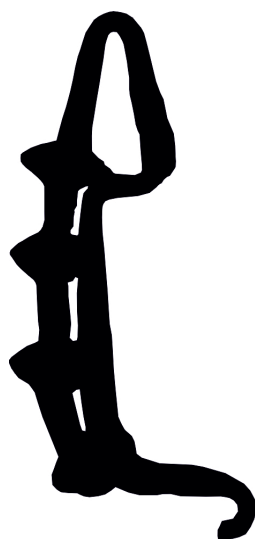


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This volume is dedicated to Tudor Soroceanu at 80 years

Acest volum este dedicat lui Tudor Soroceanu cu ocazia împlinirii a 80 de ani



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Contributions to dating the Late Bronze Age pottery in North–Western Romania

Orsolya Gyurka

Abstract: In the 16th century BC significant social and economic transformations took place in North–Western Romania, reflected in the abandonment of the Middle Bronze Age tell settlements and the emergence of the Tumulus material culture. In the area between the Crasna, Crişul-Repede rivers, the Meseş Mountains, and in a large part of the Berettyó/Barcău–Körös/Criş region and the Upper Tisza valley in Hungary, the ceramic style, which developed as a mixture of the local Middle Bronze Age and the Tumulus pottery stylistic elements, is known in the literature as the Hajdúbajos/Pişcolt–Cehăluţ, Cehăluţ–Hajdúbajos, or Hajdúbajos/Cehăluţ cultural group. The present paper contributes to the research of the Late Bronze Age with ¹⁴C data from Tăşnad–Sere and attempts to systematise the Hajdúbajos–Cehăluţ through pottery assemblages by a combined analysis of the available ¹⁴C dates from Tăşnad–Sere and Recea–Valea Sulduba sites and the associated ceramic finds.

Keywords: Late Bronze Age; Tumulus culture; Hajdúbajos–Cehăluţ pottery; absolute dating.

Introduction

From the 16th century BC, a turning point can be observed throughout Eurasia, which, in addition to environmental and climatic changes on the continent¹, can also be interpreted as a response to increased population² and mobility. This period is marked by the gradual abandonment of the tell settlements³ and the migration of the Tumulus communities from Southern Germany to Central Europe,⁴ which reached the Great Hungarian Plain and north-western Romania at the end of the Middle Bronze Age (MBA), in the Koszider period (1600–1500/1450 BC)⁵. It is at this time that new elements appear in the local material culture, a phenomenon which is the result of a specific mixture of the local MBA and the newly arrived Tumulus communities' pottery traditions. The changes observed in the material culture mark a process of hybridisation⁶. As a result, the Hajdúbajos–Cehăluţ style⁷

¹ P. Fischl, Reményi 2016, 728.

² Capuzzo *et al.* 2018.

³ Fischl *et al.* 2013, 362–363; Gogăltan 2014, 36–37; Gogăltan 2015, 73.

⁴ Horváth, Ilon 2017.

⁵ Görsdorf *et al.* 2004, 89; Kiss *et al.* 2019, 191.

⁶ Cultural hybridisation is the result of intensive interactions and is reflected in the intense mixing of elements of the artefactual material. (Stockhammer 2012, 45–51) The concept of hybridisation refers to the interaction of different cultures, resulting in the emergence of a new material culture. The process is characterised by cultural sharing or correspondence, exchange, modification and cultural experimentation. (Stockhammer 2012, 44–45) Hybridisation takes place in contact areas where communities with different material cultures have the opportunity to interact and influence each other. Hybridisation manifests itself through different modes of import, imitation or cultural communication. From an archaeological point of view, it is possible to study foreign elements on objects as a result of external influence. (Stockhammer 2012, 50)

⁷ The definition of the cultural facies of the first two periods of the Late Bronze Age (LBA I–II) in North–Western Romania can be attributed to T. Bader, J. Némethi and C. Kacsó, while in the Körös–Berettyó region and the Upper Tisza region in Hungary it is associated with T. Kemenczei and T. Kovács. Following the Koszider period at the end of the Middle Bronze Age, in the early Late Bronze Age (BzB1/BzB2–BzC), T. Kemenczei and T. Kovács has defined the Hajdúbajos group in Hungary, formed as a result of the mixture between the local Otomani culture and the newly arrived Tumulus groups at the beginning of the LBA (BzB2–BC) in the Berettyó–Körös region (Kemenczei 1963, 184–185; Kemenczei 1968, 165; Kemenczei 1984, 96; Kovács 1966; Kovács 1970, 27–45). At the same time, in the area bounded by the Crasna, the Barcău rivers and the Meseş Mountains in north-western Romania the material culture was identified first as Otomani IV (Bader 1978, 62; Bader 1998, 53), then as Pişcolt–Cehăluţ (Némethi 1987, 110; Némethi 1990; Némethi 1999; Némethi 2009) and as Cehăluţ (Kacsó 1990, 44; Kacsó 1997; Kacsó 1999) cultural group, which can be traced until the BzD period. More than 30 years later, M. L. Nagy attributes the sites of the Berkesz culture in the southern and western parts of the Nyírség to the Hajdúbajos group, noting that other eastern populations probably also contributed to the development of this later phase of the ceramic material.

has been distinguished in the Barcău/Berettyó–Criş/Körös region and the northern parts of the Great Hungarian Plain, in the area bounded by the Crasna, the Criş valleys and the Meseş Mountains, during the first two phases of the Late Bronze Age (LBA I–II)⁸. Following the Wietenberg IIIrd phase, the ceramic material attributed to the Hajdúbagos–Cehăluţ style is encountered in Transylvanian areas east to the Meseş Mountains, too, which can be the result of the migration of some communities from north–western Transylvania, although it is also possible, that only a large number of pottery is brought into the region⁹.

Regarding the inner chronology, as a working hypothesis, C. Kacsó divides the Cehăluţ group into two phases: the first phase can be paralleled with the Hajdúbagos group, while the second with the Berkesz culture. This is also reflected in the metallurgy. The second phase of this group includes the settlements in the valleys of Crasna and Barcău Rivers¹⁰. In his view, the group develops during LBA I–II¹¹. Its early phase is parallel to the middle phase of the Tumulus culture and its end to the late phase of the Urnfield culture¹². On the Cehăluţ-type pottery, he notes that, in addition to the Otomani stylistic features, they bear formal and ornamental elements of Suci de Sus, Tumulus and Piliny styles¹³.

I. Bejinariu also distinguishes two phases in his monograph on the Hajdúbagos–Cehăluţ pottery style in the Şimleu Depression, based on the pottery's stylistic elements¹⁴.

M. Przybyła has undertaken a macro-regional analysis of the Tumulus contact network on several occasions, including the Hajdúbagos–Cehăluţ sites. The researcher traces the spread of stylistic elements of the pottery in the Carpathian Basin and southern Poland, thus revising the results of traditional archaeological research from a new perspective and with a completely new methodology. He classifies the older phase of the Piliny culture, the Berkesz–Demecser group, the Suci de Sus sites in Slovakia, the Egyek group, the Hajdúbagos and Cehăluţ groups, the first phase of Lăpuş I, the Rákóczipfalva group, the early Igrîţa phase, the Păuliş group, the Bădeni–Deva III group and the Buza–Teiuş horizon into the

On the basis of the similarities observed in the pottery, she considers the name Hajdúbagos/Cehăluţ to be justified, as they appeared in the Koszider period and then both developed until the BzD period. (Nagy 2007, 27; Nagy 2008, 137–142) I. Bejinariu emphasizes the influence of the Wietenberg style on the formation of the Hajdúbagos–Cehăluţ pottery style, as a high number of Wietenberg ceramic assemblages can be found in former Otomani sites (Bejinariu 2022, 121–122).

⁸ Némethi 2009, 212.

⁹ Bejinariu 2022, 94.

¹⁰ Kacsó 1990, 44; Kacsó 1997.

¹¹ According to the relative chronology, the LBA I can be dated to BzB2–BzC1 phase (1600/1500–1350 BC), while LBA II is dated in Bz C2–Bz D/Ha A1 period, between 1350–1200/1150 (Kacsó 1990, 42–50; Przybyła 2009, 62–63; Gogăltan 2019, 49). On the basis of the radiocarbon data, the LBA I covers a time span between 1600 and 1400 BC. (Gogăltan 2019, 49). A specific chronological system was developed for the Lower Mureş Basin, where the phases of the LBA corresponds to historical events, dated with ¹⁴C data. The LBA I can be placed in the interval of 1550–1450 BC when the abandonment of the tell-settlements and the beginning of the construction of the mega-forts took place. The next period, the LBA II (1450–1250 BC) is characterised by the development of these great fortifications (Sava 2020, 289–290; Sava–Ursuţiu 2021, 85).

¹² Kacsó 1990a, 8–50; Kacsó 1997, 85–88; Kacsó 1999, 101; Kacsó 2005, 53.

¹³ For a short synthesis of the Late Bronze Age ceramic styles see Przybyła 2009 and Sava 2020, 256–259, with new radiocarbon data.

¹⁴ According to I. Bejinariu, the first phase is characterised by the use of biconical amphorae with a rounded belly and two handles connecting the neck to the shoulder, and by the use of S-shaped dishes with conical or curved body and everted or lobed rim. The most common form of bowls in the Şimleu Depression is the so-called Swedish helmet type (Bejinariu 2022, 47). Also very frequent are the cups with ringed base and semi-spherical lids with channelled rim. Early ornamental motifs include arches filled with incisions, groups of 2–4 vertical lines, as well as groups of lines arranged in the form of arches and spirals. In this period, conical knobs surrounded by semicircular channellings are usual. The wide *absatzstich* technique used during late Wietenberg III and IV periods, which also appears in the Hajdúbagos–Cehăluţ assemblages, is particularly characteristic for the region. In the second phase of the pottery style, biconical amphorae with a strongly broken belly line, conical neck and a wide, horizontally everted rim are found in large quantities. (Bejinariu 2022, 103) Also, a typical vessel form is the short cup with a handle raised over the rim, and the spherical or flattened spherical mug, with high neck, straight or ringed-based mug, ornamented with groups of three incisions. The decoration shows a smaller proportion of elements of the earlier phase: hatched arcades, conical knobs, knobs surrounded with semicircular channelling and groups of incised lines. There is a high proportion of bowls with inverted rim, often with small knobs under the rim, and biconical cups with narrow mouth. Bowls with lobed rim remain in use, but the rims are disproportionately high and the inner surface of the bowls is sometimes decorated with star-shape ornament. The second phase is also characterised by the increasing frequency of channelling on the surface of the vessels, typically associated with vertical ribs or conical knobs. Faceting is another newly used and important decorative technique. (Bejinariu 2022, 107)

Tumulus–Post-Otomani style¹⁵. Przybyła considers the amphorae with wide, round belly, cylindrical or conical neck, the dishes with lobed rim, the biconical mugs and the hatched arches as being the authentic elements of the pottery assemblages of the period¹⁶. In a study published in 2016, he reevaluates his research using modern methodology. The 94 Middle and Late BA sites he analyses, cover the period from the 19th to the 12th century BC. Among them are the Hajdúbagos–Cehăluț sites of Acăș–Râtul lui Veres, Crasna–Csereoldal, Pișcolt–Nisipărie and Nyíregyháza–Oros–Úr csere. The analysis shows that the presence of pottery classified as belonging to tell societies and the one characteristic for the Tumulus communities is at least partially contemporaneous in the Carpathian Basin¹⁷.

Other concerns related to the systematic analysis of the ceramic assemblages of the LBA I–II are limited to the elaboration of typologies for single sites¹⁸ or smaller regions¹⁹.

The dated sites

Only 2 published ¹⁴C dates from Hajdúbagos–Cehăluț sites are available so far²⁰ from Recea–Valea Sulduba/CEMACON²¹, three additional analyses were performed on samples from Tășnad–Sere.

The archaeological site of Recea–Valea Sulduba/CEMACON is located in north-western Romania, in the Crasna Valley, in the area of Șimleu Depression. Excavations were undertaken in 2008, during which 8 constructions and several pits were unearthed, belonging to the LBA I–II. The constructions were arranged on two parallel rows, the settlement covering an area of 0,35 ha²².

Tășnad–Sere archaeological site²³, discovered in 1987, is located in Satu Mare county, on the south-western periphery of Tășnad city. It is placed in a low area, on the first two terraces of the Cehal stream, a tributary of the Ier river. It was mainly the Neolithic settlement excavated here, that brought it to the forefront of the research²⁴. Since 2001, due to the expansion and modernisation of the thermal baths, preventive archaeological excavations have been carried out several years by the Satu Mare County Museum and the City Museum of Carei. During the excavations, settlement features from several periods have been found, dating to the Neolithic (Starčevo–Criș, Pișcolt), the Copper Age (Tiszapolgár, Coțofeni), the Late Bronze Age (Hajdúbagos–Cehăluț), the La Tène period, the Roman Age (3rd–4th centuries AD) and the 6th–7th centuries²⁵. Preventive excavations in 2006 revealed a Late Bronze Age settlement on the right side of the Tășnad–Marghita county road²⁶. Major excavations were carried out at the site in 2009, prior to the expansion of the Tășnad Thermal Complex, with the opening of several trenches. Archaeological researches continued in 2015²⁷, along the route of the road bypassing the town. The road crosses the terrace of the Cehal stream, the archaeological features are concentrated on a higher territory, near the dead bed of the stream. Smaller surfaces were researched in 2019²⁸, covering the territory between the excavations undertaken in 2009 and 2015. In total 81 features can be dated in the LBA I and II periods.

AMS radiocarbon analyses on samples from three Late Bronze Age pits excavated in 2009 at Tășnad–Sere²⁹ site was carried out by Isotopech Zrt. The samples selected from the settlement of

¹⁵ Przybyła 2009, 120. Similarly, Gábor V. Szabó considers the Hajdúbagos–Cehăluț group to be part of a larger unit, placing it in the pre-Gáva period. (V. Szabó 2017, 239)

¹⁶ Przybyła 2009, 121.

¹⁷ Przybyła 2016, 54.

¹⁸ Marta *et al.* 2010.

¹⁹ Némethi 2009.

²⁰ Additional 13 ¹⁴C data from Álmosd–Téglavető–dűlő, Berettyóújfalu–Arany János Gyermekváros, Hosszúpályi–Szomjúhát-dűlő VII, Nagykereki–Körtvélyes I and Sárrétudvari–Hízóföld sites are under press (Szigeti *et al.* 2024).

²¹ Bejinariu 2022, 104, 129.

²² Bejinariu 2009; Bejinariu 2022, 123–124; Bejinariu 2023.

²³ In the literature it is also referred to as Tășnad-La Sere (Marta *et al.* 2016, 204.) and Tășnad-Sere (Parcare) (Némethi 2010, 278).

²⁴ Iercoșan 1992–1993, 81; Iercoșan 1994–1995; Iercoșan 1996; Iercoșan 1997; Iercoșan 1999; Iercoșan 2000; Némethi 1999, 89; Némethi, Astaloș, Gál 2002; Némethi, Astaloș, Virag 2003; Virag 2015, 98–99; Virag 2016, 66.

²⁵ Gindele 2007; Gindele 2020.

²⁶ Virag *et al.* 2007, 366, 368–369.

²⁷ Marta *et al.* 2016, 204; Gindele 2020.

²⁸ Gyurka 2020.

²⁹ The poorly preserved bone material and the lack of other organic materials limited the possibilities for radiocarbon analyses. In addition to the presented samples, bone material from later excavations was also analysed, but the quality of the material was not sufficient.

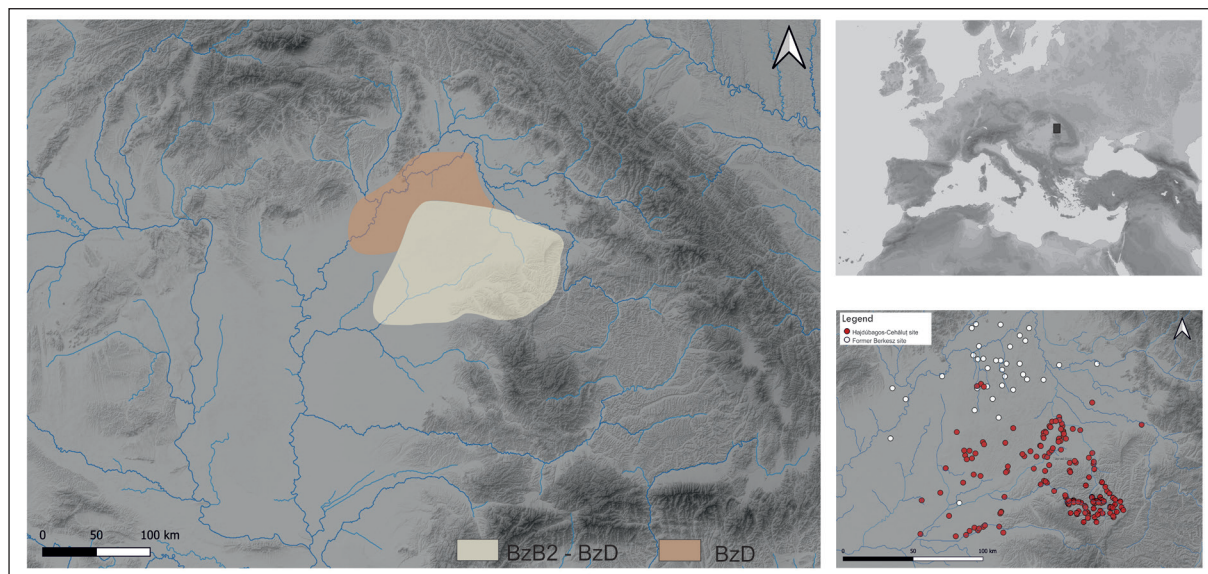


Fig. 1. The distribution area of the Cehăluț-Hajdúbagos ceramic style (based on Kemenczei 1984; Némethi 2009; Bejinariu 2022). Red dots: Hajdúbagos–Cehăluț sites, white dots: former Berkesz sites.

Tășnad are DeA-13486: charcoal from feature Cx185, DeA-24132: animal bone from feature Cx225 and DeA-24133: animal bone from feature Cx195. The results of the samples allow us to distinguish an earlier and a later phase of the settlement. The early phase includes pit Cx225 (DeA-24132), which has a calendar age of 1620–1460 (calBC, $\pm 2\sigma$). Slightly younger is pit Cx195 (DeA-24133), with a calendar age of 1510–1420 (calBC, $\pm 2\sigma$). AMS measurement of feature Cx185 (DeA-13487) show an interval between 1373–1357 BC and 1299–1125 BC (calBC, $\pm 2\sigma$).

The settlement of Tășnad is contemporary with Recea–Valea Sulduba. Here, too, an early and a late phase of the settlement can be observed, based on the absolute dates. Measurements on sample from feature Cx68 (DeA-25953) show an interval of 1530–1420 BC (calBC, $\pm 2\sigma$), while the sample from feature Cx13 (DeA-25952) places the pit between 1410 and 1210 BC (calBC, $\pm 2\sigma$)³⁰.

On the basis of the calibrated data, in the LBA I can be included feature Cx225 (1564–1492 cal BC) from Tășnad. This is contemporaneous with the sites from Geoagiu de Sus³¹, Gligorești³², Ménfőcsanak³³, Șagu³⁴ and Vlaha–Pad³⁵. A similar time interval is shown by dates from the early layers of Teiuș–Valea Viilor³⁶ Noua settlement and Sântana–Cetatea Veche³⁷. The data from feature Cx195 (1502–1422 cal BC) from Tășnad and from feature Cx68 (1518–1423 calBC) from Recea also starts in the transitional period between the Middle and Late Bronze Age. According to the absolute dates, feature Cx185 (1301–1124 calBC) from Tășnad and feature Cx13 (1409–1219 cal BC) from Recea represents a later phase of the Hajdúbagos–Cehăluț assemblages, coexisting with Sântana–Cetatea veche (MAMS 33948, MAMS 33945, MAMS 37712)³⁸, the late phase of the cemetery from Pecica (RoAms 988. 80)³⁹, the Noua layers from Rotbav (Hd-27972)⁴⁰ and the settlements from Teiuș (OS-113542)⁴¹, Alba Iulia (Hd-29183)⁴² and Borumlac (OS-108807)⁴³. In addition, samples from Geoagiu

³⁰ Bejinariu 2022, 104.

³¹ Ciugudean, Quinn 2015, tab. 2.

³² Gogăltan, Popa, 2016, fig. 10.

³³ Ilon 2014, 247, Taf. 20.

³⁴ Sava 2020, 260, 264.

³⁵ Gogăltan 2015, fig. 28, Gogăltan, Ciută, 2022, 89.

³⁶ Ciugudean, Quinn 2015, tab. 2.

³⁷ Sava, Gogăltan, Krause 2019, tab. 1.

³⁸ Sava, Gogăltan, Krause 2019, tab. 1.

³⁹ Dietrich 2014, Fig. 3.

⁴⁰ Dietrich 2014, Fig. 3.

⁴¹ Ciugudean, Quinn 2015, tab. 2.

⁴² Ciugudean, Quinn 2015, tab. 2.

⁴³ Ciugudean, Quinn 2015, Tab. 2.

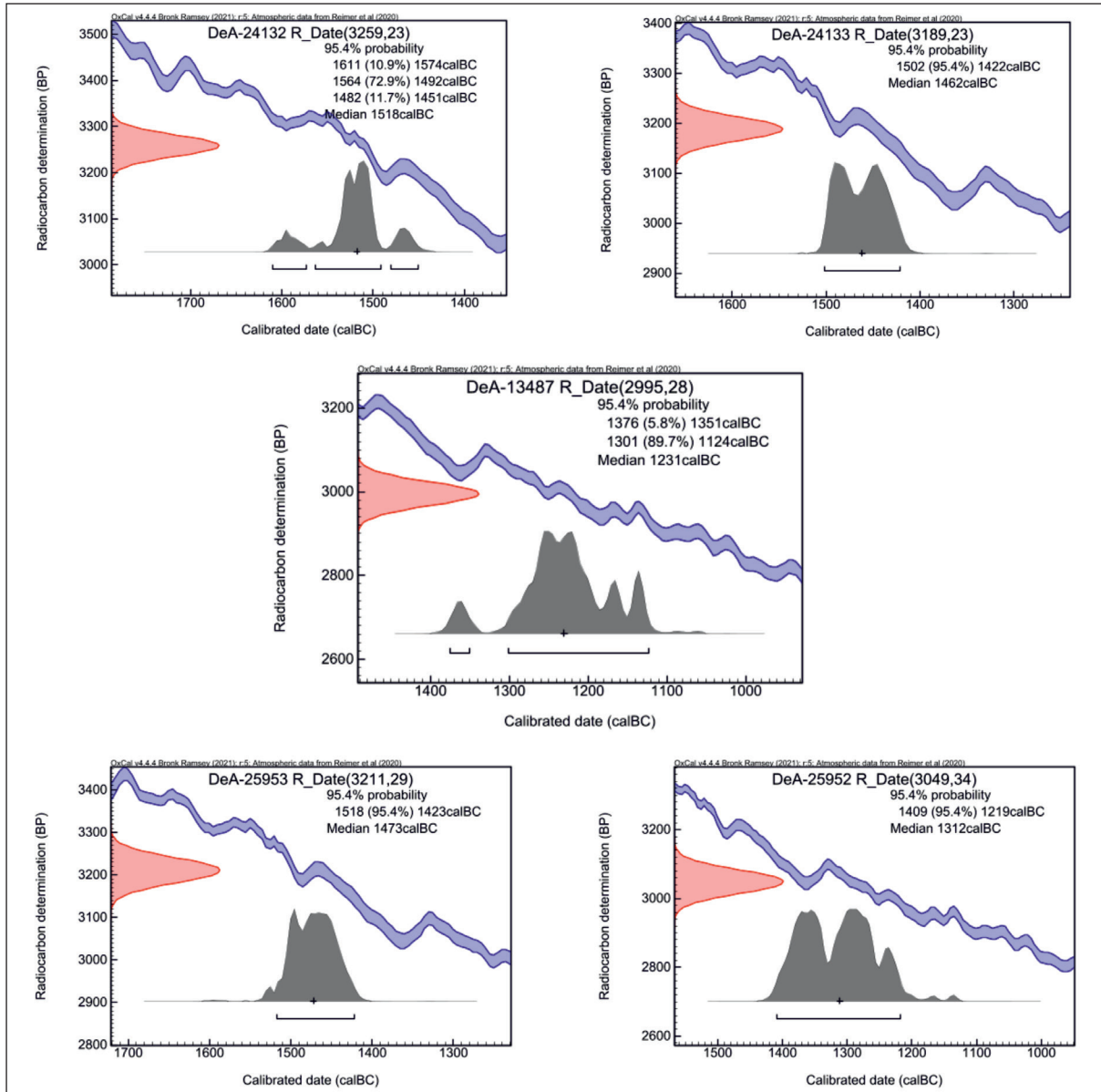


Fig. 2. Individual calibrated ¹⁴C data from Tășnad-Sere and Recea-Valea Sulduba.

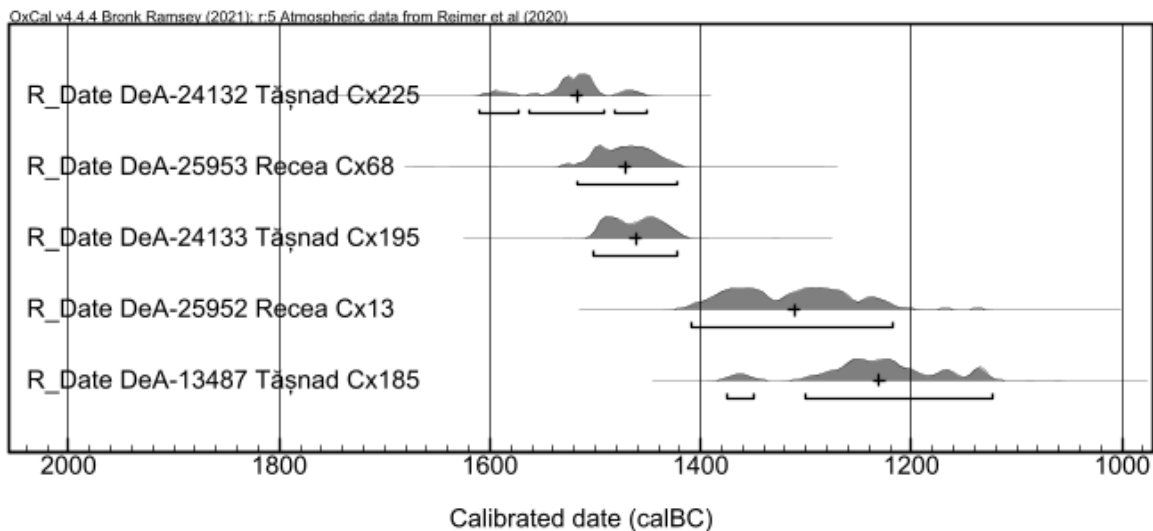


Fig. 3. The AMS calibrated dates from Tășnad and Recea.

de Sus (OS-100528)⁴⁴ and Polgár (Deb 9674)⁴⁵ can be included in this period. The late Tumulus and early Urnfield site of Németsbánya–Felsőerdei-dűlő existed also in this period⁴⁶. Further evidence of the simultaneousness of Noua and Hajdúbagós–Cehăluț pottery styles is provided by the traces of a Noua settlement found at Sutor in Sălaj County, on the eastern border of the Hajdúbagós–Cehăluț area, dating between 1420 and 1270 cal BC (DeA-41173)⁴⁷.

In the LBA I, the Hajdúbagós–Cehăluț finds are contemporaneous with the Wietenberg IV period, the Cruceni–Beleghiș I phase in the Banat region, and the Piliny and other Tumulus groups (Rákóczifalva⁴⁸, Tápé⁴⁹) from the Great Hungarian Plane. The Noua pottery style also appears at this time in the Carpathian Basin. This is followed by the LBA II period, characterised by the cooccurrence of the late Hajdúbagós–Cehăluț, Noua II, Cruceni–Beleghiș II pottery in the Carpathian Basin, based on the ¹⁴C data⁵⁰.

The pottery assemblages

The radiocarbon dated ceramic assemblages from Tășnad, features Cx225, Cx 195 and Cx185, and Recea, pit Cx68 and Cx13 are diverse in both shapes and ornamentation, and thus can be associated with a significant number of elements of the Hajdúbagós–Cehăluț ceramic style.

Forms 1A, 3A1, 3A2, 3H2, 3H3, 3H4, 3D, 3E1, 3E2, 3F, 3G, 6A, as well as ornamental motifs A1, D1, F1, F2, H1, I1, I2, I3, I4, I5, L1, N1, N2 date to the time interval between 1564 and 1492 BC. (Fig. 4, Fig. 5)

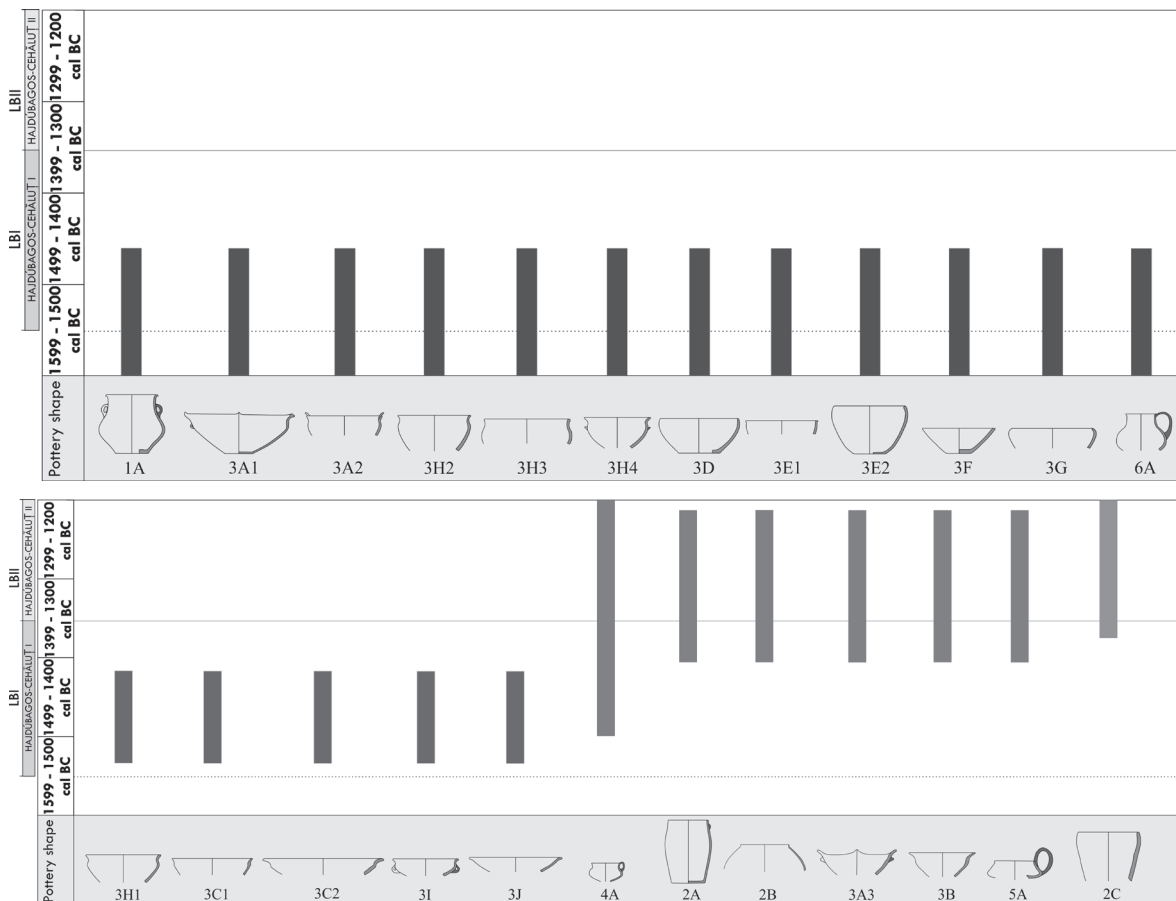


Fig. 4. The pottery shapes dated with ¹⁴C data.

⁴⁴ Ciugudean, Quinn 2015, Tab. 2.

⁴⁵ V. Szabó 2005, Tab. 2.

⁴⁶ Ilon 2014, 248, Taf. 20.

⁴⁷ Bejinariu 2023, 170, Tab. 2.

⁴⁸ Kovács 1981; Trogmayer 1985.

⁴⁹ Trogmayer 1975. Due to the radiocarbon dates, it is now known that the cemetery was used between 1500 and 1200 BC. (O'Shea *et al.* 2019, Fig. 5, Tab. 3; Sava 2020, Fig. 12)

⁵⁰ Gogăltan 2019, 51.

Type 3C2, 3C1, 3H1, 3L1, 3R1 of dishes and F3, H2, M1 ornamental motifs are present in the Hajdúbagos–Cehăluț find assemblages between 1518 and 1423 BC. In the same time interval (1502–1422 BC) M2 and I6 ornamental elements appear often on the pottery. In the period between 1409 and 1219 BC can be included vessel shapes 2A, 2B, 3A3, 3B and 5A, together with motifs C1, C2, H3, H4 and I7.

In the latest phase, between 1301–1124 BC the pottery shapes 1D1 and 2C, and ornamental elements A2, C3, F4, F5, H5 and I8 can be dated.

The 4A cup is found in all phases of the Hajdúbagos–Cehăluț style, between 1500 and 1200 BC (Fig. 4, Fig. 5).

Pottery shapes

Among the earliest pottery shapes can be included the small amphorae (1A) with everted rim, tall, cylindrical, neck, flattened spherical body and with two handles starting from the middle part of the neck and resting on the shoulders. In Hajdúbagos–Cehăluț environment it occurs only at Tășnad–Sere in feature Cx225 (Pl. 1/1), but its predecessor is found in the pottery assemblages of the last period of the Füzesabony–Otomani Cultural Complex (OFCC)⁵¹.

Bowl 3A1, with wide mouth, flaring, lobed rim, short cylindrical or slightly conical neck, and conical body, is one of the few authentic forms of the Hajdúbagos–Cehăluț style. It has been found at Acăș–Râțul lui Veres⁵², Crasna–Csereoldal⁵³, Suplacu de Barcău–Lapiș⁵⁴, Șimleu Silvaniei–Observator⁵⁵ and Tășnad–Sere (Pl. 5/1).

A similar bowl (3A2) with lobed, flaring rim, short, cylindrical neck and slightly arched body is met in Hajdúbagos–Cehăluț environment at Biharea–Grădina CAP–Insulă⁵⁶, Cehei–Misig/Mesig⁵⁷ and Tășnad–Sere (Pl. 4/7).

The 3H2 deep bowl with flaring rim, short cylindrical neck and arched shoulder is encountered at Crasna–Csereoldal⁵⁸, Sărăuad⁵⁹ and Tășnad–Sere (Pl. 3/3) sites, but the shape is inherited from the MBA OFCC⁶⁰. It also occurs in Măhăceni–La biserică settlement⁶¹, where it is found together with Noua, Wietenberg and Hajdúbagos–Cehăluț finds. It can be met among the pottery assemblages assigned to Wietenberg⁶² and Suciul de sus⁶³ styles, too.

Also rooted in the MBA, bowl 3H3 with slightly flaring rim, wide mouth, slightly arched, short neck and accentuated shoulder is present in the assemblages from Acăș–Crasna veche⁶⁴, Crasna–Csereoldal⁶⁵, Carei–Bobald 2B⁶⁶ and Tășnad–Sere (Pl. 4/5). Similar bowl shapes are used in Wietenberg environment at Bernadea⁶⁷, Corpadea⁶⁸ and Derșida–Dealul lui Balotă⁶⁹.

Bowl type 3H4 with flaring rim, arched neck and body is found at Tășnad–Sere (Pl. 4/3–4), Biharea–Grădina CAP–Baraj⁷⁰, as well as at Acăș–Crasna veche⁷¹, Crasna–Csereoldal⁷², Körösszegapáti–Pál-lapály⁷³ site, and in Igrița⁷⁴ and Wietenberg⁷⁵ environment.

⁵¹ Molnár 2014, 195, Pl. VII; Molnár 2014, Pl. 149/2.

⁵² Némethi 2010, XXV/4.

⁵³ Bejinariu, Lakó 2000, Fig. 6/5.

⁵⁴ Ignat 1984, Pl. V/5.

⁵⁵ Bejinariu 2022, Pl. XXVII/3.

⁵⁶ Dumitrașcu, Emődi 1980, Fig. 4/6, 4/14.

⁵⁷ Bejinariu 2022, Pl. XIII/3.

⁵⁸ Bejinariu, Lakó 2000, Fig. 5/7, 16/B3, 23/2.

⁵⁹ Marta, Kádas 2008, Pl. 4/4.

⁶⁰ Molnár 2014, 192, Pl. V.

⁶¹ Ciugudean 2010, Pl. II/10.

⁶² Chintelnic (Boroffka 1994, Taf 34/10).

⁶³ Bicz–Igoaie (Kacsó 2005, Pl. 12/13).

⁶⁴ Kacsó 1997, Pl. VI/1, VII/2.

⁶⁵ Bejinariu–Lakó 2000, Fig. 31/1.

⁶⁶ Gyurka *et al.* 2021, 8. tábla 2, 10. tábla 2.

⁶⁷ Boroffka 1994, Taf. 8/7.

⁶⁸ Boroffka 1994, Taf. 63/10.

⁶⁹ Chidioșan 1980, Pl. 13, B5/5.

⁷⁰ Dumitrașcu, Emődi 1980, Fig. 2/6.

⁷¹ Kacsó 1997, Pl. VII/6.

⁷² Bejinariu, Lakó 2000, Fig. 8/8, 21/1, 30/1.

⁷³ Nagy 2008, XI. tábla 3.

⁷⁴ Chidioșan, Emődi 1982, Fig. 2/5.

⁷⁵ Corvinești (Boroffka 1994, Taf. 65/1.)

The 3D deep bowl with slightly inverted rim, semi-spherical body and straight base is found in Hajdúbajos–Cehăluț environment at Tășnad–Sere (Pl. 2/1–3, 3/1), Biharea–Grădina CAP–Insulă⁷⁶, Berveni–Râtuț caprei⁷⁷, Carei–Ferma I.A.S.⁷⁸, Crasna–Csereoldal⁷⁹, Carei–Bobald 2B⁸⁰, Cehei–Misig⁸¹, Körösszegapáti–Pál-lapály⁸², Nyíregyháza–Oros–Úr cseré⁸³ and Nyírlugos–Szennyepusztá/Szabadságtelep, Folyási dűlő⁸⁴. This shape is present in Wietenberg environment⁸⁵, also having analogies in OFCC⁸⁶ and Piliny⁸⁷ sites.

The semi-spherical bowl (3E1) with flaring, thickening rim occurs in Hajdúbajos–Cehăluț type settlements at Acăș–Crasna veche⁸⁸, Crasna–Csereoldal⁸⁹ and Tășnad–Sere (Pl. 4/2). The shape is often encountered in the OFCC⁹⁰ and Suci de Sus⁹¹ ware.

The 3E2 semi-spherical deep bowl with onward flaring rim and straight base is found only at Acăș–Râtuț lui Veres⁹² and Tășnad–Sere (Pl. 2/4), but it is also part of the Wietenberg communities⁹³ material culture.

The conical bowl type (3F) with wide mouth and conical body, sometimes with two handles below the rim, is considered to be a common shape of the BA, as it is found in the pottery of the OFCC⁹⁴, Tumulus⁹⁵, Piliny⁹⁶, Suci de Sus⁹⁷ and Wietenberg⁹⁸ communities, in addition to the Hajdúbajos–Cehăluț⁹⁹ assemblages.

A characteristic bowl type is 3G, with arched, inverted rim and conical body. It appears in the MBA¹⁰⁰. Later, in the Hajdúbajos–Cehăluț area it is encountered mostly in the Ier valley and Tășnadului Plain at Acăș–Râtuț lui Veres¹⁰¹, Berveni–Râtuț caprei¹⁰², Carei–Bobald 2B¹⁰³ and Tășnad–Sere (Pl. 8/2). The vessel shape appears in Tumulus territories located north-west to the Hajdúbajos–Cehăluț areas, in Salka I cemetery¹⁰⁴ and among Piliny¹⁰⁵ and Egyek¹⁰⁶ pottery assemblages. Analogies can also be met in Banat, in the Cruceni–Belegiš¹⁰⁷ ceramic material.

⁷⁶ Dumitrașcu, Emódi 1980, Fig. 4/9.

⁷⁷ Némethi 1990, Fig. 8/8.

⁷⁸ Némethi 1990, Fig. 16/3.

⁷⁹ Bejinariu, Lakó 2000, Fig. 2/1, 7/1, 8/6.

⁸⁰ Gyurka *et al.* 2021, 8. tábla 7.

⁸¹ Bejinariu, Lakó 1996, Pl. VI/4.

⁸² Nagy 2008, X. tábla 3.

⁸³ Marta *et al.* 2010, Pl. 1/7.

⁸⁴ Nagy 2005, VII. tábla 5, XII tábla 11.

⁸⁵ It corresponds to the TD1b form of the pottery typology edited by N. Boroffka (Boroffka 1994, Typentaf 3).

⁸⁶ Carei–Bobald (Némethi, Molnár 2007, 15. tábla 2; Molnár 2014, Pl. 112/2, 131/3).

⁸⁷ Gelej (Fischl, Gucci, Kalli 2023, Fig. 11.14. T4 típus).

⁸⁸ Kacsó 1997, Pl. VII/3.

⁸⁹ Bejinariu, Lakó 2000, Fig. 26/A2.

⁹⁰ Bakonszeg–Kádárdomb (Sz. Máthé 1988, Pl. 12/1), Urziceni–Vada tag (Némethi, Molnár 2007, 4. tábla 3; Molnár 2014, Pl. 55/3.), Carei–Bobald (Némethi, Molnár 2007, 73. tábla 1.).

⁹¹ Bicz–Igoaie (Kacsó 2005, Pl. 13/1).

⁹² Némethi 2010, XIX/4.

⁹³ Chintelnic (Boroffka 1994, Taf. 36/5), Cicău (Boroffka 1994, Taf. 43/6)

⁹⁴ Bader 1978, Pl. XVI/16, Bakonszeg–Kádárdomb (Sz. Máthé 1988, Pl. 14/11), Carei–Bobald (Némethi, Molnár 2007, 15. tábla 1; Molnár 2014, Pl. 112/1).

⁹⁵ Jankovits 1992, Pl. 31/2.

⁹⁶ Litke (Kemenczei 1984, Pl. VIII/15).

⁹⁷ Kacsó 2006, Pl. 6/7; Pop 2009, Pl. 60/5; Marta 2009, Pl. 43/10.

⁹⁸ Chintelnic (Boroffka 1994, Taf. 35/2).

⁹⁹ Cehăluț (Bader 1978, Pl. XXXI/17; Némethi 2009b, 3. kép 4.); Berveni–Râtuț caprei (Némethi 1990, Fig. 8/6), Nyírlugos–Szennyepusztá/Szabadságtelep, Folyási dűlő (Nagy 2005, Pl. IV/5); Nyíregyháza–Oros–Úr cseré (Marta *et al.* 2010, Pl. 13/6, 15/5, 17/10, 25/8, 6/5, 33/5, 20/6, 39/4), Tășnad–Sere (Pl. 3/2).

¹⁰⁰ Tiream–Kendereshalom (Némethi, Molnár 2007, 64. tábla 3; Molnár 2014, Pl. 91/3).

¹⁰¹ Némethi 2010, XXII/5.

¹⁰² Némethi 1990, Pl. 1/3, 8/15.

¹⁰³ Gyurka *et al.* 2021, 9. tábla 1.

¹⁰⁴ Točík 1964, XIV/3, XV/5.

¹⁰⁵ Szécsény (Kemenczei 1984, Taf. XIII/26), Szurdokpüspöki (Kemenczei 1984, Taf. XIII/26), Gelej (Fischl, Gucci 2023, Pl. 12/80.4).

¹⁰⁶ Egyek–Szőlőhegy (Kovács 1966, 2. kép 19).

¹⁰⁷ Timișoara–Fratelia (Szentmiklósi 2021, Pl. XC/2).

Jar 6A, with high, slightly conical neck, wide, flattened spherical body, flaring rim and with a handle slightly raised over the rim, also occurs in the MBA OFCC¹⁰⁸, later in the pottery assemblage of Tășnad–Sere (Pl. 6/8–9), Doh–La izvoare¹⁰⁹ and in Igrîța¹¹⁰ environment.

The bowl with everted, slightly thickened rim, short, curved neck, accentuated shoulder and a slightly arched body (3C2) was already in use in the MBA by the OFCC¹¹¹ and Wietenberg¹¹² communities. In the LBA I–II it can be encountered at Biharea¹¹³, Álmosd–Téglavető dűlő¹¹⁴, Körösszegapáti–Pál-lapály¹¹⁵, Nyíregyháza–Tesco, Shell fuel station¹¹⁶, Nyíregyháza–Oros–Úr csere¹¹⁷, Recea–Valea Sulduba/CEMACON¹¹⁸ and Tășnad–Sere sites in Hajdúbagos–Cehăluț assemblages. It can be found in the Tumulus¹¹⁹ and Balta Sărată¹²⁰ environment. Later it continues to be used during the Gáva period, as well¹²¹.

The bowl with wide mouth, slightly flaring, thickened rim and biconical body (3C1) is a common shape of the LBA, as it occurs at Crasna–Csereoldal¹²², Marca–Husău¹²³, Recea–Valea Sulduba/CEMACON¹²⁴ and Tășnad–Sere. The form is also found among the finds from Salka I cemetery¹²⁵.

The 3H1 bowl form has a flaring rim, pronounced, arched shoulder and conical body. It appears in the OFCC¹²⁶ and in the LBA becomes a frequently used vessel type. It can be found at Biharea¹²⁷, Acăș–Râtul lui Veres¹²⁸, Cehei–Misig¹²⁹, Crasna–Csereoldal¹³⁰, Doh–La izvoare¹³¹, Recea–Valea Sulduba/CEMACON¹³² and Marca–Husău¹³³.

The form with everted rim, short cylindrical neck, conical body and 2 handles under the accentuated shoulder (3I), appears in the MBA¹³⁴. The shape is found in the LBA I at Körösszegapáti–Pál-lapály¹³⁵, Crasna–Csereoldal¹³⁶ and Recea–Valea Sulduba/CEMACON¹³⁷, later at Suplacu de Barcău–Lapiș¹³⁸.

The 3J low bowl, with a horizontally everted rim and arched body is found in the Hajdúbagos–Cehăluț area at Nyíregyháza–Oros–Úr csere¹³⁹ and Recea–Valea Sulduba/CEMACON¹⁴⁰ sites.

The 2A pot has straight rim, elongated ovoidal body, straight base, ornamented with two conical knobs under the rim. It is found at Crasna–Csereoldal¹⁴¹, Doh–La izvoare¹⁴², Pișcolt–Nisipărie¹⁴³,

¹⁰⁸ Molnár 2014, Pl. 23/1.

¹⁰⁹ Bejinariu, Lakó, Sana 2004, Pl. III/2.

¹¹⁰ Chidioșan, Emödi 1982, Fig.6/4.

¹¹¹ Molnár 2014, 194.

¹¹² Ciugudean 1997, Pl. 2/6, 16/1.

¹¹³ Dumitrașcu, Emödi 1980, Fig. 6/16.

¹¹⁴ Balázs, Nagy 2018, 5. tábla 4.

¹¹⁵ Nagy 2008, XIII. tábla 7.

¹¹⁶ Nagy 2007, II. tábla 3.

¹¹⁷ Marta *et al.* 2010, Pl. 1/3, 4/2, 12/2–3, 29/9.

¹¹⁸ Bejinariu 2022, Pl. LIII/4.

¹¹⁹ Kovács 1975, Pl. 54/2; Trogmayer 1975, Pl. II/4; Ilon 1996, Pl. 6/8.

¹²⁰ Gumă 1997, Pl. LXVIII/13, LXIX/1.

¹²¹ V. Szabó 1996, Pl. 13/10–12.

¹²² Bejinariu, Lakó 2000, Fig. 14/2, 29/4.

¹²³ Bejinariu *et al.* 2014, Pl. 44/4.

¹²⁴ Bejinariu 2022, Pl. LII/4.

¹²⁵ Točík 1964, XXVII/17.

¹²⁶ Carei–Bobald (Molnár 2014, Pl. 27/7).

¹²⁷ Dumitrașcu, Emödi 1980, Fig. 4/13.

¹²⁸ Németi 2010, XV/2.

¹²⁹ Bejinariu, Lakó 1996, Pl. III/2.

¹³⁰ Bejinariu, Lakó 2000, Fig. 17/A1.

¹³¹ Bejinariu, Lakó, Sana 2004, Pl. IV/2.

¹³² Bejinariu 2022, Pl. LII/1.

¹³³ Bejinariu *et al.* 2014, Pl. 41/2.

¹³⁴ Molnár 2014, 194.

¹³⁵ Nagy 2008, XI. tábla 7.

¹³⁶ Bejinariu, Lakó 2000, Fig. 29/6.

¹³⁷ Bejinariu 2022, Pl. LII/2.

¹³⁸ Ignat 1984, Pl. IV/2.

¹³⁹ Marta *et al.* 2010, Pl. 15/6.

¹⁴⁰ Bejinariu 2022, Pl. LII/3.

¹⁴¹ Bejinariu, Lakó 2000, Fig. 12/5, 14/3, 18/1, 29/5, 30/2.

¹⁴² Bejinariu, Lakó, Sana 2004, Fig. VI/1.

¹⁴³ Németi 2009b, 2. kép 8.

Suplacu de Barcău–Lapiş¹⁴⁴, Recea–Valea Sulduba/CEMACON¹⁴⁵ and Tășnad–Sere sites, as well as in Piliny¹⁴⁶ assemblages.

Pot shape 2B has straight rim, short, cylindrical neck and spherical body. It is the component of the pottery assemblages at Recea–Valea Sulduba/CEMACON¹⁴⁷ and Șimleu Silvaniei–Observator¹⁴⁸ settlements.

The 3A3 dish with flaring, lobed rimmed and conical, arched body is a popular vessel form in the Late Bronze Age, usually richly decorated with incised horizontal lines and garlands. The shape also has a conical knob on the curved shoulder. The the straight base is often ornamented with complex incised or channeled motifs. The type can be considered one of the mainstays of the Tumulus culture¹⁴⁹, although it is very common in north-eastern Hungary and north-western Romania from the RBB1 period to the end of the RBC period. Similar finds occur in the Hajdúbágos–Cehăluț¹⁵⁰, Berkesz¹⁵¹, Egyek¹⁵², Piliny¹⁵³ and Biharea¹⁵⁴ sites, as well as in the ceramic deposit from Debrecen¹⁵⁵. It appears among OFCC¹⁵⁶ and Wietenberg¹⁵⁷ finds, likewise in the Tumulus pottery assemblages from the southern part of the Great Hungarian Plain¹⁵⁸.

The 3B bowl type has flaring rim, short, cylindrical neck, slightly curved shoulders and oblique walls, narrowing towards the base. It was found at the sites of Körösszegapáti–Pál–lapály¹⁵⁹, Nyíregyháza–Tesco¹⁶⁰, Nyíregyháza–Oros–Úr csere¹⁶¹ and Recea–Valea Sulduba/CEMACON¹⁶².

The 5A low mug has flaring rim, conical body, widening at the base. It is known from Recea–Valea Sulduba/CEMACON¹⁶³ site.

Type 2C pot has slightly inverted rim, arched neck and conical body. It has been found in the Hajdúbágos–Cehăluț area at Tășnad–Sere (Pl. 11/6), Cehei–Nove¹⁶⁴ and Nyíregyháza–Oros–Úr csere¹⁶⁵ sites.

Cup 4A has slightly flaring rim, curved neck, accentuated shoulder, flattened spherical body and a handle raised over the rim. In the Hajdúbágos–Cehăluț area it can be found at Tășnad–Sere (Pl. 11/1), Doh–La izvoare¹⁶⁶, Nyíregyháza–Oros–Úr csere¹⁶⁷, Hajdúbágos–Daraboshegy¹⁶⁸ and Biharea¹⁶⁹. It is also encountered at Egyek¹⁷⁰ and Piliny¹⁷¹ sites.

¹⁴⁴ Ignat 1984, Pl. II/2–3.

¹⁴⁵ Bejinariu 2022, Pl. XLVII/2.

¹⁴⁶ Gelej–Kanális dűlő: Kemenczei 1984, Taf. XVIII/4.

¹⁴⁷ Bejinariu 2022, XLVI/3.

¹⁴⁸ Bejinariu 2022, Pl. XL/5.

¹⁴⁹ Kemenczei 1968, 4. kép/ 16; Trogmayer 1975, Taf. 9, 102/2; Taf. 32, 356/4; Kállay 1983, 2. kép/ 7, 10. kép/ 7–12.

¹⁵⁰ Debrecen–Bellegelő (Kovács 1970, 9 ábra/1), Marca–Husău (Bejinariu *et al.* 2014, Pl. 30/5), Suplacu de Barcău–Lapiş (Ignat 1984, Pl. IX/2), Doh–La izvoare (Bejinariu, Lakó, Sana 2004, Pl. III/3), Recea–Valea Sulduba/CEMACON (Bejinariu 2022, Pl. XLVII/5).

¹⁵¹ Kovács 1967, Fig. 17/ 8; Kalicz, Koós 1997, 69, 64 kép.

¹⁵² Kovács 1966, 4. kép 16.

¹⁵³ Kemenczei 1984, Taf. XIII/ 2; Furmánek, Marková 2001, Abb. 4/13.

¹⁵⁴ Dumitrașcu, Emődi 1980, Fig. 4/6, Fig. 6/2.

¹⁵⁵ Poroszlai 1984, 92, II/3, X/ 1–3.

¹⁵⁶ Carei–Bobald (Molnár 2014, Pl. 139/2).

¹⁵⁷ Bădeni (Boroffka 1994, Taf. 3/8).

¹⁵⁸ Domaszék–Börcsök tanya (Sánta 2009, 6. kép 7).

¹⁵⁹ Nagy 2008, XI. tábla 5.

¹⁶⁰ Nagy 2007, VI. tábla 7.

¹⁶¹ Marta *et al.* 2010, Pl. 4/4, 8, 13/9, 22/1, 25/9, 37/4.

¹⁶² Bejinariu 2022, Pl. XLVII/3.

¹⁶³ Bejinariu 2022, Pl. XLVI/1.

¹⁶⁴ Bejinariu 2022, Pl. LIX/1.

¹⁶⁵ Marta *et al.* 2010, Pl. 21/2.

¹⁶⁶ Bejinariu, Lakó, Sana 2004, Fig. I/6, VIII/5.

¹⁶⁷ Marta *et al.* 2010, Pl. 22/5, 32/5.

¹⁶⁸ Kovács 1970, 2. ábra 4, 10, 15, 3. ábra 14.

¹⁶⁹ Dumitrașcu, Emődi 1980, Fig. 1/2.

¹⁷⁰ Egyek–Szőlőhegy: Kovács 1966, 6. kép 6.

¹⁷¹ Gelej (Fischl, Gucsi 2023, Pl. 32/181.4).

Ornamental motifs

The A1 small knob with semi-circular section occurs in Hajdúbagosa–Cehăluț environment at Acăș–Rătuł lui Veres¹⁷², Nyírlugos–Szennyepusztta/Szabadságtelep¹⁷³, Nyíregyháza–Oros–Úr cseres¹⁷⁴ and Tășnad–Sere (Pl. 8/9). It is also encountered on Otomani–Fűzesabony pots at Carei–Bobald¹⁷⁵.

Groups of medium and wide horizontal channellings (H1) appear mainly on bowls and amphorae. These are located on the neck and shoulders of the vessels, together with incised zigzag¹⁷⁶ and groups of short, incised vertical¹⁷⁷ and curved lines¹⁷⁸ or knobs surrounded by groups of narrow channellings¹⁷⁹. Horizontal channellings appear mainly on the outer surface of the bowl base. They occur in combination with three circular alveoli¹⁸⁰, incised arcade motif¹⁸¹, narrow semicircular channellings¹⁸² or semicircular channellings and a row of dots surrounding a knob¹⁸³. The horizontal channellings placed above the base of the vessels can be linked to the practice of ornamenting the base, as the two occur together in the majority of cases¹⁸⁴. On pots it appears rarely, met in only one instance in Hajdúbagosa–Cehăluț sites, where it is visible on the shoulder and along the maximum diameter of the vessel¹⁸⁵. Horizontal

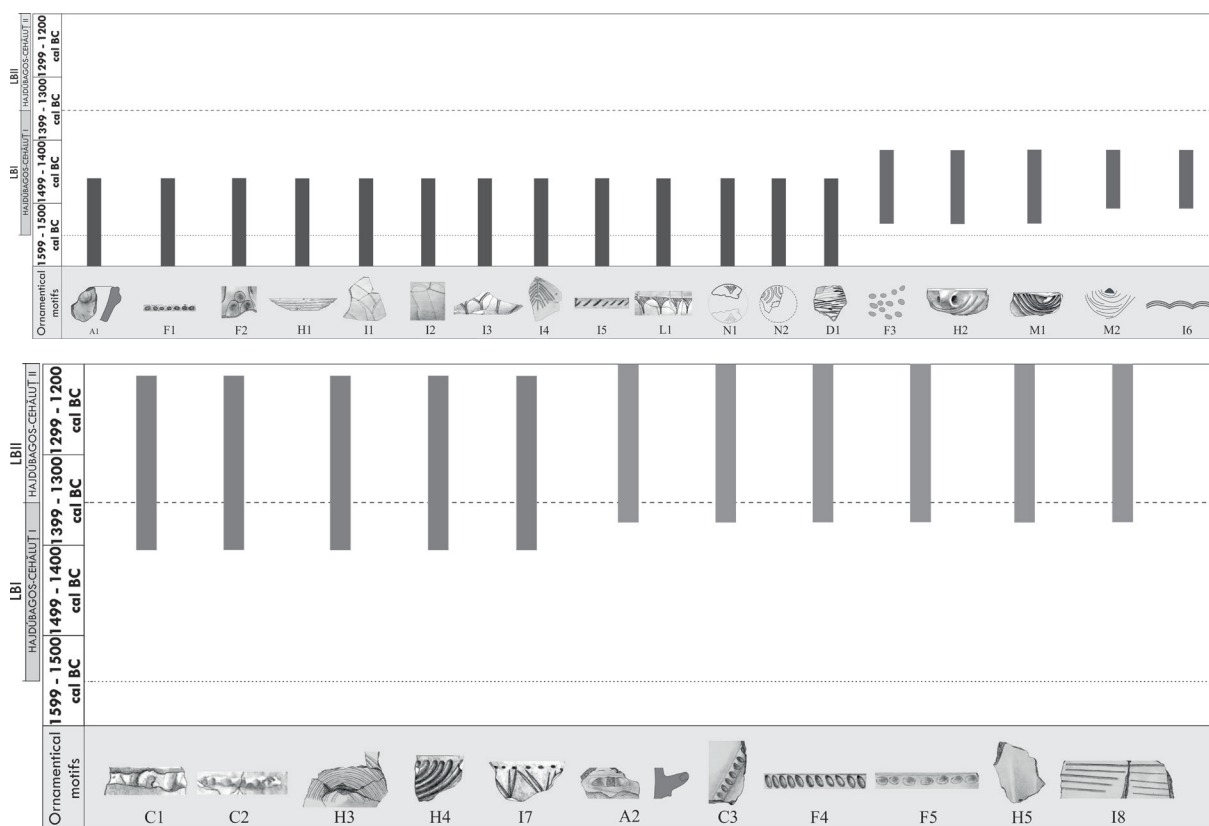


Fig. 5. Ornamental motifs dated with ¹⁴C data.

¹⁷² Németsi 2010, XXVI/5, 6.

¹⁷³ Nagy 2005, VI. tábla 7.

¹⁷⁴ Marta *et al.* 2010, Pl. 4/1, 11/3, 11/6.

¹⁷⁵ Németsi, Molnár 2007, 78. tábla 1; Molnár 2014, Pl. 163/1.

¹⁷⁶ Hajdúszoboszló–Vasútállomás (Németsi 2009b, 2. kép 4.) and Hajdúbagosa–Daraboshegy (Kovács 1970, 2. ábra 6).

¹⁷⁷ Hajdúszoboszló–Vasútállomás (Németsi 2009b, 2. kép 4.).

¹⁷⁸ Hajdúbagosa–Daraboshegy (Kovács 1970, 2. ábra 6).

¹⁷⁹ Hajdúszoboszló–Vasútállomás (Németsi 2009b, 2. kép 4.).

¹⁸⁰ Cehăluț (Bader 1978, Pl. XXXI/17; Németsi 2009b, 3. kép 4.), and with a single alveolus at Körösszegapáti–Pál-lapály site (Nagy 2008, II. tábla 7).

¹⁸¹ Tășnad–Sere (Pl. 3/1, 5/2).

¹⁸² Tășnad–Sere (unpublished material).

¹⁸³ Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 17/A2).

¹⁸⁴ Carei–Bobald 2B (Gyurka *et al.* 2021, 9. tábla 6), Suplacu de Barcău–Dealul Roșu (Bejinariu, Fazecaș 2014, Pl. 5/2), Marca–Husău (Bejinariu 2014, Pl. 30/3), Toboliu–Dâmbu Zăneacului (Găvan, Lie, Kienlin 2020, Pl. 1/4), Tășnad–Sere (Pl. 3/1, 5/2), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XVIII/2, XXXIV/2).

¹⁸⁵ Marca–Husău (Bejinariu *et al.* 2014, Pl. 22/1).

channelings are also rare among the decorative elements of the drinking vessels, being applied mainly on the neck, shoulder and above the base¹⁸⁶.

The row of circular impression (F1) is a common ornament in the LBA, as it occurs in Hajdúbagos–Cehăluț¹⁸⁷, Piliny¹⁸⁸, Tápé¹⁸⁹ and Cruceni–Belegiș¹⁹⁰ environment. It is also encountered in the MBA, in the pottery assemblages assigned to the OFCC¹⁹¹.

The pairs of curved, interlocking lines (I1) appear as early as the end of the MBA and continues to be used in the early LBA, mainly on bowls¹⁹². It can also be encountered in Otomani–Füzesabony¹⁹³ pottery assemblages.

Ornamental motif I2, the row of long-stemmed, unevenly placed incised arches and similar diagonal or interlocking variants occur exclusively on various types of bowls, usually placed on the lower part of the body, from the shoulder to the base¹⁹⁴. The decorative element appears in combination with incised horizontal lines or pair of lines¹⁹⁵, groups of vertical, short lines and rows of impressed circles¹⁹⁶. At Pir and Toboliu, the surface between the arches is filled with impressed circles or short lines¹⁹⁷, similar in appearance to the hatched arches. It occurs in the MBA OFCC assemblages as well¹⁹⁸.

The triple lined, long-stemmed arches (I3) are also found on the sides of bowls.¹⁹⁹ Similar, but linked arches are met in LBA I sites²⁰⁰. Usually these ornamental elements are found on the neck and belly of amphorae, in association with incised lines, groups of lines and semicircular channelings²⁰¹.

Ornamental motif I4, the diagonally placed groups of lines on the central vertical line, resembling the shape of a pine tree, is found on indeterminate fragments at Tășnad–Sere²⁰², and its variants at Nyírlugos–Szennyepuszta²⁰³. It appears in the cemetery of Salka I²⁰⁴, in Cruceni–Belegiș assemblages²⁰⁵ and among Wietenberg²⁰⁶ pottery.

The row of short diagonal incisions (I5) is met on the outer surface of the bowls' rims, mostly on sites dated in the LBA I²⁰⁷.

¹⁸⁶ Carei–Bobald 2B (Gyurka *et al.* 2021, 10. tábla 1), Sărăuad (Marta–Kádas 2008, Pl. 3/6), Nyíregyháza–Oros, Úr csere (Marta *et al.* 2010, Pl. 13/1).

¹⁸⁷ Ciumești–Bostănărie (Németi 1996, Fig. 5/1), Cehei–Nove (Bejinariu 2022, Pl. LVIII/3), Curtuiușeni–Dâmbul ars (Kacsó 1997, Pl. IV/5), Acăș–Crasna veche (Kacsó 1997, Pl. VI/6–7, VII/6), Körösszegapáti–Pál-lapály (Nagy 2008, VIII. tábla 4, 7, X. tábla 7, 9), Nyíregyháza–Oros–Úr csere (Marta *et al.* 2010, Pl. 11/1), Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 4/2, 31/5), Hajdúbagos–Daraboshegy (Kovács 1970, 1. ábra 8, 21, 2. ábra 1, 2, 3, 3. ábra 11, 4. ábra 11), Debrecen–Tócó part (Kovács 1970, 4. ábra 13, 14), Debrecen–Szöllőtelep (Kovács 1970, 4. ábra 15), Debrecen–Bellegelő (Kovács 1970, 9. ábra 8), Hosszúpályi–Nagy–Szik dűlő (Balázs, Szigeti 2017, 2. tábla 2), Suplacu de Barcău–Lapiș (Ignat 1984, Pl. XI/2), Sărăuad (Marta, Kádas 2008, Pl. 5/2), Toboliu–Dâmbu Zănăcanului (Găvan, Lie, Kienlin 2020, Pl. 3/1), Oradea–Salca (Dumitrașcu, Emődi 1980, Fig. 7/9, 8/10, 12), Nyíregyháza–Bujtos, Morgó (Kovács 1966, 21. kép 5, 10, 16), Tășnad–Sere (Pl. 5/2), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XXX/2), Alsóberecki (Kemenczei 1981, Abb. 4/10).

¹⁸⁸ Nagybatony (Kemenczei 1984, Taf. II/1, 2.).

¹⁸⁹ Trogmayer 1975, Taf. 13/156.

¹⁹⁰ Timișoara–Fratelia (Szentmiklósi 2021, Pl. CXIII/5, 8, CXVI/2, CXX/1, CLV/5), Deta–Dudărie (Szentmiklósi 2021, Pl. XXIII/2).

¹⁹¹ Andrid–Curtea CAP (Németi–Molnár 2007, 41. tábla 1; Molnár 2014, Pl. 157/1), Bakonszeg–Kádárdomb (Sz. Máthé 1988, Pl. 11/11), Berettyóújfalú–Szilhalom (Sz. Máthé 1988, Pl. 35/2), Carei–Bobald (Németi, Molnár 2007, 73. tábla 4, 88. tábla 1; Németi, Molnár 2012, 1. tábla 1, 18. tábla 7; Molnár 2014, Pl. 54/7, 116/1, 148/1), Tíream–Kendereshalom (Németi, Molnár 2007, 42. tábla 3–4; Molnár 2014, Pl. 142/3, 143/3–4).

¹⁹² The ornamentation can be found at Cehei–Misig (Bejinariu, Lakó 1996, Pl. IX/1), Carei–Bobald (Pustă) XII (Iercoșan 1986–1987, Fig. 10/1) and Tășnad–Sere (Fig. 8/7).

¹⁹³ Carei–Bobald (Molnár 2014, Pl. 88/3), Urziceni–Spre Carei (Németi, Molnár 2007, 7. tábla 3; Molnár 2014, Pl. 80/3.)

¹⁹⁴ Acăș–Rátul lui Veres (Németi 2010, XII/7), Hosszúpályi–Nagy–Szik dűlő (Balázs, Szigeti 2017, 2. tábla 2), Pir–Cetate, Curtea Cetății (Kacsó 2013, Fig. 4/7, 5/2, 3, 6/1), Toboliu–Rātu Alceului (Lie 2019, Pl. 5/1) és Tășnad–Sere (Pl. 3/1, 3, 5/5).

¹⁹⁵ Pir–Cetate, Curtea Cetății (Kacsó 2013, Fig. 5/3).

¹⁹⁶ Hosszúpályi–Nagy–Szik dűlő (Balázs, Szigeti 2017, 2. tábla 2).

¹⁹⁷ Kacsó 2013, Fig. 4/7, 5/2; Lie 2019, Pl. 5/1.

¹⁹⁸ Carei–Bobald (Németi, Molnár 2007, 73. tábla 4).

¹⁹⁹ Tășnad–Sere (Pl. 5/2).

²⁰⁰ Sărăuad (Marta, Kádas 2008, Pl. 5/1), Oradea–Salca (Dumitrașcu, Emődi 1980, Fig. 8/9).

²⁰¹ Hajdúbagos–Daraboshegy (Kovács 1970, 1. ábra 18, 2. ábra 16).

²⁰² Tășnad–Sere (Pl. 7/1).

²⁰³ Nyírlugos–Szennyepuszta (Kovács 1970, 7. ábra 4).

²⁰⁴ Točík 1964, XI/9, XVIII/8.

²⁰⁵ Timișoara–Fratelia (Szentmiklósi 2021, Pl. CXLVI/9).

²⁰⁶ Derșida–Dealul lui Balotă (Chidioșan 1980, Pl. 28/12).

²⁰⁷ Hajdúbagos–Daraboshegy (Kovács 1970, 4. ábra 11), Pir–Cetate, Curtea Cetății (Kacsó 2013, Fig. 6/2), Crasna–Csereoldal

The hatched arcade motif (L1), most often filled with lines arranged vertically²⁰⁸ or sloping to the right²⁰⁹ and left²¹⁰, is characteristic for the Hajdúbajos–Cehăluț style. The vast majority of the ornamentation adorns the shoulder and the maximum diameter of the bowls. A single occurrence is known on a mug²¹¹. It can already be found in the Otomani–Füzesabony pottery ware²¹².

The decoration of the vessel's base (N1, N2) is a typical practice already encountered at the end of the MBA²¹³, and becomes common in the first two phases of the Late Bronze Age. Base ornaments take a variety of forms, often consisting of concentric channellings, alveoli and semicircular channellings, geometric patterns of hatched bands or complex motifs of incised lines. In the material culture of the Hajdúbajos–Cehăluț pottery style the base of the bowls²¹⁴ are ornamented in the vast majority, and only in the rarest cases the bases of amphorae²¹⁵ or of drinking vessels²¹⁶. This practice can also be traced in the Balta Sărată II, III and IV²¹⁷, Cruceni–Beleghiș²¹⁸ assemblages in Banat and other sites assigned to the Tumulus culture²¹⁹.

The incisions made with a broom (D1) are permanent elements of the Bronze Age material culture, in the Hajdúbajos–Cehăluț area being applied mainly on the sides of pots²²⁰, although it is also rarely found on bowls²²¹. It occurs in association with conical knobs²²² or bands with irregular circular incisions²²³. It is a common element of the Suci de Sus²²⁴ pottery as well.

(Bejinariu, Lakó 2000, Fig. 3/6, 4/2) and Suplacu de Barcău–Dealul Roșu (Bejinariu, Fazecaș 2014, Pl. 6/2) sites.

²⁰⁸ Acâș–Crasna veche (Kacsó 1997, Pl. VII/9), Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 23/2), Cehei–Misig (Bejinariu, Lakó 1996, Pl. VII/5), Tășnad–Sere (Pl. 1/1, 2/4).

²⁰⁹ Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 6/2), Hosszúpályi–Nagy-Szik dűlő (Balázs, Szigeti 2017, 2. tábla 5, 6), Suplacu de Barcău–Dealul Roșu (Bejinariu–Fazecaș 2014, Pl. 6/2), Doh–La izvoare (Bejinariu, Lakó, Sana 2004, Pl. IX/3), Cehei–Misig (Bejinariu, Lakó 1996, Pl. III/1), Căpleni–Malul Crasnei (Németi 1990, Fig. 15/13), Șimleu Silvaniei–Observator (Bejinariu 2022, XVII/2, XXV/3).

²¹⁰ Andrid–Ferma C.A.P. (Németi 1978, fig. 1/1; Németi 2009b 3. kép 2.), Acâș–Crasna veche (Kacsó 1997, Pl. VI/1, 4), Acâș–Râtul lui Veres (Németi 2010, XXV/4), Carei–Bobald 2B (Gyurka *et al.* 2021, 8. tábla 2), Crasna–Csereoldal (Bejinariu–Lakó 2000, Fig. 5/7, 6/6, 7/3, 11/2, 14/2, 16/B3), Cehei–Misig (Bejinariu 2022, Pl. XIII/ 1–3), Doh–La izvoare (Bejinariu, Lakó, Sana 2004, Pl. IX/1), Körösszegapáti–Pál-lapály (Nagy 2008, III tábla 4, IX. tábla 2, X. tábla 3, 8, XII. tábla 1, 4, XIII. tábla 5), Marca–Husău (Bejinariu *et al.* 2014, Pl. 30/3, Pl. 54/2), Suplacu de Barcău–Dealul Roșu (Bejinariu, Fazecaș 2014, Pl. 8/4), Toboliu–Dâmbu Zănăcanului (Găvan, Lie, Kienlin 2020, Pl. 5/2), Măhăceni (Ciugudean 2010, Pl. II/4, 6), Otomani–Cetatea de pământ (Boroffka 2000, Fig. 1/1), Tășnad–Sere (Pl. 4/7, 5/1), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XXV/4, XXVII/3).

²¹¹ Álmosd–Téglavető dűlő (Balázs–Nagy 2018, 5. tábla 2).

²¹² Tiream–Kendereshalom (Németi–Molnár 2007, 42. tábla 9; Molnár 2014, Pl. 143/9).

²¹³ Andrid–Curtea CAP (Németi, Molnár 2007, 41. tábla 3; Molnár 2014, Pl. 157/3); Carei–Bobald (Németi, Molnár 2007, 123. tábla 1).

²¹⁴ Andrid–Ferma C.A.P. (Németi 1978, fig. 1/1; Németi 2009b 3. kép 2), Valea lui Mihai–Groapa de lut (Németi 1978, fig. 4/1; Németi 2009b, 3. kép 1), Acâș–Crasna veche (Kacsó 1997, Pl. VII/9, VIII/3), Acâș–Râtul lui Veres (Németi 2010, X/6, XVIII/4, XXIII/6, XXIV/5, XXV/3), Álmosd–Téglavető dűlő (Balázs, Nagy 2018, 3. tábla 2, 3), Carei–Bobald 2B (Gyurka *et al.* 2021, 9. tábla 5–8), Cehei–Nove (Bejinariu 2022, Pl. LVIII/3) Földes–Andaháza puszta (Kovács 1970, 4. ábra 17), Hajdúbajos–Daraboshegy (Kovács 1970, 1. ábra 14, 2. ábra 2, 3. ábra 11), Hosszúpályi–Nagy-Szik dűlő (Balázs, Szigeti 2017, 2. tábla 7), Körösszegapáti–Pál-lapály (Nagy 2008, V. tábla 5, VI. tábla 1, 2, 4), Nyíregyháza–Oros, Úr csere (Marta *et al.* 2010, Pl. 21/3), Suplacu de Barcău–Dealul Roșu (Bejinariu, Fazecaș 2014, Pl. 5/2), Suplacu de Barcău–Lapiș (Ignat 1984, Pl. IV/3), Toboliu–Dâmbu Zănăcanului (Găvan, Lie, Kienlin 2020, Pl. 1/4, 5/7), Toboliu–Râtu Alceului (Lie 2019, Pl. 7/15), Oradea–Salca (Dumitrașcu, Emődi 1980, Fig. 8/15), Otomani–Cetatea de pământ (Boroffka, Fig. 1/1), Măhăceni (Ciugudean 2010, Pl. II/4, 6), Tășnad–Sere (Pl. 3/1, 5/2–3), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XVIII/2, XXV/4, XXVIII/3, XXIX/1, 4, XXXI/1, XXXIV/2, XXXVII/2), Recea–Valea Sulduba/CEMACON (Bejinariu 2022, Pl. XLV/2, LI/5).

²¹⁵ Tășnad–Sere (unpublished material).

²¹⁶ Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 24/B1), Cehei–Mesig (Bejinariu, Lakó 1996, Pl. VIII/4, Bejinariu 2022, Pl. XII/1), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XXII/1B).

²¹⁷ Iaz–Dâmb (Gumă 1997, 232, Pl. LVIII/3, 4, 14), Caransebeș–Balta Sărată (Gumă 1997, 233, Pl. LIX/12), Iectar–Budint (Gumă 1997, 235, Pl. LXI/11), Valea Timișului–Rovină (Gumă 1997, 237, Pl. LXIII/10, LXV/2, 8), Sacu–Țărinioară (Gumă 1997, 242, Pl. LXVIII/10, 12, 14).

²¹⁸ Szentmiklosi 2021, 466, Pl. LIV/6.

²¹⁹ Domaszék–Börcsök tanya (Sánta 2009, 6. kép 7).

²²⁰ Curtuișeni–Dâmbul ars (Németi 1978, fig.2/10), Acâș–Crasna veche (Kacsó 1997, Pl. V/6, VIII/4), Tășnad–Sere (Pl. 8/8).

²²¹ Crasna–Csereoldal (Bejinariu–Lakó 2000, Fig. 26/A2), Cehei–Misig (Bejinariu, Lakó 1996, Pl. VI/5; Bejinariu 2022, Pl. X/6, XI/1).

²²² Németi 1978, fig.2/10.

²²³ Tășnad–Sere (unpublished material).

²²⁴ Someș–Uileac (Pop 2003, Fig. 2/9, 10).

The rows of circular alveoli (F3) appear on the sides of bowls, with a semicircular knob surrounded by narrow channellings²²⁵, together with a semicircular row of circular stitches and groups of narrow channellings²²⁶.

Although the upwardly displayed group of semicircular narrow channellings (H2) usually appear surrounding knobs, they can also be found relatively frequent below the handle of vessels²²⁷, and it is therefore justified to treat them as a separate category. Narrower and wider channellings also appear under the handles of bowls²²⁸.

Among the group of knobs surrounded by semicircular flutes or incised lines, several combinations of ornamental motifs can be distinguished by the thickness and number of flutes and the shape of the knobs. M1²²⁹ and M2²³⁰ ornamental motifs also belong to this group. Both are placed mainly on bowls, on the maximum diameter of the vessel. They are used both in the LBA I and LBA II, thus it is not possible to date them within a narrower time interval.

The I6 incisions displayed in garland pattern occur on the neck and shoulder of amphorae, mainly in the sites of the pottery style dated in the LBA I²³¹.

The C1 impressed rib is characteristic for the LBA pottery, predominantly located under the rim, on the upper part of the neck²³² and on the shoulder²³³. It can also be found at OFCC sites²³⁴.

Only one example of the C2 short rib with irregular impressions is known from Hajdúbagosa–Cehăluț sites, on the shoulder of a pot²³⁵. It is met in Cruceni–Belegiș assemblages²³⁶, too.

The H3 group of semicircular narrow flutes displayed downward, occur on both amphorae and bowls²³⁷.

The H4 group of narrow channellings in LBA I and II is most commonly met, surrounding a knob, but can also be observed under the handle of bowls²³⁸. It mainly adorns the bowls²³⁹, sometimes appearing with three circular alveoli²⁴⁰.

Ornamental motif I7, a row of V-shaped pair of incised lines, occurs on bowls, together with a band of oval impressions²⁴¹. It is also rarely seen on the belly of cups or mugs grouped with a pair of lines²⁴². At Tășnad it appears in features dated in the LBA I, while at Recea occurs between 1410 and 1210 cal BC. The incised band can be met in MBA assemblages as well, assigned to the Wietenberg style²⁴³.

²²⁵ Recea–Valea Sulduba (Bejinariu 2022, Pl. LII/4).

²²⁶ Tășnad–Sere (unpublished material).

²²⁷ Acăș–Crasna veche (Kacsó 1997, Pl. IX/8), Carei–Bobald (Pustă) XII (Iercoșan 1986–1987, Fig. 10/8), Recea–Valea Sulduba/CEMACON (Bejinariu 2022, Pl. LII/2), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XXXI/2–3, XL/4), Tășnad–Sere, Valea lui Mihai–Groapa cu lut (Németi 1978, Fig. 4/1).

²²⁸ Pișcolt–Nisipărie (Németi 1978, Fig. 6/5, 7, 10, 7/10), Valea Sulduba/CEMACON (Bejinariu 2022, Pl. XLII/5), Tășnad–Sere (unpublished material).

²²⁹ Acăș–Rătul lui Veres (Németi 2010, XV/7, XX/2), Körösszegapáti–Pál-lapály (Nagy 2008, XI. tábla 7, XI. tábla 5, XIII. tábla 7), Nyíregyháza–Oros–Úr csere (Marta *et al.* 2010, Pl. 17/6), Nyírlugos–Szennyepusztá/Szabadságtelep, Folyási dűlő (Nagy 2005, XIII. tábla 4), Suplacu de Barcău–Lapiș (Ignat 1984, Pl. VII/2), Pișcolt–Nisipărie (Bader 1978, Pl. XXXI/5; Kacsó 1997, Pl. II/5), Recea–Valea Sulduba/CEMACON (Bejinariu 2022, Pl. LIII/2), Toboliu–Dâmbu Zănăcanului (Găvan, Lie, Kienlin 2020, Pl. 4/4), Valea lui Mihai (Kacsó 1997, Pl. X/7).

²³⁰ Nyíregyháza–Oros, Úr csere (Marta *et al.* 2010, Pl. 20/6), Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 24/B3), Debrecen–Haláp (Kovács 1970, 10. ábra 9), Tășnad–Sere (Pl. 9/8).

²³¹ Acăș–Rătul lui Veres (Németi 2010, XXIII/5, XXIV/2), Hajdúbagosa–Daraboshegy (Kovács 1970, 1. ábra 18, 2. ábra 1; Kovács 1970, 4. ábra 3), Tășnad–Sere (Pl. 9/7).

²³² Acăș–Rătul lui Veres (Németi 2010, XXI/1), Recea–Valea Sulduba (Bejinariu 2022, Pl. LII/1), Tășnad–Sere.

²³³ Körösszegapáti–Pál-lapály (Nagy 2008, VII. Tábla 1, 7).

²³⁴ Tiream–Kendereshalom (Molnár 2014, Pl. 13/1).

²³⁵ Recea–Valea Sulduba (Bejinariu 2022, Pl. LIII/1).

²³⁶ Giroc–Mescal (Szentmiklósi 2021, Pl. LXXIII/6).

²³⁷ Toboliu–Dâmbu Zănăcanului (Găvan, Lie, Kienlin 2020, Pl. 5/5), Tășnad–Sere (Pl. 10/1).

²³⁸ Suplacu de Barcău–Dealul Roșu (Bejinariu, Fazecaș 2014, Pl. 5/4).

²³⁹ Recea–Valea Sulduba (Bejinariu 2022, Pl. XLVII/3), Tășnad–Sere (Pl. 10/4).

²⁴⁰ Doh–La izvoare (Bejinariu, Lakó, Sana 2004, Pl. X/1).

²⁴¹ Recea–Valea Sulduba (Bejinariu 2022, Pl. XLVII/5).

²⁴² Tășnad–Sere (Pl. 6/4).

²⁴³ Stolna–Băștioara (Daróczi, Ursuțiu 2015a, Type plate 21/Incised band 19, Plate 210/5211); Daróczi–Ursuțiu 2015b, Pl. 4/Incised band 19; Brașov–Bartolomeu–Schottergrube (Boroffka 1994, Taf. 17/5).

The A2 wide rectangular knob type with curved edges and two impressions is found mainly applied on pots²⁴⁴ both in LBA I and II²⁴⁵.

The oblique rib with oval impressions (C3) occurs only twice in the Hajdúbagosa–Cehăluț area, in the settlement of Tășnad (Pl. 11/6), together with long rectangular knobs, with an impression in its central part or rows of left-sloping, grain-shaped impressions. The ornamental motif is met in OFCC assemblages²⁴⁶. It is also found with F4 type²⁴⁷ row of impressions at Tășnad. Right-sloping grain impressions similar to the F4 decoration are much more common in the LBA I, applied on pots²⁴⁸, bowls²⁴⁹ and mugs²⁵⁰.

The F5 horizontal row of circular alveoli is a common ornamental element of the period²⁵¹, displayed on the necks and shoulders of mugs²⁵², on the neck or the belly of bowls²⁵³, on amphorae²⁵⁴, mostly in assemblages dated to the LBA I. It also occurs in the surrounding Tumulus pottery assemblages at Egyek²⁵⁵, Salka I²⁵⁶, Tápé²⁵⁷ and in Cruceni–Belegiș²⁵⁸ features, as well.

The H5 wide, vertical channellings appear on pots²⁵⁹, bowls²⁶⁰ and drinking vessels²⁶¹, met both in the LBA I and LBA II. The decoration appears already in the sites attributed to the MBA OFCC²⁶² and later in Piliny²⁶³ environment.

The group of horizontal incised lines (I8) is a characteristic decoration of the period²⁶⁴. It can be found on the neck and shoulder of mugs²⁶⁵, on the neck of cups²⁶⁶, jugs²⁶⁷, amphorae²⁶⁸ and on bowls²⁶⁹. It can also be encountered in the MBA Otomani–Füzesabony ware²⁷⁰, as well as in the contemporaneous Tumulus pottery assemblages²⁷¹.

²⁴⁴ Tășnad–Sere (Pl. 10/3).

²⁴⁵ Nyíregyháza–Oros–Úr csere (Marta *et al.* 2010, Pl. 18/6, 29/8).

²⁴⁶ Andrid–Curtea CAP (Molnár 2014, Pl. 161/1).

²⁴⁷ Debrecen–Bellegelő (Kovács 1970, 9. ábra 5) and Tășnad–Sere (Pl. 11/6).

²⁴⁸ Acăș–Crasna veche (Kacsó 1997, Pl. V/4), Körösszegapáti–Pál-lapály (Nagy 2008, VII. tábla 8), Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 30/2), Sărăud (Marta, Kádas 2008, Pl. 4/6).

²⁴⁹ Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 6/6), Cehei–Misig (Bejinariu, Lakó 1996, Pl. III/3), Cehei–Nove (Bejinariu 2022, Pl. LIX/2, 3, 4).

²⁵⁰ Pir–Cetate (Kacsó 2013a, Fig. 4/1), Acăș–Rátul lui Veres (Németi 2010, XXV/11), Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 6/1), Tășnad–Sere (unpublished material).

²⁵¹ Nyíregyháza–Oros, Úr csere (Marta *et al.* 2010, Pl. 9/2).

²⁵² Pișcolt–Nisipărie (Németi 1978, fig. 6/2; Németi 2009b, 52, 4. kép 7; Németi 1978, fig. 8/4), Pișcolt–Templomkert (Németi 2009b, 3. kép 16.), Nyíregyháza–Tesco, Shell fuel station (Nagy 2007, VI. tábla 9), Körösszegapáti–Pál-lapály (Nagy 2008, VIII. tábla 2), Tășnad–Sere (Pl. 11/1).

²⁵³ Valea lui Mihai–Groapa de lut (Németi 1978, fig. 4/1; Németi 2009b, 3. kép 1), Acăș–Rátul lui Veres/Veres-rét (Németi 2010, XII/4, XV/7), Crasna–Csereoldal (Bejinariu, Lakó 2000, Fig. 5/1, 6/4), Debrecen–Bellegelő (Kovács 1970, 9. ábra 10), Suplacu de Barcău–Dealul Roșu (Bejinariu, Fazecaș 2014, Pl. 6/1).

²⁵⁴ Ciumești–Bostănărie (Bader 1978, Pl. XXVI/8; Kacsó 1997, Pl. XII/2; Németi 2009b, 2. kép 1.)

²⁵⁵ Egyek–Szőlőhegy (Kovács 1966, 2. kép 10).

²⁵⁶ Tocik 1964, XXV/3.

²⁵⁷ Trogmayer 1975, Taf. 30/337, 35/405.

²⁵⁸ Deta–Dudărie (Szentmiklósi 2021, Pl. XII/2, XXII/5).

²⁵⁹ Acăș–Crasna veche (Kacsó 1997, Pl. VI/11).

²⁶⁰ Nyíregyháza–Oros–Úr csere (Marta *et al.* 2010, Pl. 8/5), Biharea–Grădina CAP–Insulă (Dumitrașcu, Emödi 1980, Fig. 4/17), Tășnad–Sere (unpublished material).

²⁶¹ Nyíregyháza–Tesco, Shell fuel station (Nagy 2007, I. tábla 8), Tășnad–Sere (Pl. 10/5).

²⁶² Tiream–Kendereshalom (Németi, Molnár 2007, 34. tábla 8; Molnár 2014, Pl. 63/8).

²⁶³ Gelej (Fischl, Gucci 2023, Pl. 26/152.2,c48/236.2); Litke (Kemenczei 1984, Taf. VII/5.)

²⁶⁴ Pișcolt–Nisipărie (Németi 1978, fig. 6/6).

²⁶⁵ Berveni–Fabrica de cânepă (Németi 1978, fig. 2/2; Németi 2009b, 52, 4. kép 3), Pișcolt–Nisipărie (Németi 1978, fig. 6/2; Németi 2009b, 52, 4. kép 7; Németi 1978, fig. 10/8; Németi 2009b, 52, 4. kép 5.), Hajdúbagosa–Daraboshegy (Kovács 1970, 1. ábra 8), Debrecen–Haláp (Kovács 1970, 10. ábra 12), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XXX/1), Tășnad–Sere (Pl. 10/6).

²⁶⁶ Acăș–Rátul lui Veres (Németi 2010, XIX/10).

²⁶⁷ Pișcolt–Nisipărie (Németi 1978, fig. 9/6), Debrecen–Tócó part (Kovács 1970, 4. ábra 13).

²⁶⁸ Ciumești–Bostănărie (Bader 1978, Pl. XXVI/8; Kacsó 1997, Pl. XII/2; Németi 2009b, 2. kép 1), Acăș–Crasna veche (Kacsó 1997, Pl. V/10), Acăș–Rátul lui Veres (Németi 2010, XXV/7), Hajdúbagosa–Daraboshegy (Kovács 1970, 1. ábra 20, 1. ábra 22, 2. ábra 1, 16, 3. ábra 7, 13, 4. ábra 9), Suplacu de Barcău–Lapiș (Ignat 1984, Pl. I/3), Șimleu Silvaniei–Observator (Bejinariu 2022, Pl. XXXVII/1), Carei–Bobald 2B (Gyurka *et al.* 2021, 7. tábla 2), Tășnad–Sere (unpublished material).

²⁶⁹ Tășnad–Sere (unpublished material).

²⁷⁰ Berettyóújfalu–Szilhalom (Sz. Máthé 1988, Pl. 32/1).

²⁷¹ Nagybatony (Kemenczei 1984, Taf. II/12, III/3, 7); Rákóczi-falva (Hänsel 1968, Taf. 29/20).

Discussion

Based on the total assemblages of finds from all the Hajdúbajos–Cehăluț sites, the decorative elements that can be seen on the pots are the A2 type bosses, the C1, C3 and C2 type ribs and the F4 impressions. The F3 circular impressions, the H2 curved flutes, the I1 interlocking pair of lines, the I3 long semicircular arches, the I4, I5 line motifs and the M2 type knobs surrounded by semicircular channellings at the base, are elements of the ornamentation of the bowls. Similarly, on the bowls can regularly be met the arcades and the ornamentation of the base, which was rarely applied on cups and amphorae. The I6 low arcades appear only on amphorae, while the H3 channelling is almost equally represented in the ornamentation of amphorae and bowls. Vertical and horizontal channellings (H1, H5), semi-spherical knobs (A1) and rows of alveoli (F5, F2) appear on amphorae, bowls, cups and mugs (Fig. 6, Fig. 7, Fig. 8).

The different ornamental elements are usually placed on the same part of the body. While the brooming can cover the entire surface, the C3, H5, H2 and I4 ornaments are usually placed on the

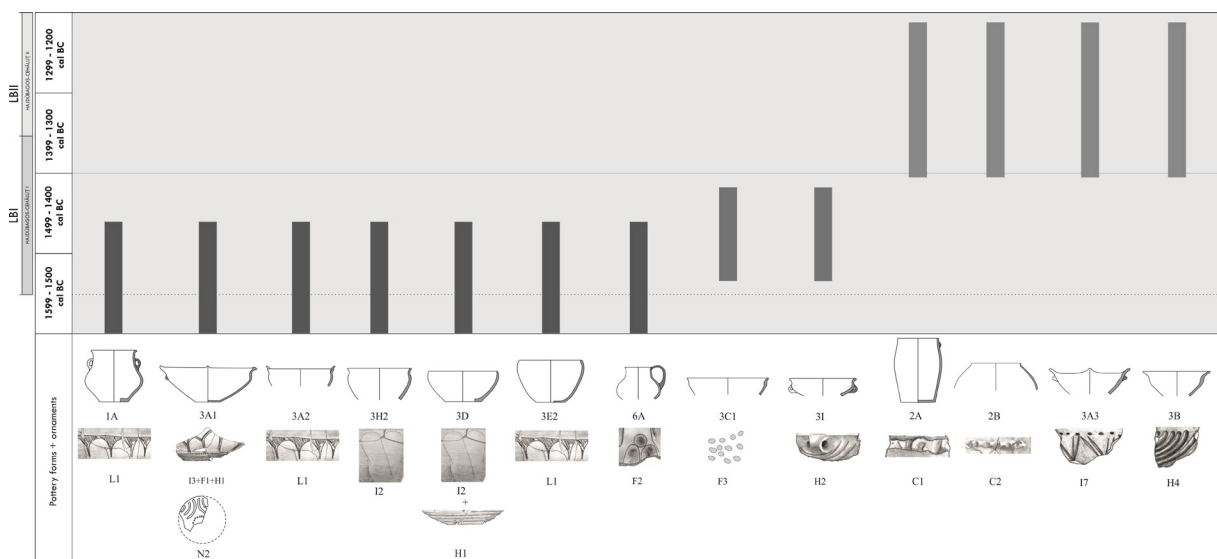


Fig. 6. Chronological distribution of the association of pottery shapes and ornamental motifs.

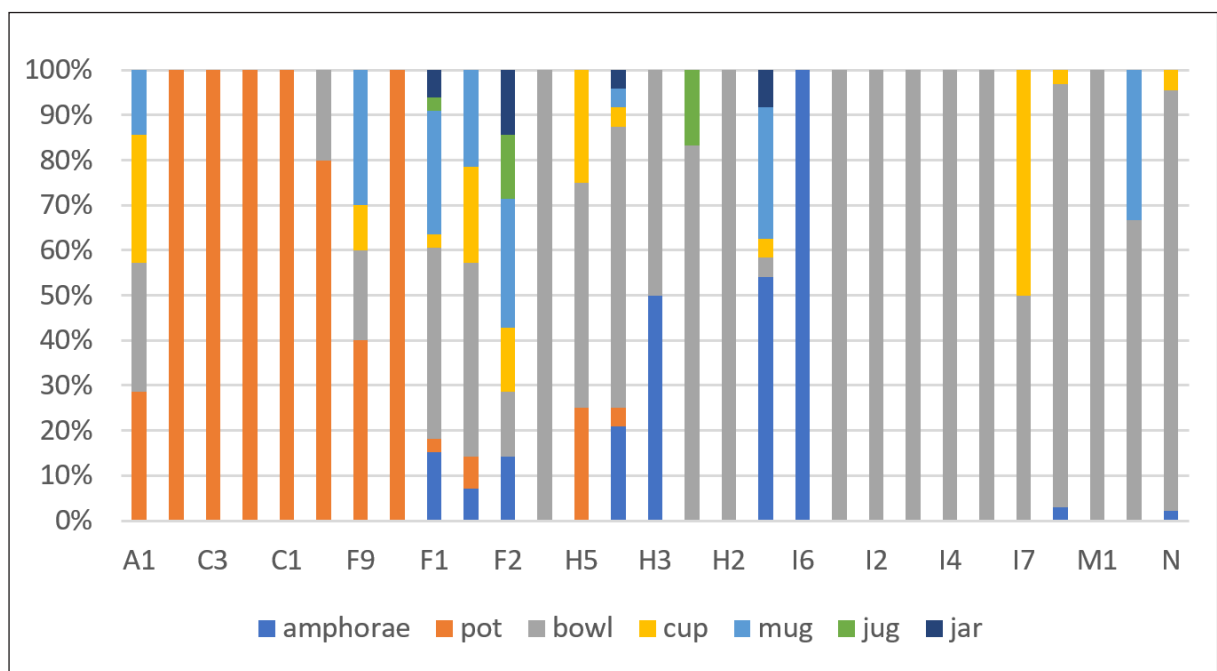


Fig. 7. Distribution of ornamental motifs on the pottery types.

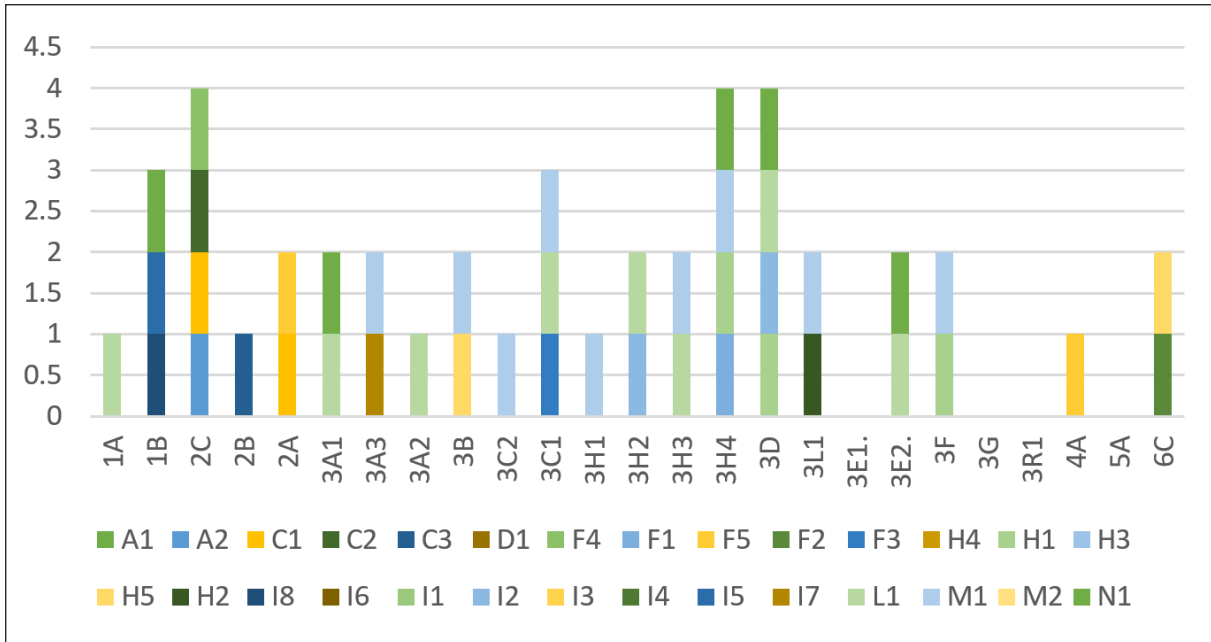


Fig. 8. The presence of ornamental motifs on pottery shapes.

maximum diameter (OP7²⁷²) of the vessel. Likewise, the C2 rib appears on the shoulder (OP6), while the F3, I3 appear only on the lower part, below the belly line (OP8). I5 motif decorates the top of the rim (OP2), and F4 impression appears just below the rim (OP3). There is more variation in the ensembles of knobs and channelling (M1, M2), as they are placed below the rim (OP3), on the neck (OP6), on the maximum diameter (OP7) and below the belly line (OP8) (Fig. 9).

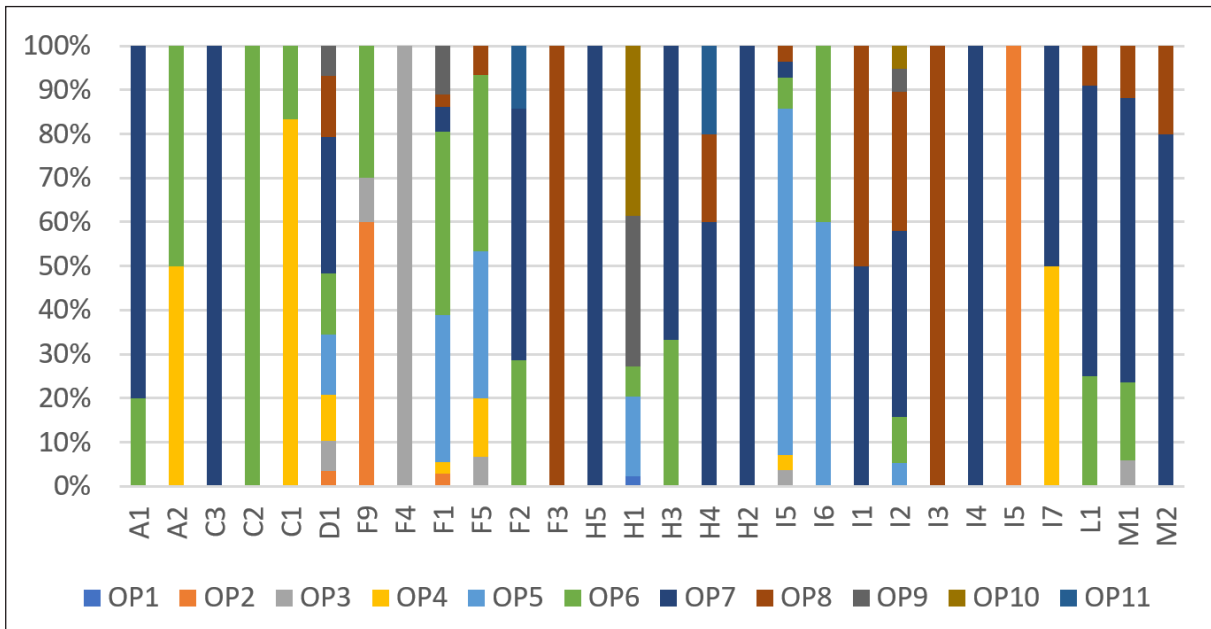


Fig. 9. The position of the ornamental motifs on the ceramic body.

²⁷² For the data collection I followed the methodology developed by T. Daróczy, according to which 12 position can be distinguished on the vessel's body. These can be interpreted primarily as intervals and not as defined points. Positions 1, 2, and 3 are located on the inner surface of the rim, on the top of the rim, and immediately below it. The top of the neck is represented by number 4 and the middle part by number 5. The shoulder decorations are number 6. The position of the decorations on the maximum diameter of the body is coded with nr. 7. The upper half of the surface between the maximum diameter and the base is coded with nr. 8, while the middle half is nr. 9. Position 10 represents the outer surface of the base, position 11 marks the handle and position 12 the ornamentation of the base. (Daróczy, Ursuțiu 2015a, 307, Type plate 31; Daróczy, Ursuțiu 2015b, 3, Fig. 3).

Based on a combined analysis of the ^{14}C data, the dated pottery assemblages' stylistic characteristics and its analogies, some comments on the chronology of ceramic use can be made. In accordance with the relative chronology, the ^{14}C data suggest the placement of the 1A, 3A2, 3H2, 3H3, 3H4, 3E2 pottery shapes and H1, I2, I3, I5, F3, H2 and I6 ornamental motifs in the LBA I. In the LBA II period occurs 3B, 5A, 2C shapes and the C2 type short rib. More common elements of the material culture can be considered pottery shapes 3A1, 3D, 3F, 3G, 3C1, 3C2, 3H1, 3I, 3J and 6A, also decorative elements A1, F1, I4, N1, N2, D1, M1, M2, which are dated with absolute data in the LBA I, still occur in later sites, as well. The same applies to 2A, 2B, 3A3 shapes and A2, C1, C3, H3, H4, H5, I7, I8 ornamental motifs, which are dated with radiocarbon data in the LBA II, but they occur in the sites assigned to the LBA I, too.

Conclusions

The limited available radiocarbon data does not allow to draw any firm conclusions, nor to elaborate a typochronological system for the LBA I–II pottery in north-western Transylvania.

The ^{14}C data both from Tășnad and from Recea confirm, that the stylistic elements popular in the LBA I and II in north-western Romania already appear in the BB1/B2 period, in the 16. c. BC, as noted in previous literature²⁷³.

The pottery of the so called Hajdúbajos–Cehăluț style is the result of the hybridisation of the OFCC and the Tumulus pottery, as a significant proportion of MBA forms and decorative elements remain in use at the beginning of the LBA, alongside a few previously unknown forms but a large number of ornamental motifs.

During the LBA, the pottery of the Tumulus communities in the Great Hungarian Plain shares many elements and exhibits a high degree of similarity. Most of the elements of the Hajdúbajos–Cehăluț pottery are also part of the ceramic assemblages of the surrounding areas. No distinctive identity markers can be identified, the authentic elements being the hatched arcades and perhaps the 3A1 bowl type. Fluidity and constant change characterise the ceramic style of the period. In the periphery of the distribution area, Wietenberg and Noua style elements can be observed, along with common decorative motifs are also common, especially in the former Egyek and Piliny area. In LBA II, pre-Gáva features emerge as precursors to the uniformization process that would lead to the Gáva cultural complex. Recent research in Banat and in Central Transylvania is unanimous in the view that the relative chronology based on pottery requires reinterpretation²⁷⁴. A similar conclusion applies to the Hajdúbajos–Cehăluț ceramic material. The temporal variation in the appearance of forms and decorations may also reflect the adherence of different communities to their traditions or their openness to new technologies and innovation, as each community adopts new cultural and economic trends at different rates.

In the first two phases of the Late Bronze Age, the lower basins of the Criș/Körös, Barcău/Berettyó, Ier and Crasna Rivers exhibit a mixed character in pottery material, featuring Middle Bronze Age elements alongside typical Tumulus pottery from the Tisza region and Banat. This area can be seen as a melting pot of diverse influences from the east, south, west and north. We observe a mixed material culture in which identity markers are not clearly defined, allowing for interpretation only in relation to the period before and after.

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²⁷³ Gogăltan 2015, 73; Gogăltan 2019, 49.

²⁷⁴ Sava 2020; Quinn *et al.* 2020, 48.

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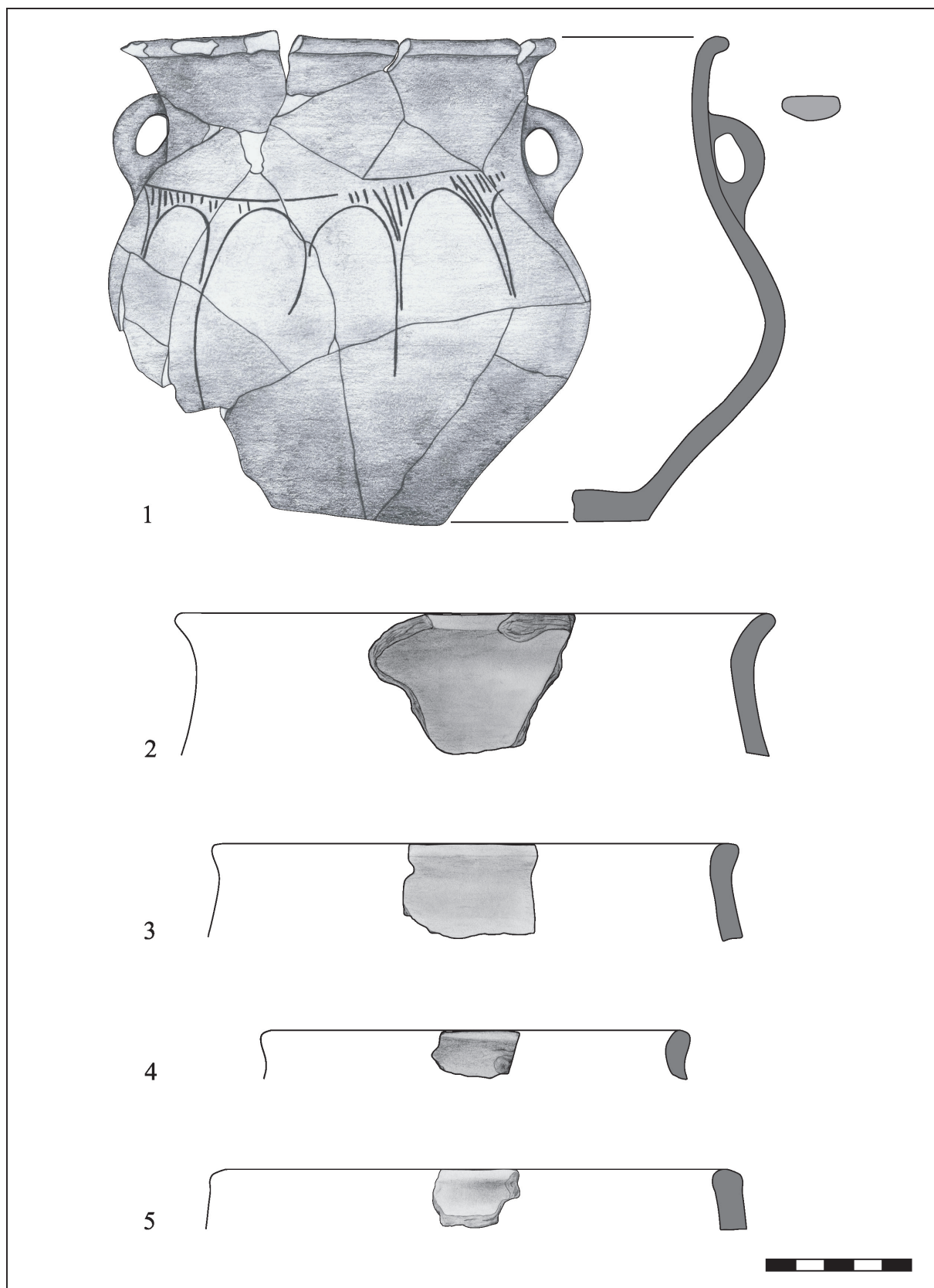


Plate 1. Pottery fragments from feature Cx225.

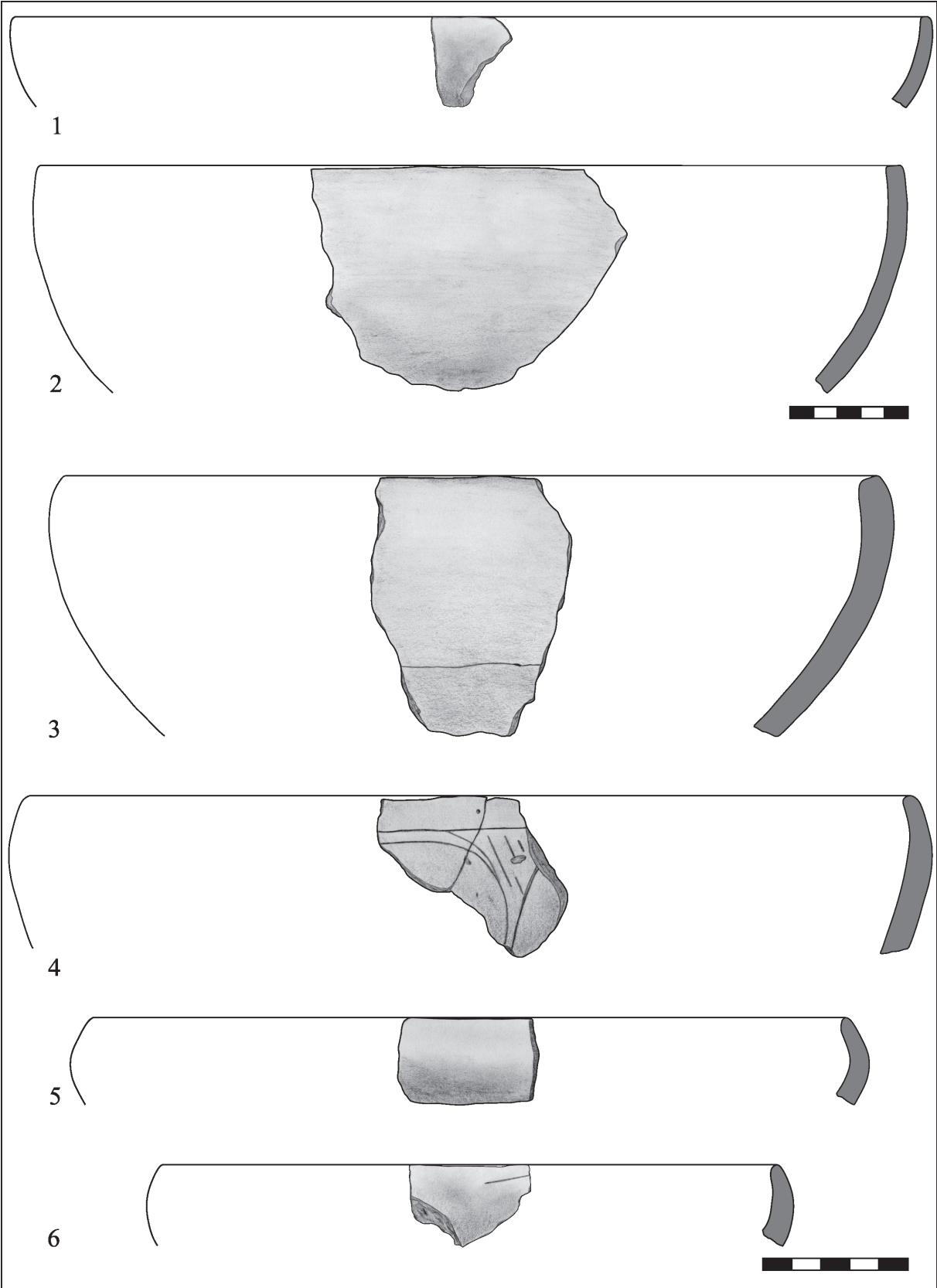


Plate 2. Pottery fragments from feature Cx225.

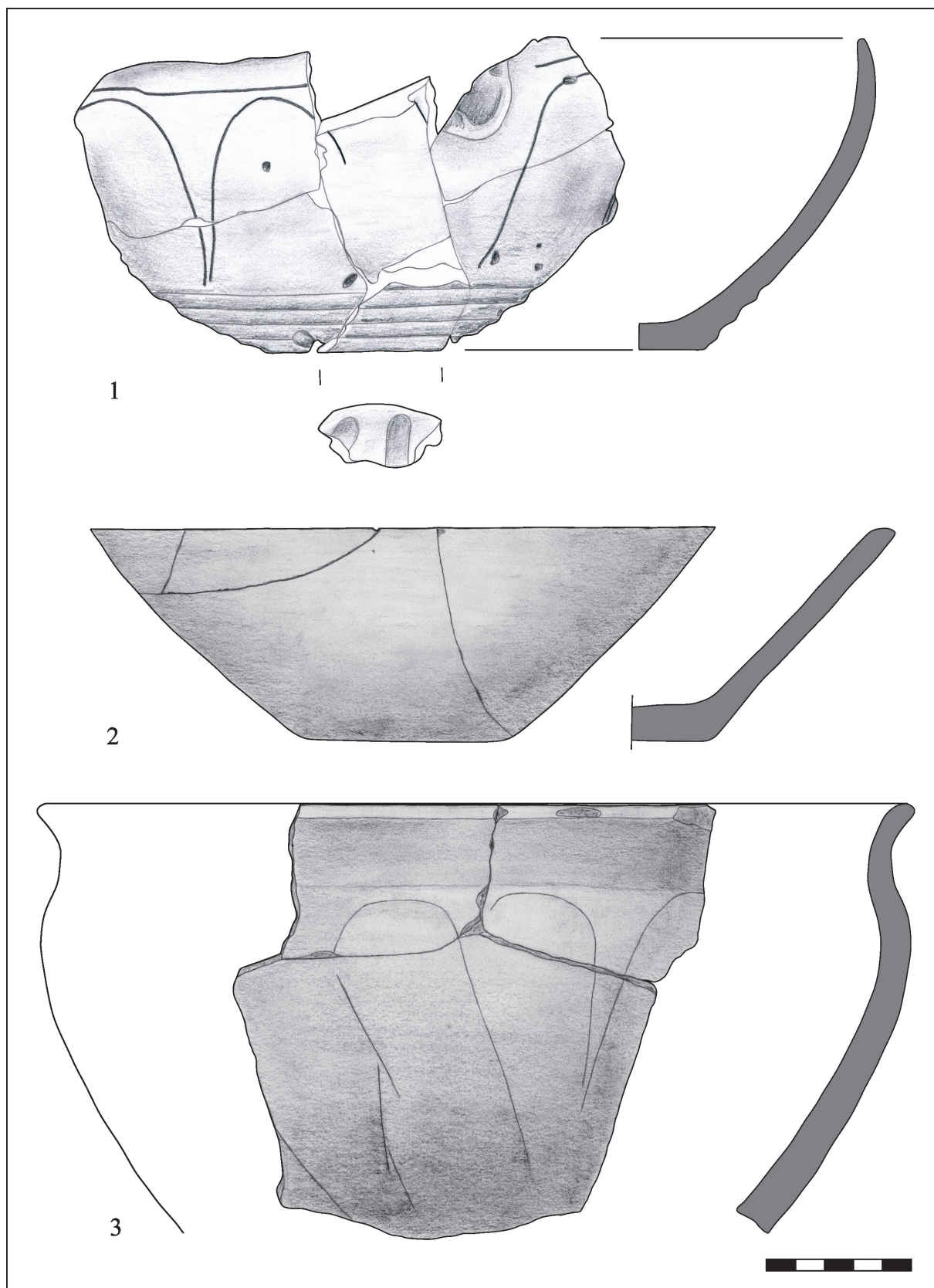


Plate 3. Pottery fragments from feature Cx225.

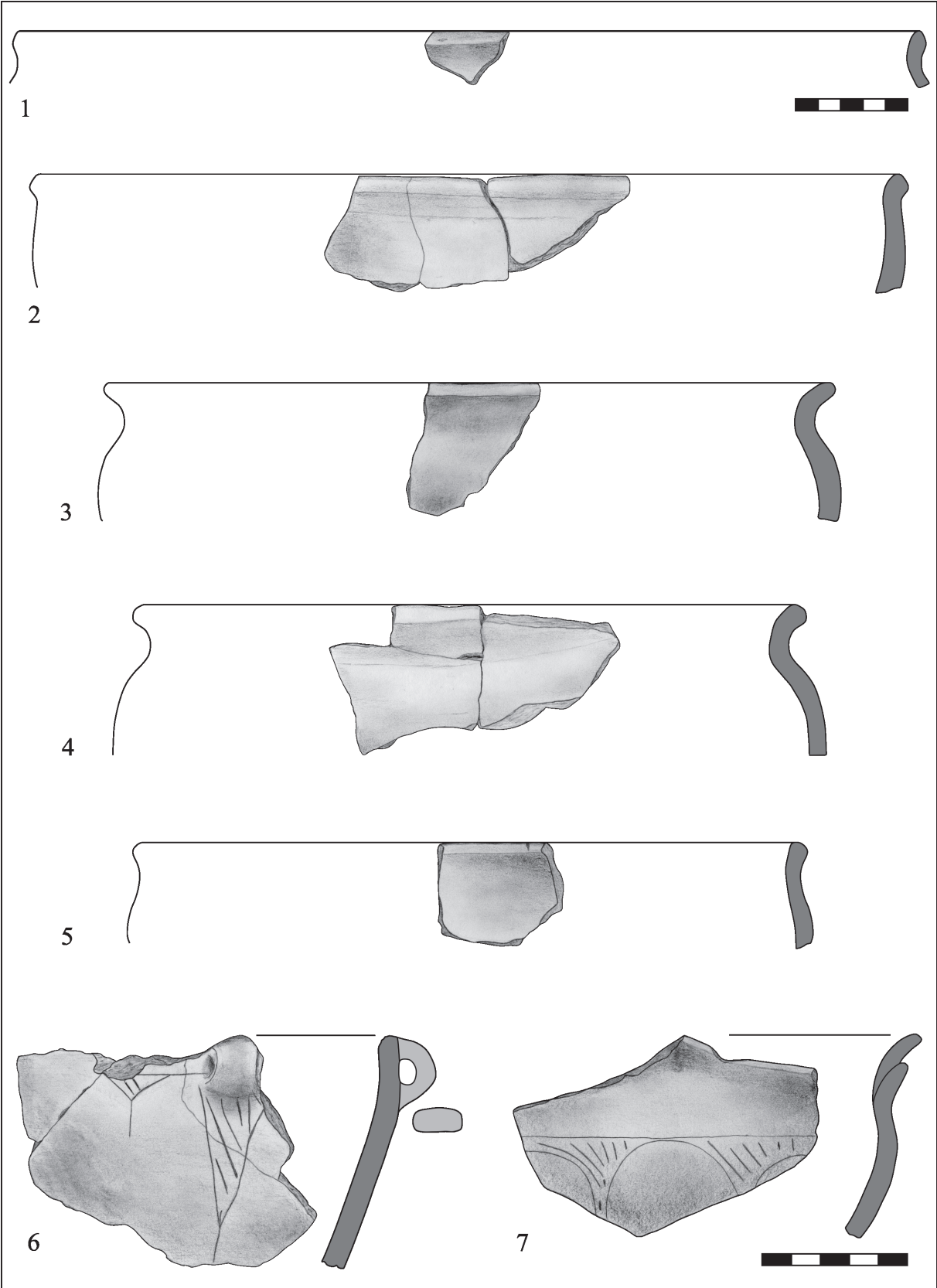


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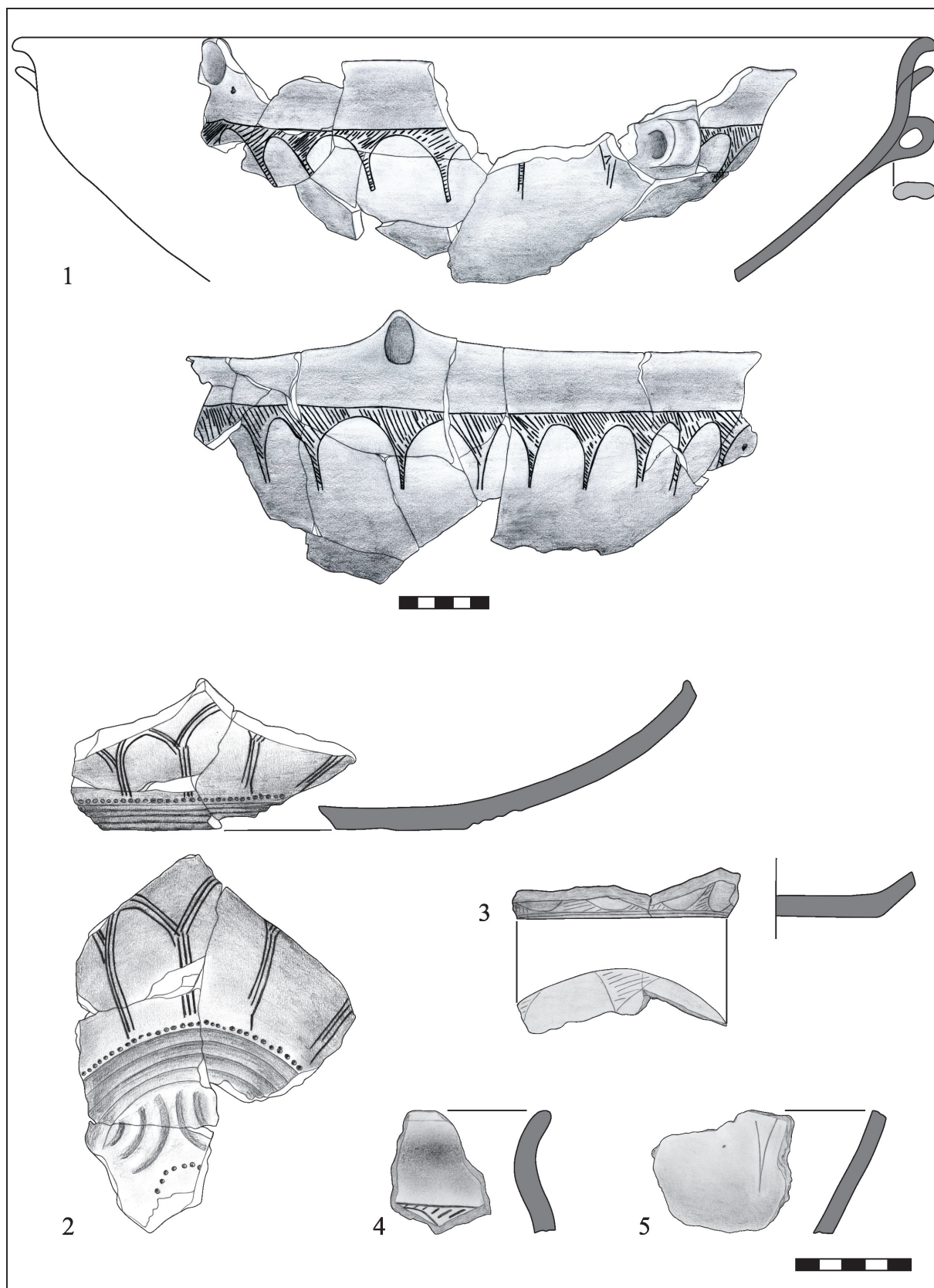


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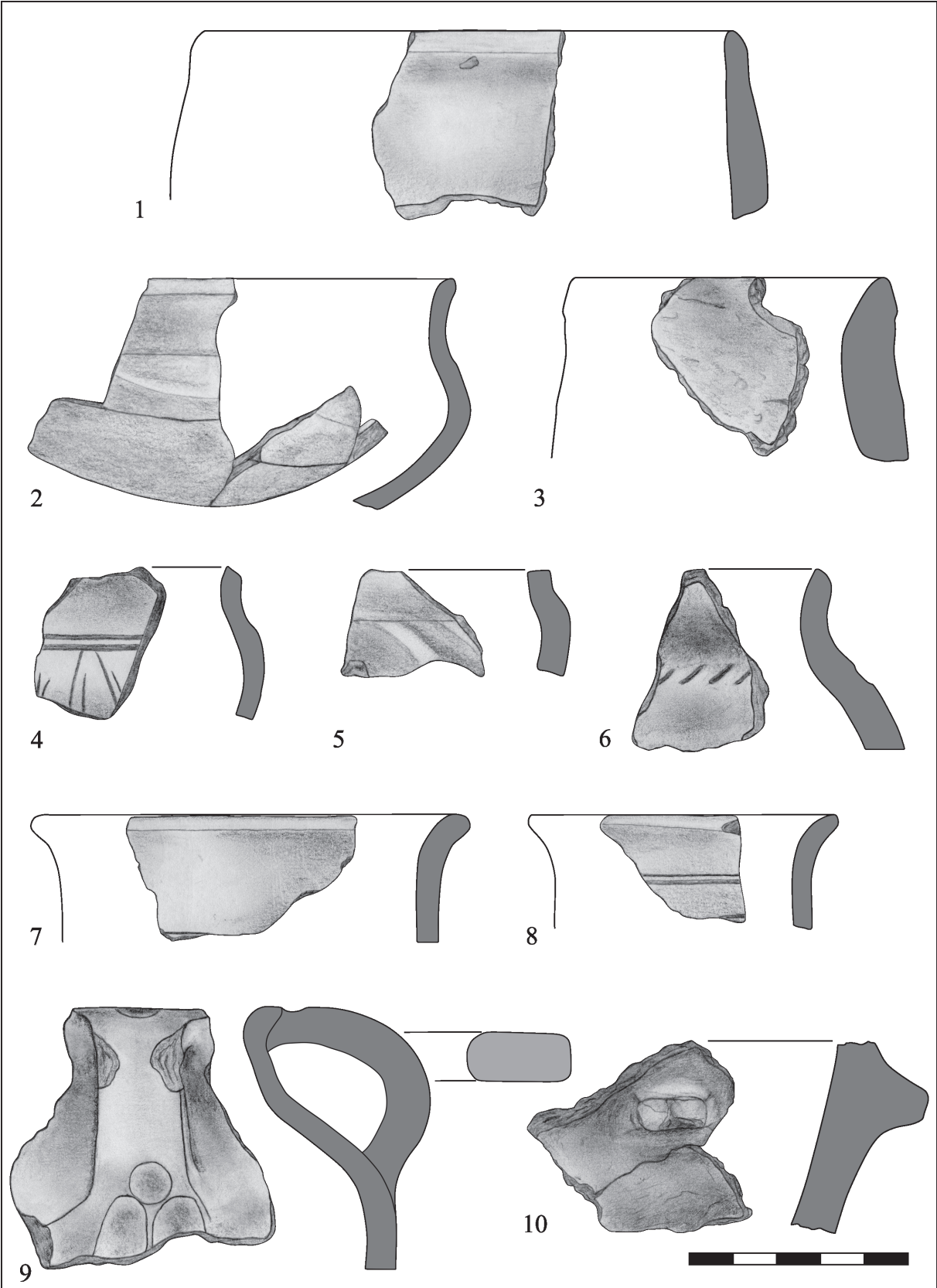


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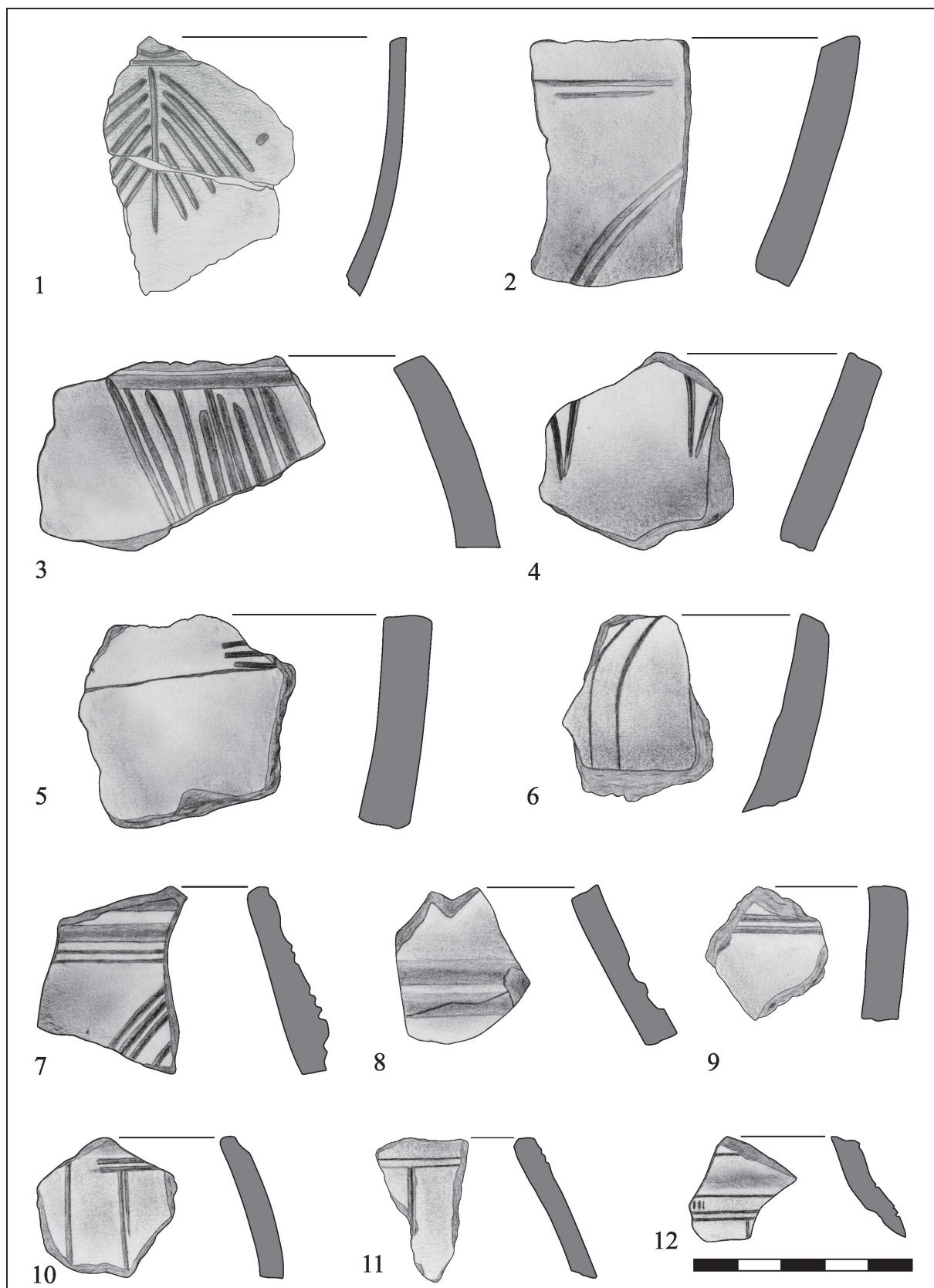


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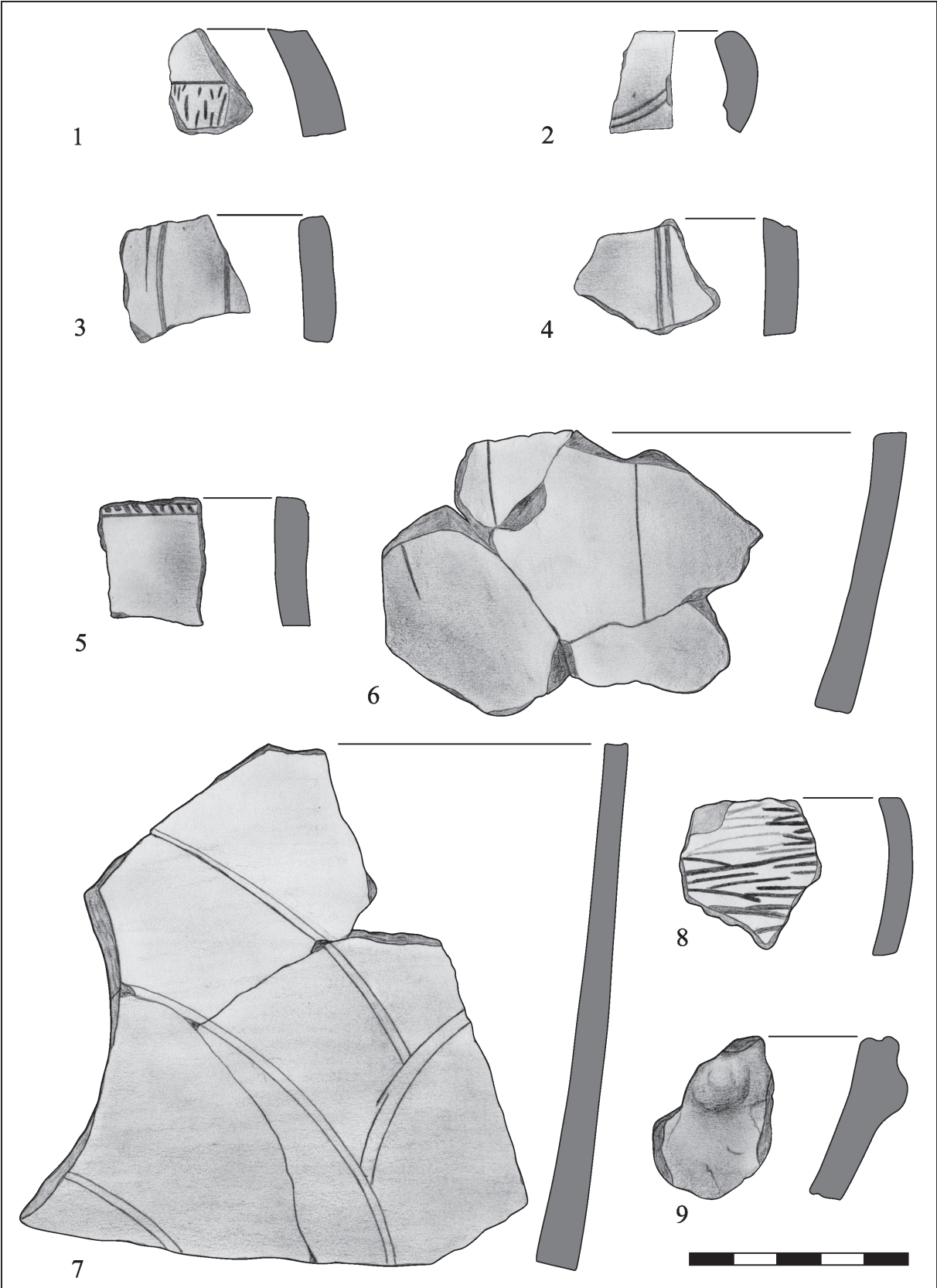


Plate 8. Pottery fragments from feature Cx225.

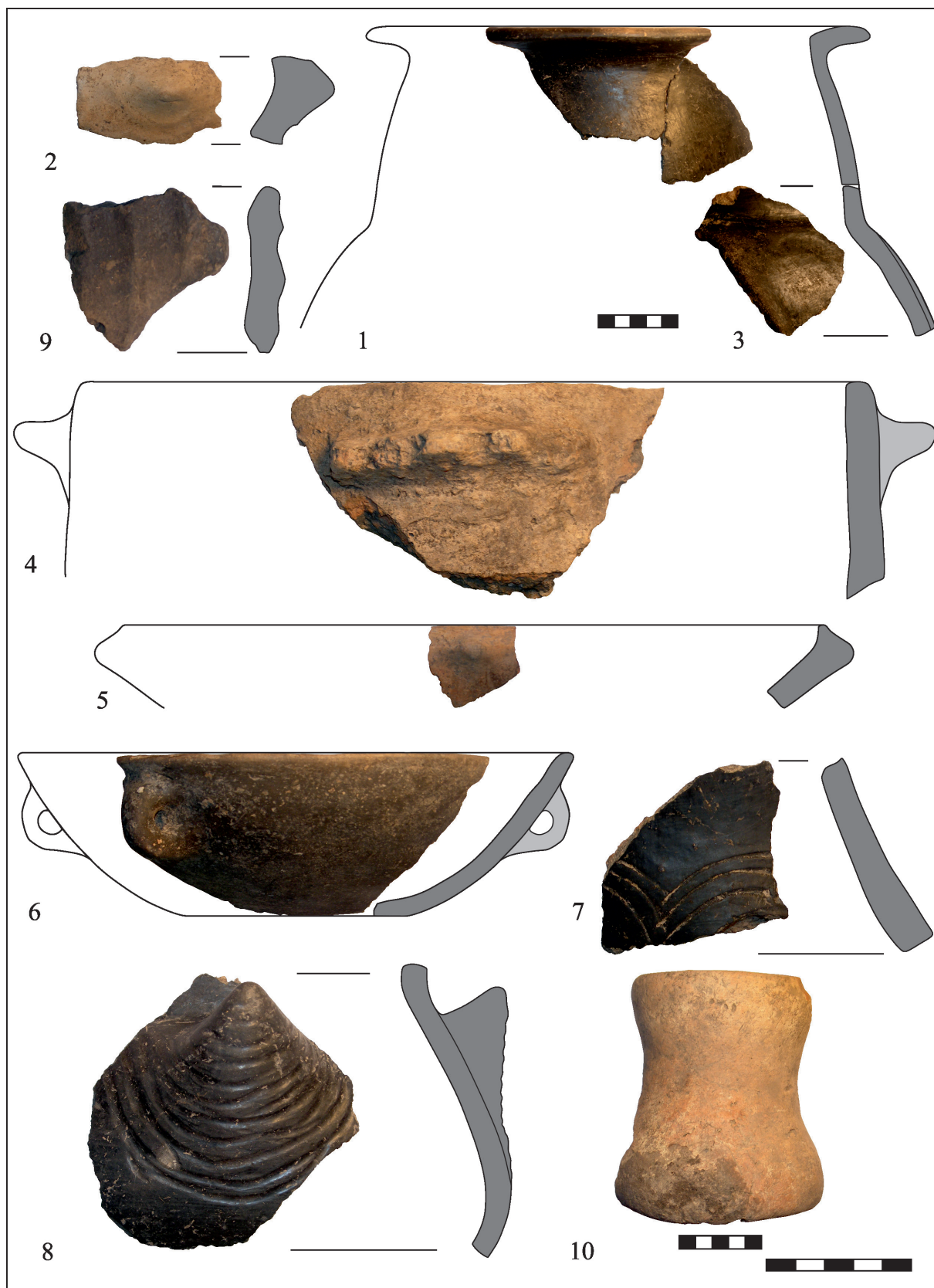


Plate 9. Pottery fragments from feature Cx195.

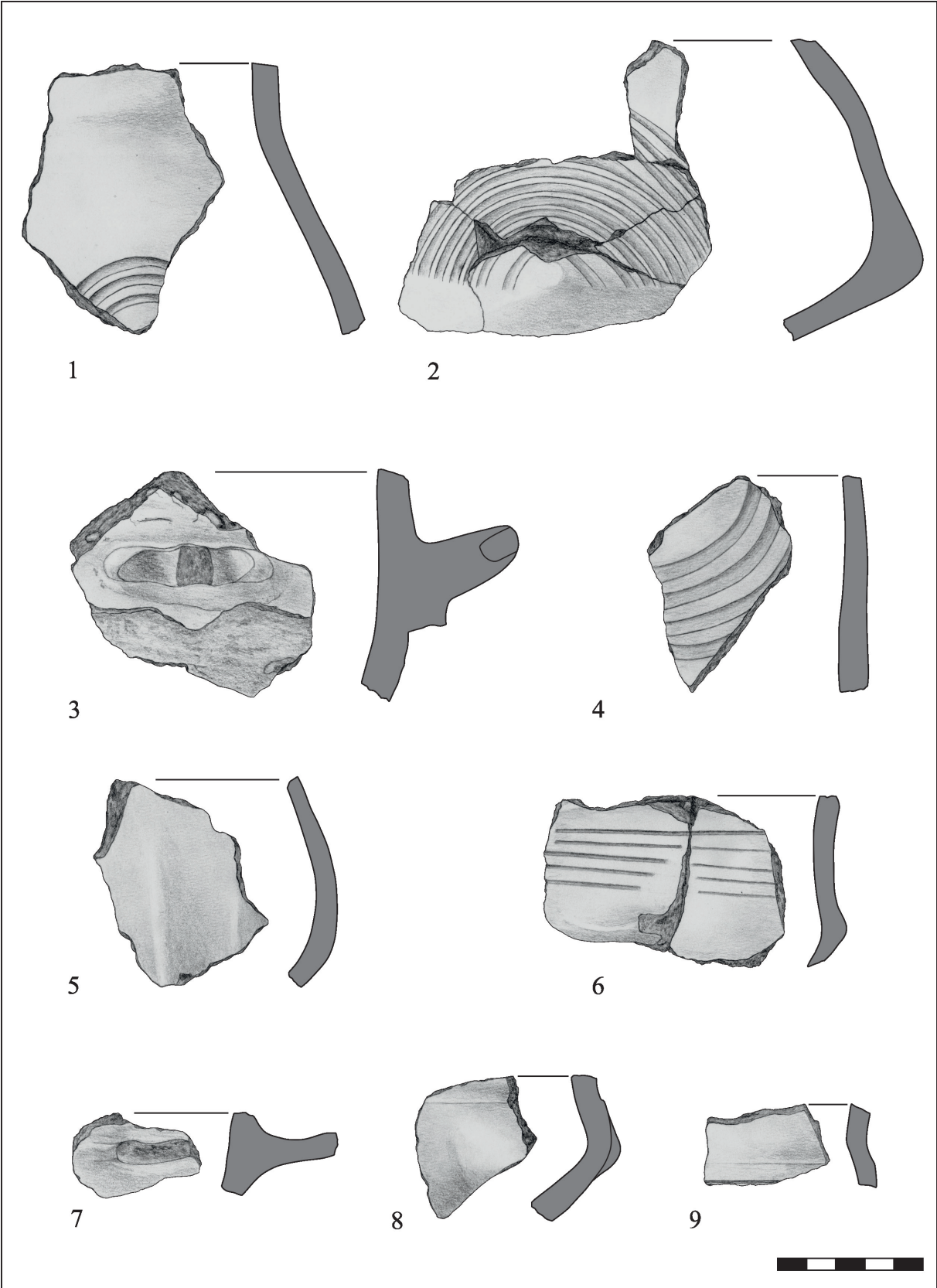


Plate 10. Pottery fragments from feature Cx185.

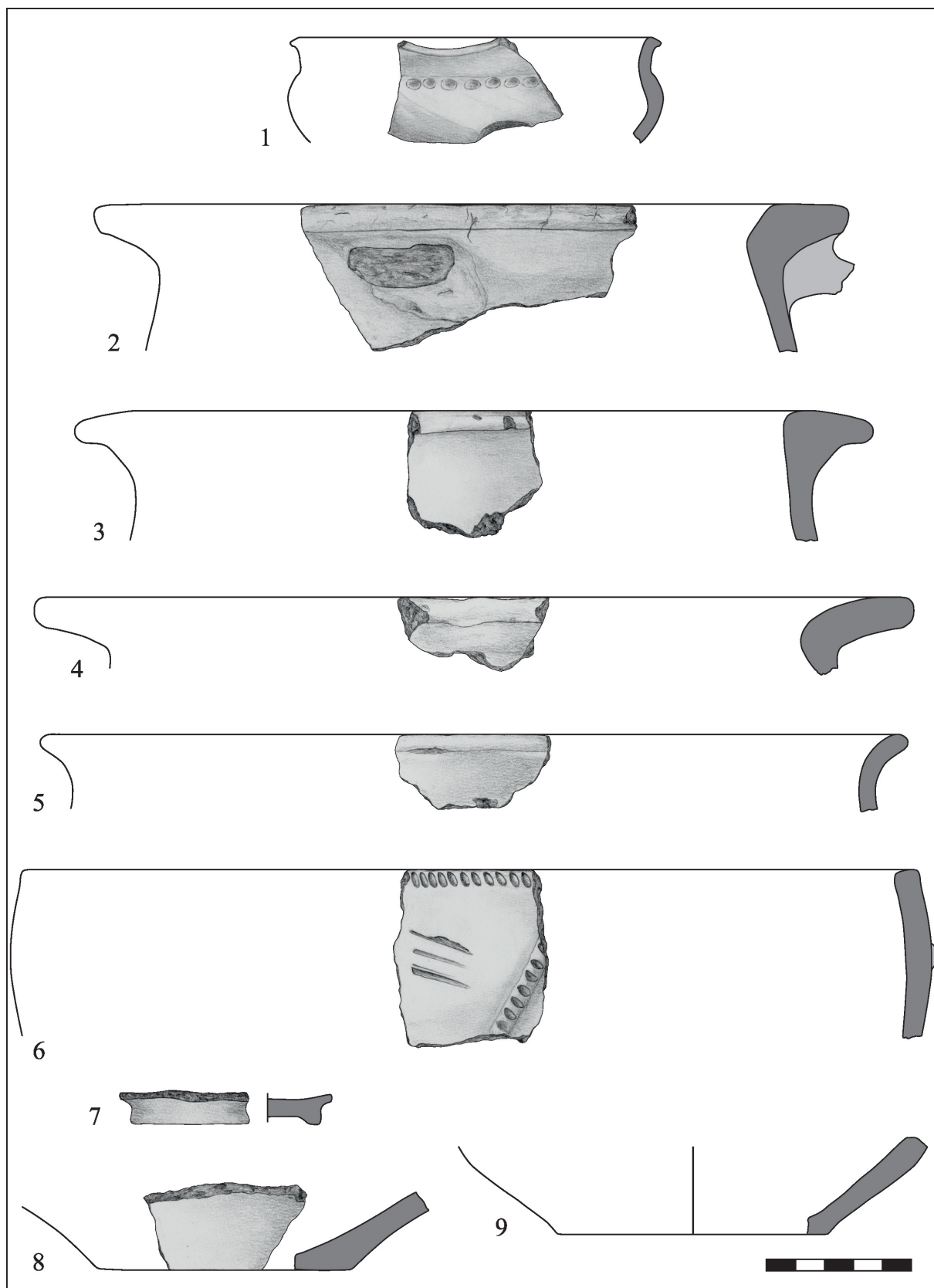


Plate 11. Pottery fragments from feature Cx185.

