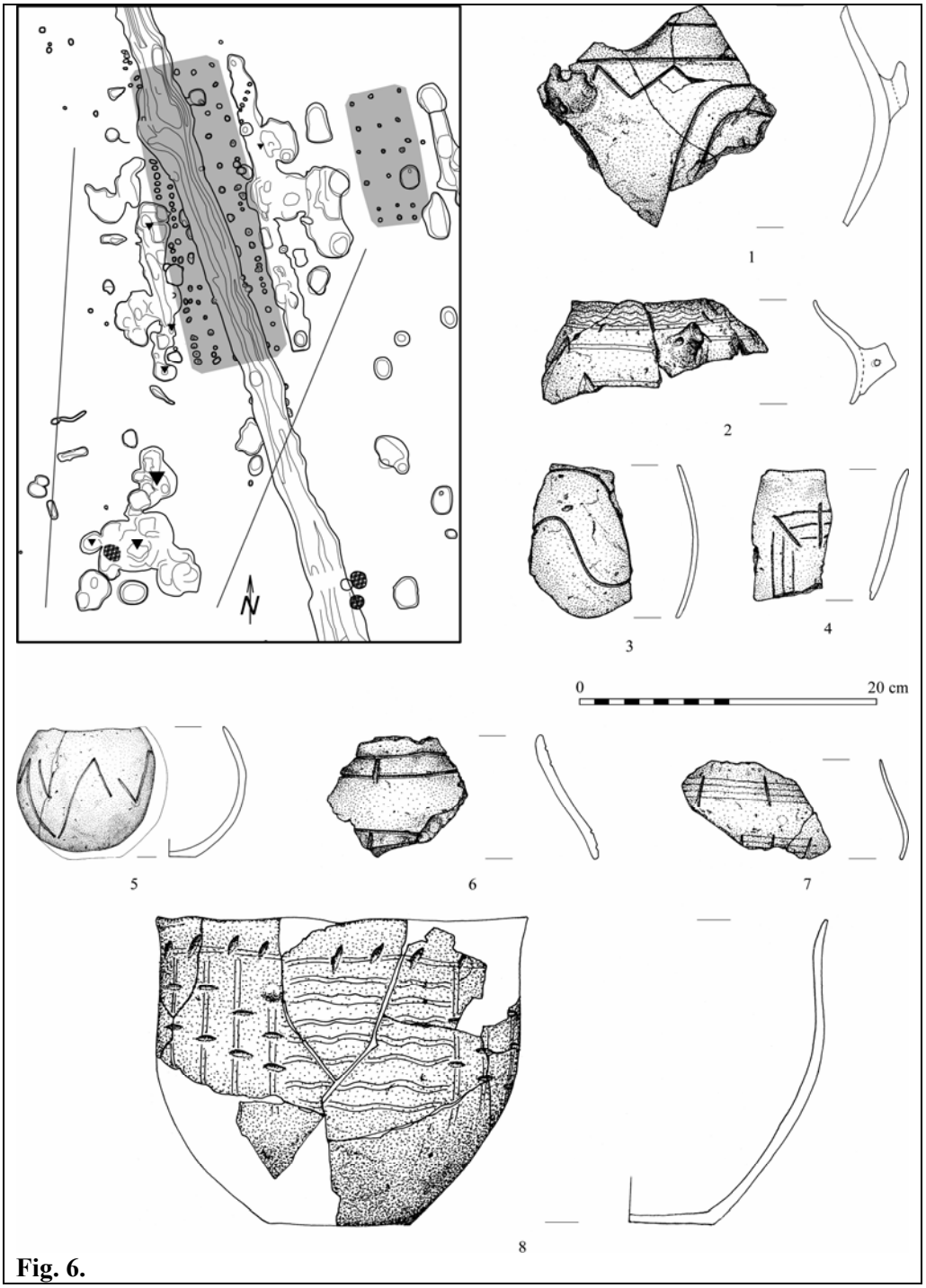

Fig. 6.