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DE L'UNIVERSITE JAGELLONNE
DE CRACOVIE

RECHERCHES ARCHEOLOGIQUES

NOUVELLE SERIE 3



KRAKÓW 2011

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DE L'UNIVERSITE JAGELLONNE DE CRACOVIE**

**RECHERCHES ARCHEOLOGIQUES
NOUVELLE SERIE 3**

KRAKÓW 2011

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EN COUVERTURE

Les types de statuettes en terre cuite mycéniennes de région au Bas-Danube (les répliques modernes), et la reconstruction du spécimen découvert sur l'hameau fortifié de l'Âge du Bronze à Maszkowice (Carpates occidentales extérieures) (Réalisation et photo par E. Przybyła et M. Przybyła)

ADRESSE DE LA RÉDACTION

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Marcin S. Przybyła¹, Magdalena Skoneczna²

**The fortified settlement from the Early and Middle Bronze Age
at Maszkowice, Nowy Sącz district (Western Carpathians).
Preliminary results of studies conducted in the years 2009–2012**

Abstract: Defensive settlement at Maszkowice is one of the best preserved long-lasting prehistorical sites in the Western Carpathians. What appears to be particularly interesting is the first settlement phase of the hillfort, which may be dated to the end of the Early Bronze Age and to the Middle Bronze Age (ca. 1650–1200 BC). The results of studies on materials collected during the field research of Maria Cabalska (seasons 1959–1975), as well as new excavation campaigns (2010–2012), allow us to formulate some conclusions concerning: settlement stratigraphy, spatial distribution of Early and Middle Bronze Age materials, chronology of the subsequent building phases and cultural connections of the populations living in the upper Dunajec Valley during the earlier periods of the Bronze Age. In the context of the last mentioned question what is particularly worth attention are the relics of fortifications in a form of a dry stone wall, discovered in 2011–2012 and connected with the oldest building phase of the hillfort (ca. 1650–1500 BC).

Keywords: Early Bronze Age, Middle Bronze Age, archaeology of Carpathians, defensive structures, hillforts

1. Introduction

For a number of reasons, the timespan around the middle of the second millennium BC is a very particular and important period for the study of the prehistory of Europe. This was the time when the earliest written sources appeared, allowing insights into the previously hidden political, social and religious aspects of the life of the inhabitants of Mediterranean coasts of our continent. It was also

when traces surfaced of the intensive contact between the communities which inhabited vast areas of Europe and on a scale exceeding everything known from other periods of our earlier prehistory. These contacts reached as far as from Scandinavia to the Peloponnese and from southern England (the barrow cemeteries of the Wessex culture) to the North Pontic steppes which were occupied by nomadic groups of the Srubna culture, or even to the Sintašta-Arkaim communities over the Urals (e.g. Lichardus, Vladar 1996; Makkay 2000). Although the precise synchronisation of various civilisation phenomena of the period discussed was a matter of discussion in the past (Renfrew 1968; Vladár, Bartoňek 1977;

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Harding 1984, 276–279; Randsborg 1992, 89–92; Gerloff 1993, 61, 80–81; Vandkilde 1996; Kadrow 2001, 34–65; Peška 2012), it now seems very likely that the wide distribution of new patterns in settlement space planning, warfare (chariots, long swords), decoration (e.g. spiral motifs), grave forms, as well as – according to some specialists – patterns of symbolic thinking and forms of social organisation (e.g. Bouzek 1985; Kull 1989; Lichardus, Vlárar 1996; Kadrow 2001; Kristiansen, Larsson 2005; Vandkilde 2007; Klontza-Jaklová 2012), was the result of the economic ‘globalisation’ of Early Bronze Age Europe (e.g. Sherrat 1993). This process was stimulated mainly by the development of a network of long-distance routes for the exchange of natural resources: copper, tin and amber.

The keystone of this network of contacts are believed to be the groups inhabiting the upland fortresses scattered throughout northern Transylvania and Slovakia, as well as those from tell-sites on the flatlands of the Great Hungarian Plain (Sherrat 1993, 25–29; Vandkilde 2007, 125–130; Makarowicz 2010, 331–367). In archaeological taxonomy, the material relics of these populations are usually referred to as the Otomani-Füzesabony culture or cultural complex (Bader 1998; Furmánek, Veliačik, Vlárar 1999 – with the discussion on terminology). As with many other archaeological cultures, the basic criterion used to define this taxonomic entity is a specific style of pottery decoration, which is based on spiral ornaments.

This cultural tradition played a particularly spectacular role in the formation and further development of the Bronze Age in the western parts of Baltic coast and in the territories along the so-called ‘first amber route’, that is in the Oder and Vistula basins (compare e.g. Jaeger 2010). In the last decade, the first interpretation models of this phenomenon were proposed, mainly in the

spirit of the ‘world system’ theory. In these approaches, societies inhabiting the lowland parts of Central Europe in the middle of the second millennium BC are thought to represent a marginal zone – a kind of an economic hinterland connected by permanent channels of cultural contacts with the civilisation centre localised on the Danube (Kadrow 2001, 230; Górski, Makarowicz 2007, 111–114; Przybyła 2009, 367–384; Makarowicz 2010, 333–367, 391–392).

Scholars looking for the source basis to verify these models have already given relatively much attention to the detailed characteristics of the context in which the products of the Otomani-Füzesabony culture occurred on the sites of the so-called Trzciniec cultural complex in the Oder and Vistula basins, i.e. in the marginal zone of the reconstructed system (e.g. Dobrzańska, Rydzewski 1992; Makarowicz 1999; Dąbrowski 2004; Górski 2007; 2011; Muzolf, Muzolf 2010). The other partner in the discussed exchange, namely the societies representing the northern periphery of the Danubian cultural centre, still remain much less well-known. According to the current state of knowledge, this periphery is marked by a group of archaeological sites (almost exclusively settlements) situated in the foreland of the Beskid Niski mountains and in the Dunajec River valley. Structures (layers, features) have been discovered at these sites containing pottery typical of the Otomani-Füzesabony culture accompanied by artefacts representing the Trzciniec complex (e.g. Gancarski 1994; 2002; Górski 2007; Przybyła 2009, 171–181, 201–236).

So far, studies on this group of sources have produced two alternative explanations for the appearance of the sites with Otomani-Füzesabony pottery north of the main range of the Carpathians. According to the first (Gancarski 1992, 44; 1994; 2002, 109), firmly in the spirit of culture-historical

archaeology, the valleys in the northern approaches to Carpathian passes were colonised at the end of the Early Bronze Age (phase BrA2/BrB1). This process supposedly resulted from the fact that the groups previously inhabiting the northern fringes of the Great Hungarian Plain were driven deeper into the mountains by the Tumulus culture expanding from the upper Danube basin. It is worth noticing that this reconstruction fits into a long-discussed broader picture of the period of political turmoil in the Carpathian Basin corresponding with the times when the hoards of Koszider horizon were deposited (BrB1) (recently: Dziegielewski, Przybyła, Gawlik 2010, 10–15 – with earlier literature cited therein). The second interpretation (Kadrow 2001, 212, 237; Przybyła 2009, 367–374) posits that both in the mountain valleys of Slovakia and to the north of the Carpathian Arc, the appearance of Otomani-Füzesabony pottery style was due to the gradual adoption of certain cultural patterns from the south by local groups of the so-called Carpathian Epi-Corded Ware culture complex rather than as a result of migration. This process could rely on direct contact between individuals representing the two cultural traditions, taking place during the exchange of goods or as a result of marital migrations. At the same time, this interpretation assumes a higher attractiveness, or even higher prestige value, of southern patterns, which was connected with the fact that groups from the Carpathian Basin controlled copper deposits.

Although the two conceptions mentioned above are totally different in terms of the postulated mechanisms of cultural change, they nevertheless share one view, namely the assumption that in the entire Polish Carpathian zone the appearance of Otomani-Füzesabony materials took place relatively late (in phase BrA2/BrB1, i.e. in the 17/16th century BC) and was preceded by the earlier

settlement of Epi-Corded Ware cultures (especially the so called Pleszów group of the Mierzanowice culture). It should be emphasised, however, that this view is based almost exclusively on the observations made during the investigation of a fortified settlement at Trzcinica in the Jasło district – on the stratigraphic sequence recorded there and on the series of radiocarbon dates it produced (Gancarski 1992, 46; 1994, 77; 1999a, 146–151; 2002; 2006; compare also e.g. Thomas 2008, 345; Šteiner 2009, 123). As has often been mentioned (e.g. Czopek 2012, 62), information concerning the other Otomani-Füzesabony sites from the Polish Carpathian zone is incomplete and does not allow for credible generalizations to be made.

This last remark is particularly true for finds from the upper Dunajec valley – an area quite remote from the Jasło-Krosno Basin (where the Trzcinica settlement is located), and geographically connected with the mountain valleys of central Slovakia and not directly with the Tisa basin. The key site for studies on the Early and Middle Bronze Age in this area is the hillfort at Maszkowice, in the Nowy Sącz district. The site occupies a small plateau (ca 0.5 ha) on a promontory called ‘Góra Zyndrama’ (‘Zyndram’s Hill’), elevated approximately 50 metres over the valley of the Dunajec River (Fig. 1).

The results of detailed analyses (Przybyła, Skoneczna, Vitoš 2012) allow for the conclusion that such a location offered an optimal combination of defensive and economic advantages. In the years 1959–1975, the settlement at Maszkowice was the scene of large-scale excavations which, apart from numerous finds dated to the Late Bronze Age and Iron Age, also yielded fragments of Otomani-Füzesabony pottery. The bulk of the latter was discovered in a deep pit excavated in the years 1971–1972 (Cabalska 1974; 1974a). Although the discoveries made at that time suggested great cognitive

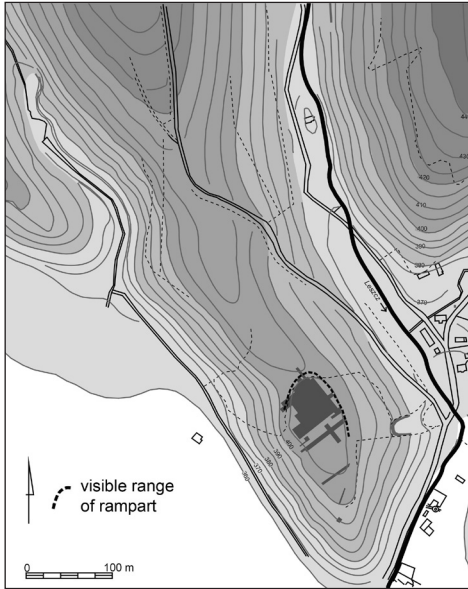


Fig. 1. Localisation of the Early and Middle Bronze Age fortified settlement on 'Góra Zyndrama' at Maszkowice, Nowy Sącz district

potential for the hillfort at Maszkowice, the results have never been fully published. As a result, despite often expressed opinions about its importance (e.g. Czopek 2005, 42), the site remained generally unknown.

The project of the full investigation and analysis of artefacts collected during the excavations at Maszkowice, realized in the Archaeological Institute of Jagiellonian University since 2009, aims to change this situation. In this paper we will present selected results obtained within the framework of this project, concerning the oldest phase of the Maszkowice settlement development (Early and Middle Bronze Age). In our view, the analysis of documentation and artefacts from previous investigations, together with the results of new excavations conducted on the site in the years 2010–2012, allows us to attempt to answer questions that seem crucial for the interpretation of cultural phenomena recorded in the Polish Carpathian zone at the end of

the Early Bronze Age. We will thus discuss how the materials from Maszkowice influence the chronology of the earliest Otomani-Füzesabony finds north of the Carpathians, is the succession of Transcarpathian materials after the Epi-Corded Ware complex really universal for the Polish Carpathian zone, and finally, what is the character of connections linking Early and Middle Bronze Age settlements from the Polish Carpathian zone with their counterparts from the Danube basin – are they deeper or limited to the similarities in pottery alone.

2. Analysis of sources

Source basis

Excavations conducted on the fortified settlement at Maszkowice in the years 1959–1975, led by Maria Cabalska from the Jagiellonian University, resulted in uncovering nearly half of the site's area (a total of ca 2100 m²) and yielded a collection of tens of thousands of artefacts. The methodology of the old excavations, as well as the state of preservation of the original documentation, impose serious constraints on the possibility of using the results, and also for the issues discussed in this paper.

Proceeding from the reconstructed plan of the site and available field documentation it may be concluded that during the entire, very long period of the functioning of the site, settlement activity was concentrated along the eastern and northern edges of the plateau, in the direct vicinity of the fortifications. The cultural layers recorded in this 'edge' part of the settlement represent two main phases of occupation: (1) dating to the Early and Middle Bronze Age, (2) dating to the timespan from the Late Bronze Age to the La Tène period (Fig. 2).

During the excavations of 1959–1975, the unearthed materials were recorded within successive arbitrary layers having the

thickness of 20 cm, within the excavation units 5×5 m each. This makes attributing the finds to particular structures or layers very difficult. However, for the zones where cultural layers were deposited more or less horizontally rather than on the slope, it was possible to demonstrate a noticeable correlation between the chronology of artefacts and the depth at which they were discovered (Przybyła, Skoneczna, Vitoš 2012, 233–237). The information concerning the distribution of artefacts in mechanical layers may be supplemented with the conclusions from the analysis of field documentation. Its preserved part includes mainly colour drawings of cross-sections and plans recorded on selected depths. However, the varying quality of the drawings and incomplete documentation means that any interpretation – including the one proposed in this paper – is now possible only through the reference to the observations made during new field works.

These works were conducted in the years 2010–2012. Initially, their only goal was to verify the conclusions drawn from the analysis of previously known materials. However, they produced information that has led to a complete re-evaluation of previous opinions about the discussed site. This primarily applies to the issues concerning the chronology of the oldest phase of the settlement on ‘Góra Zyndrama’, and the origin of the structures and layers representing it. The new excavations encompassed, among other places, the eastern edge of the settlement, which was cut with three trenches (trenches 1, 2, and 6) covering a total area of 112 m² (Fig. 2). Due to the fact that a significant part of the site had already been excavated in the past, we tried to implement methodological solutions that would provide maximum information from the smallest excavated area possible. The exploration was conducted within arbital layers 10 cm thick, tracing the borders of the layers

discernible at successive depths and making the planigraphy of the material. As a result, we obtained a three-dimensional picture of the arrangement of layers and artefacts distribution in the investigated part of the site. Thanks to that, a further, detailed analysis was possible where a spatial distribution of selected attributes was taken into account.

We will begin the discussion of our results by presenting some general remarks concerning the distribution of artefacts and structures dating from the Early and Middle Bronze Age within the zone investigated in the years 1959–1975. We will also describe complex stratigraphical sequence of deposits in the eastern part of the hill, investigated during the recent excavations. Next, a spatial distribution of technological and stylistic attributes of pottery will be analysed. Finally, detailed observations derived from applying the selected analytical methods to the materials from old and new excavations will be used to formulate more general conclusions concerning chronology and cultural context of the investigated site.

Distribution of Early and Middle Bronze Age artefacts

A systematic survey of the entire collection of materials originating from old excavations on the Maszkowice settlement reveals some regularities in the distribution of pottery that shows stylistic or technological traits of the Early and Middle Bronze Age (Fig. 3). Such materials were rarely found in concentrations higher than 100 shards per one 5×5 m trench. The highest saturation with artefacts attributed to the discussed phase is recorded on the northern and eastern edges of the settlement. Here, in two places where a particularly large quantity of pottery was discovered, it has also been possible to identify (based on the preserved field documentation) the

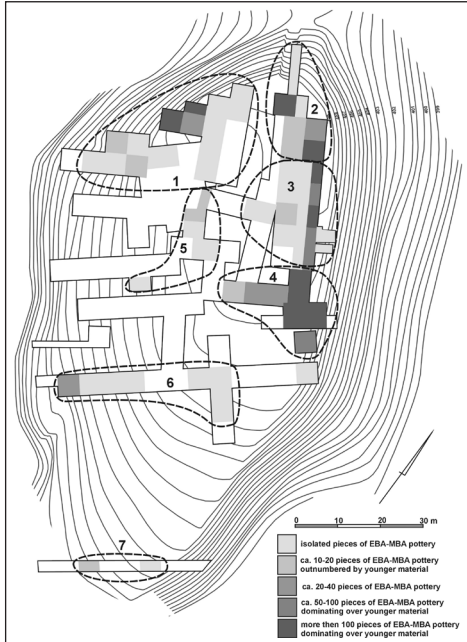


Fig. 3. Distribution of Early and Middle Bronze Age pottery in the area explored in the years 1959–1975 and 2010–2012.

relics of cultural deposits. The first of these zones we called cluster 1. It is situated next to the north-western part of the fortifications. During the investigations in 1967, a layer of brown colour was recorded there, clearly distinguishable from younger sediments dating to the Late Bronze Age and Early Iron Age. This layer seemed to have the form of a relatively narrow lens, 20 cm thick, stretching along the ramparts over a distance of ca 6 metres (Fig. 4:2). The second distinct concentration of material, located near the north-eastern corner of the fortifications, was called cluster 2. During the 1960 and 1961 excavations a patch of brown cultural layer of Early and Middle Bronze Age origin was discovered in this zone as well (at the depth of 1 m) (Fig. 4:1). To the south from cluster 2, a cultural layer from the discussed period does not appear,

as can be deduced both from the analysis of the old documentation and from the results of new excavations (trench 1 from seasons 2010–2011). However, a concentration of pottery from the Early and Middle Bronze Age (cluster 3) was also discovered there, especially near the edge of the promontory. We will explain this phenomenon in the later part of the paper.

Definitely the largest collection of materials from the time period in question was discovered a little further to the south, although still close to the eastern edge of the plateau (cluster 4). In this part of the site, recent excavations (trenches 2 and 6 from the years 2010–2012) revealed thick cultural deposits forming a complex stratigraphic arrangement. The vast majority of artefacts discovered in this area during old excavations were found in the fill of a very deep pit, explored in the years 1971–1972. According to the preserved documentation, the feature was 450 cm deep, with a diameter of up to 350 cm. Its fill was most likely stratified, with distinct layers of ashes, and contained ca 5000 fragments of pottery from the Early and Middle Bronze Age, as well as very numerous animal bones and charred organic material (wood charcoals, cereal grains) (Fig. 5).

Based on the data available, it is difficult to propose an interpretation of this feature other than its very general identification as a storage or waste pit. However, it is worth noticing that the shards found in the lower part of the pit (beneath the level of 250 cm) show much less fragmentation than those collected from the cultural layers adjoining the pit.

Concentrations of Early and Middle Bronze Age artefacts were also recorded in the central (cluster 5) and southern (cluster 6) parts of the promontory. However, their number is significantly smaller as compared with those discovered in the already discussed clusters from the northern and eastern edges of the site.

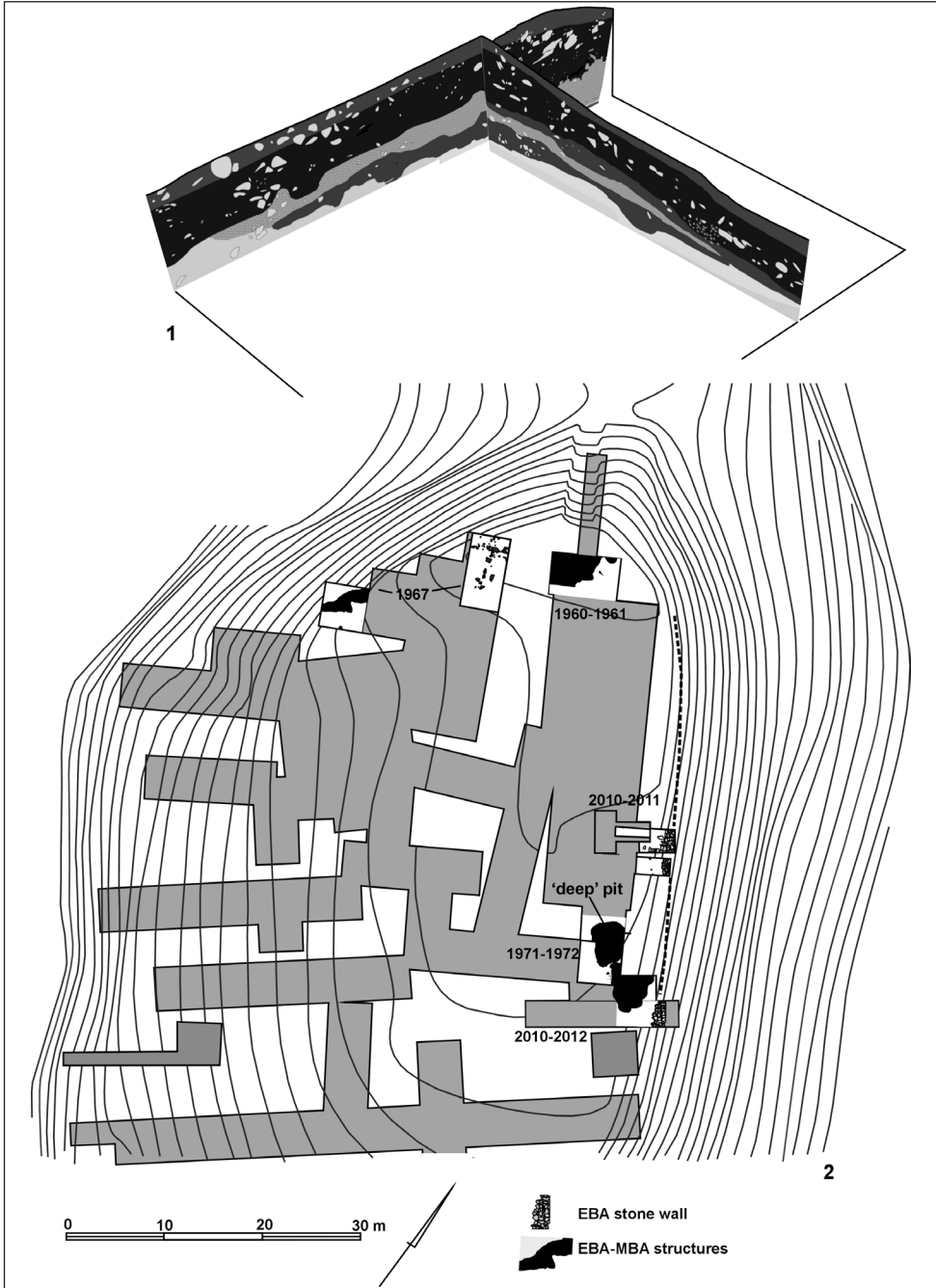


Fig. 4. Axonometric view of the trench from 1960 with the Early and Middle Bronze Age layer visible in cross-sections (1), and the distribution of such layers within the excavated part of the site (2). Based on field documentation from M. Cabalska's excavations and results of recent field works

Bronze Age, Early Iron Age and La Tène period, and (VII) contemporary humus. Within these groups, we identified particular stratigraphic units and investigated their interrelations (Fig. 6).

The sequence opens with a loess-like sediment deposited on sandstone rocks forming the hill (I A). In its upper part, a layer of buried soil of yellow-grey colour (I B) is clearly distinguishable in all three profiles. It contains a relatively large number of charcoals, especially in the ceiling part, which may be evidence of the burning of vegetation before construction activity began on the hill. It should be mentioned that a similar interpretation has been proposed for the levels of burning recorded beneath the Early Bronze Age layers on the fortified settlement at Trzcinica (Gancarski 1999a, 148). The radiocarbon age of a sample obtained from layer I B falls within the range 2141–1937 BC (2 σ) (Table 1). This is ca 300–400 years earlier than the first phase of occupation (see further in the text). This may either indicate episodes of natural fires, preceding the moment of inhabitation considerably, or suggest the mixing of charcoals from numerous fires, including the youngest one connected with clearing the site for construction. Another possibility is that the analysed sample comes from trunks or roots of trees that were several hundred years old.

The layer of buried soil slopes to the east at an angle of ca 15 degrees, which corresponds with the present-day form of the base of the terrace, at the same time indicating the original lay of the land on the eastern slopes of Góra Zyndrama. The discussed layer has not been recorded in the western segments of cross-sections, further than 4 m from the present-day edge of the plateau, which may suggest that the flat top of the hill was formed by cutting its top parts. It is also worth noticing that the higher thickness of the buried soil in the lower parts of the sections may be a combined effect of erosion-caused soil run-off and construction works that started when the promontory had been settled. With the original surface of the site one may also associate the vertical structures recorded in trench 1, which we interpret as traces of tree roots (layer I C). A sample taken from one of these structures was radiocarbon dated within the range 2281–1985 BC (2 σ) (Table 1).

Stratigraphical analyses suggest that the earliest event connected with the formation of the archaeological site at Maszkowice was the erection of a stone construction on the eastern slope of the hill (layer III A). Today, this construction can be found at the depth of ca 2.5 m beneath the plateau's edge, some 2–3 m towards the hilltop. It has the form of a dry stone wall built of sandstone

Table 1. Radiocarbon dates for samples from the Maszkowice settlement

STRATIGRAPHIC UNIT	SAMPLE CODE	BP	BC (1 σ)	BC (2 σ)	COMMENTS
I B	Poz-39413	3660 \pm 35	2130–2087 (24,9%) 2049–1973 (43,3%)	2141–1937 (95,4%)	Original stratum
I C	Poz-39414	3730 \pm 40	2199–2159 (22,5%) 2154–2122 (16,9%) 2094–2042 (28,8%)	2281–2249 (4,9%) 2231–2023 (90%) 1991–1985 (0,5%)	Original stratum (tree root)
IV A, IV C	MKL-1324	3330 \pm 70	1690–1520 (68,2%)	1862–1852 (0,6%) 1772–1448 (94,8%)	EBA cultural layer
IV H	MKL-1325	2830 \pm 80	1120–900 (68,2%)	1260–1230 (1,4%) 1220–820 (94,0%)	Burned clay layer – sample contaminated (?)

slabs 30–50 cm large. In better preserved fragments, the slabs lie tightly upon one another, with the spaces between them filled with clay and partially with small pebbles. It can be supposed that the base of the stone construction was about 1 metre wide. Moreover, in the layers adjoining the preserved part of the wall one can find loose stones which are the debris of the upper parts of the original construction (III B).

The layers of clay deposited directly on the buried soil level can be associated with the same building phase. They are most evident in the northern profile of trench 2 (layer II A). A clay embankment was formed in this part of the site, probably to level the surface prior to some construction activity, and its eastern extremity leans against the inner façade of the stone wall. Its equivalent in trench 1 are the layers characterised by the presence of zones of livid-grey and brown colour, brought about by natural pedologic processes operating within the embankment and connected mainly with the leaching of mineral components (II G). In the northern profile of trench 2 one can distinguish the first occupational level in the form of a thin, dark-grey layer saturated with charcoals (IV A). It lies directly on the above-mentioned embankment, although in some places it is separated from it by a 3 cm thick layer of yellow, powdery sand (II B). The next occupational level, also observable in the northern profile of trench 2, has the form of a layer, several centimetres thick, of grey-brown, or locally pinkish sediment (IV C) which covers eastern parts of layer IV A, although in some places the border between the two stratigraphic units is barely noticeable. A sample of charcoals taken from such a zone was dated (1 σ) to 1690–1520 BC (Table 1). From the west, to layer IV C adjoins layer IV B, built of light-grey fine-grained sediment containing charcoals and few artefacts. Due to the occurrence of the latter

we assumed an anthropogenic character for this layer, although it is difficult to declare unambiguously whether it developed as a result of the leaching of organic material which had accumulated in this place or as a consequence of soil run-off from higher parts of the slope. In the analysed profile, the sequence of the earliest occupational levels closes with alternate layers of brown-grey material (mostly charcoals and ashes) (IV E) and considerably burned clay (IV D).

Obviously younger stratigraphic position must be accepted for the second clay embankment (II C) that leans against the mentioned stone construction. It is probably contemporary with the lenses of clay covering the oldest cultural layers (II D) and with the second layer of clay embankment seen in the profile of trench 1 (II H). The ceiling of layer II C is blurred, although it can perhaps be deduced from the position of sandstone slabs which most likely were the destructs of the wall (III B). It can also be established based on its relation to the next cultural layer (IV F), whose eastern extremity covers the embankment. Unlike the sequence of occupational levels described above, which occurred locally, layer IV F spreads over a significant part of the excavated area. Almost 20 cm thick, it is characterised by grey-green colour, clay-like constitution and considerable saturation with charcoals and animal bones. Locally, concentrations of pebbles are recorded within this layer, as well as the areas where a burnt material of intensively black colour (IV G) or burnt clay (IV H) appear.

In trench 1, where there are no occupational levels dating to the Early and Middle Bronze Age, the second phase of the embankment is covered by a sequence of thin, horizontal laminae, which suggests that a periodical body of still water existed in this zone (I E). This sequence is fully covered by a layer (I D), whose colour and structure

resemble buried soil, and which we are inclined to interpret as surface run-off from higher parts of the slope. This process should be dated yet to the times of the oldest phase of the settlement. What makes this observation important is the fact that it may explain why small amounts of Early and Middle Bronze Age pottery were discovered at the depth of 80–100 cm over the entire eastern edge of the site during the old excavations, i.e. also in the zone where cultural layer from the discussed time period surely did not form.

The last phase of the clay embankment that forms the present-day terrace is relatively easy to identify both in trench 1 (layer II I) and trench 2 (II F). Its culmination is situated ca 1 m from the inner façade of the wall. In trenches 2 and 6, the sequence of Early and Middle Bronze Age deposits is closed by a brown cultural layer having the thickness of several to nearly 30 cm (IV I). It contains numerous animal bones, concentrations of stones and also, in its lower part, distinct concentrations of charcoals. This layer directly overlies earlier occupational levels (IV F) and partially the youngest clay embankment, too (II F).

Other layers universal for the entire eastern part of the site are connected with later settlement, dated to the Late Bronze Age and Early Iron Age. This younger sequence opens with ground levelling layers built of clay with the admixture of humus and reinforced with stone pavements (layer V A in trench 1 and layer V B in trench 2). A black cultural layer ca 50 cm thick (IV A) lies upon them and its structure contrasts distinctly with the deposits from older occupational phases. One may also notice that the layer in question partially covers the stone structure (III A and III B) on its outer side. This is the proof that during the successive phases of clay embankment construction, the stone structure played a role of a retaining wall whose outer façade

was exposed. It became covered only in the Late Bronze Age, due to the run-off of finer fraction of cultural layer, and after the settlement on the hill ceased to function, when the sedimentation of contemporary humus (VII) started.

An attempt to identify building phases

The analysis we presented above of stratigraphic sequences provides grounds for distinguishing the main stages of settlement activity during the Early and Middle Bronze Age in the recently investigated part of the site. These stages, according to the definition proposed by Sławomir Kadrow (1991, 56–57), will be later on referred to as building phases.

The entire sequence opens with the construction of the fortifications and contemporary occupational levels, which we preliminarily describe as building phase Maszkowice I (Fig. 7). This phase encompasses the erection of the stone wall (layer III A), the construction of the first clay embankment leaning against the wall (layers II A and II B), and the formation of the earliest occupational levels of a dwelling structure (layers IV A – IV C). Stratigraphic relations indicate that with this building should be associated the traces of two posts discovered in the course of recent excavations as well as a posthole recorded during Maria Cabalska's investigation in 1971. The localisation of these three features allows for the assumption that these are relics of a post house, oriented along a north-south axis. It is worth noticing that the stone wall erected in the same building phase has an identical orientation. Assuming that the posts whose traces were recorded were placed in the central parts of the building's walls, the dimensions of the structure would be about 8×3.5 m. Also the elongated layers of ashes recorded in the lowest occupational levels

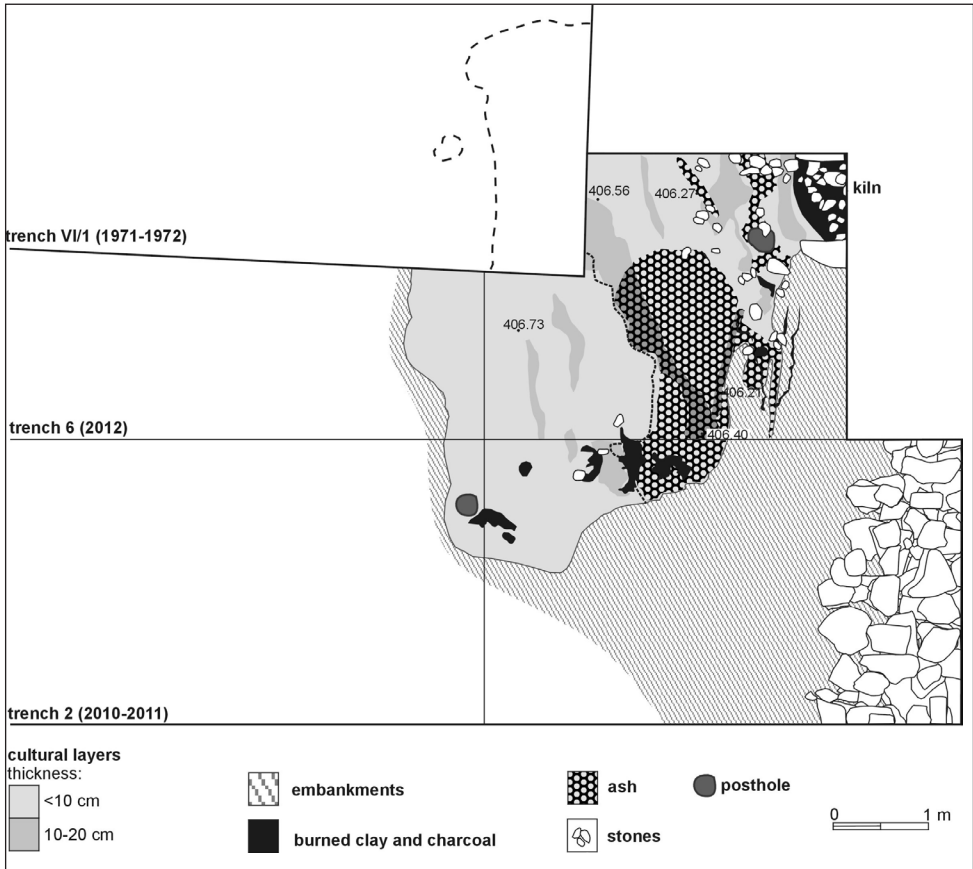


Fig. 7. Structures associated with the Maszkowice I building phase

can be regarded as relics of some construction elements. They are probably the remains of burned beams from the construction of the roof or from timber sill-beams reinforcing the walls. It is worth mentioning that this latter solution has been widely recorded on Early and Middle Bronze Age sites in the Carpathian Basin (e.g. Banner, Bóna, Márton 1957, 49–68; Ordentlich 1968, 151; Banner, Bóna 1974, 20–41; Bóna 1992a, 107; Csányi, Tárnoki 1992, 159–165; Kovács 1992, 132; Máthé 1992, 171; Stanczik, Tárnoki 1992, 125–126; Szathmári 1992, 135–136). Between the stone wall and the eastern wall of the house, a fragment of a kiln or stove was discovered

in season 2012. It was opened towards the centre of the house, and had walls built of large sandstone slabs (Fig. 8). The exploration of this feature will be continued, so the question of its function and relation to other structures remains open. The building phase in question is closed by layers of burning (IV D and IV E), which we interpret as a manifestation of the building's destruction.

The next phase (Maszkowice II) begins with the erection of the second clay embankment (layer II C), perhaps covered by fragments of the destroyed retaining wall (III B). Cultural layer IV F can be correlated with this phase, together with the accompanying layers of ground levelling (II D and



Fig. 8. Northern profile of trench 6 (excavations of 2012) – cultural deposits (over 2 meters thick) and the explored fragment of a kiln from phase Maszkowice I

II E), and the alleged hearth (IV G). Layer IV F may be regarded as another occupational level of the structure erected in the place of the older construction. However, the layer stretches for over 6 m along the east-west axis, which suggests a considerable enlargement of the house as compared to the previous stage (Fig. 9). In such a case, preserving the previous orientation of the building along the north-south axis would be impossible because of the already mentioned deep pit (excavated in the years 1971–1972) adjoining layer IV F from the north. Therefore, we assume that the

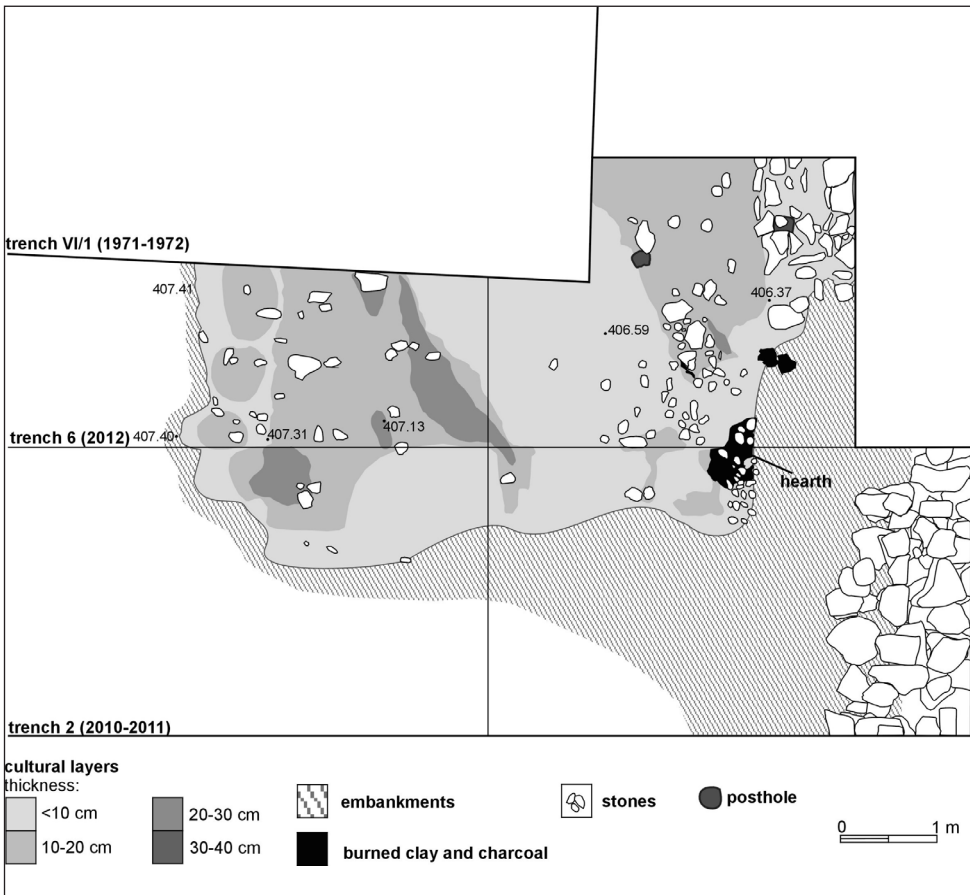


Fig. 9. Structures associated with the Maszkowice II building phase

orientation of the house was changed in the discussed phase to follow the east-west axis. Then its dimensions would not exceed 6×4.5 m. In trench 1, that is outside the zone of the most intensive settlement activity, the layers formed by natural processes (soil run-off and accumulation in local depressions), containing relatively small amount of archaeological material (I D and I E) can be associated with the Maszkowice II phase.

The last phase (Maszkowice III) is represented by another clay embankment (layer II F) and by a vast cultural layer deposited on the relics of the previous building and in its vicinity (IV I). As compared to the occupational levels from phase Maszkowice II, the

range of layer IV I is slightly reduced along the east-west axis, at the same time broadening considerably to the south (Fig. 10). This suggests that in phase Maszkowice III, the household area was again reoriented, and once more located along the north-south axis. In that time, the deep pit known from Maria Cabalska’s excavations must have already been filled to a large extent.

Analysis of technological features of pottery (seasons 2010–2011)

Frequency analyses of technological and stylistic attributes within particular layers were based on the materials from trench 2 collected in seasons 2010–2011, which have

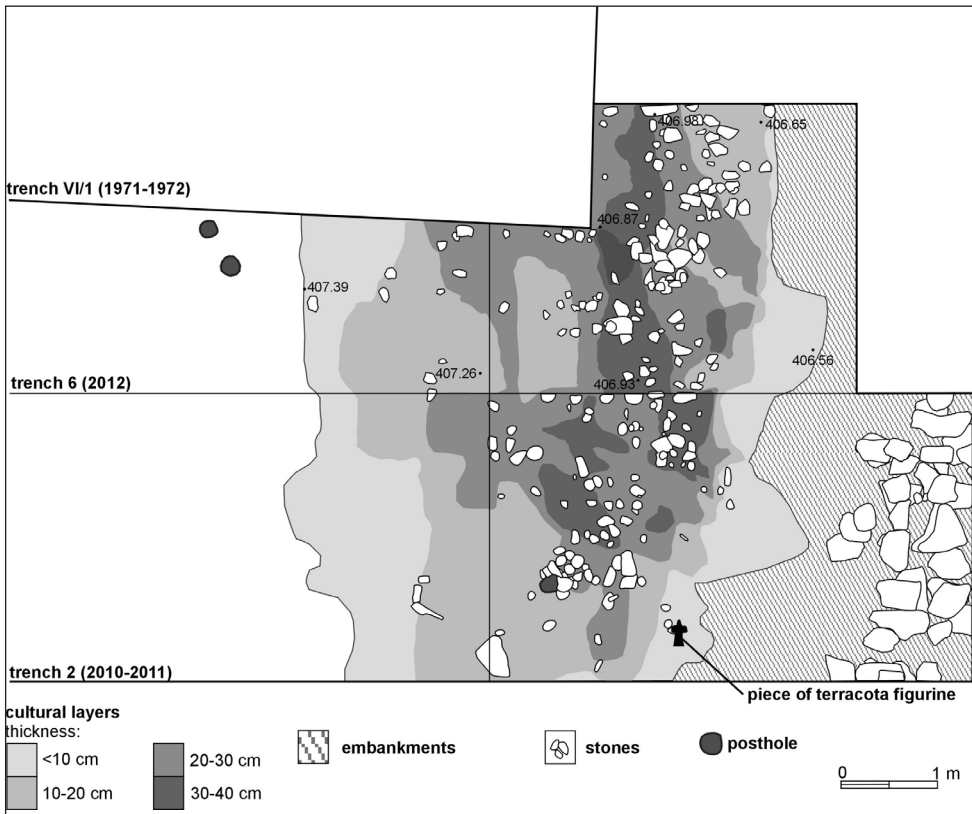


Fig. 10. Structures associated with the Maszkowice III building phase

already been fully studied. In this part of the material, layers associated with the oldest stages of the settlement yielded a total of 1278 pottery fragments (ca 100 shards for each square meter covered by Early and Middle Bronze Age layers). To reduce the possibility of contamination with younger materials, artefacts found in arbitral levels that included the boundary between lower cultural layers and younger clay embankments or upper cultural layer were excluded from analysis. The remaining collection of 820 vessel fragments may be divided into pottery originating from the three packages of layers: (1) upper Early and Middle Bronze Age cultural layer (building phase Maszkowice III), (2) lower occupational levels and clay embankments beneath them, and (3) the border zone between the upper and lower layers. Regardless of the place of deposition, Early and Middle Bronze Age pottery is characterised by relatively high fragmentation, contrasting with a very low proportion of shards with highly eroded outer surfaces (Table 2, Plate 20). This may suggest that, within the analysed collection, the manner of pottery shards deposition favoured their mechanical destruction (e.g.

as a result of trampling), at the same time reducing the impact of atmospheric conditions, especially freezing, which cause the erosion of pottery surfaces (e.g. Bradley, Fulford 1980, 86; Buko 1990, 350–352; 2008, 150–154; Schiffer 1996, 143). A situation which potentially meets the above conditions is an accumulation of ceramic waste within dwellings or other household buildings.

Pottery from Maszkowice shows distinct differentiation in terms of technological traits. To examine their changeability within cultural layers, we have distinguished several groups, each of which represents particular set of attributes. The attributes taken into consideration are: wall thickness (division into thin- and thick-walled pottery), temper type and granulation (fine-, medium- or coarse-grained crushed stone or chamotte), surface processing (coarse, smooth, with traces of band smoothing or polishing), firing conditions (oxidising or reducing atmosphere), and hardness. As a result of our analysis, we have distinguished 15 technological groups, of which 11 are represented in Early and Middle Bronze Age layers.

Table 2. Quantitative data for the Early and Middle Bronze Age pottery discovered during 2010–2011 excavations

STRATIGRAPHIC UNITS	TOTAL NUMBER OF POTTERY PIECES	SHARE OF POTTERY PIECES SMALLER THEN 3 CM	SHARE OF LARGE POTTERY FRAGMENTS (> 5 CM)	SHARE OF POTTERY WITHOUT TRACES OF WEATHERING	SHARE OF SECONDARY BURNED POTTERY FRAGMENTS
IV I (UPPER EBA-MBA LAYER)	388	44.3%	14.4%	49.4%	0.8%
IV I/IV F, IV I/II A (JUNCTION OF UPPER AND LOWER EBA-MBA LAYERS)	254	49.2%	8.7%	61.4%	0%
IV A, IV B, IV C, IV D, IV F (LOWER EBA-MBA LAYERS)	116	35.0%	9.5%	53.4%	2.6%
I B, II A, II B (CLAY EMBANKMENTS)	62	54.8%	9.7%	69.0%	0%

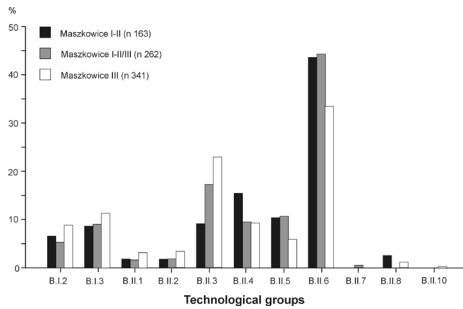


Fig. 11. Share of particular technological groups of pottery in layers dating to the Early and Middle Bronze Age

The diagram in Fig. 11 presents the percentage of pottery fragments belonging to particular groups in the materials from subsequent packages of cultural layers from early stages of the Maszkowice settlement. Pottery with coarse, brown-grey surfaces, characterised by their high degree of hardness and fine quality of manufacture (group B.II.6) is clearly predominant. It is the most numerous component in every package of cultural layers, although a downward tendency may be observed in phase Maszkowice III. The share of vessels representing groups B.II.4 and B.II.5 is relatively balanced; they are also hard, but their surfaces show traces of smoothing and, in the case of B.II.5, careful polishing. Like with group B.II.6, one can observe a slight decrease in their frequency with time (Plate 20). An opposite tendency may be recorded for vessels of group B.II.3, less hard, having smooth, matt surfaces of a light colour. Materials representing this group become particularly numerous in later stages of the settlement development, during the Late Bronze Age and Early Iron Age. The share of thin-walled pottery also increases with time, which applies both to the vessels of light colour (B.I.2) and to such whose both surfaces are black (B.I.3). In the analysed collection, very sparse are fragments of thick-walled vessels fired in reducing atmosphere

(B.II.1), or relatively poorly fired vessels with coarse surfaces of light colour (B.II.2). Sporadically, in the layers dated to the Early and Middle Bronze Age were found fragments of vessels representing groups B.II.7, B.II.8 and B.II.10, whose common trait is the presence of chamotte temper. At the same time, pottery fragments attributed to the last five of the groups discussed above form the bulk of material from the younger, upper layers of the Maszkowice settlement (Late Bronze Age and Iron Age).

On one hand, the above analysis reveals a certain variability of the technological traits of pottery in the oldest occupational phases of the settlement (building phases Maszkowice I–II and Maszkowice III), while at the same time it emphasizes the specific character of these materials, which makes them clearly distinguishable from later ones. It is worth noticing that changes in vessel technology, observed during the oldest phases of the settlement functioning, can be summarized as a tendency to worsen the quality of pottery manufacture, and of its firing in particular.

Stylistic analysis of Early and Middle Bronze Age pottery

The collection of pottery from the Early and Middle Bronze Age layers is characterized by a wide variety of vessel forms and decorations. In fact, this is a typical trait for numerous cultural traditions developing at that time in the Carpathian Basin and neighbouring areas, including assemblages attributed to the Otomani-Füzesabony culture. Although undoubtedly of great research potential, this diversity of ceramic styles poses many methodological problems at the stage of sources classification (compare e.g. Thomas 2008). In the case of the materials from Maszkowice, which come from the settlement context, these problems become

even more profound due to the significant fragmentation of vessels.

In our opinion, such situation forces us to use generalised criteria of classification rather than the narrow ones. The process of classification of distinctive vessel fragments, both from the old and recent excavations, was divided into two stages. During the first one, all the analysed fragments (374 specimens from seasons 1960–1972 and 48 from excavations of 2010–2011) were described using a code that took into account the supposed form of the vessel (the first letter of the code), decoration of the upper part (the second letter) and decoration of

the body (the third letter). The pattern was developed based on a number of published pottery assemblages from several Otomani-Füzesabony culture sites (mostly cemeteries) (especially: Polla 1960; Kemenczei 1979; Máthé 1988; Schalk 1992; 1994; Koós 2006; Horváthová 2011). To make the information collected in this way applicable to fragmentarily preserved settlement pottery, we have generalised the data significantly, grouping together similar vessel forms and decoration motifs (Fig. 12). The next stage of the classification comprised the analysis of co-occurrence of particular types of forms and decoration motifs in the collection of pottery from

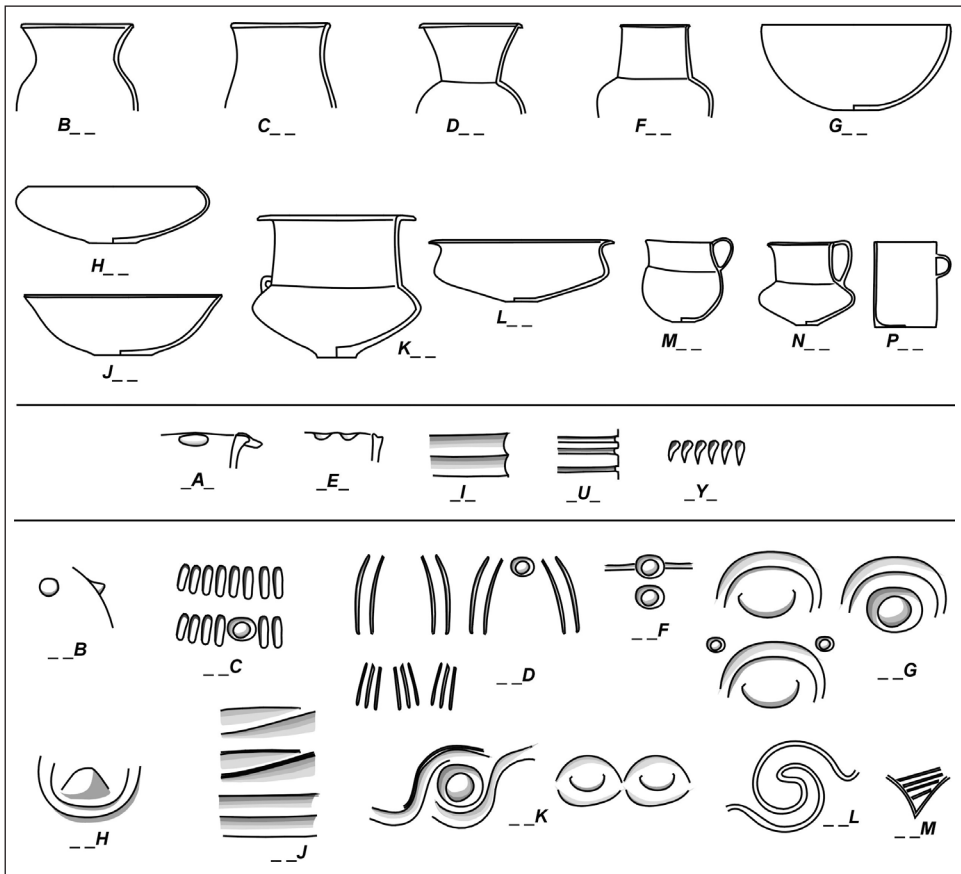


Fig. 12. Classification of the Early and Middle Bronze Age pottery on the Maszkowice settlement

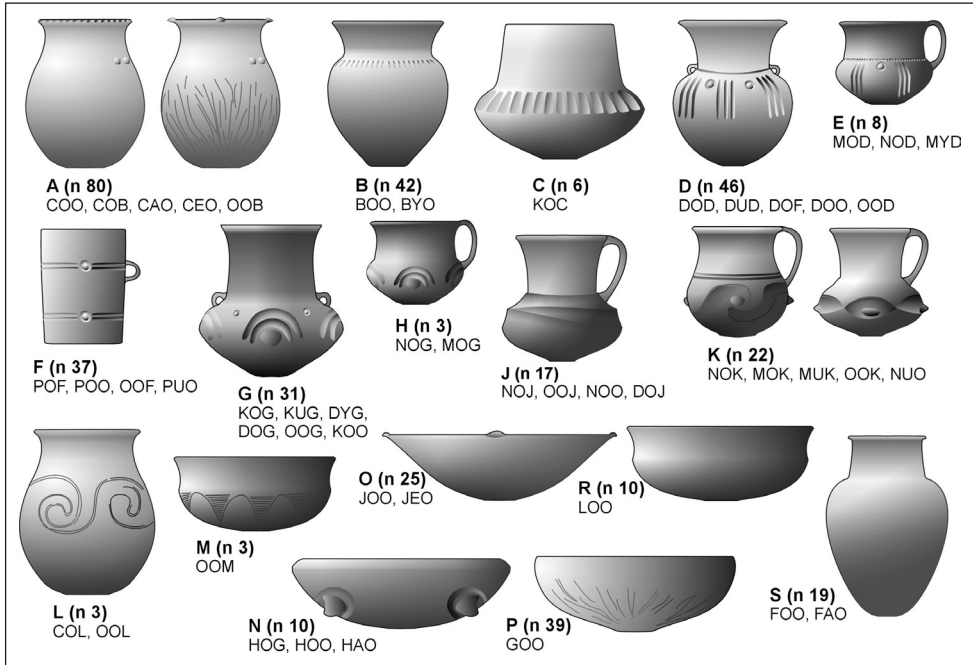


Fig. 13. 'Ideal' types of Early and Middle Bronze Age vessels at the Maszkowice settlement

Maszkowice. When a given form of vessel repeatedly showed the presence of a particular decoration motif, all the fragments with such decoration, as well as all the fragments from vessels of this form, were classified in one group. This resulted in the reconstruction of a full spectrum of pottery used on the Maszkowice settlement during the Early and Middle Bronze Age, represented by sixteen ideal vessel types (Fig. 13).

Stylistic diversity within the classified pottery assemblage could be examined using three methods. The most obvious one was to count the frequency of particular types in the layers associated with building phases that were distinguished based on the results of recent excavations. As with the analysis of pottery manufacture, the small size of the analysed assemblage also compelled us to treat the artefacts from phases Maszkowice I and II jointly in this case. For the same reasons, to phase Maszkowice III

were included fragments of pottery discovered in the border zone between layer IV I (representing phase Maszkowice III) and the oldest clay embankment (II A).

One may notice (Table 3) that in the layers representing older occupational levels, thin-walled and decorated types of vessels are more common than in phase Maszkowice III. Particularly striking is the presence of specimens whose body is decorated with horizontal or turban-like flutes (J) – a form which is completely unknown from the younger settlement horizon (Plate 8:10–11). Vessels with spiral decoration, or decorated with grooves arranged in lens-like patterns (K) are relatively more frequent in older stages, too (Plate 2:3, 4:3, 6:3–4, 7:2,5, 8:3). Stylistic attributes clearly correlated with phase Maszkowice III are the decoration with groups of narrow, vertical lines (E and D), which occurs mainly on amphorae with funnel-like necks (Plate 1:1, 2:5,

Table 3. Trench 2, seasons 2000–2011. Distribution of vessel types (compare fig. 13) in layers associated with particular building phases. Pottery fragments discovered in the border zone between layers IV F and IV I (Maszkowice II/III) were not included

	NUMBER AND SHARE OF TYPES – PHASES MASZKOWICE I AND MASZKOWICE II (N 14)	NUMBER AND SHARE OF TYPES – PHASE MASZKOWICE III (N 28)
A	2 (14%)	5 (18%)
B	–	5 (18%)
D	–	5 (18%)
E	–	–
F	–	1 (4%)
G	–	2 (7%)
J	2 (14%)	–
K	5 (36%)	1 (4%)
O	1 (7%)	2 (7%)
P	2 (14%)	4 (14%)
S	1 (7%)	2 (7%)

5:3), and a higher representation of storage vessels, namely bowls and pots (e.g. Plate 1:3–5, 2:1,5).

Analogical tendencies may be observed when analysing the frequency of pottery types in subsequent mechanical levels of the deep pit explored in the years 1971–1972 (Fig. 14). A radical change in pottery style can be noticed here around the level of 200 cm. Most of the vessels decorated with flutes or spiral motifs (J and K) were discovered below this level. Above it, maximum frequency is reached by pottery decorated with semicircular grooves (G) and groups of vertical strokes (D), and vessel types such as cylindrical cups (F) and carinated bowls (R). In the ceiling part of the pit are concentrated vessels decorated with broad, vertical flutes (C) – a type which at Maszkowice is also commonly recorded in Late Bronze Age deposits. It is worth noticing that the analogies between

the frequency of particular pottery types in subsequent levels of the pit and in cultural layers explored during recent excavations allow us to correlate the period when the pit was functioning with phases Maszkowice I or II. The time when its upper part were filled in can be correlated with phase Maszkowice III. This is in agreement with the previously formulated conclusions concerning the orientation of the oldest buildings in relation to the neighbouring pit.

The goal of the third analysis was to examine the frequency of particular pottery types in the identified clusters – the settlement zones from the Early and Middle Bronze Age (Table 4). In this approach, the analysed collection of pottery appears quite homogenous. The only – although important in our opinion – tendency we recorded was that in trenches located in the northern and north-eastern parts of the promontory (clusters 1–3 – compare Plates 10–14) the frequency of pottery decorated with vertical strokes (D) was considerably higher than in cluster 4 located further to the south. Let us recall here that the analysis of frequency of particular vessel types in the pit and in layers explored in the years 2010–2011 has shown that the vessels decorated with vertical strokes occur mainly in younger occupational levels. However, it should be emphasized that the northern clusters (1–2) also yielded fragments decorated with flutes and spiral motifs, which are connected with older occupational levels (Plate 9:3, 11:15, 13:3,10,12).

3. Discussion and conclusions

The chronology of the building phases of the Maszkowice settlement

The remarks presented above concerning the distribution of distinctive vessel fragments within the occupational levels and particular zones of the settlement will

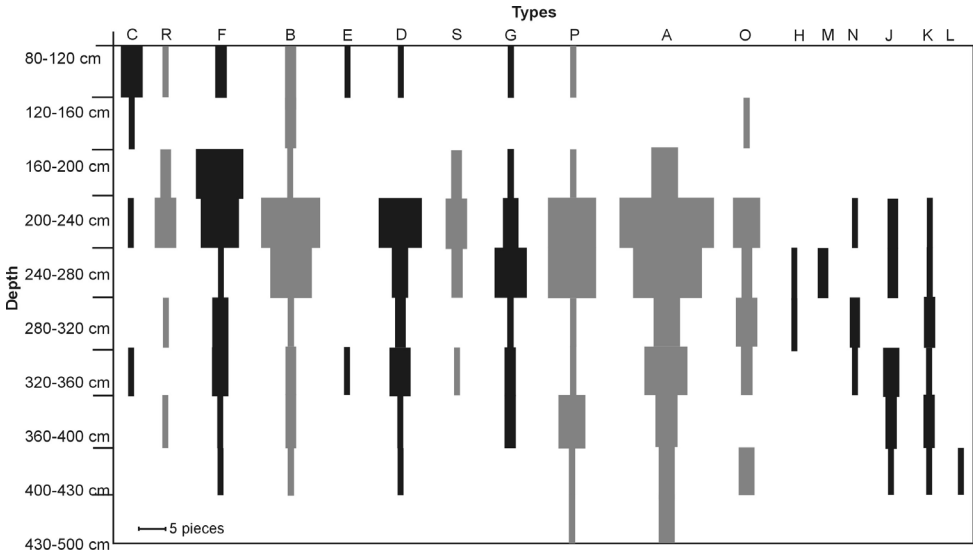


Fig. 14. Share of fine (black) and coarse (gray) pottery types (compare fig. 13) in particular arbitral layers of the pit explored in the years 1971–1972

Table 4. Distribution of vessel types (compare fig. 13) in particular zones (clusters) dated to the Early and Middle Bronze Age (compare fig. 3). For clusters that yielded only single distinctive fragments, percentage values were not given

TYPES	CLUSTER 1	CLUSTER 2	CLUSTER 3	CLUSTER 4	CLUSTER 5	CLUSTER 6	CLUSTER 7
A	3 (15%)	1 (5%)	8 (24%)	61 (23%)	-	-	-
B	2 (7%)	-	1 (3%)	34 (13%)	-	-	-
C	-	-	-	4 (1%)	-	1	-
D	9 (32%)	4 (21%)	7 (21%)	17 (6%)	-	2	1
E	-	1 (5%)	1 (3%)	5 (2%)	-	-	-
F	5 (18%)	-	3 (9%)	25 (9%)	1	1	-
G	1 (4%)	-	6 (18%)	18 (7%)	1	-	-
H	-	-	-	2 (1%)	-	-	-
J	2 (7%)	-	-	12 (4%)	-	-	-
K	1 (4%)	2 (10%)	3 (9%)	8 (3%)	-	-	-
L	-	-	-	1 (1%)	-	-	-
M	1 (4%)	-	-	2 (1%)	-	-	-
N	-	-	2 (6%)	8 (3%)	-	-	-
O	1 (4%)	1 (5%)	-	20 (7%)	-	-	-
P	2 (7%)	1 (5%)	2 (6%)	30 (11%)	-	-	-
R	-	-	-	8 (3%)	-	-	-
S	1 (4%)	2 (10%)	1 (3%)	9 (3%)	-	-	-
TOTAL	28	19	34	269	2	4	2

now be juxtaposed with the existing views on the periodization of the stylistic development of the Otomani-Füzesabony culture pottery. This problem has been disputed for many years and, in short, may be reduced to a controversy between the supporters of the long and short chronology of this cultural tradition. The first option, previously advocated mainly by Romanian scholars (e.g. Ordentlich 1970; Bader 1978), posits that the Otomani-Füzesabony culture developed from the Early Bronze Age (BrA1) till the beginnings of the Late Bronze Age (BrD, or even HaA). At the other extreme are the works of Emily Schalk (1981; 1992; 1994), who uses a short chronology, limited to phases BrA1–BrA2. Yet another perspective has been adopted by Hungarian archaeologists, who consequently distinguish between the Otomani culture from the Early Bronze Age (BrA1–BrA2), Füzesabony and Gyulavarsánd cultures from the beginnings of the Middle Bronze Age (BrA2–BrA3) and the ensuing series of finds from Koszider period (e.g. Bóna 1992).

The impasse in the studies on the chronology of Otomani-Füzesabony pottery stems partially from the autonomous, local perspective of the research adopted by some of the authors. An attempt to break the deadlock have been the works in which a comprehensive discussion of a particular category of artefacts is given. One should mention here in particular a study by Wolfgang Dawid (2002), who considerably revised the chronology of the early development of the Transylvanian centre of metallurgy, and a publication by Matthias Thomas (2008) presenting the results of meticulous studies on the grave pottery of the Otomani-Füzesabony culture. It is worth noticing that the major tendencies observed by Thomas, although based on the analysis of burial record, may also be in agreement with the directions of stylistic

transformations as recorded for pottery from settlements. This is supported particularly by the results of recent investigation of assemblages from the fortified settlement at Barca near Košice (Šteiner 2009, 49–50, 61).

Proceeding from the results of the recent studies mentioned above, with some further revisions, one may propose a generalised model of pottery style development over the entire Otomani-Füzesabony culture range (Table 5). Subsequent chronological stages will be referred to using the terminology introduced by Slovakian archaeologists (e.g. Vladár 1973; Olexa 1992), which corresponds well with M. Thomas's periodization.

The major trend observed from the pre-classic to the beginnings of the classic phase (i.e. in the period corresponding with phase BrA2) is the popularisation of fluted decoration. In the older segment of the classic phase these are primarily oblique (turban-like) and horizontal flutes on vessel body (on jugs in particular). In the younger segment, together with the tendency toward more gentle vessel profiles, horizontal and oblique flutes are gradually replaced with spiral motifs (Thomas 2008, 343–346). Interestingly, in that period – i.e. in phase BrA2/B1 (BrA3) or early BrB1 – the preference for spiral decoration can be noticed not only on pottery, but also on metal artefacts, discovered in hoards of Hajdúsamson-Apa horizon (David 2002).

This type of decoration continues in the post-classic phase, although it is much less common. Gradually, vessels decorated with groups of vertical strokes or bands of hollows become predominant. Among grave pottery, bowls decorated with horn-like knobs emphasized by grooves are still very popular (this type was widespread already in the classic phase). However, also in this functional category of vessels some changes can be noticed: profiled specimens become

Table 5. Chronological table

PHASE	ABSOLUTE CHRONOLOGY	NORTH ALPINE CHRONO-LOGICAL SEQUENCE	STRATI-GRAPHY OF SETTLEMENT IN BARCA NEAR KOŠICE (ŠTEINER 2009)	STYLISTIC PHASES OF FUNERAL POTTERY OF THE OTOMANI-FÜZESABONY CULTURE (THOMAS 2008, MODIFIED)	MAIN STYLISTIC TENDENCIES	POTTERY TYPES ON MASZKOWICE SETTLEMENT (DOMINATING FORMS BOLDED)	BUILDING PHASES	STYLISTIC PHASES IN DUNAJEC VALLEY (PRZYBYLA 2009)
PRE-CLASSIC	19th-18th c. BC	early BA2		1	decoration relatively rare, spiral motifs made with a fine lines, hatched fields	H, L	-	
EARLIER CLASSIC	18th-17th c. BC	BA2		2	domination of fluted pottery – particular horizontal or „turban-like“ arrangements, often knobs surrounded by arc-like grooves, spiral decoration; among forms: sharply profiled mugs and bowls with inverted rims	F, G, H, J, K, N	Maszkowice I	Maszkowice 1-Marcinkowice 1 (classic Otomani-Füzesabony Culture and late Mierzanowice culture)
YOUNGER CLASSIC	17th-16th c. BC	late BA2 (BA3)–BB	Barca II	3	replacement of sharply profiled mugs by softly profiled forms and „turban-like“ ornament by spiral decoration made by fluting, more often profiled bowls	F, G, H, J, K, N, R	Maszkowice I Maszkowice II	
POSTCLASSIC	16th-15th c. BC	BB	Barca I	4	domination of motifs based on groups of vertical lines and bands of hollows, often bowls with knobbed decoration and footed vessels	D, E, F, G	Maszkowice II Maszkowice III	Maszkowice 2 (postclassic OFC)
TERMINAL	15th-13th c. BC	BC1–BD		5	compound of OFC and Tumulus Culture traditions: extinction of spiral ornamentation; large knobbed vessels; often decoration with geometrical motifs; hatched fields; groups of vertical fine lines and bands of hollows	D, E, G, M	Maszkowice III	Chelmiec (Tumulus-post-Otomani style)

more frequent than hemispherical ones, vessels on feet appear, and narrow flutes replace the broad ones in pottery decoration. The post-classic phase can be correlated with period BrB1. It is represented by a relatively small number of cemeteries (including the cemetery at Streda nad Bodrogom, regarded as the most typical – Polla 1960; compare Šteiner 2003; Thomas 2008, 347–349) and much more numerous settlement assemblages, such as, for example, the younger horizons of fortified settlements at Barca and Nižna Myšľa (Olexa 1992; Šteiner 2009).

During the next and final phase of the Otomani-Füzesabony culture development, all major cemeteries and a great many settlements ceased to be used – the fact that makes this period the most difficult to define and which has always provoked discussion. When we take into account, however, that the archaeological culture in question is defined mainly – if not only – on the basis of certain tradition in pottery manufacture, then we can accept that its final phase is identical to the period of occurrence of a number of local, “Post-Otomani” cultural phenomena, such as the Bădeni III-Deva (Rotea 1994, 56; compare Boroffka 1999, 114; Ciugudean 1999, 129–130) and Păuliș (Pădureanu 1992, 508–509, 512–513; Gogăltan 1999, 210, 386) groups in Transylvania, the Hajdúbajos-Cehăluț (Kacsó 1999; Némethi 2009) and Igrîța (Emödi 1980; Kacsó 1999) groups on the upper Tisa, and taxonomic units associated with Tumulus complex influences – the Piliny culture (Furmánek 1977; Kemenczei 1984) and the Carpathian Tumulus culture (Hänssel, Kalicz 1986; Kemenczei 1989).

Apart from the ornaments such as groups of vertical or oblique strokes or bands of hollows, known already from the post-classic phase, pottery of the terminal phase is often decorated with geometric motifs (hatched

triangles and arcades) and with knobs pointing downwards, which are pasted or pushed from inside of the vessel. Based on numerous inventories containing bronze artefacts, the final phase of Otomani-Füzesabony pottery style should be correlated with periods BrC1–BrD (Przybyła 2009, 76–89, 119–123, 138–143, and the literature cited there).

It is worth noting that the above-presented general trends in the Otomani-Füzesabony pottery development are consistent with the results of vessel type frequency analysis for the Maszkowice settlement. Here also the older occupational levels yielded vessels decorated with flutes and spirals (types J and K), while the younger ones produced pottery decorated with vertical strokes, knobs encircled by grooves, or forms such as carinated bowls (types D, E, G and R). This concurrence allows us to assume that the pottery used during the oldest building phase (Maszkowice I) represented the tradition of both the older classic phase (jugs with turban-like decoration) and the younger classic phase (spiral motifs). In the middle building phase (Maszkowice II), the style typical of the younger classic phase continued to develop, but new elements also appeared (especially decoration with groups of vertical grooves) representing the post-classic phase. The youngest settlement horizon (building phase Maszkowice III) may be synchronised with post-classic and terminal phases.

The position of Maszkowice settlement in regional and local sequences of cultural development

The first of the questions raised at the beginning of this paper concerns the chronology and position of the Otomani-Füzesabony materials in the sequence of cultural development in the Western Carpathians. A good starting point for answering this question may be the comparison

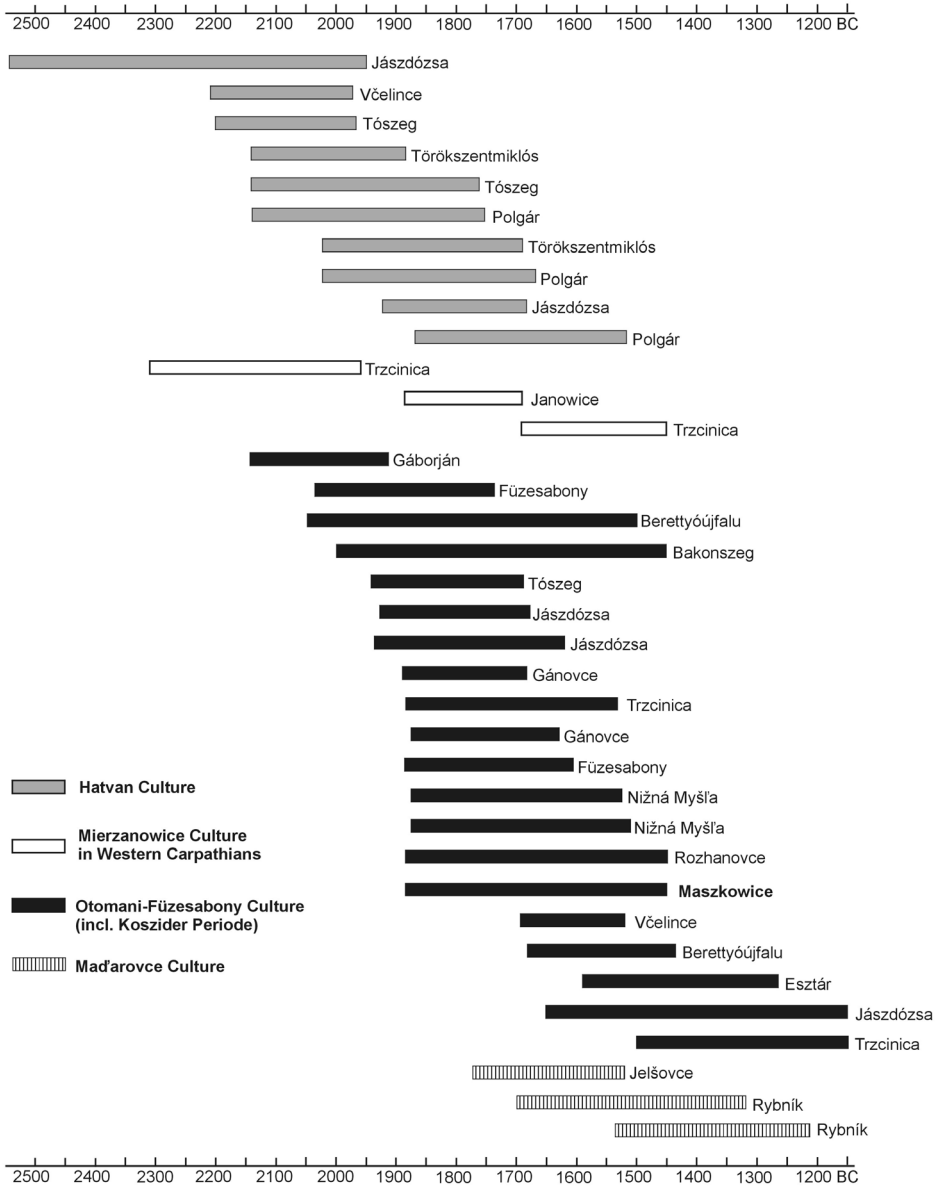


Fig. 15. Radiocarbon chronology (2σ) of the sites from the northern part of the Carpathian zone dated to the Early/Middle Bronze Age transition. For sites that have produced a longer series of dates, only the earliest and the youngest date is presented for each settlement phase (after: Gancarski 1999; Gogáltan 1999; Barta 2001; Görsdorf, Marková, Furmánek 2004; Kienlin *et al.* 2010)

of radiometric dates obtained for the sites representing major taxonomic entities from the final stages of the Early Bronze Age in the northern part of the Carpathian zone (Fig. 15). As may be seen, there is no evident chronological succession of these cultural traditions. Absolute dates suggest that they overlap rather than follow one another. This applies not only to the widely discussed relations between the Hatvan and Otomani-Füzesabony cultures (e.g. Marková 2010, 70–74), but also, which is much more important from our perspective, to the potential contemporaneity of the latter with the Mierzanowice culture.

The earliest radiocarbon dated group of Otomani-Füzesabony sites can be traced back to the 19th and 18th centuries BC. It is no doubt contemporary with the Hatvan culture and the Mierzanowice culture north of the Carpathians. Furthermore, such dates agree with the chronological position of phase BrA2 (ca 1850–1650 BC – Becker, Krause, Kromer 1989), where the pre-classic and classic styles of Otomani-Füzesabony pottery belong.

However, the bulk of the Otomani-Füzesabony culture sites yielded slightly later dates, which generally fall into the range between the 18th and 16th centuries BC. This corresponds well with the chronology proposed in the literature for the pottery style of the younger classic phase (late BrA2 or so-called BrA3 – ca 1700–1600 BC). Within this horizon should be placed the older phases of settlements and cemeteries attributed to the Mad'arovec culture and to the Věteřov group (e.g. Peška 2012, 311). To the north of the Carpathians, the dates obtained from the oldest Otomani-Füzesabony culture layers on the Trzcínica settlement and the date obtained from building phase Maszkowice I fall within the discussed range. What is particularly important for the local sequence of cultural development

in the analysed area is the conclusion that, based on radiometric chronology, we should assume at least a partial coexistence of the sites with transcarpathian materials and the youngest assemblages of the Mierzanowice culture (compare Kadrow, Machnik 1997, 100, 130).

In light of the above, some corrections need to be made to the previously proposed periodization of the older segments of the Bronze Age in the Dunajec valley (Przybyła 2009, 230–236). It seems that for the oldest phase of cultural development in this area one should assume the coexistence of the Otomani-Füzesabony inventories representing the classic phase with younger Mierzanowice culture assemblages, rather than the domination of the latter tradition. In this context, of particular interest seems to be a comparison between the Maszkowice settlement and the settlement at Marcinkowice, Nowy Sącz district, situated on the middle Dunajec River. The first site produced 'pure' classic phase inventories of the Otomani-Füzesabony culture while, on the latter site, such materials (e.g. Przybyła 2009, fig. 57:12) constitute only a minor admixture in the assemblage dominated by late Mierzanowice culture pottery. This is similar to the situation observed in the loess uplands north of the Carpathians, where a contemporary occurrence of the youngest Mierzanowice culture assemblages and the oldest Trzcíniec culture finds has been postulated within the same micro-regions (Górski, Kadrow 1996; Czopek 2003, 147–148; Przybyła, Blajer 2008, 94–95). However, the processes behind such a picture of archaeological record could have followed different trajectories. In the loess uplands, one should seriously consider a gradual displacement and acculturation of a local Mierzanowice culture population by most likely 'foreign' groups representing the Trzcíniec culture (*ibidem*). On the other hand, new

excavations at Maszkowice, and the results of field-walking surveys in the site's surroundings (no sites earlier than the Late Bronze Age have been found in the entire Łącko Basin) allow us to conclude that, in the upper Dunajec valley, a group from the south colonised a previously unoccupied territory and only later established contacts with late Mierzanowice culture populations living further down the river.

Assuming that the duration of the local stylistic phase that opens the Bronze Age sequence in the Dunajec valley can be limited to the late phase of the Mierzanowice culture and the corresponding classic Otomani-Füzesabony style, the next stage (previously defined as stylistic phase Maszkowice 2 – Przybyła 2009, 230–232) should be connected with the post-classic phase and synchronised with BrB1 period (ca. 1600–1450 BC). No major changes are required in the previously proposed definition of the third phase of pottery style development in the Dunajec valley (Chełmiec phase – Przybyła 2009, 232–234). At Maszkowice, to this stage refer the finds of the third building phase, which represent the terminal style of the Otomani-Füzesabony culture pottery (phases BrC1–BrD – ca. 1450–1200 BC). It is worth noting that (apart from Maszkowice) this chronological segment is most numerous represented in the finds from northern part of the Western Carpathians.

Maszkowice settlement in the network of long-distance connection

The assemblage of Early and Middle Bronze Age pottery collected during the old and recent excavations at Maszkowice and numbering several thousand fragments shows two characteristic traits. Firstly, the assemblage is 'culturally homogenous', which means it represents a single cultural tradition. All distinctive vessel fragments

represent the style of the Otomani-Füzesabony culture. This is not the case in the eastern part of the Polish Carpathians, where at sites such as Trzcínica or Jasło the 'transcarpathian' pottery co-occurs with the 'northern' tradition, represented by the materials of the Trzciniec complex (Garncarski 1992, 56; 1994, 78–88). Secondly, the stylistic variability of the pottery observed at Maszkowice reflects the tendencies recorded on contemporary sites from the middle Danube basin. This indicates that, throughout the entire older phase of the Maszkowice settlement development (which lasted several hundred years), permanent contacts were maintained with the populations inhabiting the territories south of the main Carpathian range.

However, the uniqueness of the Maszkowice settlement against the background of other sites from the northern Carpathian forelands exceeds the cultural connections noticeable in pottery manufacture. Of particular importance in this context are the defensive works in the form of a dry stone wall discovered on the eastern edge of the site during the 2011–2012 excavations (fig. 16–17). This kind of fortification is very rare on sites from the end of the Early Bronze Age in the Carpathian Basin. There are no such constructions known from tell settlements in the Great Hungarian Plain, where fortifications are usually limited to one or two moats surrounding the site (e.g. Ordentlich 1969; Bader 1982; Kovács 1982; Csányi, Tárnoki 1992, 159–165; Stanczik, Tárnoki 1992, 127). On the other hand, the fortifications in question appear in the piedmont zone. The remains of heavily damaged stone walls were discovered on the Maďarovce culture sites at Rybník nad Hronom (Bátora, Rassmann 2008, 86–87) and Ivanovce (Němejcová-Pavúková 1978, 26–28) in western Slovakia. Poorly preserved remnants of stone constructions

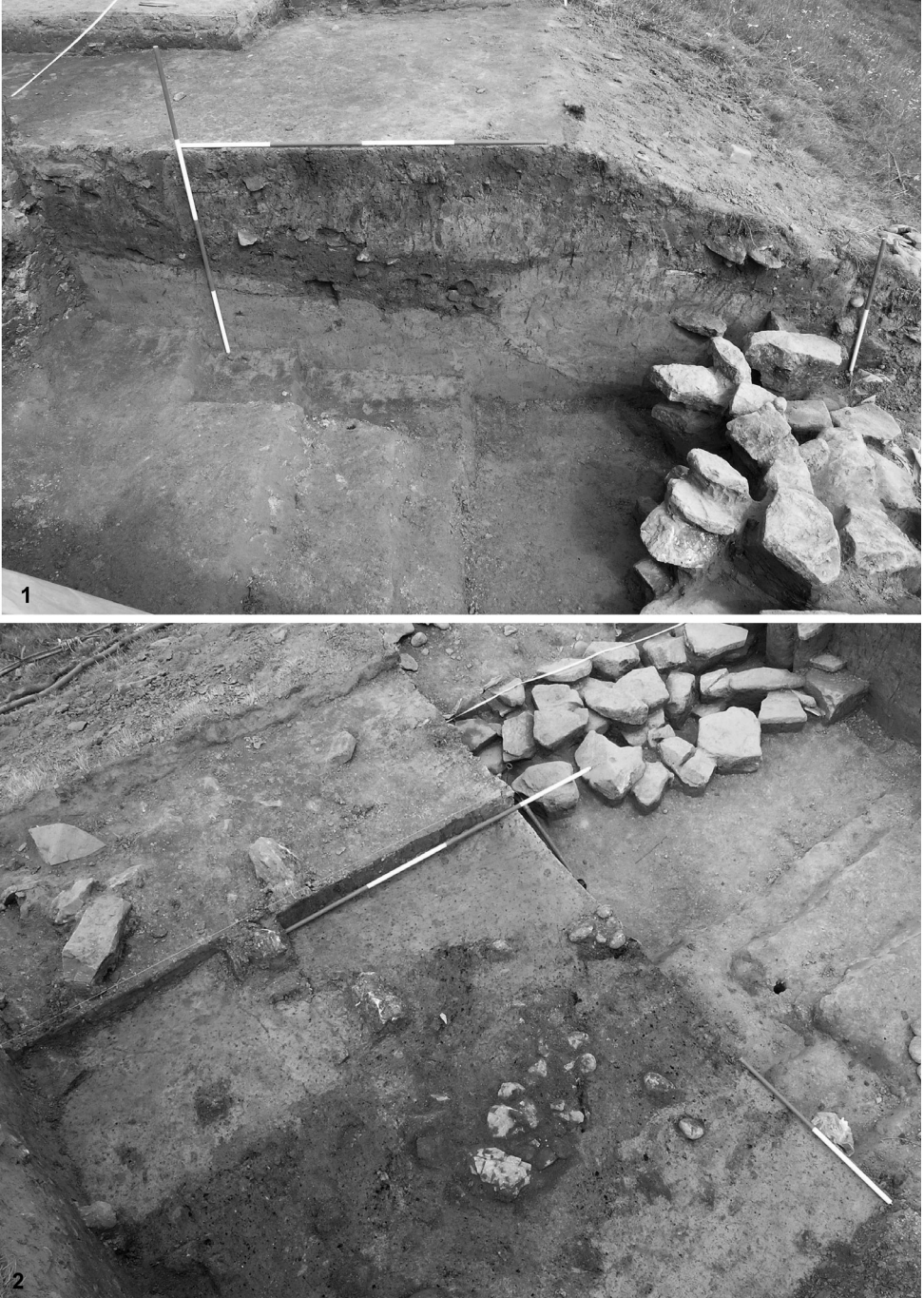


Fig. 16. Segment of a stone wall uncovered during the excavations in 2012: fragment of northern profile of trench 2 (1) and trench 6 (2)



Fig. 17. Detail of the lower layer of stones forming the wall uncovered in season 2012. Loose stones (debris) can be seen along the band (ca 1 m wide) of regularly arranged stones

(perhaps elements of earth ramparts) were also reported for a few sites attributed to the Věteřov groups in Moravia (Spurný 1954, 360–366; Richterová 1956, 472–473; Tihelka 1969; Salaš 1986, 505–506; Štrof 1990). The most spectacular manifestation of stone architecture in the north of the Carpathian Basin are the complex fortifications of the settlement at Spišský Štvrtok (Vladár 1973, 280–286; 1976). The last examples of stone fortifications in the Danube basin are the constructions found on two settlements linked with the younger phase of the Wietenberg culture in Transylvania: at Lutoasa and Turia (Boroffka 1994, 100–101; Székely 1999, 109–110).

Apart from the above-presented sites from the Carpathian Basin, there are also other analogies to the stone constructions recorded at Maszkowice. Most likely, at least some of the upland settlements (the so-called ‘gradina’) from the mountains of Bosnia, where the fortifications (sometimes multi-segment ones) were built in dry wall technique,

should be dated to the Early Bronze Age (e.g. Oreč 1978; Kosorić 1983, 74; Čović 1989, 108–109). Several other examples of very early dated stone fortifications come from Alpine valleys (Burkart 1946; Krause 2007; Steiner 2007; Lanzerein 2009).

The appearance of stone defensive works in mountainous areas might be regarded as a result of convergence – an independent, local appearance of a certain cultural innovation, attractive in regions where building material was easily accessible. However, there are two elements which, even if they do not exclude the adaptive character of the phenomenon in question, may point to the presence of additional cultural factors behind it.

Firstly, virtually all the examples presented above, regardless of the region, show a striking similarity in the construction (fig. 18). These are usually the sites of relatively small size (settlements generally do not exceed 1 ha in area), often with buildings arranged in a circle, close to the fortifications. As at Maszkowice, in numerous cases the stone wall is

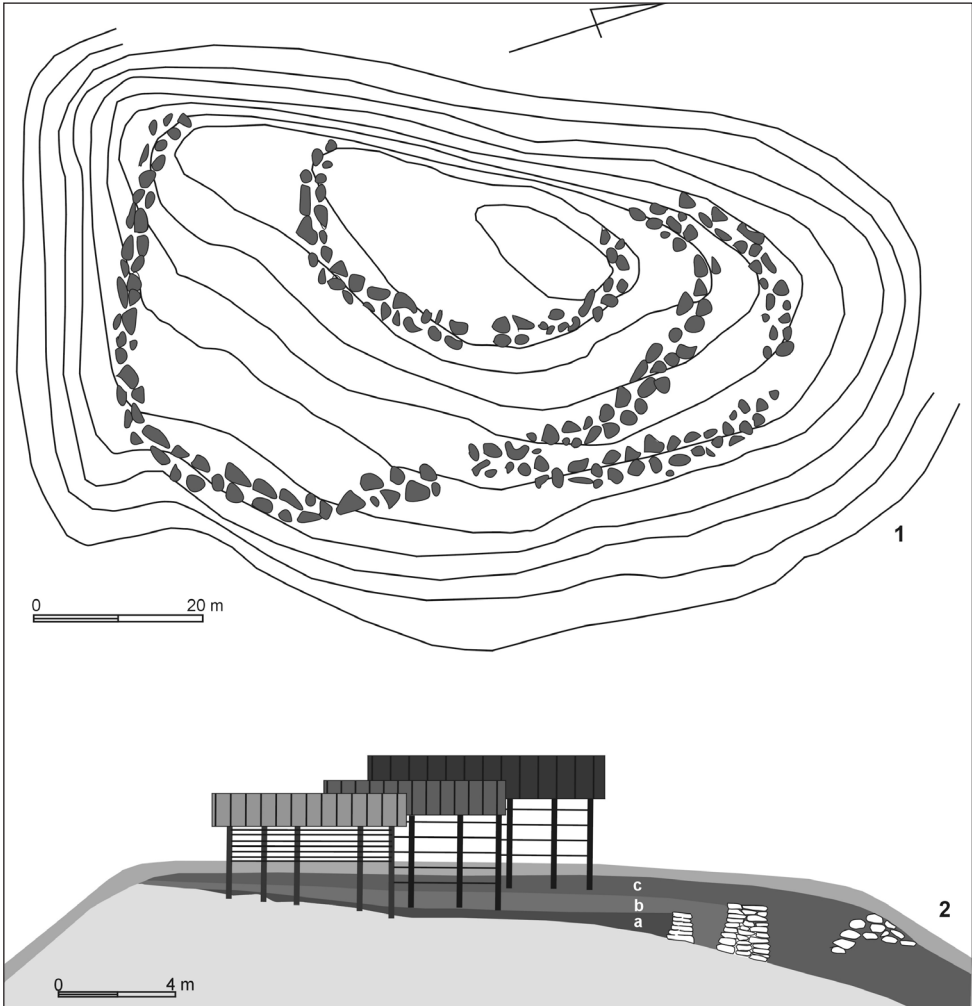


Fig. 18. Examples of defensive works analogical to Maszkowice: ‘gradina’ near Jalaševac, Bosnia (1) and the reconstructed sequence of building phases on the Crestaulta settlement near Surin, Switzerland (2) – after Burkart 1946; Oreč 1978

built on only one or two of the most easily accessible approaches to the settlement. The fortifications are built of large, rather loosely attached stones (dry wall) or a more firm stone wall faces one side of the earthen rampart. Finally, at least a few sites are known (especially in the Alpine zone) where a stone construction serves as a barrier for an earthen embankment used as a dwelling platform

(e.g. Burkart 1946, 5–7, 10, 16; Krause 2007, 125; Bátorá, Rassmann 2008, 86–87; Steiner 2007, 59–60).

Secondly, even more important than the similarities in the construction is the chronology of the discussed sites. As it turns out, all of the stone defensive works that can be reliably dated (based on artefacts or radiocarbon dates) come from no earlier than

the 17th–16th century BC, which is exactly the transition between the Early and Middle Bronze Age. It seems that we can speak of a certain short horizon when the oldest stone defensive architecture emerged on the sites from mountainous areas of Central Europe. Of course, a thorough examination of this interesting phenomenon requires further extensive studies which exceed the scope of this paper. Nevertheless, we think it is worth signalling that, in Central Europe, the appearance of the first stone defensive works coincides with the period of intensified influences from the Aegean (for chronology see e.g. Peška 2012, 311). Interestingly enough, even in the Alpine zone – the most remote from the Carpathian Basin – sites with stone architecture produced single artefacts that have analogies either on the Danube or in the Mycenaean culture (e.g. Steiner 2007, 125, 139; Lanzerein 2009, 58–59). In the context of the phenomenon in question we should not forget, too, that the development of the above-described Central European sites coincides in time with the period, when proto-urban centres were founded on the northern coast of the Adriatic which were similar to those known from the eastern part of the Mediterranean and characterised, among other things, by the presence of stone architecture (Teržan, Mihovilić, Hänsel 1998; Hänsel, Teržan, Mihovilić 2007). Arguments supporting the hypothesis about the predominance of ‘cultural’ rather than ‘adaptive’ factor in the spread of stone defensive architecture in Europe can also be derived from the results of excavations at Maszkowice. Let us recall here that stone wall opens the stratigraphic sequence on this settlement. This means that a group of people who came to the Dunajec valley, to the area that most likely had never been occupied before, began to organize their settlement space by erecting fortifications. Thus, what we have here is clearly

the realisation of a ready ‘scenario’ brought by the colonists rather than the long-lasting process of local adaptation.

The question remains whether the connections between the Maszkowice population and south-eastern Europe were limited to the oldest phase of the settlement development, or were they maintained throughout its entire Early and Middle Bronze Age phase? As mentioned before, changes in pottery style observed at Maszkowice mirror the tendencies known from other Otomani-Füzesabony

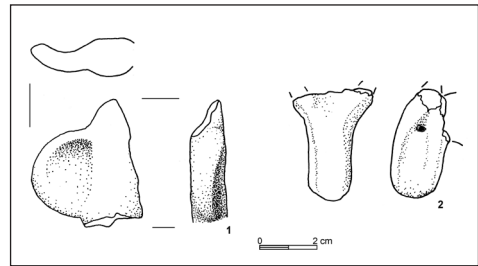


Fig. 19. Figurines found in layers connected with the Maszkowice III phase – fragment of an anthropomorphic statuette discovered in 2011 (1) and the head of animal figurine found in 1972 (2)

sites throughout the entire period of this culture’s development. In this context, particular attention should be given to the fragment of a clay anthropomorphic figurine, found in the deposits linked with the third, youngest building phase (fig. 10, 19:1). Except for similar artefacts discovered on fortified settlements at Trzcinica (Gancarski 2002, 116; 2005, 18) and Füzesabony-Öregdomb (Kovács 1990, 35), the Maszkowice specimen finds no other parallel in a relatively large collection of X-shaped anthropomorphic idols, typical of the Early and Middle Bronze Age in the northern part of the Carpathian Basin (e.g. Hájek 1957; Dietrich 2011). However, there are two geographically distant groups of artefacts that should no doubt be mentioned in this context (fig. 20).

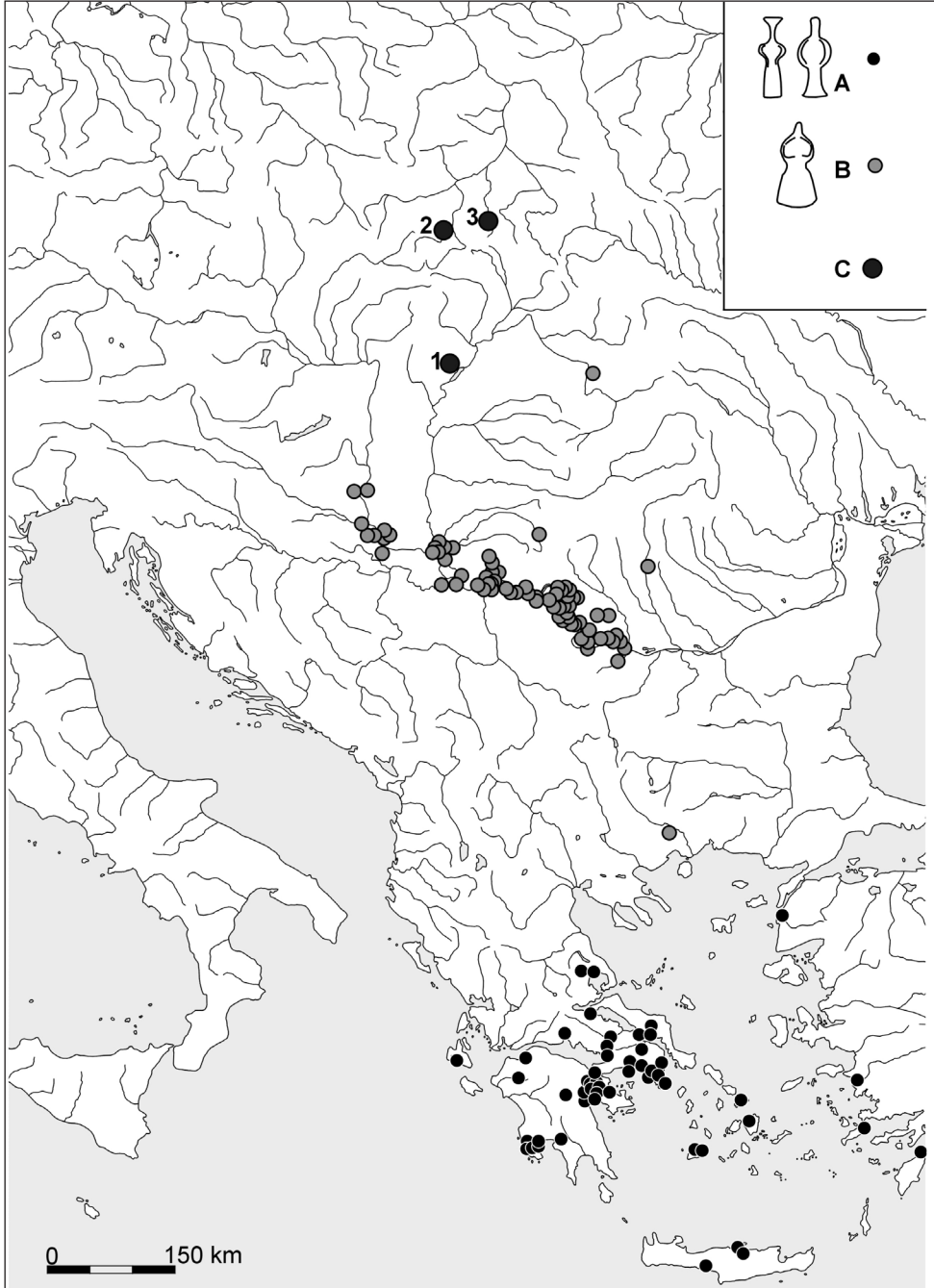


Fig. 20. Distribution of clay figurines of Phi and Tau types (A), Danubian idols (B), and isolated finds of similar statuettes in the northern part of the Carpathian zone (C): Füzesabony-Öregdomb (1), Maszkowice (2), Trzcina (3). After: French 1971 and Holenweger 2011, supplemented by Richardson 2001 and Dietrich 2010

The first group comprises statuettes known from the northern Balkans and lower Danube basin, distinguished – as is the Maszkowice figurine – by a conical upper part and the presence of semi-circular lateral protrusions imitating hands (Dumitrescu 1961; Holenweger 2011). They differ from the Maszkowice specimen in the presence of incised and sometimes also inlaid decoration which represents ornaments and dress elements. The context is different, too – these statuettes are usually discovered in graves, and apparently only in those of children (Chicideanu 1986, 15, 71a, 89, 102; Chicideanu-Şandor, Chicideanu 1990, 70; Holenweger 2011, 254). However, in terms of chronology they correspond precisely with the object from Maszkowice – they are dated approximately within the range 1450–1300 BC (BrC1–BrD – compare e.g. Reich 2002, 175–178).

A similar chronology (phases LH IIIA2–B – ca 1420–1340 BC) applies to Mycenaean statuettes of the Phi and Tau types, which are believed to represent female guardian deities (French 1971). Apart from chronology, they are linked with the Maszkowice idol by their schematic rendering of the human figure, and with the North-Balkan specimens also by the context of their appearance – many of these artefacts come from cemeteries and were discovered in child graves (e.g. Richardson 2001, 22–36, 81). They were also discovered in great numbers in house relics, almost always under the doorstep or next to the fireplace (Dickinson 2001, 286–287; Richardson 2001, 13, 83; Veters 2012, 36). In such a context, they are often accompanied by statuettes representing cattle (np. Dickinson 2001, 177; Richardson 2001, 43–44, 49; Alram-Stern 2006, 118). This last remark is particularly important, as it fully corresponds with the situation recorded at Maszkowice, where a fragment of such statuette (fig. 19:2) is known from Maria Cabalska's excavations. It was discovered in the upper part of

the fill of the deep pit, in the layer that most likely chronologically corresponds with the household area from phase Maszkowice III, i.e. the same structure where the anthropomorphic figurine was found.

The discovery of the artefacts presented above and the presence of stone fortifications are elements that distinguish Maszkowice from the local background. These arguments must be taken into account when discussing the relationships between Early and Middle Bronze Age settlements from the Polish Carpathian zone and the centres situated to the south of the Western Carpathians. In light of the facts presented above, it should be assumed that these connections reached much deeper than the influences from the area of the Otomani-Füzesabony culture development noticeable in pottery style. Most likely, together with these influences, some customs and beliefs, common for vast areas of south-eastern Europe, and for Mycenaean Greece in particular, were introduced to the upper Dunajec valley. Their material evidence is the anthropomorphic figurine discovered at Maszkowice, and especially the fact that it was accompanied by another important cultural symbol, i.e. the cattle figurine. A crucial role in spreading ideas over such a vast territory must have been played by long-distance exchange of goods, which is best manifested by the finds of Baltic amber on Carpathian sites. It is worth noting that a piece of amber was discovered at Maszkowice, too. Interestingly enough at Maszkowice, unlike on the sites from the Danube basin, it was a lump of unworked raw material and not a finished product (compare Marková 2003, 343).

Conclusions

The results of studies conducted so far on the Early and Middle Bronze Age settlement at Maszkowice may be recapitulated as follows:

1. The settlement was founded towards the end of phase BrA2 (mid-17th century BC) by a population that moved to a previously uninhabited area. Thus, it was the colonisation of anecumene rather than the acculturation of local 'Epi-Corded' groups as it is assumed for other regions in the Northern Carpathian zone. Three building phases (Maszkowice I–III) can be distinguished, clearly noticeable in the stratigraphy of the site. The youngest one probably continued into phase BrD (the 13th century BC).

2. The layout of the settlement remained unchanged during the entire period of the site's functioning, with the buildings concentrated next to the fortifications. From the very beginning, the fortifications had the form of a dry wall; in successive building phases a clay embankment was gradually erected at the inner side of the wall.

3. The collection of pottery discovered at Maszkowice finds equivalents in assemblages attributed to the Otomani-Füzesabony culture, from the classic to the final phase. Moreover, a number of other elements were revealed (fortification type, details of buildings construction, figural fine art) which allow us to assume that, over the entire period of the existence of the Early and Middle Bronze Age settlement, the Maszkowice population participated in a broad network of relationships linking the Carpathian Basin and the Balkans.

4. To propose at least a preliminary interpretation of the discussed phenomenon, we assume that these were the economic motives, especially the need to control exchange routes, that prompted one of the groups representing the 'Danubian' model of culture to cross the Carpathians in the mid-17th century BC and establish a small

fortified settlement in the upper Dunajec valley, in the place now called 'Góra Zyn-drama'. It seems highly likely that the inhabitants of the Maszkowice settlement actively participated in the exchange of goods between the 'north' and 'south' of Central Europe for nearly 400 years when the settlement existed.

It is obvious that thorough, interdisciplinary studies are still needed to fully explain why the upper Dunajec River valley was settled towards the end of the Early Bronze Age, and what was the economic basis of the exceptionally permanent occupation of the Maszkowice site. Therefore, this paper should be regarded as a starting point for future research rather than the final explanation of the more general issues signalled in this work.

Acknowledgements

We would like to thank all the people involved in the recent excavation campaigns in Maszkowice; the students of the Archaeological Institute of Jagiellonian University working at the site, local authorities of Maszkowice and the staff of Primary School in Maszkowice, especially the principal, Mr Antoni Łazarz, for making the campaigns technically feasible. We are very grateful to prof. Wojciech Blajer and prof. Jan Chochorowski from the Archaeological Institute of Jagiellonian University for all the suggestions made during fieldworks and for comments on an earlier draft of this paper. We also highly appreciate the remarks made by dr hab. Marek Drewnik from the Institute of Geography and Spatial Management of Jagiellonian University, concerning natural sediments and processes on the site

**Ufortyfikowane osiedle z wczesnej i środkowej epoki brązu w Maszkowicach,
pow. Nowy Sącz (Karpaty Zachodnie). Wstępne wyniki badań realizowanych w latach
2009–2012**

Artykuł prezentuje dotychczasowe wyniki studiów nad wielofazowym osiedlem obronnym z epoki brązu i epoki żelaza, zlokalizowanym w miejscowości Maszkowice, w dorzeczu górnego Dunajca. Przedstawione w nim badania dotyczą najstarszej fazy osadniczej zidentyfikowanej na stanowisku, która może być odnoszona do końca wczesnej epoki brązu oraz do środkowej epoki brązu. Przedstawione tutaj wyniki bazują zarówno na informacjach pozyskanych podczas dawnych prac prowadzonych na stanowisku w Maszkowicach, jak i nowych badań wykopaliskowych, realizowanych w latach 2010–2012. W kolejnych partiach artykułu scharakteryzowane zostało przestrzenne rozmieszczenie śladów osadnictwa z wczesnej i środkowej epoki brązu na terenie stanowiska, przeanalizowana została szczegółowo stratygrafia jego wschodniej partii, oraz zbadane zostało technologiczne i stylistyczne zróżnicowanie materiału ceramicznego w obrębie kolejnych nawarstwień. Rezultaty tych analiz zawrzeć można w następujących wnioskach:

1. Osiedle w Maszkowicach zostało wzniesione w końcu fazy BrA2 (połowa XVII w. przed Chr.) przez populację przybyłą na obszar najprawdopodobniej całkowicie wcześniej niezasiedlony. Mamy zatem do czynienia raczej z kolonizacją anekumeny, a nie z przyjmowanym dla innych regionów strefy północnokarpackiej procesem akulturacji lokalnych grup „episnurowych”. W rozwoju osiedla z wczesnej i środkowej epoki brązu wyróżnić można trzy fazy budowlane (Maszkowice I–III) czytelne wyraźnie w stratygrafii stanowiska. Najmłodsza z nich trwała prawdopodobnie jeszcze współcześnie z fazą BrD (XIII w. przed Chr.).

2. Przez cały okres rozwoju osada posiadała ten sam schemat przestrzennego rozplanowania, z zabudową skoncentrowaną przy umocnieniach. Te ostatnie od początku istnienia osiedla miały postać suchego muru, przy którym od strony wewnętrznej wznoszony był stopniowo, w kolejnych fazach budowlanych, gliniany nasyp.

3. Cały zbiór ceramiki odkrytej na stanowisku w Maszkowicach posiada odpowiedniki w zespołach źródeł zaliczanych do kultury Otomani-Füzesabony, począwszy od jej fazy klasycznej po fazę schyłkową. Ponadto na stanowisku stwierdzono obecność szeregu dalszych elementów (forma fortyfikacji, szczegóły konstrukcji budynków, plastyka figuralna), które pozwalają przyjąć, że przez cały czas istnienia osady z wczesnej i środkowej epoki brązu zamieszkująca ją populacja włączona była w szeroki układ powiązań obejmujący Kotlinę Karpacką i Półwysep Bałkański.

4. Podejmując się interpretacji tego zjawiska możemy przyjąć, że to motywy natury ekonomicznej, a zwłaszcza potrzeba kontroli szlaków wymiany, skłoniły w połowie XVII stulecia przed Chr. jedną z grup ludzkich reprezentujących naddunajski model kulturowy do przedostania się na północną stronę łuku Karpat i założenia w dolinie górnego Dunajca, w miejscu znanym dziś jako „Góra Zyndrama”, niewielkiego osiedla obronnego. Wiele wskazuje też na to, że mieszkańcy osiedla w Maszkowicach aktywnie uczestniczyli w wymianie dóbr pomiędzy „północą” i „południem” Europy Środkowej przez kolejnych blisko 400 lat jego funkcjonowania.

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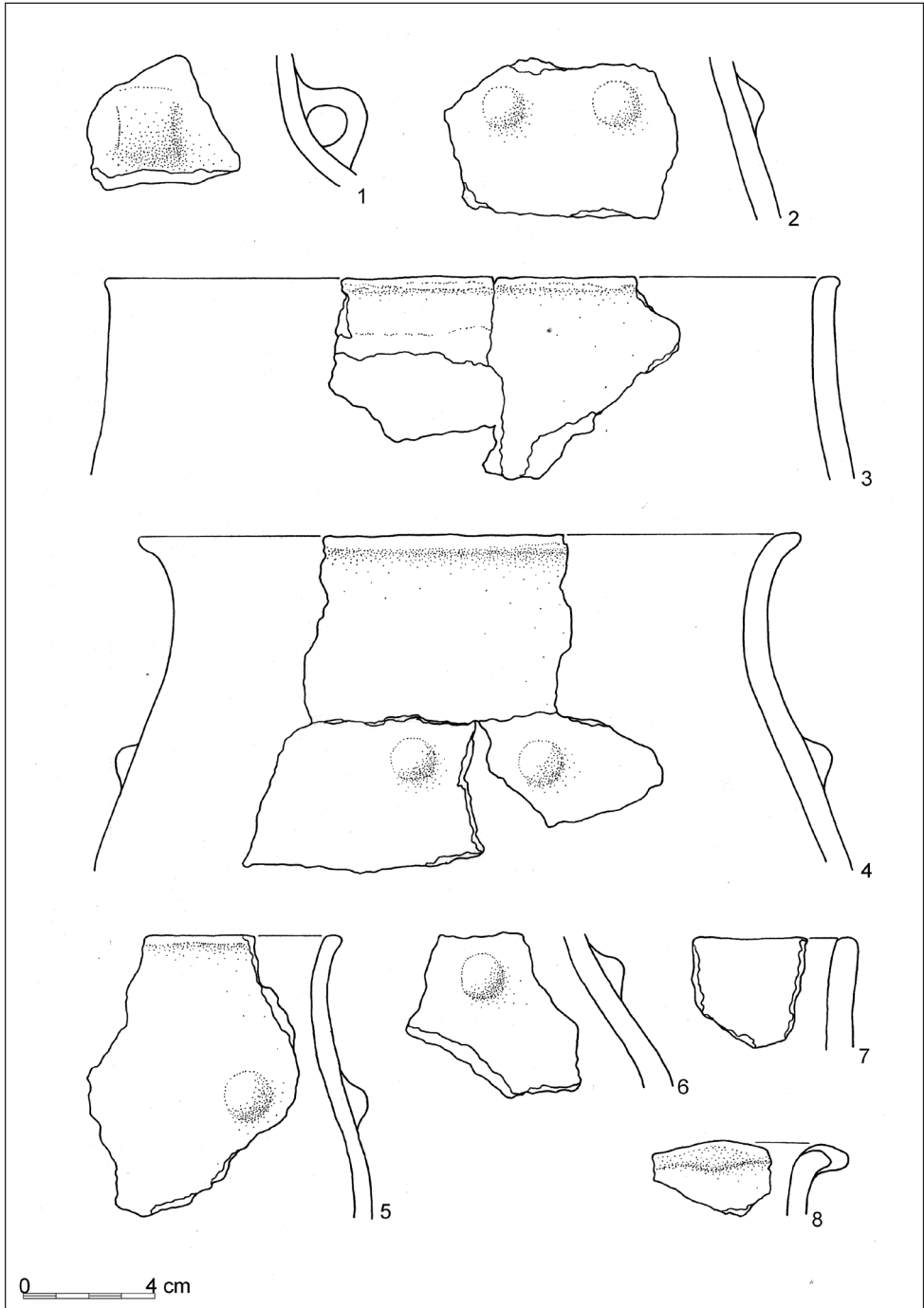


Plate 1. Pottery from layer IV I (Maszkowice phase III): 1–6, and from the border zone between layers IV F and IV I (Maszkowice phase II and III): 7–8

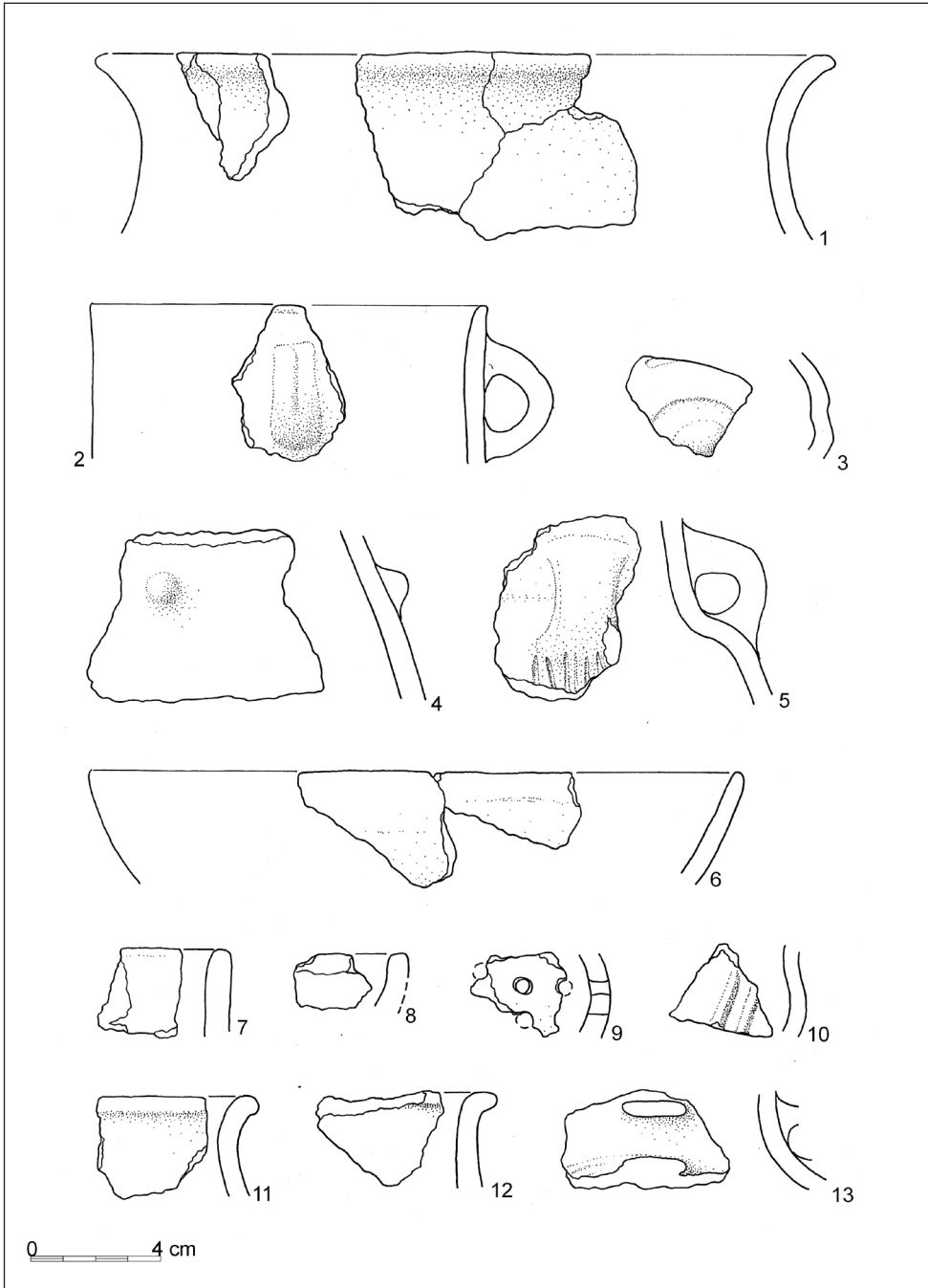


Plate 2. Pottery from layer IV I (Maszkowice phase III): 1–2, 4, 7–13, from the border zone between layers IV F and IV I (Maszkowice phase II and III): 3, and from the border zone between layer II A (first clay embankment) and IV I (Maszkowice phase III): 5–6

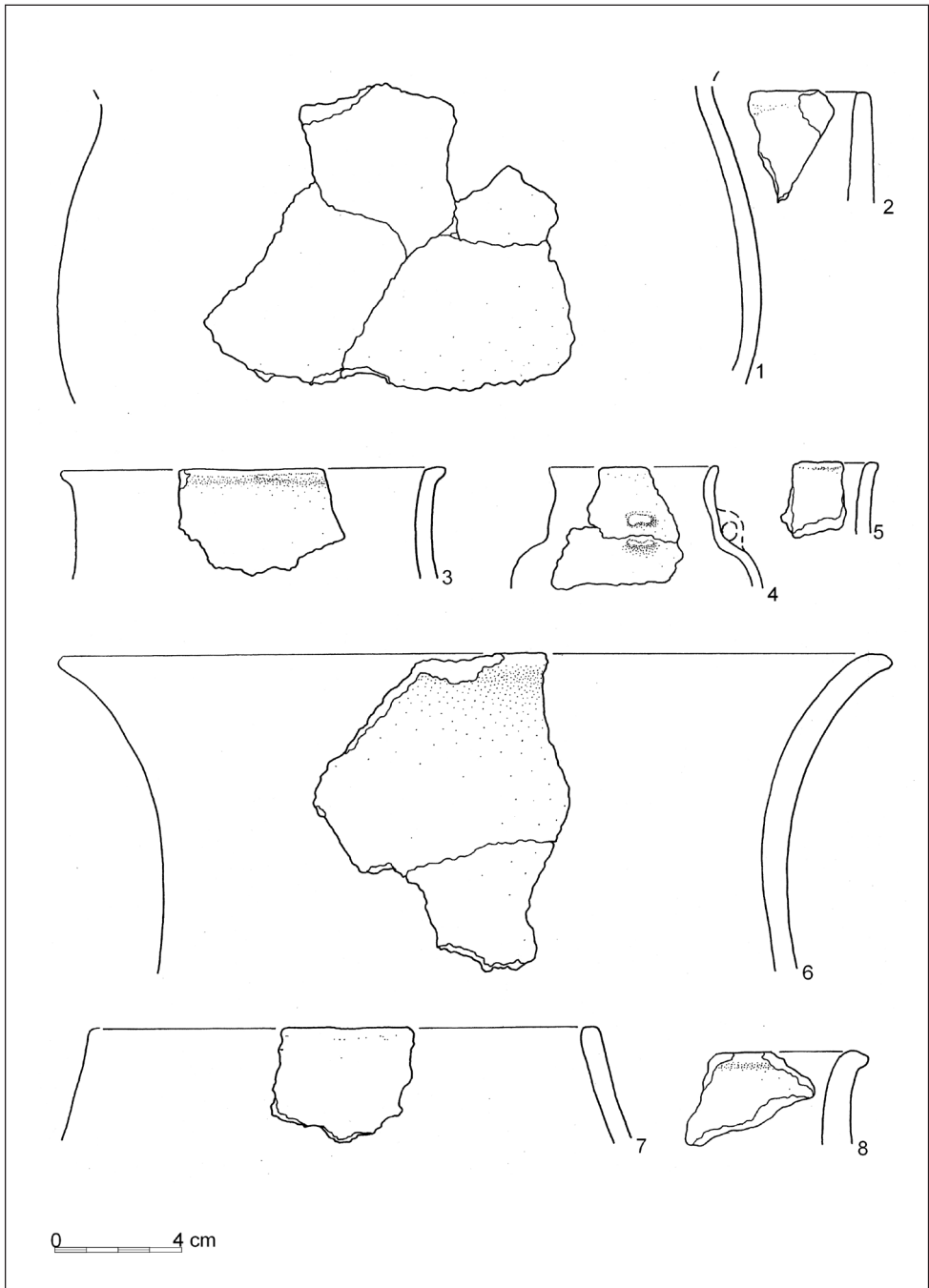


Plate 3. Pottery from layer IV I (Maszkowice phase III): 1, 3–5, 8, from the border zone between layers IV F and IV I (Maszkowice phase II and III): 2, and from the border zone between layer II A (first clay embankment) and IV I (Maszkowice phase III): 6–7

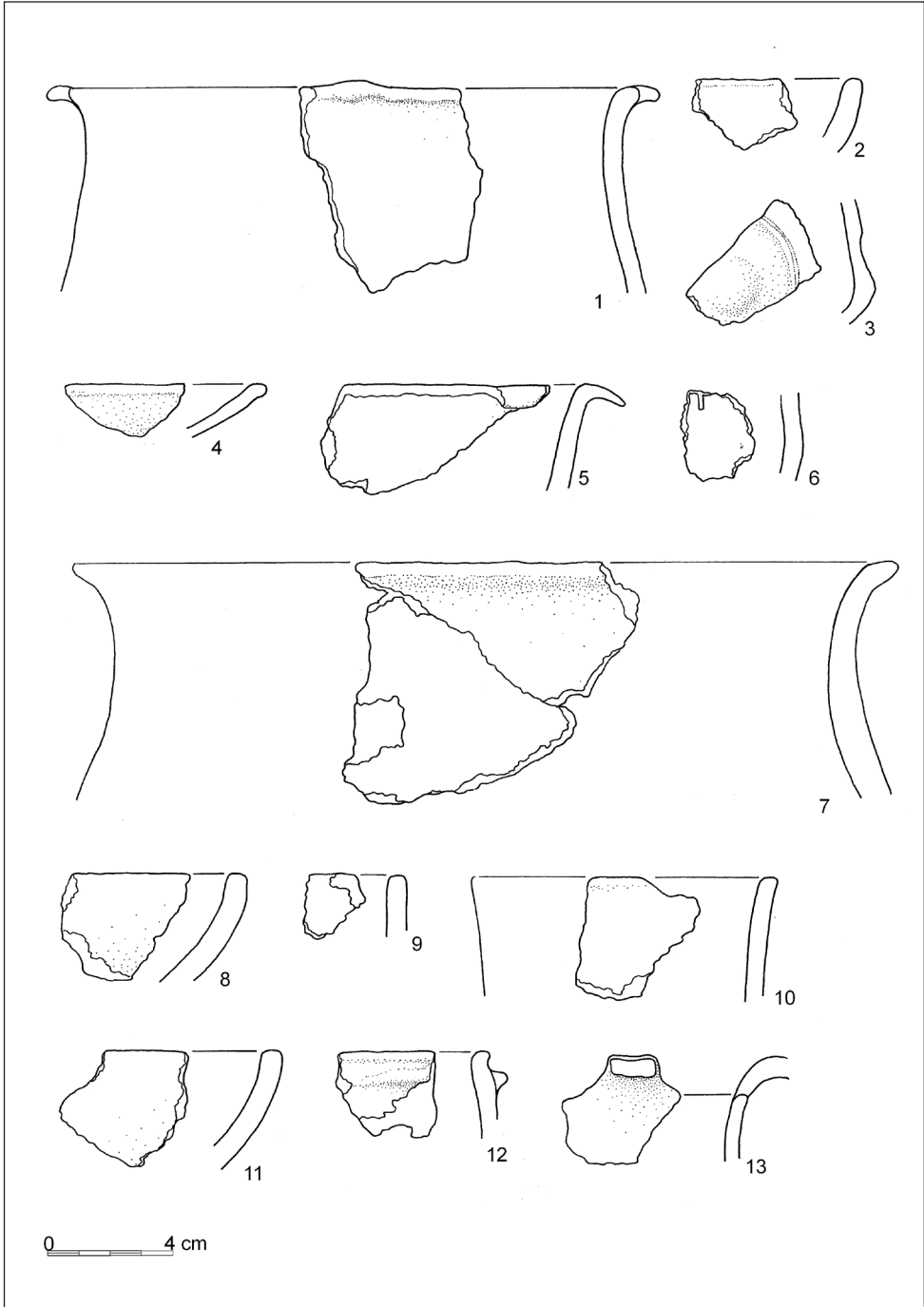


Plate 4. Pottery from layer IV I (Maszkowice phase III): 2–8, 11–13, and from the border zone between layers IV F and IV I (Maszkowice phase II and III): 1, 9–10

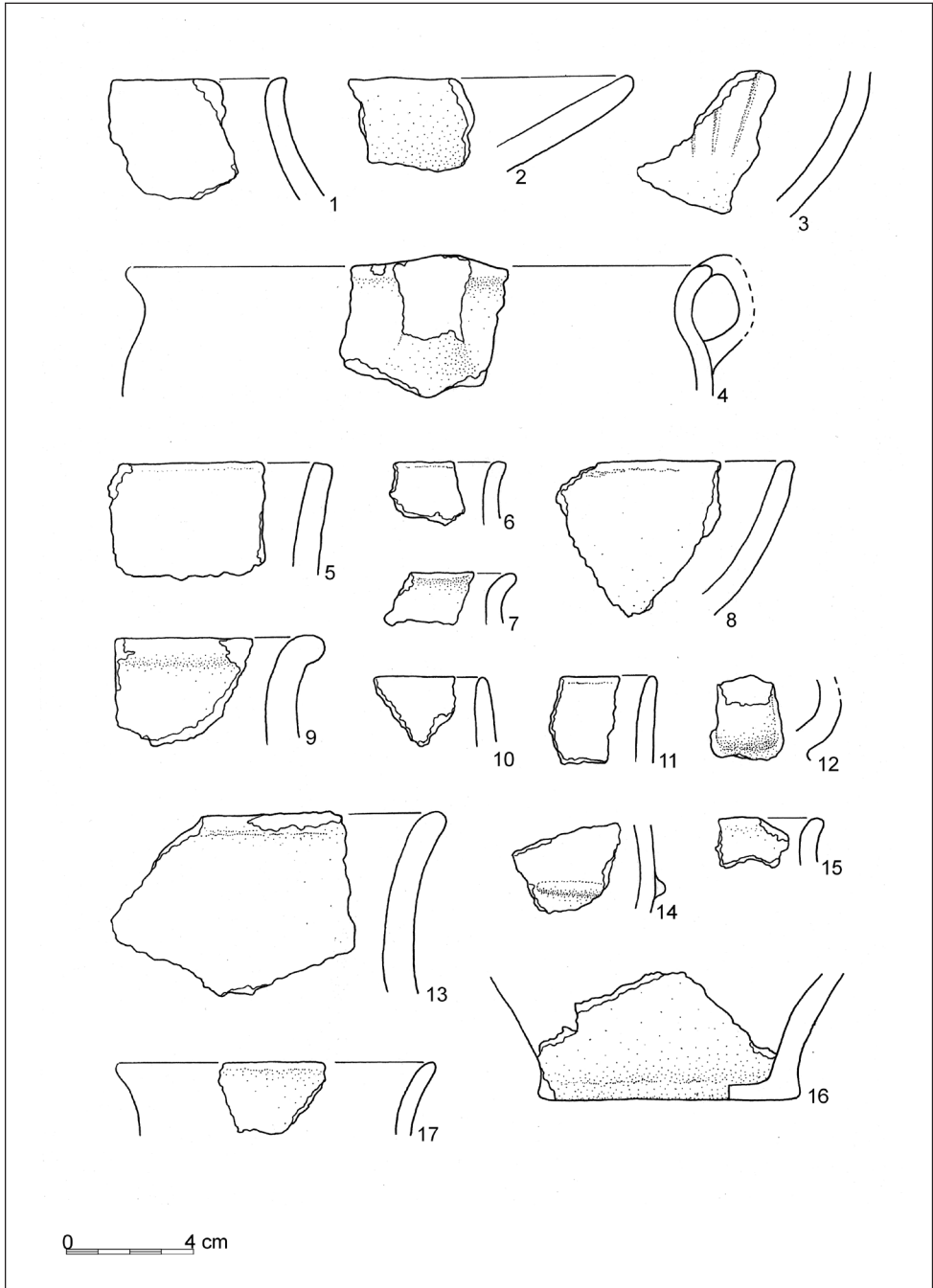


Plate 5. Pottery from layer IV I (Maszkowice phase III): 1, 6, 9, 16–17, from the border zone between layers IV F and IV I (Maszkowice phase II and III): 7–8, 13, and from the border zone between layer II A (first clay embankment) and IV I (Maszkowice phase III): 2–5, 10, 12, 14–15

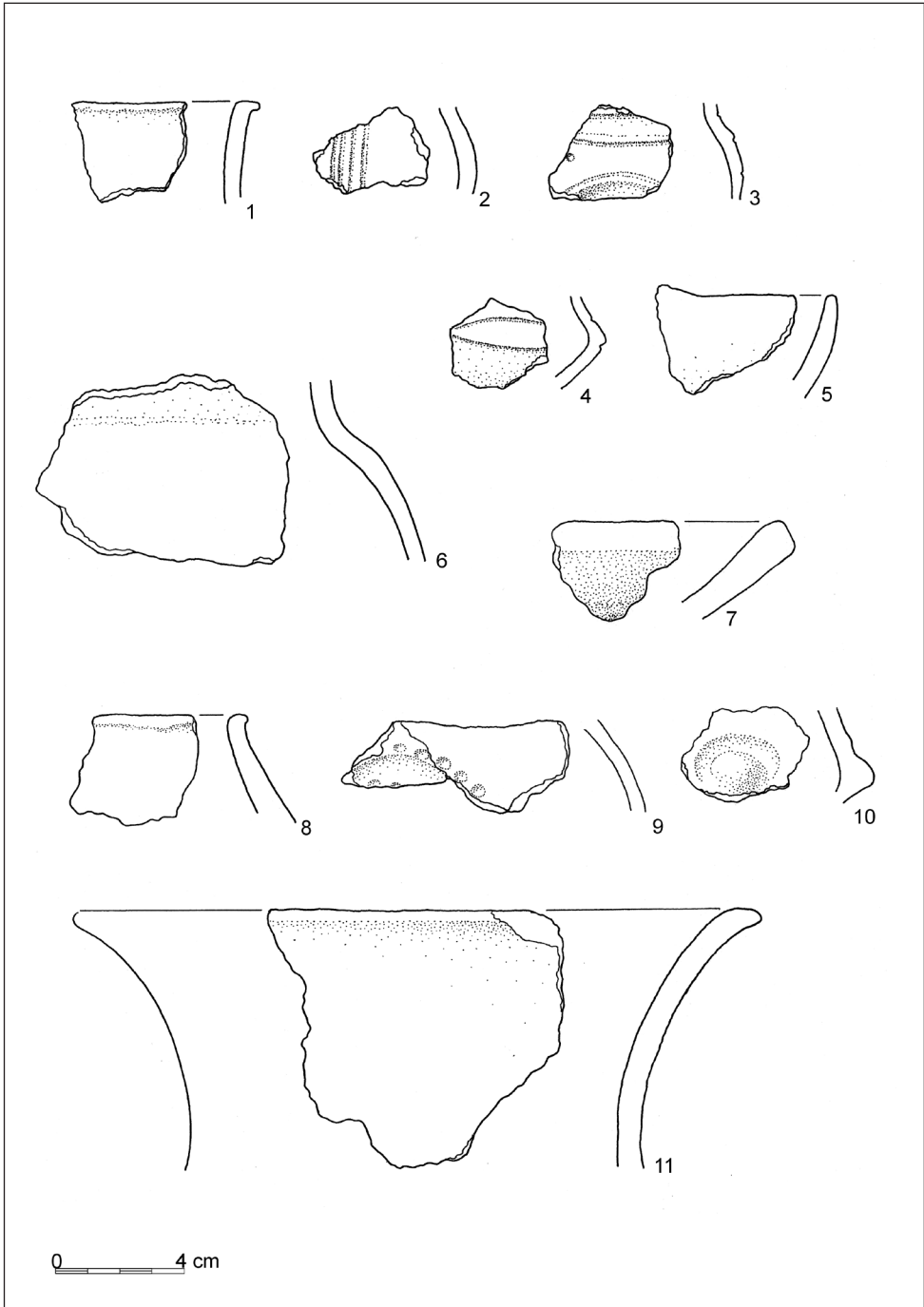


Plate 6. Pottery from layer IV I (Maszkowice phase III): 7–11, and from the border zone between layers IV F and IV I (Maszkowice phase II and III): 1–6

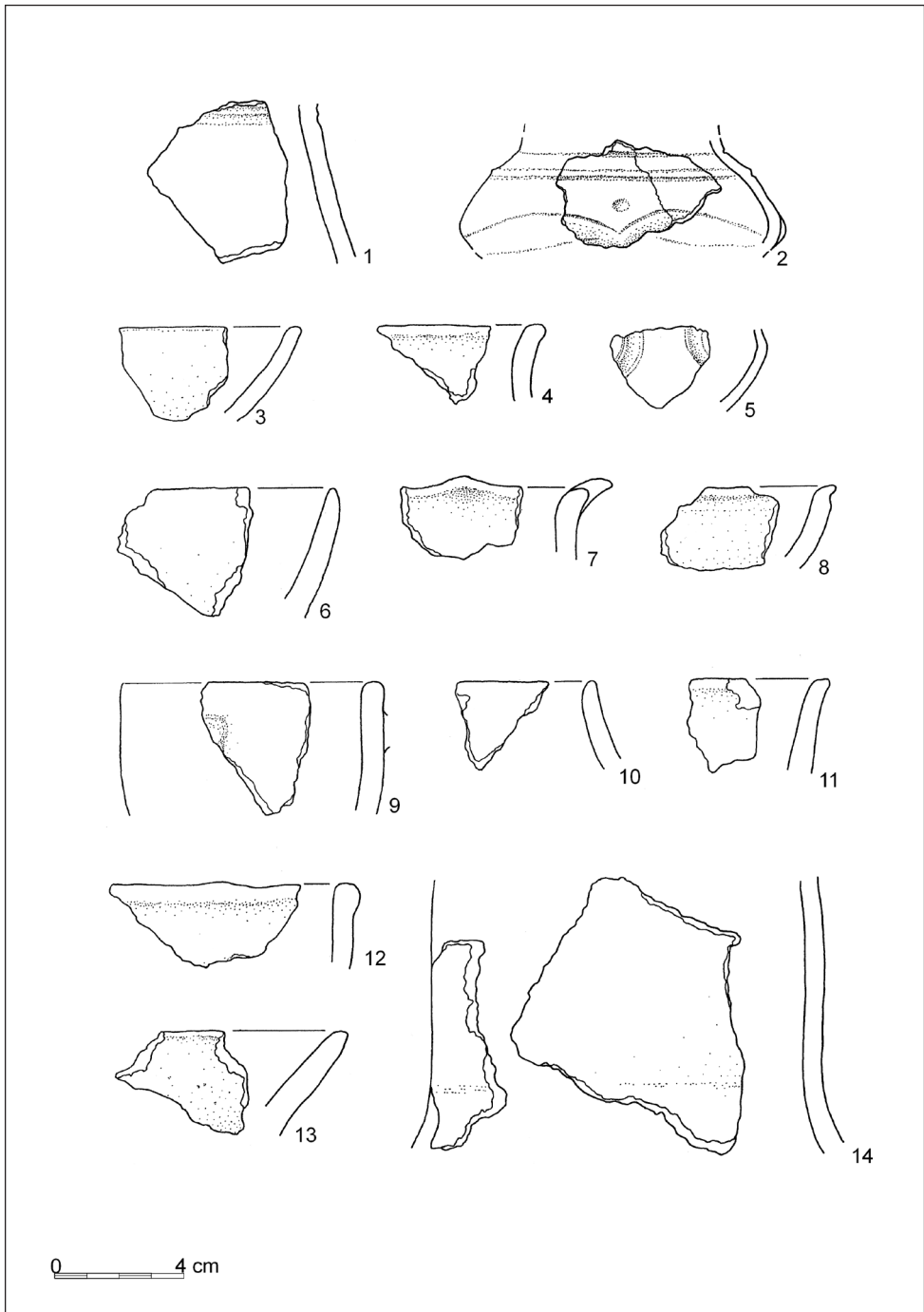


Plate 7. Pottery from layer IV I (Maszkowice phase III): 1–2, 5–6, 10–14, from the border zone between layers II A, IV B and IV F (Maszkowice phase I and II): 7–9, and from layers IV A and IV D (Maszkowice phase I): 3–4

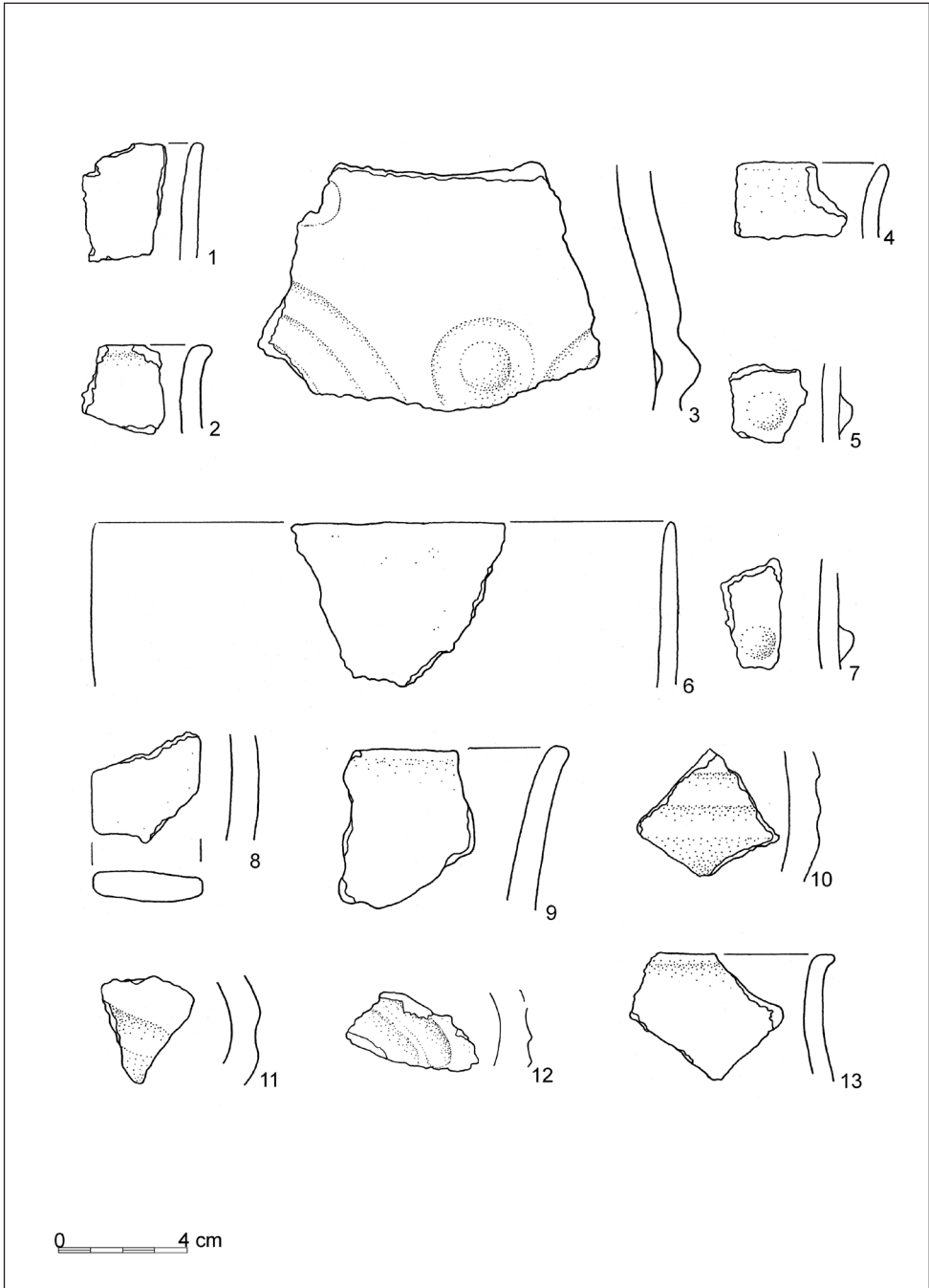


Plate 8. Pottery from the border zone between buried soil (layer I B) and the first clay embankment (IIA) or cultural layer IV B (Maszkowice phase I): 1–2, 4–13, and a burnt vessel fragment from a posthole associated with the building from Maszkowice phase I: 3

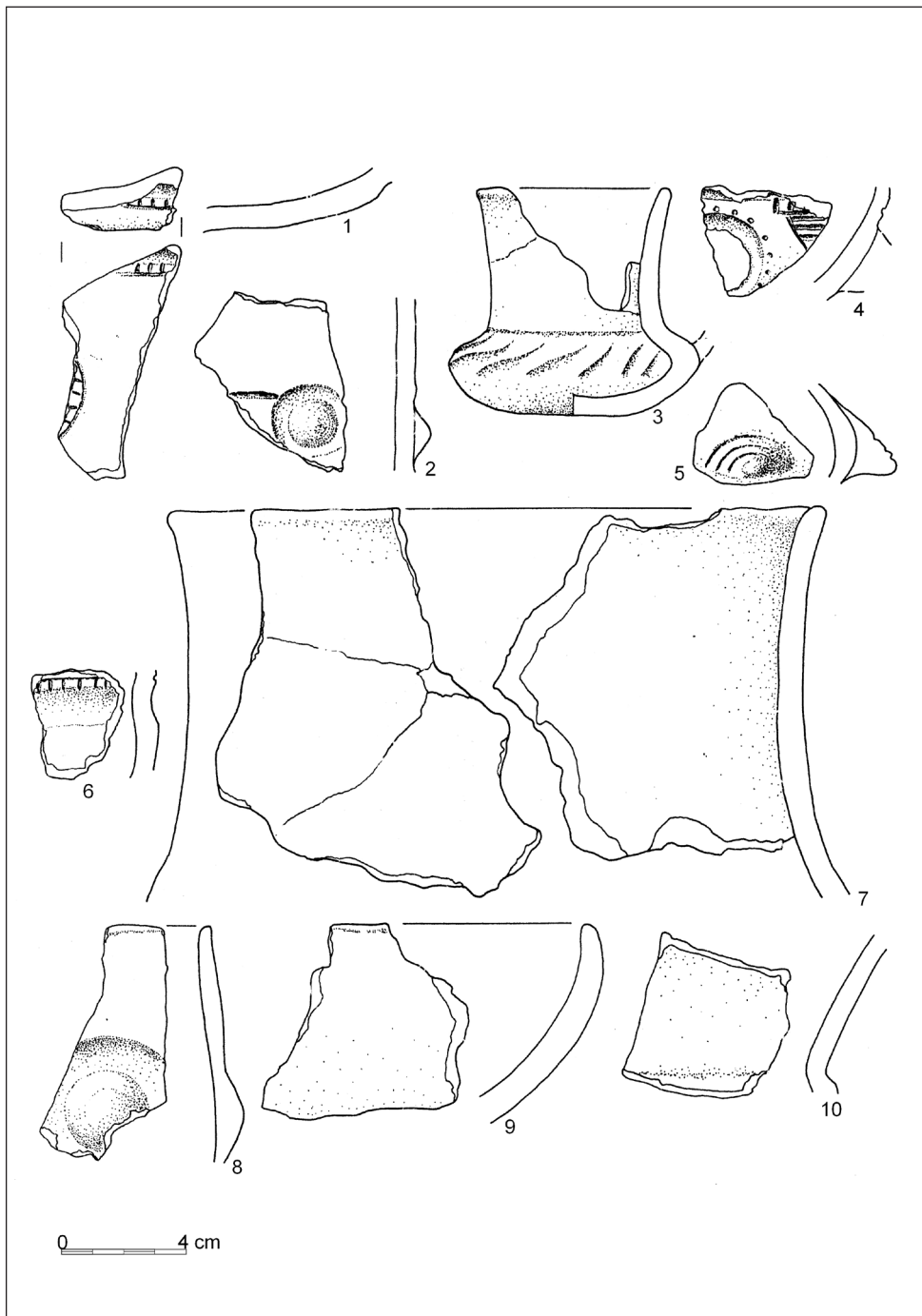


Plate 9. Early and Middle Bronze Age pottery from the trenches situated next to the northern segment of the fortifications (cluster 1), excavations of 1967

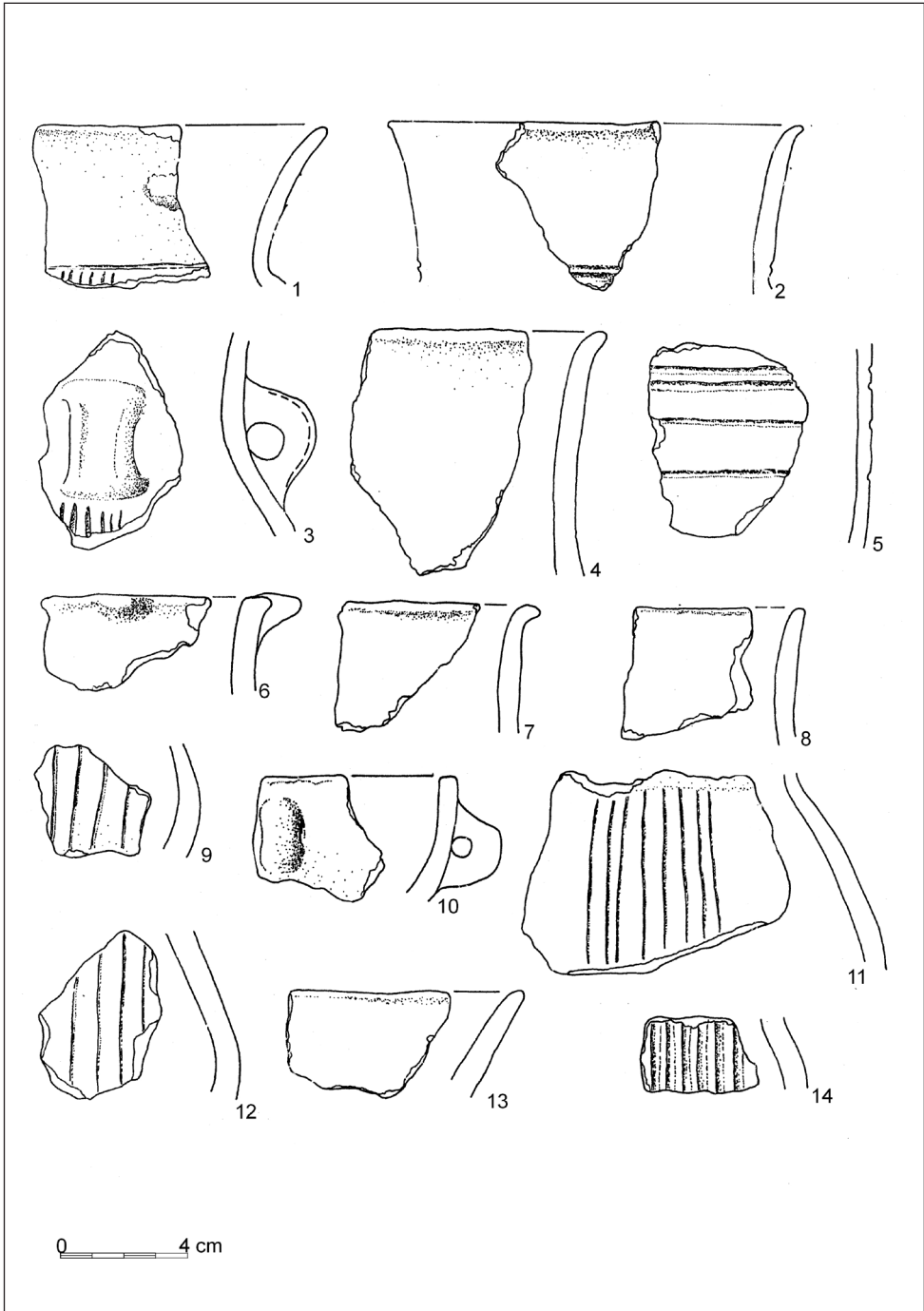


Plate 10. Early and Middle Bronze Age pottery from the trenches situated next to the northern segment of fortifications (cluster 1), excavations of 1963 (1–9), 1965 (10–11), and 1967 (12–14)



Plate 11. Early and Middle Bronze Age pottery from the trenches situated in the northern part of the settlement (cluster 2), excavations of 1960 (1–4,8,12–14,17) and 1961 (5–7,9–11,15–16)

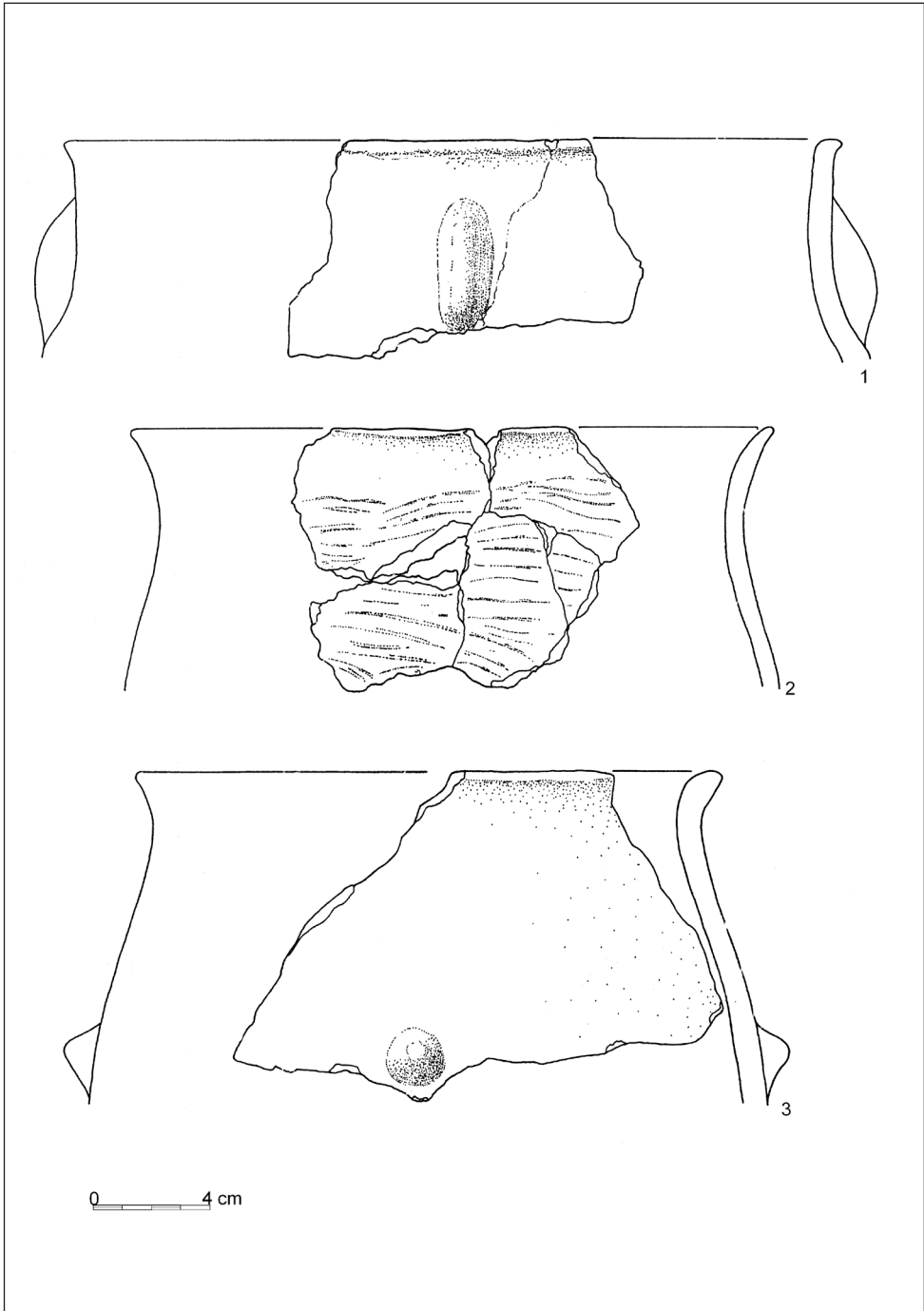


Plate 12. Early and Middle Bronze Age pottery from the trenches situated on the eastern edge of the settlement (cluster 3), the 1961 excavations

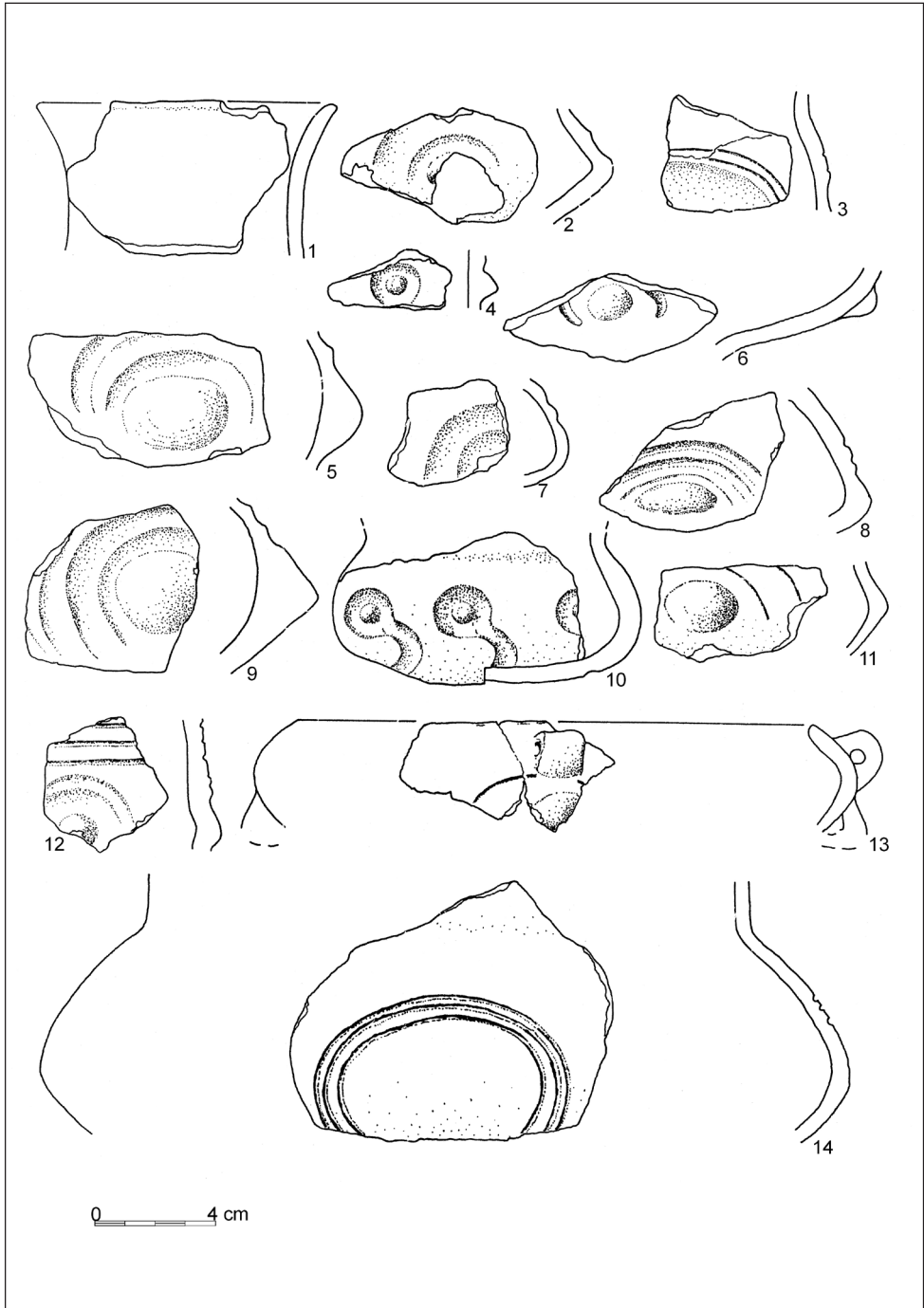


Plate 13. Early and Middle Bronze Age pottery from the trenches situated on the eastern edge of the settlement (cluster 3), excavations of 1960 (7,9–10,13), 1961 (1–6,8,11,14) and from season 2012 – trench 1 (12)

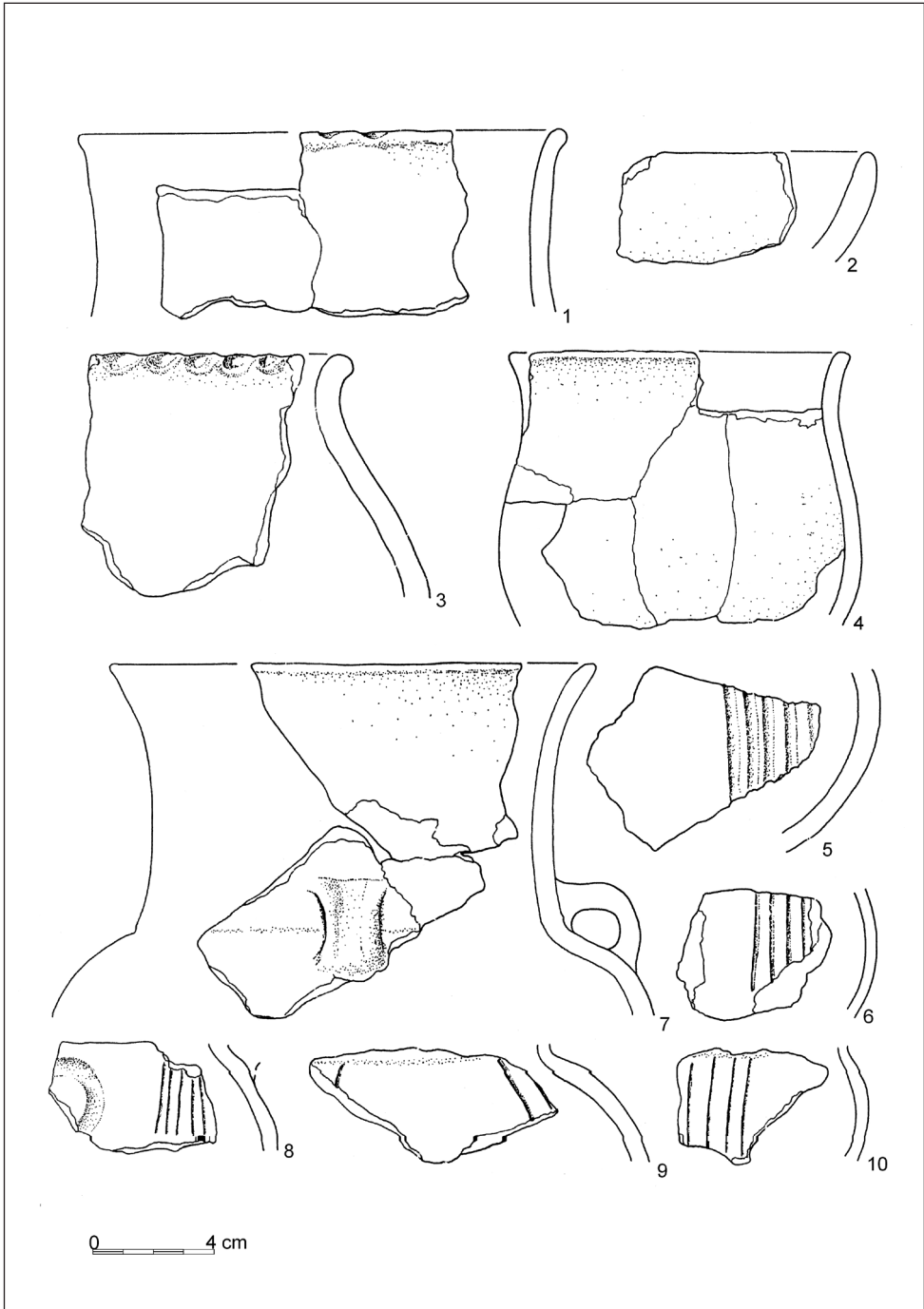


Plate 14. Early and Middle Bronze Age pottery from the trenches situated on the eastern edge of the settlement (cluster 3), excavations of 1960 (1, 6, 8) and 1961 (2-5, 7, 9-10)

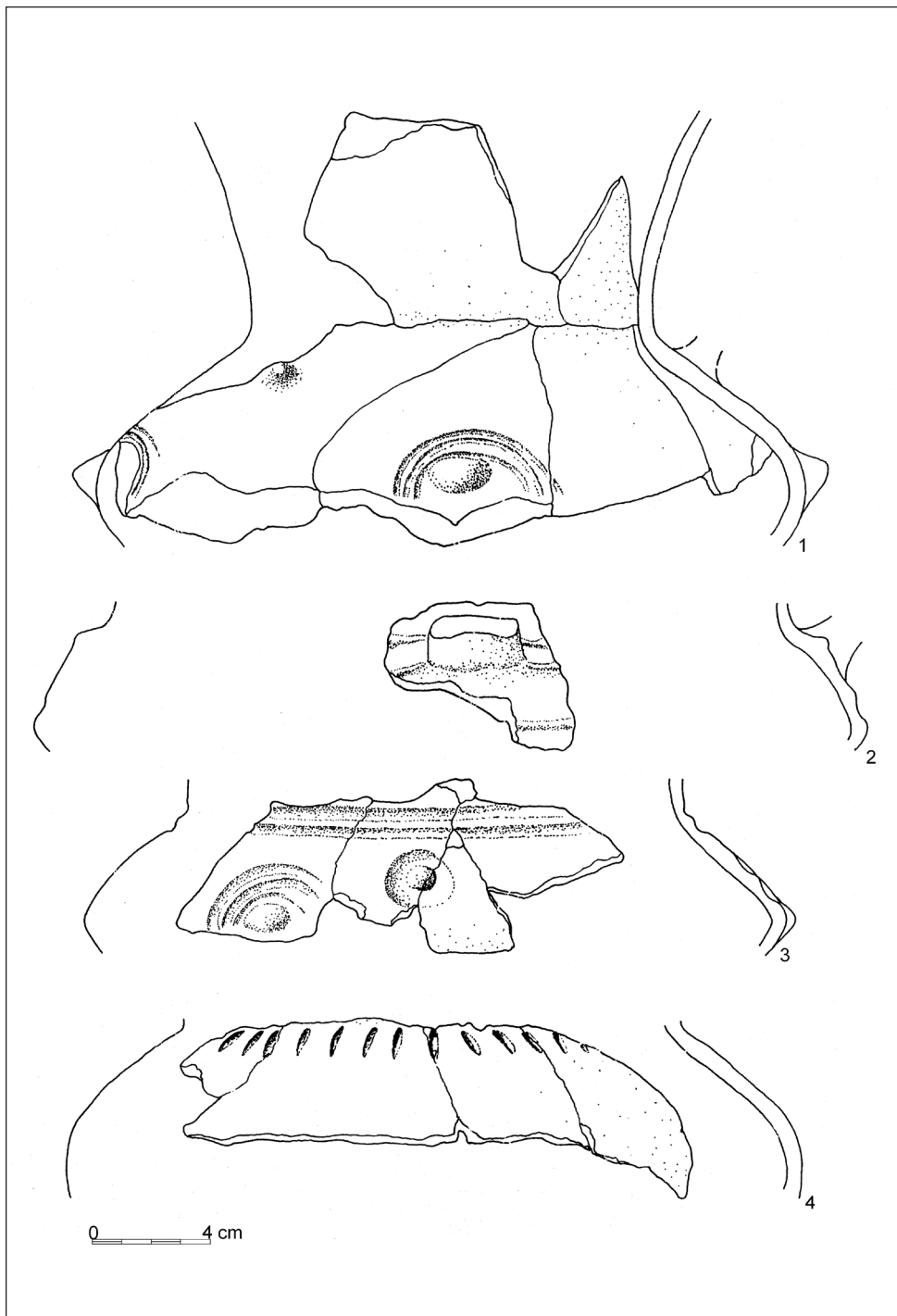


Plate 15. Selection of characteristic vessel forms from the deep pit explored in the years 1971–1972 (cluster 4)

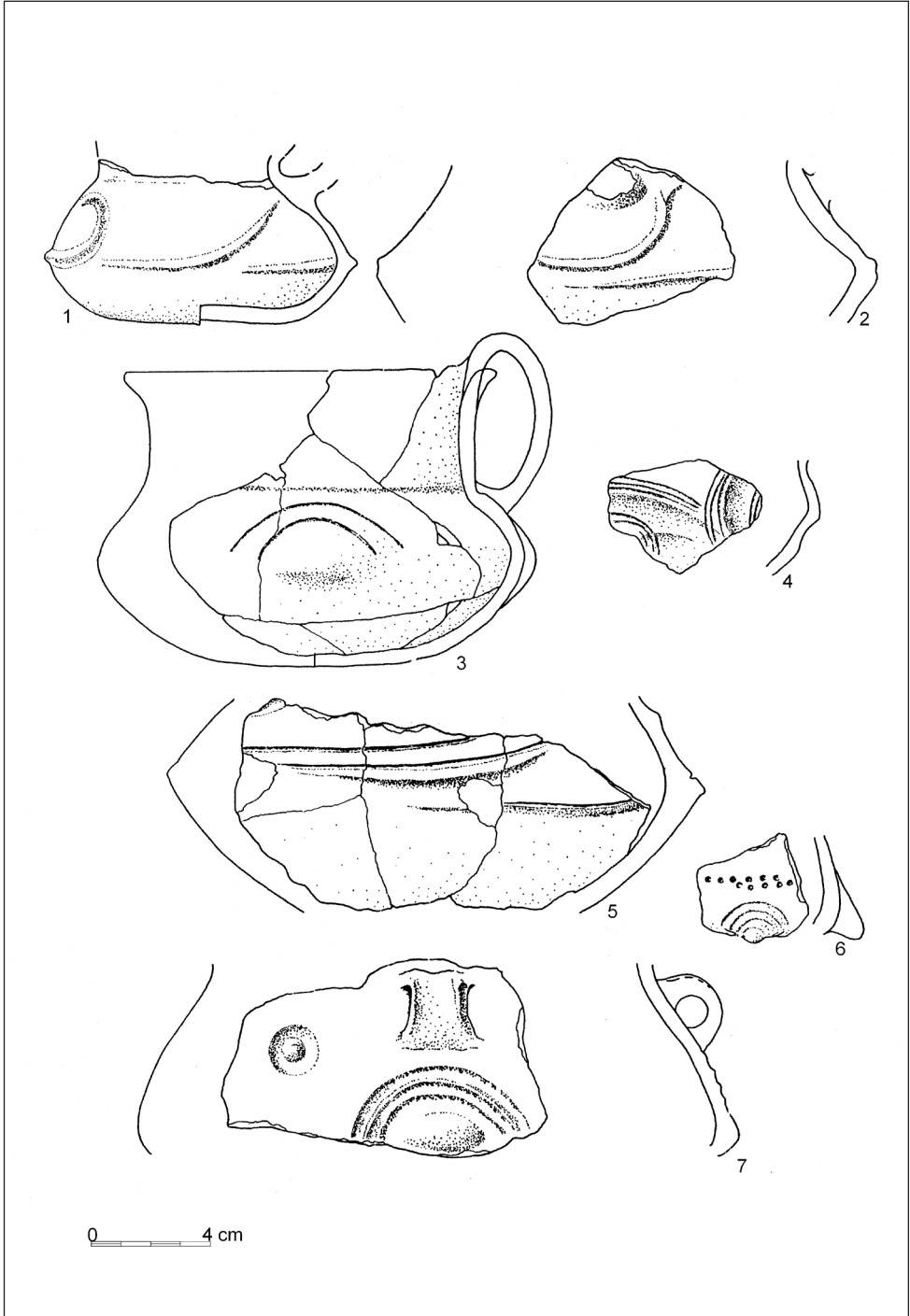


Plate 16. Selection of characteristic vessel forms from the deep pit explored in the years 1971–1972 (cluster 4)

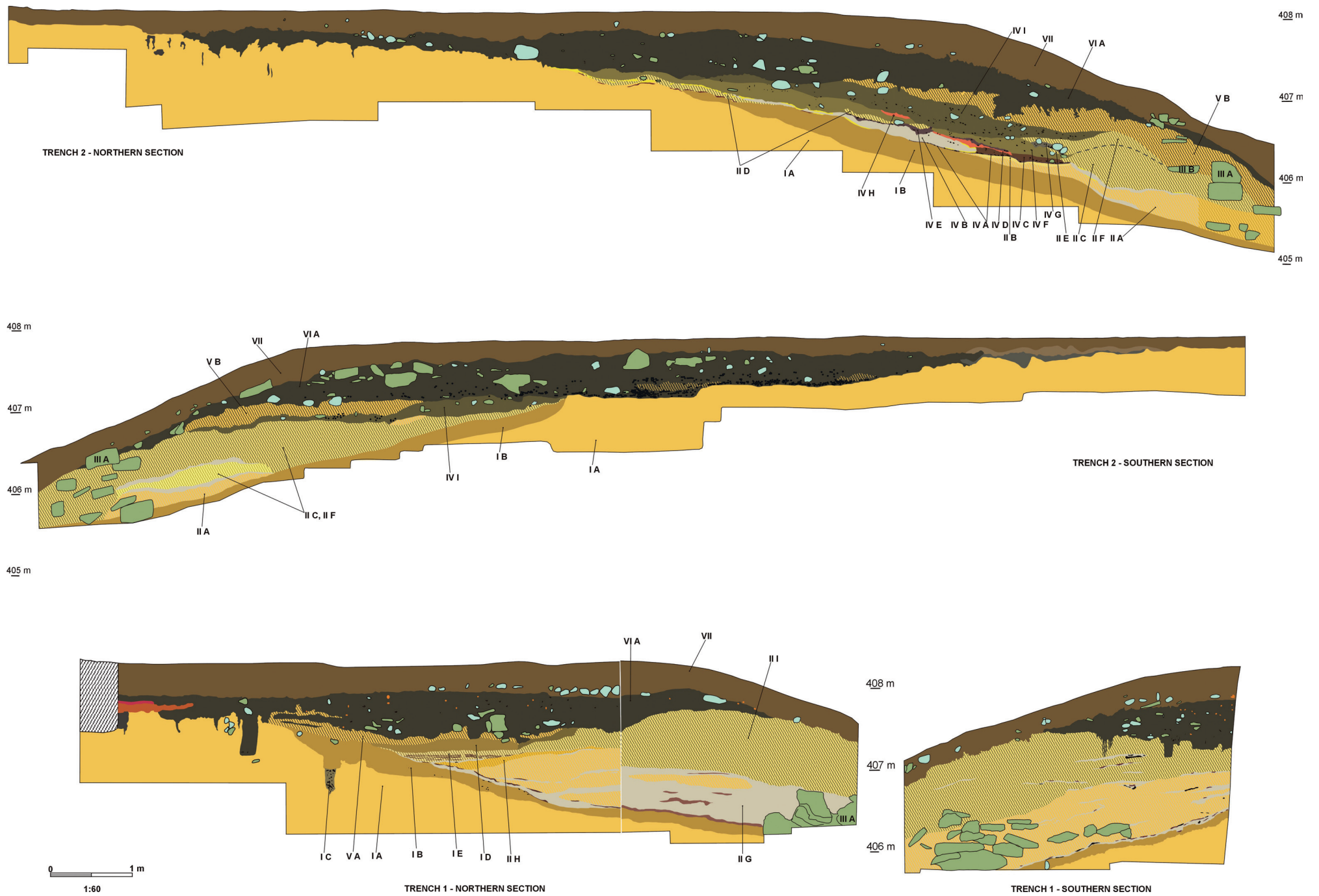
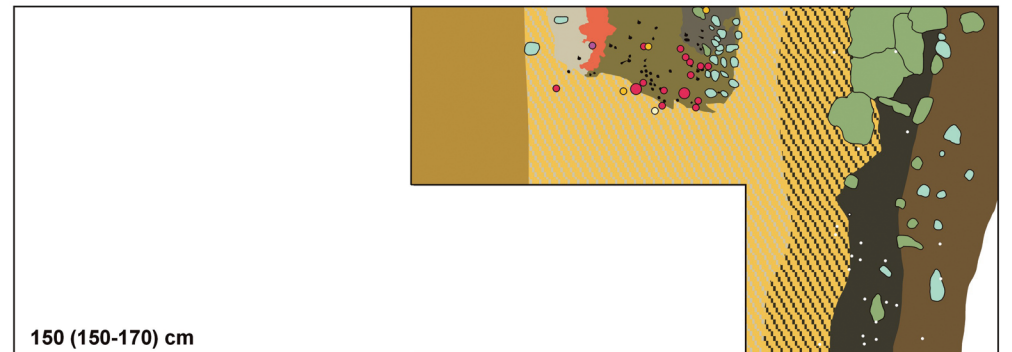
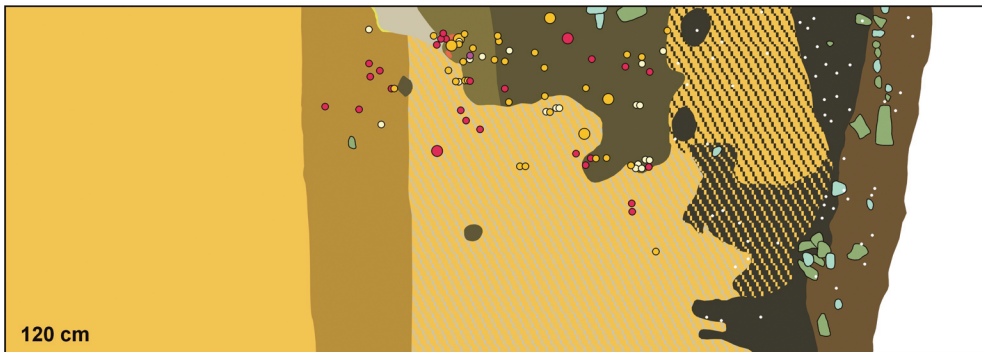
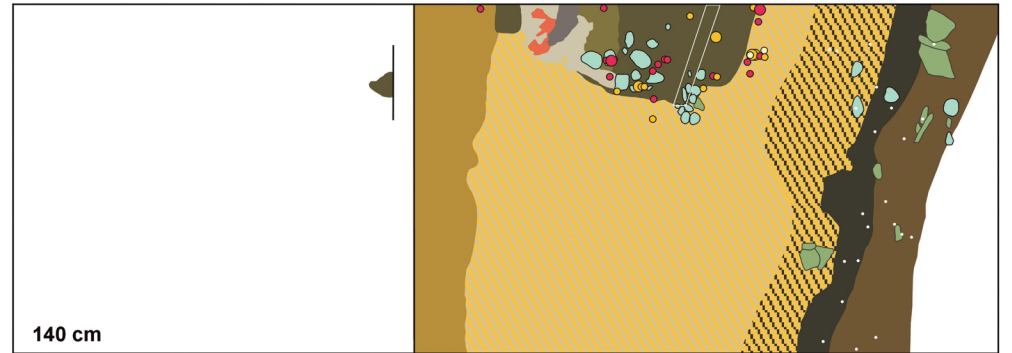
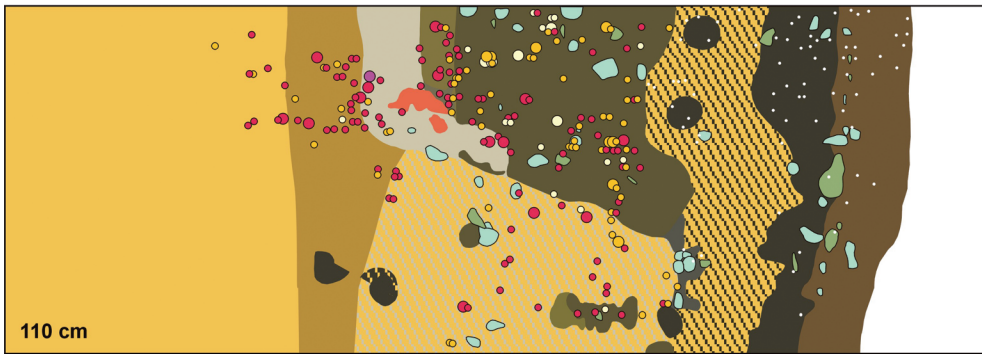
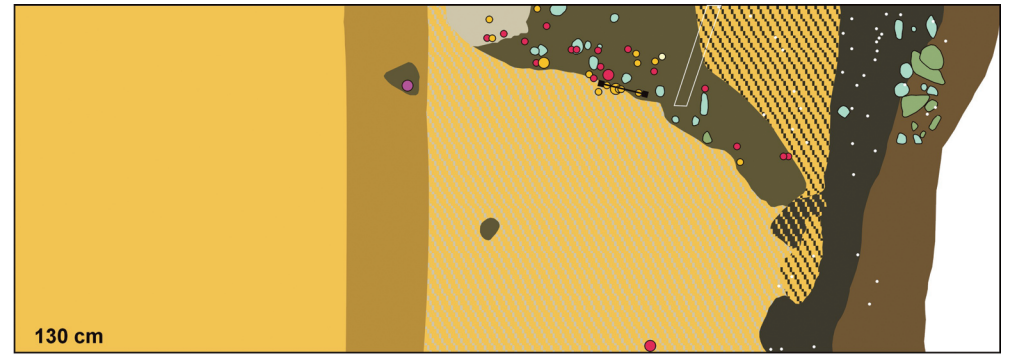
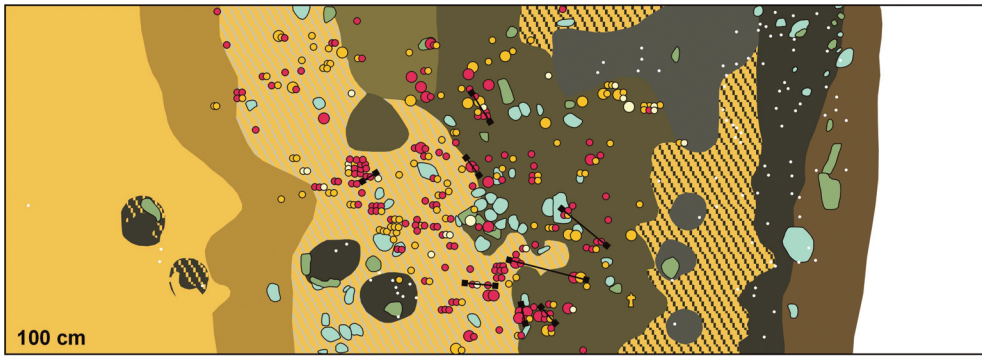


Plate 19. Northern and southern sections of trench 2 (seasons 2010–2012) and northern and southern sections of trench 1 (seasons 2010–2011)



• Pottery outside EBA-MBA layers

✦ Clay figurine

↙ Fixed pottery pieces

○	○	Badly worn pottery
●	●	Secondary burnt pottery
●	●	Technological groups B I 3, B II 5, B II 6
●	●	Other technological groups
< 5 cm	> 5 cm	Size of sherds

■ Humus

■ LBA-EIA layers

■ LBA embankments

■ EBA-MBA layers

■ EBA-MBA embankments

■ Fossil soil

■ Stones

0 1 m

Plate 20. Artefact distribution in the eastern part of trench 2, levels 100–170 cm

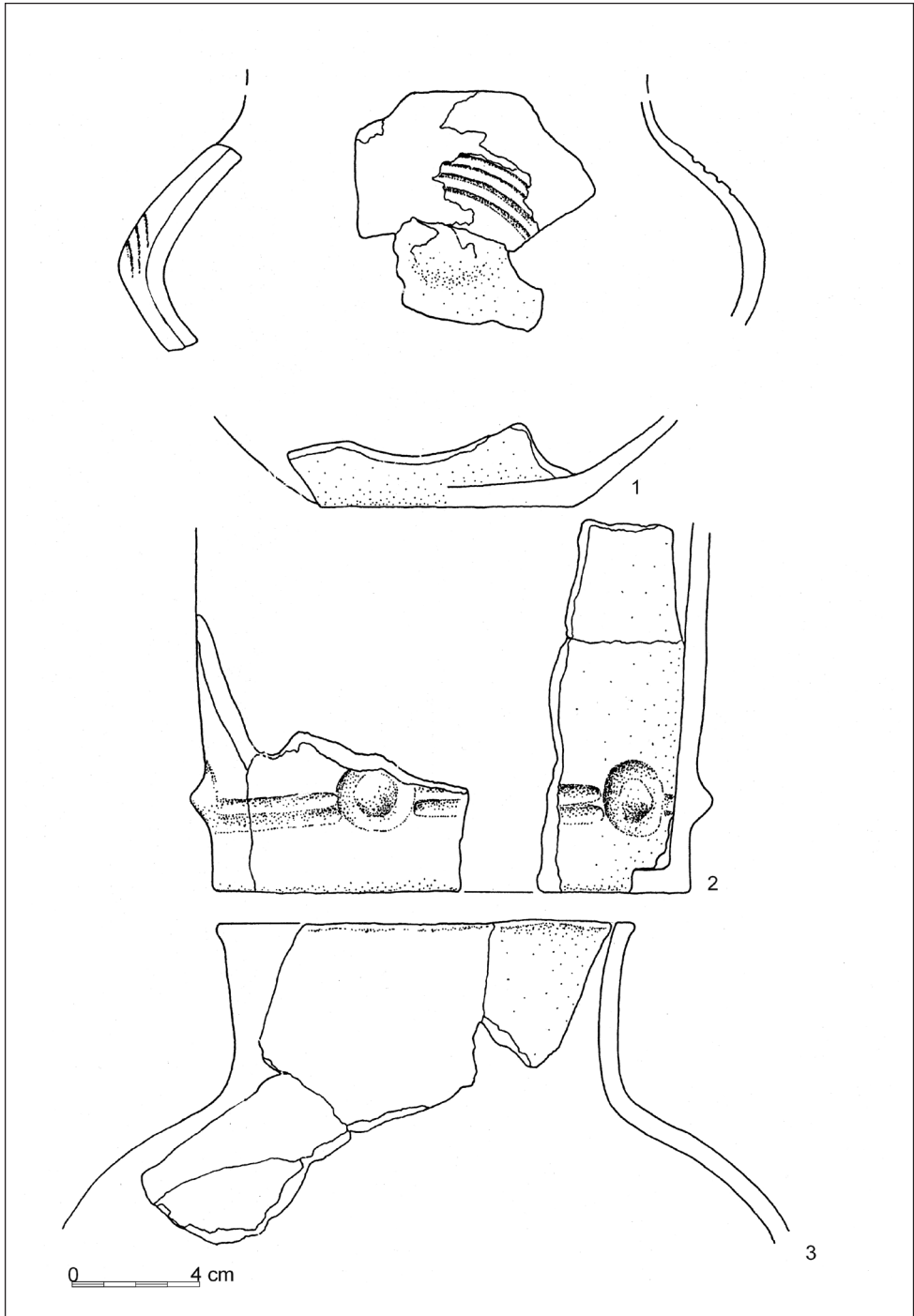


Plate 17. Selection of characteristic vessel forms from the deep pit explored in the years 1971–1972 (cluster 4)

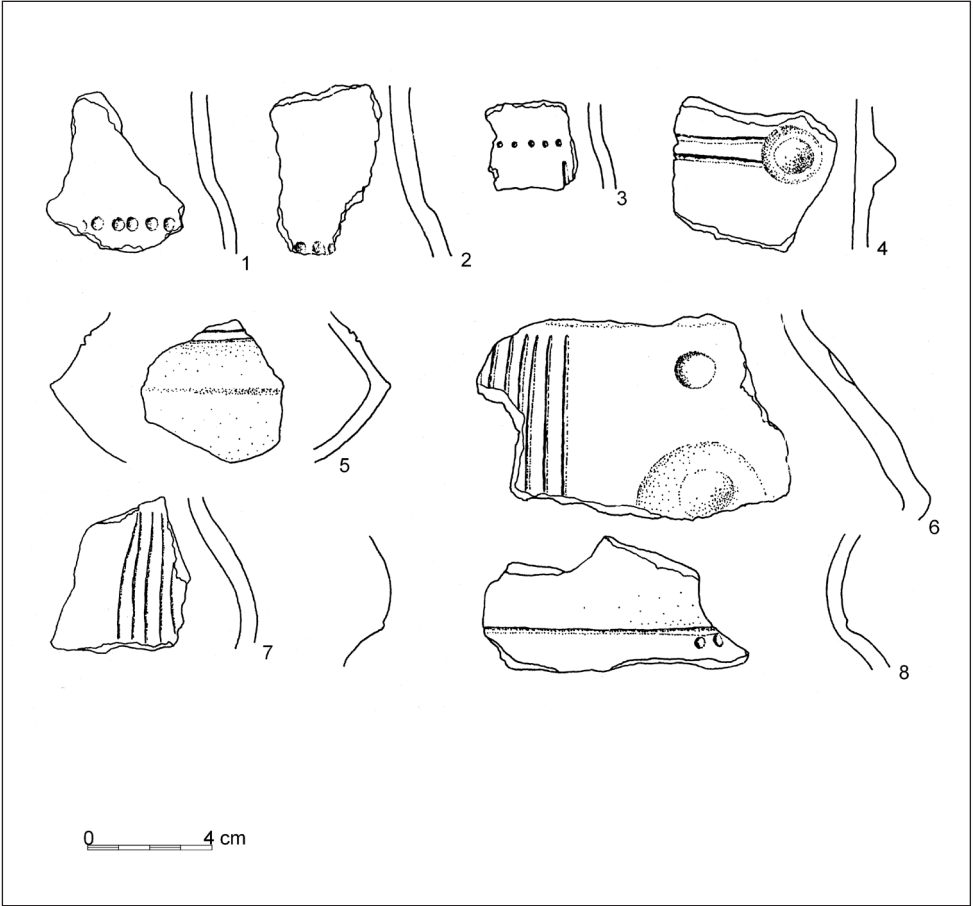


Plate 18. Early and Middle Bronze Age pottery from the trenches situated in the southern part of the settlement (cluster 6), excavations of 1962