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Andrzej Szela

Brudnice stanowisko V. Nekropola kultury przeworskiej ze środka pustki osadniczej

Warszawa 2021

Andrzej Szela

*Brudnice site V. A Przeworsk culture cemetery
in the heart of a settlement void*

Warsaw 2021

Faculty of Archaeology University of Warsaw
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Dear Readers,

As promised a few years ago on the occasion of the publication of the Kuczbork-Osada site (2018), it gives me great pleasure to present you with another, fourth in total, book on the subject of the Borderland and, at the same time, the second monograph in the series, this time concerning site V at Brudnice—the site where much, not to say everything, started. “Finally,” many of you will no doubt think. After all, individual material concerning the Brudnice cemetery has been presented on various occasions. “Already,” I will say to that. Let us not forget that the last shovel was driven into the ground at the site in 2019, and the last grave with Przeworsk culture contents was only discovered in 2017. Many of you will also feel unsatisfied with the publication of only the Przeworsk culture part of the cemetery. However, this is due to the fact that the book presents the results of many specialist analyses, including ones which have not been previously carried out for Przeworsk culture sites and which have significantly affected the cost of preparing the publication. Yet, it seems that such an approach should become standard in the 21st century. As it is, the publication boasts, among others, analyses of fatty acids and biomarkers from the vessels’ walls and analyses of strontium residues from the cremated material. Thanks to such studies, we obtain completely new information on both the everyday life and interpersonal contacts of the then inhabitants of northern Mazovia. Nevertheless, I also hope that we will soon be able to see the second volume of the Brudnice monograph, presenting the next two stages of use of this extraordinary cemetery. The first involves the Wielbark culture occupation in the late Roman period, the second concerns the re-use of the site during the Migration period.

The dream of every researcher is to work on the results of his or her research, in the case of Brudnice lasting for seventeen years, in comfort or at least in peace. Unfortunately, the publication has been prepared in rather unsettling times. Although this is only one aspect, the raging pandemic, among other things, has brought about the closure of libraries and warehouses storing the material, rotating work in laboratories as well as closed kindergartens, schools and remote learning. Thus, the reconstruction of the grave assemblages had to take place in the living room, on the floor cluttered with toy blocks, and their analysis was interspersed with writing lessons and solving first maths problems. On top of that, the typesetting of the publication was accompanied by the ever-present virus, which also wanted to have its own, fortunately not the last, say in its creation. However, despite so many adversities, I managed to finish the work, so that it can be enjoyed by its recipients, above all, the one who has waited for it the most—my daughter, Ala.

At this point, I would like to briefly thank all the people who have contributed in various ways to the excavation work over the years. First and foremost, my sincere thanks go to Elżbieta and Mirosław Kaniecki for their continued kind permission to dig on their land. Thanks are also due to the representatives of the local authorities, who from the very beginning had kind-heartedly welcomed the presence of archaeologists in the area. In particular, the late Mr Grzegorz Wesółowski, a local government official and true history aficionado, Mr Janusz Welenc, the Head of the Żuromin County for many years, and Mr. Zbigniew Nosek, the Mayor of Żuromin during the early years of the excavations, without whose help the research would have been much more difficult, deserve a mention. It is also impossible not to mention Ms Teresa Żelazna, the Head of the Brudnice village, who took great care of us and our base, and Mr Piotr Wlizło, an amazing Indian chief, who not only personally tried his hand at excavations but also often supported us in times of need. We also received various support, sometimes in the simplest ways, from: Mr and Mrs Zofia and Karol Leszczyński from Brudnice, Mr and Mrs Stolarski and Mr and Mrs Zagórski

from Będzimin, Dariusz Budka and Tadeusz Manista from Żuromin, the firemen from the Rzęzawy Volunteer Fire Department, the no longer existing MAX Parkiet company from Żuromin as well as many, many others who cannot be listed here. I should also mention and thank the dozen or so students who over the years had been honing their skills in the Żuromin land. Many of them had returned to Brudnice many times, sometimes throughout all their student years and even after the graduation.

The work at the site could not have been carried out without the financial support received mainly from the Institute of Archaeology of the University of Warsaw, the support of the successive Mazovian Voivodeship Monument Conservators in Warsaw, represented by Ms Barbara Jezierska, Mr Rafał Nadolny and Mr Jakub Lewicki, as well as Mr Krzysztof Kaliściak, Ms Wanda Gołębiewska and Mr Zbigniew Dłubakowski from the Voivodeship Office for the Protection of Monuments in Warsaw, Ciechanów Branch, and Mr Hubert Kowalski from the Varia Foundation for the Humanities at the University of Warsaw.

To everyone who has supported us in any way, even with just a kind word, I offer my heartfelt thanks.

Yours faithfully, Andrzej Szela

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Introduction

Brudnice site V was discovered in the course of the surveys carried out as part of the Archaeological Record of Poland (Archeologiczne Zdjęcie Polski, AZP) by the Institute of Archaeology, University of Warsaw, in the years 2002–2003. As a result, twenty seven archaeological sites and settlement points have been identified; however, only two of them have been dated to antiquity: a settlement from the Bronze Age, early Iron Age and Middle Ages, located in Raczyny site II, Żuromin County (AZP 93–55:5), and a Roman period cemetery in the locality of Brudnice site V, Żuromin County (AZP 39–55:19). The remaining sites have been identified as settlements or settle-



Fig. 1. Location and area of Brudnice site V.

ment points from the Middle Ages and modern times. The Brudnice cemetery was discovered within the area of a large gravel extraction pit, located on a high terrace of the meandering Wkra River. A destroyed archaeological feature was recorded in one of the slopes of the gravel pit. It was basin-shaped, approx. 25 cm thick, with burnt soil in the fill, and yielded a small bowl and a base sherd from a roughened vessel. On the basis of the pottery, the site was dated to the Roman period. In November 2003, at the request of the Voivodeship Monument Conservator in Warsaw, Ciechanów Branch, an exploratory excavation was carried out at the site. It confirmed the presence of a Roman period cemetery (A. Szela 2004). Regular archaeological excavations

begun in 2004 and continued until 2019, under the supervision of the Author of this book. During that time, the excavations were extended to cover further sites, marked in the AZP cards with numbers 18 and 20. As it turned out, they all belonged to one compact settlement and sepulchral complex, consisting of a Przeworsk culture cemetery, Wielbark culture cemetery, Migration period cemetery, their respective settlements as well as a separate cluster of grouped fireplaces. Over 17 excavation seasons, an area of almost 2,128 m² was investigated, and over 1,650 archaeological features were documented (A. Szela 2016a).

All the excavation seasons were financed by the Institute of Archaeology, University of Warsaw, and also: in 2003, by the Voivodeship Monument Conservator in Warsaw, Ciechanów Branch; in 2005, by the Centre for the Protection of Archaeological Heritage; and, in 2006–2008, by the Ministry of Culture and National Heritage under the then Priority 4. From 2009 to 2019, the excavations were once again co-financed by the Voivodeship Monument Conservator in Warsaw.

This book presents the material from the graves that were classified as Przeworsk culture graves or features directly associated with the Przeworsk culture part of the cemetery. To maintain numerical continuity, it has been decided to change the numbers subsequently assigned to the features in the order they were discovered during the excavations, regardless of the features' function and chronology. Moreover, the grave discovered during the field survey, which did not contain bone material, as well as the graves uncovered during the excavations and partially or completely located in a secondary context, either due to a landslide or sand extraction, were marked with the letters A–E.

Location and state of preservation of the site

The Brudnice cemetery is situated on a high terrace of the Wkra River, which meanders below it. According to Kondracki, it is a physiographic area belonging to the Raciąska Plain. The site itself is located in an agricultural area between the villages of Brudnice and Rzędzawy, Żuromin County. For years, the area was owned

by the State Agricultural Farm and was subjected to intensive cultivation. In the early 1990s, it became private property, and its southern part, approx. 30 hectares in size, was afforested. Even though the forest covered a significant number of settlements, no signs of the cemetery were luckily found there. Unfortunately, part of the cemetery was destroyed by the gravel pit, which began operation at an undetermined time. Initially, the gravel pit was situated right next to the escarpment by the Wkra River and then gradually expanded to the north, south and west. The gravel extraction area at the time the archaeological excavations started stretched about 100 meters in the N–S line and about 40 meters in the W–E line. It is currently impossible to determine how many archaeological features, mainly graves, had been destroyed. However, taking into account the relatively sparse distribution of the burials, oscillating around 3–4 features per are, it can be concluded that these numbers are not too high. It also seems that, due to the distinct slope of the terrain starting approximately from

the mid–width of the gravel pit, this area was not the first choice for a burial site, which probably started only at the top of the terrace. Despite this elevated location, some of the features were either partially or even completely destroyed, as evidenced by damaged graves A, B, C, D, E and grave 1, located within the gravel pit. Unfortunately, it is difficult to say whether the damage done has disrupted our knowledge about the time the cemetery was in use. As it happens, the oldest graves were located in the eastern part of the site, and the later ones radiated from them in the other three directions, so that the youngest features were situated at the outskirts of the cemetery (A. Szela 2016b). However, it should be noted that no signs, including metal and ceramic artefacts, indicating that the cemetery had been established earlier, in the pre–Roman period, have been found at the site. Therefore, it seems that, despite the loss of some of the graves due to the extended exploitation of the gravel pit, our knowledge about the chronology of the cemetery’s functioning should not be affected.

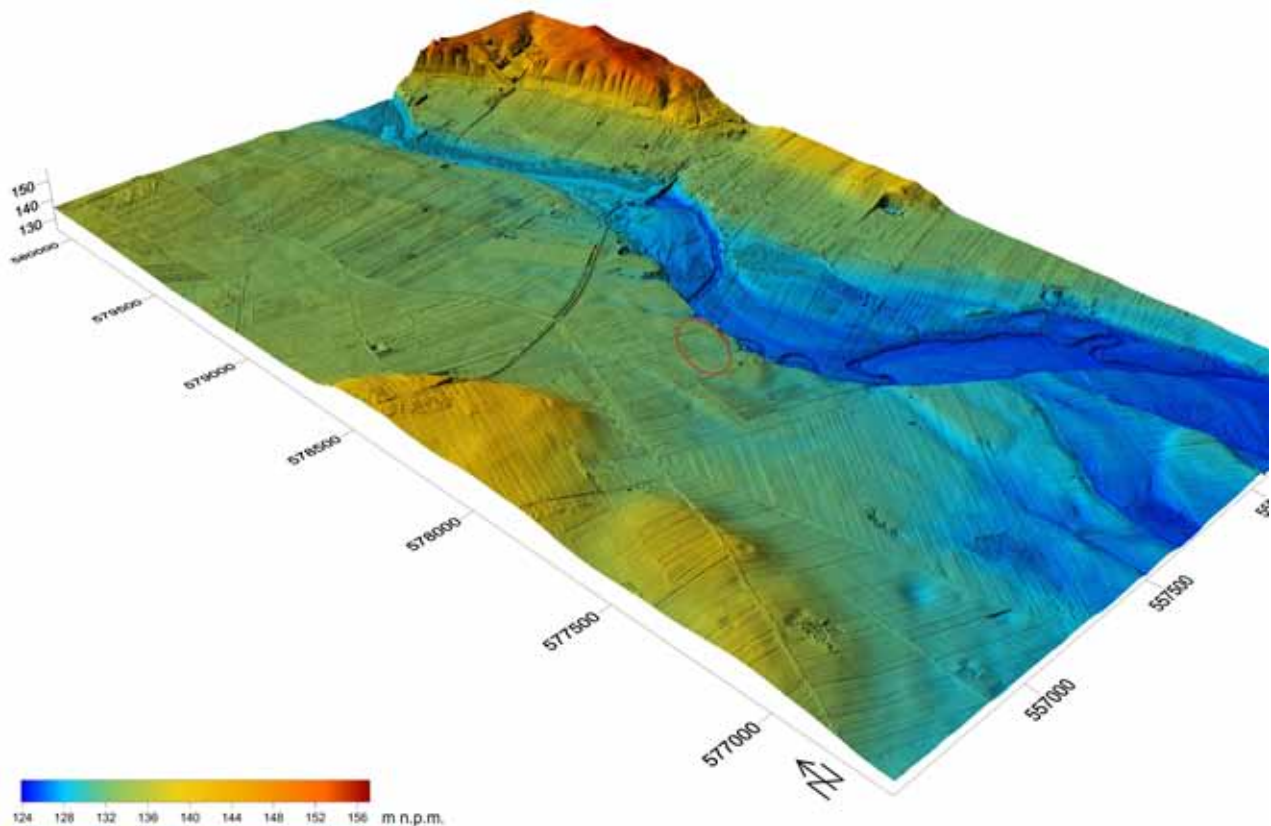


Fig. 2. Digital terrain model – 3D visualisation. Rendered by W. Małkowski



Photo 1-3 – View of the destroyed part of Brudnice site V during test excavations, November 2003.



Photo 4, 5 – View of the destroyed part of Brudnice site V during test excavations, November 2003. Photo 6 – Destroyed grave D, discovered inside the gravel pit.



Photo 7 – Destroyed grave E, located within the gravel pit. Photo 8, 9 – Grave 1, discovered inside the gravel pit.

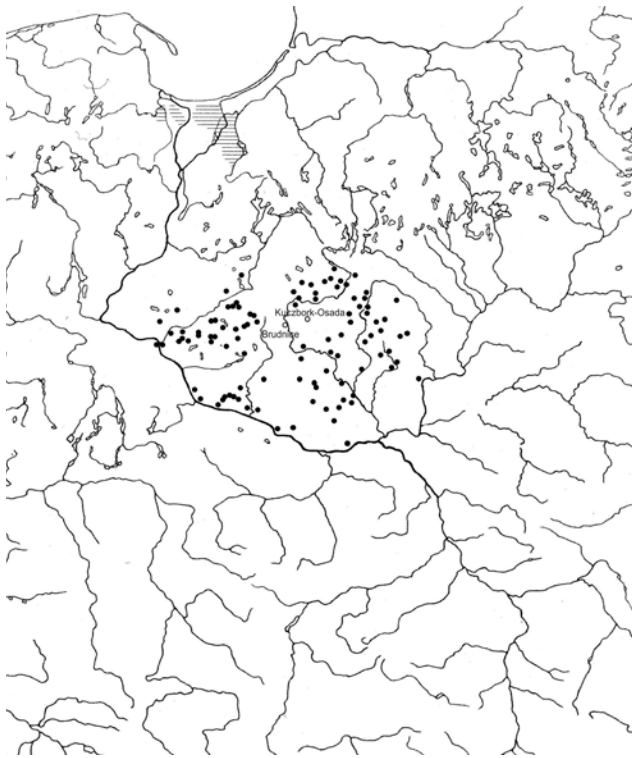


Fig. 3. Brudnice site V against the backdrop of the Roman period settlement in northern Mazovia and the neighbouring areas.

Unfortunately, both the gravel extraction and long-term cultivation of the local fields by the state-owned farms not only devastated some of the features, which were deposited at a depth between 25 and 35 cm, but also, and perhaps above all, almost completely destroyed the accompanying stone structures. Documented in the central part of the cemetery were poorly preserved clusters of stones and perhaps even structures rarely found in the Przeworsk culture, such as a barrow(?), an inhumation grave(?)¹ or atypical features resembling inhumation graves². On the southern side, the Przeworsk culture cemetery adjoins a younger necropolis of the Wielbark culture. Slightly farther to the southwest is a Migration period cemetery. From the south and west, the cemetery is overlapped by settlements and from the north—by a concentration of carefully planned hearths.

When choosing a place for settlement, access to water was of crucial importance to the settlers. Therefore, individual settlements were sited in the direct vicinity of water reservoirs, in this case—the Wkra River. In order to avoid

possible flooding from the strongly meandering and probably frequently overflowing Wkra, a decision was made to occupy the high terrace located on the western bank of the river. Thus, at present, this is the only Przeworsk culture site located on the western bank of the Middle Wkra River. It is also the only site situated so far to the west in this part of Mazovia. Additionally, it is in the middle of the settlement void that supposedly separated two great ancient worlds—those of the Przeworsk and Wielbark cultures (K. Godłowski 1985, p. 65, T. Liana, T. Dąbrowska 1986, p. 150). The location of the cemetery was directly related to the location of the settlement, as the then inhabitants decided to establish a burial ground in the immediate vicinity of their homes.

As a result of the many years of research, the Brudnice cemetery belongs to the few sepulchral sites that have been completely excavated and to the even more rarely documented complexes at which archaeological excavations have covered both the cemeteries and a large part of the accompanying settlements (Fig. 4).

1 See the chapter on the funerary rite and the anthropological analysis, grave 147.

2 Grave 78.

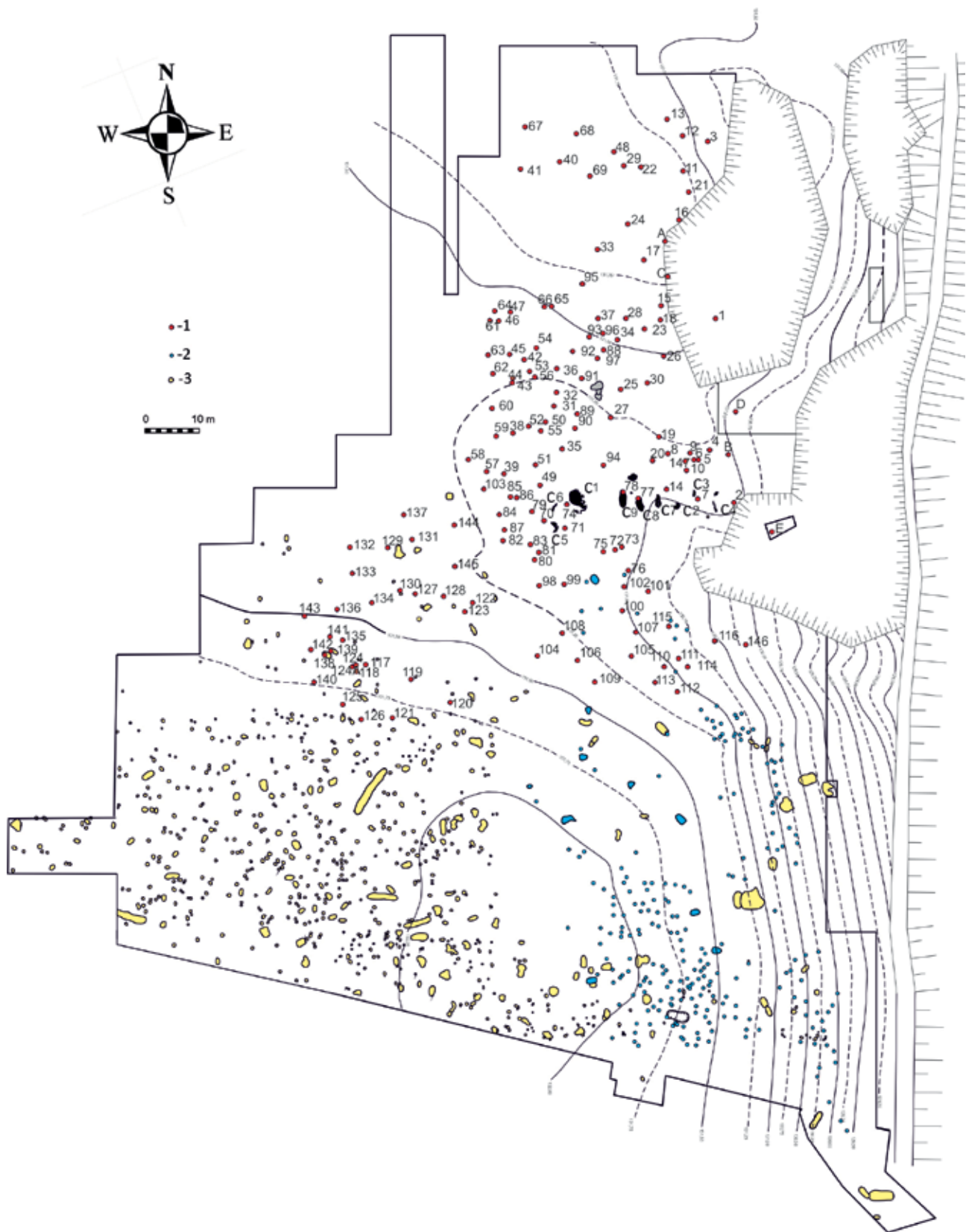


Fig. 4. Map of Brudnice site V: 1 – Przeworsk culture graves, 2 – Wielbark culture graves, 3 – settlement features.

Catalogue

Grave A (Pl. I)

[Feature A]

Description: The feature was discovered during a fieldwalking survey at the site in 2003. Severely damaged, fragmentarily preserved. Top level not preserved. In profile, the feature was basin-shaped, approx. 20 cm thick, black in colour. One completely preserved vessel and a fragment of another one were found in the preserved part of the fill.

Contents: 1) Miniature bowl, type D.2. Ashen colour, fine-grained temper, rim diameter 10 cm, base diameter 5 cm, height 5.5 cm. 2) Base sherd from a large vessel with defined base and roughened surface. Brown colour, fine-grained temper, base diameter approx. 12 cm.

Anthropological analysis: bone material not present.

Grave B (Pl. I)

[Feature B]

Description: A concentration of pottery and bones, discovered in secondary context in a gravel pit.

Contents: 1) Fragmentarily preserved vase-like vessel, type A.1.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, defined base. Light brown colour, fine-grained temper, rim diameter 20 cm, base diameter 9 cm, height approx. 17.5 cm. 2) Miniature vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brick red colour, fine-grained temper, rim diameter 9.5 cm, base diameter 4.5 cm, height approx. 7.5 cm. 3) Mug handle, brick red colour, fine-grained temper. 4) Cremated human bones.

Anthropological analysis: sex: undetermined, age: adult

Grave C (Pl. I)

[Feature C]

Description: A concentration of metal objects and potsherds, uncovered in one of the heaps in a gravel pit. No outline of the burial pit.

Contents: 1) Two heavily burnt ancient potsherds.

Brown colour, fine-grained temper. 2) Copper-alloy brooch, type A.39. Head decorated with an engraved ornament arranged in three parallel rows. Preserved length 4.7 cm, width 3.5 cm. 3) Copper-alloy rod bracelet, made from a rod of round cross-section. Bracelet dimensions, 6.6 cm, rod diameter 0,5 cm. 4) Fragmentarily preserved profiled strap-end made of copper alloy, type 1 variant 8. Preserved length 3.7 cm. 5) Notched iron pin from a belt buckle. Length 3.3 cm. 6) Iron key suspended on two rings, one round, one D-shaped, type A. Length 16 cm.

Anthropological analysis: bone material not present.

Grave D (Pl. II)

[Feature D]

Description: The feature was found in secondary context on one of the heaps in a gravel pit. Ceramic, metal and bone material occurred in two concentrations, approx. 50 cm apart. Between them, there was a layer of mixed earth and loose sand. The ceramic material from both concentrations fit together. According to the anthropological analysis, the bones belonged to one person. On this basis, the entire material was classified as one grave assemblage.

Contents: 1) Fragmentarily preserved pot-like vessel with two handles and globular body, type A.5. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, rim diameter approx. 16 cm, base diameter 12 cm, height 17.5 cm. 2) Upper part of a miniature vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red and brown colour, rim diameter 7 cm, preserved height 4 cm. 3) Base sherd. Brown colour, base diameter approx. 7 cm, preserved height 7 cm. 4) Sixty-six potsherds with burnished black surfaces, fine-grained temper. 5) Lightly burnt copper-alloy trumpet brooch with strongly bent bow and transversely incised foot. Type A.76, variant 1 after T. Liana. Length 3.7 cm, width 3 cm. 6) Copper-alloy trumpet brooch, similar to type A.75, length 3.7 cm, width 2.2 cm. 7) Partly melted copper-alloy eye brooch of the Prussian series, type A.58–59, preserved length 4.5 cm. 8) Fragmentarily preserved copper-alloy bro-

och of type A.52, bow richly decorated with an engraved ornament, knob on the foot adorned with a geometric ornament, preserved length 3.3 cm. 9) Damaged copper–alloy belt buckle with pin extending into buckle plate, type C1, length 4,3 cm. 10) Profiled strap–end made of copper alloy, type 1 variant 2, preserved length 4.5 cm. 11) Iron tubular strap–end, length 6 cm. 12) Iron belt mount attached with three rivets and rectangular washers placed on the inner side, length 5 cm. 13) Fragment of an iron needle(?). Preserved length 4.7 cm. 14) Bent iron rod of quadrangular cross–section, length 4 cm. 15) Fragment of a copper–alloy rod bracelet decorated on the terminal with an engraved ornament, length 10 cm. 16) Fragment of a copper–alloy rod bracelet decorated on the terminal with an engraved ornament, length 11 cm. 17) Two fused fragments of copper–alloy rod bracelets decorated on the terminals with an engraved ornament, length 6 and 8 cm.

Anthropological analysis: Sex: undetermined, age: adult.

Grave E (Pl. III)

[Feature 3]

Description: The feature was located on a slope of a gravel pit and was almost completely destroyed as a result of a landslide. The fill of the feature was determined by scattered potsherds, cremated bones and stones located in a several–cm–thick layer of brown earth. In plan, the feature was irregular in shape, 90x80 cm in size, brown in colour. The profile of the feature was not preserved.

Contents: 1) Fragmentarily preserved vase–like vessel, type A.4. Severely damaged, originally smooth external surface, adorned with an elaborate meander ornament and nested squares formed of narrow bands decorated with engraved lines. Body separated from the neck by a double band of plastic rolls decorated with a herringbone pattern. Black colour, fine–grained temper, maximum body diameter approx. 35 cm. 2) Fragmentarily preserved and, in places, heavily burnt bowl, type B.3. Brick red colour, fine– and medium–grained temper, rim diameter approx. 20 cm, base diameter 7 cm, height approx. 11 cm. 3) Fragmentarily preserved lower part of a vase–like vessel. Upper part of the body originally decorated with a meander ornament,

presently heavily burnt. Thickened, slightly everted rim. Brick red colour, fine–grained temper, base diameter 10 cm. 4) Miniature vessel with tall, defined neck and everted rim, type E.1.1. Globular body, concave base, glossy surface. Black colour, fine–grained temper, rim diameter 8.5 cm, base diameter 2.5 cm, height 7 cm. 5) Miniature vessel with slightly everted rim and defined base, smooth surface, type A.3. Brown colour, fine–grained temper, rim diameter 6.5 cm, base diameter 4 cm, height 5 cm. 6) Approx. thirty heavily burnt potsherds from vessels 2 and 3. 7) Cremated bones.

Anthropological analysis: Sex: female, age: adult, 45–55 years old (*maturus*).

Grave 1 (Pl. IV)

[Feature 1]

Description: The feature was located in the middle of a gravel pit, which destroyed its top level. In plan, the feature was round in shape, approx. 28 cm in diameter, with black fill. In profile, the feature was irregular in shape, approx. 20 cm thick, black in colour at the top and brown at the bottom. Multiple potsherds and very small fragments of cremated bones were found in the feature.

Contents: 1) Egg–shaped mug, deformed by fire, type D.2. Brown colour, fine–grained temper, rim diameter approx. 13 cm, base diameter 8.5 cm, height 8 cm. 2) Partially burnt vase, type A.1.3. Slightly thickened, everted rim. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine–grained temper, rim diameter 15 cm, base diameter approx. 7 cm, height 12.5 cm. 3) Lower part of a large vessel. Brick red–ashen colour, fine–grained temper, base diameter 8 cm. 4) Miniature egg–shaped bowl, type D.2. Brown–ashen colour, fine–grained temper, rim diameter 10 cm, base diameter 4 cm, height 6 cm. 5) Approx. ninety fragments of heavily burnt pottery. 6) Fragments of heavily burnt bones.

Anthropological analysis: Child, age: 6–12 years old (*infans II*).

Grave 2 (Pl. IV)

[Feature 7]

Description: In plan, the feature was oval in shape, 65x40 cm in size, dark brown in colour. At the edges of the top level, on the south side, there

were a few small stones. In profile, the feature was in the shape of a deep basin, approx. 35 cm thick, dark brown in colour at the top and black at the bottom. Medium-sized stones, between which potsherds and cremated bones were placed, were found at the edges of the pit, on its south-eastern side and in the fill.

Contents: 1) Fragmentarily preserved bowl with sharply profiled body and well-defined base, type A.2. Rim thickened, everted, slightly deformed by fire, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper, rim diameter approx. 22 cm, base diameter 10 cm, height 12 cm. 2) Lightly burnt body sherd from a vase-like(?) vessel, decorated with a meander ornament. Brown colour, fine-grained temper. 3) Forty small sherds from a vessel with glossy black surface and fine-grained temper. Six sherds ornamented with engraved vertical lines between two horizontal lines. 4) Approx. sixty nondescript potsherds, 15 of them heavily burnt. 5) Fragment of an antler pin, preserved length 1.7 cm. 6) Cremated bones. **Anthropological analysis:** Sex: undetermined, age: adult.

Grave 3 (Pl. V)

[Feature 8]

Description: The top level of the feature was severely damaged by ploughing. In plan, the feature was round in shape, approx. 36 cm in diameter, brown in colour. In the southern part, the top level of the feature was strongly stretched by ploughing. In profile, the feature was in the shape of a shallow basin, 10 cm thick, brown in colour. The fill of the feature contained multiple sherds from a destroyed bowl-like vessel and an adjoining miniature vessel. Cremated bones, two iron brooches and fragments of a spindle pin were found inside the vessel. There was also a layer of cremated bones under the vessel.

Contents: 1) Fragmentarily preserved bowl-like(?) vessel. Brown colour, fine-grained temper, base diameter 9.5 cm. 2) Fragmentarily preserved, partially burnt miniature bowl-like(?) vessel with everted neck, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper. 3) Approx. one hundred small fragments of com-

pletely burnt pottery. 3) Iron brooch covered with fire patina, type A.120. Length 3 cm, width 2.9 cm. 4) Iron brooch covered with fire patina. The brooch shows signs of repair, type A.120. Length 3 cm, width 3 cm. 5) Iron hooked pin with spirally twisted shaft, length 4.3 cm. 6) Clay biconical spindle whorl, diameter 8 cm. 7) Cremated human bones.

Anthropological analysis: Sex: female(?), age: adult (*adultus*).

Grave 4 (Pl. V)

[Feature 9]

Description: In plan, the feature was oval in shape, 48x44 cm in size, brown-black in colour in the central part and brown near the edges. Multiple potsherds—originally an upside-down vessel—were found at the top level of the feature. In profile, the feature was basin-shaped, approx. 36 cm thick, brown-black at the top and black at the bottom. In the central part of the feature, there were isolated fragments of cremated bones and a copper-alloy brooch; a concentration of cremated bones and an iron buckle were found in the bottom part of the feature.

Contents: 1) Heavily burnt bowl-like vessel with defined neck and everted rim. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brown colour, fine-grained temper, rim diameter approx. 21 cm, body diameter approx. 22 cm, base diameter 7 cm. 2) Ten sherds from a vessel with everted rim. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper. 3) Fragmentarily preserved miniature vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brown colour, fine-grained temper, rim diameter approx. 10 cm, body diameter approx. 10.5 cm, base diameter 5 cm, height approx. 7 cm. 4) Approx. forty small fragments of nondescript, ancient pottery. 5) Copper-alloy brooch, type A.68. Length 5.5 cm, width 2.4 cm. 6) Iron belt buckle, type D1. Length 3.1 cm, width 3.5 cm. 7) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined, age: adult (*adultus*). 2) Sex: undetermined; age: child (*infans*)

Grave 5 (Pl. VI)

[Feature 11a]

Description: In plan, the feature was oval in shape, 50x40 cm in size, brown–black and brown in colour. In profile, the feature was in the shape of a deep basin, approx. 32 cm thick, brown–black in colour in the western part and brown in the eastern part. In the western part of the fill, there were multiple fragments of completely burnt pottery—pumice. A miniature bowl positioned on its rim (no. 3) was located below them. The bowl contained compact fragments of skull bones. A concentration of cremated bones was found at the bottom of the feature.

Contents: 1) Fragmentarily preserved, partially burnt vase–like vessel, type A.1.3. Decorated on the maximum body circumference with an ornament composed of triple round depressions forming a triangle. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Beige–brown colour, fine–grained temper, rim diameter 18.5 cm, base diameter 9 cm, height approx. 16 cm. 2) Fragmentarily preserved miniature vessel, type A.3. Decorated on the maximum body circumference with an ornament composed of three round depressions forming a triangle. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red–brown colour, fine–grained temper, rim diameter 8.5 cm, base diameter 4 cm, height 6 cm. 3) Miniature egg–shaped bowl with gently profiled body, type D.2. Light brown colour, fine–grained temper, rim diameter 11.5 cm, base diameter 4.5 cm, height 6.5 cm. 4) Completely burnt vessel, most probably a biconical bowl with defined neck. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Undeterminable colour, fine–grained temper; base diameter 10 cm. 5) Fragments of an antler comb, Thomas type C. 6) Fragment of a copper–alloy pin, preserved length 3 cm. 7) Piece of copper alloy. 8) Cremated human bones.

Anthropological analysis: 1) Sex: female, age: adult (*adultus*).

Grave 6 (Pl. VI)

[Feature 11b]

Description: In plan, the outline of the feature was poorly discernible, round in shape, approx. 25 cm in diameter, light brown in colour. In profile,

the feature was basin–shaped, approx. 18 cm thick, light brown in colour.

Contents: 1) Three nondescript fragments of burnt, ancient pottery. Brown colour, fine–grained temper. 2) Fragment of an antler pin, preserved length 0.8 cm. 3) Several fragments of cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: 12/14–20 years old (*iuvenis*).

Grave 7 (Pl. VII)

[Feature 16]

Description: In plan, the feature was oval in shape, approx. 40x35 cm in size, brown in colour. In profile, the feature was basin–shaped, 12 cm thick, brown in colour. The fill of the pit consisted of a dense concentration of cremated bones and small finds found among them. The bones were probably deposited in an organic container, now completely decomposed.

Contents: 1) One stratified potsherd. Outer part preserved. Smooth, light brown–ashen surface. Visible traces of burning. Fine–grained temper. 2) Copper–alloy brooch, type A.52. Length 6.1 cm, width 2 cm. 3) Faience melon bead, celadon in colour. Group XVIII, type TM171b, diameter 2.1 cm. 4) Fragmentarily preserved faience melon bead, celadon in colour, group XVIII, type TM171b, diameter approx. 2 cm. 5) Fragment of an antler pin, preserved length 1.6 cm. 6) Clay biconical spindle whorl, diameter 4 cm. 7) Clay biconical spindle whorl, dimensions 5x6 cm. 8) cremated human bones. 9) Burnt animal bones. Anthropological analysis: 1) Sex: female(?); age: adult (*adultus*).

Archaeozoological analysis³: 1) One cattle bone fragment. 2) One fragment of unidentified animal bone.

Grave 8 (Pl. VIII)

[Feature 22a]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown in colour. Miniature vessels, placed one on the top of the other, were found at the top level of the feature. In profile, the feature was basin–shaped, 12 cm thick, brown in colour. The fill of the fe-

3 The archaeozoological analysis was carried out by dr Anna Gręzak from the Department of Archaeology, University of Warsaw.

ature contained a bowl-like vessel on which the miniature bowls were placed. All cremated bone fragments were found inside the vessel.

Contents: 1) Bowl-like vessel, type A.2. Decorated on the maximum body circumference with an ornament composed of triple round depressions forming a triangle. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Smooth, burnished surface. Black colour, fine-grained temper, rim diameter 19 cm, base diameter 8.5 cm, height 13.5 cm. 2) Bowl-like vessel, type A.2. Everted neck, sharply profiled body. (The sherds from the vessel were found in the fill of the grave pit as well as, in equally large numbers, inside the urn). Decorated on the maximum body circumference with an ornament composed of triple round depressions forming a triangle. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown colour, fine-grained temper, rim diameter 19 cm, base diameter 7.5 cm, height 11 cm. 3) Base sherd. Light brown colour, fine-grained temper, base diameter 5.5 cm. 4) Fragmentarily preserved egg-shaped vessel with well-defined base, type D.2. Light brown colour, medium-grained temper, rim diameter 10.5 cm, base diameter 6.5 cm, height 11.5 cm. 5) Miniature bowl with defined neck, type E.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the lower part of the body with five groups of triple vertical lines extending from the maximum body circumference to the small concave base. The space between the groups of lines filled with multiple depressions. Light brown colour, fine-grained temper, rim diameter 9 cm, base diameter 2 cm, height 5 cm. 6) Small vessel, type D.2. One side partially deformed by fire. Brick red-light brown colour, fine-grained temper, rim diameter 10 cm, base diameter 6 cm. 7) Piece of copper alloy. 8) Cremated human bones. 9) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: child, more than 6 years old (*infans I*).

Archaeozoological analysis: 1) Ten fragments of sheep-goat bones. 2) Three fragments of unidentified animal bones.

Grave 9 (Pl. VI)

[Feature 23]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown in colour. In profile, the feature was basin-shaped, 20 cm thick, brown in colour at the top and black in the middle and at the bottom. At the bottom of the feature, there was a large concentration of cremated bones.

Contents: 1) Iron belt buckle covered with fire patina, type D1. Length 2.9 cm, width 3.8 cm. 2) Cremated bones.

Anthropological analysis: 1) Sex: male; age: adult (*adultus*). 2) Sex: undetermined; age: adult (*adultus*).

Grave 10 (Pl. VI)

[Feature 24]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown in colour. In profile, the feature was basin-shaped, approx. 32 cm thick, brown in colour. The fill of the feature contained a large concentration of heavily burnt potsherds—pumice, and, under it, an upside-down bowl-like vessel, with an opening intentionally knocked out from the inside. The vessel contained cremated bones. Another cluster of cremated bones was located at the bottom of the feature.

Contents: 1) Gently profiled large bowl with everted neck, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. An aperture, intentionally knocked out from the inside, under the maximum body diameter. Light brown colour, fine-grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 11 cm. 2) Miniature vessel with strongly undercut lower part of the body, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper, rim diameter 9.5 cm, base diameter 4.5 cm, height 6.5 cm. 3) Base of a large, probably storage vessel. Coarsely wiped exterior surface. Brown colour, medium-grained temper, base diameter approx. 16 cm. 4) Approx. seventy heavily burnt and completely deformed potsherds from at least two vessels: a mug (D.3.2) and, probably, a bowl with defined neck. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. 5) Iron

brooch, type A.76. Length 5.2 cm, width 2.4 cm. 6) Iron belt buckle, type C13, length 2.9 cm, width 3.2 cm. 7) Antler pin, preserved length 7 cm. 8) Cremated human bones. 9) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: child (*infans I*). 2) Sex: undetermined; age: adolescent, 16–20 years old (*iuvenis*).

Archaeozoological analysis: 1) Three cattle bone fragments.

Grave 11 (Pl. VIII)

[Feature 25]

Description: In plan, the feature was oval in shape, approx. 55x40 cm in size, black in colour. In profile, the feature was basin-shaped, 20 cm thick, black in colour. Vessel 1 contained multiple cremated bone fragments.

Contents: 1) Gently profiled bowl-like vessel with everted neck, used as a cinerary urn, type A.2. Decorated on the upper part of the body with a chevron ornament between two engraved horizontal lines. Brick red colour, fine-grained temper, rim diameter 17.5 cm, base diameter 8.5 cm, height 14 cm. 2) Fragmentarily preserved gently profiled bowl-like vessel with everted neck, type B.3. Brick red colour, fine-grained temper, rim diameter approx. 19 cm. 3) Fragmentarily preserved miniature vessel with concave base, type E.3. Smooth, burnished surface. Black colour, fine-grained temper, base diameter 2 cm, preserved height 4 cm. 4) Lightly burnt miniature vessel, type B.7–8. Brick red-ashen colour, fine-grained temper, rim diameter 8 cm, base diameter 4 cm, height 6 cm. 5) Foot of a copper-alloy brooch, type A.38–39, preserved length 1.5 cm. 6) Fragment of a copper-alloy needle, preserved length 4.6 cm. 7) Fragment of a copper-alloy needle, preserved length 2.9 cm. 8) Piece of copper alloy. 9) Cremated human bones.

Anthropological analysis: 1) Sex: female(?); age: adult, more than 35 years old (*maturus*).

Grave 12 (Pl. IX)

[Feature 26]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, 27 cm thick, brown-black in colour at the

top and black in the bottom part. In the top part, there were two bowls under which an urn, which, in addition to the bones, contained a small, ornamented bowl, was placed. In the bottom part of the feature, near the base of the urn, there were two more miniature vessels. Cremated bones were present inside all of the vessels.

Contents: 1) Egg-shaped vessel, type D.1. Coarsely wiped lower part of the body, smooth upper part. Traces of an ornament carelessly made with a blunt tool, perhaps a stick, on the maximum body circumference. Light brown and brown in colour on the outside, brown and black on the inside, fine-grained temper, rim diameter 21 cm, base diameter 12 cm, height 24 cm. 2) Heavily burnt bowl with defined neck, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Well-defined base. Light brown and brown-ashen colour, fine-grained temper, rim diameter 24 cm, base diameter 12 cm, height approx. 17 cm. 3) Partially burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown-ashen colour, fine- and medium-grained temper, rim diameter 19 cm, base diameter 8 cm, height 11 cm. 4) Miniature bowl, type E.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the lower part of the body with five groups of triple vertical lines extending from the maximum body circumference to the small concave base. The space between the lines filled with depressions. Light brown colour, fine-grained temper, rim diameter 10.5 cm, base diameter 3 cm, height 5 cm. 5) Partly burnt miniature bowl, type B.7–8. Light brown colour, fine-grained temper, rim diameter approx. 6.5 cm, base diameter 3 cm, height 5.5 cm. 6) Miniature vessel with rounded body and tall, cylindrical neck, type E.1.4a. Poorly fired, very fragile. Light brown colour, fine- and medium-grained temper, rim diameter 8.5 cm, height 9 cm. 7) Cremated human bones. 8) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) Nine pig bone fragments. 2) One fragment of unidentified animal bone.

Grave 13 (Pls. X–XI)

[Feature 27]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, light brown in colour, poorly distinguishable from the virgin sand. In profile, the feature is basin-shaped, approx. 20 cm thick, light brown in colour. The feature contained multiple fragments of broken and partially burnt pottery, mostly from vessel 1. In the bottom part, there was a bowl (no. 2), deformed by fire, with multiple fragments of lightly burnt bones inside. Next to it, there was a concentration of large cremated bones, including skull fragments.

Contents: 1) Heavily burnt vase-like vessel, type A.1b. Three pseudo-handles, shaped as the Roman numeral for 1, on the upper part of the body. Below them, a narrow band of chevron pattern forming trapezoidal shapes, limited on both sides by engraved vertical lines. Beige-brown colour, fine-grained temper. Original dimensions impossible to determine. 2) Round-profiled bowl, heavily deformed by fire, type B.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown-ashen colour, fine-grained temper. Original dimensions impossible to determine. 3) Partially burnt egg-shaped vessel of rounded form, type D.2. Light brown colour, fine-grained temper, rim diameter approx. 14 cm, base diameter 6.5 cm, height 10.5 cm. 4) Partially burnt miniature bowl with semi-globular concave base and cylindrical neck, type E.1.1. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the lower part of the body with an ornament, repeated four times, of engraved double lines extending from the maximum body circumference to the base. Light brown colour, fine- and medium-grained temper, rim diameter approx. 10 cm, base diam. 2.5 cm, height 4.5 cm. 5) Miniature conical bowl with well-defined base, type D.2. Light brown-ashen colour, fine-grained temper, rim diameter 8 cm, base diameter 4 cm, height 6.5 cm. 6) Heavily corroded iron trumpet brooch, type A.75, length 5.9 cm. 7) Fragments of a melted copper-alloy brooch, probably a spring-cover form, type A.38–39. Preserved length 2.4 cm. 8) Fragment of a melted copper-alloy bracelet, preserved length 3.8 cm. 9) Faience melon bead, light celadon in

colour, type TM171b, diameter 1.7 cm. 10) Casquet lock spring, length 7.7 cm. 11) Clay biconical spindle whorl, diameter 2.3 cm. 12) Clay cylindrical spindle whorl, diameter 3.7 cm. 13) Clay biconical spindle whorl, diameter 4.2 cm. 14) Pieces of copper alloy, probably including fragments of an ornamented bracelet and a fitting terminated with a small rivet. 15) Fragments of melted glass beads, light blue in colour. 16) Fragment of an iron blade, length 2.5 cm, width 2.1 cm. 17) Cremated human bones. Moreover, the burnt bowl that served as a cinerary urn contained: 18) Iron key, type A, length 15 cm. 19) Iron casquet lock fitting, length 6.9 cm, width 2.7–3.8 cm. 20) Iron belt buckle, type D1, length 3.5 cm, width 3.8 cm. 21) Fragment of an iron rod, length 1.9 cm. 22) Bent iron wire. 23) Melted fragments of light blue and navy-blue glass. 24) Pieces of copper alloy. 25) Cremated human bones. 26) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*maturus*). 2) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Archaeozoological analysis: 1) Twenty-nine unidentified bird bones. 2) Five bone fragments from a galliform bird. 3) One goose bone fragment. 4) Three chicken bone fragments.

Grave 14 (Pl. XI)

[Feature 28]

Description: In plan, the outline of the feature was poorly discernible, disturbed by ploughing, approx. 20 cm in diameter, light brown in colour. The extent of the feature was determined by potsherds. In profile, the outline of the feature was indiscernible, approx. 12 cm thick. In the central part of the feature, there was a black vessel (no. 1), originally covered by another vessel positioned on its rim (no.2), which has been severely damaged by ploughing. Next to vessel 1, there was miniature vessel 3, resting on its side.

Contents: 1) Egg-shaped bowl-like vessel with smooth, glossy surface, type D.2. Black colour, fine- and medium-grained temper, rim diameter 20 cm, base diameter 7.5 cm, height 12 cm. 2) Fragmentarily preserved, partially burnt one-part bowl, type D.2. Brick red colour, fine-grained temper, rim diameter approx. 21 cm, body diameter approx. 21.5 cm. 3) Miniature bowl, type D.2. Brick red colour, fine-grained temper,

rim diameter 9.5 cm, base diameter 4 cm, height 5 cm. 4) Clay biconical spindle whorl, diameter 2.6 cm. 5) Two pieces of copper alloy. 6) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 2 years old (*infans I*).

Grave 15 (Pl. XII)

[Feature 30]

Description: In plan, the feature was round in shape, approx. 35 cm in diameter, dark brown in colour. In profile, the feature was in the shape of a deep basin, approx. 24 cm thick, dark brown in colour. At the top level of the fill, there was a mug, resting on its side, and a half-preserved, poorly fired, thin-walled vessel of black colour was located in the central part. The rest of the latter vessel has decomposed. A miniature bowl was situated between the two aforementioned vessels.

Contents: 1) Fragmentarily preserved, stratified bowl-like vessel, type B.2. Smooth surface. Black colour, fine-grained temper, base diameter 6.5 cm. 2) Fragmentarily preserved mug with a handle, type D.3.2. Light brown colour, fine-grained temper, rim diameter 12.5 cm, base diameter 7 cm, height 9 cm. 3) Miniature bowl, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red-brown colour, fine-grained temper, rim diameter 9.5 cm, base diameter 4 cm, height 6.5 cm. 4) Fragmentarily preserved, burnt, copper-alloy eye brooch of the Prussian series, preserved length 3.9 cm. 5) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 2 years old (*infans I*).

Grave 16 (Pl. XIII)

[Feature 31]

Description: In plan, the feature was roughly triangular in shape, 40x40 cm in size, brown in colour. In profile, the feature was poorly discernible, limited almost exclusively to the vessels that were present in the feature, approx. 12 cm thick. In the fill, there were three vessels, placed next to one another, containing cremated bones.

Contents: 1) Bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum

body diameter. Decorated on the maximum body circumference with an ornament of probably six groups of double depressions. Light brown-brick red colour, fine-grained temper, rim diameter approx. 15 cm, base diameter 7.5 cm, height 10 cm. 2) Large mug with a massive handle, type D.3.2. Decorated on the lower part of the body with dense vertical grooves extending from the body to the base. Light brown-brick red colour, fine-grained temper, rim diameter 15 cm, base diameter 7 cm, height 10 cm. 3) Miniature bowl, type D.2. Light brown colour, fine-grained temper, rim diameter 10 cm, base diameter 5 cm, height 5.5 cm. 4) Cremated bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Grave 17 (Pl. XIV)

[Feature 32]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, black in colour. In profile, the feature was roughly trapezoidal in shape, approx. 35 cm thick, black in colour. Isolated potsherds were visible at the top level of the feature and, below, there was a concentration of broken and carefully placed earthenware (nos. 2-4). In the bottom part, there was an upside-down urn (no.1), which contained in its central part a round cluster of cremated bones, probably deposited in an additional organic container.

Contents: 1) Large vase-like vessel, type A.1.b. Three pseudo-handles, shaped as the Roman numeral for 1, on the upper part of the body. Decorated on the maximum body circumference with round depressions. Smooth, glossy surface. Black colour, fine-grained temper, rim diameter 31.1 cm, base diameter 10 cm, height 20 cm. 2) Fragmentarily preserved vase-like vessel of globular form, type B.5.1. Three pseudo-handles, shaped as the Roman numeral for 1, on the upper part of the body. Brown colour, fine-grained temper, base diameter approx. 10 cm. Other dimensions impossible to determine. 3) Fragmentarily preserved bowl-like vessel, type B.5. Carelessly made ornament of an engraved line on the maximum body circumference. Brown colour, fine-grained temper, rim diameter approx. 22 cm. 4-5) Two fragmentarily preserved one-part vessels with concave, spherical base, type E.1.3. Decorated on almost the entire surface, apart from the concave base and the

area near the rim, with oval depressions. Beige–brown colour, fine–grained temper, rim diameter 8–9 cm, concave base diameter 3–4 cm. 6) Heavily burnt bowl–like vessel, type D.2. Dark brown colour, fine–grained temper, rim diameter approx. 15 cm, base diameter 9 cm, height 10 cm. 7) Cremated human bones. 8) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult (*adultus–maturus*).

Archaeozoological analysis: 1) Two chicken bone fragments. 2) Three bird bone fragments. 3) Ten fragments of unidentified animal bones.

Grave 18 (Pl. XII)

[Feature 33]

Description: In plan, the feature was oval in shape, approx. 55x35 cm in size, brown in colour in the northern part and black in the southern part. In profile, the feature was basin–shaped, approx. 18 cm thick, brown in colour at the top and black in the middle part and at the bottom. At the top level of the feature, there were numerous fragments of broken pottery and in the bottom part, under a layer of burnt debris, there was a large concentration of cremated bones.

Contents: 1) Fragmentarily preserved bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brick red colour, fine–grained temper, rim diameter approx. 18 cm, base diameter 5 cm. 2) Fragmentarily preserved tub–shaped vessel with straight, slightly everted walls and two horizontal handles. Brick–red colour, medium–grained temper, rim diameter 8.3x5.6 cm, base diameter 8 cm, height 4.5 cm. 3) Partially burnt miniature vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown–brick red colour, fine–grained temper, rim diameter 10 cm, base diameter 5 cm, height 7.5 cm. 4) Approx. one hundred small fragments of completely burnt pottery (pumice). 5) Iron needle, length 9.8 cm. 6) Clay biconical spindle whorl, diameter 4 cm. 7) Cremated human bones. 8) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: more than 25 years old (*adultus*).

Archaeozoological analysis: 1) One bird bone

fragment. 2) Five fragments of sheep–goat bones. 3) Twelve fragments of unidentified animal bones.

Grave 19 (Pl. XIII)

[Feature 35]

Description: The outline of the pit was very poorly discernible at the top level, heavily stretched by ploughing. In plan, the feature was oval in shape, approx. 32x22 cm in size, brown in colour. In profile, the feature was basin–shaped, approx. 11 cm thick, brown in colour.

Contents: 1) Approx. twenty small fragments of heavily burnt ancient pottery (pumice). 2) Cremated human bones. 3) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Archaeozoological analysis: 1) Five fragments of sheep–goat bones.

Grave 20 (Pl. XV)

[Feature 36]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, black in colour. In profile, the feature was basin–shaped, approx. 25 cm thick, black in colour, with brown–black discolourations near the edges. Two lightly burnt whole vessels and fragments of broken pottery were located in the bottom part of the feature. Under the vessels, there was a cluster of cremated bones.

Contents: 1) Lightly burnt egg–shaped bowl, type D.2. Brick red–brown colour, fine–and medium–grained temper, rim diameter 17.5 cm, base diameter 9 cm, height 10.5 cm. 2) Heavily burnt bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the maximum body circumference with an ornament of triple round depressions forming the shape of a triangle. Brown–brick red colour, fine–grained temper, rim diameter approx. 20 cm, base diameter approx. 9.5 cm, height 16 cm. 3) Miniature vessel, type B.7–8. Rim separated from the body by an engraved line. Brick red–brown colour, fine–grained temper, rim diameter 10 cm, base diameter 4 cm, height 6 cm. 4–5) Six small potsherds, including two rims, from different vessels with black, glossy surfaces, found inside the urn. Fine–grained temper.

6) Four iron fittings, probably from a casket. 7) Fragmentarily preserved iron casket lock fitting, dimensions of the preserved fragments – length 5 cm, width 3 cm, and length 3 cm, width 2 cm. Type impossible to determine. 8) Iron casket key, type A, length 12.8 cm. 9) Pendant made from a talon of the white-tail eagle (*Maliactus albicilla*⁴), length 2.5 cm. 10) Fragments of a heavily melted copper-alloy eye brooch, preserved length 3 cm. 11) Copper-alloy brooch spring with an iron chord, length 3.1 cm. 12) Fragment of a heavily melted copper-alloy bracelet, probably snake-headed, preserved length 2.9 cm. 13) Iron rod, preserved length 2.3 cm. 14) Iron needle, length 12.1 cm. 15) Clay biconical spindle whorl, diameter 3.2 cm. 16) Clay biconical spindle whorl, diameter 4 cm. 17) Cremated human bones. 18) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus/maturus*).

Archaeozoological analysis: 1) Two bird bone fragments. 2) One pig bone fragment. 3) One dog(?) bone fragment. 4) Twenty-four fragments of unidentified animal bones.

Grave 21 (Pl. XVI)

[Feature 37]

Description: In plan, the feature was oval in shape, 55x45 cm in size, black in colour. In profile, the feature was basin-shaped, approx. 10–15 cm thick, black in colour. The fill of the feature contained a bowl-like vessel (no. 1), covered from the top by upside-down vessel no. 2. Adjoining the bowl, there was a miniature bowl (no. 4), with another miniature vessel (no. 3) several centimetres further away. Between vessel 1 and miniature vessel 3, there was a cluster of cremated bones.

Contents: 1) Round-profiled bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Well-defined base. Light brown colour, fine-grained temper, rim diameter 17.5 cm, base diameter 7.5 cm, height 13.5 cm. 2) Round-profiled bowl-like vessel, type B.3. Light brown and brick red colour, fine- and medium-grained temper, rim diameter 19 cm, base diameter 7 cm, height 13.5 cm. 3) Miniature bowl with rounded base, type E.5.

Light brown and brick red colour, fine-grained temper, rim diameter 8 cm, height 4.5 cm. 4) Heavily burnt miniature bowl, type D.2. Brick red-ashen colour, fine- and medium-grained temper, base diameter 6 cm. 5) Partly burnt copper-alloy brooch of series 2 of group IV, similar to type A.92, length 6.6 cm. 6) Fragmentarily preserved copper-alloy brooch of series 2 of group IV, similar to type A.92, length 4.1 cm. 7) Fragment of a melted copper-alloy brooch of group IV, with the chord wound around the bow. Preserved length 1.7 cm, width 2.5 cm. 8) Fragments of a copper-alloy brooch spring. 9) Partly burnt copper-alloy bracelet decorated with a punctured ornament. Dimensions of the preserved fragments: length 10.3 cm, width 0.5 cm and length 3 cm, width 0.5 cm. 10) Iron spindle pin, length 3.4 cm. 11) Clay cylindrical spindle whorl, diameter 4 cm. 12) Pieces of copper alloy (from vessel 2). 13) Cremated human bones. 14) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus/maturus*).

Archaeozoological analysis: 1) Ten bird bone fragments. 2) Two fragments of unidentified animal bones.

Grave 22 (Pl. XVII)

[Feature 38]

Description: In plan, the feature was round in shape, approx. 55 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, approx. 20 cm thick, brown-black in colour. The fill of the feature contained two almost completely preserved, large vessels (nos. 1 and 3). Another vessel (no. 2) was placed inside vessel 1. A concentration of cremated bones was located at the bottom of the feature.

Contents: 1) Sharp-profiled bowl with well-defined base forming a foot, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown colour, fine-grained temper, rim diameter 22.5 cm, base diameter 8 cm, height 14 cm. 2) Biconical mug with a broken-off handle, type D.3.1. Maximum body diameter at 2/3 of the vessel's height. Decorated with an engraved horizontal line slightly above the max. body diameter. Lower part of the body ornamented with carelessly made, vertical and oblique lines engraved with a simple tool (stick?). Light

⁴ The analysis was carried out by Professor Karol Piasecki.

brown–ashen colour, fine– and medium–grained temper, rim diameter 10.5 cm, base diameter 6.5 cm, height 9 cm. 3) Heavily burnt round–profiled bowl, type B.3. Light brown–ashen colour, here and there celadon on the inside, fine–grained temper, rim diameter approx. 18 cm, base diameter 6 cm, height approx. 12 cm. 4) Copper–alloy needle, length 8.8 cm. 5) Fragmentarily preserved iron casket lock fitting, type impossible to determine. Length 6 cm, width 3.1–2.5 cm. 6) Clay biconical spindle whorl, diameter 3.3 cm. 7) Clay biconical spindle whorl, diameter 3.9 cm. 8) Iron key, type A. Length 15.3 cm. 9) Iron ring, diameter 1.6 cm. 10) Fragment of an iron casket lock spring, preserved length 3.1 cm. 11) Lumps of copper alloy. 12) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: more than 35 years old (*maturus*).

Grave 23 (Pl. XVIII)

[Feature 39]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown–black in colour. In profile, the feature was in the shape of a deep basin, approx. 20 cm thick, brown–black in colour. In the fill of the feature, there were two vessels bearing traces of burning. One of them (no. 1) was resting on its side. Numerous small finds were placed between the vessels. A cluster of cremated bones was located in the bottom part of the feature.

Contents: 1) Bowl–like vessel with traces of burning on one side, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Slightly pronounced base. Light brown–ashen in colour on the outside, brick red on the inside, fine–grained temper, rim diameter 17 cm, base diameter 7.5 cm, height 11 cm. 2) Fragmentarily preserved, heavily burnt bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown–ashen colour, fine– and medium–grained temper. Original dimensions impossible to determine. 3) Approx. thirty sherds of a completely burnt bowl–like vessel. Decorated on the upper part of the body with a poorly preserved herringbone pattern. Colour and dimensions impossible to determine.

4) Numerous completely burnt potsherds, probably from vessels 2 and 3. 5) Iron belt buckle, type D1. Length 4.2 cm, width 3.2 cm. 6–6a) Copper–alloy rod bracelet, diameter 5.2x5.9 cm. 7–7a) Copper–alloy rod bracelet, diameter 5.5x6.5 cm. 8) Clay biconical spindle whorl, diameter 4.2 cm. 9) Fragments of a copper–alloy pin, including a profiled head, group IVb, type 84. Length of the preserved fragments 3.7 cm and 2.6 cm. 10) Copper–alloy strap–end, length 4.7 cm. Group I, type 1, variant 3. 11) Fragments of a melted copper–alloy eye brooch of the Prussian series, type A.60–61. Preserved length 2.8 cm. 12) Copper–alloy belt mount. Preserved dimensions: length 3 cm, width 0.7 cm. 13) Copper–alloy belt mount. Preserved dimensions: length 3.7 cm, width 0.7 cm. 14) White glass bead, probably made of faience, diameter 0.7 cm. 15) Fragment of a copper–alloy needle, preserved length 3.4 cm. 16) Fragment of a copper–alloy rod (from the inside of vessel 1), preserved length 1.9 cm. 17) Lumps of copper alloy. 18) Cremated human bones. 19) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) Five fragments of unidentified bird bones. 1) Five fragments of unidentified animal bones.

Grave 24 (Pl. XIII)

[Feature 40]

Description: In plan, the feature was oval in shape, approx. 60x50 cm in size, brown in colour. In profile, the feature was basin–shaped, approx. 35 cm thick, brown and brown–black in colour. Potsherds occurred in the upper part of the feature.

Contents: 1) Fragmentarily preserved, partially burnt tripartite bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown–ashen and, here and there, brick red colour; fine–grained temper, rim diameter approx. 18 cm, body diameter approx. 20 cm, base diameter 6.5 cm, height 10 cm. 2) Iron belt buckle, type C13. Length 2.7 cm, 3.2 cm. 3) Melted brooch fragment. 4) Cremated bones.

Anthropological analysis: 1) Sex: female(?); age: adult (*adultus–maturus*).

Grave 25 (Pl. XIX)

[Feature 41]

Description: In plan, the feature was round in shape, approx. 70 cm in diameter, black in colour. In profile, the feature was basin-shaped, approx. 24 cm thick, black in colour. The feature contained three vessels, including one miniature bowl placed upside-down (no. 3) and filled with bone material. Numerous bones were also present in the bottom part of the feature.

Contents: 1) Pot with marked base and two handles affixed on plugs, type A.5. Decorated on the upper part of the body with an ornament of two engraved parallel lines running approx. 1 cm apart. Third engraved line on the junction between the body and neck. Light brown and ashen colour, fine-grained temper, rim diameter 15.5 cm, base diameter 9 cm, height 16 cm. 2) Heavily burnt bowl, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and ashen colour, fine-grained temper, base diameter 7 cm, other dimensions impossible to determine. 3) Miniature bowl, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red-light brown colour, fine-grained temper, rim diameter 8.5 cm, base diameter 3 cm, height 6 cm. 4) Copper-alloy eye brooch with an iron chord, type A.52. Length 2.9 cm, width 1.8 cm. 5) Heavily corroded iron belt buckle, type C13(?). Diameter 2.1 cm. 6) Fragment of an object made of copper alloy. 7) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult, more than 25 years old (*adultus*).

Grave 26 (Pl. XX)

[Feature 42]

Description: In plan, the feature was oval in shape, approx. 70x50 cm in size, black in colour. In profile, the feature was semi-circular in shape, approx. 35 cm thick, black in colour. In the fill of the pit, especially at the top level, there were numerous fragments of broken pottery. In the central part, there was a partially burnt bowl. Cremated bones intermixed with small finds were located under the vessel, at the bottom of the feature.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel, type A.2. Rim sepa-

rated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brown colour, fine-grained temper, rim diameter 20 cm, base diameter 8 cm, height 11 cm. 2) Heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown-ashen in colour on the outside, dark brown on the inside, fine-grained temper, base diameter 8 cm, other dimensions impossible to determine. 3) Fragment of a partly melted copper-alloy brooch, type A.68. Preserved dimensions: foot length 4.8 cm, head length 2 cm, width 2 cm, pin length 4.2 cm. 4) Fragment of a partly melted copper-alloy brooch, type A.68. Preserved dimensions: foot length 4.6 cm, head length 2 cm, width 2 cm. 5) Fragments of copper-alloy springs with an iron axis bar. Preserved dimensions: length 2.2 cm and 2.5 cm. 6) Fragment of a copper-alloy brooch pin(?), preserved length 4.2 cm. 7) Iron needle, length 7.4 cm. 8) Fragment of an iron hooked pin, preserved length 1 cm. 9) Clay biconical spindle whorl, diameter 4.5 cm. 10) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult (*adultus*).

Grave 27 (Pl. XXI)

[Feature 43]

Description: In plan, the outline of the feature was very poorly visible, round in shape, approx. 50 cm in diameter, light brown in colour. The borders of the feature were determined by numerous fragments of broken and partly burnt pottery. In profile, the feature was poorly visible, approx. 18 cm thick, light brown in colour. The fill contained multiple fragments of burnt pottery. In the bottom part, there was a concentration of cremated bones intermixed with small finds.

Contents: 1) Fragmentarily preserved, heavily burnt, large vase-like vessel with well-defined base, type A.1.a. Preserved trace of one handle. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine- and medium-grained temper, rim diameter approx. 27 cm, base diam. 14 cm, height approx. 21 cm. 2) Heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body

diameter. Brick red and brown colour, fine- and medium-grained temper, rim diameter approx. 18 cm, base diameter 5.5 cm, height 12 cm. 3) Heavily burnt miniature bowl, type A.3. Decorated under the rim with a poorly visible engraved line. Light brown colour, fine-grained temper, base diameter 4 cm, other dimensions impossible to determine. 4) Approx. one hundred and seventy heavily burnt potsherds (pumice) from the vessels described above. 5) Copper-alloy eye brooch, type A.53. Length 6.6 cm, width 2.5 cm. 6) Iron belt buckle, type C3, frame diameter 2.8 cm, length with the buckle plate 7.3 cm, crossbar length 5.9 cm. 7) S-shaped clasp made of copper alloy, type A. Length 1.7 cm, width 1 cm. 8) Iron casing – strap-end terminal, length 1.8 cm. 9) Fragments of a copper-alloy pin with profiled head, group IIc, type 21. Length of the preserved fragments 4.6 cm and 1.6 cm. 10) Heavily burnt copper-alloy strap-end. Group I, type I. Length 5.6 cm. 11) Fragments of copper-alloy bracelets, preserved dimensions: diameter 5 cm, width 0.5 cm, diameter 3.8 cm, width 0.5 cm, length 5 cm, width 0.5 cm, length 3.9 cm, width approx. 0.5 cm. 12) Iron spindle needle, preserved length 3.4 cm. 13) Clay biconical spindle whorl, diameter 4.2 cm. 14) Fragment of a bone object. 15) Lumps of copper alloy. 16) Cremated human bones.

Anthropological analysis: 1) Sex: female(?); age: adult (early *adultus*).

Grave 28 (Pl. XIII)

[Feature 44]

Description: The feature was severely damaged by ploughing. In plan, the feature was round in shape, approx. 30 cm in diameter, brown in colour. In profile, the feature was basin-shaped, approx. 6 cm thick, brown in colour. Several potsherds were located in the top part of the feature.

Contents: 1) Twenty-five very small, fragile potsherds with smooth surface. Black colour, fine-grained temper. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Grave 29 (Pl. XXII)

[Feature 46]

Description: In plan, the feature was round in shape, approx. 60 cm in diameter, black in colour. In profile, the feature was basin-shaped,

approx. 28 cm thick, black in colour. The feature contained four vessels, two of which were positioned on their rims, and scarce bone material.

Contents: 1) Fragmentarily preserved, large vase-like vessel with well-defined base, type A.1.3. Rim separated from the body by an engraved, another engraved line slightly above the maximum body diameter. Decorated on the maximum body circumference with an ornament composed of triple round depressions forming the shape of a triangle. Brick red colour, coarse surface, fine-grained temper, rim diameter approx. 19 cm, base diameter 7 cm, height approx. 18 cm. 2) Bowl-like vessel, type B.5. Surface coarse in the lower part of the vessel, carefully smoothed in its upper part. Brick red in colour in the lower part, light brown in the upper part and on the inside, fine-grained temper, rim diameter 18 cm, base diameter 8.5 cm, height 12.5 cm. 3) Base sherd of a thick-walled vessel with coarse surface. Brick red and light brown in colour on the outside; dark brown, almost black on the inside near the base and brick red above. Fine- and medium-grained temper, base diameter 7.5 cm, preserved height approx. 8 cm. 4) Miniature bowl, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the lower part of the body with an ornament of poorly visible engraved vertical lines extending from the max. body diameter to the base of the vessel. Base decorated with a cross ornament. Brick red colour, fine-grained temper, rim diameter 9.5 cm, base diameter 4 cm, height 6.5 cm. 5) Fragments of an antler pin with a crown-shaped head, type III. Length of the preserved fragments 4.8 cm and 1.3 cm. 6) Iron brooch, type A.103. Length 3.3 cm, width 2.3 cm. 7) Iron belt buckle, type D1. Length 3.1 cm, width 3.2 cm. 8) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child up to six years old (*infans I*).

Archaeozoological analysis: 1) One fragment of unidentified animal bone.

Grave 30 (Pl. XIII)

[Feature 47]

Description: The feature was severely damaged by deep ploughing. In plan, the feature was round in shape, approx. 30 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, approx. 8 cm thick, brown-black in colour.

Contents: 1) Fragmentarily preserved bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown colour, fine-grained temper, rim diameter 15 cm, base diameter 6.5 cm, height 9 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child up to six years old (*infans I*).

Grave 31 (Pl. XIX)

[Feature 48]

Description: The feature was imperceptible in plan; its borders were determined by the outline of the urn's rim, measuring 20 cm in diameter. The feature was imperceptible in profile, which was determined by the outline of a vessel—an urn—of 19 cm in thickness.

Contents: 1) Round-profiled egg-shaped vessel, type D.1. Smooth upper part of the vessel, lower part delicately roughened by wiping, with a single narrow band of smoothed surface visible under the max. body diameter. Light brown and, near the rim, black in colour on the outside, dark brown-black on the inside, fine-grained temper, rim diameter 19 cm, base diameter 10.5 cm, height 19 cm. 2) Bow fragment from a copper-alloy eye brooch, preserved length 2.3 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus-maturus*).

Grave 32 (Pl. XXIII)

[Feature 49]

Description: In plan, the feature was oval in shape, approx. 55x45 cm in size, brown in colour. In profile, the feature was basin-shaped, approx. 18 cm thick, brown in colour. In the bottom part of the feature, there were three heavily burnt vessels. Cremated human bones were located in one of the vessels and at the bottom of the grave pit.

Contents: 1) Bowl-like vessel, heavily burnt on one side and intact on the other, type D.2. Light brown and brick red colour, fine- and medium-grained temper, rim diameter 18 cm, base diameter 6 cm, height 12 cm. 2) Miniature bowl-like vessel with concave base, deformed by fire, type E.1.1. Lower part of the body decorated with densely engraved vertical lines. Light brown

colour, fine-grained temper. Original dimensions impossible to determine. 3) Thirty fragments of a completely burnt large vessel. 4) Spring fragment from a Prussian series eye brooch made of copper alloy. 5) Iron spindle needle, length 4.8 cm. 6) Clay biconical spindle whorl, diameter 4.1 cm. 7) Lumps of copper alloy. 8) Lumps of copper alloy from vessel 2. 9) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*maturus*).

Grave 33 (Pl. XX)

[Feature 50]

Description: In plan, the feature was round in shape, approx. 20 cm in diameter, light brown in colour. The top part of the feature was disturbed by ploughing. In profile, the feature was basin-shaped, approx. 10 cm thick, light brown in colour. The fill of the feature consisted of a cluster of cremated human bones.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus*).

Grave 34 (Pl. XXIV)

[Feature 51]

Description: In plan, the feature was oval in shape, approx. 50x40 cm in size, black in colour. In profile, the feature was in the shape of a deep basin, approx. 25 cm thick, black in colour. Three vessels, deposited whole, were located in the bottom part of the fill. One of them contained a miniature bowl and a completely preserved copper-alloy brooch.

Contents: 1) Partly burnt large bowl-like vessel, slightly deformed by fire, type B.3. Rim accentuated by an engraved line. Decorated on the maximum body circumference with a meander ornament filled with oblique incisions and enclosed at the top and bottom by engraved horizontal lines; originally smoothed and slippery, presently coarse surface. Brick red colour, fine-grained temper, rim diameter approx. 19 cm, base diameter 10 cm, height 16 cm. 2) Egg-shaped bowl, type D.2. Originally carefully smoothed, presently coarse surface. Brick red colour, fine-grained temper, rim diameter 18.5 cm, base diameter 7 cm, height 11 cm. 3) Lid with partially broken-off handles. Brick

red in colour on the outside, brown and ashen on the inside, fine- and medium-grained temper, rim diameter 12 cm, height 5 cm. (The clay body does not differ from the other vessels found in the grave). 4) Miniature bowl, type B.7- 8. Coarse, originally smoothed surface. Brick red and ashen colour, fine-grained temper, rim diameter 7.5 cm, base diameter 4 cm, height 5.5 cm. 5) Copper-alloy eye brooch, type A.53. Length 5.9 cm, width 2.2 cm. 6) Heavily burnt fragments of Prussian series eye brooches made of copper alloy, preserved dimensions: length 2.6 cm, length 2.5 cm, length 2.3 cm, length 3 cm, length 2.2 cm, length 1.2 cm, length 2 cm. 7) Copper-alloy eye brooch of crossbow construction, type A.61? Dimensions of the preserved fragments: foot length 4.9 cm, spring length 2.1 cm, width 2.2 cm. 8) Copper-alloy needle, length 9.4 cm. 9) Piece of copper alloy (from vessel 3), length 1.5 cm. 10) Clay biconical spindle whorl (from vessel 3), diameter 3.7 cm. 11) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (early *maturus*).

Grave 35 (Pl. XXII)

[Feature 52]

Description: In plan, the feature was oval in shape, approx. 40x35 cm in size, brown in colour. In profile, the feature was in the shape of a shallow basin, approx. 12 cm thick, brown in colour.

Contents: 1) Two fragments of ancient pottery, including one rim. Orange colour, fine-grained temper. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, up to 6 years old (*infans*).

Grave 36 (Pl. XXIII)

[Feature 53]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, approx. 18 cm thick, brown-black in colour. The fill contained multiple fragments of burnt pottery. In the bottom part of the feature, there was an unburnt small bowl containing bones and small pieces of copper alloy. Bones were present also at the bottom of the feature.

Contents: 1) Well-defined base of a burnt vessel. Brick red-brown colour, fine-grained temper,

diameter 8 cm. 2) Fragment of a defined base of a burnt vessel. Brown colour, fine-grained temper, diameter approx. 8 cm. 3) Partially burnt miniature bowl-like vessel with well-defined base, smoothed surface, type B.2. Light brown and brick red in colour on the outside, light brown and celadon on the inside, fine-grained temper, rim diameter approx. 11 cm, base diameter 6.5 cm, height 6.5 cm. 4) Approx. one hundred and sixty fragments of completely burnt pottery (pumice), including base sherds from three vessels and upper body sherds decorated with bands of engraved horizontal lines. 5) Bow fragment from a Prussian series eye brooch made of copper alloy. Preserved length 1.1 cm. 6) Fragments of a melted copper-alloy eye brooch of the Prussian series (from vessel 2). More precise typological identification impossible to establish. Preserved length 3.5 cm. 7) Spring fragments from copper-alloy brooches, preserved dimensions: length 2.6 cm, 1.6 cm, 1.3 cm, 1 cm. 8) Clay biconical spindle whorl, diameter 4.3 cm. 9) Melted copper fragments. 10) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*adultus-maturus*).

Grave 37 (Pl. XXV)

[Feature 54]

Description: The top level of the feature was severely damaged by deep ploughing. In plan, the feature was round in shape, approx. 28 cm in diameter, brown-black in colour. In profile, the feature was in the shape of a shallow basin, approx. 6 cm thick, brown-black in colour. In the top part of the feature, there was a large amount of unburnt pottery.

Contents: 1) Fragmentarily preserved vessel. Type impossible to determine. Rim accentuated by a sloppily engraved line. Body decorated with an ornament of triangles formed of quadruple oblique lines, enclosed at the top and bottom by horizontal lines. Brick red colour, fine- and medium-grained temper, rim diameter approx. 19 cm. 2) Fragmentarily preserved bowl-like vessel, type B.5. Originally smoothed, presently coarse surface. Brown and brick red colour. Medium- and coarse-grained temper, rim diameter approx. 20 cm, base diameter approx. 8 cm, height approx. 13 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus-maturus*).

Grave 38 (Pl. XXVI)

[Feature 55]

Description: In plan, the feature was round in shape, approx. 45 cm in diameter, brown–black in colour. In profile, the feature was basin–shaped, approx. 22 cm thick, brown–black in colour. The feature contained isolated potsherds and, in the bottom part, a cluster of cremated human bones.

Contents: 1) Fragmentarily preserved bowl, type D.2. Brick red–brown in colour on the outside, brown on the inside. Fine–grained temper, rim diameter 10.5 cm, base diameter 5 cm, height 8.5 cm. 2) Approx. forty fragments of completely burnt pottery (pumice). 3) Copper–alloy eye brooch of the Prussian series, type A.60. Length 7.3 cm, width 2.3 cm. 4) Heavily melted copper–alloy eye brooch, length 6.2 cm. Type impossible to determine. 5) Iron belt buckle, type D1. Length 2.8 cm, width 3.4 cm. 6) Clay biconical spindle whorl, diameter 4.2 cm. 7) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Grave 39 (Pl. XXVI)

[Feature 56]

Description: In plan, the feature was round in shape, approx. 45 cm in diameter, brown–black in colour. In profile, the feature was basin–shaped, approx. 23 cm thick, brown–black in colour. The fill of the feature contained earthenware fragments, including a miniature vessel, and cremated bones.

Contents: 1) Heavily burnt bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and dark brown in colour on the outside, reddish on the inside, fine–grained temper, base diameter 6.5 cm, height approx. 12 cm, other dimensions impossible to determine. 2) Base sherd of a partially burnt vessel. Brick red colour, fine–grained temper, base diameter 10 cm, preserved height 5.5 cm. 3) Miniature bowl, deformed by fire, type D.2. Orange colour, fine– and medium–grained temper, base diameter approx. 3 cm, other dimensions impossible to determine. 4) Approx. forty fragments of completely burnt pottery (pumice). 5) Spring of a Prussian series eye brooch made of copper alloy, length

1 cm. 6) Foot of a Prussian series eye brooch made of copper alloy (from a vessel), length 1.9 cm. 7) Clay biconical spindle whorl, diameter 4.5 cm. 8) Fragments of objects made of copper alloy. 9) Cremated human bones. 10) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Archaeozoological analysis: 1) One fragment of unidentified animal bone.

Grave 40 (Pl. XXVII)

[Feature 57]

Description: In plan, the feature was round in shape, approx. 45 cm in diameter, black in colour. In profile, the feature was in the shape of a deep basin, approx. 35 cm thick, black in colour. At the bottom of the pit, there were pottery vessels, deposited whole. Cremated bones were present both inside the vessels and at the bottom of the grave pit.

Contents: 1) Large vase–like vessel of semi–round profile, type A.1.3. Rim marked by an engraved line. Decorated on the upper part of the body with a narrow band of ornament in the form of an engraved dashed line between two engraved horizontal lines running approx. 1 cm apart from each other. Dark brown, originally light brown colour, fine–grained temper, rim diameter approx. 17 cm, base diameter 9 cm, height 11.8 cm. 2) Partially burnt bowl–like vessel with sharp–profiled body, coarse surface, type B.5. Brick red and ashen colour, fine– and medium–grained temper, rim diameter approx. 17 cm, base diameter 7.5 cm, height 11.5 cm. 3) Miniature bowl with concave base, type D.2. Smoothed, slippery surface. Light brown and brown colour, fine–grained temper, rim diameter 7.5 cm, concave base diameter 2.5 cm, height 4 cm. 4) Iron belt buckle, type D1. Length 2.6 cm, width 3.6 cm. 5) Cremated human bones. 6) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Grave 41 (Pl. XXVIII)

[Feature 58]

Description: In plan, the feature was round in shape, approx. 42 cm in diameter, brown–black in colour. The top level of the feature was partially disturbed by ploughing. In profile, the feature was in the shape of a shallow basin, approx. 8 cm

thick, brown–black in colour. A concentration of cremated human bones was located at the bottom of the feature.

Contents: 1) Cremated bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Grave 42 (Pl. XXVII)

[Feature 59]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, black in colour. In profile, the feature was in the shape of a deep basin, approx. 25 cm thick, black in colour. At the bottom of the fill, there were pottery vessels, deposited whole. Cremated bones were present both inside the vessels and at the bottom of the grave pit.

Contents: 1) Vase–like vessel with tall, defined neck, partially deformed by fire, type A.1. Rim accentuated by an engraved line. Decorated on the upper part of the body with depressions arranged in oblique lines and enclosed at the top and bottom by engraved horizontal lines. Light brown and dark brown colour, fine–grained temper, heavily worn surface, rim diameter approx. 14 cm, base diameter 8 cm, height 13 cm. 2) Bowl, slightly deformed by fire, type D.2. Brick red colour, fine– and medium–grained temper, rim diameter approx. 19 cm, base diameter 8 cm, height 10 cm. 3) Miniature bowl, type D.2. Orange and light brown colour, fine–grained temper, rim diameter 8 cm, base diameter 4.5 cm, height 5.5 cm. 4) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Grave 43 (Pl. XXVIII)

[Feature 60]

Description: The outline of the grave pit was not perceptible in either plan or profile. The border of the feature was determined by a mug dug into the virgin sand.

Contents: 1) Partially preserved mug with a broken–off handle, type D.3.1(?). Brick red–light brown colour, fine–grained temper, rim diameter approx. 12 cm, base diameter 6.5 cm, height 10 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Grave 44 (Pl. XXVIII)

[Feature 61]

Description: The pit was barely perceptible at the top level, severely damaged by ploughing. In plan, the feature was round in shape, approx. 12 cm in diameter, brown in colour. In profile, the outline of the feature was poorly legible, approx. 3 cm thick, brown in colour.

Contents: 1) Fragmentarily preserved mug. Light brown colour, fine– and medium–grained temper, rim diameter approx. 10.5 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Grave 45 (Pl. XXVIII)

[Feature 62]

Description: The outline of the grave pit was not perceptible in either plan or profile. The border of the feature was determined by earthenware dug into the virgin sand.

Contents: 1) Fragmentarily preserved thin–walled mug, type D.3.1. Light brown and brick red colour, fine–grained temper, body diameter 1.5 cm, base diameter 5.5 cm, height 6.5 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Grave 46 (Pl. XXIX)

[Feature 63]

Description: In plan, the feature was round in shape, approx. 22 cm in diameter, brown in colour. In profile, the feature was barely discernible, irregular in shape, approx. 15 cm thick, brown in colour. The fill contained two adjoining mugs.

Contents: 1) Mug, slightly deformed by fire, type D.3.1. Handle not preserved. Light brown colour, fine–grained temper, rim diameter 10.5 cm, base diameter 5 cm, height 8.5 cm. 2) Mug, slightly deformed by fire, type D.3.1. Fragmentarily preserved handle. Light brown and brick red colour, fine–grained temper, rim diameter approx. 8 cm, base diameter 4.5 cm, height 7 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Grave 47 (Pl. XXVIII)

[Feature 64]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown–black in colour. In profile, the feature was in the shape of a deep basin, approx. 30 cm thick, brown–black in colour. In the central part of the fill, there was a concentration of burnt pottery and, under it, a cluster of cremated human bones.

Contents: 1) Bowl–like(?) vessel, heavily deformed by fire, originally sharp–profiled body. Upper part of the body decorated with an elaborate ornament of depressions forming bands of squares enclosed by a band of engraved horizontal lines. Another, not so well preserved, ornamental band below, with a visible line of depressions in an oblique or horizontal arrangement and triple oblique bands of engraved strokes. Light brown–orange colour, fine–grained temper. Dimensions impossible to determine. 2) Bowl, heavily deformed by fire, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine– and medium–grained temper, base diameter approx. 8 cm, other dimensions impossible to determine. 3) Miniature bowl with concave base, heavily deformed by fire, type E.1.2. Dark brown colour, fine–grained temper, dimensions impossible to determine. 4) Approx. one hundred fragments of completely burnt pottery (pumice). 5) Cremated human bones. 6) Burnt animal bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) Three fragments of unidentified animal bones.

Grave 48 (Pl. XXV)

[Feature 65]

Description: In plan, the feature was round in shape, approx. 33 cm in diameter, brown–black in colour. In profile, the feature was basin–shaped, approx. 12 cm thick, brown–black in colour. The fill of the feature contained a large cluster of carefully placed broken pottery under which, at the bottom of the pit, there was a concentration of cremated human bones.

Contents: 1) Large vase–like vessel with everted rim, deformed by fire, type B.4. Globular body at 2/3 of the vessel’s height. Rim accentuated by an

engraved horizontal line. Decorated on the upper part of the body with two engraved horizontal lines and, between them, a third line formed by repeatedly impressing a rectangular punch. Base decorated with a swastika motif engraved on the exterior surface. Beige–brown colour, fine–grained temper, rim diameter 20 cm, base diameter 13 cm, height 24.5 cm. 2) Gently profiled bowl, heavily deformed by fire, type B.2. Brown colour, fine–grained temper, dimensions impossible to determine. 3) Miniature bowl with concave base, heavily deformed by fire, type E.1.1. Decorated on the upper part of the body with two engraved lines and below them, on the maximum body circumference, with an ornament of impressed indentations. Brick red–brown colour, concave base diameter 5 cm, height approx. 5.5 cm. 4) Multiple fragments of completely burnt pottery (pumice). 5) Cremated human bones. 6) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) Five cattle bone fragments. 2) Three fragments of unidentified animal bones.

Grave 49 (Pl. XXIX)

[Feature 66]

Description: The top level of the feature was partially stretched by ploughing. In plan, the feature was round in shape, approx. 35 cm in diameter, light brown in colour, poorly distinguishable from the virgin sand. In profile, the feature was basin–shaped, approx. 12 cm thick, light brown in colour. A large concentration of burnt pottery and cremated bones was located in the central part of the fill. At the bottom of the feature, there was a bowl, deposited whole, heavily deformed by fire in its upper part, containing large fragments of cremated bones and two unburnt copper–alloy brooches.

Contents: 1) Fragmentarily preserved, partially burnt, large vase–like(?) vessel with well–defined base. Body decorated with an ornament of triangles formed of triple engraved oblique lines, enclosed at the top and bottom by engraved horizontal lines. Light brown colour, fine–grained temper, base diameter 10.5 cm. 2) Heavily burnt, especially near the rim, bowl, type A.2 (served as an urn in the grave). Rim accentuated by an engraved horizontal line. Light brown co-

lour, fine-grained temper, rim diameter approx. 22 cm, base diameter 8 cm, height 12 cm. 3) Heavily burnt miniature bowl, type B.7–8. Brick red–brown colour, fine-grained temper, rim diameter approx. 10 cm, base diameter 3.5 cm, height 7 cm. 4) Fragmentarily preserved miniature mug, bearing no traces of burning, smooth surface, type D.2. Light brown colour, fine-grained temper, rim diameter 8 cm, base diameter 4.5 cm, height 7.5 cm. 5) Rim sherd of a heavily burnt vessel with one preserved handle. Rim accentuated by an engraved horizontal line. Body decorated with an ornamental band in the form of engraved oblique lines enclosed at the top and bottom by engraved horizontal lines. Brown colour, fine-grained temper. 6) Thirty-seven fragments of heavily burnt pottery (pumice). 7) Copper–alloy eye brooch of the Prussian series, type A.60(?). Length 7.4 cm, width 2.6 cm. 8) Fragments of a melted copper–alloy eye brooch of the Prussian series, type A.60?. Preserved length 3.3 cm, length with the pin 8 cm, width 2.1 cm. 9) Clay biconical spindle whorl, diameter 4 cm. 10) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*). 2) Sex: undetermined; age: adult, more than 35 years old (*adultus*).

Grave 50 (Pl. XXX)

[Feature 67]

Description: In plan, the feature was round in shape, approx. 42 cm in diameter, brown–black in colour. In profile, the feature was basin-shaped, approx. 13 cm thick, brown–black in colour. Multiple fragments of broken pottery were present at the top level of the feature and, under them, there was a miniature bowl positioned on its rim.

Contents: 1) Fragmentarily preserved vase-like vessel, type A.1. Rim separated from the body with an engraved line, second and third engraved line slightly above and on the maximum body circumference. Light brown and ashen in colour on the outside, brick red on the inside, fine-grained temper, rim diameter approx. 17 cm, preserved height 12 cm. 2) Fragmentarily preserved bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown colour, fine-grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 11 cm. 3) Completely preserved miniature bowl with concave base, type

E.1.1. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter 8.5 cm, concave base diameter 4.5 cm, height 5.5 cm. 4) Seventeen small fragments of heavily burnt pottery (pumice). 5) Cremated human bones. 6) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Archaeozoological analysis: 1) One fragment of unidentified animal bone.

Grave 51 (Pl. XXX)

[Feature 69]

Description: In plan, the feature was oval in shape, approx. 65x50 cm in size, black in colour. In profile, the feature was basin-shaped, approx. 25 cm thick, black in colour. Multiple potsherds and pottery vessels, deposited whole, were located in the bottom part of the feature; under them, there was a concentration of cremated bones.

Contents: 1) Partially burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red–ashen and brown colour, fine-grained temper, rim diameter 18.1 cm, base diameter 7.6 cm, height 10.4 cm. 2) Heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red and ashen colour, fine-grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 10.5 cm. 3) Small bowl-like vessel with slightly everted neck, type B.4. Decorated with a fragmentarily preserved ornament of an engraved horizontal line slightly above the maximum body diameter. Light brown and ashen colour, fine-grained temper, rim diameter 11 cm, base diameter 6 cm, height 10 cm. 4) Miniature vessel with rounded base, bearing traces of burning, type B.4. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown–brick red colour, fine-grained temper, rim diameter approx. 8 cm, height 5.5 cm. 5) Cremated human bones.

Anthropological analysis: 1) Sex: female (?); age: adult (*adultus–maturus*).

Grave 52 (Pl. XXXI)

[Feature 70]

Description: In plan, the feature was round in shape, approx. 45 cm in diameter, brown–black in colour. In profile, the feature was basin–shaped, approx. 16 cm thick, brown–black in colour. A whole vessel was deposited in the fill of the pit.

Contents: 1) Mug with a broken–off handle, type D.3.2. Brick red–ashen colour, fine–grained temper, rim diameter 12 cm, base diameter 5.5 cm, height 9 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Grave 53 (Pl. XXXII)

[Feature 71]

Description: In plan, the feature was oval in shape, approx. 42x35 cm in size, brown in colour. In profile, the feature was in the shape of a deep basin, approx. 25 cm thick, brown in colour. The fill of the feature contained four vessels, stacked one on the top of the other.

Contents: 1) Bowl–like vessel, bearing traces of burning, type A.2. Decorated on the upper part of the body with an ornament of triangles formed of double or triple oblique lines, enclosed at the top and bottom by engraved horizontal lines. Light brown colour, fine–grained temper, rim diameter approx. 18 cm, base diameter 9 cm, height 11 cm. 2) Fragmentarily preserved bowl, type A.2. Decorated with one engraved horizontal line on the maximum body circumference and another one at the junction between the body and rim. Light brown colour, fine–grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 10 cm. 3) Miniature bowl with defined neck, bearing traces of burning, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Ashen and, in places, brick red colour, fine–grained temper, rim diameter 7.5 cm, base diameter 3 cm, height 4.5 cm. 4) Completely burnt bowl–like(?) vessel. 5) Approx. one hundred and sixty small potsherds (pumice). 6) Bow of a Prussian series eye brooch made of copper alloy, type A.60. Length 5.7 cm. 7) Fragments of a Prussian series eye brooch made of copper alloy. 8) Clay biconical spindle whorl, diameter 4.3 cm. 9) Melted glass bead(?) of celadon colour. 10) Cremated human bones. 11) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined;

age: adolescent, 16–20 years old (*iuvenis–adultus*).

Archaeozoological analysis: 1) Six chicken bone fragments. 2) Three bone fragments of a galliform bird. 3) Two unidentified bird bone fragments. 4) Twenty fragments of unidentified animal bones.

Grave 54 (Pl. XXXIII)

[Feature 72]

Description: In plan, the feature was round in shape, approx. 55 cm in diameter, brown in colour. In profile, the feature was basin–shaped, approx. 20 cm thick, brown in colour. An upside–down vessel was found in the top part of the fill. Other vessels were placed below it, in the central part of the feature.

Contents: 1) Large vase–like vessel with very well–defined base, type A.1.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and ashen colour, fine–grained temper, rim diameter 16 cm, base diameter 9 cm, height 13 cm. 2) Bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brick red colour, fine–grained temper, rim diameter 20 cm, base diameter 8 cm, height 10.5 cm. 3) Miniature bowl with spherical base, type E.5. Light brown and brown colour, fine–grained temper, rim diameter 7 cm, height 5 cm. 4) Melted fragments of a Prussian series eye brooch made of copper alloy, dimensions of the preserved fragments: bow 4.3 cm, foot 2.9 cm, pin 3.2 cm. 5) Fragments of a copper–alloy brooch spring. 6) Copper–alloy pin with profiled head, group IIc, type 20–21. Preserved length 8.8 cm. 7) Iron D–shaped belt buckle with forked, profiled pin, type D4. Length 3.1 cm, width 4.6 cm. 8) Fragmentarily preserved copper–alloy bracelet. Preserved dimensions: 4.2 cm, 3.2 cm. 9) Iron belt mount with two holes, length 3.1 cm, width 1 cm. 10) Iron key, type A. Length 13.1 cm. 11) Clay knob, diameter 2.1 cm. 12) Clay biconical spindle whorl, diameter 4.8 cm. 13) Melted glass beads of blue and green colour. 14) Fragments of objects made of copper alloy. 15) Cremated human bones. 16) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adolescent, 15–20 years old (*iuvenis–adultus*).

Archaeozoological analysis: 1) Three fragments of unidentified animal bones.

Grave 55 (Pl. XXXI)

[Feature 73]

Description: In plan, the feature was round in shape, approx. 27 cm in diameter, light brown in colour. In profile, the feature was barely discernible, basin-shaped, approx. 12 cm thick, light brown in colour. Cremated human bones formed the fill of the feature.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adolescent, 15–20 years old (*iuvenis–adultus*).

Grave 56 (Pl. XXXI)

[Feature 74]

Description: The top level of the feature was severely damaged by deep ploughing. In plan, the feature was round in shape, approx. 30 cm in diameter, brown–black in colour. In profile, the feature was basin-shaped, approx. 9 cm thick, brown–black in colour.

Contents: 1) Cremated human bones. 2) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Archaeozoological analysis: 1) One fragment of unidentified animal bone.

Grave 57 (Pl. XXXI)

[Feature 75]

Description: In plan, the feature was round in shape, approx. 30 cm in diameter, brown–black in colour. In profile, the feature was in the shape of a deep basin, approx. 15 cm thick, brown–black in colour. A whole vessel was deposited in the bottom part of the feature.

Contents: 1) Completely preserved handleless mug. Brick red colour, fine-grained temper, rim diameter 11 cm, base diameter 6.5 cm, height 9 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child (*infans*).

Grave 58 (Pl. XXXI)

[Feature 76]

Description: In plan, the feature was round in shape, 35 cm in diameter, black in colour. In profile, the feature was basin-shaped, 22 cm thick, black in colour. The feature contained trace amount of bones, heavily burnt and difficult to extract.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Grave 59 (Pl. XXXIV)

[Feature 77]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, black in colour. In profile, the feature was semi-circular in shape, approx. 30 cm thick, black in colour. The fill of the feature contained three vessels. One of them was located in the top part of the feature, above partially burnt vessel 2. The third vessel was found in the bottom part of the feature. Under the vessels, there was a cluster of cremated bones and, among them, small finds.

Contents: 1) Fragmentarily preserved, heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter 16 cm, base diameter 8.5 cm, height 11.5 cm. 2) Heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper, dimensions impossible to determine. 3) Partially burnt miniature bowl, type D.2. Light brown and brick red colour, fine-grained temper, rim diameter 8.5 cm, base diameter 4.5 cm, height 4.5 cm. 4) Spring fragment from a Prussian series eye brooch made of copper alloy. 5) Iron D-shaped belt buckle, type D1. Length 3.5 cm, width 4.2 cm. 6) Iron casket lock fitting with a spring, type 10. Preserved dimensions: length 7.9 cm, width 2.2–2.5 cm. 7) Iron casket lock spring, preserved length 3.9 cm. 8) Fragments of copper-alloy objects with carefully made rectangular and oval cross-section. Preserved length 1.4 cm and 1.2 cm. 9) Fragments of objects made of copper alloy. 10) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult, more than 35 years old (*maturus*).

Grave 60 (Pl. XXXV)

[Feature 78]

Description: In plan, the feature was barely discernible, round in shape, approx. 40 cm in diameter, brown in colour. In profile, the feature was in the shape of a deep basin with distinct

discolourations, approx. 37 cm thick, brown in colour at the top and brown–black in the middle and at the bottom. Two vessels were found at the top level of the feature, and small finds and a concentration of cremated bones were located in the bottom part of the pit.

Contents: 1) Partially burnt bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brick red colour, fine–grained temper, rim diameter approx. 20 cm, base diameter 8 cm, height 11.5 cm. 2) Fragmentarily preserved round–profiled vase–like vessel, type B.4. Light brown and ashen colour, fine– and medium–grained temper, rim diameter approx. 15 cm, base diam. 7.5 cm, height 12 cm. 3) Four burnt, nondescript fragments of ancient pottery. Coarsely wiped exterior surface. Brown colour, fine– and medium–grained temper. 4) Copper–alloy eye brooch of the Prussian series, type A.60. Length 7.3 cm, width 2.8 cm. 5) Partially burnt copper–alloy eye brooch of the Prussian series, type A.60. Length 9.7 cm, width 2.6 cm. 6) Belt mount consisting of two copper–alloy plates joined with four rivets. Dimensions 2.2 cm x 2.2 cm. 7) Fragments of a partially melted copper–alloy rod bracelet of oval cross–section. Length 5.8 cm, width 0.5 cm, length 2.6 cm, width 0.5 cm, length 2.9 cm, width 0.6 cm, length 2.6 cm, width 0.3 cm, length 2.1 cm, width 0.6 cm, length 2.2 cm, width 0.4 cm. 8) Iron belt buckle, type D1. Length 3.8 cm, width 4.4 cm. 9) Fragmentarily preserved iron belt mount. Preserved length 4 cm, width 1 cm. 10) Fragment of a mount with one hole. Remains of a copper–alloy overlay visible on both sides. Preserved dimensions: 1x1 cm. 11) Iron casket lock fitting, type 2. Length 7.3 cm, width 2.2 cm. 12) Melted pieces of copper alloy. 13) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult (*adultus–maturus*)

Grave 61 (Pl. XXXIV)

[Feature 79]

Description: The outline of the feature was not perceptible in either plan or profile. Its borders were determined by pottery fragments. Most probably, it is a remnant of a completely destroyed grave, analogous to graves 44–47.

Contents: 1) Approx. twenty–five small sherds of

a vessel, including a completely preserved base, coarse surface. Brick red colour, fine– and medium–grained temper. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child (*infans*).

Grave 62 (Pl. XXXIV)

[Feature 80]

Description: The outline of the feature was not perceptible in either plan or profile. Its border was determined by an upside–down miniature bowl. At some distance from the vessel, there were isolated cremated bone fragments in the virgin sand. Most probably, it is a remnant of a completely destroyed grave, analogous to graves 44–47.

Contents: 1) Completely preserved miniature vessel with sharply profiled body and concave base, type E.3. Neck accentuated by an engraved line. Light brown and ashen colour, fine–grained temper, rim diameter 9 cm, concave base diameter 4 cm, height 5 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Grave 63 (Pl. XXXVI)

[Feature 81]

Description: In plan, the feature was oval in shape, approx. 60x50 cm in size, brown–black in colour. In profile, the feature was basin–shaped, approx. 15–20 cm thick, brown–black in colour. In the central and bottom part of the feature, there was a concentration of heavily burnt pottery and, within it, a cluster of cremated bones and small finds.

Contents: 1) Fragmentarily preserved, heavily burnt tripartite vase–like vessel with distinct globular body at 2/3 of the vessel's height, type A.1.2. Light brown and ashen colour, fine–grained temper. Dimensions impossible to determine. 2) Partially burnt miniature egg–shaped vessel with slightly rounded base, type D.2. Brown colour, fine–grained temper, rim diameter approx. 5 cm, height 5.5 cm. 3) Heavily burnt miniature bowl with concave base, type E.2.1. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the lower

part of the body with poorly visible vertical lines extending from the maximum body circumference to the small concave base. Between them, an ornament of punched depressions. Brown colour, fine-grained temper, rim diameter approx. 7.5 cm, concave base diameter 3 cm, height 5 cm. 4) Completely burnt bowl-like vessel, type A.2. Rim accentuated by an engraved line. Colour and dimensions impossible to determine. 5) Approx. one hundred fragments of heavily burnt pottery, probably from vessel no. 1. 6) Iron belt buckle, type D1. Length 3.2 cm, width 4.6 cm. 7) Iron belt mount, length 3.5 cm, width 0.5 cm. 8) Fragment of a copper-alloy belt mount. 9) Iron key, type A. Length 14.2 cm. 10) Iron casket lock fitting, type 2. Length 6.8 cm, width 3.2 cm. 11) Iron casket lock spring, length 9.8 cm. 12) Three iron casket fittings. 13) Partially burnt clay biconical spindle whorl, dimensions 3x3.5 cm. 14) Clay biconical spindle whorl, diameter 4.5 cm. 15) Fragment of an iron rod, length 2.1 cm. 16) Fragmentarily preserved snake-headed bracelet made of copper alloy. 17) Numerous pieces of copper alloy. 18) Cremated human bones. 19) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adolescent, 15–20 years old (*iuvenis*).

Archaeozoological analysis: 1) Six chicken bone fragments. 2) One bone fragment from a galliform bird. 3) Ten fragments of unidentified bird bones. 4) Three fragments of unidentified animal bones.

Grave 64 (Pl. XXXVII)

[Feature 82]

Description: In plan, the feature was round in shape, approx. 55 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, approx. 15 cm thick, brown-black in colour. In the central part of the feature, there was a mug with small bone remains inside.

Contents: 1) Mug of biconical cross-section, distinct neck and concave base, type D.4. Light brown and brick-red colour, fine-grained temper, rim diameter approx. 11 cm, concave base diameter 3.5 cm, height 7.5 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child (*infans*).

Grave 65 (Pl. XXXVII)

[Feature 83]

Description: In plan, the feature was very poorly discernible, oval in shape, approx. 45x50 cm in size, light brown in colour. In profile, the feature was very poorly discernible, basin-shaped, approx. 25 cm thick, light brown in colour. The fill of the feature contained a large concentration of burnt pottery; a cluster of cremated bones was located in the bottom part of the pit. Next to it, there was an upside-down miniature bowl.

Contents: 1) Vase-like vessel with globular body, heavily deformed by fire, type A.1.3. Rim separated from the body by an engraved line. Decorated on the maximum body circumference with an elaborate meander ornament filled with depressions. Above it, an ornament of engraved oblique lines, grouped in threes, enclosed at the top and bottom by horizontal lines. Brown and ashen colour, fine-grained temper, base diameter 8 cm, other dimensions impossible to determine. 2) Fragmentarily preserved, heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brown colour, fine-grained temper. Dimensions impossible to determine. 3) Miniature bowl with concave base, type E.1.2. Decorated on the maximum body circumference with depressions arranged in a horizontal line, adjoined from below by six analogous vertical lines extending to the concave base. Light brown and ashen colour, fine-grained temper, rim diameter 8 cm, concave base diameter 4 cm, height 5.5 cm. 4) Approx. seventy fragments of heavily burnt pottery (pumice), probably from vessel 2. 5) Iron belt buckle, type D1, length 4.2 cm, width 5 cm. 6) Cremated human bones. 7) Burnt animal bones.

Anthropological analysis: 1) Sex: male(?); age: adult (*adultus/maturus*).

Archaeozoological analysis: 1) Three cattle bone fragments. 2) Two fragments of unidentified animal bones.

Grave 66 (Pl. XXXVIII)

[Feature 84]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown in colour. In profile, the feature was in the shape of a

deep basin, approx. 28 cm thick, brown in colour. In the central and bottom part of the feature, there was a concentration of heavily burnt pottery and, below it, cremated bones.

Contents: 1) Partially burnt vase-like with high-placed maximum body diameter, upright rim and strap handle, type A.1.a. Carelessly made ornament of a double engraved line slightly above the maximum body circumference. Brown colour, fine-grained temper, rim diameter approx. 17 cm, base diameter 7 cm, height 15 cm. 2) Flat miniature bowl with rounded, pointy base, type E.5. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and brick red colour, fine-grained temper, rim diameter 8.5 cm, height 4 cm. 3) Heavily burnt bowl-like vessel, type A.2. Neck separated from the rim by an engraved line. Decorated on the upper part of the body with a chevron ornament between two engraved horizontal lines. Brown and ashen colour, fine-grained temper, base diameter 8 cm, other dimensions impossible to determine. 4) Approx. fifty fragments of heavily burnt pottery (pumice). The vessel was originally decorated with two engraved lines: one at the junction between the body and neck and another one between the neck and rim. Fine- and medium-grained temper. 5) Iron belt buckle, type D1, length 2.7 cm, width 3.6 cm. 6) Fragments of an iron rod, needle? Dimensions of the preserved fragments: length 3.3 cm and 4 cm. 7) Partially burnt clay biconical spindle whorl, diameter 5.7 cm. 8) Fragment of a heavily burnt rod bracelet made of copper alloy (from vessel 3). 9) Lumps of copper alloy (from vessel 3). 10) Cremated human bones. 11) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) One cattle bone fragment. 2) One sheep-goat bone fragment.

Grave 67 (Pl. XXXIX)

[Feature 85]

Description: In plan, the feature was round in shape, approx. 55 cm in diameter, black in colour with brown discolourations near the edges. The top level of the pit was disturbed by deep ploughing. In profile, the feature was basin-shaped, 22 cm thick, black in colour. The fill of the feature contained numerous fragments of broken pot-

tery and, in the bottom part, a large cluster of cremated bones.

Contents: 1) Large vase-like vessel with tall neck, type A.1.2. Decorated with an engraved horizontal line slightly above the maximum body diameter. Light brown and brick red colour, fine-grained temper, rim diameter 19.5 cm, base diameter 9.5 cm, height 20 cm. 2) Lightly burnt bowl-like vessel with marked base, type D.2. Brick red and ashen colour, fine-grained temper, rim diameter 18.5 cm, base diameter 7.5 cm, height 12 cm. 3) Small bowl-like vessel. Light brown and brick-red colour, fine-grained temper, rim diameter approx. 10.5 cm, base diameter 5 cm, height 7 cm. 4) Miniature bowl-like vessel with sharply profiled body and everted rim, type B.7-8. Light brown and brick red colour, fine-grained temper, rim diameter 8 cm, base diameter 4 cm, height 5 cm. 5) Silver S-shaped clasp, type D, length 1.7 cm. 6) Lightly burnt clay biconical spindle whorl, diameter 4.3 cm. 7) Bone bead(?), length 1.2 cm. 8) Cremated human bones. 9) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*maturus*).

Archaeozoological analysis: 1) Six fragments of bones of a vertebrate, perhaps a bird. 2) One bird bone fragment. 3) One fragment of unidentified mammal bone.

Grave 68 (Pl. XXIX)

[Feature 86]

Description: In plan, the feature was oval in shape, approx. 50x40 cm in size, black in colour. Severely damaged by ploughing in the top part. In profile, the feature was basin-shaped, 20 cm thick, black in colour, with brown discolourations near the bottom. The feature contained a large concentration of burnt pottery. A cluster of cremated bones was located in the bottom part of the fill.

Contents: 1) Fragmentarily preserved small biconical vase-like vessel, type B.5. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red-brown colour, fine- and medium-grained temper, rim diameter 11.3 cm, base diameter 6 cm, height 10.3 cm. 2) Fragmentarily preserved mug with a large handle, type D.3.2. Brown in colour on the outside, light brown on the inside, fine-grained temper, rim diame-

ter 14 cm, base diameter 6.5 cm, height 11 cm. 3) Iron spring–cover brooch, type A.38–39, length 4.7 cm, width 3.5 cm. 4) Iron spring–cover brooch, type A.38–39, length 4.8 cm, width 3.4 cm. 5) Iron needle, length 7.5 cm. 6) Clay biconical spindle whorl, diameter 4.3 cm. 7) Bone bead(?), length 0.9 cm. 8) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*maturus*).

Grave 69 (Pl. XL)

[Feature 87]

Description: In plan, the feature was oval in shape, approx. 45x40 cm in size, black in colour in the northern and eastern part, brown in the southern and western part. In profile, the feature was basin–shaped, 30 cm thick, brown in colour at the top and black in the middle and at the bottom. In the top and middle part of the feature, there was a large concentration of burnt pottery. Small finds placed on a cluster of cremated bones in the bottom part of the feature.

Contents: 1) Partially burnt bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and brick red colour, fine–grained temper, rim diameter approx. 20 cm, base diameter 9 cm, height approx. 11 cm. 2) Fragmentarily preserved thin–walled bowl–like vessel with well–defined base, type D.2. Brick red and brown colour, fine–grained temper, rim diameter 12 cm, base diameter 5 cm, height 9.5 cm. 3) Heavily burnt miniature bowl, type D.2. Brick red and brown colour, fine–grained temper, rim diameter approx. 8 cm, base diameter 3 cm, height 5 cm. 4) Sherds from a heavily burnt vase–like vessel with globular body and tall neck. Type impossible to determine. Decorated on the upper part of the body with engraved oblique lines enclosed by two engraved horizontal lines. Light brown and brown colour, fine–grained temper, dimensions impossible to determine. 5) Approx. two hundred and fifty fragments, including a base, of heavily burnt pottery (pumice). Light brown and brown colour, fine–grained temper, base diameter approx. 8 cm. 6) Iron spring–cover brooch, type A.38–39, length 4.8 cm, width 3.7 cm. 7) Iron belt buckle, type D1, length 3.7 cm, width 4.3 cm. 8) Copper–alloy rod bracelet of round cross–section, dimensions 4.8x7 cm. 9) Iron casket lock spring,

length 9.2 cm. 10) Fragmentarily preserved, heavily melted eye brooch of the Prussian series, made of copper alloy. 11) Ornamented cylindrical spindle whorl made of clay, diameter 4 cm. 12) Fragments of an object made of copper alloy. 13) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult, more than 25 years old (*adultus*). 2) Sex: undetermined; age: adult, more than 35 years old (*maturus*).

Grave 70 (Pl. XLI)

[Feature 88]

Description: Poorly discernible feature outline. In plan, the feature was oval in shape, 60x40 cm in size, light brown in colour. In profile, the feature was basin–shaped, approx. 22 cm thick, light brown in colour. The fill of the feature contained large sherds from a brunt vase–like vessel or a mug. Cremated bones were found mainly in the upper parts of the fill and inside vessel 1.

Contents: 1) Partially burnt, large vase–like vessel with globular body and well–defined base, type B.4. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown colour, fine–grained temper, base diameter approx. 16 cm, other dimensions impossible to determine. 2) Fragmentarily preserved mug, type D.3.1. Light brown colour, fine–grained temper, rim diameter 8.5 cm, base diameter 6.5 cm, height 6.5 cm. 3) Approx. two hundred large and medium–sized fragments of heavily burnt pottery (pumice). 4) Stone whetstone, length 7.3 cm, width 4.3 cm. 5) Cremated human bones.

Anthropological analysis: 1) Sex: female?; age: adult, more than 25 years old (*adultus*). 2) Sex: undetermined, age: child, less than 2 years old (*infans*). 3) Sex: male(?), age: adult (*adultus*).

Grave 71 (Pl. XLII)

[Feature 89]

Description: In plan, the feature was oval in shape, approx. 50x40 cm in size, brown in colour. In profile, the feature was in the shape of a deep basin, 34 cm thick, brown in colour at the top and brown–black the bottom. In the middle and bottom part of the fill, there was a concentration of broken pottery and fragments of cremated bones. A large concentration of cremated bones

was located at the bottom of the feature.

Contents: 1) Partially burnt, large vase-like vessel with tall neck, type A.1.b. Decorated on the maximum body circumference with an elaborate meander ornament filled with oblique incisions. One pseudo-handle in the shape of the Roman numeral for 1 preserved on the tall neck. Light brown colour, fine-grained temper, base diameter 11 cm, other dimensions impossible to determine. 2) Large bowl with tall neck and distinct semi-globular body, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brick red colour, fine-grained temper, rim diameter 21 cm, base diameter 7.5 cm, height 12 cm. 3) Miniature bowl, partially deformed by fire, type A.3. Brick red-ashen colour, fine-grained temper, rim diameter approx. 10.5 cm, base diameter 4.5 cm, height 7.5 cm. 4) Approx. thirty fragments of completely burnt pottery (pumice). 5) Iron D-shaped belt buckle with profiled pin, type D2, length 3.5 cm, width 4.3 cm. 6) Massive iron fitting, dimensions 4.4×2.4 cm. 7) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adolescent, approx. 16 years old (*iuvenis/adultus*).

Grave 72 (Pl. XLII)

[Feature 90]

Description: In plan, the feature was round in shape, 45 cm in diameter, brown in colour. Multiple fragments of broken pottery were found at the top level of the feature. In profile, the feature was very deep, irregular in shape, probably disturbed by a rootstock, 45 cm thick, brown-black in colour in the central part and brown near the edges. The fill contained numerous potsherds; an urn (no. 1) was placed at the bottom of the feature. Multiple cremated human bones were found in the brown-black layer.

Contents: 1) Completely preserved vase-like vessel with slightly pronounced base, type A.1.b. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Below it, an ornament of oval depressions. Carefully burnished surface. Black colour, fine- and medium-grained temper, rim diameter 17 cm, base diameter 9.5 cm, height 14.5 cm. 2) Half-preserved vase-like vessel with sharply profiled body, type A.1.b. Heavily

burnt second half. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. One pseudo-handle, shaped as the Roman numeral for 1, preserved on the upper part of the body. Light brown and brick red colour, fine-grained temper, base diameter 7.5 cm, other dimensions impossible to determine. 3) Bowl-like vessel with well-defined base, type B.2. Rim separated from the body by an engraved line. Brown colour, fine-grained temper, rim diameter 15 cm, base diameter 7 cm, height 10 cm. 4) Approx. one hundred large and small fragments of heavily burnt pottery (pumice). 5) Iron belt buckle with round frame, type C13, dimensions 3×3.3 cm. 6) Fragmentarily preserved antler pin, length 6.7 cm. 7) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adolescent, 12–16 years old (*iuvenis*).

Grave 73 (Pl. XLIII)

[Feature 91]

Description: In plan, the feature was barely discernible, round in shape, approx. 45 cm in diameter, brown in colour. Burnt pottery was found in the top part of the feature. In profile, the feature was barely discernible, basin-shaped, approx. 30 cm thick, brown in colour. In the bottom part, the feature was extended at a 45° angle by an approx. 18-cm-wide strip of brown-black earth. A concentration of pottery was located at the transition between the brown part and the brown-black part of the feature. Under it, there was a compact layer of cremated bones. Along the entire length of the narrow part of the feature, there were numerous burnt potsherds, bones and small finds: a casket fitting at a depth of 19 cm below the top level, a strap-end at a depth of 23 cm, an iron belt buckle at a depth of 28 cm, a key at a depth of 43 cm, an A.26/28 brooch at a depth of 66 cm. The remaining artefacts were located approx. at the mid-depth of the layer in question.

Contents: 1) Rim and base sherds from burnt vessels. Light brown colour, fine-grained temper. 2) Approx. two hundred fragments of heavily burnt pottery (pumice). Decorated with one engraved horizontal on the maximum body circumference and another one at the junction between the body and rim. Brown colour, fine- and medium-grained temper. 3) Lightly burnt cop-

per-alloy spring-cover brooch with an ornamented hook, type A.26/28, length 5.8 cm, width 3.6 cm. 4) Iron belt buckle with a crossbar and profiled pin extending into buckle plate, type C1, frame diameter 2.5 cm–2.8 cm, length with the buckle plate 7.2 cm. 5) Profiled strap-end made of copper alloy, group I, type 1, variant 3, length 5.3 cm. 6) Fragmentarily preserved profiled strap-end made of copper alloy, preserved length 3.1 cm. 7) Iron belt mount with two rivets, length 3.7 cm, width approx. 1 cm. 8) Copper-alloy brooch spring, length 2.9 cm. 9) Iron key, type A, length 14.2 cm. 10) Iron casket lock fitting, type 10a, length 6.3 cm, width 2.3–2.5 cm. 11) Iron casket lock spring, length 8.4 cm. 12) Clay knob, diameter approx. 1.5 cm. 13) Tall, clay biconical spindle whorl, diameter 3.1 cm, height 2.6 cm. 14) Copper-alloy rivet with semi-circular head, length 1 cm. 15) Lumps of copper alloy. 16) Cremated human bones. 17) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus*). 2) Sex: undetermined; age: child (*infans*).

Archaeozoological analysis: 1) Two bird bone fragments. 2) One pig bone fragment. 3) Two fragments of unidentified animal bones.

Grave 74 (Pl. XLIV)

[Feature 93]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, black in colour. Several medium-sized stones were located at the top level of the feature. In profile, the feature was in the shape of a deep basin, approx. 42 cm thick, black in colour. Several vessels, deposited whole or in fragments, were found at the bottom of the feature.

Contents: 1) Large vase-like vessel with two handles and slightly pronounced base, type A1.a. Decorated on the upper part of the body with two narrow ornamental bands of engraved horizontal lines filled with oblique incisions. Light brown and brick red colour, fine-grained temper, rim diameter approx. 21 cm, base diameter 10 cm, height 22.5 cm. 2) Partially burnt bowl-like vessel, type B.2. Rim separated from the body by an engraved line. Light brown and brick red colour, fine-grained temper, rim diameter 20 cm, base diameter 7 cm, height 11.5 cm. 3) Mug, type D.3.2. Brick red-ashen colour, fine- and medium-grained temper, rim diame-

ter 10 cm, base diameter 5 cm, height 8.5 cm. 4) Miniature bowl-like vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and ashen colour, fine-grained temper, rim diameter 8.5 cm, base diameter 3 cm, height 5 cm. 5) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus*).

Grave 75 (Pl. XLI)

[Feature 94]

Description: In plan, the feature was round in shape, approx. 37 cm in diameter, brown in colour. In profile, the feature was basin-shaped, approx. 20 cm thick, brown in colour. There was a burnt vessel at the bottom of the feature.

Contents: 1) Partially burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper, rim diameter 15.5 cm, base diameter 7 cm, height 10 cm. 2) Heavily burnt bowl-like vessel, type D.2. Brown and dark brown colour, fine-grained temper, base diameter 6 cm, height 9.5 cm, other dimensions impossible to determine. 3) Twenty nondescript potsherds from various vessels, including one modern fragment. 4) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, more than 1 year old (*infans I*).

Grave 76 (Pl. XXXVIII)

[Feature 95]

Description: In plan, the feature was oval in shape, approx. 70–62 cm in size, black and brown-black in colour. In profile, the feature was in the shape of a deep basin, 50 cm thick, black in colour. In the bottom part of the fill, there was a concentration of broken pottery.

Contents: 1) Partially burnt round-profiled bowl, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter approx. 23 cm, base diameter 11 cm, height 13.5 cm. 2) Lower part of a burnt vessel, type impossible to determine. Ashen colour, fine-grained tem-

per, base diameter 7 cm, preserved height 9 cm. 3) Approx. two hundred partially burnt, nondescript potsherds. 4) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 35 years old (*maturus*).

Grave 77 (Pl. XLV)

[Feature 99a]

Description: The feature was indiscernible in plan. In profile, the feature was basin-shaped, approx. 20 cm thick, brown at the top and brown-black at the bottom. Potsherds were found at the bottom of the pit.

Contents: 1) Fragmentarily preserved bowl-like vessel with sharply profiled body, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter 20 cm, base diameter 6.5 cm, height 12.5 cm. 2) Seven nondescript fragments of ancient pottery. Brick red and light brown colour, fine- and medium-grained temper. 3) Cremated human bones.

Anthropological analysis: 1) Sex: female(?); age: adult (*adultus-maturus*).

Grave 78 (Pl. XLVI)

[Feature 100]

Description: In plan, the feature was oval in shape, 3.2x1.3 m in size, dark brown in colour. The feature was oriented along the N-S line. In the northern part of the feature, there was a large boulder placed on a pavement of smaller stones. The fill of the feature contained five large stones arranged along the N-S line. Below the stones, in the northern part of the feature, there was a basin-shaped pit. Fragments of cremated human bones were found between the stones and in the pit in the northern part of the feature.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 79 (Pl. XLVII)

[Feature 101]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown-black in colour. In profile, the feature was in the shape of a deep basin, approx. 40 cm thick, brown-

black in colour. One concentration of pottery was located at the top level and another one at the bottom of the fill. Under one of them, at the bottom of the feature, there was also a cluster of cremated bones.

Contents: 1) Partially burnt bowl-like vessel, type A.2. Brown colour, fine-grained temper, rim diameter 18.5 cm, base diameter approx. 9 cm, height 11.5 cm. 2) Partially burnt small vase-like vessel, type B.4. Light brown and brown colour, fine-grained temper, rim diameter 10 cm, base diameter 5.5 cm, height 10 cm. 3) Partially burnt miniature bowl-like vessel, type B.7-8. Brown colour, fine-grained temper, rim diameter approx. 8 cm, base diameter 4 cm, height 6 cm. 4) Partially burnt miniature bowl, type D.2. Brown colour, fine-grained temper, rim diameter approx. 6 cm, base diameter 2.5 cm, height 4 cm. 5) Base sherd. Light brown colour, fine-grained temper, diameter approx. 6 cm, pres. height 6.5 cm. 6) Approx. one hundred and sixty fragments of heavily burnt pottery (pumice), including two bases. 7) Iron D-shaped belt buckle. Frame decorated with twelve transversal incisions, originally inlaid with brass wire, type D1, length 2.7 cm, width 3.6 cm. 8) Lump of copper alloy. 9) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 80 (Pl. XLVIII)

[Feature 102]

Description: In plan, the feature was round in shape, approx. 36 cm in diameter, brown in colour. In profile, the feature was basin-shaped, approx. 20 cm thick, brown in colour. At the top level of the feature, there was a bowl positioned on its rim and, below it, a large concentration of cremated bones extending all the way to the bottom of the feature.

Contents: 1) Sharply profiled biconical vase, type A.1.2. Light brown colour, fine-grained temper, rim diameter 19 cm, base diameter approx. 8 cm, height 14 cm. 2) Miniature bowl with concave base, type E.1.1. Decorated on the maximum body diameter with an ornament of depressions, above it—an engraved horizontal line, below it—engraved vertical lines extending to the base. Light brown colour, fine-grained temper, rim diameter 8 cm, base diameter 2 cm, height 6 cm. 3) Base of a heavily burnt vessel. Brick red

colour, fine-grained temper, base diameter 7 cm, preserved height 6 cm. 4) Approx. one hundred and twenty fragments of heavily burnt pottery (pumice). 5) Iron belt buckle, type D1, length 3.3 cm, width 4 cm. 6) Iron casket key, type A, length 15.7 cm. 7) Three iron casket fittings, dimensions 2.7×1.2 cm, 2.7×1.3 cm, 4.2×1.5 cm. 8) Coiled iron wire, finger-ring? diameter 2.1 cm. 9) Fragments of an antler needle, made probably from deer's or roe deer's antler, preserved length 8.7 cm. 10) Burnt clay spindle whorl, dimensions 4.5×5 cm. 11) Burnt clay biconical spindle whorl of very large size, diameter 6.5 cm. 12) Fragments of an object made of copper alloy. 13) Cremated human bones. 14) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus*).

Grave 81 (Pl. XLIV)

[Feature 103]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown in colour. In profile, the feature was basin-shaped, 30 cm thick, brown in colour at the top and black in the middle and at the bottom. In the bottom part of the fill, there was a large concentration of cremated bones and broken pottery.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel, type B.2. Brick red colour, fine-grained temper, base diameter 8 cm, height 10 cm, other dimensions impossible to determine. 2) Rim sherd decorated with an engraved horizontal line. Brown colour, fine-grained temper. 3) Iron belt buckle, frame quadrangular in cross-section, type D1. Length 3 cm, width 4.4 cm. 4) Fragments of a melted copper-alloy bracelet, preserved dimensions: 5×0.6 cm, 3.3×0.6 cm. 5) Iron rod, preserved length 3.5 cm. 6) Iron fragment. 7) Cremated human bones. 8) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) One bird bone fragment.

Grave 82 (Pl. XLVII)

[Feature 104]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, brown and brown-black in colour. In profile, the feature was

basin-shaped, approx. 25 cm thick, brown and brown-black in colour. An urn was located in the central part of the pit.

Contents: 1) Egg-shaped vessel, type D.1. Coarsely wiped lower part of the body, rim and base smoothed. Light brown colour, fine- and medium-grained temper, rim diameter 21 cm, base diam. 13 cm, height 17.5 cm. 2) Approx. thirty small ancient potsherds from one vessel. Light beige colour, fine-grained temper, coarsely wiped external surface. 3) Cremated human bones. 4) Burnt animal bones.

Anthropological analysis: 1) Sex: male (?); age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) One bird bone. 2) One cattle bone fragment.

Grave 83 (Pl. XLIX)

[Feature 105]

Description: In plan, the feature was round in shape, approx. 70–65 cm in diameter, brown in colour. In profile, the feature was in the shape of a deep basin, 52 cm thick, brown in colour at the top and black with brown-black discolorations in the middle and at the bottom. There were several stones at the top level of the feature.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: male(?); age: adult (*maturus*).

Grave 84 (Pl. XLIX)

[Feature 106]

Description: Imperceptible feature outline. Its borders were determined by a concentration of cremated bones dug into the virgin sand. In plan, the feature was oval in shape, 35×28 cm in size, light brown in colour. In profile, the feature was basin-shaped, approx. 10 cm thick, light brown in colour.

Contents: 1) Iron belt buckle, frame and pin quadrangular in cross-section, type C13, diameter approx. 2.5 cm. 2) Fragmentarily preserved antler pin, length 7 cm. 3) Cremated human bones. 4) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: child, approx. 6–12 years old (*infans II*).

Archaeozoological analysis: 1) Ten bird bone fragments.

Grave 85 (Pl. XLIX–L)

[Feature 107]

Description: In plan, the feature was round in shape, 50 cm in diameter, brown in colour. In profile, the feature was in the shape of a deep basin, approx. 50 cm thick, brown in colour at the top and black at the bottom. Whole vessels and fragments of broken pottery were found in the top part of the feature. One of the vessels was positioned on its rim (no.1).

Contents: 1) S-profiled vase-like vessel, type B.5. Dark brown and black colour, fine- and medium-grained temper, rim diameter 18.5 cm, base diameter 10 cm, height 20 cm. 2) Partially burnt bowl-like vessel of semi-round profile, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper, rim diameter 22 cm, base diameter 9 cm, height 16 cm. 3) Vase-like vessel with one handle, type A.1.a. Rim accentuated by an engraved horizontal line, slightly constricted handle. Light brown and brick red colour, fine-grained temper, rim diameter 18.5 cm, base diameter 8.5 cm, height 15 cm. 4) Fragmentarily preserved bowl-like vessel, type B.2. Light brown and brick red colour, fine-grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 12 cm. 5) Fragmentarily preserved, lightly burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the maximum body circumference with a depressed ornament. Light brown and brown colour, fine-grained temper, rim diameter 18 cm, base diameter 9 cm, height 11 cm. 6) Fragmentarily preserved large mug with a broken-off handle and intentionally knocked-out hole, type D.3.2. Light brown and brown colour, fine-grained temper, rim diameter approx. 17 cm, base diameter 9 cm, height 14.5 cm. 7) Mug, type D.3.1. Light brown and brick red colour, fine-grained temper, rim diameter 12 cm, base diameter 6 cm, height 9 cm. 8) Fragmentarily preserved miniature bowl-like vessel, type B.7–8. Decorated with an engraved line under the rim. Light brown colour, fine-grained temper, rim diameter approx. 8.5 cm, base diameter 4 cm, height 6 cm. 9) Miniature bowl, deformed by fire, type D.2. Light brown and ashen colour, fine-grained temper, base diameter 5.5 cm, height 4 cm, other

dimensions impossible to determine. 10) Sharp-profiled miniature bowl, type A.3. Smooth, burnished surface. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and black colour, fine-grained temper, rim diameter 9 cm, base diameter 4.5 cm, height 6.5 cm. 11) Sixteen small sherds from a miniature vessel, brick red colour, fine-grained temper. 12) Iron belt buckle of round shape, frame quadrangular in cross-section, type C13, diameter 3–3.2 cm. 13) Iron belt buckle, type D1, length 4.1 cm, width approx. 5 cm. 14) Small fragment of an object made of copper alloy. 15) Cremated human bones. 16) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus/maturus*).

Archaeozoological analysis: 1) One bird bone fragment. 2) One sheep-goat bone fragment. 3) One pig bone fragment. 4) Four deer bone fragments.

Grave 86 (Pl. LI)

[Feature 108]

Description: The top level of the feature was damaged by deep ploughing. In plan, the feature was round in shape, approx. 30 cm in diameter, light brown in colour. In profile, the feature was barely discernible, approx. 12 cm thick, light brown in colour. The grave pit was not much larger than the vessel placed inside it.

Contents: 1) Lower part of a poorly fired vessel with defined base. Black colour, fine-grained temper, base diameter 8.5 cm, preserved height 10 cm. 2) Fragments of a melted copper-alloy brooch of group V, preserved dimensions: length 2.1–2.6 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Grave 87 (Pl. LII)

[Feature 109]

Description: The feature was poorly discernible in plan, round in shape, approx. 40 cm in diameter, light brown in colour. In profile, the outline of the pit was limited to the vessel placed inside it, slightly expanding in the top part, approx. 20 cm thick, light brown in colour.

Contents: 1) Egg-shaped vessel with well-defi-

ned base, type D.1. Coarsely wiped body, rim and base smoothed. Light brown colour, fine-grained temper, rim diameter 20 cm, base diameter 12.5 cm, height 22 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult (*adultus–maturus*).

Grave 88 (Pl. LI)

[Feature 110]

Description: Severely damaged top level of the feature. Barely discernible outline. In plan, the feature was round in shape, approx. 14 cm in diameter, brown in colour. In profile, its border was determined by a cluster of cremated bones, 8 cm thick, light brown in colour.

Contents: 1) Four burnt, nondescript fragments of ancient pottery. Brown colour, fine-grained temper. 2) Small fragment of a copper-alloy object, brooch catchplate? 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Grave 89 (Pl. LII)

[Feature 111]

Description: In plan, the feature was oval in shape, 70x50 cm in size, black in colour, with brown discolourations near the edges. In profile, the feature was basin-shaped, approx. 24 cm thick, black in colour, with brown discolourations. Potsherds were found in the top and bottom part of the fill.

Contents: 1) Partially burnt bowl-like vessel, type D.2. Brick red and ashen colour, fine-grained temper, rim diameter 20 cm, base diameter 7.5 cm, height 12 cm. 2) Fragmentarily preserved egg-shaped vessel, type D.1. Roughened lower part of the vessel, smoothed rim. Light brown and brown colour, fine-grained temper, rim diameter approx. 20 cm, base diameter 13 cm, height approx. 22 cm. 3) Sixty fragments of heavily burnt pottery (pumice). 4) Corroded iron handle with a loop, length 6.2 cm. 5) Cremated human bones. 6) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus–maturus*).

Archaeozoological analysis: 1) One cattle bone fragment. 2) One horse bone fragment.

Grave 90 (Pl. LI)

[Feature 112]

Description: In plan, the feature was oval in shape, 76x62 cm in size, black in colour with brown discolourations near the edges. In profile, the feature was in the shape of a deep basin, approx. 30–35 cm thick, black in colour, with brown discolourations near the edges. Whole vessels and fragments of broken pottery were found in the bottom part of the fill.

Contents: 1) Completely preserved, partially burnt, gently profiled bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brown colour, fine-grained temper, rim diameter 20 cm, base diameter 7.5 cm, height 11.5 cm. 2) Fragmentarily preserved, partially burnt bowl with slightly everted rim, sharply profiled body and well-defined base, type B.6. Rim separated from the body by an engraved line; decorated on the maximum body circumference with an ornament of engraved oblique dashed lines enclosed at the top and bottom by engraved horizontal continuous lines. Brick red-brown colour, fine-grained temper, base diameter 10 cm, other dimensions impossible to determine. 3) Completely preserved miniature bowl, type B.7–8. Upper part brick red in colour, lower part black, fine-grained temper, rim diameter 6 cm, body diameter 7 cm, base diameter 3 cm, height 4 cm. 4) Base sherd of a partially burnt small vessel. Brown-ashen colour, fine-grained temper, base diameter 4 cm, preserved height 5 cm. 5) Twenty-seven fragments of heavily burnt pottery (pumice). 6) Repaired copper-alloy eye brooch of the Prussian series, type A.60, length 6.6 cm, width 2.5 cm. 7) Clay biconical spindle whorl, diameter 4.2 cm. 8) Small fragments of an object made of copper alloy. 9) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult (*adultus–maturus*).

Grave 91 (Pl. LIII)

[Feature 113]

Description: In plan, the feature was round in shape, approx. 55 cm in diameter, brown in colour. In profile, the feature was semi-circular in shape, approx. 25 cm thick, black in colour in the central part and brown near the edges. The fe-

ature contained a concentration of heavily burnt pottery; a large cluster of cremated bones was located in the bottom part of the pit.

Contents: 1) Approx. fifty small sherds of the upper part of a pot-like vessel with everted rim and two strap handles, type A.5. Rim separated from the body by an engraved line, another engraved line placed above the maximum body diameter. Dark brown and, in places, glossy black colour, fine-grained temper, rim diameter 13 cm, preserved height 5 cm. 2) Partially burnt bowl-like vessel, type A.2. One carelessly engraved line slightly above the maximum body diameter, another engraved line at the junction between the body and rim. Brown-ashen colour, fine-grained temper, base diameter 8 cm, height approx. 13 cm, other dimensions impossible to determine. 3) Approx. forty fragments of heavily burnt pottery (pumice). 4) Fragmentarily preserved copper-alloy strap-end, length 5.5 cm. 5) Fragment of an object made of copper alloy. 6) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult, more than 25 years old (*adultus*).

Grave 92 (Pl. LIV)

[Feature 114]

Description: In plan, the feature was round in shape, approx. 65 cm in diameter, dark brown in colour in the central part, with brown discolourations near the edges. In profile, the feature was basin-shaped, approx. 30 cm thick, dark brown in colour, with brown discolourations near the edges. In the bottom part of the feature, there was a concentration of burnt potsherds and, under it, cremated bones.

Contents: 1) Fragmentarily preserved, well-fired pot-like vessel, originally probably with two handles, with distinctly globular profile at the maximum body diameter, type A.5. Decorated on the lower part of the body with a meander ornament filled with engraved oblique lines. Glossy black colour, fine-grained temper, rim diameter 13 cm, base diameter 8 cm, height 14 cm. 2) Completely preserved mug with a large, applied handle, type D.3.2. Light brown and brown colour, fine- and medium-grained temper, rim diameter 11.5 cm, body diameter 11.5 cm, base diam. 5 cm, height 8 cm. 3) Heavily burnt bowl-like vessel, type impossible to determine. Brown colour, fine-grained temper, shape and dimensions impossible to determine. 4) Approx. ninety

fragments, including one base sherd, of heavily burnt pottery (pumice). 5) Eye brooch of the Prussian series, made of very thick copper-alloy sheet, type A.60, length 7.3 cm. 6) Fragments of a copper-alloy eye brooch of the Prussian series, type impossible to determine, dimensions of the preserved fragments: length 3.3 cm and 1.3 cm. 7) Bronze strap-end, group I, type 1 variant 4, length 5.5 cm. 8) Iron ring, diameter 1.4 cm. 9) Fragment of a copper-alloy needle, length 3.6 cm. 10) Iron fitting, dimensions 2.6×1.3 cm. 11) Clay biconical spindle whorl, diameter 3.7 cm. 12) Clay biconical spindle whorl, diameter 4.6 cm. 13) Cremated human bones. 14) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adolescent, approx. 16–20 years old (*iuvenis/adultus*).

Archaeozoological analysis: 1) Fifteen bird bones. 2) Five cattle bone fragments.

Grave 93 (Pl. LV)

[Feature 115]

Description: The top level of the feature was barely discernible. In plan, the feature was oval in shape, approx. 22×15 cm in size, light brown in colour. In profile, the feature was basin-shaped, 10 cm thick, light brown in colour. Grave goods consisted of a sole mug, found in the top part of the feature.

Contents: 1) Fragmentarily preserved, poorly fired, partially burnt mug with an applied handle, type D.3.1. Brick red-brown colour, fine-grained temper, rim diameter 12 cm, base diameter 6.5 cm, height 9 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child (*infans?*).

Grave 94 (Pl. LV)

[Feature 116]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown and, in the southern part, black in colour. In the central part, the top level of the feature was damaged by deep ploughing. In profile, the feature was basin-shaped, 26 cm thick, black in colour in the central part, with brown discolourations near the edges. There was a large concentration of broken pottery at the top and in the central part of the fill. A large cluster of cremated bones was located at the bottom of the feature.

Contents: 1) Fragmentarily preserved pot-like vessel with marked base and two handles, type A.5. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter 20 cm, base diameter 10.5 cm, height 14 cm. 2) Bowl-like vessel with undercut lower part of the body, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light beige colour, fine-grained temper, rim diameter 10.5 cm, base diameter 11 cm, height 8.5 cm. 3) Fragmentarily preserved, partially burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter 18 cm, base diameter 7 cm, height 13 cm. 4) Preserved upper part of a partially burnt vase-like vessel, type A.1.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and ashen colour, fine-grained temper, rim diameter 13 cm, preserved height 7 cm. 5) Two fragments of the partially burnt base part of a vessel. Brick red-light brown colour, fine-grained temper, base diameter 7 cm, preserved height 5 cm. 6) Fragmentarily preserved, partially burnt miniature vessel, type A.3. Decorated on the upper part of the body with an ornament of two engraved horizontal lines. Light brown and ashen colour, fine-grained temper, rim diameter 5 cm, body diameter 6.5 cm, base diameter 3.5 cm, height 6 cm. 7) Eight small sherds from a vessel with glossy black surface and fine-grained temper. 8) Head of a copper-alloy trumpet brooch, type A.75, preserved length 2.2 cm. 9) Cremated human bones. 10) Burnt animal bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) Three pig bone fragments.

Grave 95 (Pl. LVI)

[Feature 117]

Description: In plan, the feature was round in shape, approx. 55 cm in diameter, black in colour, with brown-black discolourations near the edges. In profile, the feature was basin-shaped, approx. 28 cm thick, black in colour, with brown-

black discolourations near the edges. The fill of the feature contained five whole vessels and fragments of broken pottery. A concentration of cremated bones was located in the bottom part of the feature.

Contents: 1) Globular pot with two handles and undercut lower part of the body, type A.5. Rim separated from the body by an engraved line, another line slightly lower, at the level of the handle. Below it, a wide band of elaborate ornament composed of triangles formed of depressions, separated from one another by six engraved oblique lines. Burnished surface. Dark brown colour, fine-grained temper, rim diameter 18.5 cm, base diameter 9.5 cm, height 22 cm. 2) Partially burnt bowl, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter approx. 18 cm, base diameter 8 cm, height 10 cm. 3) Fragmentarily preserved, partially burnt, slender mug with a handle affixed on a plug, type D.3.2. Brick red-brown colour, fine-grained temper, rim diameter 12 cm, base diameter 6.5 cm, height 12 cm. 4) Carefully made miniature bowl-like vessel with concave base, type E.1.2. Rim accentuated by a delicate engraved line. Decorated on the maximum body circumference with oblique incisions under an engraved horizontal line. Lower part of the body adorned with an ornament of carefully made curved grooves that were probably meant to imitate a glass vessel. Light brown and brick red colour, fine-grained temper, rim diameter 9.5 cm, concave base diameter 3 cm, height 6 cm. 5) Miniature biconical vessel, type B.7-8. Decorated on the upper part of the body with an ornament of few depressions arranged in a horizontal line and on the maximum body circumference with an ornament composed of triple depressions forming the shape of a triangle. The entire surface of the base filled with depressions. Ashen colour, fine-grained temper, rim diameter 4 cm, base diameter 3 cm, height 5 cm. 6) Iron D-shaped belt buckle with profiled pin, type D2, length 3.2 cm, width 3.9 cm. 7) Completely burnt copper-alloy strap-end, type 1, variant 6, preserved length 4.5 cm. 8) Partially burnt copper-alloy bracelet of oval and round cross-section, decorated with a double ornament of punched teeth, preserved length 7.7 cm, width 0.7 cm. 9) Fragment of a copper-alloy bracelet of rectangular cross-section, preserved length 3.7 cm, width 0.6 cm. 10) Frag-

ment of a copper–alloy pin with profiled head, group II/IV, preserved length 6.1 cm. 11) Iron key, type A, length 12.5 cm. 12) Iron casket lock spring, length approx. 8 cm. 13) Iron casket lock fitting, type 10a, length 8.4 cm, width 2.8–3.3 cm. 14) Partially burnt clay biconical spindle whorl, diameter 4.5 cm. 15) Fragments of a heavily melted copper–alloy eye brooch of the Prussian series. 16) Fragments of melted objects made of copper alloy. 17) Numerous fragments of melted glass beads. 18) Cremated human bones. 19) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) Six bird bone fragments.

Grave 96 (Pl. LIII)

[Feature 120]

Description: In plan, the feature was round in shape, approx. 90 cm in diameter, brown in colour. In profile, the feature was basin–shaped, approx. 34 cm thick, brown in colour. There were scarce fragments of cremated bones in the fill and a large concentration of burnt pottery at the bottom of the feature.

Contents: 1) Fragmentarily preserved, heavily burnt mug, type D.3.1. Brown colour, fine–grained temper, dimensions impossible to determine. 2) Heavily burnt miniature bowl–like vessel, type B.7–8. Celadon–ashen colour, fine–grained temper, base diameter approx. 4 cm, height approx. 6 cm, other dimensions impossible to determine. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: undetermined.

Grave 97 (Pl. LVII)

[Feature 124]

Description: In plan, the feature was oval in shape, approx. 70x60 cm in size, dark brown in colour. In profile, the feature was basin–shaped, approx. 35 cm thick, brown in colour. In the fill of the feature, there were numerous fragments of broken pottery and, at the bottom, a large concentration of cremated bones.

Contents: 1) Fragmentarily preserved miniature bowl–like vessel with slightly pronounced rim, type B.7–8. Brick red–ashen colour, fine–grained temper, rim diameter approx. 9.5 cm, base diameter 2.5 cm, height 8 cm. 2) Approx. eigh-

ty fragments of heavily burnt pottery (pumice), including rim sherds. Brown–brick red colour, fine–grained temper. 3) Fragment of the head of an eye brooch made of copper alloy, type A.52?, preserved length 2.4 cm. 4) Clay biconical spindle whorl, diameter 3.7 cm. 5) Cremated human bones. 6) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult, more than 25 years old (*adultus*).

Archaeozoological analysis: 1) One pig bone fragment.

Grave 98 (Pl. LVII)

[Feature 125]

Description: In plan, the feature was round in shape, approx. 65 cm in diameter, brown in colour. In profile, the feature was in the shape of a deep basin, approx. 42 cm thick, brown in colour at the top, black in the middle and at the bottom.

Contents: 1) Bowl, heavily deformed by fire, type D.1. Light brown and brown colour, fine–grained temper, base diameter 11 cm, height approx. 15 cm. Other dimensions impossible to determine. 2) Vase–like vessel, deformed by fire, type A.1.3. Decorated on the maximum body circumference with an engraved ornament of short horizontal lines between two horizontal continuous lines. Brick red–ashen colour, fine–grained temper, rim diameter approx. 17 cm, base diameter 7.5 cm, height 14 cm. 3) Bowl with defined base, type A.1.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown–ashen colour, fine–grained temper, rim diameter 14 cm, base diameter 8 cm, height 11 cm. 4) Small bowl, rim part not preserved, type B.5. Decorated on the upper part of the body with a chevron ornament enclosed at the top and bottom by two engraved horizontal lines. Light brown and brown colour, fine–grained temper, diameter of the broken rim 12 cm, base diameter 5.5 cm, height 9 cm. 5) Miniature bowl with deep concave base, type E.2.1. Brown colour, fine–grained temper, rim diameter 9 cm, concave base diameter 4.5 cm, height 4.5 cm. 6) Approx. twenty–five sherds from a burnt bowl. Brown colour, fine–grained temper, dimensions impossible to determine. 7) Cremated human bones. 8) Burnt animal bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 20 years old (*iuvenis/adultus*).

Archaeozoological analysis: 1) Six pig bone fragments. 2) Three fragments of unidentified animal bones.

Grave 99 (Pl. LVIII)

[Feature 126]

Description: In plan, the feature was round in shape, approx. 65 cm in diameter, black in colour in the central part and brown near the edges. In profile, the feature was basin-shaped, approx. 40 cm thick, black in colour in the central part and brown at the top. At the bottom, the feature was probably stretched by a rootstock.

Contents: 1) Miniature bowl with lightly marked neck, type A.3. Brick red colour, fine-grained temper, rim diameter 10 cm, base diameter 3.5 cm, height 6.5 cm. 2) Fragmentarily preserved, partially burnt bowl, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, fine-grained temper, rim diameter 24 cm, base diameter 8 cm, height approx. 11 cm. 3) Base sherd of a heavily burnt vessel. Light brown colour, fine-grained temper, preserved height 5 cm. 4) Approx. one hundred fragments of heavily burnt pottery (pumice). 5) Fragments of an ornamented antler handle. 6) Fragments of an antler needle, length 7 cm. 7) Fragments of a melted copper-alloy brooch spring, preserved dimensions: length 1.3 cm. 8) Fragment of a copper-alloy rod, brooch pin(?). Length 1.6 cm. 9) Cremated human bones. 10) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus-maturus*).

Archaeozoological analysis: 1) One fragment of sheep-goat bone.

Grave 100 (Pl. LVIII)

[Feature 130]

Description: In plan, the feature was round in shape, approx. 52 cm in diameter, brown in colour. In profile, the feature was basin-shaped, approx. 26 cm thick, brown at the top and black at the bottom. The fill of the feature contained potsherds and, in the bottom part, a concentration of cremated bones.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel with distinct, bulging body and strongly everted rim, type A.2. Rim separated from the body by an engraved line, another

engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter 21 cm, base diameter 8 cm, height approx. 12 cm. 2) Bowl with a gentle S-shaped profile, heavily deformed by fire, type B.4. Brown colour, fine-grained temper, dimensions impossible to determine. 3) Iron spindle needle, preserved length 5.9 cm. 4) Fragment of a copper-alloy needle(?), length 5.6 cm. 5) Partially burnt clay biconical spindle whorl, diameter 4.7 cm. 6) Fragment of an object made of copper alloy, probably an eye brooch fragment(?). 7) Cremated human bones. 8) Burnt animal bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (early *maturus*).

Archaeozoological analysis: 1) One cattle bone fragment. 2) One sheep-goat bone fragment. 3) Ten bird bone fragments.

Grave 101 (Pl. LIX)

[Feature 132]

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown and black in colour. In profile, the feature was basin-shaped, approx. 20 cm thick, black in colour in the central part and brown near the edges. A burnt vessel and sherds from other vessels were found at the bottom of the black layer; below them, there was a cluster of cremated bones.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel, type B.5. Decorated on the upper part of the body with an engraved horizontal line. Brick red-brown colour, fine-grained temper, rim diameter approx. 21 cm, base diameter 7 cm, height approx. 12 cm. 2) Partially burnt bowl with broken-off rim, type A.2. Decorated on the upper part of the body with an engraved oblique "ladder" pattern enclosed by two engraved horizontal lines. Brown colour, fine-grained temper, diameter of the broken-off rim 17 cm, base diameter 8 cm, preserved height 8 cm. 3) Fragmentarily preserved vase-like vessel, type B.5. Light brown colour, fine-grained temper, base diameter 7 cm, height approx. 11 cm, other dimensions impossible to determine. 4) Heavily deformed miniature bowl, type B.7-8. Brown colour, fine-grained temper, base diameter 4 cm, height approx. 7 cm, other dimensions impossible to determine. 5) Approx. forty fragments of heavily burnt pottery (pumice). 6) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 6 years old (*infans I*).

Grave 102 (Pl. LX)

[Feature 133]

Description: In plan, the feature was kidney-shaped, 90x40 cm in size, black in colour. In profile, the feature was in the shape of a wide, flat basin, approx. 22 cm thick, black in colour. The fill of the feature contained two clusters of numerous potsherds. A concentration of cremated bones was located at the bottom of the feature.

Contents: 1) Fragmentarily preserved bowl, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red colour, fine-grained temper, rim diameter approx. 21 cm, base diameter approx. 8 cm, height 13 cm. 2) Partially burnt vase-like vessel with well-defined base, type B.4. Body decorated on its maximum circumference with a meander ornament filled with depressions. Light brown colour, fine-grained temper, base diameter 9 cm, other dimensions impossible to determine. 3) Heavily burnt high-footed cup, type E.1.5. Decorated on the upper part of the body with two engraved horizontal lines. Brown colour, fine-grained temper, base diameter 5 cm, height approx. 8 cm. 4) Heavily corroded copper-alloy eye brooch of the Prussian series, type impossible to determine, length 7 cm. 5) Copper-alloy brooch pin, preserved length 5.6 cm. 6) Iron needle, preserved length 4.1 cm. 7) Burnt biconical spindle whorl, diameter 4.4 cm. 8) Cremated human bones. 9) Burnt animal bones.

Anthropological analysis: 1) Sex: undetermined; age: adult (*adultus*).

Archaeozoological analysis: 1) Three fragments of unidentified animal bones.

Grave 103 (Pl. LXI)

[Feature 136]

Description: The outline of the feature was barely perceptible at the top level. The outline of the feature was determined by the outline of a vessel sunk in the sand. In plan, the feature was round in shape, approx. 30 cm in diameter, light brown in colour. In profile, the border of the feature was determined by the vessel sunk in the sand, approx. 17 cm thick, light brown in colour.

Contents: 1) Fragmentarily preserved egg-shaped urn with slightly pronounced base, type D.1. Rim and base smoothed, the remaining surface roughened by wiping: horizontally on the upper part of the body, vertically on the lower part. Light brown in colour in the lower part, brown in the remaining part and on the inside, fine-grained temper, rim diameter 24 cm, base diameter 13.5 cm, height 21.5 cm. 2) Copper-alloy trumpet brooch of the Mazovian variant, type 5/5a, length 4 cm, width 2.6 cm. 3) Iron casket lock fitting, type 10, length 12.3 cm, width 3–3.2 cm. 4) Iron casket lock spring, length 8.7 cm. 5) Clay oval spindle whorl, diameter 3 cm. 6) Clay biconical spindle whorl, diameter 2.8 cm. 7) Clay biconical spindle whorl, diameter 4.2 cm. 8) Clay biconical spindle whorl, diameter 3.9 cm. 9) Clay biconical spindle whorl, diameter 4.1 cm. 10) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 25 years old (*adultus*).

Grave 104 (Pl. LXII)

[Feature 138]

Description: In plan, the feature was oval in shape, approx. 40x30 cm in size, brown-black in colour. In profile, the feature was basin-shaped, approx. 15 cm thick, brown-black in colour. A fragmentarily preserved mug was found at the top level of the feature.

Contents: 1) Almost completely preserved mug with a handle affixed on a plug, type D.3.2. Brick red-ashen colour, fine-grained temper, rim diameter 12 cm, body diameter 12 cm, base diameter 6 cm, height 8 cm.

Anthropological analysis: 1) Bone material not present.

Grave 105 (Pl. LXIII)

[Feature 139]

Description: In plan, the feature was round in shape, approx. 60 cm in diameter, brown in colour. In profile, the feature was funnel-shaped, approx. 33 cm thick, brown in colour at the top and brown-black in the central part. The fill of the feature contained a whole vessel and potsherds. In the lower part of the brown-black layer and in the light brown layer, there was a large cluster of cremated bones.

Contents: 1) Fragmentarily preserved, partially burnt miniature bowl-like vessel with concave

base, type E.3. Decorated on the upper part of the vessel with a carelessly made ornament of depressions and engraved oblique lines. Light brown and ashen colour, fine-grained temper, rim diameter 8.5 cm, base diameter 3 cm, height 6 cm. 2) Fragmentarily preserved, heavily burnt vessel, type impossible to determine. Brown colour, fine-grained temper, rim diameter approx. 12 cm, preserved height 6 cm. 3) Completely preserved high-footed cup with concave base, type E.5. Decorated on the upper part of the body with two engraved horizontal lines. Brick red and ashen colour, fine-grained temper, rim diameter 9.5 cm, base diameter 4 cm, height 5 cm. 4) Three rim sherds. Upper part of the body decorated with two engraved horizontal lines. Light brown and ashen colour, fine-grained temper. 5) Approx. thirty burnt fragments of ancient pottery. 6) S-shaped brooch made of copper alloy, type A.109–110, length 3.7 cm. 7) Fragmentarily preserved antler needle, preserved length 7.4 cm. 8) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*maturus*).

Grave 106 (Pl. LXIII)

[Feature 140]

Description: In plan, the feature was oval in shape, 55x45 cm in size, brown in colour. Disturbed by ploughing in the central part. In profile, the feature was basin-shaped, approx. 20 cm thick, brown in colour. In the fill, there were six whole vessels, including two heavily burnt, positioned on their rims. The upside-down vessels covered another vessel with glossy black surfaces (no. 4), located below them. Next to them, two miniature vessels were placed.

Contents: 1) Partially burnt miniature bowl-like vessel, type B.7–8. Brick red–brown colour, fine-grained temper, rim diameter approx. 11 cm, base diameter 4 cm, height 6.5 cm. 2) Partially burnt miniature bowl-like vessel, type B.7–8. Brown–ashen colour, fine-grained temper, rim diameter 5.5 cm, base diameter 3 cm, height 4 cm. 3) Completely preserved high-footed cup with concave base and everted rim, type E.1.5. Decorated on the upper part of the body with two engraved horizontal lines. Brick red colour, fine-grained temper, rim diameter 10 cm, base diameter 5.5 cm, height 7.5 cm. 4) Tall bowl with slightly everted rim and smooth, burnished

surfaces, type B.3. Black colour, fine-grained temper, rim diameter 20.5 cm, base diameter 8.5 cm, height 14 cm. 5) Approx. fifty sherds from a heavily burnt bowl-like vessel. Decorated with one engraved horizontal line on the maximum body circumference and another one at the junction between the body and rim. Light brown and ashen colour, fine-grained temper; vessel reconstruction not possible. 6) Three rim sherds from a vessel. Brick red colour, fine-grained temper. 7) Rim sherd from a thick-walled vessel. Dark brown colour, fine-grained temper. 8) Six small sherds from a vessel. Brown colour, fine-grained temper. 9) Base sherd. Brown colour, fine-grained temper. 10) Approx. fifty fragments of heavily burnt pottery (pumice). 11) Copper–alloy brooch, type A.109–110, length 3.9 cm. 12) Brooch spring fragment. 13) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, approx. 6–12 years old (*infans II*).

Grave 107 (Pl. LIX)

[Feature 141]

Description: In plan, the feature was round in shape, approx. 70 cm in diameter, black in colour, with brown discolourations. In profile, the feature was basin-shaped, approx. 35 cm thick, black in colour, with brown discolourations. The fill of the feature contained one whole vessel and potsherds from other vessels. Cremated bones were found inside the vessel and in the pit of the grave.

Contents: 1) Heavily burnt miniature bowl with concave base, type E.1.2. One engraved line at the junction between the body and rim; below it, an ornament of dense vertical lines extending to the base. Ashen colour, fine-grained temper, dimensions impossible to determine. 2) Fragmentarily preserved, partially burnt miniature vessel with slightly everted rim, type B.7–8. Ashen colour, fine-grained temper, rim diameter 7 cm, base diameter 4 cm, height 6 cm. 3) Tall bowl-like vessel with smooth surface and tall, curved neck, type B.5. Body at the mid-height of the vessel. Dark brown and black colour, fine-grained temper, rim diameter 20 cm, base diameter 9 cm, height 14 cm. 4) Rim sherd from a partially burnt bowl-like vessel. Decorated on the upper part of the body with an engraved horizontal line. Celadon–ashen colour, fine-grained temper. 5) Rim sherd from a partially burnt bowl. Celadon–ashen colo-

ur, fine-grained temper. 6) Approx. seventy fragments of heavily burnt pottery (pumice). 7) Iron belt buckle, type D1, length 4.5 cm, width 3.5 cm. 8) Rod-shaped fire striker, type IA1c, length 8.7 cm. 9) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 35 years old (*maturus*).

Grave 108 (Pl. LXII)

[Feature 142]

Description: In plan, the feature was round in shape, approx. 30 cm in diameter, brown in colour. In profile, the feature was basin-shaped, approx. 10 cm thick, brown in colour.

Contents: 1) Approx. twenty-five heavily burnt fragments of nondescript, ancient pottery. Brown-ashen colour, fine-grained temper. 2) Cremated bones.

Anthropological analysis: 1) Sex: female; age: adult, more than 35 years old (*maturus*).

Grave 109 (Pl. LXIV)

[Feature 143]

Description: In plan, the feature was oval in shape, 40x30 cm in size, light brown in colour. In profile, the feature was basin-shaped, approx. 12 cm thick, light brown in colour, poorly distinguishable from the virgin sand. The fill of the feature contained a severely damaged urn.

Contents: 1) Fragmentarily preserved thick-walled egg-shaped vessel with coarsely wiped surface, type D.1. Light brown colour, fine- and medium-grained temper, base diameter 14 cm, preserved height 19 cm. 2) Partially burnt miniature bowl-like vessel, type D.2. Light brown colour, fine-grained temper, rim diameter 9 cm, base diameter 5.5 cm, height 7 cm. 3) Copper-alloy brooch of mixed traits of group II/IV, series 3, length 6 cm, width 3.6 cm. 4) Copper-alloy brooch of mixed traits of group II/IV, series 3, length 5.1 cm, width 3.6 cm. 5) Iron needle, length 8.8 cm. 6) Spindle needle, length 4.5 cm. 7) Burnt clay oval spindle whorl, diameter 2.5 cm. 8) Clay biconical spindle whorl, diameter 4.1 cm. 9) Clay biconical spindle whorl, diameter 4.7 cm. 10) Cremated human bones.

Anthropological analysis: 1) Sex: female (?); age: adult, more than 20 years old (*adultus*).

Grave 110 (Pl. LXII)

[Feature 145]

Description: In plan, the feature was oval in shape, approx. 60x50 cm in size, brown-black or black in colour. In profile, the feature was basin-shaped, approx. 17 cm thick, black in colour in the central part and brown-black near the edges. An upside-down miniature bowl was located in the central part of the feature.

Contents: 1) Bowl-like vessel with slightly everted rim, sharp profile and defined base, type B.5. Brick red and ashen colour, fine-grained temper, rim diameter 19.5 cm, base diameter 8.5 cm, height 14 cm. 2) Partially burnt large mug with an applied handle, type D.3.2. Brick red-brown colour, fine-grained temper, rim diameter approx. 14.5 cm, base diameter 8 cm, height 10.5 cm. 3) Fragmentarily preserved miniature bowl, type D.2. Brick red-ashen colour, fine- and medium-grained temper, rim diameter 9 cm, base diameter 6 cm, height 7 cm. 4) Miniature egg-shaped bowl, type D.2. Brick red colour, fine-grained temper, rim diameter 3.5 cm, base diameter 4 cm, height 5 cm. 5) Miniature bowl with rounded base, type E.5. Brick red-ashen colour, fine-grained temper, rim diameter 10 cm, height 4 cm. 6) Copper-alloy eye brooch of the Prussian series, type A.61, preserved length 6.6 cm, width 2.8 cm. 7) Copper-alloy eye brooch of the Prussian series, type A.60, length 6.5 cm, width 2.6 cm. 8) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, approx. 6–12 years old (*infans II*).

Grave 111 (Pl. LXV)

[Feature 146]

Description: In plan, the feature was oval in shape, approx. 65x55 cm in size, dark brown in colour. In profile, the feature was basin-shaped, 30 cm thick, dark brown in colour, brown-black at the bottom on the southern side. A vessel and cremated bones were found at the bottom of the fill.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel with gentle profile, type B.5. Brick red colour, fine-grained temper, rim diameter 18 cm, body diameter 18 cm, base diameter 9 cm, height 12 cm. 2) Completely preserved miniature bowl with rounded base, type E.5. Rim accentuated by a slight

depression. Brown–brick red colour, fine–grained temper, rim diameter 8.5 cm, height 5 cm. 3) Base sherd of a heavily burnt vessel. Light brown in colour on the outside and brick–red on the inside, fine–grained temper, base diameter 8 cm. 4) Miniature vessel with sharply profiled body and concave base, type E.3. Rim separated from the body by an engraved line, another engraved line on the maximum body circumference. An ornament in the shape of a horizontal line of depressions slightly below the maximum body diameter. Decorated on the lower part of the body with alternating ornament of engraved vertical lines, extending to the concave base, and fields filled with round depressions. Brown colour, fine–grained temper, rim diameter 6.5 cm, concave base diameter 2 cm, height 4.5 cm. 5) Partially burnt miniature biconical vessel, type E.3. Light brown and brown colour, fine–grained temper, rim diameter 9 cm, base diameter 3.5 cm, height 6 cm. 6) Approx. forty fragments of heavily burnt pottery (pumice). 7) Copper–alloy brooch, type A.103, length 2.8 cm, width 2.6 cm. 8) Iron belt buckle, type D1, length 3.9 cm, width 4.7 cm. 9) Iron belt hook, type 1, length 3.2 cm, width 6.4 cm. 10) Iron awl, length 8.6 cm. 11) Antler needle with profiled head, preserved length 12.3 cm. 12) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 25 years old (*adultus*).

Grave 112 (Pl. LXIV)

[Feature 147]

Description: In plan, the feature was irregular in shape, approx. 60x58 cm in size, black in colour. In profile, the feature was basin–shaped with a flat bottom, 25 cm thick, black in colour. In the entire fill of the feature, there were tiny fragments of heavily burnt bones, which could not be collected.

Contents: 1) Miniature copper–alloy bracelet of flat cross–section, decorated with a puncture ornament, diameter 5.5 cm. 2) Fragments of a copper–alloy brooch spring, preserved dimensions: length 1.5 cm and 1.9 cm.

Anthropological analysis: 1) Bone material not present.

Grave 113 (Pl. LXV)

[Feature 148]

Description: The top level of the feature was severely damaged by deep ploughing. In plan, the feature was irregular in shape, brown in colour. Original dimensions impossible to determine. In profile, the feature was basin–shaped, approx. 12 cm thick, brown in colour. At the top level and in the fill of the feature, there were multiple potsherds and cremated bones.

Contents: 1) Fragmentarily preserved, small bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown–brick red colour, fine–grained temper, rim diameter 14 cm, base diameter 7 cm, height 10 cm. 2) S–shaped clasp made of copper alloy, type D, length 1.7 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child (infans).

Grave 114 (Pl. LXVI)

[Feature 150ab]

Description: In plan, the feature was oval in shape, approx. 90x55 cm in size, brown in colour in the northern part and dark brown in the southern part. In profile, the feature was basin–shaped, 15 cm thick, brown in colour in the northern part and dark brown in the southern part.

Contents: 1) Fragmentarily preserved bowl–like vessel with defined base, type B.6. Brown colour, fine–grained temper, rim diameter 17 cm, base diameter 10 cm, height 14 cm. 2) Copper–alloy pin and spring fragment from an eye brooch of the Prussian series, type impossible to determine, preserved length 6.1 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: adult, more than 25 years old (*adultus*).

Grave 115 (Pl. LXVI)

[Feature 152]

Description: In plan, the feature was round in shape, approx. 45x38 cm in size, black in colour in the central part and dark brown near the edges. In profile, the feature was basin–shaped, 22 cm thick, black in colour in the central part and dark brown near the edges. At the bottom of the feature, there was a miniature vessel, positioned on the rim, and sherds from other vessels. Under the potsherds, there was a concentration of cremated bones.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel with defined neck, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown-brick-red colour, fine-grained temper, rim diameter 17.5 cm, base diameter 6 cm, height 11 cm. 2) Fragmentarily preserved, partially burnt vase-like vessel, type A.1.3. Rim separated from the body by an engraved line, two more engraved lines slightly above the maximum body diameter. Brick red, light brown and brown colour, fine-grained temper, rim diameter approx. 14 cm, base diameter 8 cm, height approx. 13 cm. 3) Completely preserved miniature vessel with spherical base, type E.1.4.b. Brick red colour, fine-grained temper, rim diameter 8.5 cm, height 5.5 cm. 4) Completely preserved miniature bowl-like vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and brown colour, fine-grained temper, rim diameter 7.5 cm, base diameter 3 cm, height 6.6 cm. 5) Approx. fifty fragments of heavily burnt pottery (pumice). 6) Shell fragment. 7) Lumps of copper alloy. 8) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: adult.

Grave 116 (Pl. LXVI)

[Feature 156]

Description: In plan, the feature was irregular in shape, approx. 60x50 cm in size, black in colour. In profile, the feature was irregular in shape, approx. 10 cm thick, black and brown-black in colour.

Contents: 1) Fragmentarily preserved, partially burnt bowl-like vessel with distinct neck, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown colour, fine-grained temper, rim diameter approx. 18 cm, preserved height 8.5 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: *adultus-maturus*.

Grave 117 (Pl. LXVI)

[Feature 542]

Description: In plan, the feature was round in shape, approx. 28 cm in diameter, light brown in

colour. In profile, the feature was basin-shaped, 8 cm thick, light brown in colour. The fill of the feature contained a small cluster of cremated bones.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child.

Grave 118 (Pl. LXVII)

[Feature 543]

Description: In plan, the feature was round in shape, 38 cm in diameter, light brown in colour. In profile, the feature was basin-shaped, 8 cm thick, light brown in colour. A concentration of cremated bones was found in the fill of the feature.

Contents: 1) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 119 (Pl. LXVII)

[Feature 544]

Description: In plan, the feature was round in shape, of 64 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, 20 cm thick, brown-black in colour. An urn (no. 1) was located in the north-western part of the feature. Next to it, in the eastern part, there was a vase-like vessel (no. 2), deposited in fragments. Moreover, the pottery cluster contained sherds from three other vessels.

Contents: 1) Base sherd of a vessel with globular body, which served as an urn. Type impossible to determine. Black colour, smooth surface, fine-grained temper, base diameter 9 cm, preserved height 8 cm. 2) Fragmentarily preserved vase-like(?) vessel, type A.1.a. Lower part heavily burnt, upper part intact. Everted rim, rounded body, one preserved handle with supports at the top and bottom, sharp break between the body and rim. Brown-ashen colour, fine-grained temper, rim diameter approx. 30 cm, base diameter 9 cm, height approx. 21 cm. 3) Fragmentarily preserved bowl-like vessel with S-shaped profile, body rounded at its max. diameter, everted rim, type B.5. Brick red colour, fine-grained temper, rim diameter 16 cm, base diameter 8 cm, height 11 cm. 4) Fragmentarily preserved miniature high-footed cup with concave base, slightly

everted rim, type E.5. Brick red and ashen colour, fine-grained temper, rim diameter 12.5 cm, base diameter 7.5 cm, height 13 cm. 5) Fragment of a mug(?), type D.3. Brown-ashen colour, fine-grained temper, rim diameter 10 cm, preserved height 6 cm. 6) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult.

Grave 120 (Pl. LXVIII)

[Feature 545]

Description: In plan, the feature was round in shape, 50 cm in diameter, brown in colour. In profile, the feature was basin-shaped, 35 cm thick, brown in colour at the top and black in the middle and at the bottom. In the bottom part of the feature, there were two vessels: a vase (no. 1) and a mug (no. 2), covered from the top by partially burnt vessels positioned on their rims (nos. 3 and 4). Moreover, vessels 1 and 2 were lined with sherds from other vessels (nos. 5, 6 and 7) and fragments of cremated bones.

Contents: 1) Completely preserved pot-like vessel with two handles, type A.5. Rim accentuated by an engraved horizontal line. Decorated on the upper part of the body with oblique incisions and double or triple depressions between two engraved horizontal lines. Black colour, smooth surface, fine-grained temper, rim diameter 18 cm, base diameter 8.5 cm, height 17 cm. 2) Bowl with one biconical handle, type A.2.a. Rim accentuated by an engraved horizontal line. Decorated on the upper part of the body with oblique incisions and round depressions between engraved lines. Concave base. Brown-ashen colour, rim diameter 13 cm, base diameter 6 cm, height 10.5 cm. 3) Vase-like vessel with slightly pronounced base, slightly deformed by fire, type A.1. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter; below them, on the maximum body circumference, an ornament of triple depressions forming a triangle. Light brown colour, fine-grained temper, rim diameter 16 cm, base diameter 9 cm, height 13.5 cm. 4) Mug of slightly biconical profile, with a massive handle, type D.3.2. Brown and ashen colour, fine-grained temper, rim diameter 11 cm, base diameter 6 cm, height 7.5 cm. 5) Miniature bowl with concave base, partially deformed by fire, type E.2. Rim separated from the body

by an engraved line, another engraved line slightly above the maximum body diameter, lower part of the body decorated on its entire surface with depressions and engraved lines, grouped in threes or fours, extending from the body to the base. Brown and brick red colour, rim diameter approx. 9 cm, base diameter 3 cm, height 5 cm. 6) Heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red and ashen colour, rim diameter approx. 10.5 cm, base diameter 10 cm, height 12 cm. 7) Approx. 60 sherds from a heavily burnt pot like vessel with one preserved handle, strongly constricted in the middle, type A.5. Decorated on the upper part of the body with horizontal punctures above an engraved horizontal line; the rest of the ornament has not been preserved. Brown and ashen colour, fine-grained temper, dimensions impossible to determine. 8) Approx. twenty fragments of heavily burnt pottery (pumice). 9) Iron crescent-shaped knife with defined tang, straight-ended blade. Blade length 10 cm, width 1.6 cm, tang length 2.6 cm. 10) Rectangular whetstone of square cross-section. Length 8.4 cm, width 1.9x2.1 cm. 11) Iron double belt mount, attached with two rivets. Length 2.7 cm, width 0.9 cm, length of the rivets between the plates 0.3 cm. 12) Heavily corroded iron belt mount. Length 3.3 cm, width 1 cm. 13) Cremated human bones.

Anthropological analysis: 1) Sex: male; age: adult, approx. 35 years old.

Grave 121 (Pl. LXIX-LXX)

[Feature 558]

Description: At the top level, the feature was poorly distinguishable from the virgin soil. In plan, the feature was oval in shape, 56x40 cm in size, light brown in colour. In profile, the feature was in the shape of a deep basin, 60 cm thick, light brown in colour at the top and black in the middle and at the bottom. The bottom part of the fill contained multiple vessels and metal artefacts. The ceramic vessels were deposited either intact (nos. 1, 3 and 4), whole but partially burnt (nos. 2, 5), or in fragments (nos. 6, 8).

Contents: 1) Pot-like vessel with two handles, type A.5. Decorated on the upper part of the body with an engraved horizontal line and on

the maximum body circumference with an ornament of triple depressions forming the shape of a triangle, repeated seven times. Dark brown colour, fine-grained temper, rim diameter 16 cm, base diameter 9 cm, height 16.5 cm. 2) Miniature bowl-like vessel, type A.3. Everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Sharply profiled body. Brown and ashen colour, rim diameter 10 cm, base diameter 3 cm, height 6.5 cm. 3) Miniature bowl-like vessel, type B.7–8. Slightly everted rim, rounded body, base decorated with a cross ornament, heavily eroded interior surface. Brown colour, fine-grained temper, rim diameter 10.5 cm, base diameter 7 cm, height 7 cm. 4) Miniature bowl-like vessel of semi-globular form, type E.1.6. Decorated in four places on the maximum body diameter with an ornament of depressions forming the shape of a triangle. Concave base. Brown colour, fine-grained temper, rim diameter 10 cm, height 5.5 cm. 5) Partially burnt miniature bowl-like vessel, type A.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown colour, rim diameter 9.5 cm, base diameter 3 cm, height 5 cm. 6) Heavily burnt large vase-like vessel, type A.1.b. Rim accentuated by an engraved horizontal line. Decorated in the upper part with an engraved elaborate meander ornament filled with punctures. The vessel has three pseudo-handles in the shape of the Roman numeral for 1, decorated with puncture ornament. Brick red-brown colour, rim diameter approx. 25 cm, base diameter 14 cm, height approx. 22.5 cm. 7) Bowl-like vessel, completely deformed by fire. Neck separated from the rim and body by an engraved line. Brown colour, fine-grained temper, base diameter 8 cm, other dimensions impossible to determine. 8) Bowl-like vessel(?), heavily deformed by fire, decorated on the upper part of the body with an engraved ornament composed of horizontal dashed lines and two horizontal continuous lines. Brown colour, fine-grained temper, dimensions impossible to determine. 9) Heavily burnt bowl-like vessel(?). Dark brown colour, fine-grained temper, dimensions impossible to determine. 10) Copper-al-

loy brooch of type A.26, spring covers decorated with a cross ornament, head decorated with triangles and circles, bow decorated with an elaborate crest, composed of five rings, and with pseudo-granulation on the foot side. The spring shows signs of repair consisting in passing it on the outside of the right spring cover. Length 5.2 cm, width 3.7 cm. 11) Iron belt buckle, frame trapezoidal in cross-section, pin quadrangular in cross-section, type D1. Length 4.5 cm, width 5.1 cm. 12) Fragmentarily preserved profiled strap-end made of copper alloy, similar to type 1, variant 8. Preserved length 3.7 cm. 13) Iron key, handle quadrangular in cross-section, type A, length 14.5 cm. 14) Iron casket lock spring. Length 10.5 cm. 15) Iron rivet, head diameter 0.9 cm. Preserved length 0.7 cm. 16) Iron ring of round cross-section. Length 2.3 cm, width 2.7 cm, diameter 0.3 cm. 17) Fragment of an iron needle(?). Length 1.2 cm. 18) Fragment of an iron casing. Length 6 cm, diameter 0.5 cm. 19) Clay spindle whorl of biconical cross-section, diameter 4 cm. 20) Clay spindle whorl of biconical cross-section, diameter 4.6 cm. 21) Numerous lumps of copper alloy. 22) Crumbled glass bead of blue colour. 23) Heavily melted bead of yellow colour. 24) Heavily melted bead of yellow colour. 25) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult.

Grave 122 (Pl. LXXI)

[Feature 572]

Description: The outline of the feature was barely discernible at the top level. In plan, the feature was round in shape, approx. 24 cm in diameter, light brown in colour. In profile, the outline of the grave pit was barely discernible, basin-shaped, approx. 8 cm thick, light brown in colour. Fragments of cremated bones were found inside a vessel.

Contents: 1) Fragmentarily preserved mug with a handle affixed on a plug, smoothed side surfaces of the handle, type D.3.2. Brown in colour on the outside, brick red on the inside, fine- and medium-grained temper, base diameter 7.5 cm, preserved height 6 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 1 year old.

Grave 123 (Pl. LXXI)**[Feature 573]**

Description: The outline of the feature was barely discernible at the top level. In plan, the feature was round in shape, approx. 24 cm in diameter, light brown in colour. In profile, the outline of the grave pit was barely discernible, approx. 10 cm thick, light brown in colour. Fragments of cremated bones were found inside a vessel.

Contents: 1) Fragmentarily preserved mug, type D.3.2. Brick red colour, fine-grained temper, base diameter 7 cm, preserved height 5 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 1 year old.

Grave 124 (Pl. LXXII)**[Feature 577]**

Description: In plan, the feature was round in shape, approx. 50 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, 22 cm thick, brown-black in colour. Two whole vessels were deposited in the central part of the feature. Inside vessel 2, there was a base sherd from another vessel. In the immediate neighbourhood of feature 124, there was feature 124a with light brown fill.

Contents: 1) Egg-shaped vessel with slightly pronounced base, type D.2. Brown colour, rim diameter 16.5 cm, base diameter 8.5 cm, height 13 cm. 2) Mug with biconical profile, slightly pronounced base and one handle, carefully smoothed on all sides, type D.3.2. Brick red colour, fine-grained temper, rim diameter 10 cm, base diameter 8 cm, height 9 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child.

Grave 124a (Pl. LXXII)**[Feature 713]**

Description: The feature directly adjoined feature 577. In plan, the outline of the feature was almost imperceptible, approx. 30 cm in diameter, light brown in colour. In profile, the feature was barely distinguishable from the virgin sand, basin-shaped, approx. 15 cm thick, light brown in colour.

Contents: 1) Iron S-shaped clasp, type A; length 2.1 cm, width 2.2 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 3 years old.

Grave 125 (Pl. LXXIII)**[Feature 657]**

Description: In plan, the feature was round in shape, approx. 42 cm in diameter, light brown in colour. In profile, the feature was basin-shaped, 30 cm thick, brown in colour at the top and brown-black in the middle and at the bottom. A bowl-like vessel containing cremated bones was placed on its rim in the upper part of the feature. Under the vessel, there was a concentration of burnt pottery, including a small bowl-like vessel (no. 2).

Contents: 1) Bowl with slightly rounded body and defined base, partially burnt in its upper part, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. The vessel bears traces of annealing, which probably happened in the grave pit as a result of the vessel having been covered with hot earth. Brown colour, rim diameter 20 cm, base diameter 6 cm, height 12 cm. 2) Partially burnt miniature bowl with concave base, type E.3. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, an ornament of round depressions on the maximum body circumference. The vessel bears traces of annealing, which probably happened in the grave pit as a result of the vessel having been covered with hot earth. Brown colour, fine-grained temper, rim diameter 12 cm, base diameter 4 cm, height 13.5 cm. 3) Fragmentarily preserved, heavily burnt vase-like vessel with defined base, type B.6. Coarsely wiped body, smoothed base and rim. Brown colour, fine-grained temper, rim diameter approx. 16 cm, base diameter 10 cm. 4) Upper part of a bowl, type A.2. Everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brick red and ashen colour, rim diameter approx. 19 cm, preserved height 2.7 cm. 5) Approx. one hundred and forty fragments of heavily burnt pottery (pumice), mostly from vessel 3. Brown colour. 6) Copper-alloy trumpet brooch of Dąbrowska variant 5. Length 3.6 cm, width 3 cm. 7) Iron strap-end, type 9, variant 2(?). Length 7 cm, width 1.3–2.4 cm, ri-

vet length 0.2 cm. 8) Fragment of an unspecified object made of copper alloy. Length 2.5 cm. 9) Fragment of a copper–alloy brooch spring wound on an iron shaft. Length 1.2 cm, diameter 0.7 cm. 10) Clay biconical spindle whorl, diameter 4.8 cm. 11) Melted fragment of a copper–alloy object. 12) Cremated human bones.

Anthropological analysis: 1) Sex: male(?); age: adult.

Grave 126 (Pl. LXXII)

[Feature 677]

Description: In plan, the feature was round in shape, approx. 40 cm in diameter, black in colour. In profile, the feature was basin–shaped, 22 cm thick, black in colour. Almost the entire fill of the feature consisted of three whole vessels, two placed next to each other (nos. 1 and 2), with the third one located below them (no. 3). Under the vessels, there was a concentration of cremated bones.

Contents: 1) Egg–shaped vessel with slightly pronounced base, type D.2. Surface roughened by wiping and, near the base, smoothed. Brown colour, fine–grained temper, rim diameter 15 cm, base diameter 6.5 cm, height 8 cm. 2) Fragment of a mug with inverted rim, type D.3(?). Brown colour, fine–grained temper, rim diameter 12 cm. 3) Egg–shaped vessel with slightly inverted rim, type D.2. Brick red colour, fine–grained temper, rim diameter 10 cm, base diameter 6 cm, height 5 cm. 4) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 3 years old.

Grave 127 (Pl. LXXIV)

[Feature 736]

Description: In plan, the feature was round in shape, 50 cm in diameter, dark brown in colour. In profile, the feature was basin–shaped, 22 cm thick, dark brown in colour at the top and black in the middle and at the bottom. Three vessels, deposited whole, were found in the fill of the feature. Two of them, located in the eastern part, were stacked one atop the other: a large mug (no. 1) at the top and a bowl–like vessel (no. 2) at the bottom; the third vessel (no. 3) was resting on its side in the western part of the feature. Cremated bones were present inside all of the vessels.

Contents: 1) Large mug with sharply profiled body and a large handle with smoothed surfaces, type D.3.2. Decorated on the maximum body circumference with an ornament of triple depressions forming the shape of a triangle, slightly annealed base. Brick red colour, fine–grained temper, rim diameter 15 cm, base diameter 6.5 cm, height 11 cm. 2) Biconical bowl–like vessel, type B.4. Slightly annealed base. Brick red–brown colour, fine–grained temper, rim diameter 16 cm, base diameter 8.5 cm, height 11 cm. 3) Miniature biconical mug with an unproportionally large, albeit thin, handle, type D.3.2. Brick red–brown colour, fine–grained temper, rim diameter 6.5 cm, base diameter 3 cm, height 5 cm. 4) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child, less than 3 years old.

Grave 128 (Pl. LXXIV)

[Feature 741]

Description: In plan, the feature was round in shape, 46 cm in diameter, brown–black in colour. In profile, the feature was in the shape of a deep basin, 42 cm thick, brown–black in colour. In the central part of the feature, there was a partially burnt vessel (no. 1) and, under it, two other vessels (nos. 2 and 3); below, at the bottom of the feature, there was a large concentration of cremated bones.

Contents: 1) Heavily burnt bowl–like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the maximum body circumference with an ornament of triple depressions forming the shape of a triangle or square, slightly pronounced base. Brown colour, fine–grained temper, rim diameter 22 cm, base diameter 9 cm, height 16 cm. 2) Complete bowl–like vessel, type A.2. Strongly everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Decorated on the maximum body circumference with an ornament of isolated depressions above engraved vertical lines extending all the way to the base. Slightly pronounced base. Brown colour, fine–grained temper, rim diameter 20.5 cm, base diameter 11 cm, height 12 cm. 3) Lightly burnt miniature bowl, type A.3. Strongly everted rim, separated from the body by an engraved line, another en-

graved line slightly above the maximum body diameter, slightly concave base. Brown colour, fine-grained temper, rim diameter 10.5 cm, base diameter 9 cm, height 11 cm. 4) Heavily corroded iron belt buckle, type D.1(?). Length 3 cm, width 2.5 cm. 5) Iron trough-shaped belt mount. Length 7.4 cm, diameter 0.6 cm. 6) Antler pin with profiled head, type VIII B. Length 7.7 cm. 7) Melted fragments of a copper-alloy object. 8) Cremated human bones.

Anthropological analysis: 1) Sex: male(?); age: adult.

Grave 129 (Pl. LXXV)

[Feature 743/743A]

Description: In plan, the feature was oval in shape, 110x60 cm in size, black in colour in the northern part (743) and dark brown in the southern part (743A). In profile, the feature was in the shape of two touching basins, 18 cm and 30 cm thick, dark brown and black in colour. The fill of feature 743 contained a large cluster of heavily burnt pottery, with cremated bones between the potsherds. A clear concentration of bones was also present in the bottom part of the feature. Feature 743A contained cremated bone fragments. The anthropological analysis showed that the remains belonged to one individual.

Contents: 1) Almost completely preserved tub-shaped vessel with oblique walls. Dark ashen colour, fine-grained temper, rim diameter 20 cm, base diameter 14 cm, height 6 cm. 2) Partially burnt miniature bowl-like vessel, type B.7-8. Slightly everted rim, cylindrical upper part of the body, lower part undercut, slightly pronounced and concave base. Brown-ashen colour, fine-grained temper, rim diameter 9 cm, base diameter 4 cm, height 6 cm. 3) Ninety fragments of heavily burnt pottery (pumice). 4) Partly melted strip bracelet made of copper alloy, decorated along the sides with a delicate engraved ornament. Preserved length 5.5 cm, width 1.2 cm. 5) Fragment of a copper-alloy brooch spring, length 0.7 cm. 6) Clay biconical spindle whorl, diameter 4.7 cm. 7) Melted fragments of a copper-alloy object. 8) Fragments of a heavily melted copper-alloy brooch. Preserved length 2.3 cm, width 2.5 cm. 9) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: 35-39 years old.

Grave 130 (Pl. LXXV)

[Feature 744]

Description: In plan, the feature was round in shape, 40 cm in diameter, black in colour. In profile, the feature was basin-shaped, 12 cm thick, black in colour.

Contents: 1) Approx. 30 heavily burnt ancient potsherds; brick red and brown colour. 2) Silver bead decorated with pseudo-granulation on the edges. Height 0.6 cm, diameter 1.1 cm. 3) Silver bead decorated with pseudo-granulation on the edges. Height 0.6 cm, diameter 1 cm. 4) Fragment of a melted copper-alloy brooch. Length 1.2 cm, width 2.2 cm. 5) Lumps of a melted object made of copper alloy. 6) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult.

Grave 131 (Pl. LXXVI)

[Feature 746]

Description: In plan, the feature was round in shape, 50 cm in diameter, dark brown in colour. In profile, the feature was in the shape of a deep basin, 30 cm thick, dark brown in colour at the top and brown-black in the middle and at the bottom. Four whole vessels were placed next to one another in the lower part of the feature; metal artefacts were found near them. A compact cluster of cremated bones was located in the bottom part of the feature.

Contents: 1) Deep bowl, type A.2. Strongly everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, sharply profiled body, well-defined base. Light brown colour, fine-grained temper, rim diameter 18 cm, base diameter 9 cm, height 12 cm. 2) Deep bowl, type A.2. Strongly everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, rounded body, defined base. Light brown colour, fine-grained temper, rim diameter 19 cm, base diameter 7.5 cm, height 11.5 cm. 3) Miniature bowl-like vessel, type E.2.1. Slightly pronounced rim, concave base. Brown colour, fine-grained temper, rim diameter 9 cm, base diameter 6.5 cm, height 4 cm. 4) Miniature bowl-like vessel, type D.2. Brown colour, rim diameter 8.5 cm, base diameter 5.5 cm, height 6 cm. 5) Copper-alloy brooch, type A.39. Length 5.3 cm, width 3.2 cm. 6) Iron belt buckle, type D1. Length 3.3 cm, width

4.6 cm. 7) Iron key, type A. Length 13.3 cm. 8) Fragmentarily preserved iron casket lock fitting. Preserved length 3.9 cm. 9) Iron casket lock spring, length 7 cm. 10) Iron fitting. Length 1.8 cm, width 0.5 cm. 11) Iron belt mount with a rivet. Length 14 cm, width 0.6 cm, rivet length 0.5 cm. 12) Clay ball. Brown colour, fine-grained temper, diameter approx. 2.5 cm. 13) Clay biconical spindle whorl, diameter 2.8 cm. 14) Clay biconical spindle whorl, diameter 3.6 cm. 15) Clay biconical spindle whorl, diameter 4 cm. 16) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 132 (Pl. LXXVII)

[Feature 749]

Description: In plan, the feature was round in shape, 64 cm in diameter, black in colour. In profile, the feature was in the shape of a deep basin, 42 cm thick, black in colour. In the upper part of the feature, there was a concentration of broken pottery and, under it, an urn.

Contents: 1) Egg-shaped vessel, type D.1. Rim and base part smoothed, the rest of the vessel roughened. Dark brown colour, fine-grained temper, rim diameter 24 cm, base diameter 13 cm, height 18 cm. 2) Vase-like vessel, partially deformed by fire, type A.1. Slightly everted rim, separated from the neck by an engraved line, neck decorated with a chevron ornament above two engraved horizontal lines. Decorated on the maximum body circumference with a repeating horizontal ornament of 10 or 11 depressions. Brick red and ashen in colour, fine-grained temper, rim diameter approx. 18 cm, preserved height 16 cm. 3) Heavily burnt bowl-like vessel, type A.2. Everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, sharply profiled body, decorated on the maximum body circumference with an ornament of triple depressions arranged in the shape of a triangle, repeated eight times. Brown and ashen colour, fine-grained temper, rim diameter 11 cm, base diameter 8 cm, height 11 cm. 4) Small bowl-like vessel, type D.2. Dark ashen colour, fine-grained temper. Rim diameter 14 cm, base diameter 9 cm, height 7.5 cm. 5) Fragment of a brooch spring made of copper alloy. Preserved length 1.1 cm. 6) Iron needle. Preserved length 7.3 cm.

7) Clay biconical spindle whorl, diameter 4 cm. 8) Lump of copper alloy. 9) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: 35–44 years old.

Grave 133 (Pl. LXXVIII)

[Feature 750]

Description: In plan, the feature was round in shape, 62 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, 14 cm thick, brown-black at the top and black in the middle and at the bottom. A bowl-like vessel, serving as an urn, was located in the bottom part of the feature. Under the vessel, there was a large concentration of cremated bones and potsherds.

Contents: 1) Bowl-like vessel, type A.2. Everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, rounded body, upper part of the vessel annealed, probably as a result of the grave pit having been filled with hot earth. Brown and ashen colour, fine-grained temper, rim diameter 10 cm, base diameter 7 cm, height 10 cm. 2) Fragmentarily preserved egg-shaped vessel with inverted rim, type D.2. Heavily eroded interior surface. Brown and ashen colour, fine-grained temper, rim diameter 11 cm, base diameter 5 cm, height 8 cm. 3) Miniature egg-shaped bowl, type D.2. Ashen colour, fine-grained temper, rim diameter 5 cm, base diameter 2.5 cm, height 2.5 cm. 4) Iron belt buckle with rectangular frame of square cross-section, round pin, type G1. Length 2.5 cm, width 3.7 cm. 5) Iron key with two protrusions on the handle, type A. Length 17.2 cm. 6) Iron awl decorated at the mid-length with engraved and incised lines, quadrangular in cross-section in the upper part, round in the lower part. Length 13 cm. 7) Iron awl, quadrangular in cross-section in the upper part, round in the lower part, upper part decorated with incisions on the edges. Length 8.5 cm. 8) Iron awl(?). Preserved length 6.8 cm. 9) Iron rod with an adhered glass fragment of green colour. Preserved length 5.5 cm. 10) Antler awl of curved cross-section. Length 16 cm. 11) Antler awl of roughly quadrangular cross-section. Length 14 cm. 12) Melted bead of transparent yellow glass, decorated with opaque dark yellow strands. Length 2 cm. 13) Melted bead of

transparent yellow glass, decorated with opaque dark yellow strands. Length 2.3 cm. 14) Richly ornamented antler comb with semi-circular back, type D. Length 7 cm, height including teeth 5.5 cm. 15) Clay biconical spindle whorl, diameter 3 cm. 16) Clay biconical spindle whorl, diameter 4 cm. 17) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 134 (Pl. LXXI)

[Feature 751]

Description: The top level of the pit was disturbed by deep ploughing. In plan, the feature was round in shape, 60 cm in diameter, brown in colour. In profile, the feature was basin-shaped, 16 cm thick, brown in colour. The fill of the feature contained two adjoining vessels, which served as urns (nos. 1 and 2), and an accessory vessel.

Contents: 1) Deep bowl-like vessel with everted rim, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, rounded body, defined base. Brick red colour, fine-grained temper, rim diameter 24 cm, base diameter 10 cm, height 15 cm. 2) Lower part of a partially burnt vessel. Type impossible to determine. Light brown in colour on the outside, brick red on the inside, base diameter 9 cm, preserved height 7 cm. 3) Base sherd from a heavily burnt vessel. Type impossible to determine. Dark brown colour, base diameter 5 cm, preserved height 5 cm. 4) Fifteen fragments of heavily burnt pottery (pumice), brown colour, fine-grained temper. 5) Copper-alloy brooch of series 8 of Almgren group V. Length 4 cm, oval bow with dimensions of 0.4x0.2 cm.

Anthropological analysis: 1) Sex: male; age: adult.

Grave 135 (Pl. LXXIX)

[Feature 752]

Description: In plan, the feature was round in shape, 60 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, 12 cm thick, brown-black in colour. In the central part of the feature, there was a large urn (no. 1), lined in the upper part with numerous fragments of broken and partially burnt pottery. Vessel 4 was found inside the urn.

Contents: 1) Large vase, serving as an urn, type A.1.b. Everted rim, round body. Decorated on the upper part of the body with an elaborate geometric ornament in the form of seven rectangles, filled with depressions, and eight fields with horizontally arranged depressions enclosed at the top and bottom by a row of oblique incisions. In the ornamental band, there were two pseudo-handles in the shape of a cross with a depressed centre. Smooth, burnished surface. Black colour, fine-grained temper, rim diameter 26 cm, base diameter 11 cm, height 20 cm. 2) Fragmentarily preserved, partially burnt bowl-like vessel with one handle, type A.2. Everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Light brown and ashen colour, rim diameter 20 cm, base diameter 8 cm, height 12 cm. 3) Fragmentarily preserved small bowl-like vessel, type B.7-8. Light brown and ashen colour, fine-grained temper, rim diameter 12 cm, base diameter 6 cm, height 5.5 cm. 4) Partially burnt bowl-like vessel, type E.3. Everted rim, decorated on the maximum body circumference with an ornament of engraved lines and depressions forming the shape of triangles, lower part of the vessel decorated with vertically arranged depressions and engraved lines, concave base. Light brown and ashen colour, fine-grained temper, rim diameter 10 cm, base diameter 4.5 cm, height 5.5 cm. 5) Fragment of a barrel-shaped mug, type D.3.1. Brown-ashen colour, fine-grained temper, preserved height 5 cm. 6) One hundred fragments of heavily burnt pottery (pumice), ashen colour. 7) Fragment of a brooch spring made of copper alloy. Length 1.7 cm. 8) Fragments of a melted copper-alloy bracelet, with traces of punched ornament preserved on the outer rim. 9) Lumps of a melted object made of copper alloy. 10) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult.

Grave 136 (Pl. LXXX-LXXXI)

[Feature 753]

Description: In plan, the feature was oval in shape, 54x48 cm in size, brown in colour. In profile, the feature was in the shape of a deep basin, 50 cm thick, brown in colour at the top and black in the middle and at the bottom. In the plan of the feature, there were isolated fragments of

cremated bones; in the central part, there was a concentration of burnt pottery, including vessels 2 and 3. An urn (no. 1) containing multiple metal artefacts and cremated bones was placed at the bottom of the feature. Cremated bones were also present around the urn and formed a large compact cluster under vessel 1.

Contents: 1) Biconical bowl-like vessel with strongly everted rim and sharply profiled body, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter; below it, an alternating ornament of horizontally arranged triple depressions and depressions forming the shape of a triangle. Carinated body, defined base. Light brown in colour on the outside, brick red on the inside, fine-grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 9.5 cm. 2) Vase-like vessel with sharply profiled body, deformed by fire, type B.5. Slightly pronounced rim, maximum body diameter at the mid-height of the vessel. Brown and ashen colour, fine-grained temper, rim diameter 12 cm, base diameter 7 cm, height 12.5 cm. 3) Small bowl, deformed by fire, type impossible to determine. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and dark ashen colour. 4) Seven sherds from a burnt vessel with thickened rim, ashen colour. 5) Seventy-five fragments of heavily burnt pottery (pumice), including some decorated with engraved horizontal lines, brick red and ashen colour. 6) Massive trumpet brooch made of copper alloy, similar to type A.92, spring casing decorated with engraved oblique lines. Length 6 cm, width 4.5 cm. 7) Massive trumpet brooch made of copper alloy, similar to type A.92, spring casing decorated with engraved oblique lines. Length 6 cm, width 4.5 cm. 8) Partially preserved copper-alloy pin with profiled head, group IVa, type 64. Preserved length 5.2 cm, head diameter 1.1 cm. 9) Iron belt buckle, type D1. Length 3.4 cm, width 4 cm. 10) Iron casket key, handle rectangular in cross-section. Length 16.5 cm. 11) Iron casket lock spring. Length 7 cm. 12) Partially preserved, melted rod bracelet made of copper alloy, oval in cross-section. Preserved length 7 cm. 13) Copper-alloy fitting, made from a flat sheet decorated with punched circles, joined with two round-head rivets, diameter 1–1.5 cm. 14) Frame of an iron belt buckle(?), type D1, round in cross-

section, diameter 2.1 cm. 15) Iron casing, strap-end? Length 2 cm, diameter 0.5 cm. 16) Fragments of a melted copper-alloy object. Length 1.5 cm 2.2 cm and 2.5 cm. 17) Melon bead with preserved suspension wire made of copper alloy, type TM171. Opaque, blue colour, diameter 1.6 cm. 18) Melon bead, type TM171b. Opaque, celadon colour, diameter 1.6 cm. 19) Melon bead, type TM171b. Opaque, celadon colour, diameter 1.6 cm. 20) Melon bead, type TM171. Opaque, blue colour, diameter 1.4 cm. 21) Melted transparent glass bead, dark blue with a white spiral strand, diameter 2.5 cm. 22) Melted transparent glass bead, dark blue with a white spiral strand, size 2.2 cm. 23) Melted transparent glass bead, most likely melon-shaped, made of navy blue glass. Length 1.8 cm. 24) Melted transparent glass bead, dark blue with a white strand. Length 2.1 cm. 25) Melted glass bead, opaque, red colour, diameter 1.4 cm. 26) Melted glass bead, opaque, red colour, diameter 1.4 cm. 27) Small fragments of transparent colourless glass bead. 28) Fragments of melted transparent glass beads of navy-blue colour. 29) Biconical spindle whorl, diameter 4.6 cm. 30) Lumps of a melted copper-alloy object. 31) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: 40–44 years old.

Grave 137 (Pl. LXXXI)

[Feature 755]

Description: In plan, the feature was round in shape, 80 cm in diameter, black in colour. In profile, the feature was basin-shaped, 36 cm thick, black in colour. In the bottom part of the feature, there was a large concentration of heavily burnt pottery and, under it, cremated bones.

Contents: 1) Heavily burnt bowl-like vessel, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, defined base. Brick red and brown colour, base diameter 9.5 cm. 2) Heavily burnt miniature bowl-like vessel, type D.2. Dark brown colour, fine-grained temper, rim diameter 10 cm, base diameter 7 cm, height 7 cm. 3) Heavily burnt miniature bowl-like vessel with inverted rim and slightly pronounced base, type D.2. Brown and ashen colour, fine-grained temper, base diameter 3.5 cm. 4) Miniature amphora with cylindrical neck, globular body and defined base,

type B.7–8. Brown and black colour, fine-grained temper, rim diameter 3 cm, base diameter 2.5 cm, height 5.5 cm. 5) One hundred and forty fragments of heavily burnt, nondescript, ancient pottery (pumice), including two rim sherds with handles in the shape of the Roman numeral for 1 and forty five body sherds decorated with a meander ornament filled with punctures; brown and ashen colour, type A.1.a. 6) Heavily corroded iron belt buckle(?), type C13(?); diameter 4.5 cm, variable cross-section diameter 0.7–1.2 cm. 7) Biconical spindle whorl, diameter 3.5 cm. 8) Biconical spindle whorl, diameter 3.1 cm. 9) Biconical spindle whorl, diameter 3.5 cm. 10) Lumps of copper alloy. 11) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 138 (Pl. LXXXII)

[Feature 756B]

Description: In plan, the feature was round in shape, 34 cm in diameter, dark brown in colour. In profile, the feature was basin-shaped, 12 cm thick, dark brown in colour. The top level of the feature was disturbed by feature 756A, probably a contemporary cut or a rootstock. Two vessels were found in the central part of the feature.

Contents: 1) Bowl-like vessel with everted rim, type A.2. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter, sharply profiled body. Light brown in colour on the outside, brick red on the inside, fine-grained temper, rim diameter 18 cm, base diameter 7.5 cm, height 9.5 cm. 2) Miniature bowl-like vessel, type D.2. Brick red-ashen colour, fine-grained temper, rim diameter 8 cm, base diameter 4 cm, height 7 cm. 3) Fragments of a melted transparent glass bead of navy-blue colour. 4) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: approx. 4 years old.

Grave 139 (Pl. LXXXII)

[Feature 757B]

Description: The plan and profile of the feature were indiscernible, completely disturbed by feature 757A—a pit(?). Potsherds and cremated bo-

nes were found at different levels of feature 757A.

Contents: 1) Barrel-shaped mug, type D.3.2. Brick red and ashen colour, fine-grained temper, rim diameter 10 cm, base diameter 6 cm, height 7 cm. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: foetus, between 42 and 50 weeks.

Grave 140 (Pl. LXXXIII)

[Feature 764]

Description: The top level of the feature was severely damaged by deep ploughing. In plan, the feature was round in shape, 46 cm in diameter, brown in colour. In profile, the feature was basin-shaped, 10 cm thick, brown in colour.

Contents: 1) Fragmentarily preserved, partially burnt vase-like vessel, type B.5. Everted rim, semi-globular body, defined base. Brick red and ashen colour, fine-grained temper, rim diameter approx. 16 cm, base diameter 7 cm, height 11 cm. 2) Approx. thirty fragments of heavily burnt ancient pottery; brick red and brown colour. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 141 (Pl. LXXXII)

[Feature 765]

Description: In plan, the feature was round in shape, 36 cm in diameter, brown-black in colour. In profile, the feature was basin-shaped, 16 cm thick, brown-black in colour. In the central part of the feature, there was a vessel (no. 1) covered by another vessel (no. 2) standing on its rim.

Contents: 1) Bowl-like vessel, type A.2. Everted rim, sharply profiled body, smooth surface. Black colour, fine-grained temper, rim diameter 14 cm, base diameter 6 cm, height 7 cm. 2) Vase-like vessel, type B.5. Everted rim. Vessel decorated on the upper part with a chevron ornament and on the maximum body circumference with an engraved horizontal line and seven spaced depressions, base not preserved. Brown colour, fine-grained temper, rim diameter 11 cm, preserved height 10 cm. 3) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: up to 1 year old.

Grave 142 (Pl. LXXXIII)

[Feature 766]

Description: In plan, the feature was round in shape, 50 cm in diameter, black in colour. In profile, the feature was irregular in shape, 40 cm thick, black in colour. The fill of the feature contained five vessels, deposited in three layers. Upper layer: vessels 1 and 2; middle layer: vessels 3 and 4; bottom layer: vessel 5.

Contents: 1) Fragmentarily preserved, stratified, very poorly fired vase-like vessel of semi-globular profile, type B.4. Everted rim, accentuated by an engraved horizontal line. Upper part of the vessel decorated with a narrow band of chevron ornament, base not preserved. Black colour, smoothed surface, fine-grained temper, rim diameter 17 cm, preserved height 12 cm. 2) Biconical mug, type D.3.1. Handle not preserved. Brown colour, fine-grained temper, rim diameter 10 cm, base diameter 7 cm, height 8 cm. 3) Heavily burnt vase-like vessel with strongly undercut body and well-defined concave base, type B.5. Brown and ashen colour, fine-grained temper, base diameter 6 cm, preserved height 8 cm. 4) Slightly annealed miniature bowl-like vessel with hemispherical base, type E.5. Slightly everted rim, separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and ashen colour, fine-grained temper, rim diameter 11 cm, height 2.5 cm. 5) Approx. fifty sherds from a heavily burnt pot-like vessel with two handles, type A.5. Rim separated from the body by an engraved line, another engraved line slightly above the maximum body diameter. Brown and ashen colour, fine-grained temper, base diameter 8.5 cm. 6) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: child.

Grave 143 (Pl. LXXXIV)

[Feature 767]

Description: The top level of the feature was severely damaged by deep ploughing. In plan, the outline of the feature was poorly discernible, round in shape, 30 cm in diameter, light brown in colour. In profile, the feature was poorly discernible, basin-shaped, 14 cm thick, light brown in colour. The fill of the feature contained two stacked vessels. Vessel 1 served as an urn.

Contents: 1) Fragmentarily preserved, stratified,

very poorly fired bowl-like vessel, type B.2. Slightly everted neck, globular body, strongly undercut lower part of the vessel. Black colour, glossy surface, fine-grained temper, rim diameter 13 cm, preserved height 6 cm. 2) Heavily burnt lower part of a mug(?) with defined base, type D.3(?). Brown and brick red colour, fine-grained temper, base diameter 7.5 cm, preserved height 7 cm. 3) Rectangular belt buckle of quadrangular cross-section, type G1. Length 4.2 cm, width 2.1 cm. 4) Iron pin with spirally twisted shaft. Length 5 cm. 5) Fragment of an iron needle(?). Length 3 cm. 6) Partially burnt clay biconical spindle whorl, diameter 4.7 cm. 7) Lumps of a melted copper-alloy object. 8) Cremated human bones.

Anthropological analysis: 1) Sex: male(?); age: adult.

Grave 144 (Pl. LXXXV)

[Feature 777]

Description: In plan, the feature was round in shape, 70 cm in diameter, black in colour. In profile, the feature was basin-shaped, 38 cm thick, black in colour. In the lower part of the feature, there were two whole vessels (nos. 1 and 2), standing next to each other, with a third vessel (no. 3), resting on its side, nearby. In the bottom part of the feature, there was a concentration of cremated bones, which also contained potsherds (no. 4) and small finds.

Contents: 1) Bowl-like vessel, everted rim, sharply profiled body, type B.5. Brick red colour, fine-grained temper, rim diameter 18 cm, base diameter 8 cm, height 11 cm. 2) Miniature bowl-like vessel, type A.3. Everted rim, slightly rounded body. Brick red colour, fine-grained temper, rim diameter 11 cm, height 7 cm. 3) Vase-like vessel, slightly deformed due to high temperatures, type A.1. Everted rim, delicately accentuated by an engraved line. Decorated on the upper part of the body with a single stamped element in the form of triangles arranged in a circle and a horizontal line engraved below it. On the maximum body circumference, an ornament composed of triple round depressions forming a triangle, defined base. Light brown colour, fine-grained temper, rim diameter 18 cm, base diameter 10 cm, height 17 cm. 4) Fragmentarily preserved bowl-like vessel, type B.2. Everted rim, marked by a sharp break, rounded body, slightly pronounced base. Brick red-ashen colour, fine-grained temper, rim

diameter 16 cm, base diameter 7.5 cm, height 10 cm. 5) Copper–alloy brooch of type A.61, rhomboidally expanding foot. Length 7.5 cm. 6) Fragment of a copper–alloy spring of quadrangular cross–section, from an eye brooch. Length 1 cm. 7) Fragment of a copper–alloy brooch pin. Length 5.8 cm. 8) Fragment of a copper–alloy spring. Length 0.6 cm. 9) Completely preserved copper–alloy pin with profiled head, group IIc. Length 12.5 cm. 10) Head of a copper–alloy pin(?), type VIII. Cylindrical shape, profiled, with an aperture in the middle. Length 0.7 cm, diameter 0.5 cm. 11) Fragments of a copper–alloy needle. Length 3.4 cm. 12) Biconical spindle whorl, diameter 4.3 cm. 13) Small fragments of melted glass beads of yellow, red and navy–blue colour. 14) Lumps of copper alloy. 15) Cremated human bones.

Anthropological analysis: 1) Sex: female; age: adult.

Grave 145 (Pl. LXXXIV)

[Feature 778]

Description: In plan, the feature was poorly discernible, round in shape, 60 cm in diameter, light brown in colour. In profile, the feature was basin–shaped, 28 cm thick, light brown in colour at the top and brown–black in the middle and at the bottom. The fill of the feature contained burnt potsherds and, in the bottom part, a concentration of cremated bones.

Contents: 1) Fragmentarily preserved, heavily burnt egg–shaped mug, type D.3(?). Inverted rim, globular body. Brown colour, fine–grained temper, rim diameter approx. 8.5 cm, base diameter 7.5 cm, height 6.5 cm. 2) Upper part of a heavily burnt vase–like vessel, type A.1. Decorated on the junction between the neck and body with an ornament of engraved oblique lines and depressions between engraved lines. Decorated on the maximum body circumference with an ornament of depressions forming the shape of a triangle. Brown colour, fine–grained temper, dimensions impossible to determine. 3) Iron casket lid handle, affixed on a hook, diameter 3 cm. 4) Fragmentarily preserved antler pin with quadrangular head, type IB1. Length 8.5 cm.

Anthropological analysis: 1) Sex: undetermined; age: adult.

Grave 146 (Pl. LXXXVI)

[Feature 192a]

Description: The feature was located in the slope of a gravel pit. In plan, the feature was oval in shape, approx. 90x60 cm in size, black in colour. In profile, the feature was basin–shaped, 25 cm thick, black in colour.

Contents: 1) Seven burnt potsherds, including three rims. Everted rims, accentuated by an engraved horizontal line. Worn, bright orange surface; in places, the original smoothed surface has been preserved. Brown colour, fine–grained temper. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: *adultus*.

Grave 147 (Pl. LXXXVI)

[Feature 29]

Description: In plan, the feature was oval in shape, elongated on the N–S line, 90x38 cm in size, light brown in colour. The northern and southern borders of the feature were determined by large stones. In profile, the outline of the feature was poorly discernible, in the shape of a shallow basin, approx. 20 cm thick, light brown in colour. The fill of the feature contained fragments of tooth enamel and a fragment of an antler pin.

Contents: 1) Fragment of an antler pin. Preserved length 0.9 cm. 2) Fragments of two deciduous teeth.

Anthropological analysis: 1) Sex: undetermined; age: child, up to seven years old.

Stone structures

Stone circle or pavement (Pl. LXXXVIII– LXXXIX)

[Feature 92]

Description: In the centre of the Przeworsk culture part of the cemetery, there was a residually preserved stone ring or circle of approx. 4.5 m in diameter. The upper layer of stones formed a circle preserved on the southern and eastern side. On the western side, the arrangement of stones had been completely destroyed. In the northern part, there was a round patch of dark brown soil of 2.5 m in diameter, extended in the southern part by another 1.2 m. The feature was basin–shaped and approx. 0.6 m thick. In the fill, there were five layers of irregularly placed stones and, at the bottom of the central part, a worked stone stele, resting

on its side. Moreover, in the western part of the circle, under a few stones, there was a cremation grave—no. 74. It was the only Przeworsk culture grave with stones at the top.

Contents: 1) Nine small sherds of nondescript ancient pottery from different vessels. Brown and black colour, fine- and medium-grained temper. 2) Small pieces of charcoal. 3) Small fragments of unburnt wood. 4) Small fragments of cremated bones.

Anthropological analysis: Sex: undetermined; age: undetermined⁵.

Cluster 2 (Pl. XC)

Description: Located in the eastern part of the cemetery, a small cluster of large stones, arranged in a partially preserved circle of approx. 2 m in diameter.

Contents: none.

Cluster 3 (Pl. XC)

Description: Located in the eastern part of the cemetery, a small cluster of small and medium-sized stones, elongated on the N–S line. Dimensions of approx. 1.6 m × 0.5 m.

Contents: none.

Cluster 4 (Pl. XC)

Description: Located in the eastern part of the cemetery, a small cluster of small and medium-sized stones, elongated on the N–S line. Dimensions of approx. 2.4 m × 0.5 m.

Contents: none.

Cluster 5 (Pl. XCI)

[Feature 97]

Description: Located in the western part of the cemetery, a cluster of small and medium-sized stones, arranged in two layers. Dimensions of approx. 3.6 × 1.2 m.

Contents: none.

Cluster 6 (Pl. XCI)

[Feature 98]

Description: Located in the western part of the cemetery, a small cluster of small and medium-sized

stones, arranged in three layers. Dimensions of approx. 1.8 × 0.5 m. A trace, probably of a posthole, has been preserved in the western part of the cluster.

Contents: none.

Cluster 7 (Pl. XCII)

[Cluster of stones]

Description: Located in the eastern part of the cemetery, loosely spaced stones at the top of an elongated patch of darker soil oriented along the N–S line. Dimensions of the dark patch of 2.7 × 1.1 m, brown colour. In profile, the darkening measured approx. 0.3 m in thickness. Three large boulders were located in the southern part of the feature.

Contents: none.

Cluster 8 (Pl. XLV)

[Feature 99]

Description: Located in the eastern part of the cemetery, a compact cluster of medium-sized and large stones, forming an oval pavement measuring 2.7 × 1.3 m, under which there was an oval patch of darker soil of brown colour. In profile, the darkening was basin-shaped, approx. 0.6 m thick, brown colour. Adjacent to the cluster on the northern side, there was grave 77.

Contents: none.

Cluster 9 (Pl. XLVI)

[Feature 100]

Description: In plan, feature of oval shape, 3.2 × 1.3 m in size, dark brown in colour, oriented along the N–S line. In the northern part of the feature, there was a large boulder placed on a pavement of smaller stones. In the fill of the feature, measuring approx. 0.25–0.3 m in thickness, there were six medium-sized stones, aligned on the N–S line. Below the large boulder in the northern part, there were a few small stones and, under them, a brown–black layer of burnt debris, approx. 0.3 m thick, extending all the way to the virgin soil. The layer contained cremated human bones—grave 78.

Contents: 1) Seven small sherds of nondescript ancient pottery, including three burnt. Light brown and brown colour, fine-grained temper. 2) Cremated human bones.

Anthropological analysis: 1) Sex: undetermined; age: adult.

⁵ Four small fragments of cremated human bones (long bone shafts).

Analysis of archaeological material⁶

Dress accessories and decorations

Brooches

Nine brooches of group II distinguished by O. Almgren (1923) are known from the Brudnice site. Chronologically, the specimens of the western series are the oldest in this group; they were found in two graves: 73 and 121 (Pls. XLIII.73:3, LXXIX.121:10). The brooch from grave 73 was partially burnt. It has a large, ornamented hook, high-arched, massive bow and relatively narrow spring covers in which it resembles type A.26, while the way the head is decorated—with triangles extending to the punched “eyes” and a low and narrow crest—makes it similar to A.28 brooches. The second fibula had been damaged while still in use and was subsequently repaired. For this purpose, the broken spring was fixed with a collar wrapped around one of the spring covers. Unfortunately, the hook of the brooch has not been preserved, making it impossible to establish its exact classification. The ornament on the bow is similar to that of the first brooch. Additionally, its spring covers are decorated with engraved crosses. Both brooches have been classified as type A.26/28.

Both A.26 and A.28 brooches commonly occurred in the Lower Elbe River region, Mecklenburg and Jutland (Almgren 1923, pp. 215–216, 222; Cosack 1979, p. 53, pls. 6, 8; Drescher 1957, pp. 80–95). Such forms are less frequently found in Czechia (Motykova–Šneidrová 1965, pp. 116–117) and Moravia (Peškař 1972, pp. 68–69, pl. 2). They are equally rare in Poland, especially in the area of the Przeworsk culture (Godłowski

1981a, p. 93; Olędzki, 1992, p. 49), which yielded only a few examples. One comes from grave 31 at the cemetery at Niedanowo site 2, Nidzica County (Ziemlińska-Odojowa 1999b, pp. 17, 111, pl. XII:31.2), other two from the cemetery at Młodzikowo, Środa Wielkopolska County (Dymaczewski 1958, pp. 371, 408, fig. 401.8–9). A similar brooch was found in an inhumation grave at Stogi, Strzelin County (Pescheck 1939, p. 24; Niewęglowski 1981, p. 79). Brooches of these types are equally rare in the Wielbark culture assemblages. These are the finds from Chalin on the Skrwa River, Lipno County (Hahuła 1988, p. 89, Zieliński 1874, pp. 86–93); Lubowidz, Łęborg County, grave 65 (Wołągiewicz 1995, pp. 19, 39, pl. XI.65.1); two from Kowalewko, grave 484, Oborniki County, site 12 (Skorupka 2001, pp. 125, 133, pl. 151.484.1–2); Słotnica, Pырzyce County (Eggers, Stary, 2001, pp. 95–96, pl. 271); and Czarnówko, Łęborg County.⁷

The older variants of spring-cover brooches of the western series, including type A.26, are dated to phase B₁; type A.28 appears a bit later and is dated to phase B₂ (Cosack 1979, p. 30, Leube 1998 pp. 58–59).

The A.26/28 brooch from grave 73 was accompanied by a fragmentarily preserved spring of another, unidentified, brooch 73.8 (Pl. XLIII.73:8), a buckle of type C.1 and a profiled strap-end of type 1, variant 3. The second grave contained a type-D1 buckle and a strap-end of type 1, variant 8. Buckles of type C1 appear already in the pre-Roman period, then sporadically in phase B₁ of the Roman period, only to once again become more numerous in phase B_{2a} (Madyda-Legutko 1987, tables 7–9). The graves from Brudnice should be dated similarly. However, taking into account the horizontal stratigraphy of the cemetery, grave 73 can be dated to the developed phase B₁, while grave 121 comes rather from phase B_{2a} of the Roman period.

Spring-cover brooches of the eastern series were definitely more common at Brudnice. In the case of northern Mazovia, it is assumed that the older variants, type A.38–9, are characteristic of Przeworsk culture assemblages, while the later variants, type A.40–41, are linked to the arrival of new settlers, associated with the Wielbark culture (Andrzejowski 1989,

6 The following typological classifications were used in this study: for Roman period brooches: O. Almgren 1923, T. Liana 1970 (trumpet brooches), T. Dąbrowska 1995 (heavily profiled brooches), J. Andrzejowski 1994 (mixed series II/IV), M. Olędzki (spring-cover brooches); for belt hooks: R. Madyda-Legutko 1990; for belt buckles: R. Madyda-Legutko 1987; for strap-ends: R. Madyda-Legutko 1978, 2011; for beads: M. Tempelmann-Maczyńska 1977, 1985, Kokowski 2017; for combs: S. Thomas 1960; for copper-alloy pins: Ch. Beckmann 1966; for antler pins: A. Dulkiewicz; for S-shaped clasps: A. von Muller 1957; for pin-shaped fire strikers: A. Kokowski 1985; M. Jonakowski 1996; for keys and casket fittings: A. Kokowski 1997; for pottery: Liana 1970, Dąbrowska 1973, Ziemlińska-Odojowa 1999b.

7 Unpublished material. Information obtained from mgr Andrzej Kasprzak.

p. 118). At Brudnice, there were 7 brooches of type A.38–39, 5 of which were almost completely preserved. Three of them, from graves 68 (2 pcs.) and 69 (Pls. XXXIX.68:3,4 and XL.69:6), were made of iron, which is a real rarity.⁸ They were fashioned with great care, which undoubtedly attests to the exceptional talent of the smith who made them. Of particular note are the precisely punched ornaments on their bows and the spring of the brooch from grave 69, which was forged from a square wire. Thanks to the fire patina that covered the artefacts, all the fibulae in question were preserved in almost perfect condition. The iron brooches from Brudnice are not the only specimens of this type in northern Mazovia. The closest analogous, if slightly corroded, fibula comes from grave no. 14/84 at the cemetery at Modła, Mława County, about 40 km away (Grzymkowski 1996, pp. 157–158, photo p. 162; Andrzejowski 2001a, p. 181, fig. 2b). An A.37 iron brooch was also found in grave 242 at Niedanowo (Ziemlińska-Odojowa, 1999b, pp. 48, 111, pl. LXXIII:242.1). Other iron brooches come from grave 200 at Kleszewo, Pułtusk County; grave 19 at Cząstków Polski, Nowy Dwór Mazowiecki County;⁹ and Kębliny, Zgierz County (Demetrykiewicz 1905, col. 15, pl. I:8). An iron brooch of type A.38 had also been mentioned in relation to the site at Głoska, Środa Śląska County (Kaletyn, 1973, pp. 107–108, fig. 1b,d; Andrzejowski 1997, pp. 107–108); in the more recent literature, it has been regarded as type Y of A.41 brooches (Mączyńska 2006, p. 174, 48; Schuster 2006, p. 114. 31). Interestingly, iron brooches of type A.41 also appear at Wielbark culture cemeteries, where they are clear evidence of imports from the area of the Przeworsk culture. Brooches of this type were recorded at the sites of Szczyrkowice, Słupsk County (Machajewski 2002, pp. 312, 317, fig. 4:2,2); Straduń, Czarnków–Trzcianka County (Gałęzowska 1996, p. 176, fig. 8:7,8), Opalenie, Tczew County (Adamska, Tuszyńska 2011, 368) and Krzykosy, Kwidzyn County (Ruta, Strobin, 2010, pp. 466–468). The second place in Poland where local variants of iron spring–cover brooches are found in large numbers is the Pilica River region. Spring–cover brooches with a knob holding the spring visible

⁸ See (Mączyńska 2006, p. 161).

⁹ Unpublished material, excavations of mgr Maria Kulisiewicz and Stefan Woyda; Andrzejowski 2001 p. 66, footnote 8).

on the bow belong to type 38–39a distinguished by M. Olędzki (1992). They are additionally decorated with silver inlay. The characteristic knobs on the bow mark the attachment of the spring terminal, same as in the case of mixed groups A.II/IV brooches. Two specimens of this variant come from grave 10 at Nowe Miasto on the Pilica River, Grójec County (Liana, 1975, pp. 381, 403, pl. IV.1,2). There are also specimens made of two raw materials, with a copper–alloy bow and an iron spring. Such a brooch is known from grave 140 at Kamieńczyk, Wyszaków County (Olędzki 1992, p. 58, cf. Dąbrowska, 1997, pp. 37, 81, pl. LXXIII:140.1.2). Two more examples come from the site at Brzeźce, Białobrzegi County (Balke 1976, pp. 186–87, pl. IV.1, fig. 16h). In addition to the above–mentioned iron brooches of type A.38–39, two whole fibulae and fragments of two more brooches cast in copper alloy were found at the Brudnice site. They come from graves: C, 131, 11 and 13 (Pls. I.C:2, LXXVI.131:5, VIII.11:5, XI.13:7). The brooch from grave 131 is a classic form, decorated on the bow with a punched ornament. The artefact from grave C is very short and massive, in which it resembles brooches of type A.40–41. Grave 11 yielded a small foot fragment, while a crested bow fragment was found in feature 13, accompanied by a trumpet brooch of type A.75, among others. A.38–39 brooches should be dated to the later stage of phase B₂ of the Roman period (Godłowski 1977, p. 13).

Grave 109 (Pl. LXIV.109:3,4) yielded two identical copper–alloy brooches with mixed features of O. Almgren's second and fourth group. The bow of such brooches clearly expands near the chord, while the foot is long, narrow and terminates with a profiled crest and a knob. The edges of the bow are decorated with an ornament of engraved lines, and there is a large, carefully made knob on its upper part, which constitutes the spring terminal. This is a characteristic element of most of the brooches with mixed features of group II/IV, especially of series 3 (Andrzejowski 1994a, p. 92). The Brudnice fibulae, due to other morphological traits, correspond to type 2 of series 3 in the classification of J. Andrzejowski (1994a, p. 95). Such brooches should be dated to the end of phase B_{2b} and, in the case of the Brudnice cemetery, come from one of the latest graves of the Przeworsk culture.

The oldest examples of group III brooches are the fibulae of type A.52. They come from

graves D, 7 and 25 (Pls. II.D:8, VII.7.2, XIX.25:4). Another two specimens were stray finds (Pl. LXXXVII. SF:1, 2). The spring of the brooch from grave 25 was set on an iron axis bar, which may suggest it had been repaired. Brooches of type A.52 should be dated to the later section of phase B₁ of the Roman period, although they also occur together with the younger variants of eye brooches of the Prussian series, dated to phase B_{2a} (Dąbrowska 1997, pp. 14, 51, 53, 58–59, 82, Mączyńska 2004, pp. 212–213, table 1). A. 53 brooches were found in graves 27 and 34 (Pls. XXI. 27:5, XXIV.34:5). The brooch from grave 27 was accompanied by a buckle of type C3, and the one from grave 34—by two damaged eye brooches of the Prussian series, including one of crossbow construction. Graves D, 15 and 90 yielded brooches of type A.58–59 (Pls.II.D:7, XII.15:4, LI.90:6). Another one, fragmentarily preserved, was found in grave 97 (Pl. LVII.97:3), and one more was a stray find (Pls. LXXXVII.SF:3). The later variants of eye brooches, type A.60–61, are decidedly more common. A.60 fibulae come from graves: 34, 38, 49, 53, 54, 60, 92; 110 and 144 (Pls. XXIV.34:7, XXVI.38:3, XXIX.49:7, XXXII.53:6, XXXIII.54:4, XXXV.60:4–5, LIV.92:5, LXII.110:7, LXXXV.144:5). The only brooch of type A.61 was found in grave 110 (Pl. LXII.110:6). In addition, the brooches from graves: 38, 49, 54 can be generally identified as types A.60–61 (Pls. XXVI.38:4, XXIX.49:8, XXV.54:4). Fragments of eye brooches which cannot be even approximately classified come from graves: 20, 23, 31, 34, 32, 36, 39, 53, 59, 69, 92, 95, 102, 114, 129, 130 and a stray find (tabl. XV.20:10, XXIV.34:6, XVIII.23:11, XIX.31:2, XXIII.32:4, XXIII.36:5,6, XXVI.39:5,6, XXXII.53:7, XXXIV.59:4, XL.69:10, LIV.92:6, LX.102:1, LXVI.114:2, LXXV.129:8, LXXV.130:4, LXXXVII. SF:4). An interesting case is the brooch from grave 102; despite having been preserved in its entirety, it was completely deformed by the so-called malignant patina. An extremely interesting and rare specimen is the fragmentarily preserved eye brooch of crossbow construction from grave 34 (Pl. XXIV.34:7). It has been suggested in the literature that the construction of this kind is of later chronology, as it is regarded precisely as an idea borrowed from crossbow brooches (Nowakowski 1995, p. 29, 1996, p. 49). However, the oldest eye brooches with an internal chord have already been found among brooches of the main series at the sites of

Pruszcz Gdański, Gdańsk County, site 7; Ulkowy, Gdańsk County; and Weklice, Elbląg County, where they were accompanied by brooches of types A.52 and A.53 as well as A.51 (Andrzejowski, Cieśliński 2007, p. 483; Natuniewicz-Sekuła, Okulicz 2011, pl. CCXVIII.489.1; Tuszyńska 2005, pl. III.5.3). The rest belong to the Prussian series variant. This may prove that such a construction was created accidentally as a result of varyingly successful repairs. There is only one known example of a brooch of crossbow construction from the area of the Przeworsk culture; it was recovered from grave 213 at the Niedanowo cemetery (Ziemlińska-Odojowa 1999b, p. 43, pl. VXII:213.1). The brooch from grave 34 is not the only eye fibula with signs of repair. In the case of the specimens from graves 27 (Pl. XXI.27:5) and 90 (Pl. LI.90:6), the hook that held the spring of the brooch had been broken off. The head of the brooch was then drilled through to insert a special hook, which held the detached spring and the chord. The only other specimens salvaged in this way come from grave 59 at the site of Nadkole, Węgrów County (Andrzejowski 1998, p. 58, pls. XLIV:59.5, CVIII:5), and from the barrow cemetery at Paragaudis in Samogitia (Michelbertas 1997, pp. 22, 55, fig. 63; Andrzejowski 2007, p. 285, footnote 20). For slightly different reasons, the brooch from grave 92 (Pl. LIV.92:5) is also an interesting specimen. It is very massive and heavy, and its “eyes” were very carelessly made. The brooch appears to have been forged rather than cast.¹⁰ This is probably the first case of an eye brooch made in such an unconventional way.

The eye brooches of the Prussian series from all the graves add up to the total of 30 specimens, which is consistent with other eastern Przeworsk culture cemeteries, where this brooch type was extremely popular (Andrzejowski, Cieśliński 2007 p. 283, fig. 4). The oldest brooches of the main series appear at the beginning of phase B_{1a}, and the youngest ones last until phase B₂. Prussian series eye brooches are typical of phase B_{2a}; however, they also persist in phase B_{2b} (Mączyńska 2004, pp. 213–215; Mączyńska 2009, pp. 25–27). This is also confirmed at the Brudnice cemetery, where a residually preserved Prussian series eye brooch was

¹⁰ For the consultation, I offer my thanks to dr hab. Jacek Andrzejowski from the State Archaeological Museum in Warsaw.

found in feature 69 (Pl. XL.69:10) together with an A.38–39 spring–cover brooch.

The oldest fibulae of group IV are the brooches of type A.68, with three specimens found. One, preserved in its entirety, was recovered from feature 4 (Pl.VII.4:5), and two more, fragmentarily preserved, come from feature 26 (Pl. XX.26:3–4). All these fibulae had springs set on an iron axis bar. Brooches of this type are very common in the territory of the Przeworsk culture and are regarded, with few exceptions, as local products, inspired by A.67 brooches arriving from the Roman Empire (Prochowicz 2003). Moreover, A.68 fibulae are one of the main markers of phase B_{1b} (Liana 1970, pp. 441, 454–55; Mączyńska 2009, pp. 27–31).

Series 2 of group IV consists of trumpet brooches. Brooches of type A.75 and variant L.2 as distinguished by T. Liana (1970 pp. 442, 444) come from graves: D, 13 and 94 (Pls. II.D:6, XI.13:6, LV.94:8). The brooch from grave 13 was made of iron and has clear grooves on the crests, which were originally filled with copper–alloy wire, as indicated by its preserved small fragments. The other two brooches were made of copper alloy. The brooches from graves D and 94 are dated to the beginning of phase B_{2a}. The brooch from grave 13, most likely found together with a residually preserved A.38–39 fibula, might be of a slightly longer chronology. Brooches of type A.76 were found in grave D (Pl. II.D:5) and in grave 10 (Pl. VII.10:5). The brooch from grave D was made of copper alloy, whereas the one from grave 10 was forged from iron. The transversal incisions on the brooch from grave 10 were filled with copper wire. Copper inlays are relatively rare. Incisions filled with silver are much more common. Brooches decorated with silver inlay are also encountered in Czechia, Norway and in the Elbe River basin (Godłowski 1977, pp. 10–11). Copper wire inlay is also found on trumpet brooches; however, this decorative motif is much rarer. A brooch from Tarnów, Opole County (Godłowski, Szadkowska 1972, p. 86, fig. 19a), probably possessed similar inlay, although it is a later specimen resembling A.78–79 brooches. A similarly ornamented trumpet brooch is known from the site at Žarošice, Hodonin District, in Moravia (Peškař 1972, pp. 55–56, fig. 13.9). Brooches of this type are rarely accompanied by date markers other than pottery, and their chro-

nology extends from the later section of phase B₁ to the beginning of phase B₂ (Godłowski 1977, p. 11).

The latest trumpet brooches from Brudnice belong to type 5 distinguished by T. Dąbrowska (1995), and J. Andrzejowski's type 5A (2009, p. 519). Such specimens come from graves 103 and 125 (Pls. LXI.103:2, LXXIII.125:6). Of particular interest here is the brooch from grave 125, which is decorated on the crests with silver inlay. This type of decoration is very rarely encountered. Trumpet brooches of type 5 are dated to the later section of phase B_{2b} (Dąbrowska 1995, pp. 19–20) and are among the latest chronological markers of the Przeworsk culture in Mazovia.

Two partly burnt, very massive, copper–alloy brooches representing the 3rd series of Almgren group IV were found in grave 21 (Pl. XVI.21:5–6). Their closer typological identification became possible only after analogous artefacts, untouched by fire, had been found in grave 136 (Pl. LXXX.136:6,7). These brooches are similar to type A.92 and have the spring placed in a cylinder. They should be dated to phase B₂.

From Brudnice grave 29 (Pl. XXII.29:6) comes a very rare, perfectly preserved brooch of type A.103, forged from iron. Another specimen, made of copper alloy, was found in feature 111 (Pl. LXV.111:7). Moreover, grave 21 (Pl. XVI.21:6) yielded the head of a copper–alloy brooch of group V, which most probably also belonged to the same type. Brooches of series 4 of Almgren group V, which includes type 103, are mainly characteristic of Jutland and the northern part of the Elbe River region. They are very rare in Poland,¹¹ and specimens forged from iron are almost unheard of. Two have been found so far, both in grave 264 at the Niedanowo cemetery (Ziemlińska-Odojowa 1999b p. 113, pl. LXXX:2, 3). Other analogous artefacts were made of copper alloy. One brooch was found in grave 18 at site 3 at Gródki, Działdowo County (Okulicz 1983, p. 107, fig. 26f, pp. 166–167)¹²

11 Brooches of other types are often mistaken for A.103 fibulae, as was the case, for example, with the finds from Gostkowo, Bytów County, graves 1 and 319; Lubowidz, Łębork County, grave 71; and Lutom, Chojnice County (Walenta 1980, pp. 113, 120, 138; Wołagiewicz 1995, pp. 19, 39, pl. XII.1–2; Machajewski 1980, p. 52 fig. 8:2; Andrzejowski 1997, p. 108, footnote 16)

12 There incorrectly identified as A.II/IV.

two more, including one with an iron spring, come from inhumation graves 6 and 7 from Bodzanów, Bodzanów County (Zielonka 1958, p. 352, figs. 40c, 41a). Other specimens come from grave 82B/1934 at Gledzianówek, Łęczycza County (Kaszewska 1977, pp. 92, 127, pl. L.2), grave 104 at Kleszewo (Tempelmann-Mączyńska 1985, p. 284) and grave 449 at Kowalewko site 12 (Skorupka, 2001, pp. 117, 139, pl. 139:449/3). The stray find of a fibula from the cemetery in Biała, Zgierz County (Makiewicz 1970, p. 210, pl. XVI:17) should also be counted in this group. At Niedanowo, the artefacts in question were found together with an A.53 brooch; at Gledzianówek, with a brooch of type A.38–39, shield-boss of type J.6, shield grip with decorative cut-outs and a protuberant rib and with two spearheads. At Kowalewko, they were accompanied by two A.99 brooches, and at Bodzanów by brooches of the 10th series of group V. Considering the finds, it can be assumed that the chronology of these brooches falls within phase B₂ of the Roman period. In the case of Brudnice, it seems that the occurrence of this type of brooches may be narrowed down to phase B_{2b} on the basis of the horizontal stratigraphy.

An S-shaped brooch of series 7 of group V comes from grave 105 (Pl. LXIII.105:6). It represents type A.109–110 and is decorated with two double rings with incised edges. Copper-alloy brooches of series 7 are characteristic mainly of the Wielbark culture. They are much rarer in the area of the Przeworsk culture, where they are limited to its eastern zone. In the territory of the Nidzica group, brooches of series 7 are known only from the cemeteries at Niedanowo, Gródki, Sławka Wielka, Nidzica County, and Dzierzgowo, Mława County (Mączyńska 2009, pp. 268–271, pl. 17; Szela 2001, p. 165, fig. 3.23). The earliest specimens appear at the beginning of phase B₂, becoming one of its markers. However, they also continue in phase B_{2b}, as in the case of the finds from grave 628 at Niedanowo or grave 2/96 at Dzierzgowo (Ziemlińska-Odojowa 1999b, 107, pl. CCXXII.628; Szela 2001, p. 165).

Additionally, four brooches of the 8th series of group V were found at Brudnice. Two brooches of type A.120, or type 1 distinguished by Machajewski (1998), come from grave 3 (Pl. V.3:3,4). Both fibulae were made of iron and are covered with a very nice fire patina. One of them shows signs of repair, which involved install-

ing two hooks around the head to hold the broken spring. The oldest specimens of this brooch type appear as early as phase B_{2a}, although they are the most common in phase B_{2b}, while the youngest examples last until phase B₂/C₁ (Machajewski 1998, p. 190). A copper-alloy brooch with a residual crest on the head and a delicate roll on the transition between the bow and foot was found in feature 106 (Pl. LXIII.106:11,12). The brooch from grave 134 (Pl. LXXI.134:5) should probably also be included in this group. It lacks a crest on the head, which is instead imitated by the chord spring wrapped around the head. An analogous brooch comes from grave 108 at Nadkole (Andrzejowski 1998, p. 41, pl. LXVI.108:4). Additionally, the head of an unspecified copper-alloy brooch with a flat cross-section of the bow and a fragment of a spring, probably belonging to a brooch of group V, were found in grave 86 (Pl. LI.86:2).

Furthermore, small fragments of brooches whose type cannot be identified come from features: 20 21, 36, 54, 73, 88, 99, 102, 112, 121, 125, 129, 132, 135, 144 (Pls. XV. 20:11, XVI.21:8, XXIII.36:7, XXXIII.54:5, XLIII.73:8, LI.88:2, LVIII.99:7, LX.102:5, LXIV.112:2, LXIX.121:18, LXXIII.125:9, LXXV.129:5, LXXVII.132:5, LXXIX.135:7, LXXXV.144:8) and probably also from graves 24, 100.

Copper-alloy pins

Eight pins made of copper alloy were found at the Brudnice cemetery. The pins that can be classified as group IIc or IVa are the most numerous. The best-preserved pin comes from grave 144 (Pl. LXXXV.144:9). In the middle, it has a perforated oval shaft, enclosed by three bi-conical rings both from above and underneath. This pin was classified as type 20 of group IIc. Two other pins, from graves 27 and 54 (XXI.27:9, XXXIII. 54:6), were probably very similar in appearance, but their heads were partly deformed by high temperatures. The head of the pin from grave 27 is decorated with sharply bevelled rings under a perforated knob. The head of the pin from grave 54 was probably shaped as a crown. The pin from grave 95 (LVI.95:10) also belongs in group IIc, although the middle part of its head is shaped in the form of an “hourglass”, which is more in line with pins of group IVa, which,

however, are not perforated. The heads of the pins from graves 23 and 136 (Pls. XVIII.23:9, LXXX.136:8) are completely different in form. The pin from the former grave is decorated with a knob between two flat double rings with incised edges. Another knob crowns the head of the pin and is ornamented with an engraved cross. The pin from grave 136 has a knob above a biconical ring above two more rings, smaller in size. The head is topped by a hemispherical knob. Both pins were classified as group IVa. The stray find of a fragmentarily preserved pin (Pl. LXXXVII.SF:10) has also been included in this group. The fragment of a small pin head from grave 144 (Pl. LXXXV.144:10) should probably be assigned to group VIII (Beckmann 1966, pp. 18–38, pls. 1–4, maps 11,17,21).

Pins are encountered throughout the entire area of the Przeworsk culture, albeit with varying intensity. There is a clear concentration of such finds in the eastern Przeworsk culture area, especially in northern Mazovia (Andrzejowski 2001b, p. 74, fig. 15). The closest finds of pins from the north–western region of the Przeworsk culture come from the sites of Dłutowo (Ziemlińska-Odojowa 1999a, pp. 405, 406, fig. 12, grave 24.8; fig. 13, grave 25.13), Niedanowo (Ziemlińska-Odojowa 1999b, pls. XXIX.98:4; LXXI.238:1, LXXXIX.270:4), Modła (Andrzejowski 2009, pl. 3.91, grave 188.3), Garlino, Mława County (Okulicz 1965/2006 pl. XXIV.10), and Pierławki, Działdowo County (Grzymkowski 1981, pp. 17–21). The heads of the artefacts from Dłutowo have not been preserved. The pins from graves 238 and 270 at Niedanowo are very similar in shape to those from features 27, 54 and 95 at Brudnice.

The pins described are dated to the later section of the early Roman period, which corresponds to the general trend in the occurrence of this type of artefacts in the eastern part of the Przeworsk culture (Andrzejowski 2001, p. 74, fig. 15). The specimen from grave 23 at Brudnice was found together with a Prussian series eye brooch, rod bracelets and a profiled strap–end. The pin from feature 27 was accompanied by an A.53 eye brooch, a belt buckle with pin extending into buckle plate, bracelet fragments, a strap–end and a copper–alloy S–shaped clasp of type A. Apart from the pin, grave 54 contained an A.60 eye brooch of the Prussian series, and the pin from grave 95 was found next to a belt

buckle of type D2, bracelet fragments, a strap–end and casket fittings. In the case of all the graves described, the richness of the grave goods accompanying the pins is noticeable. This clearly indicates wealth, and thus high social rank of the people who used this type of jewellery. The features listed should be dated to phase B₂ of the Roman period.

Antler pins

These were mostly specimens without a head or with a poorly defined one, which belonged to type IA distinguished by A. Dulkiwicz (2009, pp. 210–213). The pin from feature 105 (Pl. LXIII.105:7) had an undefined, straight–cut head. A very similar pin, with a quadrangular head, was found in grave 145 (Pl. LXXXIV.145:4). The head of the artefact from grave 111 (Pl. LXV.111:11) was marked with a delicate double narrowing. The pin from feature 5 (Pl. VI.5:6) had a slightly more distinct head, conical in shape and quadrangular in cross–section. Despite the lack of ornamentation, the shape of the head makes it more similar to type ID (Dulkiwicz 2009, pp. 214–215). The specimen from grave 29 (Pl. XXII.29:5), the end of which resembled a crown, and the artefact found in grave 128, distinctly constricted in two places (Pl. LXXIV.128:6), had the most elaborate decoration. The former can be classified as type III, the latter as type VIII in Dulkiwicz’s typology (2009, pp. 224–230).

Large fragments of antler pins—heads not preserved—were recovered from features 10, 72, 80, 84 and 99 (Pls. VII.10:7, XLII.72:6, XLVIII.80:9; XLIX.84:2 and LVIII.99:6). In addition, small pieces of pins were found in graves 2, 6, 7 and 147 (Pls. IV.2:5 VI.6:2, VII.7:5, LXXXVI.147:1), and one more was a stray find (Pl. LXXXVII.SF:9).

Antler pins are imitations of pins made of copper alloy, which is clearly indicated by their similarity to their prototypes, especially to the types of Beckmann groups II and IV (Godłowski 1977, p. 42). Specimens with profiled heads are relatively often found in Silesia and Greater Poland as well as in the eastern part of the Przeworsk culture. They are dated to the early Roman period or to the beginning of the late Roman period. The context in which antler pins were found in some of the graves is

worth noting. The pin from grave 5 was found together with a fragmentarily preserved comb of type C. In grave 29, the pin with an elaborate crown-shaped head was accompanied by an A.103 brooch. The pin from feature 111 was also found next to an A.103 brooch. Moreover, the grave contained a belt hook of type 1a. In the case of all the described grave assemblages, of note is the co-occurrence of elements of clearly western characteristics, typical of the Elbe River region and Jutland (cf. Dąbrowska, Liana 1986, p. 151, Madyda-Legutko 1988, pp. 189–190, Andrzejowski 1997, p. 108). It seems that such an influence would also explain the presence of at least some of the pins in the Brudnice graves, as antler pins were one of the main grave goods in women's burials in the Elbe region. They were found in approx. 70% of the graves dated to the early Roman period (Mączyńska 1985b, p. 17).

S-shaped clasps

As many as four S-shaped clasps were found at the cemetery.

A copper-alloy clasp of von Müller's type A (1957) comes from grave 27 (Pl. XXI.27:7). Another fastener of the same type, this time made of iron, very large and massive, was found in grave 124a (Pl. LXXII.124a:3). A delicate S-shaped clasp of type D, made of copper alloy, was recovered from feature 113 (Pl. LXV.113:2). A specimen of the same type, made of silver, was found in grave 67 (Pl. XXXIX.67:5). Apart from grave 27, the features with S-clasps contained only ceramic chronological markers. Grave 27 yielded a buckle of type C3 and an A.53 brooch, which dates it to the end of phase B₁ and the beginning of phase B_{2a}. S-shaped clasps are not very common in the territory of the Przeworsk culture. Nevertheless, over twenty finds are known from this area, with its eastern zone accounting for fourteen of them. S-shaped fasteners were particularly numerous at the Nadkole cemetery, where as many as five specimens were found (Andrzejowski 1997 p. 110, fig. 8). In the case of the artefacts from Brudnice, the silver clasp from grave 67 (Pl. XXXIX.67:5) is worthy of note, as artefacts made of this raw material are unique in the territory

of the Przeworsk culture. A similar but much more massive clasp comes from grave 1A at Gródek on the Nurzec River, Wysokie Mazowieckie County.¹³ A silver clasp of type C is also known from grave 106/1937 at Witaszewice, Łęczyca County (Andrzejowski 1997, p. 110), a type-B specimen from grave 424 at Niedanowo (Ziemlińska-Odojowa 1999b, p. 79, pl. CLVII.424:5), and an example of type A from grave 26 at Nadkole (Andrzejowski 1998 p. 22, pl. XXII.26:3). All the artefacts listed are dated to phase B₂.

Pendants

A unique perforated pendant made from a claw of a white-tailed eagle comes from grave 20 (Pl. XV.20:9) at Brudnice. The only similar artefact—for which, however, the bird species has not been determined—was found at the cemetery at Starachowice (Jamka 1959, pp. 39, 11g), where it was part of a necklace made of polished, multi-coloured, chalcedony beads. It was accompanied by two engraved gems of Roman provenance. The assemblage is dated to phase C_{1a} of the late Roman period (Andrzejowski 2004, p. 331.24:18). An ornament made from a drilled-through bone was also found in grave 153 at Chorula, Krapkowice County, dated to phase C₂ (Szydłowski 1964, p. 118, fig. 126.6). Several pendants shaped from bear claws are also known from the area of the Przeworsk culture. These are the artefacts from grave 1 at Brzyków, Trzebnica County (Petersen 1934), and from feature 1 at the settlement of Iwiny, Wrocław County (Peschek 1939, Rogatko 1994, p. 345). Undrilled claws come from the Stupsk site, Mława County, grave 16 (Reinbacher 1964, p. 157, pl. 27b:4).

According to A. Kokowski, the artefact from Starachowice, just like wild boar sabres and astragali, is evidence of Sarmatian connections (Kokowski 2004, pp. 24 et seq.). However, in the case of the Brudnice artefact, seeking such distant correlations already in phase B_{2a} seems too bold a hypothesis.

13 Unpublished material, collection of the North Mazovian Museum in Łomża.

Clay knobs of type Bernaschivka

A clay knob of oval cross-section and with fluted edges was found in grave 54 (Pl. XXXIII.54:11). An analogous, slightly smaller artefact was uncovered in grave 73 (Pl. XLIII.73:12). Furthermore, a clay ball, measuring approx. 2.5 cm in diameter, was found in grave 131 (Pl. LXXVI.131:12). B. Niezabitowska-Wiśniewska classifies them among the type of flat knobs, characteristic of the Przeworsk culture (2015, p. 519).

It seems that these knobs served as buttons, attached to the clothes with threads passed through the grooves visible on the external surface, so that they were permanently fixed to the garments. Their function as buttons or dress ornaments may be supported by the arrangement of such artefacts documented in grave 10 at Lubieszewo, Nowy Dwór County (Jonakowski 2001, pp. 187–188, figs. 1, 3.9), where eight such items were found. These artefacts are not very common in the Przeworsk culture. One specimen was present in grave 285 at Modła, dated with an eye brooch of type A.46, another was a stray find (Andrzejowski 2009, pl. 3.152.285:5; pl. 3.154:17). Other examples come from grave 113 at Nadkole (Andrzejowski 1998, p. 42, pl. LXVIII.113:22) and from Młodzikowo, where it was a stray find (Dymaczewski 1958, p. 400, fig. 470.10). Four pieces come from grave VI at Starachowice (Jamka 1959, p. 39, pl. 12.g), four more—from grave 153 at Chorula (Szydłowski 1964, p. 119, fig. 126.1–4).

Such artefacts are much more frequent in the Wielbark culture. In the case of Mazovia, they have been found in feature 20 at Kuczbork-Osada (Szela 2018a, p. 23, pl. XV.20:5); Zeńbok, Ciechanów County (Dąbrowski 1958, p. 158, fig. 2); Kozłówko, Nidzica County (Woźniak 2011, fig. 9.15); Niedanowo, graves 520 and 550 (Ziemlińska-Odojowa, 1999b, pp. 91, 96, pls. CLXXXVIII.520:8, CXCVIII.550:3). It seems that the Wielbark culture specimens are smaller and more spherical in shape. However, the raw material and vertical groove decoration remain identical to the Przeworsk culture examples. Outside of Mazovia, such artefacts are frequently encountered in Eastern Pomerania as well as in the area of the Chernyakhov culture and in Germany (Kokowski 2000, fig. 3, Niezabitowska-Wiśniewska 2015, fig. 4).

Beads

Beads are not very commonly found in Przeworsk culture grave inventories. The cremation burial rite, which effectively destroyed decorations of this type, undoubtedly had a part in this state of affairs. However, while any amber beads would have been completely burnt, glass ornaments should have at least been preserved as melted lumps or drippings on the bone material. Glass beads or their remains were registered only in 14 graves at the Brudnice cemetery¹⁴. In four cases, they were the so-called melon beads, assigned to group XVIII in Tempelmann-Mączyńska's typology (1985, pp. 19–20 39–45). They probably survived thanks to the raw material of which they were made, i.e. faience, which is more resistant to fire (Mączyńska 1977, p. 84, Tempelmann-Mączyńska 1985, pp. 41–42). Such artefacts come from graves: 7, 13, 53 and 136 (Pls. VII.7:3,4, XI.13:9, XXXII.53:9, LXXX.136:17–20). One intact bead and half of a second one were found in grave 7, one bead each was recovered from features 13 and 53, and as many as four beads of this type were uncovered in grave 136—two classic beads of blue colour and two celadon ones. Inside one of the beads, there was a piece of copper-alloy wire (Pl. 136:17). Celadon in colour were also the beads from graves 7, 13 and 53. Due to the colour differing from that of the model exemplar, A. Kokowski proposed distinguishing such beads as a separate type—TM171b (Kokowski 2017, p. 143; Kokowski 2019). The bead from grave 7 is dated with a main series eye brooch to the later section of phase B₁. Other assemblages are dated with brooches of types A.75, A.38–39 and A.60 to phase B₂. The rest of the glass beads were heavily melted, which prevented their more precise typological identification. They come from graves: 13, 23, 54, 95, 121, 130, 133, 136, 138, 144. In grave 13, it was a fragment of an opaque bead of light blue colour. Grave 23 yielded an opaque white bead (Pl. XVIII.23:14). Pieces of opaque beads, green and blue, were found in grave 54. Fragments of crushed, transparent, yellow and blue beads come from grave 121. Fragments of transparent yellow beads decorated with opaque

¹⁴ In most cases, the state of preservation of the beads made it impossible to picture them in the plates presenting the artefacts.

yellow threads were recovered from grave 133 (Pl. LXXXVIII.133:9, 12,13). Fragments of heavily melted beads, coloured red (Pl. LXXX.136:25–26), navy blue (Pl. LXXX.136:23), dark blue with a decoration in the form of a white spiral (Pl. LXXX.136:21,22,24) as well as colourless, come from grave 136. Grave 138 yielded a piece of a transparent dark blue bead, grave 144 pieces of yellow, red and dark blue beads and grave 95—numerous fragments of heavily melted beads of indeterminate colour.

Moreover, at the Brudnice site were found: three bone beads in graves 27 (Pl. XXI.27:14), 67 (Pl. XXXIX.67:7) and 68 (Pl. XXXIX.68:7), and two silver beads, decorated with pseudo–granulation, in grave 130 (Pl. LXXV.130:2, 3).

Bracelets

Bracelets, or in fact their fragments, are very common grave goods in the Przeworsk culture part of the Brudnice cemetery. Artefacts of this type come from as many as 17 features of this culture. They are mostly fragments of rod bracelets. Two very well–preserved rod bracelets of square cross–section were found in grave 23 (Pl. XVIII.23:6,7). They are decorated with punched “eyes”, placed in the middle of the rod, and with small punctures running along the edge. Very similar, albeit partially burnt, bracelets were found in grave D (Pl. II.D:15–17); in this case, however, punched decoration is limited only to the ends of the bracelets. Residually preserved fragments of similarly decorated bracelets come from grave 135 (Pl. LXXIX.135:8). Grave 69 (Pl. XL.69:8) yielded a completely preserved copper–alloy bracelet, round in cross–section but oval in shape, most probably due to damage. A similar bracelet was found in grave 95 (Pl. LVI.95:8). A damaged bracelet of round shape and cross–section, with one carefully finished, profiled terminal (the other had been broken off), was found in grave C (Pl. I.C:3). Grave 95 also yielded a fragment of a bracelet of flat cross–section (Pl. LXXVI.95:9). Additionally, fragments of heavily damaged bracelets of oval cross–section come from features: 13, 21, 27, 54, 60, 66, 81 and 136 (Pls. XI.13:14, XVI.21:9, XXI.27:11, XXXIII.54:8; XXXV.60:7; XXXVIII.66:8, XLIV.81:4 and LXXX.136:12).

Small bracelets made from a thin copper–alloy sheet, slightly convex in the central part, come from graves 112 and 129 (Pls. LXIV.112:1, LXXV.129:4). Their edges are decorated with densely placed punched points. They should be classified as type 2 distinguished by Natuniewicz (2000). Grave 112 did not yield any other artefacts, but grave 129 contained ceramic material associated with the Przeworsk culture. Such bracelets had not been previously found at Przeworsk culture cemeteries; the only analogous forms are known from Wielbark culture sites. Two come from grave 25 at the cemetery of Weklice, Elbląg County (Natuniewicz–Sekuła, Okulicz–Kozaryn 2011, p. 30, pl. VII.25:4.5), whose chronology is determined by A.96 and A.128 brooches. Snake–headed bracelets were decidedly less common, and their fragments were found only in three graves. A heavily melted fragment of an object resembling the head of such a bracelet was recovered from grave 13 (Pl. XI.13:8). Equally poorly preserved fragments of a snake–headed bracelets were found in graves 20 and 63 (Pls. XV.20:12, XXXVI.63:16). Objects of this type are very rare in the Przeworsk culture area (Andrzejowski 1994b, p. 321), where their presence is linked to imports from the area of the Wielbark culture.

Finger–rings

A ring made from an iron rod of round cross–section and with overlapping ends comes from feature 80:8 (Pl. XLVIII.80:8). The shape and diameter of the object (1.3 cm) suggest that this is a simple version of a finger–ring. The grave can be dated generally to the Roman period.

Belt elements

Belt hooks

From feature 111 (Pl. LXV.111:9) comes an iron belt hook, with the hook transitioning directly into a transverse plate of rectangular shape, which allows the artefact to be identified as type 1a distinguished by Madyda–Legutko (1990, pp. 160–161, fig. 2). Such belt hooks were typical grave goods in the northern part of the Elbe

River region, in Schleswig and Western Mecklenburg as well as in the Gustow group (Dąbrowska, Liana 1986, p. 151; Madyda-Legutko 1988, pp. 189, 190). In most of these areas, they appear together with brooches of Kostrzewski type N and are typical of women's graves in phase B₁. A little later, they reach the mouth of the Vistula River, where they get modified, as riveted two-piece belt hooks are encountered there. The artefacts found in northern Mazovia should be regarded as a manifestation of the influence from the Wielbark culture or even directly from the Elbe region. The specimen from Brudnice was made from a single piece of metal, so it belongs to type 1a. Moreover, it was found together with a brooch of type A.103, which additionally confirms its north-western origin. Two similar belt hooks were recovered from the Niedanowo cemetery. One is a stray find, the other comes from grave 500 (Ziemlińska-Odojowa 1999b, pp. 88, 116, pl. CLXXXII:4; pl. CCXXIX:40). Other examples were found in grave 62 at Modła (Andrzejowski 2009, pl. 3.25:1), in grave 24 at Nadkole (Andrzejowski 1998, pl. XX:6) and in grave 44 at Wesółki, Kalisz County, site 1 (Dąbrowscy l., K. 1967, pl. 51.2,7). A copper-alloy belt hook comes from the Wielbark culture cemetery at Ulkowy, grave 26 (Tuszyńska 2005, pl. 13.5). It is worth noting here that the belt hook from Brudnice was accompanied by a classic belt buckle of type D1. This would testify to the elaborate attire of the man—as determined by the anthropological analysis conducted—buried in this grave. This is all the more interesting considering that in other areas belt hooks are found in women's graves (Dąbrowska, Liana 1986 p. 151; Madyda-Legutko 1988, p. 190).¹⁵

Belt buckles

Belt buckles with a profiled pin extending into buckle plate, type **C1**, come from graves D and 73 (Pls. II.D:9, XLIII.73:4). The buckle from grave 73 was forged from iron, whereas the one from grave D was made of two metals and had an iron frame and a copper-alloy pin. Both buckles also have a trough-shaped crossbar, 6 and 6.8 cm long respectively, for attaching the belt.

Another iron buckle with an extended pin, this time of type **C3**, comes from grave 27 (Pl. XXI.27:6). Its plate was attached to the belt with two rivets, whose heads were hammered flat. Like the artefacts from graves D and 73, the buckle had a trough-shaped crossbar between the frame and the plate, which fixed and stiffened the leather strap. The length of the trough makes it possible to estimate the width of the strap at 5.9 cm, and the length of the rivets indicates strap thickness of approx. 3 mm. Additional trough-shaped fittings, found on their own, come from graves: D, 128, 136 (Pls. II.D:11, LXXIV.128:5, LXXX.135:5).

Buckles with a profiled pin extending into buckle plate are not very common. The earliest and, at the same time, the closest analogous artefact, also made of iron, comes from grave 9 at the cemetery at Wielki Łęck, Działdowo County, where it was accompanied by faceted pottery characteristic of the late pre-Roman period (Jahn 1940, pl. 401.6–12). Further iron artefacts come from the cemetery at Dłutowo, Działdowo County, grave 9 (Ziemlińska-Odojowa 1999a, pp. 403, 406, fig. 6, grave 9.2) and from Kuczbork-Osada, feature 50 (Szela 2018a, p. 34. XL.50:7), where the buckle was found together with an A.67 brooch. At Niedanowo, two analogous buckles were made of iron (graves 255:3 and 285:2), another one was made of copper alloy (grave 596:1) (Ziemlińska-Odojowa 1999b, pp. 50, 56, 115, pls. LXXXI.255:3; XCVIII.285:2; CCXI.596:5). Grave 285 is dated with a trumpet brooch of variant 1 distinguished by Liana (1970) to phase B_{1b}, while grave 596 is dated to phase B_{2a}, based on an A.75 trumpet fibula. At Brudnice, the buckles of type C.1 were accompanied by brooches of types A.26/28, A.76/L.1 as well as A.52 and A.58–59 eye brooches, while the buckle of type C.3 was found together with an A.53 brooch. This allows all these assemblages to be dated to phase B_{1c}–B_{2a}. A new division of buckles with a pin extending into buckle plate was proposed by P. Iwanicki (Iwanicki, 2015, pp. 46–53). According to him, the buckle from feature 27:6 belongs to type V, and the artefact from feature 73 to type IIIc.

An iron buckle with a frame of round cross-section, type **C13**, comes from feature 10 (Pl. VII.10:6). An analogous buckle, this time with the ends of the frame hammered flat and overlapped, comes from feature 72

¹⁵ As confirmed by the anthropological analyses carried out for the cemeteries at Modła, Nadkole, Kamieńczyk.

(Pl. XLII.72:5). Further examples of this type were found in graves 24, 85 and probably also 137 (Pls. XIII.24:2, L.85:12, LXXXI.137:6); however, in these cases, the ends of the frame do not meet. Moreover, a miniature buckle of this type was found in grave 84 (Pl. XLIX.84:1), and another one, fragmentarily preserved, comes from grave 25 (Pl. XIX.25:5). This type is very popular and appears from the beginning of the Roman period to the early Migration period (Madyda-Legutko 1987, tables 7–8). The most common buckles found at the Brudnice cemetery belong to type **D1** (Madyda-Legutko 1987, pp. 24–26). This group can be divided into several subtypes. The most numerous are the specimens with a frame of quadrangular cross-section, whose ends were hammered flat and overlapped: 4, 9, 65, 69, 80; 85, 107, 111, 131 i 136 (Pls. V.4:6, VI.9:1, XXXVII.65:5, XL.69:7, XLVIII.80:5, LIX.107:7, LXV.111:8, LXXVI.131:6, LXXX.136:9); three more specimens were stray finds (Pl. LXXXVII.SF:5–7). An analogous buckle, but with a nearly triangular cross-section, comes from feature 29 (Pl. XXII.29:7), and one with an oval cross-section comes from grave 59 (Pl. XXXIV.59:5). A strongly corroded buckle of this type was found in feature 13 (Pl. X.13:20). The buckles of type D.1 whose frame ends are not hammered flat and do not overlap are much less common. Such artefacts come from features 23, 38, 40, 66, 81 and probably also 136 (Pls. XVIII.23:5, XXVI.38:5, XXVII.40:4, XXXVIII.66:5, XLIV.81:3 and LXXX.136:14). Even rarer are the type – D1 buckles whose frame ends do not meet at all; they were found in features 63, 85, 121 and probably also 121, 128 (Pls. XXXVI.63:6, XLIX.85:13, LXIX.121:11,16, LXXIV.128:4). In addition, a buckle of type D1 with a frame of roughly round shape and square cross-section was recovered from feature 60 (Pl. XXXV.60:8). A very rare example of a buckle that morphologically belongs to type D1 comes from feature 79 (Pl. XLVII.79:7). The buckle has an oval frame of round cross-section, decorated in eleven places with transversal incisions measuring approx. 1 mm in width. The notches were filled with copper wire. This kind of buckle decoration is extremely rare. An iron belt buckle from grave 186 at the Modła cemetery has similar inlay (Andrzejowski 2009, p. 168, pl. 3.87 grave 186.3). Its frame had likewise been incised many times, however, there

is currently no trace of inlay in the grooves, which is probably due to the artefact having been placed on a funeral pyre, as evidenced by the fire patina found on the buckle and the destruction of other copper–alloy artefacts found in the grave. A very similar iron buckle with copper–alloy inlay comes from the cemetery at Myrungs, Gotland. It is dated to the early Roman period (Almgren, Nerman 1923, p. 38, fig. 243). A type – D1 buckle with silver inlay comes from a grave at the cemetery of Strobin, Wieluń County (Abramek 1987, pl. 358). Another rare buckle was found in feature 54 (Pl. XXXIII.54:7). Morphologically, it corresponds to type D1, but it has a profiled pin, like type D2, whose forked ends reference type D4 (Madyda-Legutko 1987, p. pl. 8.4). An identical artefact was found at the cemetery at Stupsk, Mława County, in grave 3/89.¹⁶ Another buckle comes from the Tarnów cemetery, but this specimen does not have a profiled pin (Godłowski, Szadkowska 1972, p. 65, pl. 42.4). The last known similar artefact with a forked pin was found at the cemetery of Turšice in the Bohemian Basin (Madyda-Legutko 1987, pl. 8.4). Buckles with a forked pin are not a new phenomenon in the Przeworsk culture. They are very common in the later phase of the early Roman period, although those specimens have a rectangular frame. They are usually accompanied by weaponry; hence, they are considered to be one of the indicators of warriors' graves. The buckle from Brudnice was found in a grave which, in addition to three vessels, contained a spindle whorl, a casket key, a copper pin with a profiled head and a residually preserved eye brooch of the Prussian series, type A.60. The casket elements and the pin clearly indicate that the grave belonged to a woman of high social status. The sex of the deceased has also been confirmed by the anthropological analysis conducted, which identified it as the burial of a woman of *iuvenis*–*adultus* age. The buckle from Stupsk was accompanied by a partly melted, strongly profiled brooch resembling type A.92, an analogous fibula, fragmentarily preserved and made of copper alloy, a rectangular belt mount, a spindle whorl, two melted melon beads and a clay(?) pendant in the shape of a five-pointed star. The Tarnów ar-

16 Unpublished material of the Museum of the Zawkrze Land in Mława.

tefact was found together with a key of type A, a bucket-shaped pendant and a trapezoidal strap-end. Analysing the above-mentioned assemblages, it can be observed that oval buckles with a forked pin are found exclusively in women's graves. Therefore, it can be assumed that they are the female equivalent of rectangular buckles with a forked pin, which were reserved for male graves only. Considering the extreme rarity of the buckles described and almost twin likeness of the specimens from Brudnice and Stupsk, it is hard not to hypothesise that both artefacts were probably made by the same craftsman.

Iron buckles with a profiled pin, type **D2**, come from graves 71 and 95 (Pls. XLII.71:5, LVI.95:6). Buckles of this type had previously been known almost exclusively from the area of the Wielbark culture, the Vistula mouth region and Dobrzyń Land, and are very rarely found in the territory of the Przeworsk culture (Madyda-Legutko 1987, map 17). There, their appearance is limited to the Nidzica group, with analogous specimens found at the cemeteries of Niedanowo, Gródko and Zgliczyn Pobodzy. At Niedanowo, such buckles were recovered from graves 89, 248, 278 and 342 (Ziemińska--Odojowa 1999b, p. 116, pls. XXVI.89:2, LXXVII.248:1, XCIV.278:5, CXXVI.342:1). The buckles from graves 89 and 248 were made of iron, the other two were made of copper alloy. At Gródko, Łysa Góra site, an analogous buckle was found in grave 24 (Okulicz 1983, fig. 37c); at the site of Zgliczyn Pobodzy, Żuromin County, it was uncovered in grave 4 (Grzymkowski 2006, fig. 6.1.6; Szela 2018b, p. 127, fig. 9.7). Specimens of this type are dated mainly to the early section of the Roman period. Jan Schuster suggests that buckles of this type appeared in northern Mazovia as a result of the Wielbark culture's influence on the eastern Przeworsk culture areas (Schuster 2016, p. 142).

Rectangular buckles of type **G1** were found in graves 133 and 143 (Pls. LXXVIII.133:4, LXXXIV.143:3). A third buckle of this type was a stray find (Pl. LXXXVII.SF:8). In both cases, it can be concluded that these were female graves. Buckles of this type are dated to phase B₂ (Madyda-Legutko 1987, table 1).

Additionally, grave C (Pl. I.C:5) yielded a gently profiled pin from a belt buckle of unspecified type.

Strap-ends

Ten profiled strap-ends were found at the Brudnice cemetery. They come from graves: C, D, 23, 27, 73, 91, 92, 95, 121 (Pls. I.C:4, I.D:10, XVIII.23:10, XXI.27:10, XLIII.73:5,6, LIII.91:4, LIV.92:7, LVI.95:7, LXIX.121:12).

The strap-end from grave D (Pl. II.D:10) represents **variant 2 of type 1**. An analogous fitting comes from a princely grave at Zgliczyn Pobodzy (Grzymkowski 2006, fig. 6:3,4). At Brudnice, the strap-end was accompanied by a belt buckle with a pin extending into buckle plate, trumpet brooches of variants L.1 and L.2 and by A.52 and A.58–59 eye fibulae; at Zgliczyn Pobodzy, it was found together with a trumpet brooch of type L.1 and an A.109–110 fibula. This allows dating both these assemblages to the beginning of phase B₂. This strap-end variant is not very common in the Przeworsk culture area. Analogous artefacts come from the sites of Niedanowo, grave 591; Kryspinów, Kraków County, grave 51; and Księży Młyn, Poddębice County (Madyda-Legutko 2011, pp. 22, 127, maps 1, 2). Forms similar to the strap-ends in question are much more frequently encountered in the Elbe River region, the Bohemian Basin and by the Danube River (Madyda-Legutko 2011, p. 22). Such fittings are mainly found in phase B₁, but they are also present in assemblages dated to phase B₂ (Madyda-Legutko 2011, p. 22). Two profiled strap-ends were uncovered in feature 73 (Pl. XLXII.73:5, 6). One has been preserved in its entirety, the other in fragments, without the profiled terminal. It can only be assumed that both were originally identical and represented **variant 3 of type 1**. Another profiled strap-end of the same type, but with a slightly less elaborate moulding, comes from feature 23 (Pl. XVIII.23:10). A perfectly preserved strap-end, the only bronze one found at the site, was recovered from grave 92 (Pl. LIV.92:7). This last artefact seems to most closely resemble **variant 4 of type 1**. Such strap-ends are characteristic of the Wielbark culture, but the Brudnice specimen was found in an undisputedly Przeworsk context (Madyda-Legutko 2011, pl. IV.12, 13). Two other strap-ends should probably be identified as **variant 6 of type 1**. These are the artefacts from graves 91, 95 (Pls. LIII.91:4, LVI.95:7). The profiled terminal of the first one was broken off, the second one was partially deformed by fire. This variant is characterised by a knob placed in the

upper part of the terminal and a length of approx. 5.5 cm (Madyda-Legutko 2011, pp. 18, 19, pl. II). A very rare strap-end comes from grave C (Szela 2015, pp. 649–650) and another one—probably from grave 121 (Pls. I.C:4, LXIX.121:12). Unfortunately, the open ends of both specimens were broken off. The central part of both strap-ends is decorated with a traditional “vase”, but the terminals are cylindrical and repeatedly grooved; in the case of the artefact from grave C, it is additionally terminated with a knob. These strap-ends should be classified as **variant 8 of type 1**. Similar artefacts come from the Modła cemetery, grave 249, and from Starachowice, in the country of Starachowice, grave VI (Madyda-Legutko 2011, pl. III.4–5). Strap-ends of this type are equally infrequent in the Wielbark culture area, where analogous artefacts were found at the cemeteries of Kowalewko, grave 423, pl. VI.5; and Odry, Chojnice County, grave 551. They are definitely more common in Mecklenburg and the Elbe River region, where they were recovered from the sites at Badow, Lkr. Nordwestmecklenburg, grave 18/1972, 1036; Dishley, Kr. Neubrandenburg, grave 32; Neuenkirchen, Kr. Neubrandenburg, grave 17, 50; Plöwen, Kr. Plöwen, grave 8; Schlotheim, Kr. Unstrut–Hainich, grave 14.87. Specimens of this type are also known from the swamp deposits from Vimose in Denmark and Thorsberg 3–5 in Germany (Madyda-Legutko 2011, pl. III.4–5, pl. VI.1–5). Furthermore, a partially burnt profiled strap-end, accompanying an iron buckle of type C3, comes from grave 27:10 (Pl. XXI.27:10). Despite the damage, this specimen should certainly be classified as **type 1**, but it is difficult to assign it to a specific variant. This difficulty results, on the one hand, from the burning of the artefact, on the other, from the lack of an equivalent. Two knobs separated with rings, above which there was a vase-shaped element typical of early Roman fittings (Madyda-Legutko 2011, p. 17), can be clearly seen on the terminal of the Brudnice strap-end. The strap-end from grave 125 (Pl. LXXIII.125:7) probably belongs to **variant 2 of type 9**. Unlike its prototypes, this fitting is clearly expanded in its lower part (Madyda-Legutko 2011, p. 72, pl. XXXII.1–7). Another strap-end, which cannot be typologically identified, comes from feature 91 (Pl. LIII.91:4).

To conclude the analysis of the strap-ends from the Przeworsk culture assemblages, it is worth drawing attention to the set of belt

fittings from grave 27 (Pl. XXI.27:6,8,10). In addition to the aforementioned type-1 strap-end and the accompanying belt buckle of type C1, this grave yielded a small, 1.7-cm-long, trough-shaped fitting. This last artefact harmonises well with the second, longer, trough-shaped fitting, which was an integral part of the buckle. Trough-shaped and profiled fittings do not commonly appear side by side, although a grave from the Oblin site (Czarnecka 2007, pls. XCI.85:2.2a, XXCII.85:7) can serve as an example of such an occurrence. The trough-shaped fitting placed near the buckle allows reconstructing the width of the initial part of the belt. Meanwhile, the end of the belt was most probably split. Its first end, terminated with a short trough-shaped fitting, was passed through the buckle, and the other one, with the profiled strap-end, was hanging down.

Belt mounts

Various types of appliqués also constitute parts of belt sets. Two copper-alloy belt mounts come from feature 23:12,13 (Pl. XVIII.23:12, 13). One consists of two thin copper-alloy plates joined with two small rivets, indicating the thickness of the clipped item of approx. 1 mm. From feature 60:6 (Pl. XXXV.60:6) comes a square belt mount, made up of two copper-alloy plates, measuring 2.2x2.2 cm and fastened at the corners with four rivets. It is possible that the mount was originally decorated, but the deformations caused by the temperature of the funeral pyre make it impossible to unequivocally confirm this assumption. The burning of the artefact makes it very difficult to determine the length of the rivets, and thus the thickness of the decorated object. Another partly burnt copper-alloy belt mount, composed of two rectangular plates, comes from grave 63:7 (Pl. XXXVI.63:7). A fragment of a second belt mount with a preserved rivet 63:8 was also found in the same grave. Rectangular iron belt mounts were recovered from graves D:12, 54:9, 60:10 and 73:7, 120:11,12, 131:11 (Pls. II.D:12, XXXIII.54:9, XXXV.60:9, 10 and XLIII.73:7, LXVIII.120:11, 12, LXXVI.131:11). The specimens from features 54, 60 and 120 were attached with thin rivets, which have been preserved only in the case of the mounts from grave 120. The mount from grave 73 was made from much thicker sheet metal and was fixed

with two massive rivets. Equally massive was the mount from grave D, which was attached with three rivets. This allows an assumption that these items probably served a utilitarian function, possibly strengthening one section of the belt. The mount from grave D could also have been used as a divider for an additional strap, which was attached with the middle rivet.

Tools and items of everyday use

Combs

At the Brudnice cemetery, combs almost never appear in the Przeworsk culture features. Only two artefacts of this kind are known from this site. The one from grave 5 (Pl. VI.5:5) has only been preserved in a few pieces. It is an open-work comb of type C distinguished by Thomas (1960, pp. 66–71). The second one, preserved almost completely, comes from grave 133 (Pl. LXXVIII.133:14). It is a comb of type D, beautifully decorated with reliefs. A similar situation has been observed at the Przeworsk culture part of the Niedanowo cemetery, which yielded only one comb fragment (Ziemlińska-Odojowa 1999, pp. 52, 119, 133). What is interesting, both of the aforementioned types of combs are very rare in Poland (Szela 2015, pp. 650–651) and are more commonly encountered in the eastern Przeworsk area, albeit with varying intensity. For example, only one comb of type D (Dąbrowska 1997, p. 101) was found at the Kamieńczyk cemetery, whereas as many as six specimens were recovered from the Nadkole cemetery (Andrzejowski 1998, p. 85). Such artefacts are undeniably more common in the Elbe River region (Thomas 1960, p. 71, maps 3, 4) and in Scandinavia (Ilkjær, 1993, pp. 284–286, fig. 115).

Needles

Both iron and copper–alloy needles were found at the Brudnice cemetery. Iron needles, completely or almost completely preserved, were uncovered in graves: 18, 20, 26, 66(?), 68, 109, 132, 143 (Pls. XII.18:5, XV.20:14, XX.26:7, XXXVIII.66:6(?), XXXIX.68:5, LXIV.109:5, LXXVII.132:6, LXXXIV.143:5). Smaller fragments were found in graves:

D, 26, 102, 133 (Pls. II.D:13, XX.26:6, LX.102:6, LXXVIII.133:9) and probably also in features: 100, 121, (Pls. LVIII.100:4, LXIX.121:17. Copper–alloy needles were less common and were recovered from graves: 11, 22, 23, 34, 92, 100 and 144 (Pls. VIII.11:6, 7, XVII.22:4, XVIII.23:15, XXIV.34:8, LIV.92:9, LVIII.100:4, LXXXV.144:11).

Hooked needles are equally frequently encountered at the Brudnice site. Such items were found in graves: 3, 21, 26, 27, 32, 100, 109, 143 (Pls. V.3:5, XVI.21:10, XX.26:8, XXI.27:12, XXIII.32:5, LVIII.100:3, LXIV.109:6, LXXXIV.143:4). Hooked needles are not very common in the Przeworsk culture area, especially in its northern Mazovian borderland (Mączyńska 2009, fig. 40). They are definitely more popular in the Wielbark culture area, especially in the Vistula mouth region. Their chronology is very long, as they appear in phase B_{2b} and last until phase D₁ (Godłowski 1977, p. 41, Mączyńska 2009, p. 106). In the case of some of the Brudnice needles, an earlier chronology should be established. The needle from feature 27 was accompanied by an A.53 brooch, and the one from feature 32 was found with a spring fragment from an eye fibula. The needles from these features should be dated to phase B₂.

Awls¹⁷

Awls were found in two graves: 111 and 133 (Pls. LXV.111:10, LXXVIII.133:6–8). The former yielded one artefact, which had two different working ends—one round, the other rectangular. As many as five awls were found in the second grave. The first one, 13 cm long, also had two different ends—round and rectangular—and was ornamented at about the mid-length of the shaft. The second awl, 8.5 cm long, with round lower part and quadrangular upper part, was likewise ornamented halfway along the shaft. The third one was round and about 6.8 cm long; its upper part was most probably broken off, as indicated by its irregular terminal. Fragments of two antler tools, probably also awls, 7 and 10 cm long, were also found in the same

¹⁷ Awls are very difficult to distinguish from fire strikers—at times, it is even impossible—as undeniably proved by the research at Illerup. In this paper, the artefacts accompanied by quartzite fire–flints have been identified as fire strikers, the ones unaccompanied by fire–flints as awls.

grave (Pl. LXXVIII.133:11,12). One had a quadrangular cross-section, the other a curved one. Grave 111 is dated with an A.103 brooch and a belt hook of type 1a to phase B_{2b}, grave 133 can be dated generally to phase B₂.

Fire strikers

The only fire striker found at the Brudnice cemetery comes from grave 107 (Pl. LIX.107:8). It is a rod-shaped fire striker, with a slightly expanded working part and the opposite end terminated with a loop, of type IA1c distinguished by Jonakowski (1996, p. 95, pl. I) and type IA2c after Kokowski (1985, 118–119, fig. 1). Fire strikers of this type are characteristic of phase B₂, especially its later section, although they occasionally appear in phase B₁ and last until phase B₂/C₁–C_{1a}.

Fire-flints

A quartzite fire-flint of rectangular shape with rounded sides comes from feature 70 (Pl. XLI.70:4). A distinct vertical depression is visible in its central part—a sign of its intensive use.

Crescent-shaped knife

The only artefact of this type comes from grave 120 (Pl. LXVIII.120:9). The blade is cut straight at the end, and it has a trapezoidal tang. Knives with a defined tang are typical of men's graves (Dąbrowska 2008, p. 62), which has also been confirmed by the anthropological analysis of the Brudnice grave. The feature did not contain any other metal date markers. This knife was found in a set with a rectangular whetstone.

Whetstone

The only whetstone was found in grave 120 (Pl. LXVIII.120:10), together with a crescent-shaped knife. It is 8.4 cm long and has a square cross-section measuring 2x2 cm. An analogous whetstone comes from grave 33 at the Oblin cemetery (Czarnecka 2007, p. 18, pl. XXXII.33:19). Unfortunately, part of the whet-

stone broke off, so it is unknown whether it originally had a suspension hole (Rakowski, Watemborska-Rakowska 2017).

Metal and bone handles

A fragment of a handle made of thin copper-alloy sheet comes from grave 136 (Pl. LXXX.136:13). The sheet was coiled into an irregular polygon and fixed to an unknown object with two small, round-head rivets. The surface of the sheet is decorated with rows of punched-out circles. Fragments of a handle, probably of a knife or an awl, richly ornamented with engraved circles, come from grave 99 (Pl. LVIII.99:5). Very similar handle fragments were found in grave 202 at Piaski, Bełchatów County (Skowron 1997, pp. 33,34, pl. XII.202), grave 49 at Łęgonice Małe site II, Przysucha County, (Liana 1976b, pl. XV.11), and grave 38 at Nadkole (Andrzejowski 1998, p. pl. XXVII:38.13–14).

Spindle whorls

Spindle whorls were very common at the cemetery under discussion and numbered as many as 64 pieces. They were found in 44 graves, usually one in each: 3, 14, 18, 21, 23, 26, 27, 32, 34, 36, 38, 39, 49, 53, 54, 66, 67, 68, 69, 73, 90, 95, 97, 100, 102, 125, 129, 132, 136, 143, 144 (Pls. V.3:6, XI.14:4, XII.18:6, XVI.21:11, XVIII.23:8, XX.26:9, XXI.27:13, XXIII.32:6, XXIV.34:10, XXIII.36:8, XXVI.38:6, XXVI.39:7, XXIX.49:9, XXXII.53:8, XXXIII.54:12, XXXVIII.66:7, XXXIX.67:6, XXXIX.68:6, XL.69:11, XLIII.73:13, LI.90:7, LVI.95:14, LVII.97:4, LVIII.100:5, LX.102:5, LXXIII.125:10, LXXV.129:6, LXXVII.132:7, LXXX.136:29, LXXXIV.143:6, LXXXV.144:12). Pairs of spindle whorls were found in eight graves: 7, 20, 22, 63, 80, 92, 121, 133 (VII.7:6,7, XV.20:15,16, XVII.22:6,7, XXXVI.63:13,14, XLVIII.80:10,11, LIV.92:11,12, LXIX.121:11,12, LXXVIII.133:15,16). Sets of three spindle whorls come from features: 13, 109, 131, 137 (Pls. XI.13:11–13, LXIV.109:7–9, LXXVI.131:13–15, LXXXI.137:7–9), and feature 103 yielded as many as five specimens (Pl. LXI. 103:5–9).

Almost all of the whorls are classically biconical in shape. Cylindrical spindle whorls were found only in features 13:12, 21:10 and 69:9 (Pls. XI.13:12, XVI.21:11, XL.69:11). The speci-

men from feature 69 most probably imitated a stone spindle whorl and was decorated with spherical depressions and engraved vertical lines.

Keys and casket elements

Casket elements were found in as many as 17 graves. Six of them contained the full set consisting of a key, lock fitting and spring: 13, 22, 63, 73, 95, 131 (Pls. X.13:10,18,19, XVII.22:5,8,10, XXXVI.63:9–11, XLIII.73:9–11, LVI.95:11–13, LXXVI.131:7–9). Graves 121 and 131 (Pls. LXIX:121:13,14, LXXX.131:10,11) yielded a key with a spring each, grave 20 a key and fitting (Pl. XV.20:7,8), and graves C, 54 and 80 (Pls. II.C:6, XXXIII.54:10 and XLVIII.80:6) only a key each. In addition, only fittings with springs were found in graves 59 and 103 (Pls. XXXIV.59:6,7 and LXI.103:3,4), and a solitary fitting was recovered from grave 60 (Pl. XXXV.60:11). Feature 69 (Pl. XL.69:9) contained a spring only. A casket lid handle was found only in grave 145 (Pl. LXXXIV.145:3).

In total, keys were found in 12 graves. All of them represent the simplest type A distinguished by Kokowski (1997, p. 36, pl. 18). The key from grave 133 was adorned with two profiled knobs. This is a very rare decorative element, which was present only in a few cases, for example, in a grave at the cemetery of Tuchlin, Wyszaków County, grave 16; Wiktorów, Zgierz County, grave 16; Brzeski, Przysucha County, stray find (Okuliczowa Ł. 1964, fig. 15a; Moszczyński, Tyszler 2001, fig. 4:7; Cieślak-Kopyt 2004, fig. 25.45; cf. Czarnecka 2021, pp. 72, 73). Additionally, the specimens from features 20, 63, 73 and 95 (Pls. XV.20:7; XXXVI.63:9; XLIII.73:9 and LVI.95:11) had rings attached, probably to facilitate securing them to the belt. Moreover, the keys from features C and 80 (Pls. I.C:6, XLVIII.80:6) were equipped with D-shaped rings similar to buckles of type D1.

Casket lock fittings

A lock fitting of Kokowski type 2 (Kokowski 1997, pp. 35–36, pl. 6) was found in grave 60 (Pl. XXXV.60:11). A slightly more massive specimen, with one round and one square opening,

comes from grave 63 (Pl. XXXVI.63:10). This fitting was not riveted but affixed with its bent, tapering ends. A similar attachment method could be observed in the case of the lock fitting from grave 103 (Pl. LXI.103:3), which represented type 10. A similar fitting of this type, attached with two large rivets, comes from grave 59 (Pl. XXXIV.59:6). Graves 73 and 95 (Pls. XLIII.73:10, LVI.95:13) yielded fittings of type 10a. A relatively rare fitting of type 4 (Kokowski 1997, p. 37, figs. 6, 31) was found in grave 13 (Pl. X.13:19). Furthermore, fragments of casket fittings that cannot be typologically identified due to their state of preservation were recovered from features 20, 22, 131 (Pls. XV.20:7, XVII.22:5 LXXVI.131:8).

Casket fittings

In addition to a key and a lock mount, four plank fittings made of flat sheet iron were found in feature 20 (Pl. XV.20:6) at the Brudnice cemetery. Three similar pieces come from graves 63 (Pl. XXXVI.63:12) and 80 (Pl. XLVIII.80:7). A single fitting each was recovered from graves 92 and 131 (Pls. LIV.92:10, LXXVI.131:10). Grave 71 (Pl. XLII.71:6) yielded a very massive iron fitting, made from a wide, thick sheet, coiled in a loop. The specimens from graves 20, 63 and 80 were most probably casket fittings. In the case of the artefacts from grave 92 and, especially, from grave 71, this is not so certain, as the features contained no other casket-related elements; of note is also the unusual shape of the fitting from grave 71. Moreover, from grave 145 (Pl. LXXXIV.145:3) comes a round, iron casket lid handle, which was fixed with a hook. This is the only artefact of this type found at the cemetery.

Shells

A fragment of a shell was found in grave 115 (Pl. LXVI:115:6). It is the only object of this type at the cemetery. It is difficult to say whether it was intentionally included in the grave goods or if it is a natural addition found in the sand of the gravel pit.

Rings and „loop” rivets

Various iron rings of undetermined function, made from a wire of round cross-section and varying thickness, come from features 13, 22 and 92 (Pls. XI.13:22, XVII.22:9, LIV.92:8). Graves 73 and 121 (Pls. XLIII.73:14, LXIX.121:15) yielded small rivets with semi-circular heads and bent shafts. Unfortunately, it is not known what they might have been used for.

Unidentified object

An object made from a thick, iron sheet, with one side wider and the other narrower and looped, was found in the upper part of grave 89 (Pl. LII.89:4). The purpose of the item is unknown. Grave 13 yielded a fragment of an iron blade, perhaps from an adze (Pl. XI.13:16). A bent iron rod of square cross-section comes from grave D (Pl. II.D:14).

Small, unidentified fragments of copper-alloy objects also come from graves: 5, 8, 11, 13, 14, 20, 21, 23, 25, 34, 39, 54, 59, 60, 63, 69, 80, 81, 85, 90, 91, 95, 99, 125, 136 (Pls. XV.20:13, XVIII.23:16, XXIV.34:9, XXXIV.59:8, XXXV.60:12, XXXVI.63:15, XLIV.81:5, LIII.91:5, LVI.95:16, LVIII.99:8, LXXIII.125:8, LXXX.136:16). Small lumps of melted copper were found in graves: 13, 27, 32, 36, 66, 73, 115, 121, 125, 130, 135, 136, 137, 143, 144 (Pl. LXXIII.125:11).

Pottery¹⁸

Group A. This group consists of tripartite vessels with a tall neck as well as vessels in which the neck was marked only symbolically, by separating it from the rim and body with an engraved horizontal line. The first method of forming the neck is characteristic of the oldest ceramic forms encountered at the Brudnice cemetery and is dated mainly to phase B₁. This ornament was simplified in later periods and took the form of two horizontal lines separating the neck from the body and rim. At the same time, this is the most popular type of ornament found at Brudnice, and it can also be encountered at other northern Mazovian cemeteries.

Type A.1. These are large vessels with an upright or slanted neck, sometimes convex in the middle, body placed high and, occasionally, undercut lower part. An important feature in identifying this type is the rim diameter, which is usually smaller than or equal to the maximum body diameter but, most importantly, lower than the height of the vessel. Such vessels are described as vases. These are the key features differentiating type A.1 vessels from ceramic forms of type A2, which are called bowls.

Type-A.1 specimens were found at the Brudnice cemetery in features 42:1, 50:1, 120:3, 132:2 and probably also in grave 145:2 (Pls. XXVII.42:1, XXX.50:1, LXVIII.120:3, LXXVII.132:2, LXXXIV.145:2). In most cases, the vessels had a well-defined base. Almost all the vessels included in this group had an ornament, usually in the form of engraved horizontal lines and indentations arranged in horizontal and oblique rows or in the shape of a triangle. Depressions arranged in the shape of a triangle are characteristic of pottery from northern Mazovian sites, as already noticed years ago by J. Okulicz-Kozaryn (1965/2006 p. 97, table V). Moreover, the neck of the vessel from grave 132 was decorated with engraved oblique lines, and the vessel from grave 144 was adorned with an impressed stamp (!) ornament in the shape of a circle. Vessels of this type were usually found in assemblages devoid of any

chronological markers made of metal that would allow their more precise dating.

Type A.1a. These are vessels analogous to type A.1, additionally equipped with one or two handles. The vase-like vessels from graves 27:1, 66:1, 74:1, 85:3, and probably also from graves 119:2 and 137:5 (Pls. XXI.27:1, XXXVIII.66:1, XLIV.74:1, L.85:3, LXVII.119:2, LXXXI.137:5) can be included in this group. All the vessels have handles expanding at the base, and the handle of the vessel from grave 137 is shaped as the Roman numeral for 1. Most of the vessels are decorated with an ornament of engraved horizontal lines. Only the vessels from graves 74 and 137 had a more elaborate ornament. In the case of vessel 74, it was in the form of two narrow ornamental bands filled with oblique incisions, and the vessel from grave 137 was decorated with a meander pattern filled with punctures. Additionally, the vessel from grave 74 had a well-defined base.

Metal date markers were found only in graves 27, 66 and 88. In the case of graves 66 and 85, these were type-D1 belt buckles; grave 27 yielded an eye fibula of type A.53 and a belt buckle of type C3. They allow dating the grave to phases B_{1b} – B_{2a}. The vessel from grave 74, with a narrow ornamental band characteristic of the oldest assemblages from the Brudnice cemetery, should probably be dated to phase B₁.

Type A.1b. This subtype includes vessels of type A1, equipped with the so-called pseudo-handles, shaped as the Roman numeral for 1 or of other atypical shapes.

Specimens of this type occurred in features 13:1, 17:1, 71:1, 72:1, 121:6 and also include the vessel from grave 135:1, which has two handles in the shape of a cross (Pls. X.13:1, XIV.17:1, XLII.71:1, XLII.72:1, LXX.121:6, LXXIX.135.1). The vessel from feature 13 had a narrow band of ornament on the upper part of the body, in the form of oblique incisions, grouped in fours, enclosed by engraved lines. The specimen from feature 17 was decorated on the maximum body circumference with depressions arranged in a horizontal line. The most elaborate ornaments were found on the vessels from graves 71 and 135. The former had a band of hatched meanders on the maximum body circumference; the latter had a broad band of ornament composed of squares, filled with indentations, and rectangles, filled with three

18 The classification of the Przeworsk culture pottery was based mainly on the typological division created for the cemetery at Niedanowo (Ziemlińska-Odojowa 1999b) by prof. T. Dąbrowska (cf. Ziemlińska-Odojowa 1999a, p. 407) as well as on a study by T. Liana (1970).

horizontally arranged rows of engraved oblique lines and depressions, on the upper part of the body. The vessels from graves 17 and 135 had glossy, black surfaces and served as cinerary urns. The other vessels, albeit equally impressive, were brown and deposited in fragments, in some cases bearing traces of burning. Interestingly, in all the cases, the metal artefacts present as well as the anthropological analysis conducted indicate that the aforementioned vessels were used as urns in women's graves.

Precise chronological markers were found only in graves 13 and 121. In grave 13, it was an A.75 brooch and a fragment of an A.38–39 brooch, and in grave 121—a brooch of type A.26/28. Moreover, grave 71 yielded a D2 belt buckle, graves 72 and 121—a buckle of type D1, feature 135—a fragment of a copper–alloy bracelet, and graves 13 and 121—parts of caskets. This allows establishing the general chronology of the assemblage as phase B₂ of the Roman period.

Type **A.1.2**. These are vessels analogous to type A.1, but the neck is separated from the body by a sharp break. The specimens found in features 63.1, 67.1 and 80.1 (Pls. XXXVI.63:1, XXXIX.67:1, XLVIII.80:1) can be counted among vessels of this type. The vessels lacked bands of ornamentation, and the features in which they occurred did not yield metal artefacts that would allow their precise dating. In feature 67, there was a silver S-shaped clasp; features 63 and 80 contained belt buckles of type D1 and parts of caskets. The chronology of the assemblage should be established broadly as phase B₂.

Type **A.1.3** is represented by vase-like vessels, with the neck separated from the body by an engraved line or an ornament placed between the neck and the body.

This group includes 13 vessels. Their lower part is straight or slightly undercut. Additionally, some of them have well-defined bases. Specimens of this type occurred in features B:1, 1:2, 5:1, 29:1, 40:1, 54:1, 65:1, 72:1, 98:2,3, 94:4 115:2, B:1 (Pls. I.B:1, IV.1:2, VI.5:1, XXII.29:1, XXVII.40:1, XXXIII.54:1, XXXVII.65:1, XLII.72:1, LVII.98:2,3, LV.94:4, LXVI.115:2). On the vessels from features 5 and 29, there was an ornament of impressed indentations arranged in the shape of a triangle. The specimen from feature 72 was decorated with a horizontal row of punctured de-

pressions. The vessels from graves 40 and 98 had an ornament in the form of a horizontal dashed line, and the vessel from grave 65 was decorated with a chevron ornament and a meander filled with depressions. The vessels from features B, 29, 73 and 98 had well-defined bases.

Grave 94 is dated with an A.75 brooch, grave 29 yielded an A.103 brooch, and a fragmentarily preserved eye fibula was found in feature 54. From graves 40, 65, and 72 come belt buckles of type D1, from feature 54—a D2 buckle, and from feature 5—a comb of type C. On the basis of these artefacts, the chronology can be only broadly determined as the Roman period.

Type **A.2** includes vessels closely resembling type A.1; however, they are shorter, and the rim diameter usually exceeds body diameter and is always greater than the height of the vessel, which suggests they should be identified as bowls. The neck is upright or slanted, slightly convex in the middle in the vessels of earlier chronology, later flat and poorly defined. The body is rounded, rarely sharply profiled. This vessel type constitutes the largest pottery group at the Brudnice cemetery, comprising as many as seventy four specimens: 2:1, 4:1, 8:1,2, 10:1, 11:1, 12:2,3, 16:1, 18:1, 20:2, 21:1, 22:1, 23:1,2, 24:1, 25:2, 26:1,2, 27:2, 30:1, 39:1, 49:2, 50:2, 51:1,2, 53:1,2, 54:2, 59:1,2, 60:1, 66:3, 69:1, 71:2, 75:1, 76:1, 77:1, 79:1, 85:2,5, 90:1, 91:2, 94:2,3, 95:2, 99:2, 100:1, 101:2, 102:1, 113:1, 115:1, 116:1, 120:6, 125:1,4, 128:1,2, 131:1,2, 132:3, 133:1, 134:1, 135:2, 136:1, 138:1, 141:1, and probably also 47:2, 63:4, 65:2, 121:7–9, 137:1, SF:15 (Pls. IV.2:1, V.4:1, VIII.8:1,2, VII.10:1, VIII.11:1, IX.12:2,3, XIII.16:1, XII.18:1, XV.20:2, XVI.21:1, XVII.22:1, XVIII.23:1,2, XIII.24:1, XIX.25:2, XX.26:1,2, XXI.27:2, XIII.30:1, XXVI.39:1, XXIX.49:2, XXX.50:2, XXX.51:1,2, XXXII.53:1,2, XXXIII.54:2, XXXIV.59:1,2, XXXV.60:1, XXXVII.65:2, XXXVIII.66:3, XL.69:1, XLII.71:2, XLI.75:1, XXXVIII.76:1, XLV.77:1, XLVII.79:1, L.85:2,5, LI.90:1, LIII.91:2, LV.94:2,3, LVI.95:2, LVIII.99:2, LVIII.100:1, LIX.101:2, LX.102:1, LXV.113:1, LXVI.115:1, LXVI.116:1, LXVIII.120:6, LXXIII.125:1,4, LXXIV.128:1,2, LXXVI.131:1,2, LXXVII.132:3, LXXVIII.133:1, LXXI.134:1, LXXIX.135:2, LXXXI.136:1, LXXXII.138:1, LXXXII.141:1, XXVIII.47:2, XXXVI.63:4, LXX.121:7–9, LXXXI.137:1, LXXXVII.SF:15).

In addition to the most common ornament of engraved lines between the neck and the rim and body, an ornament of double

(grave 16:1) or triple depressions arranged in the shape of a triangle (8:1, 158:1, 132:3), a row of horizontally-aligned depressions (85:5), indentations adjoined from below by engraved lines extending downwards towards the base (128:2), as well as a chevron ornament (53:1, 66:3, 11:1) and engraved ladder-shaped patterns (101:2) can all be found on the maximum body circumference of the vessels.

Such vessels were encountered throughout the entire period of use of the Przeworsk culture part of the Brudnice cemetery. The earliest forms appear together with the oldest grave assemblages containing brooches of types A.68, A.52, A.75, A.76; later ones co-occurred with A.26 and A.53 brooches as well as Prussian series eye fibulae of types A.58–59 and A.60–61; the youngest ones were accompanied by A.38–39 brooches, A.120 fibulae with a crest on the bow and a trumpet brooch of variant 5.

Type **A.2a** is represented by vessels analogous to the ones described above, additionally equipped with a handle. The only vessel of this group was found in grave 120:2 (Pl. LXVIII.120:2). It is decorated with a narrow band of oblique incisions and has a concave base. The grave did not yield any chronological markers made of metal.

Type **A.3** are miniature vessels with a defined neck and sharp body profile. Twenty five vessels of this group were found at the cemetery: B:2, D:2, E:5, 3:2, 4:3, 5:2, 10:2, 15:3, 18:3, 25:3, 27:3, 29:4, 53:3, 71:3, 74:4, 85:10, 94:6, 99:1, 115:4, 121:2,5, 128:3, 144:2 and SF:14 (Pls. I.B:2, II.D:2, III.E:5, V.3:2, V.4:3, VI.5:2, VII.10:2, XII.15:3, XII.18:3, XIX.25:3, XXI.27:3, XXII.29:4, XXXII.53:3, XLII.71:3, XLIV.74:4, L.85:10, LV.94:6, LVIII.99:1, LXVI.115:4, LXIX.121:2,5, LXXIV.128:3, LXXXV.144:2, and LXXXVII.SF:14). Most specimens belonging in this group are decorated with an ornament of engraved horizontal lines under the rim and on the upper part of the body. The vessel from feature 5 is decorated with an ornament of three depressions in the shape of triangles. A similar, albeit less carefully made, ornament was present above the maximum body diameter of the vessel from feature 105. In the case of the vessel from feature 29, a cross-shaped ornament was placed on the base.

Graves 4, 10 and 25 are dated with brooches of types A.68, A.52 and A.76 to phase B_{1b}. In feature 27, a vessel of this type co-occurred with an A.53 brooch and a C.3 belt

buckle, which suggests dating the assemblage to the transition between phases B_{1b} and B_{2a}. The vessels from features 15, 53, 94 and 105, accompanied by Prussian series eye fibulae and A.75 and A.109–110 brooches, should be dated to phase B_{2a}. Probably of a slightly later chronology are grave 29, which contained an A.103 brooch, and grave 13, which yielded an A.75 brooch as well as a fragment of an A.38–39 fibula.

Type **A.4** are vessels with a rounded body and an applied strip of clay under an upright or slanted neck. Only one such vessel comes from the Brudnice cemetery; it was found in grave E.1 (Pl. III.E:1). The grave did not yield any metal date markers.

Type **A.5** is represented by large vessels with globular bodies, usually with two handles, ornamented in a number of ways. Such vessels were present in graves: D:1, 25:1, 91:1 and 92:1, 94:1, 95:1, 120:1, 121:1, 142:5 and probably also 120:7 (Pls. II.D:1, XIX.25:1, LIII.91:1, LIV.92:1, LV.94:1, LVI.95:1, LXVIII.120:1,7 LXIX.121:1, LXXXIII.142:5). The vessel from feature 92 is decorated with a wide band of meander pattern filled with engraved lines. The vessel from grave 95 is decorated with a wide band of triangles, formed of alternating engraved lines and depressions, the vessel from feature 121.1—with indentations arranged in the shape of a triangle, and the vessel from grave 120—with a narrow band of ornament composed of engraved oblique lines and horizontally aligned depressions grouped in twos or threes. Moreover, all the vessels, except for the pottery from graves 91 and 92, had an ornament of engraved lines at the transition between the neck and the rim and body. It is worth noting that the vessel from grave 95.1 references the Wielbark culture vessels of group ID, both in its form and in ornamentation.

Grave 25 is dated with an A.52 brooch and early trumpet fibulae to the end of phase B₁; grave 94, based on the head of an A.75 brooch, should be dated to the end of phase B₁ and the beginning of phase B_{2a}. Grave D, with A.52, A.58–59, A.75 and A.76 brooches, as well as graves 92 and 95, with Prussian series eye brooches, and grave 121, with an A.26/28 brooch, should be dated to phase B_{2a-b}.

Group B This group consists of bipartite vessels of various sizes, without a defined neck, which correspond to Liana type IV/1.

Type **B2** are gently profiled bowls with the body placed high and the lower part of the vessel undercut. Such vessels appeared in 9 graves: 15:1, 36:3, 48:2, 72:3, 74:2, 81:1, 85:4, 143:1, 144:4 (Pls. XII.15:1, XXIII.36:3, XXV.48:2, XLII.72:3, XLIV.74:2, XLIV.81:1, L.85:4, LXXXIV.143:1, LXXXV.144:4). They are rarely ornamented. The neck of the specimens from features 72 and 74 is separated from the body by an engraved line. Graves 36 and 144 are dated with eye brooches of the Prussian series, and grave 29—with a brooch of type A.103, which suggests that they should be attributed to phase B_{2a}. The remaining graves yielded only belt buckles of types D1, C13, G1 and antler pins.

Type **B.3** groups bowls with a globular, rounded body and everted rim. Vessels of this type were present in 7 graves: E:2, 11:2, 13:2, 21:2, 22:3, 34:1 and 106:4 (Pls. III.E:2, VIII.11:2, X.13:2, XVI.21:2, XVII.22:3, XXIV.34:1 and LXIII.106:4). Most of the specimens assigned to this group had necks marked only by engraved lines. Only one vessel, from feature 34, was decorated with a wide meander pattern on the maximum body circumference. The bowl from feature E is dated, based on other pottery, to phase B₁. The specimen from feature 34 is dated with a Prussian series eye fibula to phase B_{2a}. The rest of the vessels are dated with A.38–39 brooches, a fibula resembling type A.92 and an A.120 brooch to phase B_{2b}.

Type **B.4** is represented by vases of various sizes, with a rounded or S-shaped profile. Ten vessels were included in this group: 48:1, 51:3, 60:2, 70:1, 79:2, 100:2, 102:2, 127:2, 142:1, SF:13 (Pls. XXV.48:1, XXX.51:3, XXXV.60:2, XLI.70:1, XLVII.79:2, LVIII.100:2, LX.102:2, LXXIV.127:2, LXXXIII.142:1, LXXXVI.SF:13). The specimens from features 48 and 70 are distinguished by their large size, measuring 25.5 cm in height. The vessels from features 70 and 102 have well-defined bases, and their bodies are decorated with a meander pattern filled with indentations. The specimen from feature 48 is ornamented with a narrow band of quadrangular depressions between two engraved lines; the base is decorated with a swastika. Chronological markers in the form of eye brooches of the Prussian series were present only in graves 60 and 102, dating the features to phase B_{2a}.

Type **B.5** are sharply profiled vessels with an undefined neck and biconical body.

Specimens of this type were present in seventeen graves, which yielded eighteen vessels: 17:3, 29:2, 37:2, 40:2, 68:1, 85:1, 98:4, 101:1,3 110:1, 107:3, 111:1, 119:3, 136:2, 140:1, 141:2, 142:3, 144:1 (Pls. XIV.17:3, XXII.29:2, XXV.37:2, XXVII.40:2, XXXIX.68:1, XLIX.85:1, LVII.98:4, LIX.101:1,3 LXII.110:1, LIX.107:3, LXV.111:1, LXVII.119:3, LXXXI.136:2, LXXXIII.140:1, LXXXII.141:2, LXXXIII.142:3, LXXXV.144:1). Only two specimens were decorated: the vessel from grave 68 with engraved horizontal lines and the vessel from grave 98 with a chevron ornament. Metal chronological markers, in the form of brooches of types A.38–39, A.60–61 and A.103 as well as a belt hook of type 1, were present only in graves 68, 101, 111, which allows them to be dated to phases B_{2a} and B_{2b}.

Type **B.5.1** is equipped with pseudo-handles. The sole, fragmentarily preserved, vessel assigned to this type came from feature 17.2 (Pl. XIV.17:2). The assemblage did not contain any metal chronological markers that would allow its precise dating.

Type **B.6** consists of biconical vessels with a marked foot. The vessels from features 90:2, 114:1, 125:3 (Pls. LI.90:2, LXVI.114:1, LXXXIII.125:3) were included in this group. The specimens from features 90 and 114 are distinguished by their large size, measuring approx. 16–18 cm in height. The vessel from feature 90 is decorated with an engraved horizontal line, adjoined from below by vertical incisions extending downwards. Graves 90 and 114 are dated with eye fibulae of the Prussian series, and grave 125—with a trumpet brooch of variant 5, corresponding to phases B_{2a} and B_{2b}.

As types **B.7** and **B.8** are not that much different, they are grouped together. They include small forms with a round or biconical body, sometimes with an emphasised rim. Twenty vessels of this group come from Brudnice: 11:4, 12:5, 20:3, 34:4, 49:3, 67:4, 79:3, 85:8, 90:3, 95:5, 96:2, 97:1, 101:4, 106:1,2, 107:2, 121:3, 129:2, 135:3 and 137:4 (Pls. VIII.11:4, IX.12:5, XV.20:3, XXIV.34:4, XXIX.49:3, XXXIX.67:4, XLVII.79:3, L.85:8, LI.90:3, LVI.95:5, LIII.96:2, LVII.97:1, LIX.101:4, LXIII.106:1,2, LIX.107:2, LXIX.121:3, LXXV.129:2, LXXIX.135:3, LXXXI.137:4). The rims of the vessels from graves 20, 47 and 101 are emphasised by an engraved line. The miniature vessel from grave 95 has an ornament of horizontally aligned

indentations on the upper part of the body and on the base. The vessel from grave 137 is a miniature footed flask. Best dated are the vessels from graves 20, 49, 90, 97, accompanied by Prussian series eye brooches, and from graves 11 and 16, with an A.38–39 brooch and A.120 brooch respectively, which allows them to be dated to phases B_{2a} and B_{2b}.

Group D. This group consists of egg-shaped vessels, equivalent to group III in the typology of T. Liana (1970). The group includes vessels of very different sizes.

Type D.1, i.e. large, egg-shaped vessels, usually used as cinerary urns. Such vessels were found in 7 graves: 12:1, 31:1, 82:1, 87:1, 103:1 and 109:1, 132:1 (Pls. IX.12:1, XIX.31:1, XLVII.82:1, LII.87:1, LXI.103:1 and LXIV.109:1, LXXVII.132:1). In addition, fragments of vessels of this type were found in features 89.2, 98.1 (Pls. LII.89.2, LVII.98.1). In grave 31, the pottery was dated with an eye fibula of the Prussian series, in grave 103—with a trumpet brooch of variant 5, and in feature 109—with brooches of mixed characteristics of Almgren group II/IV. The remaining features did not contain chronological markers made of metal. On the basis of the data presented above, the vessels of this group, according to Liana's recommendations (1970), should be dated to phase B₂ of the Roman period. The horizontal stratigraphy of the Brudnice site indicates that such vessels first appear in the later section of phase B₂, which is related to the changes in the funeral rites and their use as cinerary urns.

Group D.2 is represented by egg-shaped bowls. These vessels have an upright or slightly inverted rim and come in many different sizes. At the Brudnice site, as many as 47 specimens were found, very often two or three in one grave: A:1, 1:1,4, 5:3, 8:4,6, 13:3,5, 14:1–3, 16:3, 17:6, 20:1, 21:4, 32:1, 34:2, 38:1, 39:3, 42:2,3, 49:4, 57:1, 59:3, 63:2, 67:2,3, 69:2,3, 75:2, 79:4, 85:9, 89:1, 109:2, 110:3,4, 124:1, 126:1,3, 131:4, 132:4, 133:2,3, 137:2,3, 138:2 and SF:11 (Pls. I.A:1, IV.1:1,4, VI.5:3, VIII.8:4,6, X.13:3,5, XI.14:1–3, XIII.16:3, XIV.17:6, XV.20:1, XVI.21:4, XXIII.32:1, XXIV.34:2, XXVI.38:1, XXVI.39:3, XXVII.42:2,3, XXIX.49:4, XXXI.57:1, XXXIV.59:3, XXXVI.63:2, XXXIX.67:2,3, XL.69:2,3, XLI.75:2, XLVII.79:4, L.85:9, LII.89:1, LXIV.109:2, LXII.110:3,4, LXXII.124:1, LXXII.126:1,3, LXXVI.131:4, LXXVII.132:4, LXXVIII.133:2,3, LXXXI.137:2,3, LXXXII.138:2,

LXXXVII.SF:11). The vessels lack ornamentation. Of unusual form is the vessel from grave 13:5, which has a distinct foot. Grave 75 from Brudnice, based on the accompanying type–A.2 vessel with a defined neck, can be dated to the end of phase B₁. In features 20, 32, 34, 38 and 39, the vessels in question co-occurred with eye brooches of the Prussian series. In feature 13, they were found together with A.75 and A.38–39 brooches, in feature 21—with fibulae similar to type A.80, in feature 69—with A.38–39 brooches, and in feature 109—with brooches of mixed characteristics of group II/IV, allowing them to be dated to phase B_{2b}.

Types D.3 and D.4 consist of mugs. **Type D.3** has been divided into two smaller units: type **D.3.1** groups mugs with handles placed below the edge of the rim. Mugs of this type were present in 10 graves at Brudnice: 22:2, 43:1, 45:1, 46:1, 70:2, 85:7, 93:1 and 96:1, 135:5(?), 142:2 (Pls. XVII.22:2, XXVIII.43:1, XXVIII.45:1, XXIX.46:1, XLI.70:2, L.85:7, LV.93:1, LIII.96:1, LXXIX.135:5(?), LXXXIII.142:2). In the case of graves 43, 45 and 93, the vessels in question probably served as cinerary urns. Only the mug from feature 22 was ornamented—with carelessly engraved lines on the lower part of the vessel. The vessels discussed were not accompanied by other chronological markers and can be only broadly dated to the Roman period. **Type D.3.2** consists of mugs with handles extending from the rim. They appeared in 16 graves: 10:4, 15:2, 16:2, 52:1, 68:2, 74:3, 85:6, 92:2, 95:3, 104:1(?), 110:2, 120:4, 124:2, 127:1,3, 122:1(?), 139:1, (Pls. VII.10:4, XII.15:2, XIII.16:2, XXXI.52:1, XXXIX.68:2, XLIV.74:3, L.85:6, LIV.92:2, LVI.95:3, LXII.104:1, LXII.110:2, LXVIII.120:4, LXXII.124:2, LXXIV.127:1,3, LXXI.122:1, LXXXII.139:1). The mug from feature 10 is dated with an A.76 brooch to phase B_{1b}, while the specimens from features 15, 92, 95 and 110 are dated with Prussian series eye brooches to phase B_{2a}. The youngest mug, from grave 68, is dated with A.38–39 brooches. In features 46 and 52, the vessels in question were used as urns. **Type D.4** groups short, squat mugs with a handle extending from the rim. The only vessel of this type was found in grave 64.1 (Pl. XXXVII.64.1) and served as a cinerary urn. The assemblage contained no chronological markers made of metal. In addition, fragments of mugs were found in features D.3, 44:1, 61:1, 119:5, 123:1, 126:2, 134:2,3, 143:2, 145:1 (Pls. II.D:3,

XXVIII.44:1, XXXIV.61:1, LXVII.119:5, LXXI.123:1, LXXII.126:2, LXXI.134:2,3, LXXXIV.143:2, LXXXIV.145:1). In graves 44, 61, 123, the mugs probably served as urns.

Group D also includes two tub-shaped vessels: from grave 18:2 (Pl. XII.18:2) and from grave 129:1 (Pl. LXXV.129:1). Both bowls have straight, slightly outward-leaning walls. The vessel from grave 129 is round, while the one from grave 18 is oval, with the longer sides terminating in flat handles. A very similar vessel comes from grave 404 at the Niedanowo cemetery (Ziemlińska-Odojowa 1999b, pp. 75, 76, pl. CXLVIII.7). It is dated with an A.110 brooch to phase B_{2a} of the Roman period. On the basis of the other pottery from feature 18 as well as the horizontal stratigraphy, the artefact from Brudnice should be similarly dated. Other analogous vessels come from grave 57 at Okołowice, Pabianice County (Fitzke 1933, p. 107, fig. 4.2), the cemetery at Wilanów, Warsaw County, grave 6 (Marciniak 1957, pl. 9.3), and from the Goszyce settlement, Kłodzko County (Bartys 1933, p.103, fig. 2.3). Despite these finds, it seems that such forms are foreign elements in the territory of Poland. Artefacts of this type are definitely more frequent in Jutland, where they are encountered from the late pre-Roman period, for example, at the settlement at Hodde (Hvass 1985, pls. 130.f, 147.k).

The last **group E** includes small vessels, most often with a concave, less often hemispherical base. Type **E.1.1** includes deep bowls with a well-defined, profiled neck and concave base. Vessels attributed to this group were found in 7 graves: E:4, 13:4, 32:2, 48:3, 50:3, 51:4, 80:2 (Pls. III.E:4, X.13:4, XXIII.32:2 and XXV.48:3, XXX.50:3, XXX.51:4, XLVIII.80:2). They have a tall neck with a clearly visible thickening in the middle part, emphasised by depressions or engraved lines on both sides. Additionally, the vessels from features 13, 32 and 80 were decorated on the lower part with vertical grooves descending towards the concave base. This ornament, particularly in the case of the vessel from grave 80, was probably intended to imitate glass vessels. The features which yielded these forms did not contain many chronological markers. In grave 32, there

was a spring of an eye fibula, dating the assemblage to phase B_{2a}, while feature 13 contained an A.75 and A.38–39 brooch, which dates it to phase B_{2b}. Similar forms, without a defined neck, with a hemispherical body and concave base have been identified as type **E.1.2**, which includes small bowls from graves: 47:3, 65, 95, 107 (Pls. XXVIII.47:3, XXXVII.65:3, LVI.95:4, LIX.107:1). The vessel from grave 65 is decorated with an ornament of horizontal and vertical depressions and engraved lines, and the vessel from grave 95 is adorned with oblique incisions on the maximum body circumference and carefully made semi-circular grooves on the entire lower part of the vessel. The ornament was probably intended to imitate glass vessels. Graves 65 and 107 contained a D1 buckle, while grave 95 yielded a D2 buckle and a residually preserved eye brooch. Simpler forms of miniature vessels, described as “egg-shaped”, were isolated as another type—**E.1.3**. Two vessels from grave 17 belong to this type (Pl. XIV.17:4,5). These small bowls are decorated across their entire surface with oval depressions imitating cut glass vessels. The assemblage contained no metal date markers. Another type—**E.1.4a**—comprises deep, hemispherical bowls with a round base and a defined neck. They include one specimen from grave 12 (Pl. IX.12:6). Also one vessel belongs to the next type, consisting of hemispherical vessels with a round base and without a neck, described as type **E.1.4b**. Said artefact comes from grave 115:3 (Pl. LXVI.115:3), which contained no other chronological markers. Type **E.1.5** includes bowls of various depths, with a high foot with concave bottom. As many as four such unusual vessels were found at Brudnice. They come from features 102:3, 105:3, 106:3 and 119:4 (Pls. LX.102:3, LXIII.105:3, LXIII.106:3 and LXVII.119:4). The vessels were accompanied by eye fibulae of the Prussian series and A.109–110 and A.120 brooches, which date the features to phases B_{2a} and B_{2b}.

Type **E.2** includes small, shallow bowls with a defined neck, marked by engraved lines, and a concave base. Vessels belonging to this group come from graves: 8:5, 12:4, 120:5 (Pls. VIII.8:5, IX.12:4, LXVIII.120:5). They have very elaborate ornamentation that covers the entire lower part of the vessel. It consists of five segments filled with densely placed depressions, separated

by triple engraved lines descending from the body to the concave base. The features listed above contained no metal artefacts. The next type, denoted as **E.2.1**, groups small, shallow bowls with a concave base and without a defined neck. This type includes three vessels from graves 63, 98:5, 131:3 (Pls. XXXVI.63:3, LVII.98:5, LXXVI.131.3). Only the bowl from grave 131 was accompanied by a metal date marker—brooch of type A.38–39—which allows narrowing down the chronology of the assemblage to phase B_{2b}. Small, shallow bowls with a concave base and biconical profile were included in type **E.3**. Eight vessels of this type were found in seven graves: 11:3, 40:3, 62:1, 105:1, 111:4,5 125:2, 135:4 (Pls. VIII.11:3, XXVII.40:3, XXXIV.62:1; LXIII.105:1; LXV.111:4,5 LXXIII.125:2, LXXIX.135:4). In feature 11, the bowl was found with a fragment of an A.38–39 brooch, in grave 111—with an A.103 brooch and a belt hook of type 1, in grave 105—with an A.109–110 brooch, and in grave 125—with a trumpet brooch of variant 5. This allows dating these vessels to phase B_{2a} and B_{2b}. Type **E.4** is represented by small egg-shaped bowls with a concave base. The only vessel assigned to this type was found in grave 121:4 (Pl. LXIX.121:4). The vessel was decorated with an ornament of triple indentations arranged in the shape of a triangle. The grave contained no chronological markers made of metal. The last type of miniature vessels found at the Brudnice cemetery is type **E.5**, which includes small vessels with a slightly everted, less often upright rim and semi-circular or slightly pointed base. Such vessels come from 6 graves: 21:3, 54:3, 66:2, 110:5, 111:2, 142:4 (Pls. XVI.21:3, XXXIII.54:3, XXXVIII.66:2, LXII.110:5, LXV.111:2, LXXXIII.142:4). Of the vessels included in this group, only those from graves 66 and 142 had the neck marked by an ornament of engraved lines. The specimens from graves 54 and 110 are dated with Prussian series eye brooches to phase B_{2a}. The vessel from grave 111, accompanied by an A.103 brooch, is dated to phase B_{2b}, whereas the vessel from grave 21, containing brooches similar to type A.92, is dated generally to phase B₂.

Unusual forms Feature 34:3 (Pl. XXIV.34:3) yielded a lid, which served as one of the accessory vessels in the grave. The lid has a tall, cylindrical neck and a completely flat top. The side forming a protruding rim was broken off. The lid from Brudnice was made from the same ceramic body as the other vessels present in the feature. The grave is dated with an A.53 eye brooch of the main series and fragments of three eye fibulae of the Prussian series to phase B_{2a}.

Lids are very rare finds in the territory of the Przeworsk culture. Only a few specimens come from sites dated to the late pre-Roman period (Dąbrowska 1993, pp. 109–110). Even fewer forms are known from assemblages dating to the Roman period. Most of the specimens of such a chronology are domed. This applies to the artefacts from the cemetery at Modła, grave 92.8 (Andrzejowski 2009, pl. 3.39), Kamieńczyk, grave 359.12 (Dąbrowska 1997, pl. CLXIV), Niedanowo, grave 281.2 (Ziemlińska-Odojowa 1999b, pl. XCV), and grave 10.2 from Pajewo-Szwelice (Dłubakowski 2005, pl. VII).¹⁹ In the case of cap-like lids, it is uncertain whether they are artefacts of the Przeworsk culture or older, originating in the Pomeranian culture and later re-used, as in the case of, for example, grave 71 from the Karczewiec cemetery (Dąbrowska 1973, pp. 421–422, pl. XVI; Andrzejowski 2009, p. 35). Similar doubts do not arise in regard to the artefact from Brudnice. This lid is completely flat. A similar specimen comes from grave 271 at Kamieńczyk (Dąbrowska 1997, pl. CXXIX.271:9). The artefact from Kamieńczyk, in contrast to the Brudnice specimen, originally had a centrally placed handle. The closest lid form comes from a poorly dated assemblage, attributed to the Oksywie culture, from Skowarcz, Gdańsk County (Bohnsack 1938, p. 148, Dąbrowska 1993, pp. 110, 114, fig. 2c). However, the ceramic body of the Brudnice lid, which is similar to the rest of the vessels from feature 34, supports the Przeworsk culture provenance of the artefact. According to T. Dąbrowska (1993, p. 115, fig. 4), lids are found almost exclusively in the eastern part of the Przeworsk culture area and in the territory of the Oksywie culture.

¹⁹ The dating of the assemblage from Pajewo-Szwelice is uncertain. It included not only an iron brooch of type M but also a casket lock fitting; such artefacts are more often encountered in the Roman period.

Moreover, almost completely burnt, large potsherds were found in graves: 5:4, 53:4, 69:5, 92:3 (Pls. VI.5:4, XXXII.53:4, XL.69.5, LIV.92:3). Likewise, the rim sherds found in the graves: 4:2, 20:4,5, 35:1, 37:1, 47:1, 49:5, 69:4, 73:1, 81:2, 97:2, 98:6, 105:2, 106:5–8, 107:4,5, 146:1, SF:12 (Pls. V.4:2, XV.20:4,5, XXII.35:1, XXV.37:1, XXVIII.47:1, XXIX.49:5, XL.69:4, XLIII.73:1, XLIV. 81:2, LVII.97:2, LVII.98:6, LXIII.105:2, LXIII.106:5–8, LIX.107:4,5, LXXXVI.146:1, LXXXVII.SF:12) could not be assigned to specific types. In addition, indeterminate base sherds come from graves: A:2, E:3, 1:3, 3:1, 8:3, 10:3, 29:3, 36:1,2,4, 39:2, 49:1, 3:2, 73:2, 76:2, 79:5, 80:3, 90:4, 92:4, 94:5, 99:3, 106:9, 111:3, 119:1 (Pls. I.A:2, III.E:3, IV.I:3, V.3:1, VIII.8:3, VII.10:3, XXII.29:3, XXIII.36:1,2,4, XXVI.39:2, XXIX.49:1, XLIII.73:2, XXXVIII.76:2, XLVII.79:5, XLVIII.80:3, LI.90:4, LIV.92:4, LV.94:5, LVIII.99:3, LXIII.106:9, LXXXVII.ZL:12, LXV.111:3, LXVII.119:1). Small body sherds and handles were found in graves B:3 and 2:2,3 (Pls. I.B:3, IV.2:2,3), and graves: 5, 24, 18, 19, 27, 32, 36, 38, 39, 47, 48, 50, 53, 66, 69, 70, 71, 72, 73, 79, 80, 89, 90, 91, 92, 97, 99, 101, 106, 107, 111, 115, 120, 125, 129, 134, 135, 136, 137 yielded numerous fragments of burnt pottery described as pumice.

Funerary rite at the Brudnice cemetery

Cremation was a common funerary practice in the Przeworsk culture. After burning the body, the ashes of the deceased were either interred directly in a burial pit or placed into a previously prepared vessel which served as a cinerary urn. Accordingly, such graves are referred to as either urn graves or pit graves. Dependent on the presence or absence of pyre remains in the grave pits, such burials are also referred to as clean burials or burials with pyre remains.

With the exception of one child burial, which should be considered an inhumation grave, the remaining 146 graves from the Brudnice cemetery should be considered cremation graves. However, only a few of them can be classified as either a pit burial or an urn burial described above.

Pit burials occurred in twenty three cases, nine of which were pit graves without pyre remains (burials 6, 7, 33, 35, 55, 84, 88, 117, 118). Nine other graves were pit burials with pyre remains (burials: 9, 19, 24, 41, 56, 58, 83, 112, 130). Pit graves also include burials containing cremated bones, deposited in poorly visible grave pits, which were accompanied by a large amount of ceramic material in the form of vessel fragments and, sometimes, also by metal artefacts. Graves of this type include burials 27, 77, 108, 111, 145. Urn graves were equally rarely encountered at the Brudnice cemetery. Graves 8, 17, 31, 82, 87, 103, 109, 132, 135 should be regarded as classic features of this type. Apart from graves 17, 132 and 135, they were all clean urn graves. In the other cases, the urn had been bestrewn with pyre remains. In feature 8, the bones were placed in a black-walled bowl of type A.2. The feature contained five more vessels, including four miniature bowls, stacked on top of one another and then put on the urn. In the case of graves 17 and 135, the function of the urn was performed by large, black vase-like vessels of type A1b, with smooth, glossy surfaces and equipped with small pseudo-handles. In addition to the urn, grave 17 contained intentionally broken and then carefully stacked vessel

fragments, among which were clay imitations of two glass bowls. Grave 135, apart from the sherds of four burnt vessels, also contained fragments of a melted bracelet. It seems that these two features are the oldest urn graves at the Brudnice cemetery and should be dated to phase B_{2a}. Urn graves begin to appear on a larger scale in the next phase, probably at its very end, just before the Przeworsk part of the cemetery ceased to be used. During that period, the function of urns was performed solely by egg-shaped vessels of type D1, described in the typology by Teresa Liana (1970) as type III. A specific type of urn burials is represented by the features in which the urns were in the form of small vessels, mainly mugs. This atypical type of urn was probably used due to the fact that these graves contained the remains of children. These burials never contained any additional grave goods; therefore, it is not possible to determine their more precise chronology. This form of graves seems to have been present throughout the entire Przeworsk culture period of use of the cemetery, i.e. the entire Roman period. This group includes graves: 43, 44, 45, 46, 52, 57, 61, 62, 64, 93, 104, 122, 123, 139 and probably also grave 96.

In the remaining cases known from the Brudnice cemetery, we are dealing with a completely different, previously undocumented way of treating the remains of the deceased. It consisted in depositing the ashes of the deceased both at the bottom of the grave pit and in several vessels placed in the fill. The presence of many vessels placed in the burial pit was noted already by Jerzy Okulicz-Kozaryn in his dissertation. He observed, however, that the vessels were largely burnt (J. Okulicz-Kozaryn 1965 p. 81, pl. V, items 8–9), which differs from the situation observed at the Brudnice cemetery, where the vessels were usually deposited whole and only sometimes bore traces of burning and were completely burnt in a few cases only.

In order to investigate the presence of multiple vessels in burial pits, and especially the deposition of bone remains in them, it was decided during the excavations that each bone cluster found in the burial pit as well as in each vessel would be collected separately and given an individual inventory number. The subsequent anthropological analysis showed

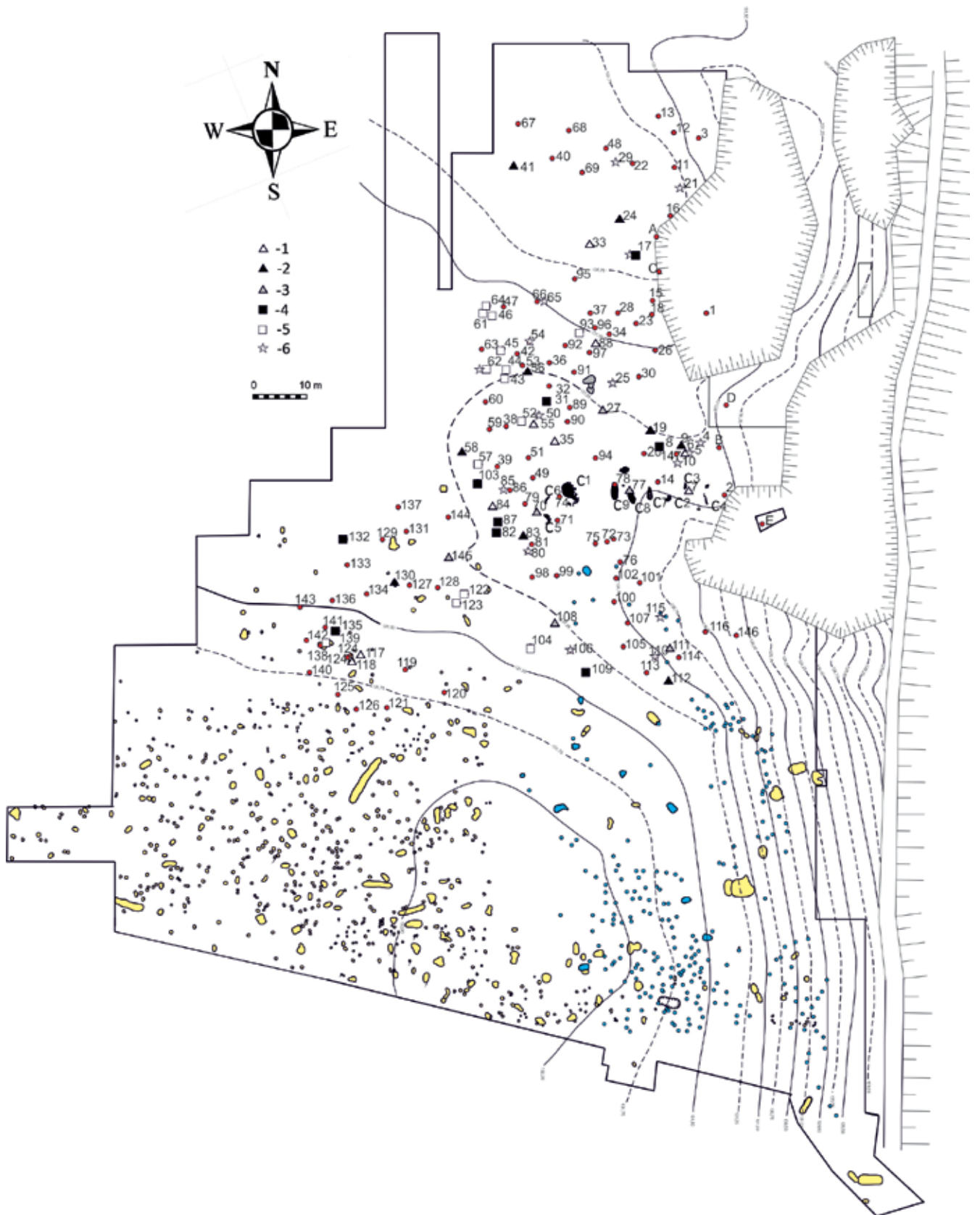


Fig. 5. Graves with different types of burial marked: 1 – pit burial without pyre remains, 2 – pit burial with pyre remains, 3 – pit burial without pyre remains and with broken pottery 4 – urn burial, 5 – burial in a mug, 6 – graves with upside-down vessels.

that most of the graves contained bones from a single individual. Double burials were observed in eight cases only (graves 4, 9, 10, 13, 49, 69, 73, 120), and a triple burial was found in one case (grave 70). Therefore, it would seem that the introduced system of division and documentation of the bone material did not bring any new information, and the observed phenomenon may have been accidental, resulting from, for example, backfilling the grave pit with the earth from the pyre or from other postdepositional processes. However, a comprehensive analysis of the distribution of the bone material in both the grave pits and the vessels clearly indicates that we are dealing here with a new, previously unrecorded funerary rite. The non-accidental placement of bones across several vessels is supported by the anthropological analysis conducted. It showed that the individual vessels contained mainly skull bones (graves: 11, 23, 32, 51, 56, 59, 98, 106, 110, 139, 144) or skull and limb bones (graves 3, 11, 12, 16, 19, 20, 21, 22, 23, 25, 26, 29, 30, 32, 40, 42, 43, 45, 49, 50, 62, 81, 66, 74, 78, 83, 84, 88, 91, 98, 113, 122). Other elements of the skeleton are not present. A slightly different division was executed in grave 63, where the remains of the deceased person were divided in a rather original way between two vessels. Vessel 1 contained the remains of the right side of the skeleton, while vessel 2 contained the remains of the left part. It seems that this may be the result of the cremated remains having been collected simultaneously from two opposite sides of the pyre and immediately placed in each vessel.

It is also worth noting that the grave assemblages in question usually contained intact or only slightly damaged vessels, and the remains of the deceased were also deposited at the bottom of the grave pit, in one or several clusters. On the other hand, the bones were not found in other parts of the burial pit, such as the central part or the top level. Thus, the division of the skeleton between the burial pit and several vessels deposited in the pit must have been intentional and not a result of an accidental introduction of the remains of the deceased into the vessels during the backfilling of the burial pit with pyre remains or of post-depositional processes.

By comparison, in another well-examined area of the Przeworsk culture—in the Liswarta River region—similar cases of depositing bone remains in several vessels have been documented three times only: one each at the cemeteries at Rybno, Mokra and Opatów, all Kłobuck County (J. Zagórska–Telega 2019, pp. 42, 43).

The observations made, combined with the anthropological analysis, allow concluding that such procedures were intentionally carried out during the funeral ceremony. Thus, it should be concluded that in the case of the Brudnice cemetery we are dealing with a pit-and-urn or, more precisely, pit-and-multi-urn burials. In order to simplify the name of this complex funerary rite, it seems appropriate to call it—after the cemetery where it was documented—a **Brudnice type burial**.

Moreover, other unusual practices related to the funeral ritual have been observed at the Brudnice cemetery. One of them was turning the vessels upside down. This custom has been documented in at least seventeen graves: 4, 5, 10, 17, 21, 25, 29, 50, 54, 62, 65, 69, 80, 85, 106, 110, 115. Only a single vessel constituting part of the grave goods would usually be positioned in such a way, even if the grave contained several accessory vessels. An exception was grave 29, where as many as 3 vessels were placed upside down. What is interesting, an analogous way of placing vessels has also been documented at other northern Mazovian cemeteries, such as the cemeteries at Gródki, site 3, and Kurki, site III, Działdowo County, or Bartki and Niedanowo, Nidzica County (J. Okulicz-Kozaryn 1983, figs. 20, 58; M. Woźniak, A. Grabarek 2020, fig. 7; J. Okulicz-Kozaryn 1965, pls. XIX.3, XX.1, 2; W. Ziemińska-Odojowa 1999, pls. XI.37, XII.31, XIII.36, XIV.42, XVII.50, XIX.61, XLIII.149, XLIV.152, XLVII.164, LXVI.229, LXXIII.242, LXXVI.249, LXXVII.248, LXXX.253; LXXXIII.257, LXXXVII.266, LXXIX.270XCVII.290, CI.291, CLVIII.427, CLXVIII.465, CLXX.464, CLXXXIII.505, CCXXVII.639). At the previously mentioned cemetery at Opatów, a similar treatment was recorded only in one case—grave 858; at the Mokra cemetery, it was observed three times—in features 92, 100, and 428 (J. Zagórska–Telega 2019, p. 43).

The practices documented seem to indicate that special care was taken of the re-

mains of the deceased. It remains undecided whether the purpose was to avoid damaging the remains or, on the contrary, to prevent them from “escaping”. Such fears would, however, be contradicted by the case of grave 10, which contained skull bones in an upside-down vessel in which a hole had been intentionally knocked out from the inside, thus allowing the “spirit” of the deceased to escape.



Stone structures

The elements inseparably connected with the Przeworsk culture part of the Brudnice cemetery are **stone structures**, or rather their remains. They are located in the central part of the cemetery and seem to mark its centre. The structures are arranged along the W–E line. They are marked by a cluster of unusual features of sepulchral character. The most important of them is a stone circle of approx. 5 metres in diameter (cluster 1, Pl. LXXXVIII–LXXXIX.), which could have originally been covered with an earth mound, forming a barrow. In its interior, there was a pit of approx. 2.2 m in diameter, extended by another 1.2 m in the southern direction, with a brown fill and thickness of 0.6 m and 0.3 m respectively. In the fill of the pit, there were several layers of chaotically placed stones, and a stone stele, topped to the side, was found at the bottom. It was 0.35 m high, and its triangular base measured 0.35x0.25 m (photo 10a–d). The stele bears traces of planned processing. Inside the circle itself, there were isolated fragments of Przeworsk culture pottery and few fragments of cremated bones. In the worst-preserved, western part of the stone circle, there was also one grave—no. 74, which can be interpreted as the “grave of the founder of the cemetery”. Unfortunately, the feature contained no metal artefacts, but the shape and, above all, ornamentation of vessel 1 (Pl. XLIV.74:1) point to its early origin, correlated probably with phase B₁. Its decoration in the form of a narrow ornamental band as well as slightly constricted handles reference the style from the late pre-Roman period and is very rarely found on the



Photos 10a – d. Photographs of the stele found inside cluster 1.

pottery from Brudnice. Narrow ornamentation bands, this time depicting a meander motif, occurred only on two more vessels, found in the nearby graves 70 and 71. With the exception of the abovementioned features, the stone ring described is separated by an empty space of approx. 15–20 metres. It is only behind this space that further burials appear; however, they belong to a much later phase of the cemetery's use, already at the end of phase B₂. To the east, the space described is even larger and filled with three features of very unusual form—stone clusters 7, 8 and 9. Cluster 7 is a pit measuring 2.7×1.1 m, filled inside with three large boulders (Pl. XCII). Cluster 8 (Pl. XLV) is a cluster of large and medium-sized stones, under which there was a pit oriented along the N–S line, measuring 2.7×1.3 m and 0.6 m thick. Pit grave 77 was situated in its northern part. Cluster 9 was located slightly further to the east. It was a pit elongated along the N–S line, 3.2×1.3 m in size, marked in the northern part by a large boulder. Three more, albeit much smaller, stone clusters nos. 2, 3 and 4 were located even further to the east, already between more typical types of graves (Pl. XC). Cluster 2 is probably a remnant of a circle of approx. 2 m in diameter. The other two features are difficult to interpret due to their state of preservation. The same applies to two stone clusters 5 and 6 documented to the west of cluster 1 (Pl. XCI). Unfortunately, their residual state of preservation makes it impossible to reconstruct their original shapes, let alone their original functions.

The features described, despite their often residual state of preservation, are undoubtedly elements connected with the cemetery functioning at that time. They prove that the Brudnice cemetery is similar to other sites of this type, mainly in the Działdówka River region, mentioned by Jerzy Okulicz-Kozaryn (1965/2006, p. 223) in his dissertation.

The feature discovered in 2005/96 may be indirect evidence for the existence in that place of structures, either stone or earthen but certainly visible on the ground surface also in modern times. It contained a completely preserved vessel, placed on its rim, dated to the mid–15th century, which held the burial of

a nine-month foetus²⁰. Encountered in medieval Mazovia, it is a form of burial of unborn and thus unbaptised children, who, according to the then traditions, could not be buried at Catholic cemeteries. Therefore, burials of this type were placed at pagan cemeteries (B. Zawadzka–Antosik 1973, 1982, E. Kowalczyk 2004). Mounds or stone structures, which have not survived to our times, were probably helpful in choosing a suitable place.

20 The anthropological analysis was carried out by dr Maurycy Stanaszek from the State Archaeological Museum in Warsaw.

Function of vessels placed in graves

Analysing the function of the many vessels deposited in the graves at the Brudnice cemetery, it is worth considering whether these vessels were used only as cinerary urns or also as accessory vessels, i.e. receptacles in which a meal or an offering was presented to the deceased for their journey to the after-life. For this purpose, five vessels from one of the graves—no. 121—were analysed for the presence of fatty acids and archaeological biomarkers²¹. The samples analysed provided an unexpectedly large amount of information (cf. J. Czaplińska-Kałużna, Anna Józefowska, Angelina Rosiak 2020). Such a large number of potential biomarkers results from the funerary rite practiced at the Brudnice cemetery on the one hand, and probably also from the methodology applied during the excavation and exploration of ceramic artefacts on the other. Indeed, most of the vessels were bandaged at the site of discovery and retrieved whole. Their exploration took place under laboratory conditions, and the vessels were in most cases cleaned dry, without the use of water or detergents. This was probably decisive for the preservation of traces of substances stored inside the vessels. The fatty acid analysis showed that each of the five vessels contained traces of nutrients, including mainly seed and nut residues and, in the case of vessel 1, also mammalian meat and berries. Admittedly, it should be borne in mind that the vessel served as a cinerary urn, so these compounds may simply indicate the presence of human remains. However, it seems unlikely that human organic compounds would have survived the prolonged process of cremation on a funeral pyre, after which they would have been transferred to the walls of the urn along with the ashes. Our knowledge of the contents of the

other vessels is greatly supplemented by the analyses of potential biomarkers. They indicate the possible presence of meat also in the other vessels, as suggested by the presence of 3 β -TRIMETHYLSILOXY-5 α ,6 α -EPOXYCHOLESTANE acids, which are considered by researchers to be the so-called indicator of ancient animal life. The presence of phthalates, on the other hand, indicates thermal processing of the stored contents. Of great interest is the presence of aromatic substances—cinnamic acid, noted in vessel 1, which could have been a component of incense, perfumes or dyes. This may indicate that the urn had been subjected to additional religious treatments before the remains of the deceased were placed inside. Another substance noted in vessel 1 is aceturic acid, which is considered to have euphoric, energising and cheering effects and which is found in citrus fruits and wine. The presence of wine in the other vessels may be indicated by the presence of vanillin. Moreover, residues of lactic acid, either from dairy products or from the fermentation of certain plants, such as cucumbers and cabbage, were detected in other vessels. The presence of glycerol could also point to the presence of cabbage, although this substance is also found in mustard.

The analyses conducted clearly show that the presence of multiple vessels in graves was not accidental but based on important grounds related to the beliefs. The substances deposited inside were most likely meant to ensure the deceased's prosperity after death. Interestingly, the analyses indicate the possibility of the presence of imported products such as wine or spices in the containers. So far, the availability of such products in the barbarian world has only been the matter of conjecture.

21 The analyses were carried out by prof. Joanna Kałużna-Czaplińska and dr Angelina Rosiak from Lodz University of Technology. A comprehensive description of the analysis results is presented further in the book. I would also like to thank Professor Kałużna-Czaplińska for the long and exhaustive discussions that allowed comprehending these extremely complicated analysis results.

Results of strontium analysis and their interpretation

Analysing the horizontal stratigraphy of the Przeworsk part of the Brudnice site (Szela 2016b), attention has been drawn to several distinctive clusters of graves, which could correspond to unspecified, simultaneous yet different human groups, as suggested by the different character of the grave goods, especially metal artefacts. Iron artefacts were found in the northern part, artefacts made of copper alloy in the southern part (Szela 2016b, pp. 270–274). The features from the southern zone were also more likely to contain richer grave goods. Presently, these observations can be supplemented with the analyses of the bone material. The bone remains from 12 selected graves were analysed for strontium content (Table 1). Unfortunately,

borne in mind that the skeletal system is formed throughout the entire life. Thus, strontium values may change depending on where the person was at a given time (Gregoricka et al. 2014; Mays 2010; Szostek, Stepańczyk 2009). In the case of the bones from Brudnice, the analysis was conducted on the petrous parts of the skull.²² This choice was dictated by the fact that these bones are formed up to the second year of human life; thus, the results of such analyses will be most similar to the results of strontium analyses of the enamel of first molars, i.e. from the period of the formation of the organism. The analyses conducted for the Brudnice site clearly indicate that several groups of people had been buried there. The first group consists of individuals of evidently local origin. These are the remains of individuals with strontium values oscillating between 0.7016 and 0.7020, which is typical of a large part of present-day Poland. The second group consists of individuals

No.	symbol	87Sr/86Sr	measurement error	feature number
1	BR1	0,714644	± 0,000012	17
2	BR2	0,713780	± 0,000014	21
3	BR3	0,713967	± 0,000015	27
4	BR4	0,714111	± 0,000010	29
5	BR5	0,712017	± 0,000009	49
6	BR6	0,713568	± 0,000010	69
7	BR8	0,711931	± 0,000010	105
8	BR9	0,711656	± 0,000010	108
9	BR10	0,713489	± 0,000009	111
10	BR12	0,714671	± 0,000012	121
11	BR13	0,714101	± 0,000010	129
12	BR14	0,713942	± 0,000011	144

Table 1. Results of strontium content analysis carried out on the petrous part of the skull from selected graves from Brudnice site V.

the prevailing funerary rite in the area of the Przeworsk culture deprived us of the material from the tooth enamel, which is the basic material used in such analyses. However, for some time now, the material from cremated remains has also been used for strontium analyses (Snoeck, Pouncett, Claeys, et al. 2018; Taylor, Frei, Frei 2020; Sebald, Zeiler, Gisela Grupe 2018). When analysing such results, it should, nonetheless, be

of undisputedly foreign provenance, whose strontium content ranges from 0.7034 to as much as 0.7046. The closest areas with such high strontium signatures are central and eastern Scandinavia and the Bohemian Massif—the area from the Sudetes in the north to the Danube

²² The analyses were carried out at the Isotope Laboratory of Adam Mickiewicz University in Poznań, under the supervision of prof. Bełka.

valley in the south—and the area of central Ukraine. More distant areas include the central part of the Alps, a number of regions in France—the Massif Central, Normandy, the Vosges—and the Black Forest in Germany and, in the south, the Rhodope Massif in Macedonia, Bulgaria and southern Serbia (Pospieszny, Bełka 2015, p. 189).

Strontium values exceeding 0.730 are extremely rare in the area of Poland. A similar value comes from the Przeworsk culture cemetery at Karczyn and Witowo, Inowrocław County (Pospieszny, Bełka 2015, table 1, item 9, fig. 3, p. 189). Several comparable results come from early medieval sites, including: Bodzia, Włocławek County (Błaszczuk 2018, p. 143, table 1)—value 0.71292–0.73052; Dziekanowice, Gniezno County; Kałdus, Chełmno County, or Ciepłe, Tczew County (Bełka, et al. 2019, pp. 440, 443), with the values between 0.726 and 0.736. In almost every case, the individuals are considered to have been outsiders (Bełka, et al. 2019, p. 443). Signatures higher than 0.7136 occur in Poland only occasionally (Price et al., 2012, fig. 8). The analyses of the goods from the graves for which strontium analyses indicated the local origin of the people buried in them show that they are characteristic of the assemblages containing classic eastern Przeworsk culture grave goods A.60 eye brooches in graves 49 and 144, an A.109–110 brooch in grave 105 and an A.120 brooch in grave 106.

In the graves for which strontium analyses indicated individuals of foreign provenance, the archaeological material also deviated from the traditional Przeworsk culture grave goods. Grave 21 contained an A.92 brooch, grave 29—an A.103 brooch, grave 111—an A.103 brooch, grave 121—an A.26 brooch, and grave 129—a tub-shaped vessel, atypical of the Przeworsk culture.

Strontium content indicating people from other parts of Europe was also found in the following assemblages: grave 17, devoid of metal artefacts, distinguished, however, by the burial in a smooth-walled, black urn with a pseudo-handle in the shape of the Roman numeral for 1 (Szela 2015, p. 64); grave 27, with an A.53 brooch, type C3 buckle, copper-alloy pin with profiled head and fragments of bracelets; and grave 69, with an iron brooch of type A.38–39, an ornamented spindle whorl of unusual cylindrical shape, a rod bracelet and cas-ket elements.

The results described above match the results of the metallographic analyses,²³ which have shown that the artefacts analysed were made in different workshops. This may be evidence of the craftsmen themselves engaging in itinerary trade or of people migrating with the artefacts. Such observations apply to different artefact groups and, interestingly, to A.26, A.92 and A.103 brooches in particular. Said brooch types show an increased tin content accompanied by a decreased zinc content in their chemical composition, indicating that the artefacts were not made in the same workshops as the other Brudnice artefacts. It is also worth noting that the composition of both A.26 brooches is very similar, which might suggest they were made in one workshop. Similar observations have also been made in relation to the whole sets of grave goods. Similarities are visible on the example of graves C, 21, 54, 73, 95 and 136, which may indicate that the entire set of objects comprising each of the assemblages might have been bought at once from a travelling merchant or made in another part of Barbaricum. Considering that the graves contained brooches of type A.92 (graves 21 and 136) and type A.26 (grave 73) as well as an atypical strap-end (grave C) (Szela 2015, pp. 649–650), the latter option seems a lot more probable, as such artefacts were common in the Elbe region areas and in Jutland. Similarly, the copper-alloy pins with profiled heads from graves 54 and 95 and the accompanying belt buckles of type D2 are not typical Przeworsk culture artefacts. They were probably imports from the Wielbark culture area (Schuster 2016, p. 142). The buckle combining features of types D2 and D4 is likewise atypical. The only artefact made of bronze, i.e. the strap-end from grave 92, is probably also an import—from the area of Pomerania.

In light of these analyses, it is reasonable to conclude that, at least in the case of the Brudnice site, we are dealing not only with imported objects but also with the migration of individual people, or perhaps even groups of people. Thus, it is justified to question the homogeneity of the Przeworsk culture, both at the Brudnice cemetery and at other archaeological sites where metal and ceramic artefacts of foreign provenance have been found.

²³ See the annex by P. Gan in this book.

Chronology of the Przeworsk culture part of the Brudnice cemetery

The horizontal stratigraphy of the Przeworsk culture part of the Brudnice cemetery has already been described in detail in another article (A. Szela 2016b). Therefore, only the main conclusions as regards the chronology of the site will be presented here. The beginning of the functioning of the Przeworsk culture cemetery at Brudnice should be determined as developed phase B₁ of the Roman period. The oldest grave assemblages include graves 4, 7, 10, 25, 26, which contained A.52 eye brooches of the main series, trumpet brooches of types A.76—Liana variant 1—and of type A.68. On the basis of the pottery present in the features, graves E, 70, 71, 74, 75, 116 should also be dated to this phase. The vessels in question have a tall neck with a distinct thickening in the middle part, which is characteristic of the oldest earthenware at the Brudnice cemetery (A. Szela 2016b, pp. 167–168). The thickening disappears in the later phases, leaving only a cylindrical or slanted neck. Next, the defined neck gets replaced by a simple ornament of engraved horizontal lines, which emphasise the tripartite nature of the vessels. The decorations found at the Brudnice site only in phase B₁ include also a cordon, found only on vessel 1 from grave E, and narrow ornamentation bands in the form of engraved horizontal lines (vessel 1 from grave 74) or meanders of narrowly spaced engraved lines as in the case of vessels 1 from graves 70, 71. Therefore, probably only 12 graves can be confidently dated to the beginning of the Roman period. Such a small number of graves may be due to two factors. One is the foundation of the cemetery already in the course of phase B₁, which is evidenced by the lack of artefacts from the beginning of this phase, such as A.67 brooches. In contrast, such artefacts were found, for example, at the almost completely destroyed cemetery at Kuczbork-Osada, Żuromin County, some 15 km away (A. Szela 2018a, pl. XL.50:6). The second factor may be the destruction of the eastern part of the cemetery, where the oldest Brudnice graves are accumulated. Although the damage done may be of significance in determining the total number of graves from the

beginning of the Roman period, it should not affect our knowledge of the chronology of the cemetery's functioning. As it is, the excavations did not yield any metal or ceramic evidence that would allow distinguishing older phases of use of both the cemetery and the settlement.

Graves 27, 34 with A.53 eye fibulae, should probably be dated to the end of phase B₁ and the beginning of phase B_{2a}. Moreover, grave 27 contained a belt buckle of type C3, and grave 34—three residually preserved eye brooch of the Prussian series. It seems that grave 73 should also be dated to the same chronological phase; in addition to a type—C1 buckle, it contained an A.26/28 brooch. Another brooch of this type, recovered from grave 121 and bearing signs of several repairs, was probably in use a little longer (A. Szela 2016b, p. 169). Grave D, which contained—in addition to A.52 and A.76 brooches—a later variant of a trumpet brooch, similar to T. Liana variant 2, and an A.58–59 eye brooch of the Prussian series,²⁴ should also be dated to the end of phase B₁ or the beginning of phase B_{2a}.

Graves 15, 90 and probably also 97, which contained A.58–59 brooches, can for certain be dated to the beginning of phase B_{2a}. Graves 38, 49, 53, 54, 60, 92 and 144, with A.60 brooches, would be of later chronology, which, nonetheless, would still fall within phase B_{2a}. It should be noted, however, that the brooch from grave 144 has an only residually preserved crest, and the grave itself is located at a significant distance from the main cluster of graves containing Prussian series eye brooches. As such, it might be of later chronology. Grave 110, containing already a classic form of an A.61 brooch, was likewise located slightly further away from the centre of the cemetery. Moreover, another 15 graves: 15, 20, 23, 31, 32, 34, 36, 39, 59, 69, 95, 97, 102, 114, 129 contained destroyed eye brooches, whose typology cannot be precisely determined. Grave 94, with a brooch resembling type A.75, and grave 105, with an A.109–110 brooch, should also be dated to phase B_{2a}. The later section of phase B₂ brings about a considerable variety in the forms of brooches. From phase B_{2b} come graves 11, 13, 68, 69, 131, which yielded A.38–39 fibulae. Grave 13 additionally contained an A.75 brooch. Moreover, grave 109, with a brooch of group II

²⁴ As the grave was found in a secondary context, there are some doubts as to whether its contents had not been disturbed.

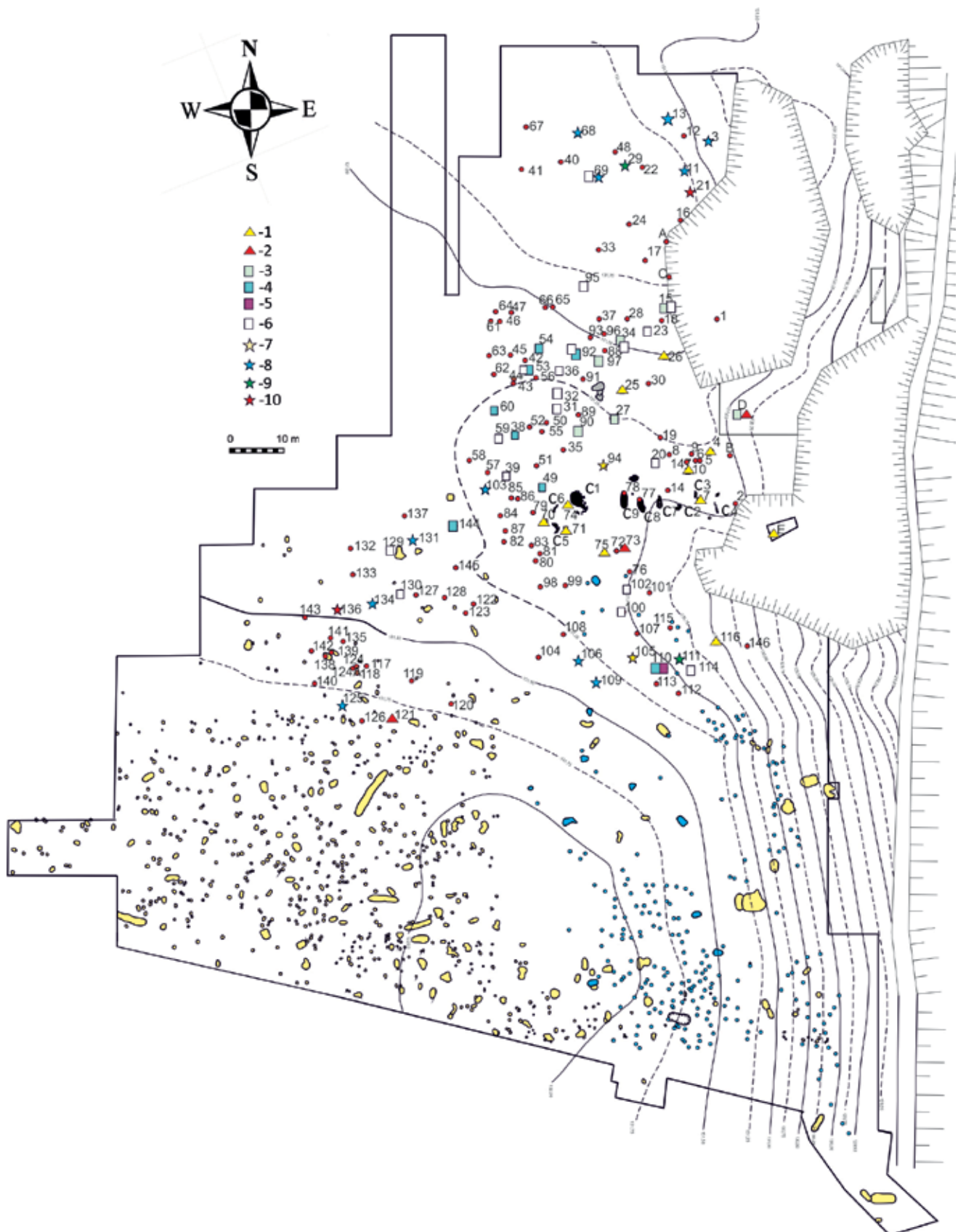


Fig. 6. Chronology of the Przeworsk culture features from the Brudnice cemetery: 1 – phase B₁, 2 – phase B_{1b–B2a'}, 3 – graves with A.53 and A.58–59 brooches, 4 – graves with A.60 brooches, 5 – grave with a A.61 brooch, 6 – graves with eye brooch fragments, 7 – other graves dated to phase B_{2a}, 8 – graves confidently dated to phase B_{2b'}, 9 – graves with A.103 brooches, 10 – graves with A.92 brooches.

and IV; graves 3, 106, 134, with brooches of type A.120 or similar; and graves 103, 125, with trumpet brooches of T. Dąbrowska variant 5, should also be dated to the final period of use of the Przeworsk culture part of the cemetery. Additionally, it seems that graves 29 and 111, which contained A.103 brooches, should likewise be dated to the later section of phase B₂. Graves 21 and 136, which yielded A.92 brooches, can be dated generally to phase B₂.

The remaining Przeworsk culture graves did not have date markers that would allow determining their place in the timeline; therefore, we can date them only generally to the Roman period, i.e. to the time of the Przeworsk culture functioning at the Brudnice site.

In the next phase, the Brudnice site, similar to other northern Mazovian cemeteries, would see the appearance of graves connected with the Wielbark culture, arriving from the north.

Bibliography:

- Almgren O. 1923 Studien über nordeuropäische Fibelformen der ersten nachchristlichen Jahrhunderte mit Berücksichtigung der provinzialrömischen und südrussischen Formen, Marnnus–Bibliothek 32, Leipzig.
- Almgren O., Nerman B. 1923 *Ältere Eisenzeit Gotlands*. Sztokholm.
- Adamska E., Tuszyńska M. 2011 *Dalsze odkrycia na cmentarzysku w Opaleniu, gmina Gniew, stanowisko 1*, [w:] M. Fudziński, H. Paner (red.), XVII Sesja Pomorzoznawcza, 1: Od epoki kamienia do wczesnego średniowiecza, Gdańsk, s. 367–374.
- Andrzejowski J. 1989 *Zagadnienie kontynuacji cmentarzysk we wschodniej strefie kultury przeworskiej*, [w:] J. Gurba, A. Kokowski (red.), *Kultura wielbarska w młodszym okresie rzymskim 2*, Lublin 1989, s. 103–125.
- 1994a *Zapinki o cechach mieszanych II i IV grupy Almgrena*, *Barbaricum* 3, s. 87–129.
- 1994b *Powiązania kultur przeworskiej i wielbarskiej w świetle znalezisk bransolet*, *Kultura Przeworska* 1, Lublin, s. 317–341.
- 1997 *Cmentarzysko kultury przeworskiej w Todzi, gmina Kadzidło, województwo ostrołęckie, stanowisko 2*, *Wiadomości Archeologiczne* 53/2 (1993–94) 1997, s. 101–126.
- 1998 *Nadkole 2. A Cemetery of the Przeworsk Culture in Eastern Poland*. *Monumenta Archaeologica Barbarica* V, Kraków.
- 2001a *Nowe znaleziska z cmentarzyska kultury przeworskiej w Nadkolu nad Liwem*, *Wiadomości Archeologiczne* 54, (1995–1999), s. 180–181.
- 2001b *Wschodnia strefa kultury przeworskiej – próba definicji*, *Wiadomości Archeologiczne* 54, 1995–1998 (2001), s. 59–87.
- 2004 *Starachowice, pow. loco, woj. świętokrzyskie*, [w:] J. Andrzejowski, A. Kokowski, C. Leiber (red.), *Wandalowie, Strażnicy bursztynowego szlaku, Państwowe Muzeum Archeologiczne w Warszawie, 8 marca–16 czerwca 2004*. Katalog wystawy, Lublin–Warszawa, s. 331.
- 2009 *Nekropola w Modle a późna faza kultury przeworskiej na północnym Mazowszu*, maszynopis pracy doktorskiej I–II, Archiwum IA UW, Warszawa 2009.
- Andrzejowski J., Cieśliński A. 2007 *Germanie i Bałtowie u schyłku starożytności. Przyjazne związki czy wrogie sąsiedztwo?* [w:] A. Bitner-Wróblewska (red.), *Kultura bogaczewska w 20 lat później. Materiały z konferencji, Warszawa, 26–27 marca 2003*. Seminarium Bałtyjskie I, Warszawa 2007, s. 279–319.
- Bartys J. 1933 *Osada z wczesnego okresu wpływów kultury prowincjonalno-rzymskiej w Goszycach pow. miechowskiego*, *Przegląd Archeologiczny* 5/1, s. 104–107.
- Balke B. 1976 *Cmentarzysko z okresu rzymskiego w Brzeźcach, pow. Białobrzegi, st. 1*, *Wiadomości Archeologiczne* 41/2, s. 155–207.
- Beckmann, Ch. 1966 *Studien über die Metallnadeln der römischen Kaiserzeit im freien Germanien*. *Saalburg-Jahrbuch* 23, s. 5–100.
- Bełka et alii 2019 Z., Dopieralska J., Królikowska-Ciągło S., Ratajczyk Z., Wadył S. *Pochodzenie w świetle badań składu izotopowego strontu biogenicznych fosforanów*, [w:] S. Wadył (red.), *Ciepłe. Elitarna nekropola wczesnośredniowieczna na Pomorzu Wschodnim*, Gdańsk 2019, s. 437–444.
- Błaszczak D. 2018 *Pochodzenie i dieta mężczyzny pochowanego w grobie D162 z cmentarzyska w Bodzi w świetle badań izotopowych*, *Światowit XIII–XIV (LIV–LV)A/B*, 2015–2016, s. 133–157.
- Cieślak-Kopyt M. 2004 *Brzeski, pow. przysuski, woj. mazowieckie* [w:] J. Andrzejowski, A. Kokowski, C. Leiber (red.), *Wandalowie, Strażnicy bursztynowego szlaku, Państwowe Muzeum Archeologiczne w Warszawie, 8 marca–16 czerwca 2004*. Katalog wystawy, Lublin–Warszawa, s. 340–341.
- Cosack E. 1979 *Die Fibeln der älteren römischen Kaiserzeit in der Germania Libera (Dänemark, DDR, BDR, Niederlande, ČSSR)*. Einetechnologisch–archäologische Analyse 1. Armbrustfibeln, Rollenkapfenfibeln, Augenfibeln. Göttingen Schr. Vor– u. Frühgesch. 19, Neumünster.

- Czarnecka K.
2007 *Oblin. Ein Gräberfeld der Przeworsk-Kultur in Südmasowien*, Monumenta Archaeologia Barbarica 13, Warszawa.
- 2021 *Zamki i klucze kultury przeworskiej. Działanie, zastosowanie, znaczenie symboliczne*, Warszawa
- Dąbrowska T.
1973 *Cmentarzysko kultury przeworskiej w Karczewu, pow. Węgrów*, Materiały Starożytne i Wczesnośredniowieczne 2, s. 383–527.
- 1993 *Uwagi o genezie pokryw w kręgu przeworsko-oksywskim w młodszym okresie przedrzymskim*, [w:] F. Rożnowski (red.), *Miscellanea archaeologica Thaddeo Malinowski dedicata*, Słupsk–Poznań, s. 109–117.
- 1995 *Późne odmiany fibul silnie profilowanych w Polsce*, *Wiadomości Archeologiczne* 53/1, s. 3–34.
- Kamieńczyk. Ein Gräberfeld der Przeworsk-Kultur in Ostmasowien*, Monumenta Archaeologica Barbarica 3, Kraków 1997.
- 2008 *Młodszy okres przedrzymski na Mazowszu i zachodnim Podlasiu. Zarys kulturowo-chronologiczny*, *Materiały Starożytne i Wczesnośredniowieczne VII*.
- Dąbrowska T., Liana T.
1986 *Stan i potrzeby badań nad młodszym okresem przedrzymskim i okresem wpływów rzymskich na Mazowszu*, [w:] *Stan i potrzeby badań nad młodszym okresem przedrzymskim i okresem wpływów rzymskich w Polsce. Materiały z konferencji Kraków 14–16 listopad 1984*, Kraków s. 147–166.
- Dąbrowscy I., K.
1967 *Cmentarzysko z okresu późnolateńskiego i wpływów rzymskich w Wesótkach, pow. Kalisz*, Wrocław–Warszawa–Kraków.
- Dąbrowski J.
1958 *Groby z okresu rzymskiego z miejscowości Zeńbok pow. Ciechanów*, *Wiadomości Archeologiczne* 25/1–2, s. 158–159.
- Demetrykiewicz W.
1905 *Wykopalisko z Kęblin i ślady rzymskiej „terra sigilata” w Królestwie Polskim*, *Wiadomości Numizmatyczno-Archeologiczne*, nr 62, szp. 1–18.
- Dłubakowski Z.
2005 *Stanowisko wielokulturowe w miejscowości Pajewo-Szwelice, woj. mazowieckie*, *Warszawskie Materiały Archeologiczne* 9, Warszawa.
- Drescher H.
1957 *Die Technik der germanischen Rollenkappenfibeln*. *Germania* 35, 1957, s. 80–95.
- Dulkiewicz A.
2009 *Szpile kościane i rogowe kultury przeworskiej na terenie Polski: typologia, chronologia, rozprzestrzenienie*, *Folia Praehistorica Posnaniensia* 15, s. 209–235.
- Dymaczewski A.
1958 *Cmentarzysko z okresu rzymskiego w Młodzikowie pow. Środa*, *Fontes Archaeologici Posnanienses* 8/9, (1957–1958), s. 179–433.
- Eggers, H. J. Stary P.F.
2001 *Funde der Vörrömischen Eisenzeit, der Römischen Kaiserzeit und der Völkerwanderungszeit in Pommern*. *Beiträge zur Ur- und Frühgeschichte Mecklenburg-Vorpommerns* 38, Lübstorf 2001.
- Fitzke J.
1933 *Trzy groby późnolateńskie odkryte na cmentarzysku tużyckim w Okołowicach, pow. łaski, woj. łódzkie*, *Przegląd Archeologiczny* 5/1, s. 107–109.
- Gałęzowska A.
1996 *Materiały z młodszego okresu przedrzymskiego i okresu wpływów rzymskich z Kuźnicy Żelichowskiej, w. woj. piłskim*, *Wielkopolskie Sprawozdania Archeologiczne* 4, s. 155–184
- Godłowski K.
1977 *Materiały kultury przeworskiej z obszaru Górnego Śląska (część 2)*. *Materiały Starożytne i Wczesnośredniowieczne* 4, s. 7–237.
- 1981 *Kultura przeworska*, [w:] *Wielowiejski (red.), Prahistoria Ziem Polskich 5: Późny okres lateński i okres rzymski*, Wrocław, s. 57–134.
- 1985 *Przemiany kulturowe i osadnicze w południowej i środkowej Polsce w młodszym okresie przedrzymskim i w okresie rzymskim*. *Prace Komisji Archeologicznej* 23, Wrocław–Warszawa–Kraków–Gdańsk–Łódź.
- Godłowski K., Szadkowska, L.
1972 *Cmentarzysko z okresu rzymskiego w Tarnowie, powiat Opole*, *Opolski Rocznik Muzealny V*, Kraków.
- Gregoricka L.A., et alli.
2014 *Gregoricka L., A., Betsinger T., K., Scott, A. B., Polcyn, M., Apotropaic practices and the*

- undead: a bio geochemical assessment of deviant burials in post-medieval Poland*, "PloS ONE" 9/11, 1–24, doi:10.1371/journal.pone.0113564.
- Grzymkowski A.
1981 *Ślady cmentarzyska w Pierławkach koło Działdowa*, Mławska Kronika Archeologiczno-Numizmatyczna 4, Mława, s. 17–21.
- 1996 *Ziemia Zakrzeńska w pierwszych wiekach naszej ery*, Studia i materiały do Dziejów Ziemi Zakrzeńskiej 2, Mława 1996, s. 151–208.
- 2006 *Grobowiec „książęcy” ze Zgliczyna Pobodzego, gmina Biezuń, powiat żuromiński*, [w:] W. Nowakowski, A. Szela (red.), *Pogranicze trzech światów, Kontakty kultur przeworskiej, wielbarskiej i bogaczewskiej w świetle materiałów z badań i poszukiwań archeologicznych, Księga dedykowana Jerzemu Okuliczowi-Kozarynowi w siedemdziesiątą piątą rocznicę urodzin*, Światowit Supplement Series P: Prehistory and Middle Ages, vol. 14, s. 61–78.
- Habuła K.
1988 *Kultura wielbarska na Ziemi Dobrzyńskiej*, [w:] J. Gurba, A. Kokowski (red.), *Kultura wielbarska w młodszym okresie rzymskim I*, Lublin, s. 87–103.
- Ilkjær, J.
1993 *Illerup Ådal 3. Die Gürtel. Bestandteile und Zubehör*, Jutland Archaeological Society Publications 25/1, Aarhus.
- Iwanicki P., Juga-Szymańska A.
2007 *Horyzont 1. kultury bogaczewskiej w świetle analizy wybranych typów zabytków*, [w:] A. Bitner-Wróblewska (red.), *Kultura bogaczewska w 20 lat później. Materiały z konferencji*, Warszawa, 26–27 marca 2003. Seminarium Bałtyjskie I, Warszawa 2007, s. 41–71.
- Iwanicki P.
2015 *Sprzączki z kolcem przedłużonym w skuwkę w kulturze przeworskiej*, [w:] B. Kontny (red.), *Ubi tribus faucibus fluente Vistulae fluminis ebibuntur. Jerzy Okulicz-Kozaryn in memoriam*, Światowit, Supplement Series B: Barbaricum 11, Warszawa, s. 175–193.
- Jahn. M.
1940 *Die Wandalen*. [w:] H. Reinerth (red.), *Vorgeschichte der deutschen Stämme* 3, Leipzig s. 943–1032.
- Jamka R.
1959 *Cmentarzysko z okresu rzymskiego w Starachowicach*, Przegląd Archeologiczny XI, 1957–1958, s. 32–61.
- Kałużna-Czaplińska J., Józefowska A., Rosiak A.
2020 *Oznaczenie związków organicznych w próbkach naczyń pochodzących z grobów halszackich z Domastawia 10/11/12, gm. Kobierzyce*, [w:] B. Gediga, A. Józefowska (red.), *Cmentarzysko wczesnej epoki żelaza w Domastawiu 10/11/12, powiat wrocławski V*, Opracowania specjalistyczne, Wrocław 2020, s. 251–259.
- Jonakowski M.
1996 *Komplet narzędzi do krzesania ognia w kulturze przeworskiej ze szczególnym uwzględnieniem krzesiwa sztabkowatych*, [w:] W. Nowakowski (red.), *Concordia. Studia ofiarowane Jerzemu Okuliczowi-Kozarynowi w sześćdziesiątą piątą rocznicę urodzin*, Warszawa, s. 193–198.
- 2001 *Grave szkieletowy kultury wielbarskiej z cmentarzyska w Lubieszewie, pow. Nowy Dwór Gdański, stanowisko 2*, Wiadomości Archeologiczne 54, 1995–1998, (2001), s. 185–188.
- Kaletyn T.
1973 *Groby ciałopalne z okresu rzymskiego w Głoscie, pow. Środa Śląska*, Wiadomości Archeologiczne 38, s. 107–108.
- Kaszewska E.
1977 *Cmentarzysko kultury przeworskiej w Gledzianówku (st. 1), woj. płockie*, Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi 24, 1977, s. 63–231.
- Kokowski A.
1985 *Die Feuerstahlwerkzeuge der Przeworsk-Kultur*, [w:] *Memories Archeologiques*, Lublin s. 109–128.
- 1997 *Schlossbeschläge und Schlüssel im Barbaricum in der römischen Kaiserzeit und der frühen Völkerwanderungszeit*, *Klasyfikacje zabytków archeologicznych* 2, Lublin.
- 2000 *Geheimnisvollen Tonknöpfen von typ „Bernášivka”*, *Sborník Národního Muzea v Praze, Řada A – Historie*, 54/1–4, s. 65–70.
- 2004 *Przyczynek do historii kontaktów Germanów i Sarmatów w świetle badań archeologicznych*, [w:] A. Kokowski (red.), *Sarmaci i Germanie. Studia Sarmatica I*, Lublin, s. 11–69.
- 2017 *O rebristych busach (typ TM-171) w centralno- i severoeuropejskom Barba-*

- rikyme, [w:] V. E. Rodinkova, O. S. Rumân-
ceva (red.), *Evropa ot Latena do Credneve-
kov'â: varvarskij mir i roždenie slavânskich
kul'tur*. K 60—letiu A. M. Oblomckogo, Ran-
neslavânskij Mir 19, Moskva, s. 142–148.
- 2019 *Illerup Aadal. Kleinfunde von ziviler Cha-
rakter* 15, [w:] Jutland Archaeological So-
ciety Publication XXV:15, Moesgaard 2019.
- Kondracki J.
2002 *Geografia regionalna Polski*, Warszawa.
- Kowalczyk E.
2004 *Chrześcijańskie miłosierdzie. Rzecz
o pochówkach dzieci nie ochrzczonych
(na przykładzie północnego Mazowsza,*
[w:] W. Dzieduszycki, J. Wrzesiński (red.),
*Dusza maluczka, a strata ogromna, Fu-
neralia Lednickie, Spotkanie* 6, Poznań,
s. 103–114
- Leube A.
1998 *Die Rollenkapfenfibeln Almgren Gruppe II,
Fig. 24–29, im Gebiet zwischen Weser und
Parsenta—Studien zur Typologie und zur
Fundgeographie*, [w:] J. Kunow (red.), *100
Jahre Fibelformen nach Oscar Almgren. In-
ternationale Arbeitstagung 25.—Mai 1997
in Klein Machnow, Land Brandenburg, For-
schung zur Archäologische Land Branden-
burg* 5, Wünsdorf, s. 55–66.
- Liana T.
1970 *Chronologia względna kultury przeworskiej
we wczesnym okresie rzymskim*, *Wiadomo-
ści Archeologiczne* 35/4, s. 429–91.
1975 *Cmentarzysko kultury przeworskiej w No-
wym Mieście pow. Rawa Mazowiecka*, *Wia-
domości Archeologiczne* 40/3, s. 375–410.
1976 *Kurhan i cmentarzysko płaskie kultury prze-
worskiej na stan. II w Łęgonicach Małych,
pow. Opoczno*, *Wiadomości Archeologiczne*
41/1, s. 64–127.
- Machajewski H.
1980 *Kultura wielbarska a kultura przeworska
w Wielkopolsce*, *Fontes Archaeologici Po-
snanienses* 29, 1978, 49–64.
1998 *Die Fibeln der Gruppe V, Serie 8, im östlichen
Teil Mitteleuropas*, [w:] J. Kunow (red.), *100
Jahre Fibelformen nach Oscar Almgren. In-
ternationale Arbeitstagung 25.—Mai 1997
in Klein Machnow, Land Brandenburg,
Forschung zur Archäologische Land Bran-
denburg* 5, Wünsdorf, s. 187–196.
2002 *Cmentarzysko ludności kultury wielbarskiej
w Szczypkowicach, woj. Pomorskie*, [w:]
- Andrzejowski, R. Prochowicz, A. Żórawska
(red.), *Varia Barbarica Zenini Woźniak ab
amicis dicata*, *Monumenta Archaeologica
Barbarica, Seriae Gamina* 1, Warszawa—Lu-
blin, s. 457–473.
- Maciałowicz A.
2006 *Cmentarzysko kultury przeworskiej z młod-
szego okresu przedrzymskiego w Suchodo-
le, pow. sochaczewski*, *Wiadomości Arche-
ologiczne* 58, s. 283–369.
- Madyda-Legutko R.
1987 *Die Gürtelschnallen der Römischen Kaiser-
zeit und der Frühen Volkerwanderungszeit
im Mitteleuropäischen Barbaricum*, BAR,
International Series 360, Oxford.
1988 *Powiązania kultury wielbarskiej z sąsied-
nimi obszarami w świetle analizy meta-
lowych części pasa*, [w:] J. Gurba, A. Ko-
kowski (red.), *Kultura wielbarska w młod-
szym okresie rzymskim I*, Lublin 1988,
s. 189–204.
1990 *Gürtelhaken der frühromischen Kaiser-
zeit im Gebiet des mitteleuropäischen
Barbaricum*, *Przegląd Archeologiczny* 37,
s. 157–180.
2011 *Studia nad różnicowaniem metalowych
części pasów w kulturze przeworskiej. Oku-
cia końca pasa*, Kraków 2011.
- Makiewicz T.
1970 *Cmentarzysko z okresu rzymskiego w Białej,
pow. Łódź*, *Prace i Materiały Muzeum Ar-
cheologicznego i Etnograficznego w Łodzi*
17, s. 173–255.
- Mays S.
2010 *The archaeology of human bones*, London—
New York.
- Mączyńska M. (Tempelmann-Mączyńska M.)
1977 *Paciorki z okresu rzymskiego i wczesnej
fazy okresu wędrówek ludów na obszarze
środkowoeuropejskiego Barbaricum*, *Ar-
cheologia* 28, s. 61–96.
1985 *Die Perlen der römischen Kaiserzeit und der
frühe Phase der Völkerwanderungszeit im mit-
teleuropäischen Barbaricum*. *Römisch—Ger-
manische Forschungen* 43, Mainz ma Rhein.
1989 *Das Frauentrachtzubehör des mittel— und
osteuropäischen Barbaricums in der rö-
mischen Kaiserzeit*, Kraków.
2004 *Bemerkugen über einige Typen der Augen-
fibeln im Barbaricum*, [w:] H. Fresinger,
A. Stuppner (red.), *Zentrum und Periph-
erie— Gesellschaftliche Phänomene In der*

- Frühgeschichte, Materialien des 13. Internationalen Symposiums Grundprobleme der frühgeschichtlichen Entwicklung im mittleren Donauraum, Zwettl, 4.–8. Dezember 2000*, Wien 2004, s. 211–240.
- 2006 *Uwagi o niektórych typach zapinek II grupy, serii wschodniej Oscara Almgrena*. Wiadomości Archeologiczne 58, s. 159–184.
- 2009 *Der frühvölkerwanderungszeitliche Hortfund aus Łubiana, Kreis Kościerzyna (Pommern)*, Bericht der Römisch–Germanischen Kommission 90, (2011), s. 7–481.
- Marciniak J.
1957 *Cmentarzysko ciałopalne z okresu późnołateńskiego w Wilanowie koło Warszawy*, Materiały Starożytne 2, s. 7–166.
- Michelbertas M.
1997 *Paragaudžio pilkapynas*, Vilnius 1997.
- Moszczyński J., Tyszler L.
2001 *Groby z terra sigillata z cmentarzyska kultury przeworskiej w Wiktorowie, pow. Zgierski*, [w:] J. Kolendo, A. Bursche (red.), *Nowe znaleziska importów rzymskich z ziem Polski II*, Supplement II, Korpus znalezisk rzymskich z europejskiego Barbaricum, Warszawa, s. 69–116.
- Motyková–Šneidrowa K.
1965 *Zur Chronologie der älteren römischen Kaiserzeit in Böhmen*.
- von Müller A.
1956 *Die birnen- und kugelförmigen Anhänger der älteren römischen Kaiserzeit*. Offa 15, 1956, s. 93–114.
- Niewęglowski A.
1981 *Obrządek pogrzebowy ludności kultury przeworskiej na przełomie er (II wiek p.n.e.–II wiek n.e.)*, Wrocław.
- Nowakowski W.
1995 *Od Galindai do Galinditae. Z badań nad pradziejami bałtyjskiego ludu z Pojezierza Mazurskiego*, Barbaricum 4, Warszawa.
1996 *Das Samland in der römischen Kaiserzeit und seine Verbindungen mit dem römischen Reich und der barbarischen Welt*. Veröffentlichung des Vorgeschichtlichen Seminars Marburg, Sonderband 10, Marburg–Warszawa.
- Natuniewicz M.
2000 „Nowe” znaleziska ze starych wykopalisk. Ocalałe materiały ze starych wykopalisk. Ocalałe materiały archeologiczne z okresu wpływów rzymskich z okolic Elbląga, [w:] J. Kolendo, W. Nowakowski (red.), *Antiquitates Prussiae. Studia z archeologii dawnych ziem pruskich*, Warszawa, s. 105–206.
- Natuniewicz-Sekuła, M., Okulicz-Kozaryn J.
2011 *Weklice. A cemetery of the Wielbark Culture on the Eastern Margin of Vistula Delta (Excavations 1984–2004)*, Monumenta Archaeologica Barbarica 17, Warszawa.
- Niewęglowski A.
1981 *Obrządek pogrzebowy ludności kultury przeworskiej na przełomie er (II w. p.n.e.–II w. n.e.)*, Wrocław–Warszawa–Kraków–Gdańsk–Łódź.
- Niezabitowska-Wiśniewska B.
2015 *Ulów (pow. tomaszowski, woj. lubelskie), stanowisko 7, obiekt 124, czyli raz jeszcze w kwestii guzków typu Bernašivka*, [w:] B. Kontny (red.), *Ubi tribus faucibus fluenta Vistulae fluminis ebibuntur. Jerzy Okulicz-Kozaryn in memoriam*, Światowit, Supplement Series B: Barbaricum 11, Warszawa, s. 489–524.
- Nowakowski W.
1995 *Od Galindai do Galinditae. Z badań nad pradziejami bałtyjskiego ludu z Pojezierza Mazurskiego*, Barbaricum 4 (Warszawa 1995).
1996 *Das Samland in der römischen Kaiserzeit und seine Verbindungen mit dem römischen Reich und der barbarischen Welt*. Veröffentlichung des Vorgeschichtlichen Seminars Marburg, Sonderband 10, Marburg–Warszawa.
- Okulicz J. (Okulicz-Kozaryn)
1965/2006 *Plemiona grupy nidzickiej kultury grobów jamowych (w okresie od końca II w. przed naszą erą do V w. n.e.)*, wyd. na CD, [w:] W. Nowakowski, A. Szela (red.), *Pogranicze trzech światów. Kontakty kultur przeworskiej, wielbarskiej, i bogaczewskiej w świetle materiałów z badań i poszukiwań archeologicznych*, Światowit, Supplement Series P: Prehistory and Middle Ages XIV, Warszawa 2006.
- 1965 *Kitki I, distr. De Przasnysz, dep. De Varsivie*, Inventaria Archaeologica, Pologne, fasc. XV, pl. s. 94–95.
- 1983 *Cmentarzyska z okresu rzymskiego na „Łysej Górze” i „Zwierzyńcu” w Gródkach w województwie ciechanowskim*, Rocznik Olsztyński 14/15, s. 73–189.

- Okuliczow Ł.
1964 *Cmentarzysko z okresu rzymskiego w Tuchlinie pow. Wyszków*, Wiadomości Archeologiczne XXX, s. 371–387.
- Olędzki M.
1992 *Uwagi o niektórych odmianach fibul kapurkowatych serii wschodniej jako przyczynek do zagadnienia kwalifikacji kulturowej wschodnich obszarów kultury przeworskiej*, Przegląd Archeologiczny 40, s. 49–70.
- Pawlikowski M.,
2020 *Ceramologia archeologiczna*, Krosno.
- Pescheck Ch.
1939 *Die frühwandalische Kultur in Mittelschlesien (100 vor bis 200 nach Christus)*, Quellenschriften zur ostdeutschen Vor- und Frühgeschichte 5, Leipzig 1939.
- Peškař I.
1972 *Fibeln aus der römischen Kaiserzeit in Mähren*, Praga 1972.
- Petersen E.
1934 *Neue reiche Grabfunde der Spätlatenenzeit aus Schlesien*, Altschlesien 4, s. 240–254.
- Piotrowski M., Szela A.
2001 *Pogranicze trzech światów — cmentarzysko kultury przeworskiej w Dzierzgowie, na północnym Mazowszu*, [w:] W. Nowakowski, A. Szela (red.), *Officina archaeologica optima. Studia ofiarowane Jerzemu Okuliczowi-Kozarynowi w siedemdziesiątą rocznicę urodzin*, Światowit Suppl. Series. P: Prehistory and Middle Ages 7 Warszawa, s. 165–173.
- Pospieszny Ł., Bełka Z.
2015 *Dieta i mobilność u schyłku starożytności. Szczątki ludzkie z cmentarzyska w Karczynie/Witowach stan. 21/22. W świetle badań izotopowych* [w:] J. Bednarczyk, A. Romańska (red.) *Karczyn/Witowy stan. 21/22. Birytualne cmentarzysko kultury przeworskiej*, Studia i Materiały do dziejów Kujaw 12, Poznań–Inowrocław, s. 179–195.
- Price T. D., Naum M., Bennike P., Lynnerup N., Frei K. M., Wagnkilde H., Pind T. & Nielsen F. O.
2012 *Isotopic investigation of human provenience at the eleventh century cemetery of Ndr. Grødbygård, Bornholm, Denmark* Danish Journal of Archaeology, 1:2, s. 93–112, DOI: 10.1080/21662282.2013.798903.
- Prochowicz R. J.
2003 *Rzadki wariant zapinek typu A.68 z cmentarzyska kultury przeworskiej w Sobieniach Biskupich, pow. Otwock*, [w:] A. Bursche-
R. Ciołek (red.), *Antyk i Barbarzyńcy. Księga dedykowana Profesorowi Jerzemu Kolendo w siedemdziesiątą rocznicę urodzin*, Warszawa, s. 33–46.
- Rakowski T., Watemborska–Rakowska K.
2017 *Gniew jest osłą męstwa. Uwagi o osetkach z okresu wpływów rzymskich na podstawie znaleziska z cmentarza kultury przeworskiej w Czarnówku na Urzeczu* [w:] J. Andrzejowski, C. von Carnap–Bornheim, A. Cieśliński, B. Kontny (red.) *Orbis barbarorum. Studia ad archaeologiam Germanorum et Baltorum temporibus Imperii Romani pertinentia Adalberto Nowakowski dedicate*, Monumenta Archaeologica Barbarica, Series Gemina 6, Warszawa, s. 507–536.
- Reinbacher E.
1964 *Ein ostgermanischer Friedhof bei Stupsk, Kr. Mława in Polen, Nach den von A. Götze hinterlassenen Aufzeichnungen dargestellt*, [w:] P. Grimm (red.), *Varia Archaeologica. Wilhelm Unverzagt zum 70. Geburtstag dargebracht*, Schriften der Sektion für Vor- und Frühgeschichte 16, Berlin, s. 148–161.
- Rogatko J.
1994 *O niektórych kategoriach wyrobów kościanych i rogowych w obrębie kultury przeworskiej*, Kultura Przeworska I, s. 343–361.
- Ruta A., Strobin A.
2010 *Materiały kultury wielbarskiej z cmentarzyska w Krzykosach, woj. pomorskie*, [w:] A. Urbaniak, R. Prochowicz, I. Jakubczyk, M. Levada, J. Schuster (red.), *Terra Barbarica. Studia ofiarowane Magdalenie Mączyńskiej w 65. rocznicę urodzin*. Monumenta Archaeologica Barbarica, Series Gemina II, Łódź–Warszawa (2011), s. 457–473.
- Schuster J.
2016 *„Ubogi książę” z okazałego grobu ze Zgliczyzna Pobodzego*, [w:] A. Jarzec, W. Nowakowski, A. Szela (red.), *Pogranicze trzech światów — Mazowsze u schyłku starożytności*, Światowit, Supplement Series P: Prehistory and Middle Age XVII, Warszawa, s. 135–165.
- Sebald S. V., Zeiler M. Gisela Grupe
2018 *Provenance analysis of human cremations by 87Sr/86Sr isotopic ratios: migration into an Iron Age mining region in North–Rhine Westphalia* doi.org/10.4081/arc.2018.7512
- Snoeck, C., Pouncett, J., Claeys, P. et al.
2018 Snoeck C., Pouncett J., Claeys P., Goderis S.,

- Pearson M. P., Willis, C., Zazzo A., Lee-Thorp J. & Schulting R. *Strontium isotope analysis on cremated human remains from Stonehenge support links with west Wales*. *Scientific Reports* 8, 10790, doi.org/10.1038/s41598-018-28969-8
- Skorupka T.
2001 *Kowalewko 12. Cmentarzysko brytualne ludności kultury wielbarskiej (od połowy I w. n.e. do początku III w. n.e.)*, [w:] M. Chłodnicki (red.), *Archeologiczne badania ratownicze wzdłuż trasy gazociągu tranzytowego II – Wielkopolska*, cz. 3, Poznań 2001.
- Skowron J.
1997 *Cmentarzysko kultury przeworskiej z późnego okresu wpływów rzymskich w miejscowości Piaski gm. Kleszczów, woj. Piotrków Trybunalski st. 1*, *Prace i Materiały Muzeum Miasta Zgierza* 2, s. 11–154.
- Szela A.
2004 *Ratownicze badania wykopaliskowe na stanowisku 5 w Brudnicach, pow. żuromiński*, [w:] Światowit, Supplement Series B: Barbaricum 7, s. 295–304.
2015 *Wybrane zespoły grobowe z nekropoli w Brudnicach, stan. V w kontekście innych stanowisk grupy nidzickiej i kontaktów z zachodnimi rejonami Morza Bałtyckiego*, [w:] B. Kontny (red.), *Ubi tribus faucibus fluenta Vistulae fluminis ebibuntur. Jerzy Okulicz-Kozaryn in memoriam*, Światowit Supplement Series B: Barbaricum 11, s. 639–658.
2016a *Historia poszukiwań archeologicznych w powiecie żuromińskim*, [w:] A. Jarzec, W. Nowakowski, A. Szela (red.), *Pogranicze trzech światów – Mazowsze u schyłku starożytności*, Światowit, Supplement Series P: Prehistory and Middle Age 17, Warszawa, s. 37–52.
2016b *Stratygrafia horyzontalna zarejestrowana na przeworskiej części nekropoli w Brudnicach st. V z I i II wieku naszej ery*, [w:] A. Jarzec, W. Nowakowski, A. Szela (red.), *Pogranicze trzech światów – Mazowsze u schyłku starożytności*, Światowit, Supplement Series P: Prehistory and Middle Age 17, Warszawa, s. 165–188.
2018a *Kuczbork-Osada, Nekropola z pogranicza starożytnych światów*, Światowit, Supplement Series P: Prehistory and Middle Age XXI, Warszawa,
2018b *Zgliczyn Pobodzy. Zapomniana nekropola z północnego Mazowsza*, *Wiadomości Archeologiczne* 69, s. 122–147.
- Szostek K., Stepańczyk B.
2009 *Zastosowanie analizy stabilnych izotopów w antropologii – wstępne wyniki badań*, [w:] W. Dzieduszycki, J. Wrzeński (red.), *Metody. Źródła. Dokumentacja*, Funeraria Lednickie. Spotkanie 11, Poznań, s. 125–140.
- Szydłowski J.
1964 *Cmentarzysko z okresu wpływów rzymskich w Choruli, pow. Krapkowice*, Biblioteka Archeologiczna 17, Wrocław–Warszawa–Kraków.
- Taylor N., Frei K. M., Frei R.,
2020 *A strontium isotope pilot study using cremated teeth from the Vollmarshausen cemetery, Hesse, Germany*, *Journal of Archaeological Science: Reports* 31, doi.org/10.1016/j.jasrep.2020.102356, s. 1–10.
- Thomas S.
1960 *Studien zu den germanischen Kämmen der römischen Kaiserzeit. Arbeits- und Forschungsberichte zur Sächsischen Bodendenkmalpflege* 8, 1960, s. 54–215.
- Tuszyńska M.
2005 *Ulkowy. Cmentarzysko kultury wielbarskiej na Pomorzu Gdańskim*.
- Walenta K.
1980 *Obrządek pogrzebowy na Pomorzu w okresie późnolateńskim i rzymskim*, *Archeologia Baltica* 5, Łódź.
- Wołągiewicz R.
1995 *Ein birituelles Gräberfeld der Wielbark-Kultur aus der Zeit vom Ende des 1. Jhs. v.Chr. bis zum Anfang des 3. Jhs. n.Chr.*, *Monumenta Archaeologica Barbarica* I, Kraków.
- Woźniak M.
2011 *Cmentarzysko kultury wielbarskiej w KozłóWKu, pow. Nidzicki (D. Kleien Kolsau, Kreis Nidenburg) w świetle publikacji i materiałów archiwalnych*, *Wiadomości archeologiczne* 72, s. 169–208. Woźniak M., Grabarek A.,
2020 *Cmentarzysko kultury przeworskiej w Kurkach, pow. działdowski, stan. III*, *Wiadomości Archeologiczne* 70, s. 369–383.
- Zagórska-Telega J.
2019 *Obrządek pogrzebowy ludności kultury przeworskiej nadliswarciańskiego regionu osad-*

niczego w młodszym i późnym okresie rzymskim, Kraków 2019

Zawadzka Antosik B.

1973 *Pochówki dzieci w naczyniach glinianych*, *Wiadomości Archeologiczne* 38/2, s. 365–371.

1982 *Z problematyki pochówków dziecięcych odkrytych na cmentarzysku w Czekanowie, woj. siedleckie*, *Wiadomości Archeologiczne* 47/1, s. 25–57.

Zieliński G.

1874 *Starożytności Dobrzyńskie*, *Wiadomości Archeologiczne* 2, s. 78–93.

Zielonka B.

1958 *Cmentarzysko w Bodzanowie w pow. aleksandrowskim*, *Przegląd Archeologiczny* 10, 1954–56, 331–382.

Ziemlińska-Odojowa W.

1999a *Materiały kultury przeworskiej z cmentarzyska w Dłutowie, stan. 3, pow. Działdowo*, [w:] J. Andrzejowski (red.), *COMHLAN. Studia z archeologii okresu przedrzymskiego i rzymskiego w Europie Środkowej dedykowane Teresie Dąbrowskiej w 65. rocznicę urodzin*, Warszawa, s. 401–422.

1999b *Niedanowo. Ein Gräberfeld der Przeworsk- und Wielbark –Kultur in Nordmasowien*, *Monumenta Archaeologica Barbarica* 7, Kraków 1999.

Appendix I

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Archaeometric analyses of non – ferrous artefacts from Brudnice site V, Żuromin County

A total of 59 artefacts from 37 graves of the Przeworsk culture were selected for archaeometric analyses in order to obtain material and technological data. These included various types of brooches, pins, bracelets and S-shaped clasps. The non-destructive methods of micro- and macro X-ray fluorescence with a TESCAN Vega 5135MM scanning microscope with AVALON PGT – Princeton Gamma Tech (SEM-EDS) analyser and an Artax spectrometer were used to determine the elemental composition of the artefacts. Chemical profiles were obtained from analyses carried out at points cleaned of corrosion products—the remaining patina was removed with diamond polishing discs. The results, which are averaged values of several measurements, are presented in tables, same as in other research of this type conducted in the Bio- and Archaeometry Laboratory of the Institute of Archaeology and Ethnology, Polish Academy of Sciences (Gan 2019, p. 128).

It should be noted that copper alloys of various compositions were used in the manufacture of the objects examined; most of them are single- or multi-component brasses. A few bronzes were also recorded. Minor impurities were marked in all the analyses, however, they had no significant impact on the properties of the alloy and were introduced into the final product as a result of inaccurate ore refining. Contaminants of arsenic, antimony or iron occur in copper and calamine (zinc) ores; moreover, the addition of lead, which can improve castability of the alloy, did not exceed 0.60% (with the average 0.12), which does not seem to indicate that it had been used on purpose.

Results of the analysis of individual artefact groups:

Bracelets

Analyses were carried out on 13 artefacts in this category. Material-wise, this is a fairly uniform group of multi-component brasses, with zinc content in the range of 6–12% (average 9.51%) and tin content of 2.17–4.49% (average 3.08%). The presence of both these components is relatively common in the metallurgy of the Roman period (Craddock 1978, 12) and indicates intermixing zinc-rich raw material, formed by cementation, with low-tin bronze. The resulting metal had versatile properties and was suitable for both casting and forming. This may suggest the activity of local manufacturing workshops and processing of raw material—products with high Zn content—according to a specific formula.

Strap-ends

Seven profiled strap-ends and one belt mount were analysed. The artefact from grave 92 (analysis CL20720) stands out in terms of material, as it is the only object made of bronze, with Sn content of over 16%, in this group. It was most probably made in a permanent mould, using the lost wax method. The remaining items in this artefact group are similar in structure to the multi-component brasses described above (with average content of Zn of 8.73% and Sn of 2.71%). It can be assumed that in order to make them, the craftsman could have used die-forging in addition to casting (Strobin 2000, pp. 231–233).

Pins

In this group, five artefacts with profiled heads were analysed. In the case of three objects, small differences in the tin content were observed, which might be a result of uneven distribution of the metal in the alloy, probably a remnant of casting in a permanent mould using the lost wax method. Only a minimal addition of tin was determined for the pins from graves 23 and 144, while the share of Zn was comparable to the other artefacts. Such a composition should be associated with processing of fresh brass without additional components.

S-shaped clasps

Two such artefacts were analysed. In comparison with the other artefacts, both of them showed reduced presence of Zn (<4%) and increased share of Sn (7.15–8.69%). It can, therefore, be assumed that brass scrap, added as a supplement to the bronze alloy, was used in their manufacture; or, conversely, unskilfully melted brass, in which the Zn content sharply decreased as a result of prolonged evaporation, had to be supplemented with a correspondingly larger addition of bronze (Dungworth 1996, p. 905).

Brooches

Fibulae are the largest artefact category analysed, with 48 specimens, out of which 28 were eye brooches of the main and Prussian series. The chemical profiles obtained do not differ much from the other examined artefacts from the Brudnice cemetery, creating a uniform picture of metallurgy at the site. Most of the brooches were made of brass alloy with a small addition of tin bronze; its average share for this entire category was 9.77% for Zn and 3.77% for Sn. Nevertheless, a few particular cases are worth noting. The pair of A.26 brooches from graves 73 and 121 (analyses CL20715 and CL20733 respectively) have a very similar chemical profile based on Zn content of approx. 13% and Sn addition of 1% Sn. This may suggest that both items came from a single bronze workshop. Two eye fibulae, an A.52 brooch from grave 7 (CL20687) and A.57–59 fibula from grave 15 (CL20691) have Zn levels exceeding 15%. This alloy is commonly encountered in the case of eye fibulae, indicating the use of a specific recipe and production in a single, though still unidentified, metallurgical centre. There are many indications that the other eye brooches analysed, with lower zinc levels, may have been made as part of smaller, local production based on available raw material (Łuczkiwicz 2020). A completely different raw material characterises the brooch assigned typologically to groups A. II/IV (CL20728). An analysis of the bow revealed that it was made of tin bronze (approx. 10% Sn) with an increased Zn content (approx. 1%).

Conclusions

The analyses conducted showed that the main factors differentiating the whole of the examined material were the most important alloying elements, i.e. tin and zinc. Their relationship is shown in a figure (Fig. 1). Most of the analyses agglomerate around average contents of 9.30 for Zn and 3.25 for Sn. A few clusters of results suggesting a workshop/raw material connection of several products have been observed. Raw material correlations are particularly evident for the following artefacts:

- A.68 and A.57–59 brooches from graves 92 and 26 (CL20719 and CL20699);
- eye brooches from burials 23, 110 (CL20727, CL20697) and pin from grave 54 (CL20709);
- bracelet from grave 37 (CL20693) and belt fitting from grave 121 (CL20734);
- A.110 brooch from grave 105 (CL20725) and strap-end from grave C (CL20745);
- bracelets from graves 95 and 129 and A.120 brooch from grave 134 (CL20723, 20736).

The comparison of brooches not characteristic of the Przeworsk culture with the remaining fibulae is presented in Figure 2 (Fig. 2), showing a greater intermixture of brass raw material in A.92 and A.103 brooches. However, it is difficult to draw unequivocal conclusions here due to the small size of the sample.

A high degree of similarity is also evident in regard to the contents of individual graves. The grave goods examined show considerable correlation with one another (grave C, 21, 54, 73, 95, 136).

A fairly uniform picture of metallurgy at the investigated site emerges from the considerations presented. It is metallurgy based on re-processing of raw material, following a specific formula. Often, the entire grave inventory recorded was made of the same raw material. The low diversity in the chemical composition of the goods, as well as the absence of zinc-rich products obtained directly by means of cementation, may indicate negligible commercial contacts of the local community as well as the existence of a small workshop satisfying local demand. At the same time, this picture of metallurgy does not differ

much from other sites associated with the Przeworsk culture, such as the cemeteries at Modła (Andrzejowski 2009) or Garwolin (Niewęłowski 1991).

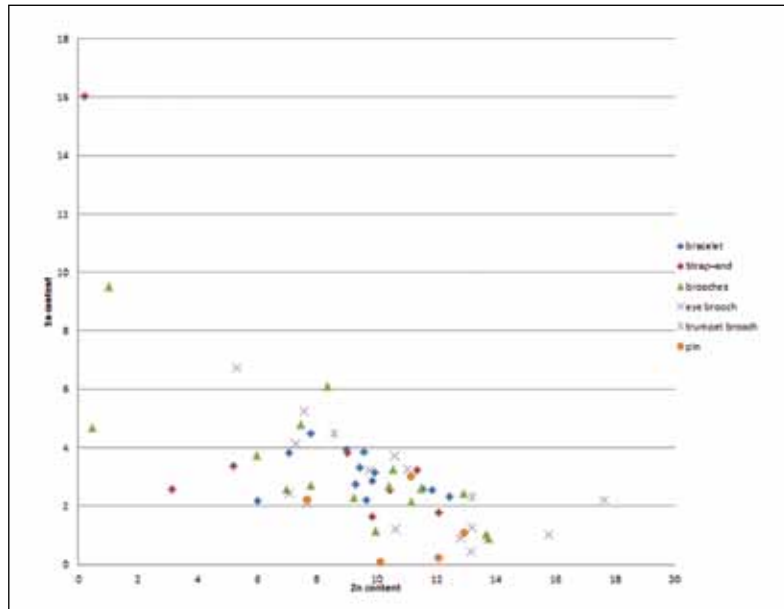


Fig. 1. Zn/Sn content of all the artefacts analysed.

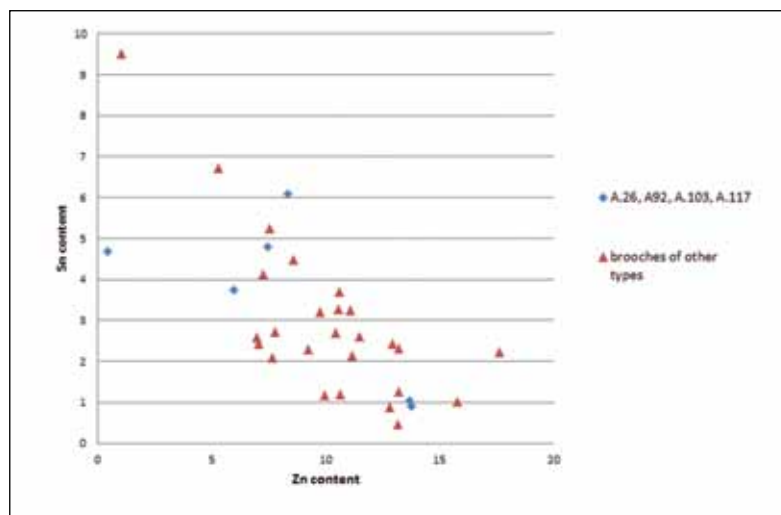


Fig. 2. Zn/Sn content of the brooches atypical of the Przeworsk culture against the rest of the artefacts analysed.

Sample- no.	Grave no.	artefacts	Cu	Zn	As	Sn	Sb	Pb	Fe	Ni	Bi	Al	Si	P	S
20690	13	Bracelet	85,11	9,94	0,05	3,15	0,26	0,15	0,26	0,13	x	x	0,17	0,79	x
20693	21	Bracelet	84,73	8,99	0,03	3,95	0,24	0,14	0,32	0,11	0,02		0,28	1,20	x
20694	23	Bracelet	83,10	12,47	0,03	2,32	0,12	0,08	0,17	0,10	0,01	0,27	0,31	1,03	x
20704	27	Bracelet	90,08	6,01	0,04	2,17	0,18	0,16	0,23	0,10	0,02	0,15	0,21	0,66	x
20708	54	Bracelet	85,84	9,29	0,02	2,74	0,20	0,05	0,27	0,08	0,02	0,18	0,13	1,06	0,13
20712	60	Bracelet	84,14	9,57	0,02	3,87	0,17	0,08	0,67	0,09	0,02	0,26	0,22	0,74	0,16
20714	69	Bracelet	87,68	7,08	0,07	3,84	0,28	0,58	0,34	0,11	0,02	x	x	x	x
20717	81	Bracelet	84,61	9,44	0,02	3,33	0,19	0,05	0,25	0,12	0,02	0,39	0,37	1,20	x
20723	95	Bracelet	83,95	11,57	0,04	2,57	0,21	0,11	0,26	0,12	0,03	0,21	0,18	0,75	x
20730	112	Bracelet	85,33	9,86	0,07	2,86	0,34	0,33	0,34	0,12	0,02	0,21	0,21	x	0,31
20736	129	Bracelet	84,83	11,86	0,02	2,54	0,20	0,13	0,26	0,11	0,04	x	x	x	x
20739	136	Bracelet	85,57	7,81	0,05	4,49	0,24	0,20	0,25	0,12	0,02	0,20	0,37	0,68	x
20744	C	Bracelet	85,37	9,67	0,03	2,22	0,14	0,21	0,26	0,13	0,02	0,22	0,41	1,32	x
20703	27	S-shaped clasp, analysis of uncleaned surface	84,11	3,83	0,25	8,69	0,31	0,60	0,53	0,10	0,04	0,31	0,27	0,96	x
20731	113	S-shaped clasp, analysis of uncleaned surface	89,51	2,55	0,03	7,15	0,14	0,09	0,35	0,14	0,04	x	x	x	x
20696	23	Strap-end	82,72	11,36	0,03	3,22	0,24	0,17	0,23	0,12	0,03	0,32	0,20	1,13	0,24
20700	27	Strap-end	89,45	5,20	0,03	3,38	0,28	0,18	0,20	0,11	0,03	x	0,21	0,76	0,18
20716	73	Strap-end	87,79	9,85	0,03	1,63	0,18	0,12	0,28	0,12	0,01	x	x	x	x
20720	92	Strap-end	82,65	0,20	0,04	16,02	0,66	0,07	0,22	0,12	0,02	x	x	x	x
20721	95	Strap-end	84,97	12,09	0,03	1,77	0,32	0,09	0,27	0,11	0,02	x	0,33	x	x
20734	121	Strap-end	85,07	9,03	0,03	3,84	0,19	0,10	0,24	0,12	0,02	0,23	0,32	0,60	0,21
20745	C	Strap-end	84,23	10,44	0,04	2,54	0,32	0,16	0,13	0,13	0,02	0,20	0,25	1,37	0,19
20713	60	Strap-end	93,33	3,15	0,02	2,59	0,29	0,05	0,14	0,12	0,02	0,16	0,13	x	x
20701	27	Pin	83,08	12,97	0,01	1,07	0,17	0,05	0,31	0,10	0,02	0,35	0,22	1,47	0,19
20722	95	Pin	84,18	11,18	0,03	3,01	0,11	0,15	0,30	0,09	0,03	0,17	0,16	0,60	x
20742	144	Pin	85,73	12,10	0,01	0,21	0,22	0,06	0,32	0,13	0,02	0,29	0,22	0,70	x

20709	54	Pin, shaft cross-section	88,05	7,70	0,02	2,20	0,11	0,05	0,98	0,09	0,02	x	x	0,66	0,13
20695	23	Pin, head	87,96	10,15	0,03	0,08	0,17	0,08	0,16	0,13	0,03	0,31	0,18	0,72	x
20729	111	Brooch A.103, bow	88,06	5,99	0,02	3,75	0,11	0,04	0,34	0,10	0,01	0,30	0,19	0,89	0,21
20725	105	Brooch A.110, bow	84,80	10,43	0,03	2,69	0,22	0,12	0,29	0,13	0,02	x	0,18	0,94	0,16
20726	106	Brooch A.120, bow	86,40	7,81	0,03	2,71	0,28	0,05	0,86	0,11	0,02	0,35	0,30	0,90	0,19
20738	134	Brooch A.120, bow	83,45	11,50	0,03	2,60	0,10	0,13	0,19	0,13	0,02	0,22	0,27	1,18	0,18
20715	73	Brooch A.26, bow	84,43	13,76	0,02	0,91	0,13	0,07	0,22	0,09	0,02	0,18	0,18	x	x
20733	121	Brooch A.26, bow	83,72	13,69	0,02	1,04	0,19	0,06	0,20	0,12	0,01	x	x	0,82	0,12
20688	11	Brooch A.38-39, bow	84,35	10,55	0,03	3,27	0,22	0,21	0,23	0,13	x	x	0,17	0,73	0,12
20689	13	Brooch A.38-39, bow	84,41	11,17	0,01	2,15	0,20	0,05	0,19	0,11	x	0,26	0,16	1,19	0,10
20737	131	Brooch A.38-39, bow	82,49	12,92	0,02	2,42	0,21	0,08	0,22	0,11	0,02	0,30	0,19	1,01	x
20743	C	Brooch A.38-39, catchplate	88,04	9,23	0,01	2,29	0,13	0,03	0,12	0,13	0,02	x	x	x	x
20699	26	Brooch A.68, bow	88,04	6,99	0,01	2,58	0,17	0,10	0,33	0,10	0,03	0,29	0,25	0,98	0,14
20686	4	Brooch A.68, catchplate	86,83	9,98	0,03	1,17	0,17	0,10	0,16	0,13	x	0,24	0,30	0,67	0,22
20692	21	Brooch A.92, catchplate	86,66	7,46	0,02	4,79	0,13	0,07	0,20	0,12	0,02	0,33	0,20	x	x
20740	136	Brooch A.92, catchplate	83,35	8,36	0,03	6,10	0,17	0,09	0,14	0,12	0,02	0,27	0,30	1,05	x
20728	109	Brooch A.II/IV, bow	86,79	1,03	0,04	9,52	0,29	0,42	0,12	0,12	0,02	0,22	0,23	1,20	x
20687	7	Eye brooch A.52, catchplate	80,39	15,77	0,01	1,01	0,24	0,06	0,16	0,13	x	0,00	0,32	1,54	0,36
20698	25	Eye brooch A.52, catchplate	83,46	13,20	0,02	1,27	0,06	0,07	0,15	0,12	0,03	x	0,40	1,02	0,20
20718	90	Eye brooch A.57-59, bow	85,33	12,83	0,02	0,89	0,22	0,04	0,24	0,13	0,02	x	0,29	x	x
20719	92	Eye brooch A.57-59, bow	89,30	7,08	0,03	2,44	0,17	0,04	0,15	0,12	0,01	x	x	0,67	x
20702	27	Eye brooch A.57-59, catchplate	84,40	10,61	0,03	3,71	0,22	0,06	0,16	0,13	0,02	x	x	0,67	x
20710	54	Eye brooch A.60-61, bow	85,40	9,77	0,03	3,22	0,21	0,06	0,18	0,13	0,04	0,26	0,19	0,51	x

20727	110	Eye brooch A.60-61, bow	87,83	7,65	0,02	2,09	0,21	0,05	0,47	0,12	0,01	0,23	0,26	0,76	0,31
20706	38	Eye brooch A.60-61, catchplate	86,36	7,28	0,04	4,13	0,20	0,08	0,27	0,10	0,04	0,30	0,14	1,07	x
20707	49	Eye brooch A.60-61, catchplate	82,84	11,07	0,03	3,26	0,18	0,16	0,24	0,11	0,02	0,39	0,25	1,08	0,38
20711	60	Eye brooch A.60-61, catchplate	85,85	13,17	0,01	0,45	0,22	0,02	0,14	0,12	0,02	x	x	x	x
20741	144	Eye brooch A.60-61, catchplate	86,89	5,30	0,02	6,72	0,32	0,05	0,11	0,11	0,02	0,21	0,25	x	x
20691	15	Eye brooch A.57-59, bow	78,94	17,63	0,04	2,22	0,23	0,13	0,20	0,11	0,02	0,21	x	x	0,26
20697	23	Eye brooch A.57-59, spring	85,64	7,56	0,03	5,24	0,25	0,06	0,17	0,10	0,02	0,14	0,16	0,63	x
20705	34	Eye brooch catchplate	86,46	10,63	0,03	1,21	0,16	0,10	0,15	0,10	0,03	0,18	x	0,80	0,17
20724	103	Trumpet brooch, variant 5, bow	84,94	8,58	0,03	4,48	0,21	0,10	0,23	0,11	0,03	0,36	0,23	0,73	x
20735	125	Trumpet brooch, variant 5, bow	82,76	13,22	0,02	2,31	0,29	0,09	0,15	0,10	0,02	0,31	x	0,74	x

Bibliography:

- Craddock P.T. Niewęłowski A.
1978 *The composition of the copper alloys used by the Greek, Etruscan and Roman civilizations: 3. The origins and early use of brass*, Journal of Archaeological Science 5/1, s. 1-16. 1991 *Cmentarzysko kultury przeworskiej w Garwolinie, woj. siedleckie*, Warszawa. Strobin J.
Dungworth D. 2000 *Modelowanie w kształtownikach – uwagi na temat technik kucia w metaloplastyce* kultury wielbarskiej, Światowit 44, s. 231-252.
1996 *Roman Copper Alloys: analysis of artefacts from Northern Britain*, Journal of Archaeological Science, 24, s. 901-910.
Gan P.
2019 *Analiza kompozycji chemicznej emalii i naczyń z łęgu Piekarskiego*, Wiadomości Archeologiczne 70, s. 128-131.
Łuczkiwicz P.
2020 *Przyczynek do badań metalurgii w Barbaricum – uwagi na podstawie analiz kompozycji chemicznej zapinek oczkowanych serii pruskiej z cmentarzyska w Malborku-Wielbarku* (praca niepublikowana).

Appendix II

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Analysis of organic residues preserved in the walls of earthenware vessels from site V in the village of Brudnice, Żuromin County

Introduction

The current scientific literature concerning studies on organic residues preserved in pottery distinguishes two main ways of conducting research: one involves analysing lipid profiles and identifying fatty acids, the other consists in searching for archaeological biomarkers, i.e. compounds characteristic of, for example, a particular type of food with which an earthenware vessel may have come in contact. This means that an analysis of organic residues preserved in the walls of ceramic vessels may indicate components characteristic of food of plant or animal origin, expand the knowledge on the diet and cult rituals of the people inhabiting the area from which the pottery comes as well as provide information on the purpose of the earthenware under study (Kałużna-Czaplińska J., Rosiak A., Kwapińska M., Kwapiński W., 2016, pp. 67–81; Kałużna-Czaplińska J., Rosiak A., Grams J., Chałupka K., Makarowicz P., Maniukiewicz W., Szubiakiewicz E., 2017, pp. 490–498). Studies show that the degradation of fatty acids is a very complex process, which may lead to the formation of a broad range of organic compounds, depending on the environment in which the analysed samples resided. Researchers point out that saturated fatty acids may oxidise, and, as a result of this process, different shorter-chained derivatives may be formed. Moreover, unsaturated fatty acids oxidise quicker than the saturated ones. Additionally, long- and short-chain acids, i.e. those with more than 18 and fewer than 14 carbon atoms in the chain, oxidise quicker than acids with medium-sized chains,

i.e. ones with 14 to 18 carbon atoms. The exact rate at which fatty acids degrade depends on a number of factors, such as their original relative content, temperature or access to oxygen and water. It is estimated that, in a temperature of 100°C, the rate of oxidation between stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2) and linolenic acid (C18:3) is 1 : 100 : 1200 : 2500 (Eerkens J., 2007, pp. 1–7). Plants contain mainly unsaturated fatty acids, such as oleic acid (C18:1), while saturated acids—for example, palmitic acid—predominate in animal fats. Vegetable oils are present mainly in seeds and the flesh of fruits. In most fats found in fruit pulp, the main components are C16:0 acid and C18:1 acid, sometimes also linoleic acid (C18:2). Seeds mainly contain C16:0, C18:1 and C18:2 acids, which are occasionally accompanied by linolenic acid (C18:3) (Sikorski Z.E., 2007). Another researcher, Regert (Regert M., 2011, pp. 177–220), showed that residues of reserve fats of ruminants (and dairy products) should contain a significantly larger amount of C18:0 acid than of C16:0 acid and a small share of C15:0 and C17:0 acids (with straight and branched chains) as well as a mixture of isomers of C18:1 acid. Furthermore, remains of meat of monogastric animals (e.g. pork) contain more C16:0 acid than C18:0 acid, and they should not contain fatty acids with an odd number of carbon atoms in the chain; however, they may contain only one type of C18:1 unsaturated fatty acid—oleic (cis-9-octadecanoic) acid.

Aim of research

Detection and identification of organic compounds in 5 samples obtained from site V in the village of Brudnice, Żuromin County (including plant and animal markers), with the use of a gas chromatograph coupled to a mass spectrometer (GC-MS).

Description of samples

SAMPLE 1 feature. 121, vessel 1
SAMPLE 2 feature. 121, vessel 2
SAMPLE 3 feature. 121, vessel 3
SAMPLE 4 feature. 121, vessel 4
SAMPLE 5 feature. 121, vessel 5

Chromatographic analyses with the use of a gas chromatograph coupled to a mass spectrometer

A gas chromatograph coupled to a mass spectrometer (5973 Network Mass Selective Detector) was used to identify organic compounds in the vessel samples.

Preparation of samples for the analysis

The weighed sample of the material (approximately 5 g) was extracted in a mixture of dichloromethane and methanol (2:1 v/v) in a Soxhlet apparatus for 4 hours. The extracted lipid fraction was evaporated to dryness on a rotary evaporator. The resulting residue was dissolved in 2 mL of hexane. 0.5 mL of the solution was transferred to a glass vial and evaporated under a stream of nitrogen. The analytes comprising the lipid fraction were derivatized (converted to volatile derivatives) by adding 100 μ L of a mixture of N,O-Bis(trimethylsilyl)trifluoroacetamide and trimethylchlorosilane (100:1 v/v). The process was carried out for 30 minutes at 75°C. The vials were filled up with 300 μ L of hexane and subjected to GC-MS analysis.

Equipment parameters

Gas chromatograph:

- Column type: HP-5MS (length 30 m, diameter 0.25 mm, film thickness 0.25 μ m)
- Carrier gas: helium with flow rate of 0.9 mL/min.
- Injected sample volume: 1 μ L
- *Injector temperature: 250°C*
- Chromatographic oven temperature program:
 - starting temperature: 60°C (0 min.)
 - temperature increase rate: 12°C/min.
 - final temperature: 300°C (10 min.)
 - *Total time of analysis: 20 min.*

Mass spectrometer:

- Ionisation type: electron ionisation (EI)
- Ion source temperature: 230°C
- Analyser type: quadrupole analyser
- Detector temperature: 150°C
- Solvent delay: 4 min.
- Scanning range of mass-to-charge ratio (m/z): 50–550

Identification of fatty acids in pottery

Qualitative analysis of fatty acids and biomarkers was performed using Wiley and NIST08 mass spectral libraries and commercially available standards.

Quantitative analysis of fatty acids was performed using the internal normalisation method.

Ratio	State	Terrestrial mammals	Fish	Roots	Greens	Seeds and nuts	Berries
(C15:0+C17:0)/C18:0	Fresh	<0,2	0,2–0,5	>0,2	0,1–1,0	<0,6	<0,2
	Degraded	<0,2	0,2–0,5	>0,2	0,1–1,0	<0,6	<0,2
C16:1/C18:1	Fresh	0,02–0,2	0,2–0,5	0,05–0,7	>0,7	<0,3	<0,08
	Degraded	0,08–0,8	0,8–2,0	0,2–2,8	>2,8	<1,2	<0,32
C16:0/C18:0	Fresh	<3,5	4–6	3–12	5–12	0–9	2–6
	Degraded	<7	8–12	6–24	10–24	0–18	4–12
C12:0/C14:0	Fresh	<0,15	<0,15	>0,15	>0,05	>0,15	>0,15
	Degraded	<0,15	<0,15	>0,15	>0,05	>0,15	>0,15

Table 1: Fatty acids used to distinguish food types

Fatty acids		Sample number					
Systematic name	Common name	Abbr.	1	2	3	4	5
pentanoic acid	valeric acid	C5:0		0,36			0,37
hexanoic acid	caproic acid	C6:0	0,29	2,64	1,19	0,82	2,20
heptanoic acid	enanthic acid	C7:0	0,21	1,33	0,49	0,34	1,17
octanoic acid	caprylic acid	C8:0	0,45	1,80	0,55	0,33	1,32
nonanoic acid	pelargonic acid	C9:0	0,55	2,71	0,81	0,45	1,89
decanoic acid	capric acid	C10:0	1,05	1,13			0,80
undecanoic acid	–	C11:0					
dodecanoic acid	lauric acid	C12:0	1,18	1,64	0,60	0,32	0,80
tridecanoic acid	–	C13:0					
tetradecanoic acid	myristic acid	C14:0	4,19	1,57			
pentadecanoic acid	–	C15:0	0,61				
cis-9-hexadecanoic acid	palmitoleic acid	C16:1	0,34			0,83	
hexadecanoic acid	palmitic acid	C16:0	26,35	10,95	6,79	10,47	14,53
heptadecanoic acid	margaric acid	C17:0					
cis-9-octadecanoic acid	oleic acid	C18:1	1,85			0,82	0,68
octadecanoic acid	stearic acid	C18:0	20,12	3,42	2,90	4,29	5,63
nonadecanoic acid	–	C19:0	0,67	0,72			

Table 2. Percentage share of fatty acids in samples 1–5

Sample number	Acid ratio				Probable source of residue (identified for min. 3 matching ratios)
	(C15:0+C17:0)/C18:0	C16:1/C18:1	C16:0/C18:0	C12:0/C14:0	
1	0,03	0,18	1,31	0,28	Seeds and nuts, berries and mammal meat
2	0,00		3,20	1,04	Seeds and nuts
3	0,00		2,34		*only two matching ratios
4	0,00	1,01	2,44		Seeds and nuts
5	0,00	0,00	2,58		Seeds and nuts

Table 3. Fatty acid ratios calculated for 5 samples from archaeological site V at Brudnice in accordance with the criteria proposed by Eerkens:

Analysis results

1. Distinguishing between foods of plant and animal origin by calculating the respective ratios of fatty acid discovered in the sample, as proposed by Eerkens (Table 1) (Eerkens, 2005, pp. 83–102).

food, supported with information obtained through traditional archaeological methods, Eerkens observed that the ratios of selected fatty acids differ significantly depending on whether they are of plant or animal origin.

Having conducted multiple analyses of earthenware vessels and fresh and degraded

2. Characteristic compounds identified in samples 1–5

The following compounds were identified as potential markers in sample 1:

Ethylene glycol, 2TMS derivative
Glycerol, 3TMS derivative
1,6–Hexanediol, 2TMS derivative
phenoxyethanol, TMS derivative
Aceburic acid, TMS
Desulphosinigrin
Vanillin, TMS derivative
1–Dodecanol, TMS derivative
2,2,4–Trimethyl–1,3–pentanediol diisobutyrate
1–Tetradecanol, TMS derivative
Ethanol, 2–(octadecyloxy)–
Isopropyl myristate
Cinnamic acid, 4–hydroxy–3–methoxy–, (5–hydroxy–2–hydroxymethyl–6–[2–(4–hydroxy–3–methoxyphenyl)ethoxy]–4–(6–methyl–3,4,5–trihydroxytetrahydropyran–2–yloxy)tetrahydropyran–3–yl) ester
1,25–Dihydroxyvitamin D3, TMS derivative
9–Octadecenoic acid, (2–phenyl–1,3–dioxolan–4–yl)methyl ester, cis–
1,2–Benzenedicarboxylic acid, bis(2–methylpropyl) ester
Cyclopropanedodecanoic acid, 2–octyl–, methyl ester
1–Hexadecanol, TMS derivative
Dibutyl phthalate
tert–Hexadecanethiol
1–Octadecanol, TMS derivative
13–Octadecenoic acid, (E)–, TMS derivative
Octadecane, 3–ethyl–5–(2–ethylbutyl)–
Hexadecanoic acid, 1–(hydroxymethyl)–1,2–ethanediyl ester
5,8,11–Eicosatriynoic acid, tert–butyldimethylsilyl ester
Docosanol, TMS derivative
2–Palmitoylglycerol, 2TMS derivative
1–Monopalmitin, 2TMS derivative
2–Monostearin, 2TMS derivative

The following compounds were identified as potential markers in sample:

Ethylene glycol, 2TMS derivative
Propylene glycol, 2TMS derivative
Lactic Acid, 2TMS derivative
2–Pyrrolidinone, TMS derivative

Diethylene glycol, 2TMS derivative
Benzoic Acid, TMS derivative
Glycerol, 3TMS derivative
Monomethyl octadecanedioate, TMS derivative
Vanillin, TMS derivative
1–Dodecanol, TMS derivative
2,2,4–Trimethyl–1,3–pentanediol diisobutyrate
Dodecanoic acid, 2,3–bis(acetyloxy)propyl ester
1,25–Dihydroxyvitamin D3, TMS derivative
1–Tridecanol, TMS derivative
1–Tetradecanol, TMS derivative
9–Octadecenoic acid, (2–phenyl–1,3–dioxolan–4–yl)methyl ester, cis–
1–Pentadecanol, TMS derivative
1,2–Benzenedicarboxylic acid, bis(2–methylpropyl) ester
Cyclopropanebutanoic acid, 2–[[2–[[2–[[2–(2–pentylcyclopropyl)methyl]cyclopropyl]methyl]cyclopropyl]methyl]–, methyl ester
1–Hexadecanol, TMS derivative
Dibutyl phthalate
1–Octadecanol, TMS derivative
Oleic acid, 3–(octadecyloxy)propyl ester
Hexadecanoic acid, 1–(hydroxymethyl)–1,2–ethanediyl ester
Heptacosane
Docosanoic acid, 1,2,3–propanetriyl ester–
7,8–Epoxy lanostan–11–ol, 3–acetoxy–
3 β –Trimethylsiloxy–5 α ,6 α –epoxycholestane
1,3–Dipalmitin, TMS derivative

The following compounds were identified as potential markers in sample 3:

Ethylene glycol, 2TMS derivative
Propylene glycol, 2TMS derivative
1–(2–Methoxy–1–methylethoxy)–2–propanol, TMS derivative
Benzoic Acid, TMS derivative
1–(1–Butoxy–2–propoxy)–2–propanol, TMS derivative
Glycerol, 3TMS derivative
Desulphosinigrin
1,6–Hexanediol, 2TMS derivative
phenoxyethanol, TMS derivative
Vanillin, TMS derivative
1–Dodecanol, TMS derivative
Isotridecyl alcohol, TMS derivative
Pentanoic acid, 2,2,4–trimethyl–3–carboxyisopropyl, isobutyl ester
Dodecanoic acid, 2,3–bis(acetyloxy)propyl ester

1-Tridecanol, TMS derivative
 1-Hexadecanol, 2-methyl-
 1-Tetradecanol, TMS derivative
 1,3-Dipalmitin, TMS derivative
 tert-Hexadecanethiol
 9-Octadecenoic acid, (2-phenyl-1,3-dioxo-
 lan-4-yl)methyl ester, cis-
 1,2-Benzenedicarboxylic acid, bis(2-methylpro-
 pyl) ester
 1-Hexadecanol, TMS derivative
 Dibutyl phthalate
 1,25-Dihydroxyvitamin D3, TMS derivative
 Oleic acid, 3-(octadecyloxy)propyl ester
 α -D-Glucopyranoside, methyl 2-(acetyla-
 mino)-2-deoxy-3-O-(trimethylsilyl)-, cyclic
 methylboronate
 3 β -Trimethylsiloxy-5 α ,6 α -epoxycholestane
 Heptacosane
 7,8-Epoxy lanostan-11-ol, 3-acetoxy-

The following compounds were identified as potential markers in sample 4:

Ethylene glycol, 2TMS derivative
 2-Pyrrolidinone, TMS derivative
 Diethylene glycol, 2TMS derivative
 Benzoic Acid, TMS derivative
 1-(1-Butoxy-2-propoxy)-2-propanol, TMS
 derivative
 Glycerol, 3TMS derivative
 1,6-Hexanediol, 2TMS derivative
 Vanillin, TMS derivative
 1-Dodecanol, TMS derivative
 Triethanolamine, 3TMS derivative
 1-Tetradecanol, TMS derivative
 1,2-Propanediol, 3-(hexadecyloxy)-, diacetate
 Digitoxin
 Octadecanoic acid, 4-hydroxybutyl ester
 9-Octadecenoic acid, (2-phenyl-1,3-dioxo-
 lan-4-yl)methyl ester, cis-
 1,2-Benzenedicarboxylic acid, bis(2-methylpro-
 pyl) ester
 1,25-Dihydroxyvitamin D3, TMS derivative
 1-Hexadecanol, TMS derivative
 Dibutyl phthalate
 Octadecane, 3-ethyl-5-(2-ethylbutyl)-
 tert-Hexadecanethiol
 Oleic acid, 3-(octadecyloxy)propyl ester
 Hexadecanoic acid, 1-(hydroxymethyl)-1,2-
 ethanediyl ester
 Heptacosane
 Nonadecanoic acid, TMS derivative

3 β -Trimethylsiloxy-5 α ,6 α -epoxycholestane
 Docosanoic acid, 1,2,3-propanetriyl ester
 1,3-Dipalmitin, TMS derivative
 7,8-Epoxy lanostan-11-ol, 3-acetoxy-
 9,19-Cyclolanostane-3,7-diol

The following compounds were identified as potential markers in sample 5:

Ethylene glycol, 2TMS derivative
 2-Pyrrolidinone, TMS derivative
 Diethylene glycol, 2TMS derivative
 Benzoic Acid, TMS derivative
 1-(1-Butoxy-2-propoxy)-2-propanol, TMS
 derivative
 Tripropylene glycol monomethyl ether, TMS
 derivative
 phenoxyethanol, TMS derivative
 Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-
 trimethylpentyl ester
 1-Undecanol, TMS derivative
 2,6-Di-tert-butyl-4-hydroxy-4-methylcyclo-
 hexa-2,5-dien-1-one
 Vanillin, TMS derivative
 1-Dodecanol, TMS derivative
 Dodecanoic acid, 1-methylethyl ester
 1-Tridecanol, TMS derivative
 1-Tetradecanol, TMS derivative
 i-Propyl 12-methyl-tridecanoate
 9-Octadecenoic acid, (2-phenyl-1,3-dioxo-
 lan-4-yl)methyl ester, cis-
 1,2-Benzenedicarboxylic acid, bis(2-methylpro-
 pyl) ester
 1-Hexadecanol, 2-methyl-
 Dibutyl phthalate
 1,25-Dihydroxyvitamin D3, TMS derivative
 1-Octadecanol, TMS derivative
 Oleic acid, 3-(octadecyloxy)propyl ester
 7,8-Epoxy lanostan-11-ol, 3-acetoxy-
 Cholest-22-ene-21-ol, 3,5-dehydro-6-me-
 thoxy-, pivalate
 Heptacosane
 9,19-Cyclolanostan-3-ol, 24,24-epoxymetha-
 no-, acetate
 Docosanoic acid, 1,2,3-propanetriyl ester
 Hexadecanoic acid, 1-(hydroxymethyl)-1,2-
 ethanediyl ester
 3 β -Trimethylsiloxy-5 α ,6 α -epoxycholestane
 Docosanol, TMS derivative
 1,3-Dipalmitin, TMS derivative

Findings

The study of organic residues requires great care in interpretation, as it is based mainly on the analysis of fatty acids and potential biomarkers that serve to identify the source or types of sources of foods stored and/or processed in the pottery under examination. For example, cholesterol may be evidence of the presence of meat, while sitosterol (generally phytosterols) is a biomarker indicating the presence of plant-based foods.

1. Fatty acids identified in samples 1–5

Fatty acids of carbon-chain length from 5 to 19 have been identified in the samples. Dominant among them are saturated acids: stearic (C18:0) and palmitic (C16:0). Unsaturated acids are represented by palmitoleic acid (C16:1), present in samples 1 and 4, and oleic acid (C18:1), present in three vessel samples: 1, 4 and 5. Linoleic acid (C18:2) is not present in the samples. The content of fatty acids is particularly poor in sample 3, which contained 7 fatty acids characteristic of food residues.

If interpretations are to be based on the content of fatty acids, then almost all the samples are basically plant-based (seeds and nuts, berries), although, in the case of sample 1, the ratios of fatty acids indicate also the presence of mammalian meat.

2. Identification of biomarkers characteristic of particular types of food which may have come in contact with the vessel.

Due to the large number of potential markers in the five samples, only those compounds (markers) whose origin is documented in the literature have been characterised. It is also worth noting that, in all five samples, there are (apart from fatty acids) compounds which are naturally and commonly present in various plants (leaves, flowers) as well as those that are typical of animals. Moreover, their presence indicates that changes (transformations) took place in the case of some of the initial (primary) compounds, and those identified in the samples are,

for example, their metabolites. Finally, it is possible (albeit less probable due to the proper procedure observed while preparing the samples) that the cleaning and/or storing of the artefacts may have contributed to their contamination with the compounds that are present in the sample.

Characteristic compounds identified in samples 1–5

- Benzoic Acid, TMS derivative, considered, among others, as a constituent of propolis. Currently, propolis is regarded as a plant product, a resinous secretion of leaf buds of some trees or an exudate produced by plants after they are damaged, with an addition of wax and small amounts of glandular secretions produced by bees (Erturk O., Cil E., Yoloğlu N., Yavuz C., 2016, pp. 4–18; Çelemlı Ö.G., 2015, pp. 49–57). Esters of benzoic acid are used in skin care products, e.g. hand wash, bath oils, suntan oils, antiperspirants, perfumes, creams and pharmaceutical ointments.
- 1,25-Dihydroxyvitamin D₃, TMS derivative is a metabolite of vitamin D₃. Vitamin D is a group of fat-soluble steroid organic compounds with multiple physiological effects, primarily in calcium-phosphate metabolism and maintenance of normal bone structure and function. Two forms of vitamin D, differing in the structure of the side chain, are of primary importance: ergocalciferol (vitamin D₂), naturally occurring in plants/yeast, and cholecalciferol (vitamin D₃), naturally occurring in animals.
- Glycerol, 3TMS derivative (Glycerine)—an organic chemical compound from the group of alditols; the simplest stable trihydric alcohol (triol). Glycerol is also found in some fruits and vegetables.
- Dibutyl phthalate (derivative of phthalic acid); phthalic acid can indicate thermal processing of prepared foods (products) (Poulain, M., et al., 2016, pp. 32–42).
- Lactic Acid, 2TMS derivative—a hydroxy acid commonly found in living organisms. It is formed in sour milk by lacto-fermentation (a re-

sult of fermentation of sugars, e.g. lactose in milk or fructose in fruit). It is also formed in the skeletal muscles of mammals during high physical exertion (Chmiel A 1991, p. 75). Lactic acid is also formed as a result of deliberate fermentation of certain vegetables e.g. cucumbers and cabbage.

- Aceburic acid, TMS, also known as 4-acetoxybutanoic acid or 4-hydroxybutyric acid acetate, is a drug currently described as an analgesic.
- 3 β -Trimethylsiloxy-5 α ,6 α -epoxycholestane—a cholestane derivative. The presence of cholestane in environmental samples is commonly interpreted as an indicator of animal life and/or traces of O₂. Cholestane is often interpreted as an indicator of ancient animal life and is often used by geochemists and geobiologists to reconstruct animal evolution. It is often found in analyses of organic compounds in petroleum (Peters, Kenneth E., 1950, (2007)).
- Cinnamic acid, 4-hydroxy-3-methoxy-, (5-hydroxy-2-hydroxymethyl-6-[2-(4-hydroxy-3-methoxyphenyl)ethoxy]-4-(6-methyl-3,4, 5-trihydroxytetrahydropyran-2-yl) tetrahydropyran-3-yl) ester—cinnamic acid and its derivatives containing ester or carboxyl groups are used as essential components of aromatic substances, perfumes and dyes.
- Vanillin, TMS derivative (4-hydroxy-3-methoxybenzaldehyde) is an organic chemical compound consisting of a benzene ring substituted with three functional groups: aldehyde, hydroxyl and methoxyl, and is one of the components of vanilla fragrance.
- Triethanolamine, 3TMS derivative is a compound that exhibits properties of both alcohols and amines, contains small amounts of diethanolamine and ethanolamine and can also act as an antioxidant against the self-oxidation of animal and vegetable fats. It is now widely used as a pH regulator and surfactant in industrial and cosmetic products, such as skin care and hair care products.

Conclusions

Fatty acids are characterised by durability and stability as well as a relatively high resistance to decomposition, which always takes place with the passing of time. It is also worth noting that fatty acids trapped in clay, due to the small size of pores in the walls of pottery, are little affected by the activity of bacteria or physicochemical interactions. The other important group of compounds used to interpret organic residues preserved in clay vessels consists of biomarkers, which serve to almost unequivocally determine the source or the types of sources of foods or substances processed and/or stored in the earthenware analysed.

On the basis of the chromatographic analyses conducted (ratios of fatty acids and potential biomarkers present in the samples) and the information collected from the literature, it may be stated that:

– the ceramic vessel samples submitted for analysis had mostly been in contact with raw material of plant origin (seeds, nuts, berries); only sample no. 1, considering the calculated ratios of fatty acids, may have additionally been in contact with products of animal origin. However, it should be clearly stated that the ratios that have served as a basis for the interpretation of the results were prepared by Professor Eerkens for the North American continent.

The identification of potential biomarkers provides supplementing information that the other samples may have also been in contact with products of animal origin (presence of vitamin D₃ metabolite, which occurs in animals). The presence of dibutyl phthalate and benzene in samples indicates thermal processing of prepared foods (cooking). All five samples contain a derivative of dibutyl phthalate, while the second compound considered an indicator of thermal processing—benzene—is missing. Vanillin and benzoic acid are also present in all the samples, which may indicate contact with plant products.

Of interest is sample 1, which, in addition to vanillin (a derivative of phthalic acid), contained also a derivative of cinnamic acid, which might indicate that the sample was in contact with benzoin. There are two variants of benzoin. One of them is *Styrax benzo*es from

Sumatra, the other is *Styrax tonkinensis* from Laos. Their composition is very similar, and the only difference is the presence of cinnamic acid in the resin obtained on Sumatra. It is worth noting that vanillin as well as vanillic acid are both encountered in benzoin resins. Perhaps sample 1 comes from a vessel which was used to burn incense?

Sample 2 contains lactic acid, which may indicate the presence of milk.

On the other hand, compounds characteristic of milk fats, such as phytanic acid, 3,7,11,14 tetramethylhexadecanoic acid as well as pristanic acid and 2, 6, 10, 14 tetramethylpentadecanoic acid (Lough A.K. 1973, s. 1–48), are not present. Milk fat contains one more specific group of fatty acids synthesised by bacteria, i.e. cyclic fatty acids. In our sample, there is a representative of cyclic fatty acids, namely an acid from the group of cyclopropane acids: cyclopropanebutanoic acid, which is characteristic of ruminant animal milk (Kaneda T. 1991, pp. 288–302). On the other hand, the presence of vanillin, benzoic acid, vitamin D3 derivative and other compounds, such as alcohols and hydrocarbons, may suggest that the sample might have been in contact with propolis, which is a resinous secretion, and also with benzoin, both of which might have served as a sealant of the vessel or a preservative.

Samples 3 and 4, in addition to benzoic acid, vanillin and vitamin D3 derivative, contain other interesting compounds—Desulphosinigrin and a cholestane derivative. The former is a plant alkaloid observed in the *Artemisia judaica* species (E. Ramadan Elsharkawy, M. H. Shiboob, 2017, p. 154), whereas cholestane is considered an indicator of ancient animal life and is used by geochemists and geobiologists to reconstruct the evolution of animals. The same compound is also present in sample 5. Moreover, sample 4 contains triethanolamine, which acts as an antioxidant against self-oxidation of vegetable and animal fats. In the case of samples 3, 4, and 5, it is difficult to indicate what might have been stored in the vessels; however, the results obtained suggest contact with products of both plant and animal origin. Moreover, it should be noted that, similarly to the two previously described samples, they also contained components characteristic of benzoin resins and propolis.

Bibliography:

- Chmiel A.,
1991 *Biotechnologia. Podstawy mikrobiologiczne i biochemiczne*. Warszawa, Wydawnictwo Naukowe PWN, s. 75.
- Çelemlı Ö.G.,
2015 *Chemical Classification of Propolis Samples Collected from Different Regions of Turkey in Geographical Region Base. Hacettepe Journal of Biology and Chemistry* 43/1, s. 49–57.
- Eerkens, J.W.
2005 *GC–MS analysis and fatty acid ratios of archaeological potsherds from the Western Great Basin of North America. Archaeometry* 47, s. 83–102.
- Eerkens J.,
2007 *Organic residues analysis and the decomposition of fatty acids in Ancient Potsherds, Archaeopress*, s. 1–7.
- Elsharkawy E. Ramadan, Shiboob M. H.,
2017 *Antioxidant Activity of Phenolic and Alkaloid Fractions Accumulated in Artemisia Judaica and Artemisia Herba Alba, Journal of Natural Remedies* 17/4, s. 154.
- Erturk O., Cil E., Yolođlu N., Yavuz C.,
2016 *An In vitro Study on Antimicrobial and Antioxidant Activity of Propolis from Rize Province of Turkey. Mellifera*, 16/1, s. 4–18.
- Kaźuzna-Czaplińska J., Rosiak A., Kwapińska M., Kwapiński W.,
2016 *Different analytical procedures in the studies of organic residues in archaeological ceramic samples with the use of gas chromatography–mass spectrometry, Critical Reviews in Analytical Chemistry* 46, s. 67–81.
- Kaźuzna-Czaplińska J., Rosiak A., Grams J., Chałupka K., Markarowicz P., Maniukiewicz W., Szubiakiewicz E.,
2017 *The studies of archaeological pottery with the use of selected analytical techniques, Critical Reviews in Analytical Chemistry* 47, s. 490–498.
- Kaneda T.
1991 *Iso- and anteiso-fatty acids in bacteria: biosynthesis, function, and taxonomic significance, Microbiol. Rev.*, 55, s. 288–302.
- Lough A., K.
1973 *The chemistry and biochemistry of phytanic, pristanic and related acids, Prog. Chem. Fats Other Lipids*, 14, s. 1–48.
- Peters, K., E.,
1950, (2007). *Przewodnik po biomarkerach*. Cambridge University Press.
- Poulain, M., et al.,
2016 *Dietary practices at the castle of Middelburg, Bel-*

gium: Organic residue analysis of 16th–to 17th–century ceramics, *Journal of Archaeological Science* 67, s. 32–42.

Regert M.,

2011 *Analytical strategies for discriminating archaeological fatty substances from animal origin*, *Mass Spectrometry Reviews* 30, s. 177–220.

Sikorski Z.E.,

2007 *Chemia żywności. Składniki żywności*, Wydawnictwo Naukowo–Techniczne 1–3, Warszawa.

Appendix III

Maciej Pawlikowski

Results of mineralogical raw material and technological analyses of the pottery from the Brudnice site V, Żuromin County

Research methods

The raw material, mineralogical and technological pottery analyses consisted in observations under a binocular microscope and a polarizing microscope.

The examination with a binocular microscope involved documenting the structure of the wall fracture of the vessels and served to select sherds for further analyses with a polarizing microscope.

Specific tests using a polarizing microscope were performed on thin sections. For this purpose, the sherds were embedded in special polymers and then cut on a diamond saw. The obtained slices were ground with grinding powders and polished on a diamond, and then glued to a glass slide. After further polishing, the slide was covered with a coverslip and dried under vacuum. The analyses were carried out with a polarizing microscope, produced by the Chinese company Meiji, with a photographic attachment.

The POTTERY software was used to catalogue the test results and compare macroscopic and microscopic features. The software characterises macroscopic features in the following order: fracture colour (inner, middle and outer part), smoothing (wiping), painting, glazing, decoration (lines, dots, zigzags). Microscopic analyses encompass examinations of mineral and grain composition of pottery fabrics. The analyses were performed by counting approximately 1,000 mineral grains in each sample, using thin sections for polarized transmitted light microscopy. The results were converted to percentages and tabulated in the following order: ceramic body (clay), quartz, potassium feldspars, plagioclase, fragments of sedimentary, igneous and metamorphic rocks (each type counted separately), muscovite, biotite,

heavy minerals, pottery fragments, carbonates, etc. Grain size was determined by counting 500 grains in the following ranges: 15–60, 60–100, 100–200, 200–400, 400–1000, 1000–2000, > 2000 micrometres.

Moreover, during the analyses, the approximate firing temperature of the ceramics was determined on the basis of the degree of transformation of the clay minerals, which was marked as their degree of optical isotropisation. The experimentally verified determination error was about ± 50 °C.

The results can be compared by computer to determine the similarities and differences between the fabrics. The POTTERY software allows comparing the fabrics by a single characteristic (e.g. quartz content) as well as by all of the analysed features together.

Conclusions

Technologically, the vessels analysed can be divided into two groups: pottery with either “non-tempered” or “tempered”—due to the excessive density of “fat” clay minerals—fabrics. Ceramics were tempered with crushed granite or other rocks rich in K-feldspar. Potassium contained in feldspars acts as a flux and lowers the firing temperature while improving the quality of the ceramic body (durability).

The information on whether the pottery was tempered in this way is contained in the analyses of mineral composition in the points fragments of magmatic rocks and K-feldspars. The analyses conducted indicate that even over a dozen percent of crushed granite was added to some of the fabrics. This proves the technological advancement of the ceramic workshops manufacturing vessels from such fabrics. It is interesting whether the vessels of this group were made locally or imported. The current observations of the geological structure of the Brudnice region indicate that they are imports, as the area lacks good pottery clays.

Another tempering raw material was quartz, which was added either in the form of quartz sand, in which case quartz grains are rounded, or crushed quartz, with angular grains.

The vessels made with an admixture of coal dust appear to be local products. They were fired in a reducing atmosphere, as oxidation

firing would cause the coal dust to burn to ash and the fired vessels to disintegrate.

The pottery made of a mixture of sand cemented with wood tar should be treated similarly. Apart from its unusual mineral composition, such pottery is subject to characteristic plastic deformations.

Most of the vessels were fired in a reducing atmosphere or with restricted air access, especially in the final stage of firing. The firing temperature was 700–750 °C.

The research conducted indicates that the analysed pottery varied considerably in terms of raw material. This proves that the raw material for pottery manufacturing was obtained from many sources, which suggests that the pottery could have come from many ceramic “workshops”. The computer comparative analysis of all parameters of the fabrics shows that only some of the vessels are similar in terms of raw material and technology. At the same time, this similarity does not exceed 60% (Table 1). Thus, the similarity can be described as low and uncertain, as statistically significant similarities can only be determined at a level above 70%. At the sites where local pottery was made, same vessel fabrics reoccur repeatedly. This is not the case at the Brudnice site, which indicates a limited local production of ceramics. This may be due to the lack of good local raw material for pottery manufacturing.

Grave number/ Sample number	17	82	103	109	121	121	121	121	121	121	121	121	121	121	121	128	128	128	128	128	129	135	135	135	135	135	135	135	136	136	136	136	136	137	137	142	142	142	142	142	142						
	v.1	v.1	v.1	v.1	v.2	v.3	v.4	v.5	v.8	v.1	v.2	v.3	v.1	v.1	v.1	v.1	v.2	v.2	v.3	v.1	v.1	v.2	v.3	n.1	n.1	n.1	v.1	v.2	v.3	v.4	v.5	n.1	n.3	v.1	v.2	v.3	v.4	v.5									
clay mass	68,6	45,1	74,2	65	72,4	74	67	61	48	48,9	66,6	62,1	68	62	74	15	74	15	63	61,1	47,7	65	30	23	47	70	40	64	46	39																	
Quartz	22,2	45,5	24,8	9,6	20,3	23,4	3,5	24,4	41,8	39,2	26,1	10,1	17,4	26,9	24,8	82	24	24	36,1	43,9	33,5	59	68	44,6	28	53	28,1	52,4	41,1																		
K-feldspars	1	0,2	0	1,9	0,6	0,3	3,1	0,7	1	4,5	0	2,6	2,4	0,2	0,4	0,8	9,5	1	3	0	3,1	1,9	2,2	0,3	2,4	0,7	0,1	9,6																			
plagioclases	1	0,4	0,1	0,1	2	0,1	4,1	2,6	1,8	6	3,8	3,8	2,7	0,2	0,3	0,2	3,1	1,2	2,5	0,1	1,6	1	2,1	0,2	0,9	1	0	6,5																			
fr. sed. Rocks	0	0,2	0	0	0	0	0	0	0	0	0	7,6	1,3	0	0,1	0	0	0	0	0	0	0,1	0,3	0,6	0	0	0,8	0,1	0																		
fr. mag Rocks	6,6	8	0,6	22,4	0	1,8	20,2	7,3	6,3	0	0,7	11,8	7,8	10	0	0,8	0	0	0	0,4	2	0,9	3,3	4,1	2	1	2,4	5,3	0	3,5																	
fr. met. Rocks	0	0,2	0	0,1	0,5	0	0,8	0	0,3	0,3	0	0	0,1	0	0	1,1	0	0	0	0	0	0	1,4	1,6	1,3	0	0,8	0	0																		
muscovite	0,3	0,1	0,1	0,2	0,2	0	0,9	0	0	0,1	0	0	0,1	0,3	0,1	0	0	0	0	0	0	0	0	0	0	0,1	0	1,1	0																		
biotite	0	0,1	0,1	0,2	0	0	0,1	0	0	0	0	0,6	0	0,1	0,2	0	0	0	0	0	0	0	0	0	0	0,2	0,1	0																			
heavy minerals	0,1	0,1	0	0,1	0	0,1	0,1	0	0	0	0	1	0	0,1	0	0	0	0	0,1	0,1	0	0	0,1	0	0,1	0	0,1	0	0,1																		
fr. of pottery	0	0	0	0	4	0	0	0	0	0,1	2	0	0	0	0	0	0	0	0,2	0	0	0,1	0,2	0	0	0	0,1	0	0																		
carbonates	0	0	0	0	0	0	0	0	0	0	0	0	0	0,1	0	0	0	0	0	0	0	0,2	0,5	0	0	0	0	0	0																		
other	0,2	0,1	0,1	0,4	0	0,3	0,2	4	0,8	0,9	0,8	0,4	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,9	0,2	0,6	0,1	0,1	0,2	0,2	0,1	0,2	0,2																	
grain size comp																																															
15-60	23	15	28	8	26	41	61	49	12	13	36	18,6	42	26	22	0,3	52	25	33	7	34	38	5	22	93	28,2	71,8	4																			
60-100	18,5	41,1	53	30,7	37,3	1,5	8,7	15,2	34,4	34,2	23,4	29,2	11,3	30,8	40	29,1	18,6	54	31,8	32	37,1	42	25,7	31,1	1,1	43,6	7,5	28,2																			
100-200	31	36,5	13,9	32,8	21	45,2	4,1	2,4	31,2	28,9	27,5	16,2	9,1	18,3	27,7	38,2	22,9	19,5	17,3	3	19,8	17	42	16,1	1,8	22,6	7,8	33,6																			
200-400	19,9	6,3	1,6	10,2	15,7	8,8	8,2	9,1	17,9	15,9	11,2	20,9	17,8	11,6	8,6	29,7	6,5	1,5	9,2	41,3	8,1	3	24,6	22	0,8	5,6	4,1	30																			
400-1000	0	1,1	2,3	12,2	0	2,3	12	14,6	4,5	2,8	1,1	10,5	10,3	10	1,7	2	0	0	4,5	15,2	1	0	2,7	8,8	1,6	0	8,8	4,2																			
1000-2000	7,6	0	1,2	6,1	0	1,2	6	9,7	0	5,2	0	4,6	9,5	3,3	0	0,7	0	0	4,2	1,5	0	0	0	0	0	0,9	0	0																			
2000	0	0	0	0	0	0	0	0	0	0	0,8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,8	0	0	0																		

Table 1. Results of technological analyses of ceramic bodies.

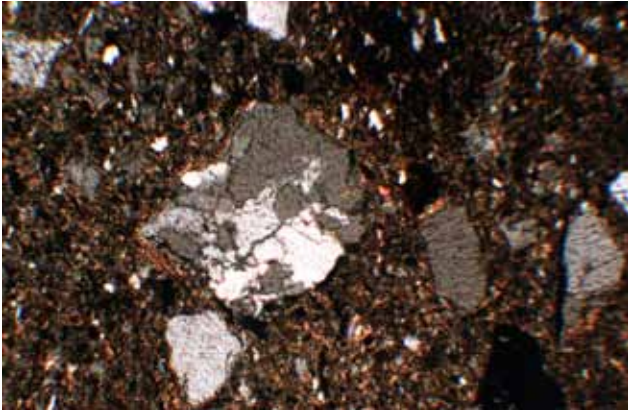


Fig. 1. Grave 17 vessel 1. A granite fragment in the ceramic body. Polarizing microscope, one polarizer, 40x magnification.

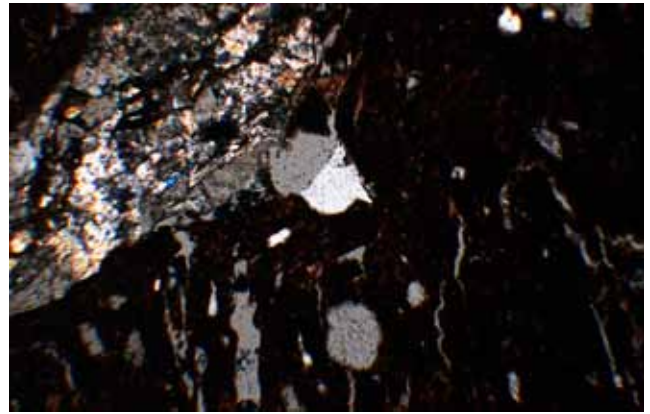


Fig. 4. Grave 109 vessel 1. Metamorphic rock fragment in the ceramic body of parallel texture highlighted by numerous directional cracks. Polarizing microscope, one polarizer, 40x magnification.

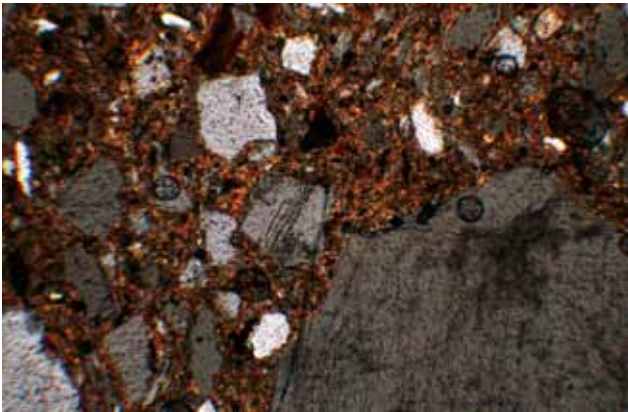


Fig. 2. Grave 82 vessel 1. Grave Plagioclase grain and a large quartz grain in the ceramic body fired with air access. Polarizing microscope, one polarizer, 40x magnification.

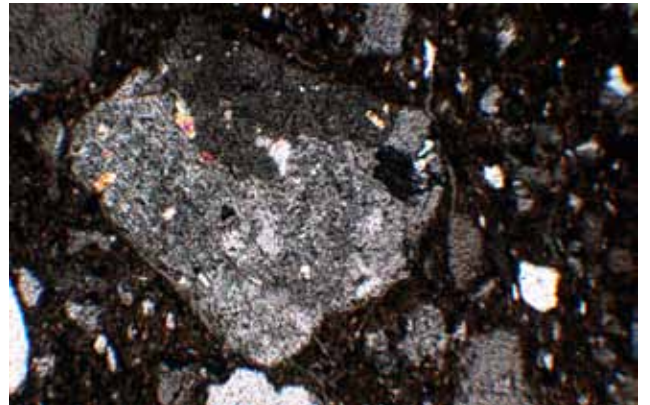


Fig. 5. Grave 121 vessel 1. Weathered K-feldspar fragment in the ceramic body. Polarizing microscope, one polarizer, 40x magnification.

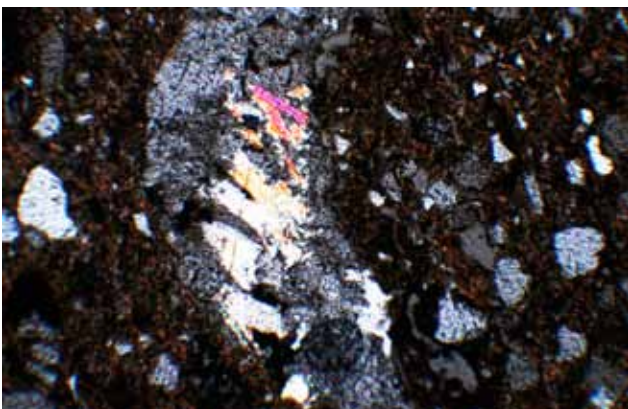


Fig. 3. Grave 103 vessel 1. Feldspar-mica rock fragment embedded in the thermally altered ceramic body. Polarizing microscope, one polarizer, 40x magnification.



Fig. 6. Grave 121 vessel 2. Directional cracks in the ceramic body related to the vessel formation process. Polarizing microscope, one polarizer, 40x magnification.



Fig. 7. Grave 121 vessel 3. A sheet of muscovite (white mica) embedded in the thermally altered ceramic body. Polarizing microscope, one polarizer, 40x magnification.

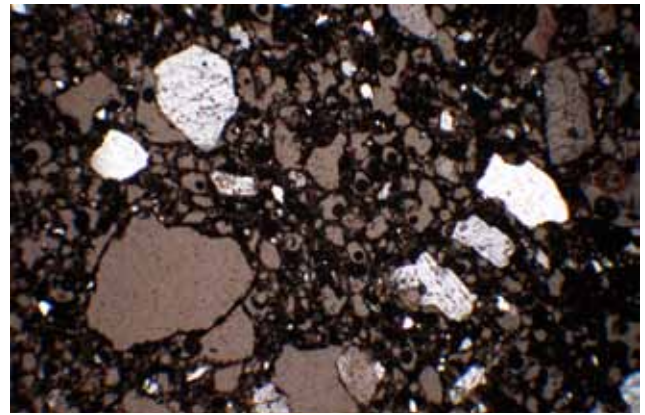


Fig. 10. Grave 121 vessel 8. Quartz and feldspar grains embedded in the body containing black coal dust. Polarizing microscope, one polarizer, 40x magnification.

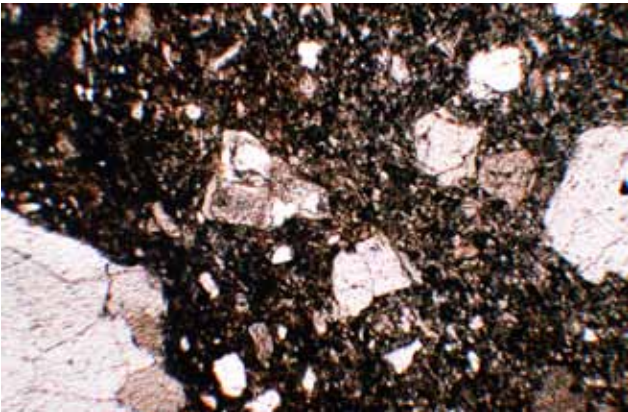
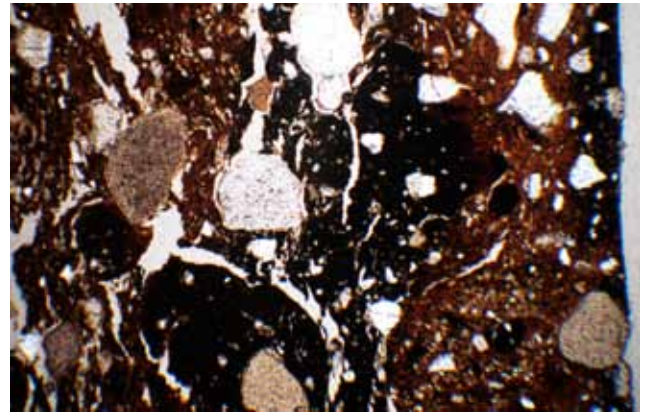


Fig. 8. Grave 121 vessel 4. Angular granite fragments added to the ceramic body as temper. Polarizing microscope, one polarizer, 40x magnification.



Ryc. 11. Grave 128 naczynie 1. Obraz niedokładnie zmieszanej masy ceramicznej. Widoczne zgrubienia niezmeszanego materiału powodujące pęknięcia w ściankach naczynia. Mikroskop polaryzacyjny, polaroid częściowo X, powiększenie 40x.

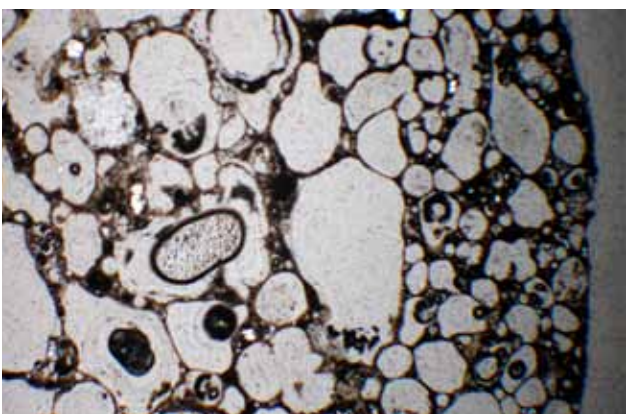


Fig. 9. Grave 121 vessel 5. Bright quartz grains with a small amount of binding substance. Polarizing microscope, one polarizer, 40x magnification.

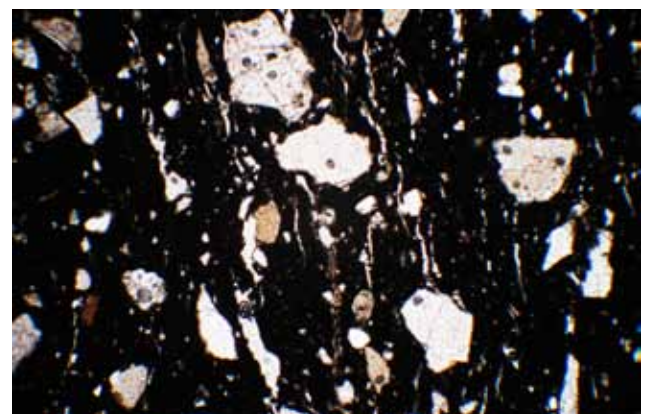


Fig. 12. Grave 128 vessel 2. A network of parallel cracks in the vessel's walls, due to incomplete drying before firing, is visible. Large admixture of charcoal dust. Polarizing microscope, one polarizer, 40x magnification.

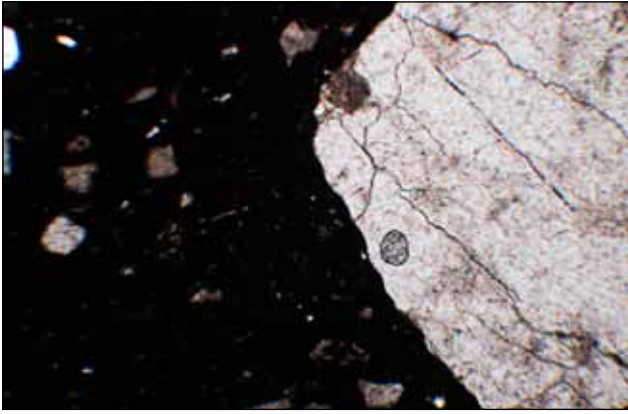


Fig. 13. Grave 128 vessel 3. Large feldspar grain (arrows) added to the fine-grained clay body. Polarizing microscope, one polarizer, 40x magnification.

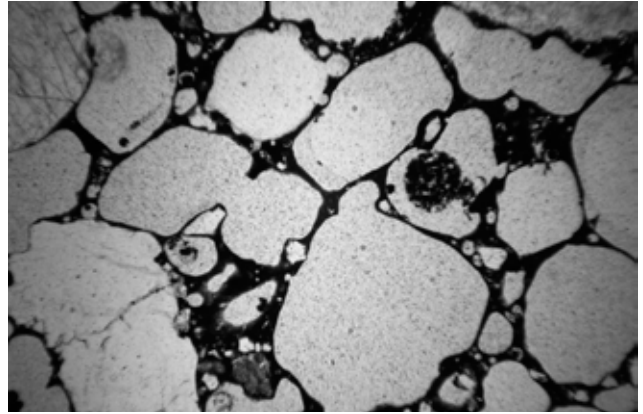


Fig. 16. Grave 135 vessel 2. Microscopic image of the ceramic body composed of large quartz sand grains cemented mainly with clay minerals and tarry substance (wood tar?). Polarizing microscope, one polarizer, 40x magnification.

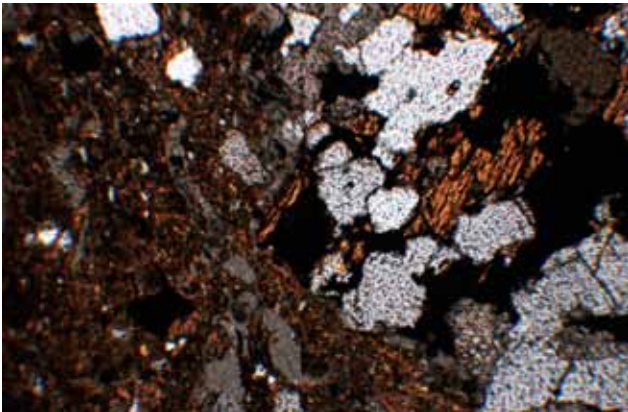


Fig. 14. Grave 129 vessel 1. Fragment of a quartz-feldspar igneous rock with biotite and ore minerals, embedded in the thermally altered clay body. Polarizing microscope, one polarizer, 40x magnification.



Fig. 17. Grave 135 vessel 2. Image of the cement composed mainly of tarry substance resembling wood tar. Polarizing microscope, one polarizer, 400x magnification

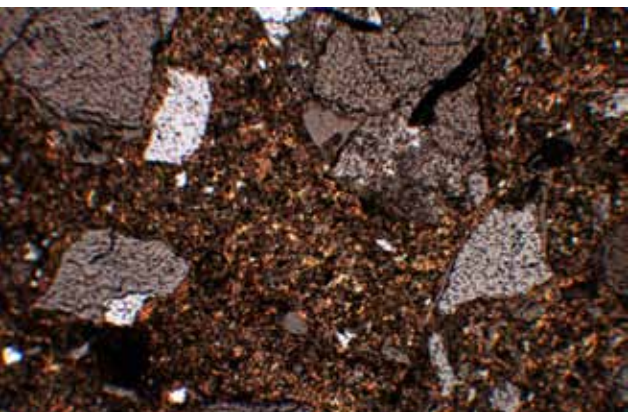


Fig. 15. Grave 135 vessel 1. Angular grains of crushed quartz (arrows) added to the ceramic body as temper. Polarizing microscope, one polarizer, 40x magnification.

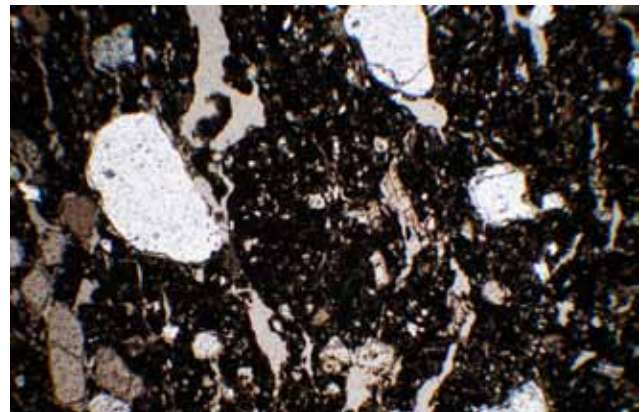


Fig. 18. Grave 135 vessel 3. Ceramic body, which had not been fully dried before firing, resulting in multiple irregular cracks, conducive to a quick destruction of the vessel, visible in the photograph. Polarizing microscope, one polarizer, 40x magnification.

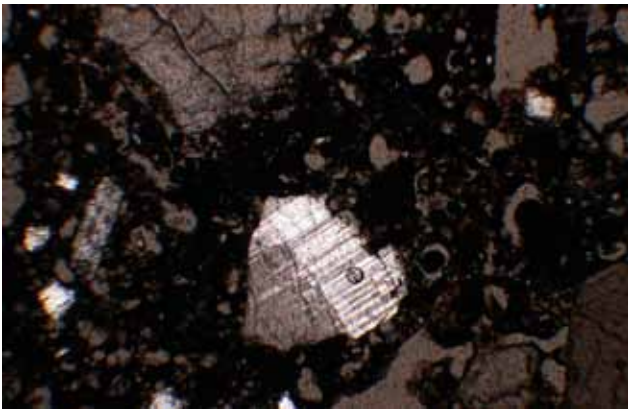


Fig. 19. Grave 135 vessel 4. Acid plagioclase grain in the ceramic body fired in reducing conditions. Polarizing microscope, one polarizer, 40x magnification.

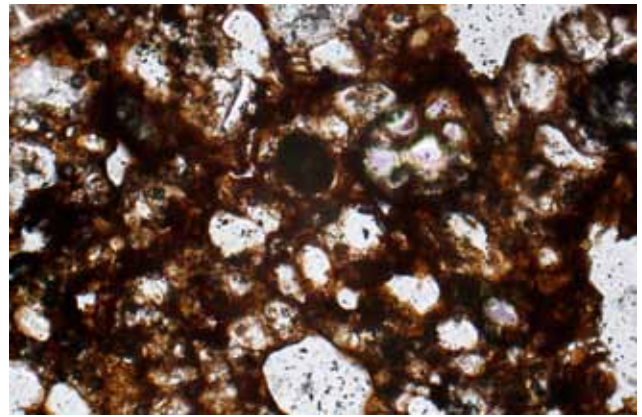


Fig. 22. Grave 136 vessel 3. Microscopic image of the ceramic body. Quartz and isolated feldspars (light-coloured grains); the brown cement consists of clay minerals with an admixture of tarry substance, wood tar(?). Polarizing microscope, one polarizer, 40x magnification.

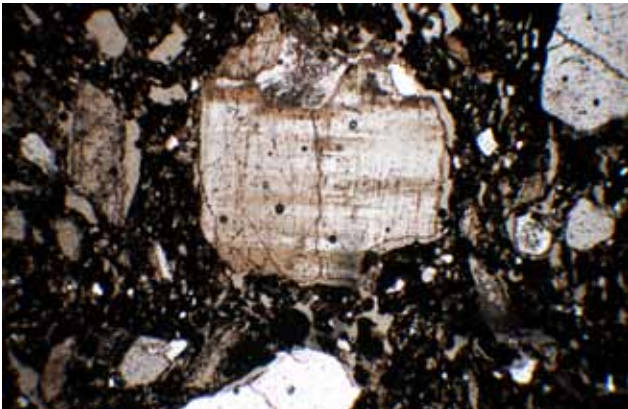


Fig. 20. Grave 136 vessel 1. Large, bright feldspar fragments and admixture of charcoal dust. Polarizing microscope, one polarizer, 40x magnification.

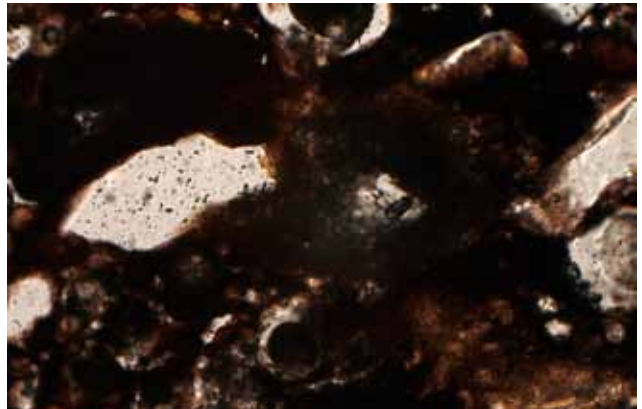


Fig. 23. Grave 136 vessel 3. Enlarged concentration of tarry substance (wood tar?) in the spaces between quartz sand grains. Polarizing microscope, one polarizer, 400x magnification.

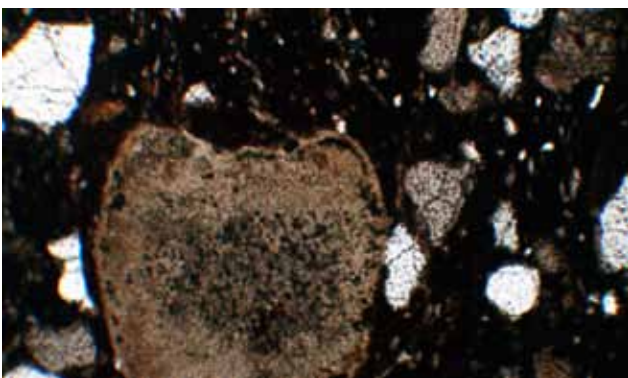


Fig. 21. Grave 136 vessel 2. A clump of unmixed clay material, embedded in the ceramic body. Polarizing microscope, one polarizer, 40x magnification.

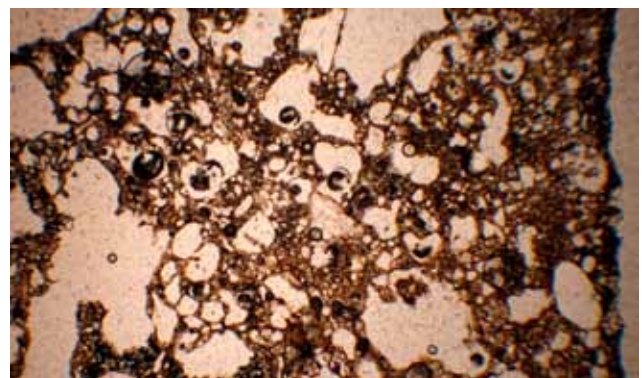


Fig. 24. Grave 137 vessel 1. General microscopic image of the ceramic body. Quartz grains cemented with clay minerals with an admixture of tarry organic substance, wood tar(?). Polarizing microscope, one polarizer, 40x magnification.

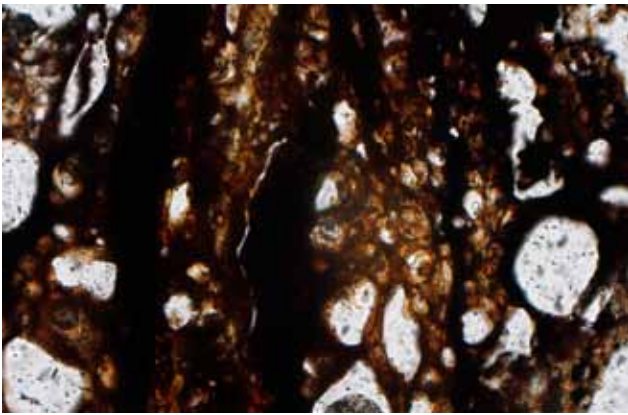


Fig. 25. Grave 137 vessel 1. Close-up of the black areas of tarry substance (wood tar?) added to the clay body. Polarizing microscope, one polarizer, 400x magnification.

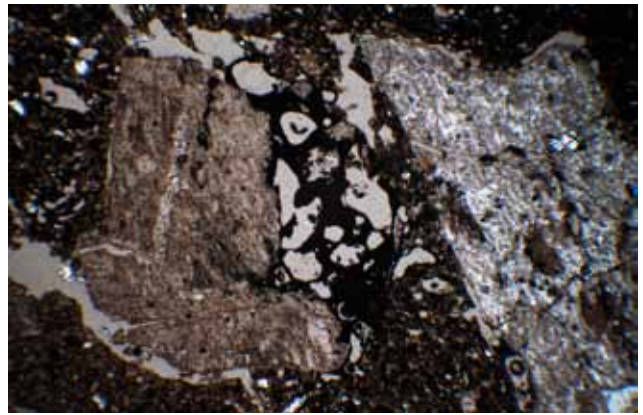


Fig. 28. Grave 142 vessel 2. Large fragments of added feldspars (light-coloured grain) and an admixture of unmixed clay (brown grain) with coal dust. Polarizing microscope, one polarizer, 40x magnification.

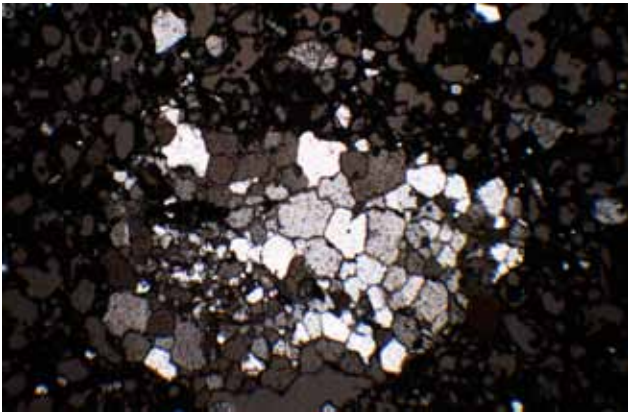


Fig. 26. Grave 137 vessel 3. A single, big quartzite fragment is visible. Polarizing microscope, one polarizer, 40x magnification.

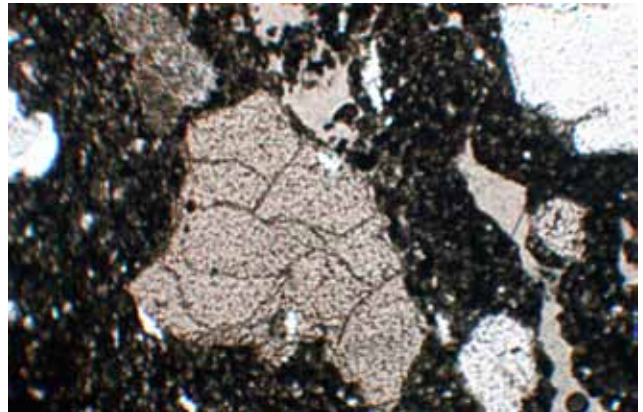


Fig. 29. Grave 142 vessel 3. Cracked, angular fragment of crushed quartz added to the ceramic body. Polarizing microscope, one polarizer, 40x magnification.

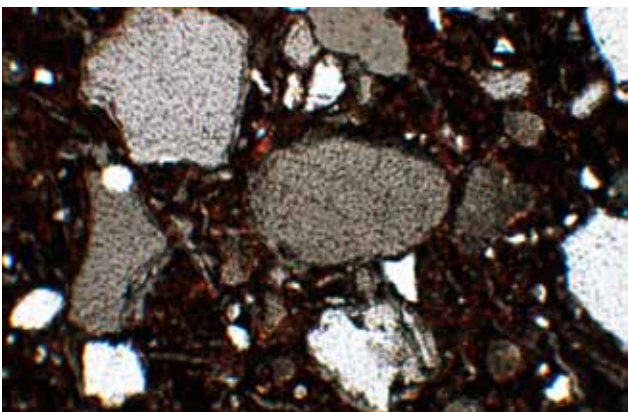


Fig. 27. Grave 142 vessel 1. Angular and rounded quartz grains in the thermally altered ceramic body. Polarizing microscope, one polarizer, 40x magnification.

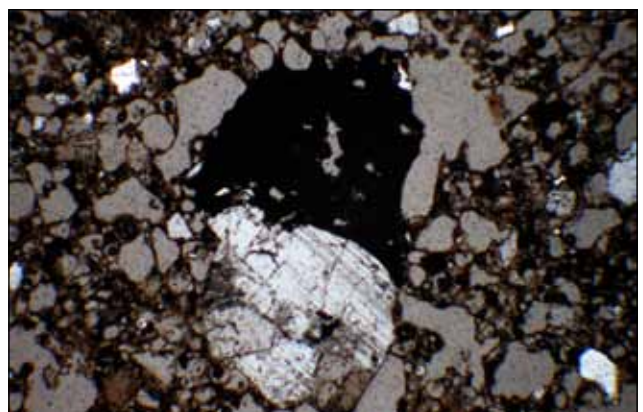


Fig. 30. Grave 142 vessel 5. A single wood tar fragment (black spot in the middle of the image), with an acid plagioclase (striped) adhered to it, is visible. Polarizing microscope, one polarizer, 40x magnification.

Appendix IV

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Human remains from the Przeworsk culture graves at the Brudnice cemetery, site V, Żuromin County

The human remains from 149 Przeworsk culture cremation graves discovered during archaeological excavations at the Brudnice cemetery, site V, Żuromin County, were subjected to a bioarchaeological analysis. The research was aimed at a description of biological characteristics of the buried individuals as well as an assessment of the state of preservation of the bones and identification of funerary practices related to the treatment of cremated human remains.

Material

The features under analysis are cremation graves and one inhumation grave (feature 147), which contained a single tooth of a child (Table 1). The remaining graves are urned and unurned cremation burials. In many cases, there was more than one vessel containing human bones present in the pit of the grave (Table 1). In such a case, the bones from each container were collected separately during the excavations, and so were the remains found in the fills of the urn graves as well as those from different clusters identified in the pits of the unurned burials. Each set of bones collected from a given feature (e.g. fill, cluster, vessel) was assigned its own inventory number and analysed separately (cf. Table 1: Context). The bones recovered during the first excavation season (graves E, 1, 2) were analysed by dr Łukasz Stanaszek from the State Archaeological Museum. The osteological material from the 2004–2006 seasons was analysed by mgr Beata Balukiewicz. Both analyses investigated the remains in terms of their biological characteristics, and their results are included in the present study, in the part concerning anthro-

pological description of the population buried at the Brudnice cemetery. An analysis of the remains discovered during the remaining excavation seasons and a synthesis of all the results concerning the Przeworsk culture human remains from the cemetery in question were carried out by the present Author.

Methods

The cremated bones from each set collected were weighed to determine the size of each bone assemblage (see Material; Table 1) and obtain data for assessing the state of preservation (completeness) of the burials. The anatomical identification of the skeleton fragments present was carried out in accordance with the procedure for recording cremation remains proposed by J. I. McKinley (1994). In order to reflect the anatomical structure of the remains in each feature, all identified fragments of the skeleton were separated and grouped according to the anatomical regions into bones of the skull, torso (including limb girdles) and separately: upper and lower limbs. The fragments that could not be assigned to any of the groups were classified as indeterminate. The presented division of the elements identified allows an analysis of the completeness of the skeleton and an observation of possible differences in the treatment of different body parts during the funerary ritual, such as uneven burning or selective burial (McKinley 1994; Gonçalves 2015, Jaskulska 2018, 2019).

The determination of the degree of oxidation of the remains was based on the colour of the bone (Shipman et al. 1984; Holden et al. 1995a, 1995b; Thompson 2005). This study uses a four-level scale as per Holden et al. (1995a, 1995b), according to which, brown to orange colour corresponds to unburnt bone, black to charring (approx. 300°C), blue and grey to incomplete oxidation (up to approx. 600°C) and white to complete oxidation of organic matter (above 800°C).

To determine the biological data, all the available fragments for which standard anthropological determinations were possible were examined (McKinley 1994; Buikstra, Ubelaker 1994; White et al. 2011). In the case of cremated remains, an analysis of biological characteri-

stics is problematic, as a significant share of diagnostic skeletal elements gets damaged during cremation (Rösing et al. 2007; Fairgrieve 2007, 104–118; Cunha et al. 2009; McKinley 2017, 15; Jaskulska 2019, 199–212). Therefore, detailed information, explaining on which morphological element the identification was based, has been provided for all the demographic data (see Table 1). The determination of the minimum number of individuals (MNI) in each burial was based on the skeletal fragments identified (McKinley 1994, 6–11; 2004, 10), using the simplest model—Max (L, R), and on the age determinations (Brickley, McKinley 2004). The age at death of the non-adult individuals was determined on the basis of the dental development, as presented by Ubelaker (1989), and the degree of skeletal development and ossification (Buikstra, Ubelaker 1994; Schaefer et al. 2009). The age at death of the adults was determined taking into account the severity of involutionary changes in the skeleton, to the extent that the preserved diagnostic fragments allowed. In the absence of diagnostic fragments used to determine the age at death, only a vague distinction between adult/non-adult individuals and children, based on the bone size, macroscopic observation of tissue structure and the degree of ossification of the skeleton, was possible (McKinley 2017, 15; Jaskulska 2019, 199–212). A division into traditional age classes was used (Malinowski, Bozilov 1997). The sex of the deceased was determined taking into account the overall massiveness of the bone fragments and sexual dimorphism in the morphological formation of cranial and postcranial skeletal features (Buikstra, Ubelaker 1994, Piontek 1999, Steckel et al. 2006). To identify the pathological changes observed, a differential diagnosis, based on the methods for identifying pathological lesions contained in the works of Ortner (2003) and Waldron (2009), was carried out. It should be emphasised that, as far as these changes are concerned, bone-forming lesions are more frequently observed on cremated remains, which is not a reflection of the biological condition of the population studied but is related to the reaction of the bone tissue to the cremation process (Jaskulska 2019, 205).

Due to the different research methodology applied for cremated and non-cremated remains, grave 147 has been included only in the part of the analysis that concerns biological character-

istics of the population buried at the Brudnice cemetery.

A detailed analysis of the state of preservation of the remains was also carried out on a sample of 54 features (37% of the entire series). It covered a description of the fragmentation of the bones and heat-induced fractures observed on their surface. The bones were sieved with a set of calibrated sieves with openings of 10, 5 and 2 mm in diameter. The smallest remains (<2mm) have no diagnostic features and are omitted in analysis (McKinley 1994:5–6). The remaining three fractions were weighed. The degree of fragmentation was determined by the share of each fraction in the burial. In addition, the maximum length of the largest fragment in each anatomical category was measured. A macroscopic observation of the bone surface was then carried out on the identified fragments to note the presence of fractures (Symes et al. 2008:42–43) and any other changes in the surface structure. The results of these investigations are the subject of a detailed study and will receive a separate summary. This paper is limited to general conclusions characterising the cremated remains from the Przeworsk culture graves at the site of Brudnice, which were obtained from the above-mentioned analyses.

Results

Table 1 provides detailed information on the context in which the bones from each feature were found and the biological characteristics of the individuals identified. The contents of each bone assemblage have been described in terms of the overall weight of the remains, the skeletal fragments present, any admixture of animal bones and the degree of oxidation of the remains (bone colour).

Analysis of biological characteristics

Thanks to the analysis conducted, 159 individuals (MNI = 159) have been identified. Most of the features analysed were single burials (MNI = 1), including those that contained additional vessels. Co-mingled remains of two individuals (MNI = 2) were found in eight cases only

(graves 4, 9, 10, 13, 49, 69, 73, 120), and one feature (grave 70) probably contained the remains of three people (MNI = 3)—two adults and a child under 2 years of age (Table 1). In addition to human remains, small amounts (<50g) of animal bones were present in some graves (Table 1). The age and sex structure of the deceased is illustrated in Figures 1–5. Fifty burials of children

age at death; however, on the basis of the bone tissue structure and the degree of ossification of the skeleton, the remains of adults and children were distinguished (Figure 2). In the remaining six cases, the state of preservation of the bones (especially their low weight) did not allow even a general age determination.

The remains of those who died in childhood constitute 31% (n=50) of the whole population studied. Among them, the skeletons of children whose death occurred at <6 years of age—age category infans I (early childhood)—are visibly predominant. This is not surprising as, on the one hand, the mortality of children in historical populations is highest in early childhood, and, on the other hand, in the case of poorly preserved remains, it is easiest to determine the age at death for this age category. In contrast, the low number of older children (infans II) and adolescents (juvenis) identified is probably related to the state of preservation of the bones and the lack of diagnostic fragments that would allow more precise determinations for the features that were designated as children’s graves based on the bone tissue structure (Figure 1, Table 1). Almost two thirds of the skeletons belonged to adults, with a slight predominance of those that died between 25 and 35 years of age (category adultus) over mature individuals, i.e. those more than 35 years old, representing the age category of maturus. Elderly individuals—age category senilis (over 55 years old)—were not present among the deceased, which seems typical of a historical population.

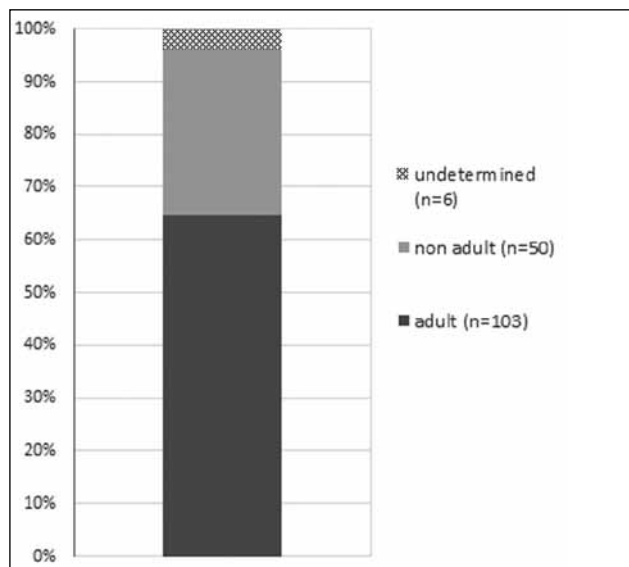


Figure 1. Percentage share of adult and non-adult individuals in the analysed sample (n=159).

of different ages and 103 burials of adults were discovered at the Brudnice cemetery (Figure 1).

The approximate age at death could be determined for 84 (53%) individuals, including 45 adults and 39 non-adults (Figure 2). For 69 skeletons (43%), it was not possible to determine the

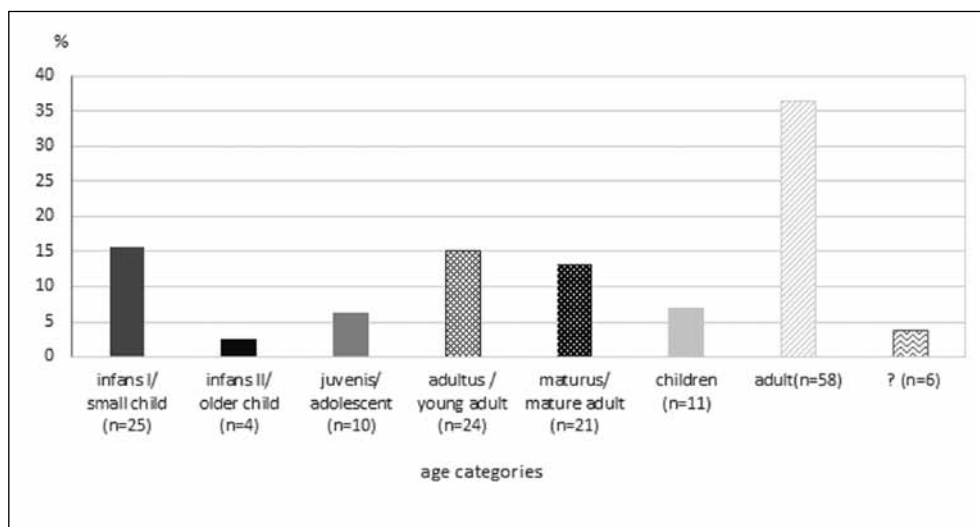


Figure 2. Age distribution in the analysed population (n=159), divided between age categories (x axis).

Sex determination was possible for fragments preserved in 63 burials, which constitutes 40% of the population studied (Figure 3). A clear predominance of female burials (Figures 3–5) has been observed. For 96 skeletons, the sex could not be determined, but more than half of them were children (n=50), whose sex is not deter-

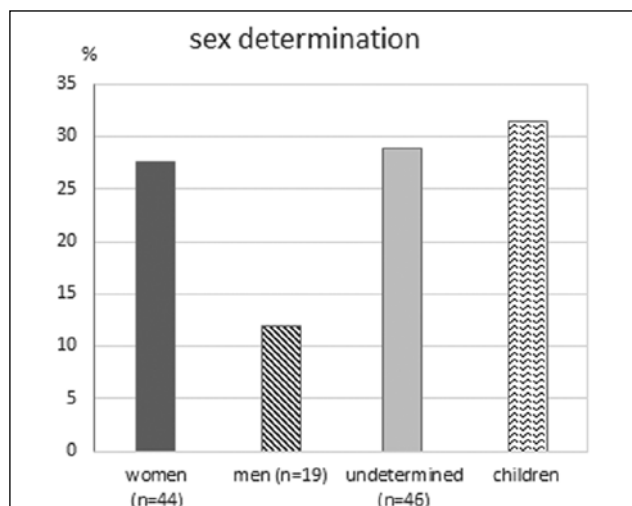


Figure 3. Presentation of general data regarding the sex of the analysed skeletons (n=159).-13

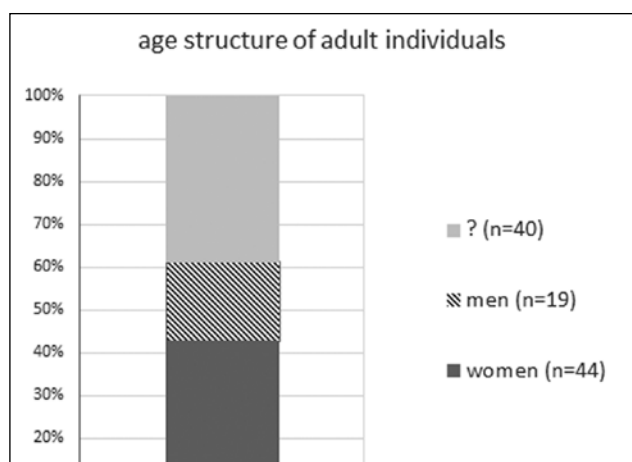


Figure 4. Sex distribution among adult individuals (n=103).

mined on the basis of the skeletal morphology. Among the individuals for whom the sex and age at death have been determined (Figure 5), the majority were women who died under 35 years of age (category adultus).

It should be noted that, in the case of incomplete and fragmented remains, such as cremated bones, the availability of diagnostic fragments has a decisive impact on the picture of the demographic structure, therefore, the data obtained reflect the state of preservation of the remains rather than the biological condition of the population studied.

Pathological conditions were observed in several cases (Table 1: Remarks). These are mainly degenerative changes in the articular surfaces, recorded on the remains of adult individuals, and cribra orbitalia, i.e. porous hypertrophy occurring in the orbital roof, associated with metabolic disorders. In a few cases, degenerative changes in the temporomandibular joint were observed; they may have been caused by chronic overloading of the joint, e.g. as a result of a premortem loss of a significant number of teeth or other changes in the masticatory apparatus (Hodges 1991, 367–377; Waldron 2009, 34–35). However, the aetiology of the lesions cannot be verified, as the teeth were not preserved in any of the cases analysed. This degeneration may also result from the use of teeth for work. It is found more frequently in human groups who use their teeth as tools (Roberts–Thomson R.A, Roberts–Thomson P.J 1999, 267). Cribra orbitalia is a disorder often associated with anaemia, although the presence other influencing factors cannot be excluded (Waldron 2009, 136–137).

Anatomical identification of the remains in the burials

The identification of the bone fragments found in the separate grave assemblages illustrates great diversity in the way the Przeworsk culture community collected cremated remains and deposited them in graves. The analysis showed that the remains of one individual had often been divided between several containers and also scattered in the grave pit (cf. Table 1: Context and skeletal elements present). While the presence of bones in the fills of cremation graves may be related to the state of preservation of the urns and be of secondary character, the distribution of the remains of one skeleton between several vessels should be considered an element of the funeral rite. In the graves discussed, no recurring way of dividing the remains between vessels has been observed. In most cases, bone fragments from the entire skeleton are co-mingled in all containers. In some graves, however, some selectivity has been observed (cf. Table 1), for example, most of the upper limb bones were deposited in one vessel and the lower limb fragments in another (grave 34), or the skull bones were placed in a separate vessel (graves 5 and

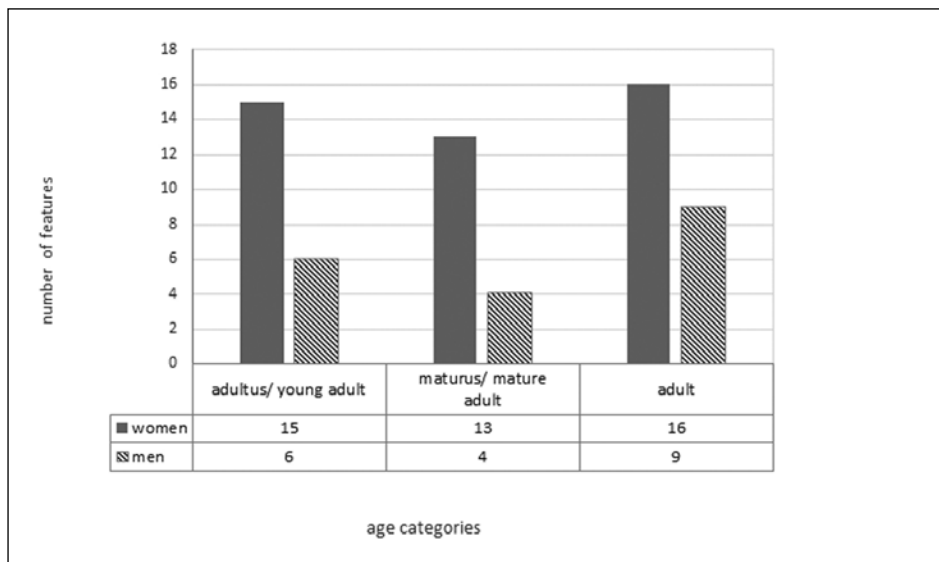


Figure 5. Sex and age structure of adult individuals (n=63).

25). In the case of double burials, some of the bones of both individuals were deposited together in one vessel, while some fragments were divided between other vessels (graves 10 and 120). This type of regularity has been recorded in several cases, but the division of the skeleton observed is different each time (Table 1). The number and type of vessels also varies. Perhaps a further study, including a statistical analysis of the distribution of individual parts of the skeleton in the multi-urn burials, will yield more details.

Weight of the remains

In terms of the weight of the remains, the features analysed show great diversity (Figures 6–7). The bone weight recorded ranged from 0.2 g (grave 93 with the remains of a child) to 2,095 g (grave 82 containing the remains of an adult male). Most of the Przeworsk culture graves discovered at Brudnice contained over 100 g of cremated human bone (Figure 6). Among them, the decided majority were single burials of adult individuals (Figure 7). Among the graves with the bone weight lower than 100 g, the majority were children's burials (Figure 7), which might explain the low bone weight; however, it cannot be excluded that some of them were partial burials, representing an incomplete skeleton. The bones from 26 graves (17%) weighed less than 25 g; they are almost exclusively children's graves. Only two burials with such a low bone weight (graves

37 and 96) contained adult remains and are, without a doubt, incomplete burials (McKinley 2004:11). The bone weight in the graves containing more than 1 individual (MNI>1) ranged from 422 g to 1,916 g. As the weight of bones from mass graves is particularly difficult to interpret and cannot be compared with the bone weight from single burials, such features have not been included in further analysis. The average bone weight for the single burials with adult remains (n=91) is 685 g, and the average bone weight for the children's graves (n=43) is 214 g.

The weight of cremated bones is difficult to interpret. Based on the studies from modern crematoria, skeletal weight has been found to be extremely variable between individuals. It is influenced by biological parameters, such as sex, age, body build, cadaver weight and skeleton weight (Warren, Maples 1997). There is also an inter-population variation (Gonçalves 2015, 73). Studies have shown a large discrepancy between the observers, and, so far, no universal reference values have been established (Gonçalves 2015, 73—with further literature). The results obtained through various experiments for a cremated adult skeleton vary between 876 g (female remains, according to Warren, Maples 1997) and 5,379 g (male remains, according to Bass, Jantz 2004, 901–904). In the case of archaeological remains, these factors are compounded by environmental and cultural variables. The number of originally cremated individuals, presence of

animal bones, contamination of the remains of several individuals consecutively cremated in the same place, precision in collecting bone fragments from the pyre remains and any other ritual procedures are all of significance (McKinley 1994, 84–105; Gonçalves 2015, 72). Lastly, the final weight of the bones subjected to osteological analysis is also influenced by the state of preservation of the grave and the methods of exploration (Harvig et al. 2012, 369–387). Consequently, the weight of the remains obtained is an approximate value, underestimated to a varying degree in relation to the actual weight of the cremated human skeleton, and cannot be taken as a determinant of biological characteristics of buried individuals. Nevertheless, it is an important parameter for identifying some details related to the funeral rite itself (e.g. Gonçalves et al. 2015; Harvig 2015; Jaskulska 2018, 2019).

In the case of the features under discussion, all graves come from a homogeneous archaeological context, which consists of a small area of the cemetery, short chronology of its use and consistent research methodology throughout the Brudnice expedition. It can, therefore, be assumed that environmental and archaeological factors had a comparable impact on the state of preservation of the bones from the features analysed (Gonçalves 2015, 77; Harvig 2015, 52). As such, taphonomic processes appear to be an insufficient explanation for the significant differences in the weight of the cremated remains obtained from the individual graves recorded at Brudnice. The remains from 35 adult graves weighed over 800 g (cf. Figure 7, Table 1), which is close to or more than the lightest weight of a cremated adult skeleton recorded in the literature. These features may then be complete burials, representing the full skeleton of the deceased. In the case of the adult graves that ranged in weight from 25 g to 800g and contained bones from all parts of the skeleton, it can be assumed that some selection of the remains took place; however, considering the data available, it is not possible to determine its nature—whether it was a purposeful and intentional choice, perhaps part of the funerary ritual, or it results from the specificity of post-depositional processes. A better understanding of this issue requires further research, including a detailed analysis of the context in which the bones were found and of the

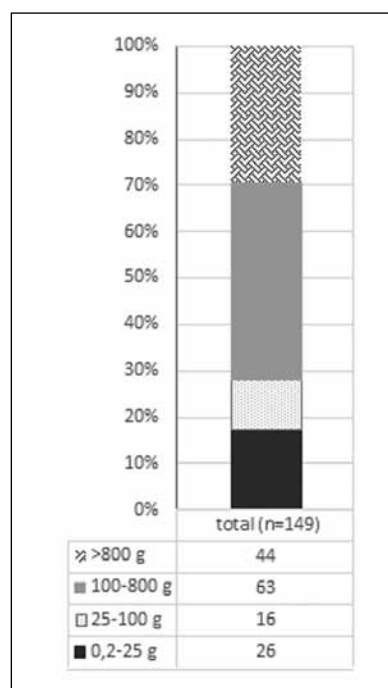


Figure 6. Percentage distribution of the weight of the bone remains preserved in all the analysed graves (n=149).

distribution of individual skeletal fragments in the separate deposits and clusters in a given grave.

Degree of oxidation

The Przeworsk culture human remains from Brudnice were heavily burnt (Table 1). More than 75% of the bones from most of the burials were white in colour, with fragments characterised by shades of grey dominating in some of the graves. The presence of grey–blue coloured bones indicates that the remains were not completely oxidised. Charred fragments were present only in graves 25 and 135 (cf. Table 1: Bone colour). In grave 25, these were isolated fragments from skeletal elements, in feature 135—fragments of the epiphyses of long bones, which represented less than 25% of all the fragments from this burial. The results of the colour analysis suggest that the remains from the graves examined were exposed to a temperature of at least 600°C (Holden et al. 1995a). As different parts of the skeleton burn unevenly (Symes et al. 2008, figs. 2 and 3, 32–33), the absence of clear differences in the degree of oxidation of different skeletal elements in most burials suggests prolonged cremation.

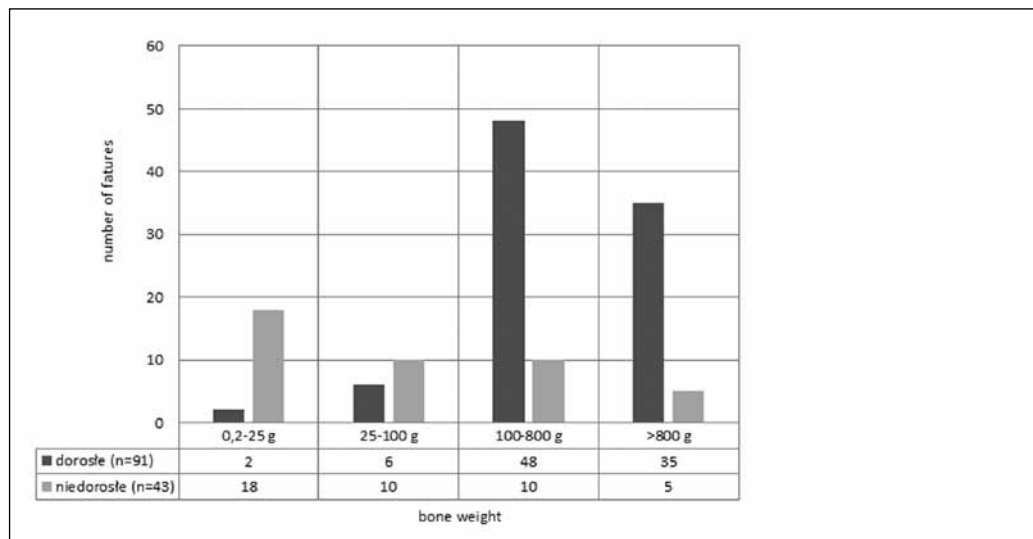


Figure 7. Division of features containing single adult and non-adult burials according to the bone weight (n=134).

State of preservation of the bones

On the basis of the analysis of the remains from select features (n=54; cf. Table 1: Remarks), the degree of fragmentation of the Przeworsk bones from Brudnice can be considered average. Fragments measuring over 10 mm in length (the largest fraction according to McKinley 1994) constituted over 40% of the remains from the adult burials (n=28), while fragments not exceeding 2 mm in length (the smallest fraction) usually accounted for less than 15% of the weight of the remains. The lengths measured for the largest fragment in the adult burials range from 3.5 cm to 12 cm.

The remains analysed had numerous heat-induced fractures, with differences observed in the distribution of individual fracture types between different parts of the skeleton. Delamination on the skull fragments, as well as traces of patina on the skull's interior, were noted for all the graves. Delamination and longitudinal and transverse fractures were observed on the elements of the axial skeleton. The fragments of the upper limb were characterised by longitudinal, segmental and transverse fractures. Curved transverse fractures were also recorded on both sides of the bone shafts. There were also traces of patina on the preserved fragments of the articular surfaces. The bones of the lower limb had longitudinal, segmental, transverse and curved transverse fractures, located on both sides of the bone shafts. Patina was also noted within the articular surfaces. In

addition to fractures, lesions not fitting into the categories of the existing typology were observed. These are fractures of irregular course and varying depth, located especially on the surfaces of cranial and irregular bones. The results obtained are difficult to interpret. The analysis conducted shows that the typology of heat-induced fractures used today is insufficient. It can only provide a complete description of changes on long bones. Flat and irregular bones require a slightly different approach. Some types of fractures occur exclusively or predominantly on specific areas of the skeleton, such as patina fractures on the articular surfaces and cranial vault. Furthermore, the cause of the formation of different types of fractures remains unclear. The occurrence of curved fractures is mainly explained in the literature as a stress effect caused on the bone by the shrinking soft tissues (Ubelaker 2009, 3). This popular opinion has already been challenged by David Gonçalves et al. (2011, 1308–1309), and it seems that the changes observed in the present analysis on the side of the marrow cavities of long bones confirm the doubts about the origin of this type of fractures. In this context, further research into the issue of heat-induced fractures occurring on cremated remains seems necessary.

Conclusions

The analysis of the human bones from the Przeworsk culture cemetery at Brudnice made it possible to identify the remains of 159 people

buried in urned (including multi-urn) and unurned cremation graves as well as in one inhumation grave. They were mostly single burials. Only in a few cases, double burials and one containing the remains of three people (two adults and a child) were found. There were burials of adults of both sexes and of children. Adult females were buried in the majority of the graves recorded. Few lesions, commonly found on the remains of the prehistoric and historic populations, were observed.

Among the most interesting results of the analysis are the observations concerning the details of the funerary ritual practiced by the people who used the Brudnice cemetery. The weight of the recovered bones as well as the representation of skeletal elements present and the distribution of the remains in individual graves show great diversity, which may indicate previously unrecorded elements of the Przeworsk culture cremation rite.

Bibliography:

- Adams B.J., Konigsberg L.W.
2004 *Estimation of the Most Likely Number of Individuals From Commingled Human Skeletal Remains*, American Journal of Physical Anthropology 125, s. 138–151.
- Bass W.M., Jantz R.L.
2004 *Cremation weights in east Tennessee*. Journal of Forensic Sciences 49, s. 901–904.
- Brickley M., McKinley J.I. (red.)
2004 *Guidelines to the Standards for Recording Human Remains*, IFA Paper No. 7.
- Buikstra, J.E., Ubelaker, D.H.
1994 *Standards for data collection from human skeletal remains* [w:] *Proceeding of a Seminar at The Field Museum of Natural History Organized by Jonathan Haas*, Arkansas Archeological Survey Research Series 44.
- Cunha E., Baccino E., Martrille L., Ramsthaler F., Prieto J., Schuliar Y., Lynnerup N., Cattaneo C.
2009 *The Problem of Aging Human Remains and Living Individuals: A Review*, Forensic Science International 193/1, s. 1–13.
- Gonçalves D.M., Campanacho V., Thompson T., Mataloto R.
2015 *The weight of the matter: Examining the potential of skeletal weight for the bioarchaeological analysis of cremation at the Iron Age necropolis of Tera*. [w:] T. Thompson (red.), *The Archaeology of Cremation. Burned human remains in funerary studies*. Oxford i Philadelphia, s. 63–96.
- Fairgrieve S.I.
2008 *Forensic cremation. Recovery and Analysis*. Boca Raton.
- Harvig L., Lynnerup N., Ebsen J. A.,
2012 *Computed Tomography and Computed Radiography of late Bronze Age Cremation Urns from Denmark: An interdisciplinary attempt to develop methods applied in Bioarchaeological cremation research*, Archaeometry 54/2, s. 369–387.
- Harvig L.
2015 *Past cremation practices from a bioarchaeological perspective: How new methods and techniques revealed conceptual changes in cremation practices during the late Bronze Age and early Iron Age in Denmark*, [w:] T. Thompson (red.), *The Archaeology of Cremation. Burned human remains in funerary studies*. Oxford i Philadelphia, s. 43–62.
- Hodges D.C.
1991 *Temporomandibular joint osteoarthritis in a British skeletal population*, American Journal of Physical Anthropology 85, s. 367–377.
- Holden J.L., Phaky P.P., Clement J.G.
1995a *Scanning electron microscope observations of incinerated human femoral bone: a case study*, Forensic Science International 74, s. 17–28.
- Holden J.L., Phaky P.P., Clement J.G.
1995b *Scanning electron microscope observations on heat-treated human bone*. Forensic Science International 74, s. 29–45.
- Jaskulska E.
2018 *Order in Chaos. Spatial Analysis of Cremated Human Remains in Urn Burials from Podlesie, Site 5, Oleśnica Commune, Świętokrzyskie Voivodeship, Światowit 57*, s. 57–69.
- Jaskulska E.
2019 *Szczątki ciepłopalnych cmentarzysk pogranicza mazowiecko-ruskiego: analiza bioarcheologiczna*, [w:] A. Buko (red.), *Początki chrześcijaństwa na pograniczu mazowiecko-ruskim w świetle wyników badań wybranych cmentarzysk*. Warszawa, s. 199–212.
- Lovejoy C.O., Meindl R.S., Pryzbeck T.R., Mensforth R.P.
1985 *Chronological metamorphosis of the auricular surface of the ilium: A new method for the determina-*

- tion of adult skeletal age at death, *American Journal of Physical Anthropology* 68, s. 15–28.
- Malinowski A., Bożiłow W.
1997 *Podstawy antropometrii. Metody, techniki, normy.* Warszawa–Łódź.
- Malinowski A., Strzałko J.
1985 *Antropologia*, Warszawa–Poznań.
- McKinley J.I.
1994 *The Anglo–Saxon Cemetery at Spong Hill, North Elmham Part VIII: The Cremations, Dereham*, East Anglian Archaeology No. 69.
- McKinley J.I.
2004 *Compiling a skeletal inventory: cremated human bones*, [w:] M. Brickley, J.I. McKinley (red.), *Guidelines to the Standards for Recording Human Remains*, Southampton, Institute of Field Archaeologists Paper No. 7, s. 9–50.
- Ortner D.J.
2003 *Identification of pathological conditions in human skeletal remains.* San Diego.
- Piontek J.
1999 *Biologia populacji pradziejowych*, Poznań.
- Rösing F.W., Graw M., Marré B., Ritz–Timme S., Rothschild M.A., Röttscher K., Schmeling A., Schröder I., Geserick G.
2007 *Recommendations for the Forensic Diagnosis of Sex and Age from Skeletons.* HOMO Journal of Comparative Human Biology 58/1, s. 75–89.
- Roberts–Thomson R.A., Roberts–Thomson P.J.
1999 *Rheumatic disease and the Australian aborigine*, *Annals of the Rheumatic Diseases* 58, s. 266–270.
- Schaefer M., Black S., Scheuer L.
2009 *Juvenile Osteology. A Laboratory and Field Manual*, Amsterdam–Boston–Heidelberg–London–New York–Oxford–Paris–San Diego–San Francisco–Singapore–Sydney–Tokyo.
- Scheuer L., Black S.,
2000 *Developmental Juvenile Osteology.* London.
- Shipman P., Foster G., Schoeninger M.
1984 *Burnt bone and teeth: an experimental study of color, morphology, crystal structure and shrinkage.* *Journal of Archaeological Science* 11, s. 307–325.
- Strzałko J., Piontek J., Malinowski A.
1974 *Możliwości identyfikacji szczątków ludzkich z grobów ciałopalnych w świetle badań eksperymentalnych*, [w:] H. Giżyńska (red.), *Materiały z konferencji, Metody, wyniki i konsekwencje badań kości z grobów ciałopalnych*, Poznań, s. 31–42.
- Symes S.A., Rainwater C.W., Chapman E.N., Gipson D.R., Piper A.L.,
2008 *Patterned Thermal Destruction of Human Remains in a Forensic Setting* [w:] C.W. Schmidt, S.A. Symes (red.), *The Analysis of Burned Human Remains.* London, s. 15–54.
- Thompson T.J.U.
2005 *Heat–induced dimensional changes in bone and their consequences for forensic anthropology.* *Journal of Forensic Sciences* 50, s. 1008–1015.
- Thompson T. (red.)
2015 *The Archaeology of Cremation. Burned human remains in funerary studies.* Oxford i Philadelphia.
- Ubelaker D.H.
2009 *The forensic evaluation of burned skeletal remains: a synthesis*, *Forensic Science International* 183/1, s. 1–5.
- Waldron T.
2009 *Palaeopathology.* Cambridge.
- White T.D., Black M.T., Folkens P.A.
2011 *Human Osteology.* Wyd. 3. Oxford.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
A			none							–	–
B	fill	260	bones from all elements of the skeleton	grey	–	1	adult	bone tissue structure	?	–	–
C			none							–	–
D	fill	76	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	?	–	–
E	fill	270	bones from all elements of the skeleton	white	–	1	45–55 years	degree of cranial suture obliteration	f	femoral head measurements, massiveness of the skeleton, zygomatic bone, upper orbital margin, mental protuberance	deformation of vertebral bodies
1	fill	10	fragments of bones from the postcranial skeleton, mainly long bones	white	–	1	6–12 years	bone size and degree of ossification of the skeleton	n.d.	–	–
2	fill	210	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	?	–	backbone lesions
	fill	5	skull and long bone fragments	white, grey	–	1	adult	bone tissue structure	f?	massiveness of the skeleton	–
3	vessel 1	310	skull and long bone fragments	white, grey	–						–
	vessel 2	3	bones from all elements of the skeleton	white, grey	–						–
4	fill	422	bones from all elements of the skeleton, co-mingled remains of two individuals of different ages	white, grey	–	2	adult	bone tissue structure	?	–	–
							child	bone size and degree of ossification of the skeleton	n.d.	–	–
5	fill – N part	180	bones from all elements of the skeleton	white	–			bone tissue structure and degree of ossification of the skeleton	f	upper orbital margin, glabella	–
	fill – S part	280	bones from all elements of the skeleton	white	–	1	adult		–	–	–
	pottery cluster	35	mainly limb bone fragments	white	–						–
	vessel 3 (small bowl, placed upside-down)	80	mainly cranial vault fragments	white	–				–	–	–
	bottom of the feature	10	mainly cancellous bone	white	–				–	–	–

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
6	top of the feature	72	mainly long bone shafts fragments of bones from the postcranial skeleton	white	–	1	12/14–20 years	degree of ossification of the skeleton	n.d.	–	–
	wypelnisko			white	–						
7	fill	571	bones from all elements of the skeleton	white	cattle, unidentified bones	1	adult	bone tissue structure and degree of ossification of the skeleton	f?	massiveness of the skeleton	–
8	vessel 1 (urn)	66	bones from all elements of the skeleton	white	sheep-goat, unidentified bones	1	>6 years	bone size and degree of ossification of the skeleton	n.d.	–	–
				grey	–		2	adult	bone tissue structure and degree of ossification of the skeleton	m?	massiveness of the skeleton
9	fill	1,430	bones from all elements of the skeleton, co-mingled remains of two adult individuals	grey	–	2	adult	bone tissue structure and degree of ossification of the skeleton	?	–	–
				grey	–		adult	–	–		
10	fill	171	bones from all elements of the skeleton: child remains	grey	–	2	<6 years	wielkośc i struktura tkanki kostnej, stopień skostnienia szkieletu	n.d.	–	–
	vessel 1 – upper part	188	bones from all elements of the skeleton; co-mingled remains of two individuals of different ages	grey	–						
	vessel 1 – lower part	114	bones from all elements of the skeleton	grey	–						
	cluster under vessel 1	136	heavily fragmented human bones, unidentified; co-mingled remains of two individuals of different ages	grey	–						
	vessel 2	0.5	long bone fragments	grey	–						
11	fill of the feature – lower part	63	heavily fragmented human bones, unidentified	grey	–	1	>35 years	size and structure of bone tissue, degree of ossification of the skeleton	n.d.	–	upper orbital margin
	bottom of the feature	92	heavily fragmented human bones, unidentified	grey	–						
	vessel 1	237	skull and long bone fragments	white, grey	–						
	vessel 2	2	heavily fragmented human bones, unidentified	white, grey	–				f		–

Table 1. Anthropological analysis results for Bruznice site V, Żuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
11	vessel 2	2	heavily fragmented human bones, unidentified	white, grey	–						–
	vessel 3	0.5	heavily fragmented human bones, unidentified	white, grey	–						
	fill	181	heavily fragmented human bones, unidentified	white, grey	pig, unidentified bones						
	vessel 1 (urn)	123	bones from all elements of the skeleton	white	pig, unidentified bones						
	vessel 2 bowl – from W part	170	mainly fragments of cranial vault and long bone shafts	grey	–						
	vessel 3 bowl – from N part	174	mainly long bones and bones of the torso (pelvis fragments)	grey	–						
12	vessel 3 (bowl sherd from the inside of the urn)	166	jaw fragment and fragments of unidentified human bones	grey	unidentified bones	1	>25 years	degree of cranial suture obliteration	f	upper orbital margin, massiveness of the skeleton, mastoid process	–
	vessel 4	0.5	one fragment of cremated human bone	white, grey	–						
	vessel 5 (small bowl)	1	heavily fragmented human bones, unidentified	white, grey	–						
	vessel 6	1	heavily fragmented human bones, unidentified	white, grey	–						
	fill	577	bones from all elements of the skeleton, co-mingled remains of two individuals of different ages	white	bird						
	vessel 2 (urn)	107	bones from all elements of the skeleton, co-mingled remains of two individuals of different ages	white	bird	2	>35 years	degree of cranial suture obliteration, bone size and degree of ossification of the skeleton	f	upper orbital margin, mastoid process, zygomatic bone	lesions in the area of the mandibular head and the distal end of the humerus
13	vessel 3 small bowl	1	mainly long bone shafts	white	–		<6 years	bone size and degree of ossification of the skeleton	n.d.	–	–
	vessel 5 (small bowl)	1	mainly long bone shafts and rib fragments	white	–						

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
13	bottom of the feature – W part	42	bones from all elements of the skeleton, co-mingled remains of two individuals of different ages	white	bird	2	–	–	–	–	–
	spąg obiektu – część W	42	kości ze wszystkich części szkieletu, przemieszane szczątki dwóch osobników w różnym wieku	białe	ptak						
14	vessel 1 (urn)	66	bones from all elements of the skeleton	white	–	1	<2 years	degree of ossification of the skeleton and of dental development	n.d.	–	–
15	vessel 1	7.5	bones from all elements of the skeleton, mainly long bone and skull fragments	white	–	1	<2 years	degree of ossification of the skeleton and of dental development	n.d.	–	–
	vessel 2	2.5	bones from all elements of the skeleton, mainly long bone and skull fragments	white	–						
16	naczynie 2	2,5	kości ze wszystkich części szkieletu, głównie fragmenty kości długich i czaszki	białe	–	1	<6 years	degree of ossification of the skeleton and of dental development	n.d.	–	–
	vessel 3	0.2	bones from all elements of the skeleton	white	–						
17	top of the feature	20	bones from all elements of the skeleton, mainly long bone and skull fragments	white	–	1	adult	bone tissue structure and degree of ossification of the skeleton	f	upper orbital margin	–
	near the rim of the urn	170	long bone and cranial vault fragments	white	bird, unidentified bones						
	fill of the urn	1,096	bones from all elements of the skeleton	white	bird, unidentified bones						
	near the base of the urn	40	bones from all elements of the skeleton, mainly long bone and skull fragments	white	–						
	fill	1,002	bones from all elements of the skeleton	white, grey	sheep-goat, bird, unidentified bones						
18	fill	182	mainly fragments of long bone shafts	white, grey	sheep-goat, unidentified bones	1	adult	bone tissue structure	?	–	–
19	fill	182	mainly fragments of long bone shafts	white, grey	sheep-goat, unidentified bones	1	adult	bone tissue structure	?	–	–
	top of the feature	72	bones from all elements of the skeleton, mainly long bone and skull fragments	grey	sheep-goat, unidentified bones	1	adult	bone tissue structure	?	–	–
20	vessel 1	5	mainly fragments of long bone shafts	grey	pig, cattle, bird, unidentified bones	1	adult	bone tissue structure	–	–	–

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
20	vessel 2	1	fragments of long bone shafts	grey	pig, cattle, bird, dog(?), unidentified bones	1	-	-	-	-	-
	bottom of the feature – under vessel 1	304	heavily fragmented human bones, unidentified	grey	unidentified bones						
	bottom of the feature – N part	85	heavily fragmented human bones, unidentified	grey	unidentified bones						
	fill	540	bones from all elements of the skeleton	grey, white	-						
21	top of the feature	161	bones from all elements of the skeleton	white, grey	bird, unidentified bones	1	>25 years	degree of cranial suture obliteration	f	upper orbital margin, massiveness of the skeleton	-
	vessel 1	3	mainly fragments of long bone shafts	grey, white	-						
	vessel 3	3	mainly fragments of the cranial vault and long bones	white	-						
	vessel 4	1	mainly fragments of long bone shafts	grey, white	-						
22	top of the feature	9	mainly fragments of long bone shafts	white	-	1	>35 years	degree of cranial suture obliteration	m	massiveness of the skeleton, humerus measurements	-
	fill – N part	21	mainly fragments of the cranial vault and long bone shafts	white	-						
	fill – S part	131	mainly fragments of the cranial vault and long bone shafts	white	-						
	vessel 1	3	mainly fragments of long bone shafts	white	-						
	vessel 2	2	mainly fragments of long bone shafts	white	-						
	vessel 3	2	mainly fragments of long bone shafts	white	-						
	cluster from the bottom of the feature	695	bones from all elements of the skeleton	white	-						
23	top of the feature	2	cranial vault fragments	white	-	1	>25 years	degree of cranial suture obliteration	f	upper orbital margin	-
	fill	888	bones from all elements of the skeleton, mainly long bone and skull fragments	white	bird, unidentified bones						
	vessel 1	6	mainly cranial vault fragments	white	-						

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
23	vessel 2	1	heavily fragmented human bones, unidentified	white	-					-	-
24	fill	378	bones from all elements of the skeleton	white	-	1	adult	bone tissue structure and degree of ossification of the skeleton	f	mastoid process, massiveness of the skeleton	-
25	fill	420	bones from all elements of the skeleton	white	-	1	>25 years	degree of cranial suture obliteration	?	-	-
	vessel 1	35	mainly fragments of long bone shafts	white	-						
	vessel 2	11	fragments of long bone shafts and ribs	white, black	-						
26	vessel 3 (placed on the rim)	28	mainly fragments of the cranial vault and long bones	white, black	-	1	adult	bone tissue structure	f	upper orbital margin, glabella and supraorbital ridges, external occipital protuberance	-
	cluster under vessel 3	6	cranial vault fragments	white	-						
	top of the feature	107	bones from all elements of the skeleton	white	-						
27	vessel 2	31	mainly fragments of the cranial vault and long bones	white	-	1	>25 years	degree of cranial suture obliteration	f?	massiveness of the skeleton	-
	bottom of the feature	301	bones from all elements of the skeleton	white	-						
	fill	785	bones from all elements of the skeleton	white	-						
28	vessel 3	3	long bone fragments and ribs	white	-	1	?	-	?	-	-
	fill	0.5	few heavily fragmented human bones, unidentified	white	-						
29	top of the feature	21	long bone and cranial vault fragments	white	unidentified bones	1	<6 years	degree of ossification of the skeleton and of dental development	n.d.	-	-
	vessel 2	132	mainly fragments of the cranial vault and long bone shafts	white	-	1				-	-
	vessel 3	46	mainly fragments of the cranial vault and long bone shafts	white	-						
	vessel 4	44	mainly fragments of the cranial vault and long bone shafts	grey, black	-						
fill	17	mainly fragments of the cranial vault and long bone shafts	white	-							
30	fill	17	mainly fragments of the cranial vault and long bone shafts	white	-	1	<6 years	degree of ossification of the skeleton	n.d.	-	-

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
31	top of the feature	5	heavily fragmented human bones, unidentified	white	-	1	adult	bone tissue structure	?	-	-
	urn	481	bones from all elements of the skeleton	white	-						
32	top of the feature	1	heavily fragmented human bones, unidentified	white	-	1	>35 years	degree of cranial suture obliteration	f	upper orbital margin	-
	fill	200	bones from all elements of the skeleton	white	-						
	vessel 1	213.5	mainly skull bones	white	-						
	vessel 3	3.6	mainly long bone shafts	white	-						
33	fill	482	bones from all elements of the skeleton	white	-	1	adult	bone tissue structure, degree of ossification of the skeleton	?	-	-
	vessel 1	460	bones from all elements of the skeleton	white, grey	-						
34	vessel 2	190	mainly fragments of long bones from upper limbs	white	-	1	>35 years	degree of cranial suture obliteration	f	upper orbital edge, external occipital protuberance, massiveness of the skeleton	-
	vessel 4	10	mainly fragments of shafts of long bones from lower limbs	white	-						
	fill	0.5	skull and long bone fragments	white	-						
35	fill	170	skull and long bone fragments	white	-	1	<6 years	degree of ossification of the skeleton	n.d.	-	-
	vessel 3	38	postcranial skeleton fragments	white, grey	-						
	bottom of the feature	717	bones from all elements of the skeleton	white, grey	-						
36	fill	8	mainly long bone fragments	white	-	1	adult	bone tissue structure	?	-	-
	bottom	398	bones from all elements of the skeleton	white	-						
37	fill	98	long bone and cranial vault fragments	white	-	1	>25 years	degree of cranial suture obliteration	f?	massiveness of the skeleton	-
	vessel 1	61	mainly long bone shafts	white	-						
	bottom	100	skull and long bone fragments	white	unidentified bones						
38	fill	33	fragments of long bone shafts and cranial vault	white	-	1	>25 years	degree of cranial suture obliteration	f?	massiveness of the skeleton	-
	bottom	398	bones from all elements of the skeleton	white	-						
39	fill	98	long bone and cranial vault fragments	white	-	1	adult	bone tissue structure	?	-	-
	bottom	100	skull and long bone fragments	white	unidentified bones						

Table 1. Anthropological analysis results for Brudnice site V, Zúromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
40	top of the feature	3	long bone and cranial vault fragments	white	–	1	adult	bone tissue structure	?	–	–
	bottom of the feature	108	mainly long bone shafts	white	unidentified bones						
	vessel 1	1	one fragment of cremated human bone, unidentified	white	–						
41	vessel 2	1	mainly fragments of the cranial vault and long bone shafts	white, grey	–	1	>25 years	degree of cranial suture obliteration	f	upper orbital margin, massiveness of the skeleton	–
	vessel 3	6	mainly fragments of long bones from upper limbs	white, grey	–						
	fill	458	bones from all elements of the skeleton	white	–						
42	fill	4	mainly long bone and skull fragments	white	–	1	<6 years	degree of ossification of the skeleton and of dental development	n.d.	–	–
	vessel 1	1	mainly long bone fragments	white	–						
	vessel 2	9	mainly long bone fragments	white	–						
	bottom	27	mainly long bone and skull fragments	white	–						
	fill	12	mainly long bone and skull fragments	white	–						
43	fill	0.5	isolated fragments of long bone shafts	white	–	1	?>	–	?	–	–
44	fill	1.5	mainly long bone and skull fragments	white	–	1	<6 years	degree of ossification of the skeleton and of dental development	n.d.	–	–
45	vessel 1	1	isolated fragments of long bone shafts	white	–	1	?	–	?	–	–
	vessel 2	24	isolated fragments of long bone shafts	white	–						
46	top of the feature	98	isolated fragments of human bones, unidentified	white	unidentified bones	1	>25 years	degree of cranial suture obliteration	m	upper orbital edge, mastoid process, external occipital protuberance, massiveness of the skeleton	–

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
47	vessel 2	6	mainly long bone fragments	white	-	1	>25 years	-		-	-
	bottom of the feature	945	bones from all elements of the skeleton	white							
48	top of the feature	50.3	bones from all elements of the skeleton	white	-	1	>25 years	degree of cranial suture obliteration	f?	upper orbital margin	-
	bottom of the feature	660	bones from all elements of the skeleton	white	cattle, unidentified bones						
49	fill	105	fragments of long bone shafts and cranial vault	white	unidentified bones	2	dorosly >35 lat	bone tissue structure and degree of ossification of the skeleton	?		-
	vessel 2	400	bones from all elements of the skeleton	white	-			degree of cranial suture obliteration			
	vessel 3	0.5	fragments of long bone shafts	white	-						
50	top of the feature	34	fragments of long bone shafts and cranial vault	white, grey	unidentified bones	1	adult	bone tissue structure j	?		-
	fill	127	fragments of long bone shafts and cranial vault	white, grey	-						
	vessel 3	0.5	long bone fragments	white, grey	-						
51	fill	591	bones from all elements of the skeleton	white, grey	-					upper orbital margin, mastoid process, massiveness of the skeleton	-
	vessel 1	103	bones from all elements of the skeleton	white	-	1	adult	bone tissue structure j	f?		-
	vessel 3	94	mainly cranial vault fragments	white	-						
52	under the vessel	0.2	fragment of a long bone shaft	white	-	1	?	-	?		-
	vessel 1	0.1	two fragments of cremated human bone, unidentified	white	-						
53	fill	216	bones from all elements of the skeleton	grey	bird, unidentified bones	1					
	vessel 1	411	bones from all elements of the skeleton	white, grey	-						
	vessel 3	1.5	mainly long bone fragments	white	-			pubic symphysis	n.d.		-
54	vessel 2		-	-	bird, unidentified bones						
	cluster near feature 54	0.5	fragments of long bone shafts	white	-	1	15-20 years	degree of ossification of the skeleton	n.d.		-
	fill	138	bones from all elements of the skeleton	white	unidentified bones						
	vessel 1	87	bones from all elements of the skeleton	white	-						

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
54	vessel 2	410	bones from all elements of the skeleton	white	-					-	-
	vessel 3	0.4	heavily fragmented human bones, unidentified	white	-					-	-
55	fill	902	bones from all elements of the skeleton	white	-	1	15-20 years	degree of ossification of the skeleton	n.d.	-	-
56	fill	14	mainly cranial vault fragments	white	-	1	?	-	?	-	-
57	fill	2	bones from all elements of the skeleton	white	-	1	child	degree of ossification of the skeleton	n.d.	-	-
	vessel 1	0.2	human bone fragment, unidentified	white	-					-	-
58	fill	0.2	isolated fragments of long bone shafts	white	-	1	?	-	?	-	-
59	fill	317	bones from all elements of the skeleton	white, grey	-						
	vessel 1	0.2	isolated fragments, unidentified	white	-	1	>35 years	degree of cranial suture obliteration	?	-	-
	vessel 2	133	fragments of long bone shafts and of cranial vault	white	-						
	vessel 3	3	cranial vault fragments	white	-						
60	fill	609	bones from all elements of the skeleton	white, grey	-	1	adult	bone tissue structure and degree of ossification of the skeleton	f	upper orbital margin	-
61	fill	0.5	isolated fragments, unidentified	white	-	1	child	bone size and degree of ossification of the skeleton	n.d.	-	-
62	fill	265	mainly fragments of the cranial vault and long bone shafts	white	-						
	cluster	60	mainly fragments of the cranial vault and long bone shafts	white	-	1	adult	bone tissue structure	n.d.	-	-
	vessel 1	2	isolated fragments of long bone shafts	white	-						
63	top of the feature	57	long bone fragments	white, grey	-						
	fill	195	bones from all elements of the skeleton	white, grey	bird	1	15-20 years	degree of ossification of the skeleton	n.d.	-	-
	W cluster	296	mainly fragments of cranial vault, left side of viscerocranium and long bone shafts	white, grey	bird, unidentified bones						

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
63	E cluster	267	mainly fragments of cranial vault, right side of viscerocranium and long bone shafts	white, grey	bird, unidentified bones					–	–
	vessel 2	0.2	mainly rib fragments	white, grey	–					–	–
64	vessel 1	0.8	mainly long bone shafts	grey	–	1	child	size and structure of bone tissue	n.d.	–	–
	fill	1,673	bones from all elements of the skeleton	white	cattle, unidentified bones						
65	vessel 1	3	fragments of ribs and long bones	white	–	1	adult	bone tissue structure and degree of ossification of the skeleton	m?	external occipital protuberance, massiveness of the skeleton	–
	vessel 3	9	heavily fragmented human bones, unidentified	white	–						
	top of the feature	258	bones from all elements of the skeleton	white, grey	–						
66	vessel 3	68	bones from all elements of the skeleton	white, grey	–						
	vessel 1	519	bones from all elements of the skeleton	white, grey	–	1	>25 years	degree of cranial suture obliteration	f	upper orbital edge, external occipital protuberance, mental protuberance, preauricular groove	–
	vessel 2	12	mainly fragments of the cranial vault and long bones	white, grey	–						
	bottom of the feature	804	bones from all elements of the skeleton	white, grey	sheep-goat, cattle						
	fill	116	mainly fragments of long bones and pelvis	white, grey	bird, unidentified bones	1	>35 years	degree of cranial suture obliteration	f	upper orbital margin, glabella, external occipital protuberance	–
67	bottom	1075	bones from all elements of the skeleton	white, grey	–						
	fill	574	bones from all elements of the skeleton	white, grey	–	1	>35 years	degree of cranial suture obliteration	f	upper orbital margin	–
68	fill	653	bones from all elements of the skeleton	white	–	2	>25 years	degree of cranial suture obliteration	?	–	–
	fill	653	bones from all elements of the skeleton	white	–		>35 years	degree of cranial suture obliteration	?	–	–
70	top of the feature	5.2	mainly fragments of long bone shafts	white	–		>25 years	size and structure of bone tissue	k	górna krawędź oczodołu	
	fill	982	bones from all elements of the skeleton	white, grey	–	3	<2 years	size and structure of bone tissue	n.d.	–	–
	vessel 1	603	bones from all elements of the skeleton	white	–		adult	size and structure of bone tissue	m?	massiveness of the skeleton	–
	naczynie 2	0,5	pojedyncze fragmenty, nieokreślone	białe	–					–	

Table 1. Anthropological analysis results for Brudnice site V, Żuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
71	top of the feature	37	fragments of vertebrae and long bone shafts	white, grey	-	1	approx. 16 years	degree of ossification of the skeleton	n.d.	-	-
	fill	11	fragments of long bone shafts and a frontal bone fragment	white, grey	-						
	bottom of the feature	410	heavily fragmented human bones, unidentified	white	-						
	cluster	396	bones from all elements of the skeleton	white, grey	-						
	vessel 3	210	heavily fragmented human bones, unidentified	white	-						
72	fill	317	bones from all elements of the skeleton	white	-	1	12-16 years	degree of ossification of the skeleton	n.d.	-	-
	vessel 2 (urn)	266	mainly fragments of pelvis and shafts of lower limb bones	white	-						
	vessel 3	3	long bone fragments and ribs	white	-						
	top of the feature	2.4	isolated fragments of long bone shafts	grey	-						
73	fill	448	fragments of long bone shafts and of cranial vault	grey	pig, bird, unidentified bones	2	adult	bone size and degree of ossification of the skeleton	?	-	-
	fill	212	fragments of long bone shafts and cranial vault	white, grey	-						
	bottom part of vessel 1	2	fragments of long bone shafts and cranial vault	white, grey	-						
	vessel 2 (urn)	400	bones from all elements of the skeleton	white, grey	-						
	vessel 3	1.4	mainly fragments of the cranial vault and long bone shafts	white, grey	-						
74	vessel 4	1.2	isolated fragments of long bone shafts	white, grey	-	1	adult	size and structure of bone tissue	?	-	-
	fill	23.6	fragments of long bone shafts and of cranial vault	white	-						
75	fill	1,280	bones from all elements of the skeleton	white, grey	-	1	>35 years	degree of cranial suture obliteration	m	upper orbital edge, external occipital protuberance, mental protuberance	-
76	fill	362	bones from all elements of the skeleton	white	-	1	adult	bone size and structure of bone tissue	f	upper orbital margin	-
77	fill	75	fragments of long bone shafts and cranial vault	white	-	1	adult	bone size and structure of bone tissue	?	-	-

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
79	fill	1,089	bones from all elements of the skeleton	white, grey, black	-	1	adult	bone size and structure of bone tissue	?	-	-
80	fill	796	bones from all elements of the skeleton	white	-	1	adult	bone size and structure of bone tissue	?	-	-
	vessel 1 (urn) small bowl	184 10	long bone fragments long bone fragments	white white	- -						
81	fill	1,030	bones from all elements of the skeleton	white	bird	1	>25 years	degree of cranial suture obliteration	f	upper orbital margin, mental protuberance, angle of the mandible	-
82	fill	2,095	bones from all elements of the skeleton	white	cattle, bird	1	>25 years	degree of cranial suture obliteration	m?	massiveness of the skeleton	-
83	fill	450	bones from all elements of the skeleton, but with very few skull fragments	white	-	1	adult	bone size and structure of bone tissue	m?	massiveness of the skeleton	-
84	fill	345	long bone and cranial vault fragments	white	bird	1	6-12 years	bone size and degree of ossification of the skeleton	n.d.	-	-
85	fill	1,073	bones from all elements of the skeleton	white, grey	sheep-goat, pig, bird, deer	1	>25 years	degree of cranial suture obliteration	f	-	upper orbital margin, zygomatic bone, massiveness of the skeleton
	vessel 6	22	isolated fragments of long bones	white, grey	-						
	vessel 7	0.5	isolated fragments of long bones	white, grey	-						
	vessel 10	9	isolated fragments of long bones	white, grey	-						
86	vessel 1 (urn)	141	bones from all elements of the skeleton	white	-	1	<6 years	bone size and degree of bone and dental development	n.d.	-	-
87	vessel 1 (urn)	212	long bone and skull fragments	white, grey	-	1	adult	bone tissue structure	f	upper orbital margin, mastoid process	-
88	fill	34	long bone and cranial vault fragments	white	-	1	adult	bone tissue structure	?	-	-
89	fill	635	bones from all elements of the skeleton	white, grey	cattle, horse	1	adult	bone tissue structure	?	-	-
90	fill	140	fragments of limb bones	white, grey	-	1	adult	bone tissue structure	k	-	mastoid process, mental protuberance, massiveness of the skeleton
	vessel 1	404	bones from all elements of the skeleton	white, grey	-						
91	fill	168	long bone and cranial vault fragments	white, grey	-	1	>25 years	degree of cranial suture obliteration	?	-	-
	vessel 1	0.2	fragments of long bone shafts	white	-						
	vessel 2	7	long bone and cranial vault fragments	grey, black	-						

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
92	fill	1,035	bones from all elements of the skeleton	white	cattle, bird	1	16-20 years	degree of ossification of the skeleton	n.d.	-	-
	vessel 1	0.1	fragments of long bone epiphyses	white	-						
	vessel 2	27	long bone fragments	white, grey	-						
93	fill	0.2	heavily fragmented human bones. unidentified	white	-	1	child	bone size and structure of bone tissue	n.d.	-	-
94	fill	1,550	bones from all elements of the skeleton	white, grey	pig	1	>25 years	degree of cranial suture obliteration	m	mastoid process, mental protuberance, massiveness of the skeleton	-
95	fill	1,515	bones from all elements of the skeleton	white, grey	bird	1	>25 years	suture obliteration	f	upper orbital margin	-
	vessel 1	75	heavily fragmented human bones. unidentified	grey	bird						
	vessel 3	3	heavily fragmented human bones. unidentified	grey	bird						
	vessel 4	20	fragments of long bones and ribs	white, grey	-						
	vessel 5	0.2	fragments of long bone shafts	white, grey	-						
96	fill	0.3	fragments of long bone shafts	white	-	1	adult?	bone size and structure of bone tissue	?	-	-
97	fill	259	bones from all elements of the skeleton	white	pig	1	>25 years	degree of cranial suture obliteration	?	-	-
98	fill	322	long bone fragments	grey	pig, unidentified bones	1	<20 years	degree of ossification of the skeleton	m?	upper orbital margin, massiveness of the skeleton	-
	W cluster	83	long bone and cranial vault fragments	grey	-						
	vessel 1	164	long bone and cranial vault fragments	grey	pig, unidentified bones						
	vessel 2	104	mainly fragments of cranial vault and long bones from lower limbs	grey	-						
	vessel 3	170	mainly skull bones	grey	-						
	vessel 4	388	bones from all elements of the skeleton	grey	-						
	fill	652	mainly fragments of long bone shafts	white, grey	sheep-goat						
99	vessel 1	15	long bone fragments	white, grey	-	1	adult	bone size and structure of bone tissue	?	-	-
100	fill	1,047	bones from all elements of the skeleton	white, grey	sheep-goat, cattle, bird,	1	>35 years	degree of cranial suture obliteration	f	upper orbital margin, mastoid process, massiveness of the skeleton	-

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
101 [132]	fill	77	bones from all elements of the skeleton	white, grey	-	1	<6 years	bone size and degree of skeletal and dental development	n.d.	-	-
	vessel 1	0.1	isolated heavily fragmented of human bone, unidentified	white, grey	-						
102 [133]	fill	442	bones from all elements of the skeleton	white, grey	-	1	adult	bone size and structure of bone tissue	?	-	-
	fill	55	bones from all elements of the skeleton	white	-						
103 [136]	vessel 1 (urn)	1,317	bones from all elements of the skeleton	white	-	1	>25 years	degree of cranial suture obliteration	f	upper orbital margin, massiveness of the skeleton	-
	vessel 1		no bone material								
105	fill	1,064	bones from all elements of the skeleton	white	-	1	>35 years	degree of cranial suture obliteration	f	upper orbital margin, massiveness of the skeleton	-
	vessel 1	4	fragments of long bone shafts	grey	-						
	vessel 3	17	long bone fragments	white	-						
106	fill	1	cranial vault fragments	white	-	1	6-12 years	bone size and degree of skeletal and dental development	n.d.	-	-
	vessel 4	223	bones from all elements of the skeleton	white	-						
107	fill	161	bones from all elements of the skeleton	white, grey	-	1	>35 years	degree of cranial suture obliteration	m	mastoid process, upper orbital edge, external occipital protuberance, massiveness of the skeleton	-
	vessel 3	487	bones from all elements of the skeleton	white, grey	-						
108	fill	52	bones from all elements of the skeleton	white	-	1	>35 years	degree of cranial suture obliteration	f	upper orbital margin	-
	fill	6	mainly long bone fragments	white	-						
109	vessel 1	912	bones from all elements of the skeleton	white	-	1	>20 years	bone size and degree of skeletal and dental development	n.d.	-	-
	top of the feature	9	mainly fragments of long bone shafts	white, grey	-						
110	vessel 1	132	bones from all elements of the skeleton	white, grey	-	1	6-12 years	degree of ossification of the skeleton, degree of cranial suture obliteration	n.d.	-	-
	vessel 2	1	isolated fragments, unidentified	white, grey	-						
	vessel 6	13	mainly cranial vault fragments	white, grey	-						
111	fill	957	bones from all elements of the skeleton	white, grey	-	1	>25 years	degree of cranial suture obliteration	m	upper orbital margin, massiveness of the skeleton	-
	vessel 2	0.2	long bone fragments	white, grey	-						
	vessel 3	1	long bone fragments	white, grey	-						

Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
112			no bone material							-	-
113	fill	46	long bone and cranial vault fragments	white, grey	-	1	child	bone size, bone tissue structure	n.d.	-	-
	vessel 1	43	long bone and cranial vault fragments	white, grey	-						
114	top of the feature	14	mainly long bone fragments	white, grey	-	1	>25 years	stopień obliteracji szwów czaszkowych	m	wyrostek sutkowy, masywność szkieletu	-
	fill of feature 150 a	628	bones from all elements of the skeleton	white, grey	-						
	fill of feature 150 b	18	long bone fragments	white, grey	-						
115	fill	989	bones from all elements of the skeleton	white	-	1	adult	bone tissue structure	m	mastoid process, supra-mastoid crest, external occipital protuberance, massiveness of the skeleton	
	vessel 1	4.5	mainly long bone fragments	white							
	vessel 2	4.2	mainly long bone fragments	white							
116	fill	90	bones from all elements of the skeleton	white	-	1	adult	bone tissue structure	?	-	-
117	fill	31	bones from all elements of the skeleton	white	-	1	child	wielkość i struktura kości	n.d.	-	-
	fill	86	fragments of skull and unidentified bones	white	-	1	adult	bone tissue structure	?	-	-
119	fill	97	bones from all elements of the skeleton	white	unidentified bones	1	adult	bone tissue structure	f	upper orbital margin	-
	vessel 1 (urn)	240	bones from all elements of the skeleton	white	-						
120	fill	591	bones from all elements of the skeleton; adult and child	white	-						
	vessel 1 (urn)	844	bones from all elements of the skeleton; adult	white, grey	unidentified bones	2	approx. 35 years	auricular surface, pubic symphysis	m	upper orbital margin, mastoid process, glabella, external occipital protuberance, supra-mastoid crest	-
	vessel 2	268	bones from all elements of the skeleton, mainly limb – arm and foot – bones; adult	white	unidentified bones						
	vessel 3	57	bones from all elements of the skeleton; child	white	-						
	vessel 4	104	fragments of skull and torso bones; adult and child	white	-						
vessel 5	52	bones from all elements of the skeleton: child	white	-		child	wielkość i struktura kości	n.d.	-	-	

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feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
121	fill	185	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	f	upper orbital margin, preauricular groove, mastoid process	lesions in the area of the right mandibular fossa
	vessel 1 (urn)	400	bones from all elements of the skeleton	white	unidentified bones						
	vessel 2	114	bones from all elements of the skeleton	white	–						
	vessel 3	67	bones from all elements of the skeleton	white	unidentified bones						
	bottom	379	bones from all elements of the skeleton	white	–						
122	fill	7	fragments of skull and limb bones	white	–	1	<1 year	size and structure of bones	n.d.	–	–
123	vessel 1 (mug)	2.5	isolated heavily fragments of human bone, unidentified	white	–	1	<1 year	size and structure of bones	n.d.	–	–
124	vessel 1 (bowl)	162	bones from all elements of the skeleton	white	–	1	>3 years	size and structure of bones	n.d.	–	cribra orbitalia faza II
	fill	128	bones from all elements of the skeleton	white	–						
124a	fill	15.4	fragments of skull, axial skeleton and unidentified bones	white	–	1	>3 years	degree of ossification of the skeleton	n.d.	–	–
125	fill	586	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	m?	massiveness of the skeleton	very massive
	vessel 1	9	fragments of skull and unidentified bones	white	unidentified bones						
	bottom	547	bones from all elements of the skeleton	white	–						
126	fill	78	mainly fragments of skull and axial skeleton	white	–	1	>3 years	degree of ossification of the skeleton	n.d.	–	–
	vessel 3	0.5	isolated heavily fragments of human bone, unidentified	white	–						
127	fill	24	fragments of skull, axial skeleton and unidentified bones	white	–	1	>3 years	degree of ossification of the skeleton	n.d.	–	–
128	fill	1,013	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	m?	supramastoid crest	–
	vessel 2 (urn)	690	bones from all elements of the skeleton	white	–						

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feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
128	vessel 3	4	fragment of a distal end of a rib, phalanx fragment, tooth root	white	–					–	–
129	fill of feature 743	826	bones from all elements of the skeleton	white	–	1	35–39 years	auricular surface	?	–	–
	fill of feature 743A	32	bones from all elements of the skeleton	white	unidentified bones						
130	fill	751	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	f	mastoid process, external occipital protuberance	–
131	fill	727	bones from all elements of the skeleton	white	–						
	vessel 1 (urn)	252	bones from all elements of the skeleton	white	unidentified bones						
	vessel 2	139	isolated fragmented human bones, unidentified	white	–	1	adult	bone tissue structure	?	–	–
	vessel 4	7	isolated fragmented human bones, unidentified	white	–						
	bottom	234	bones from all elements of the skeleton	white	yes unidentified bones						
	fill	56	mainly fragments of skull and axial skeleton	white	–						
132	vessel 1 (urn)	402	bones from all elements of the skeleton	white	unidentified bones	1	35–44 years	auricular surface	f	upper orbital margin, mastoid process	lumbar spondylosis
133	fill	421	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	?	–	–
	vessel 1 (urn)	385	bones from all elements of the skeleton	white	unidentified bones						
134	fill	820	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	m	mental protuberance, angle of the mandible	lesions of the left mandibular head
135	fill	6	isolated fragments of cranial vault, axial skeleton and upper limb bones	white, black	–	1	adult	bone tissue structure	f	mastoid process	–
136	vessel 1 (urn)	866	bones from all elements of the skeleton	white, black	unidentified bones						
	fill	769	bones from all elements of the skeleton	white	unidentified bones						
	cluster on E side of the feature	27	isolated fragments of bones from all elements of the skeleton	white	–	1	40–44 years	auricular surface	f	mastoid process, angle of the mandible	lesion in the proximal epiphysis of proximal toe phalanx; lesions in the cubital fossa of the right humerus
	vessel 1 (urn)	301	bones from all elements of the skeleton	white	unidentified bones						
	vessel 2	18	isolated fragments of cranial vault, axial skeleton and lower limb bones	white	–						

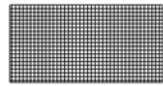
Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	MNI	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
137	fill	611	bones from all elements of the skeleton	white	–						
	vessel 2	1	isolated heavily fragmented human bone, unidentified	white	unidentified bones	1	adult	bone tissue structure	?	–	–
138	vessel 1 (urn)	134	bones from all elements of the skeleton, mainly cranial vault and axial skeleton fragments	white	–	1	approx. 4 years	degree of ossification of the skeleton and dental development	n.d.	–	–
139	fill	17	fragments of skull and limb bones	white	–	1	42nd–50th week, prenatal	size and structure of bones	n.d.	–	–
140	fill	166	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	?	–	–
141	fill	28	bones from all elements of the skeleton	white	–	1	<1 year	size and structure of bones	n.d.	–	–
142	fill	20	fragments of skull and unidentified bones	white	–						
	vessel 2	12	isolated heavily fragmented human bone, unidentified	white	–	1	child	stopień rozwoju zębów	n.d.	–	–
	vessel 3	animal bones	–	white	unidentified bones						
	vessel 4	2	isolated heavily fragmented human bone, unidentified	white	unidentified bones						
143	fill	260	bones from all elements of the skeleton	white	unidentified bones	1	adult	bone tissue structure	m?	external occipital protuberance	lesions in the area of the femoral head
	vessel 1 (urn)	747	bones from all elements of the skeleton	white	unidentified bones						
144	fill	858	bones from all elements of the skeleton	white	–						
	vessel 1	8	isolated fragments of cranial vault, axial skeleton and unidentified bones	white	–	1	adult	bone tissue structure	f	mastoid process, supra-mastoid crest	lesions in the area of the femoral head
	vessel 2	2.5	skull bone fragments	white	–						
145	vessel 3	9	isolated fragments of skull and limb bones	white	–						
	fill	521	bones from all elements of the skeleton	white	yes unidentified bones	1	adult	bone tissue structure	?	–	new subperiosteal bone on a long bone shaft fragment
146	fill	238	bones from all elements of the skeleton	white	–	1	adult	bone tissue structure	?	–	–

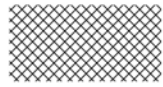
Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.

feature	context	bone weight [g]	represented skeletal elements	bone colour	animal bone admixture	M N I	wiek	age determination method	sex	sex determination method	palaeopathological observations/remarks
147	fill	–	buds of upper and lower premolars and molars, indicating an age of up to 6–7 years	unburnt	?	1	<7 years	degree of dental development	n.d.	–	–

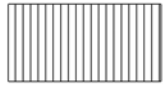
Table 1. Anthropological analysis results for Brudnice site V, Žuromin County.



black



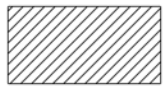
brown and black



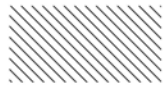
dark brown



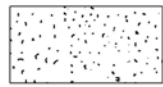
brown



light brown



brown and yellow



virgin soil



pottery



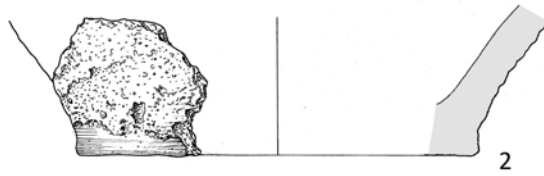
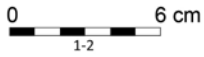
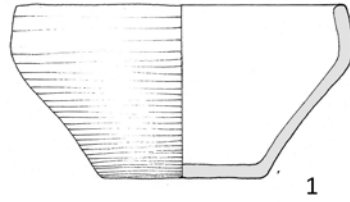
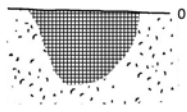
stones



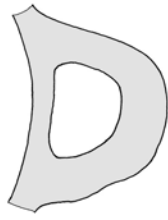
burnt bones



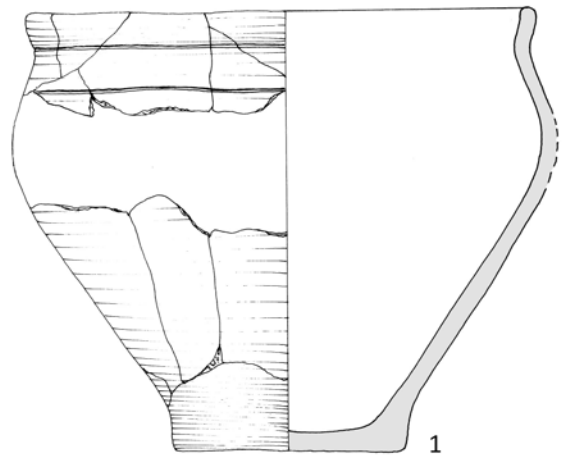
Grave A



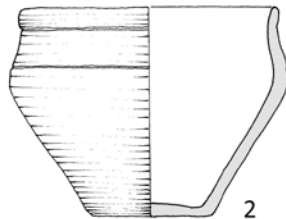
Grave B



3



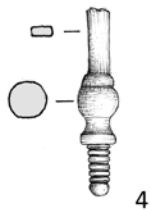
1



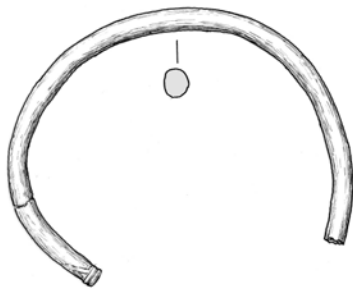
2



Grave C



4



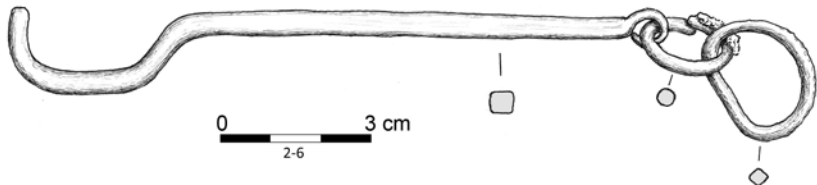
3



2



5



6

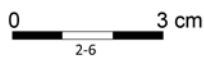


Plate I. Features A: 1, 2 – clay; B: 1–3 – clay; C: 2–4 copper alloy; 5–6 – iron.

Grave D

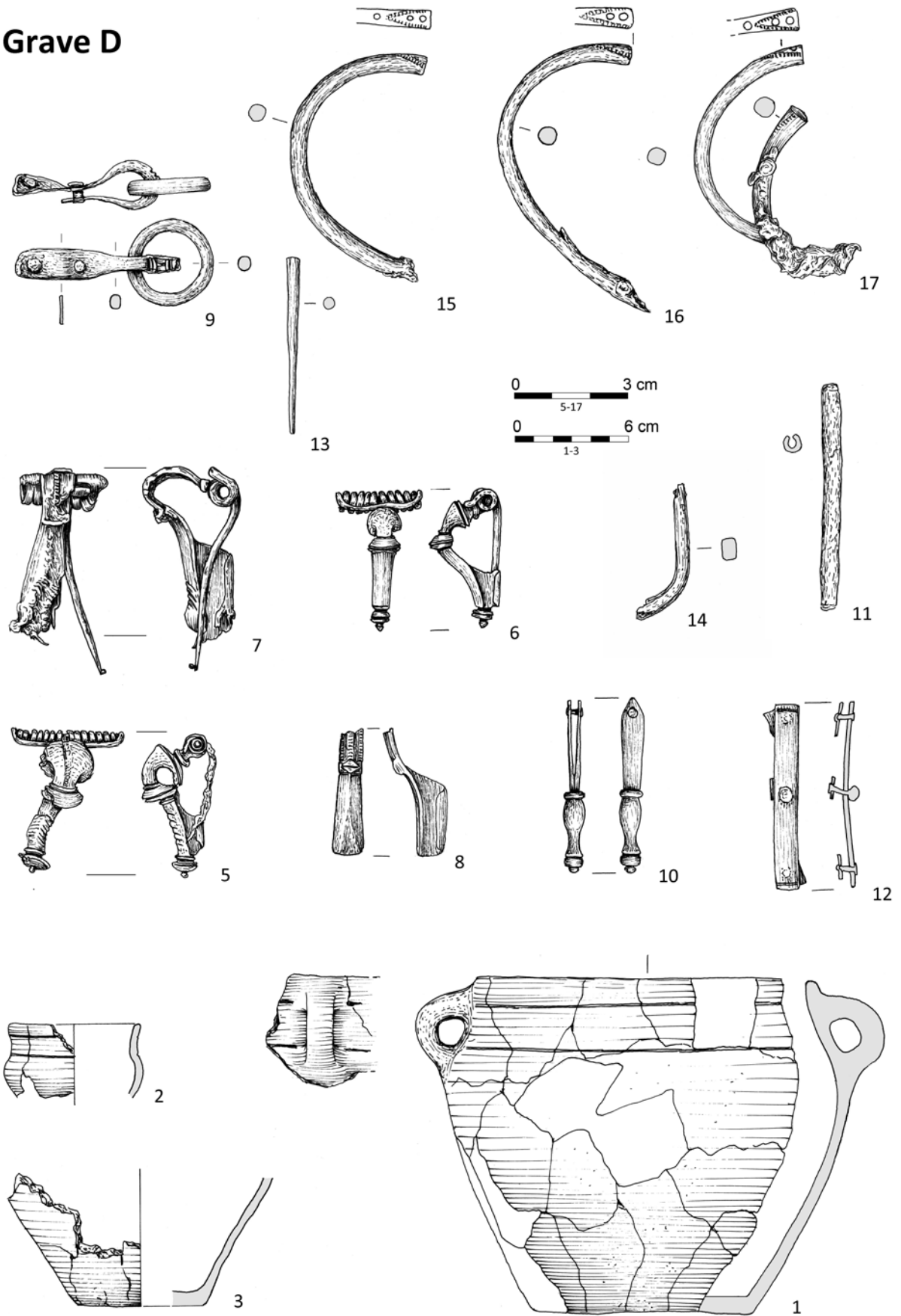


Plate II. Feature D: 1-3 - clay; 5-10, 15-17 copper alloy; 11-14 - iron.

Grave E

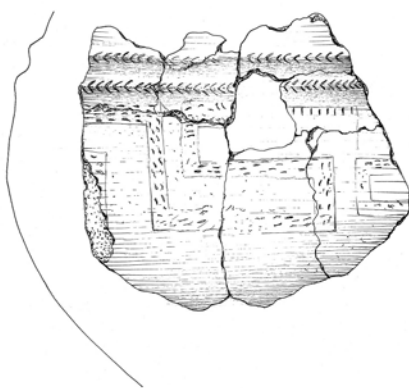
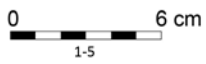
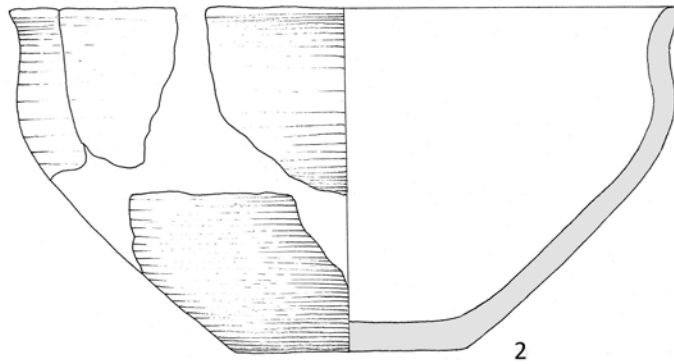
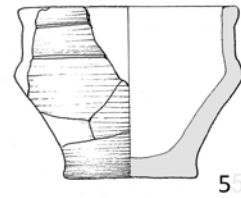
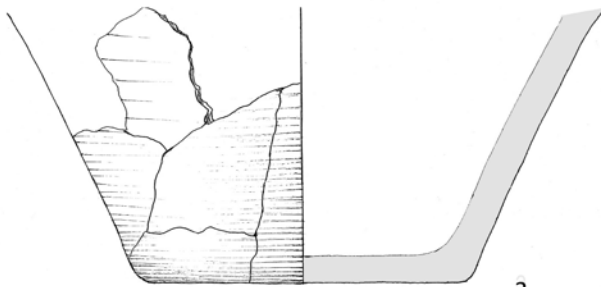
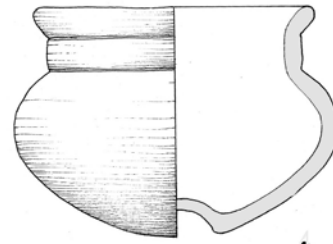
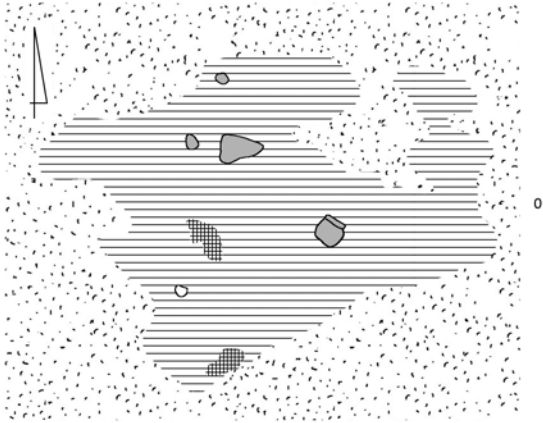
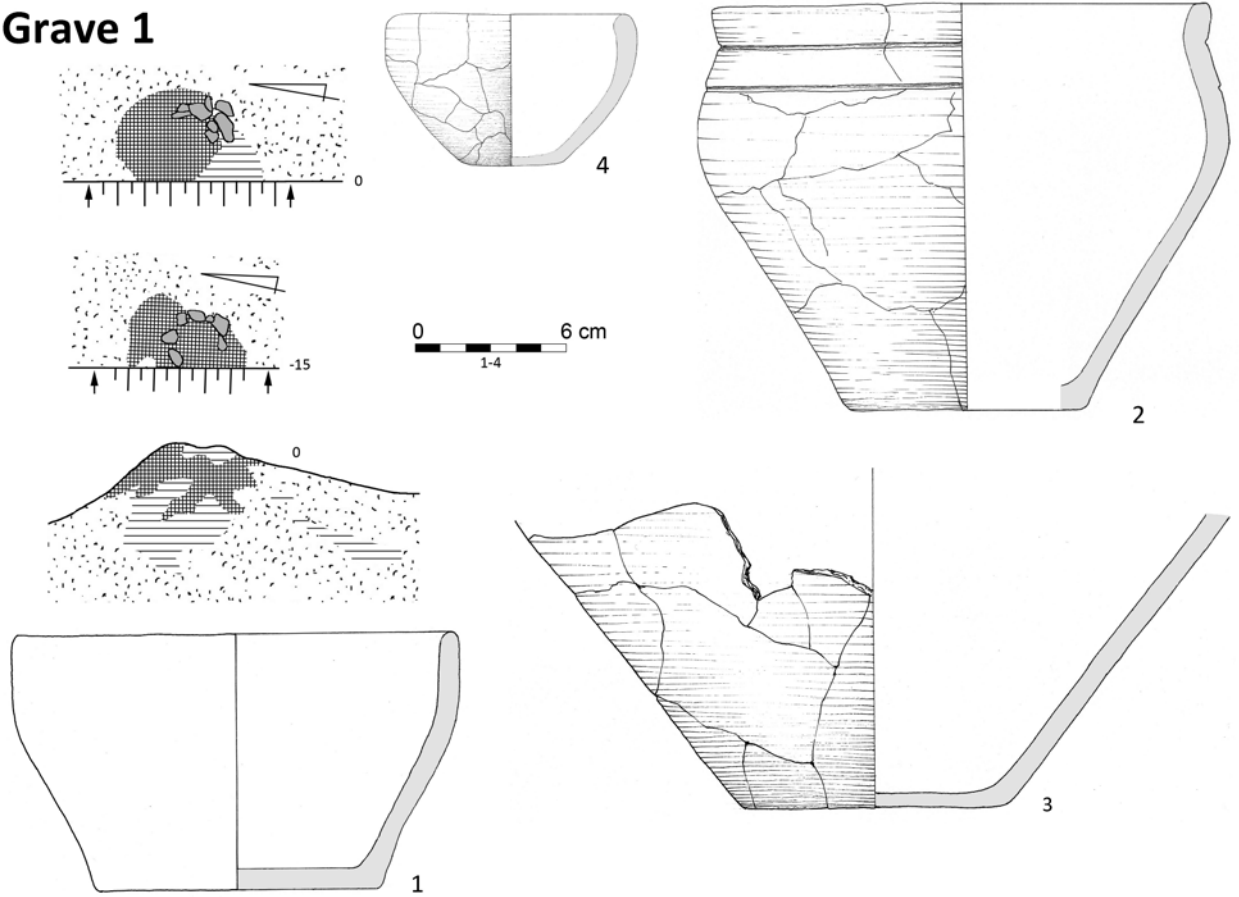


Plate III. Feature E: 1-5 - clay.

Grave 1



Grave 2

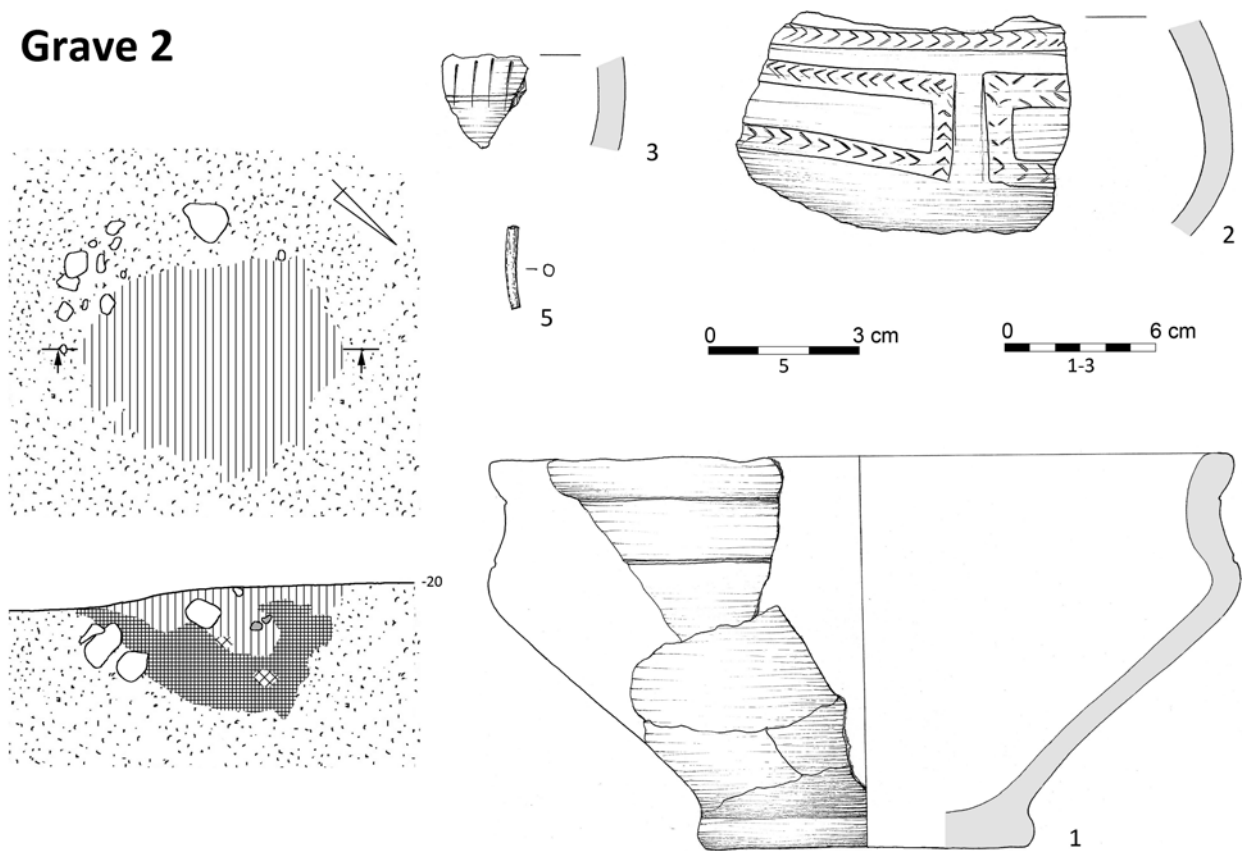
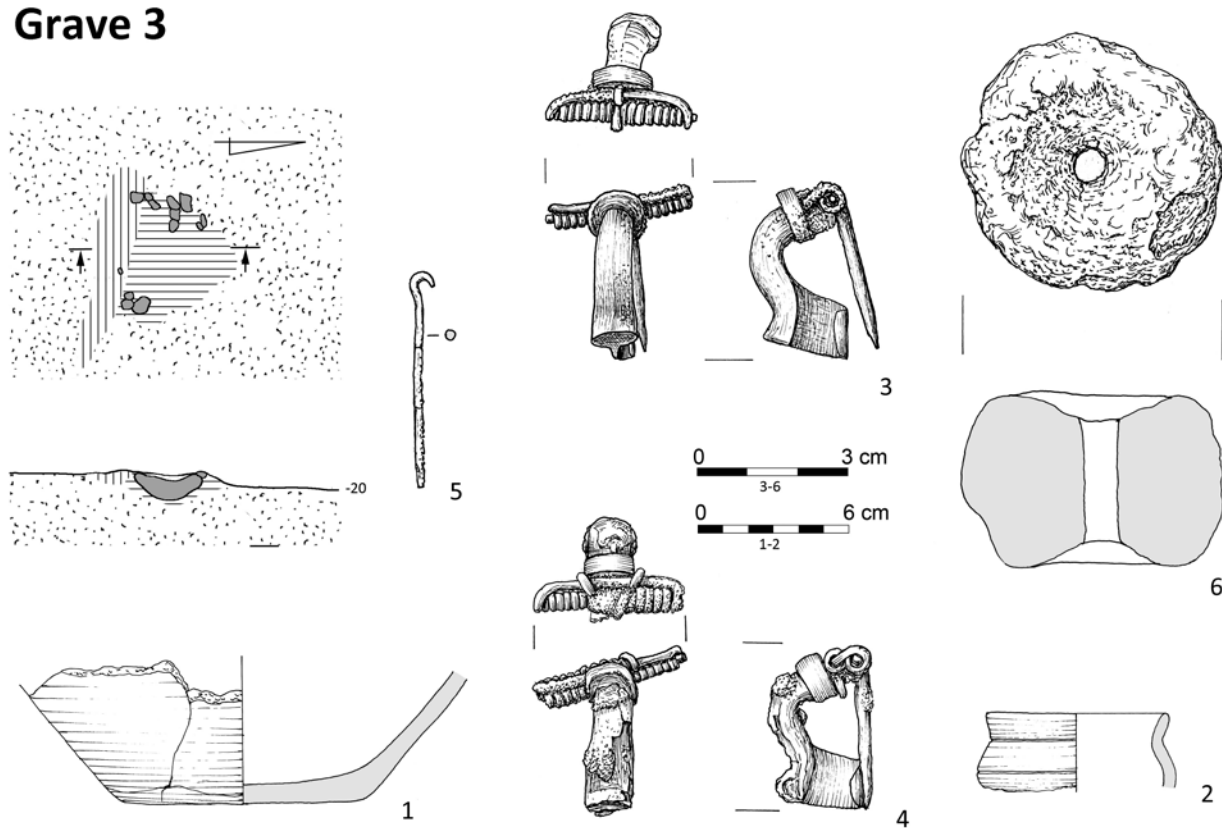


Plate IV. Grave 1: 1-4 clay. Grave 2: 1-3 - clay, 5 - antler.

Grave 3



Grave 4

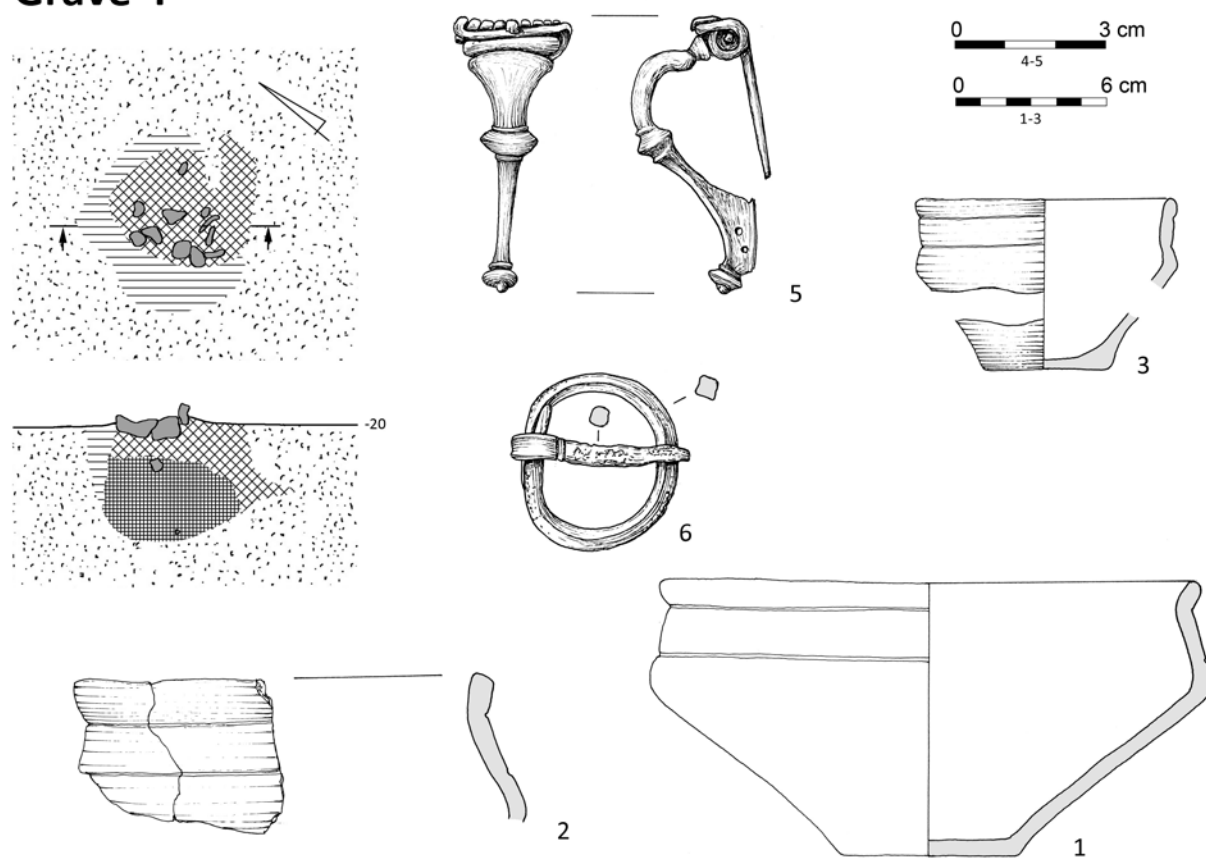
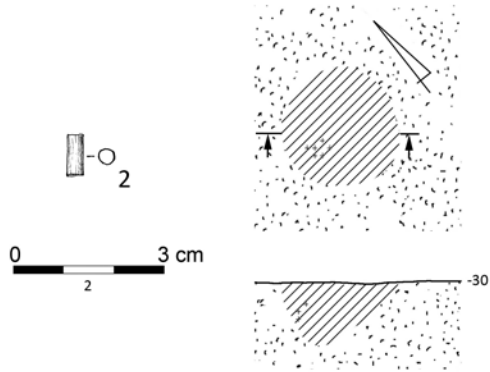
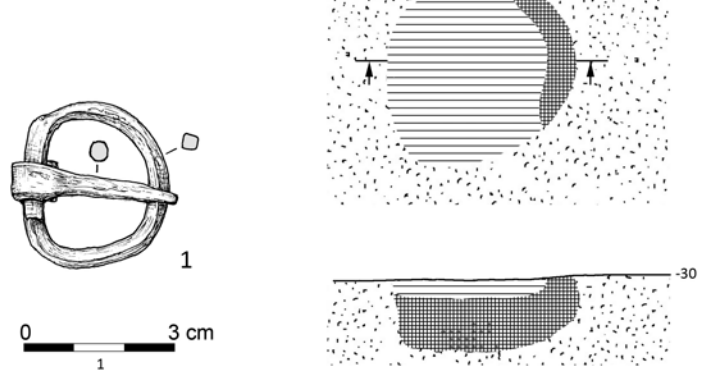


Plate V. Grave 3: 1, 2, 6 – clay, 3–5 – iron. Grave 4: 1–3 – clay, 4 – copper alloy, 5 – iron.

Grave 6



Grave 9



Grave 5

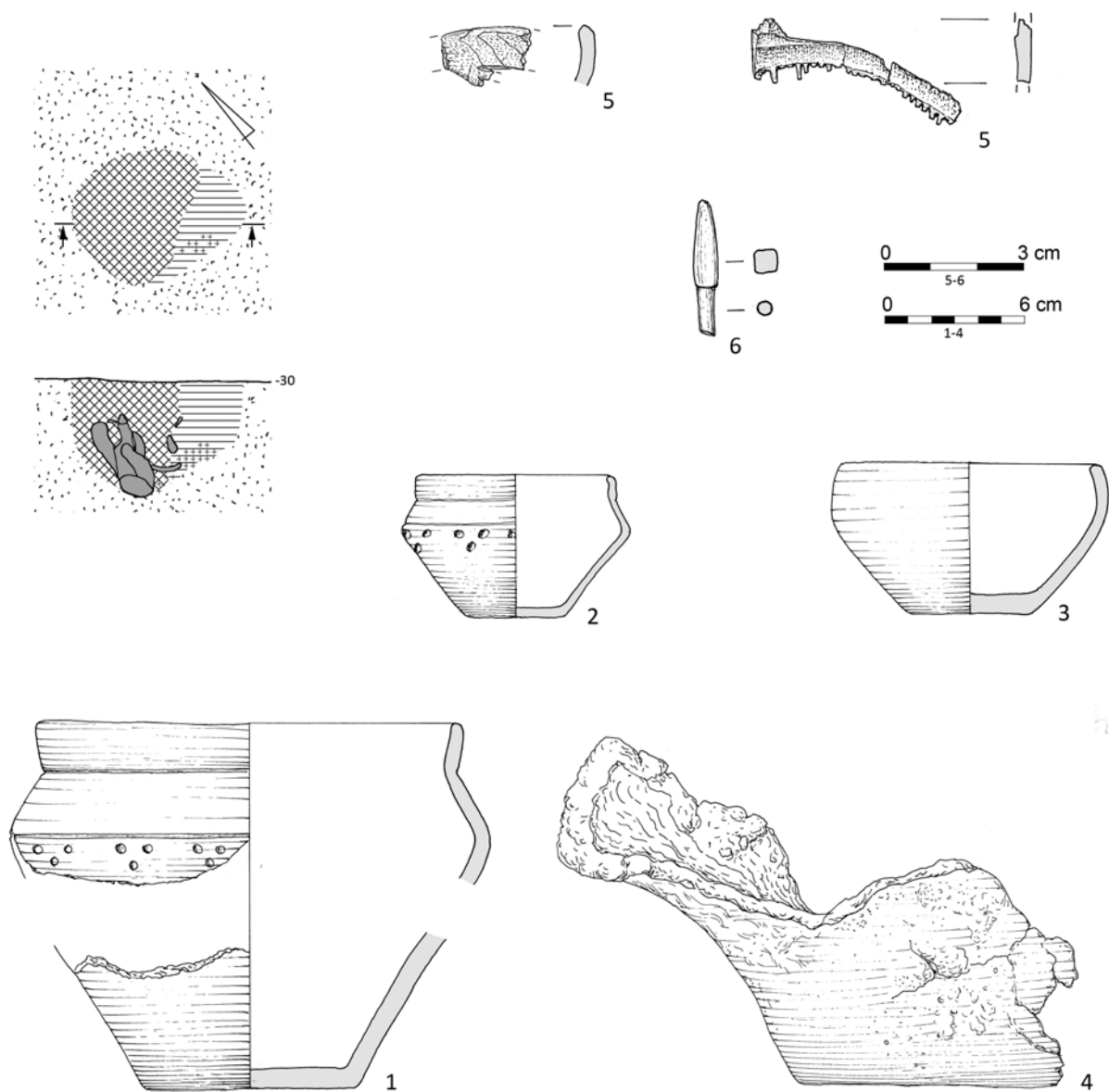
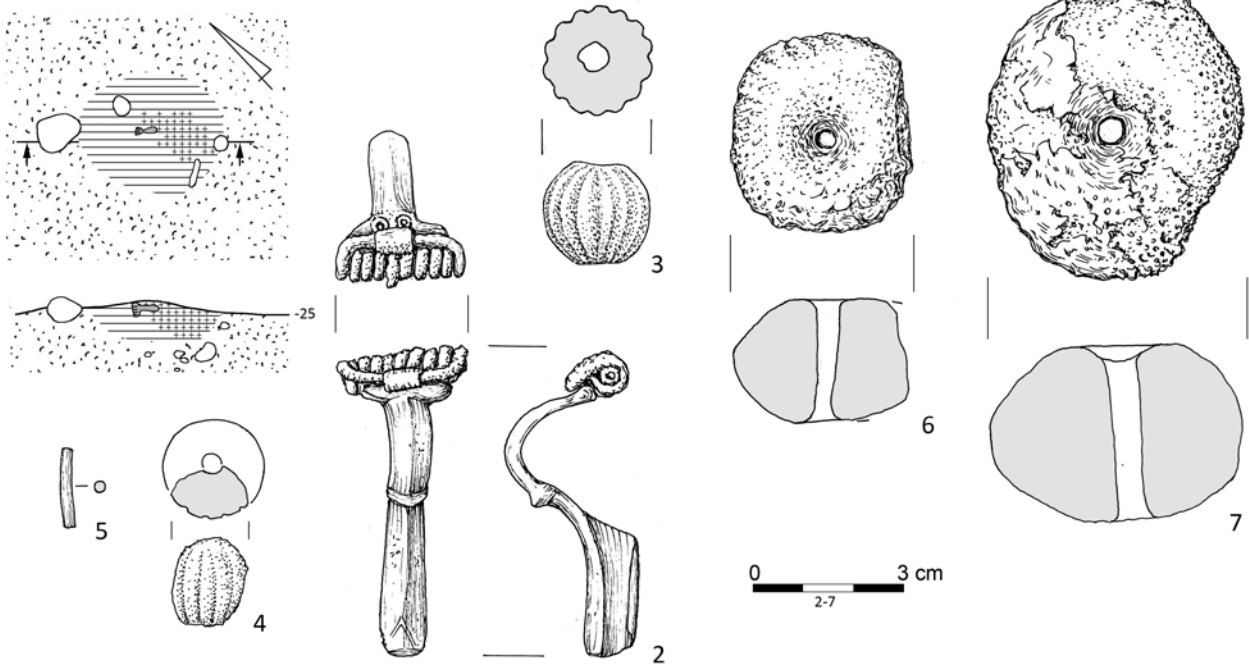


Plate VI. Grave 5: 1-4 – clay, 5-6 – antler. Grave 6: 1 – antler. Grave 9: 1 – iron.

Grave 7



Grave 10

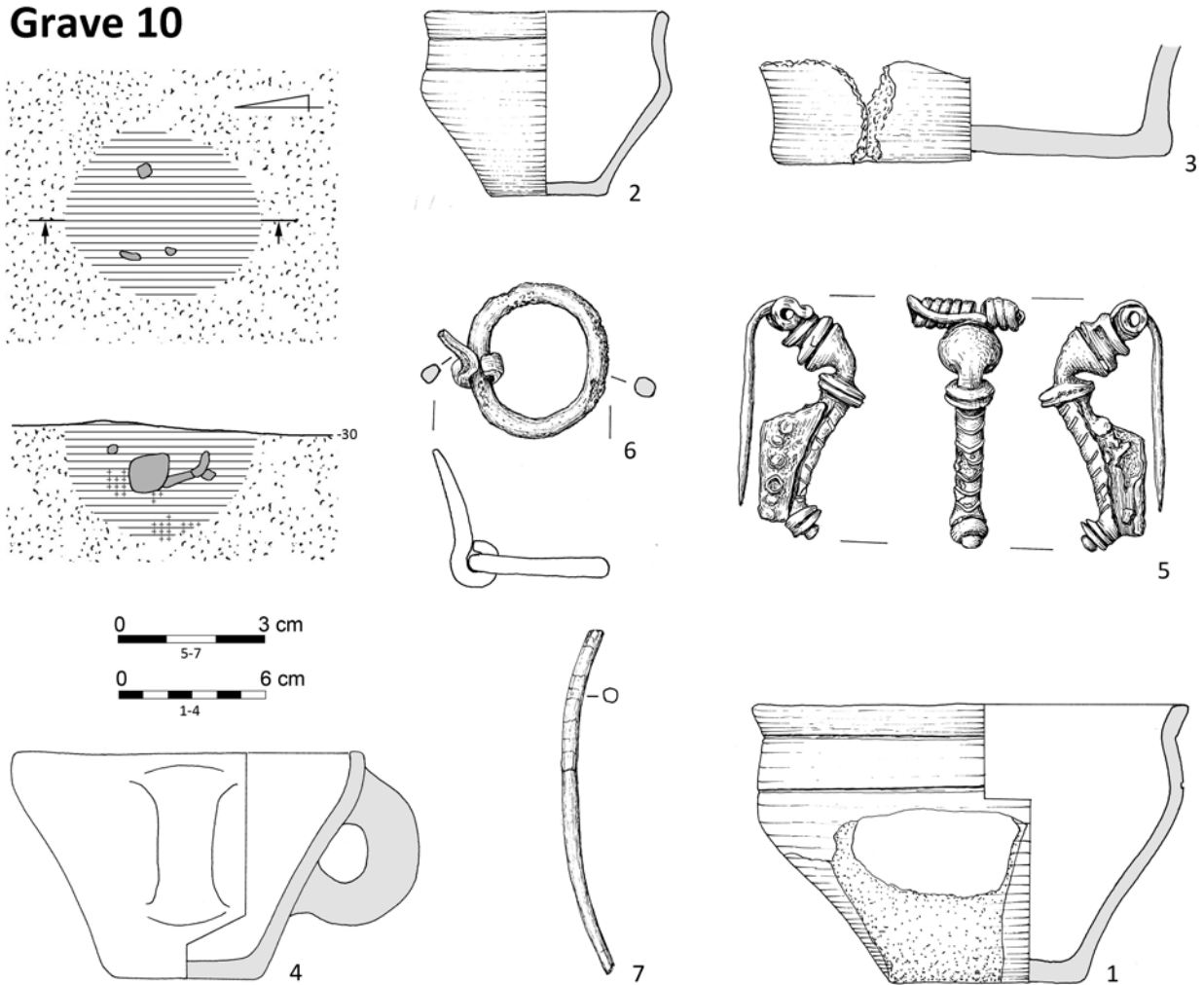
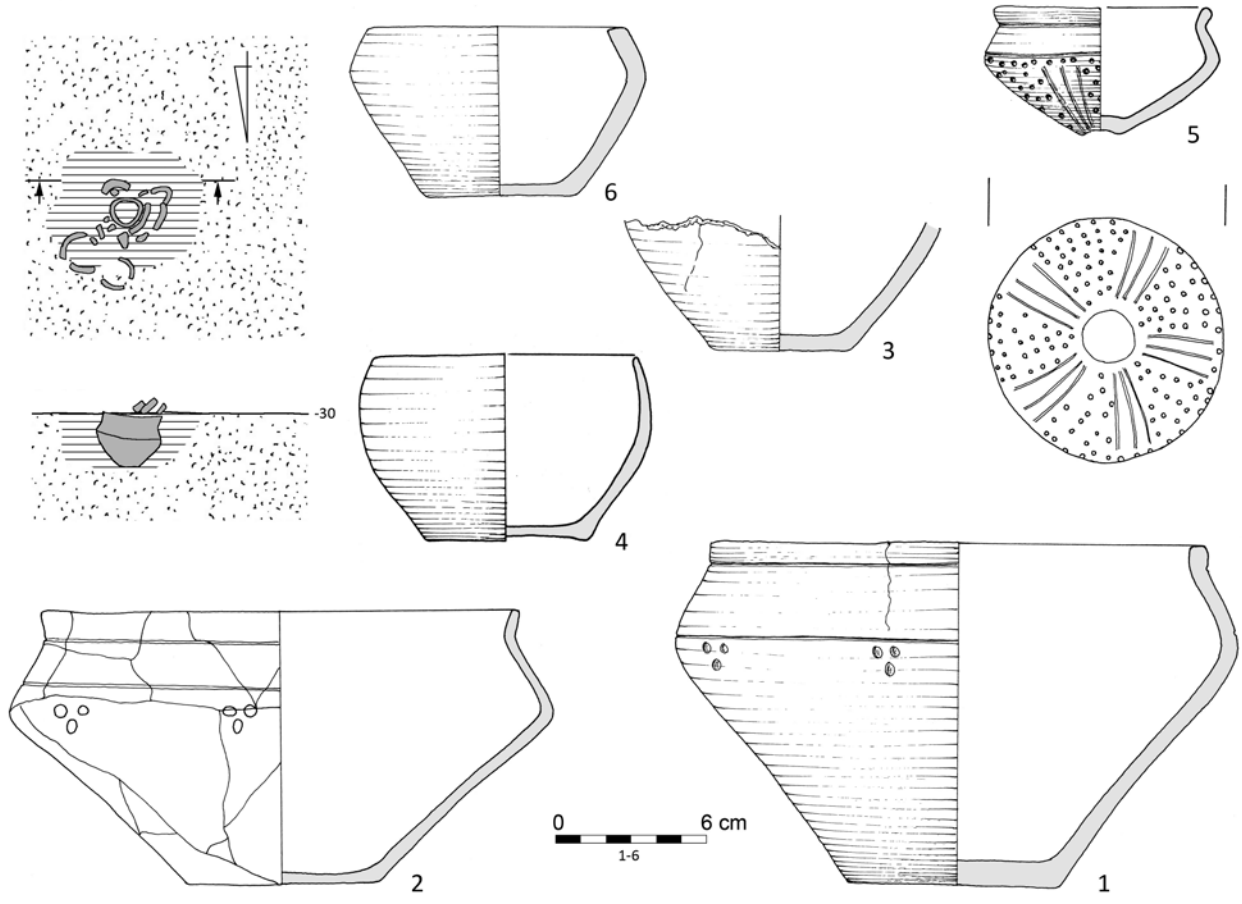


Plate VII. Grave 7: 2 – copper alloy, 3, 4 – faience, 5 – antler, 6, 7 – clay. Grave 10: 1–4 – clay, 5, 6 – iron, 7 – antler.

Grave 8



Grave 11

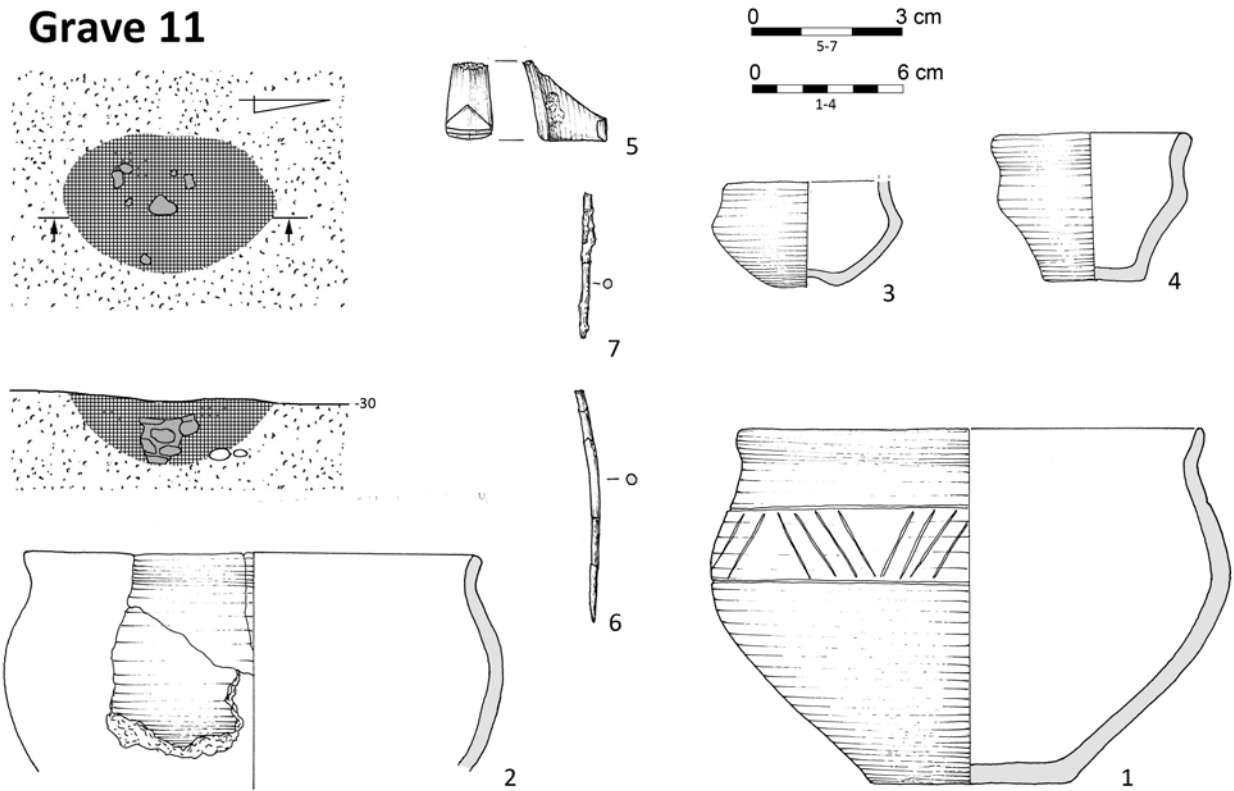


Plate VIII. Grave 8: 1-5 – clay. Grave 11: 1-4 – clay, 5-7 – copper alloy.

Grave 12

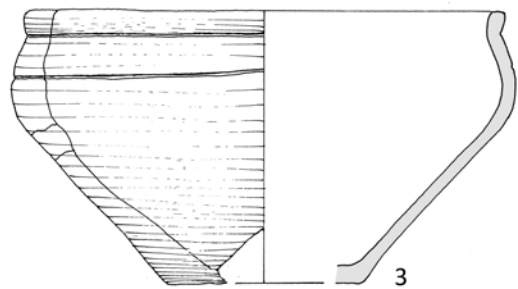
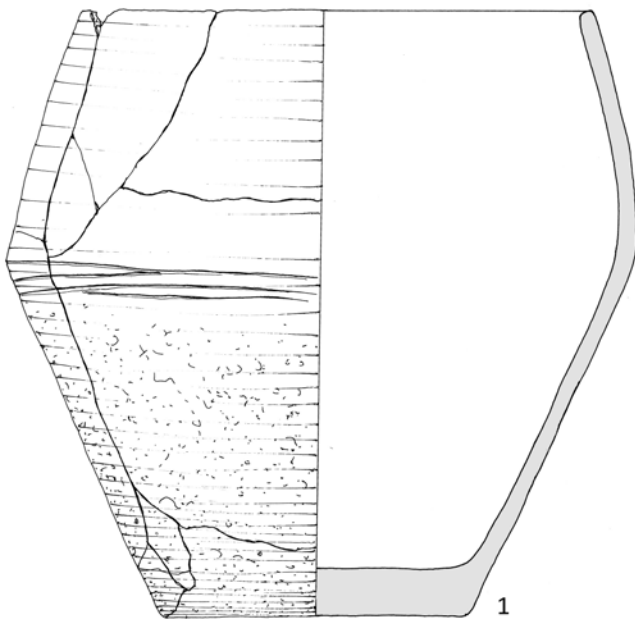
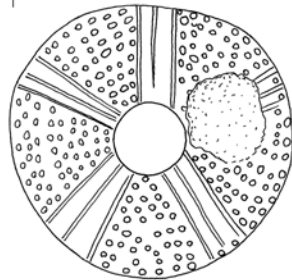
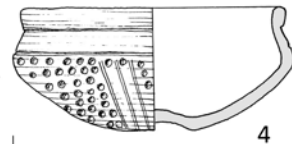
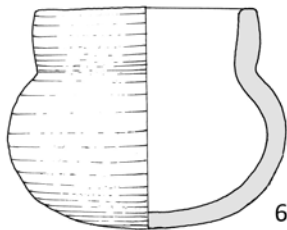
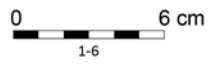
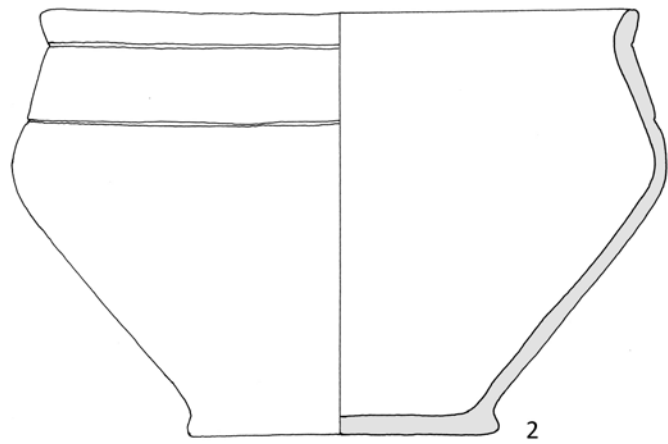
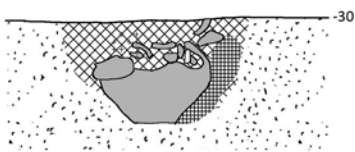
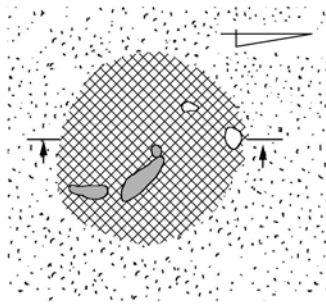


Plate IX. Grave 12: 1-6 – clay.

Grave 13

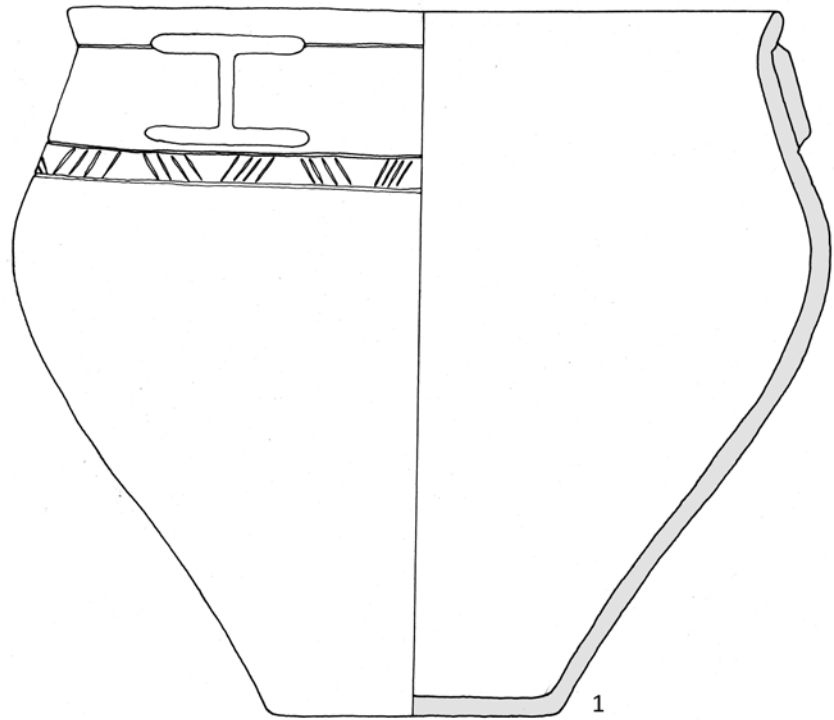
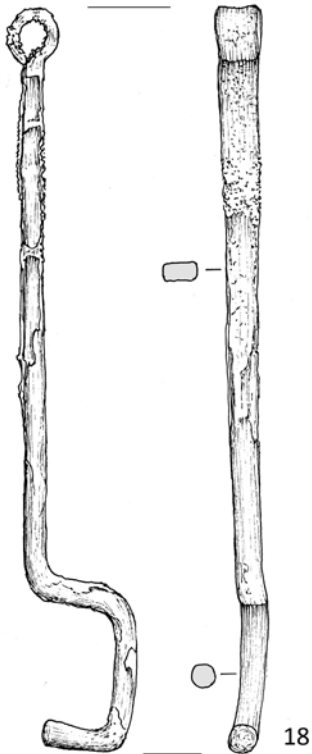
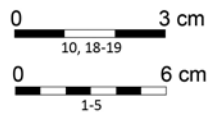
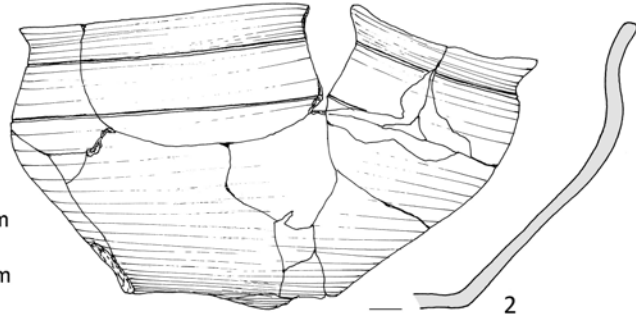
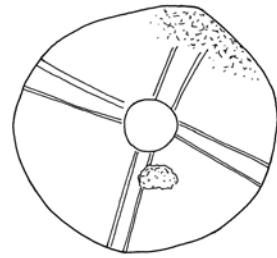
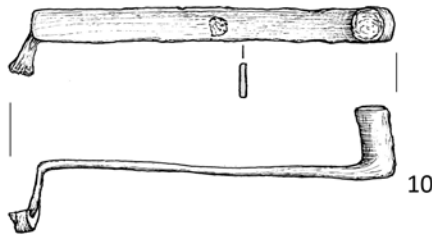
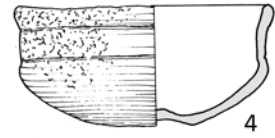
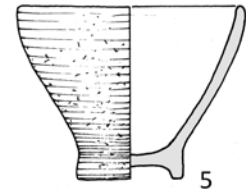
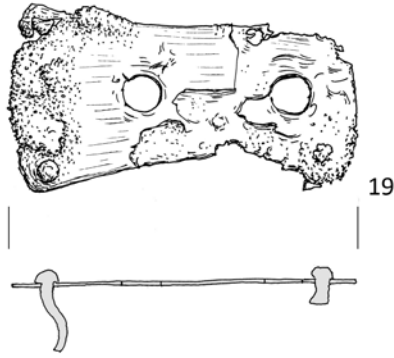
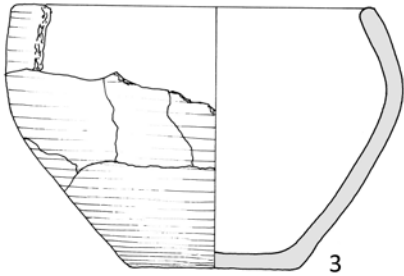
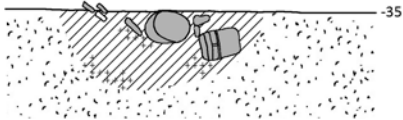
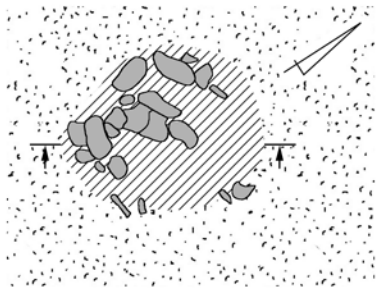
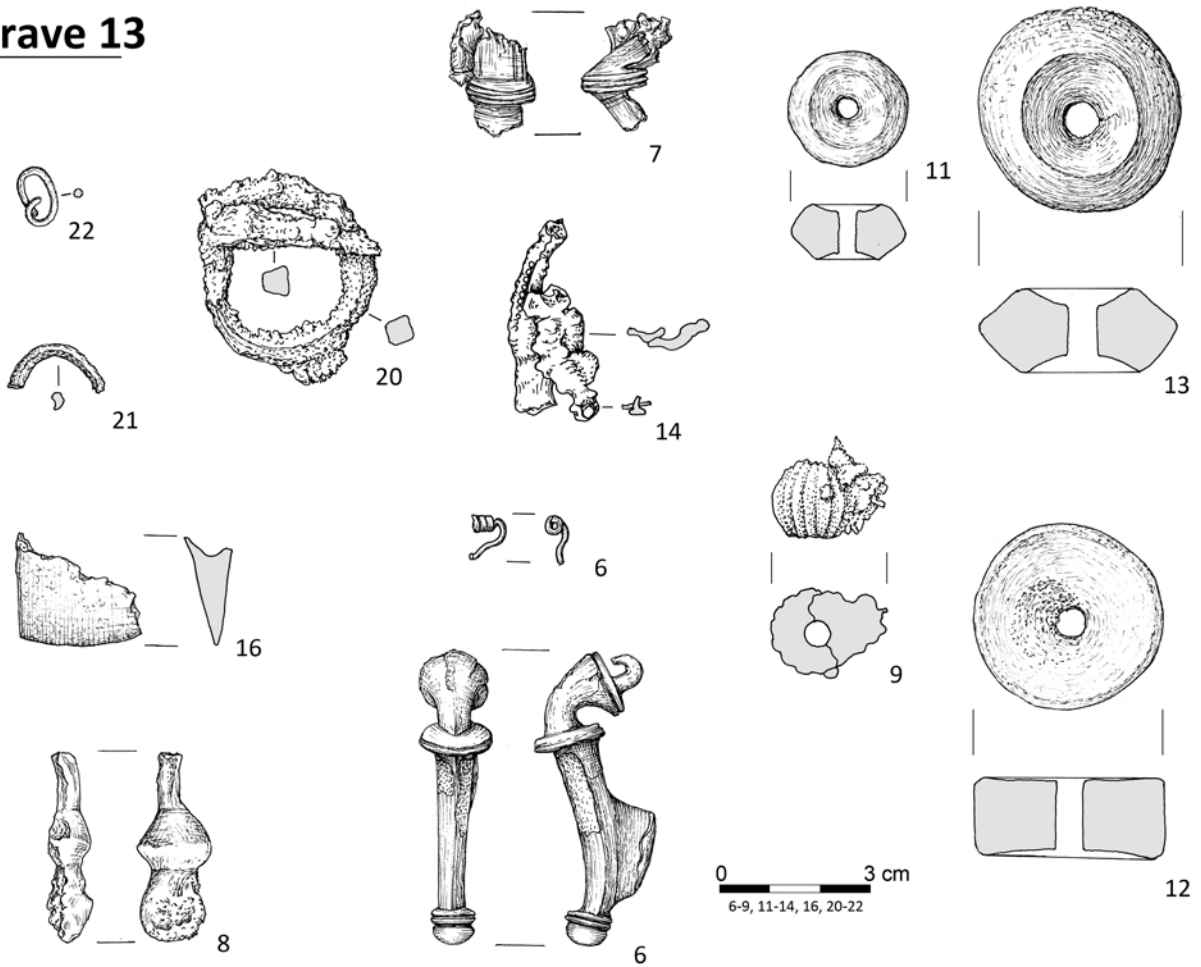


Plate X. Grave 13: 1-5 - clay, 10, 18, 19 - iron.

Grave 13



Grave 14

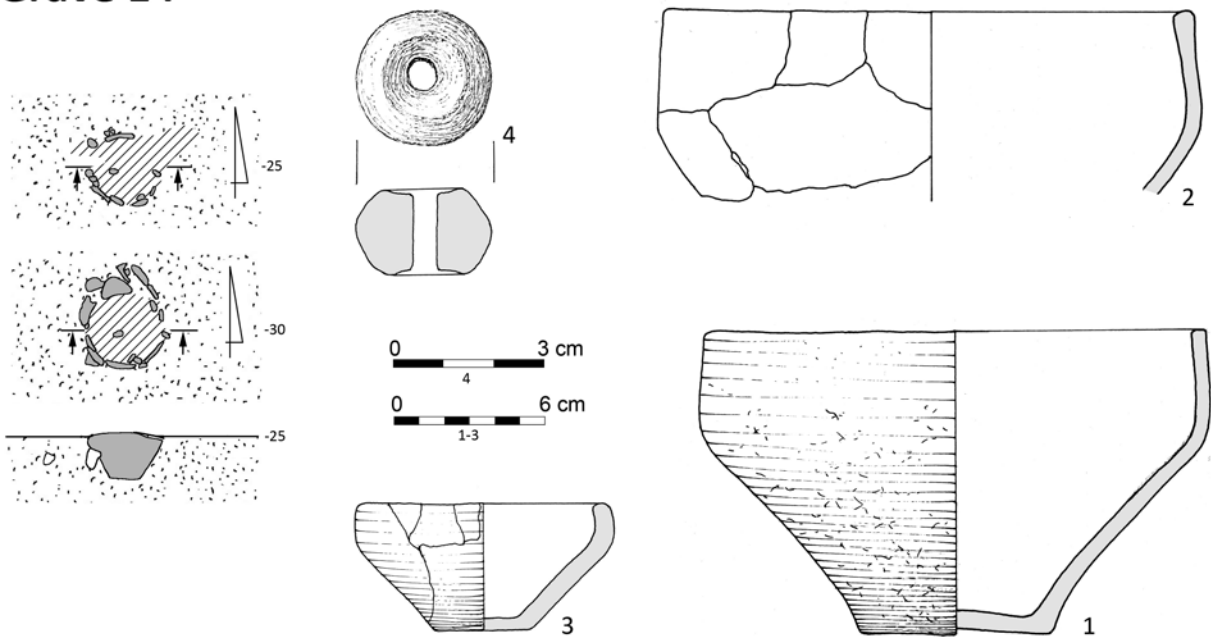
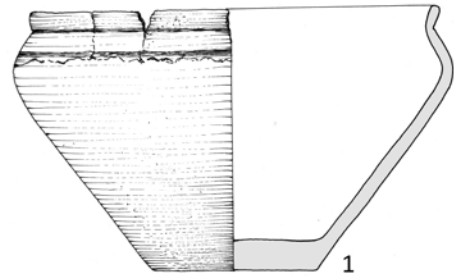
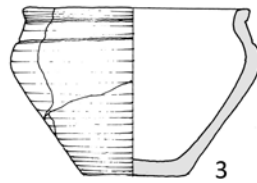
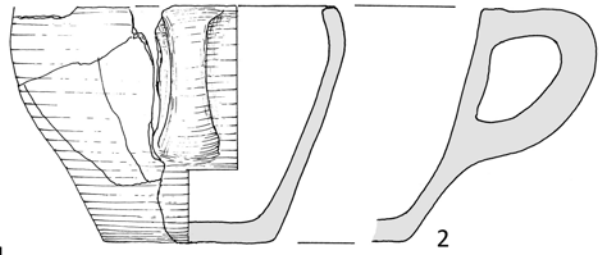
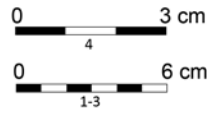
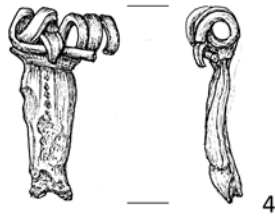
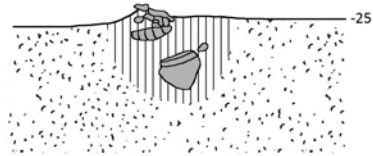
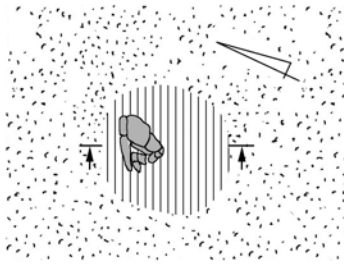


Plate XI. Grave 13: 7, 8, 14 – copper alloy, 9 – faience, 11–13 – clay, 6, 14, 16, 20–22 – iron. Grave 14: 1–4 – clay.

Grave 15



Grave 18

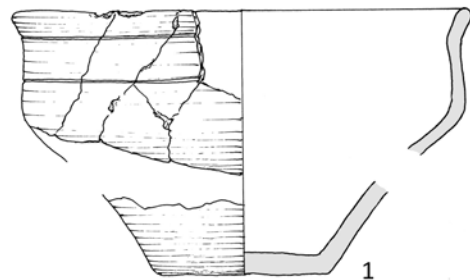
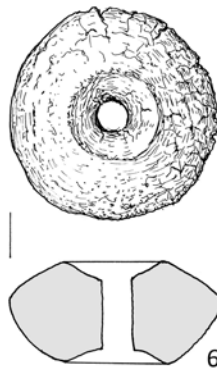
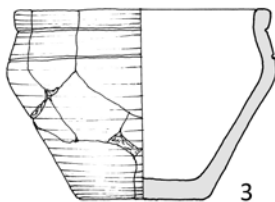
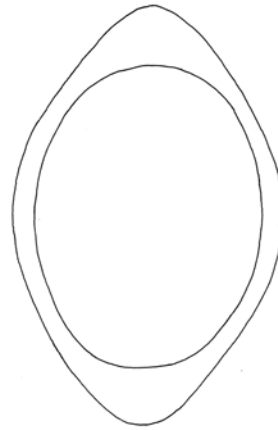
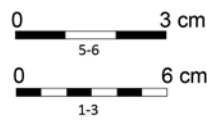
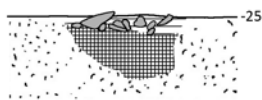
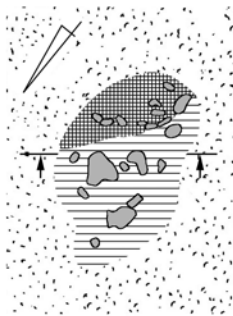
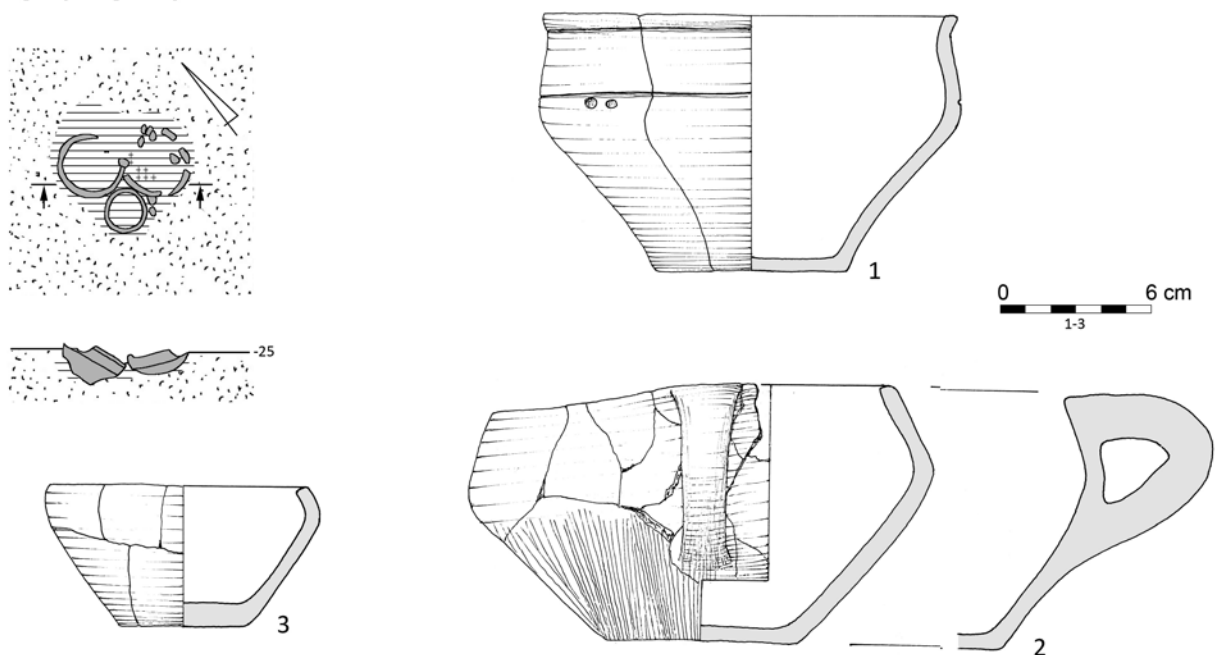
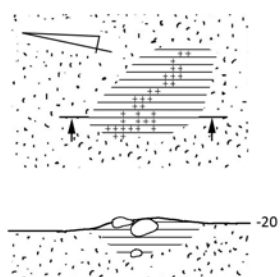


Plate XII. Grave 15: 1 – 3 – clay, 4 – copper alloy. Grave 18: 1–3, 6 – clay, 5 – iron.

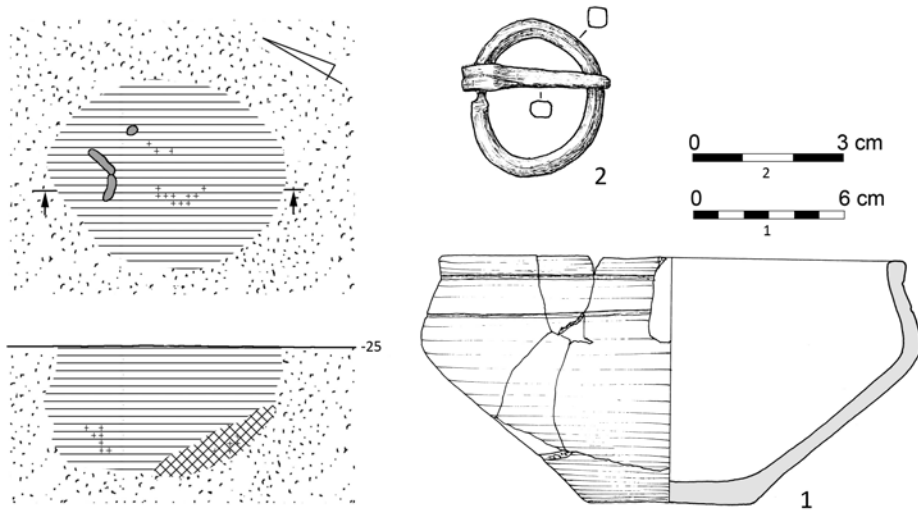
Grave 16



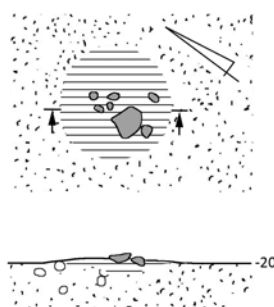
Grave 19



Grave 24



Grave 28



Grave 30

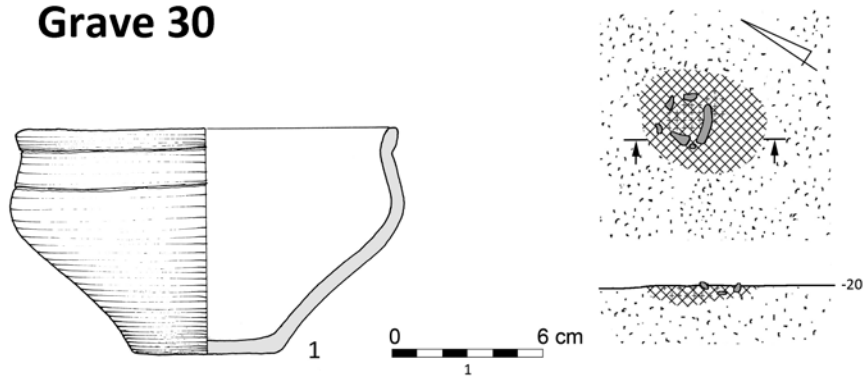


Plate XIII. Grave 16: 1-3 – clay. Grave 19. Grave 24: 1 – clay, 2 – iron. Grave 28. Grave 30: 1 – clay.

Grave 17

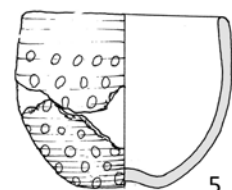
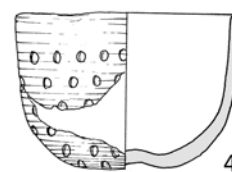
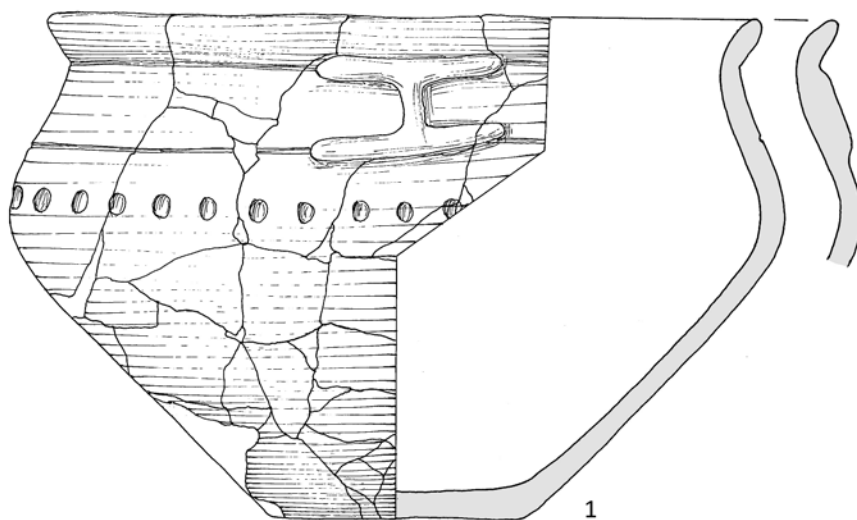
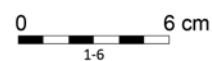
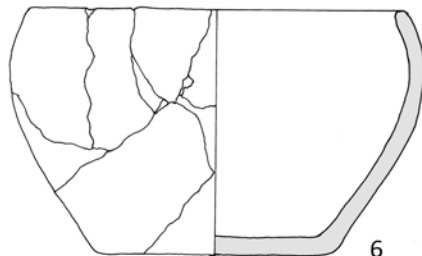
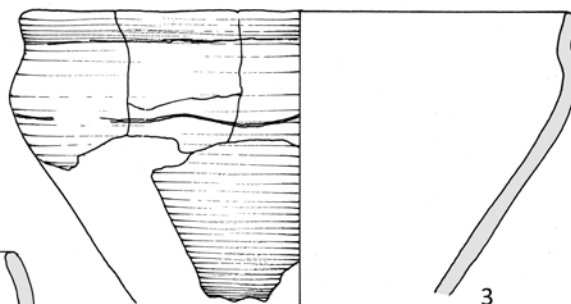
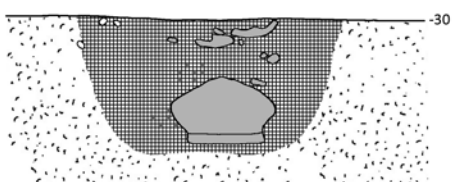
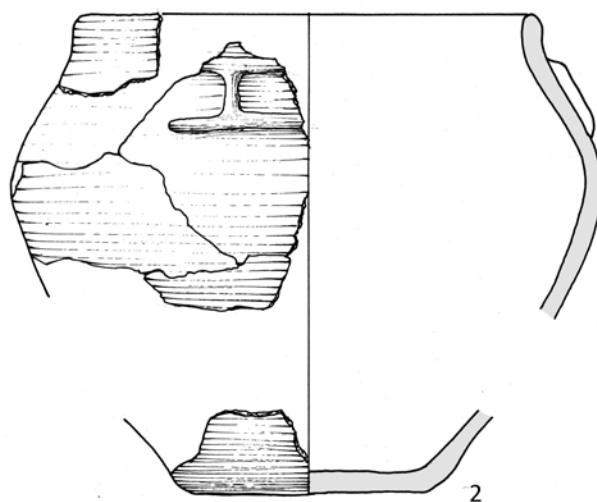
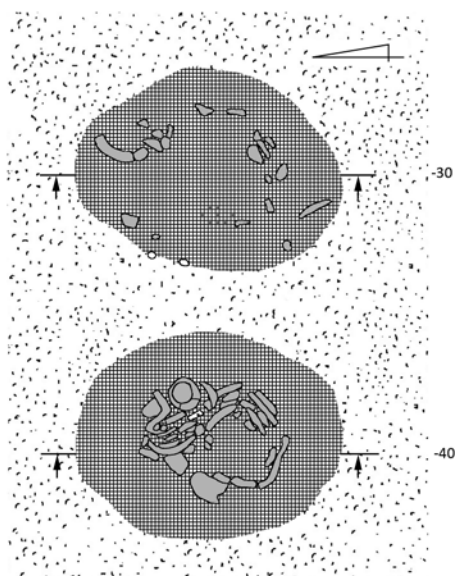
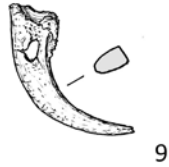
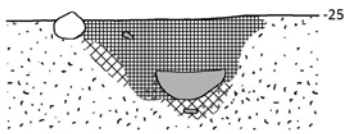
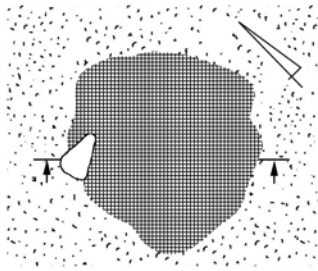


Plate XIV. Grave 17: 1-6 - clay.

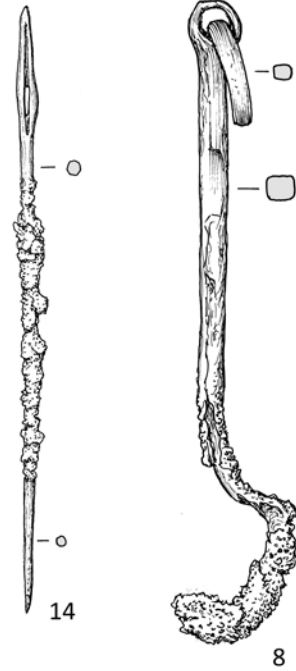
Grave 20



9



12



14

8

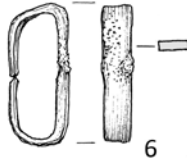


6

6



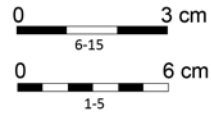
13



6



6



0

3 cm

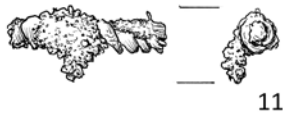
0

6-15

6 cm

0

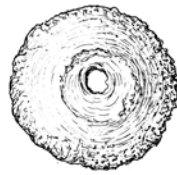
1-5



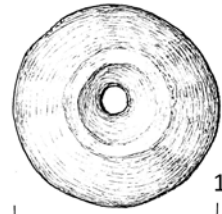
11



7



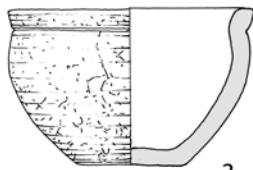
15



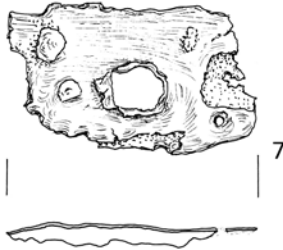
16



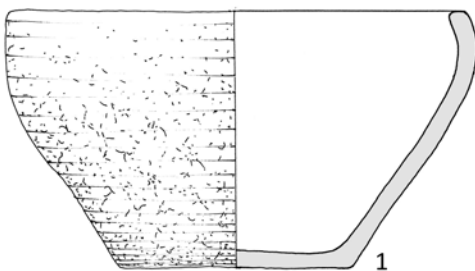
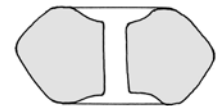
10



3



7



1



4



5



2

Plate XV. Grave 20: 1-5, 15, 16 - clay, 6-8, 13, 14 - iron, 9 - claw, 10-12 - copper alloy.

Grave 21

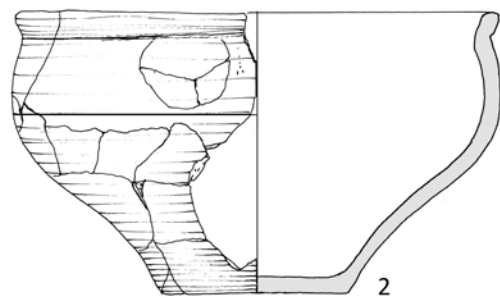
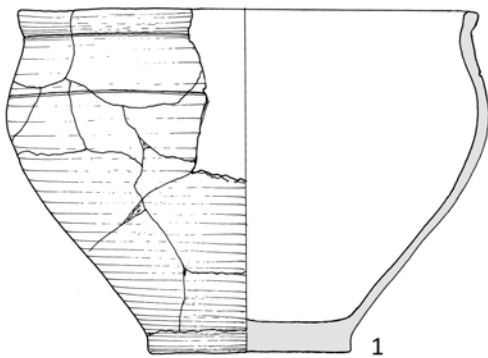
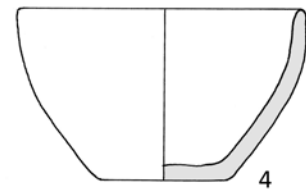
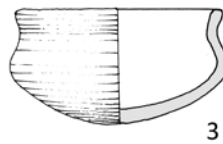
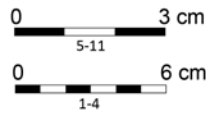
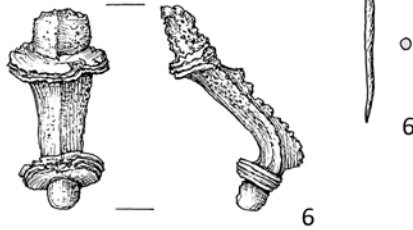
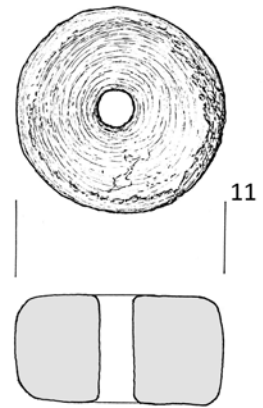
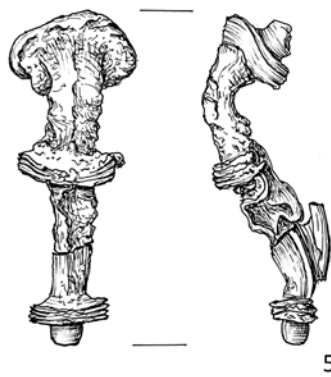
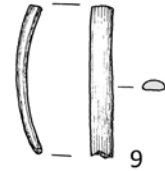
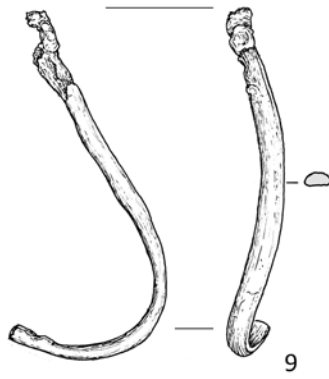
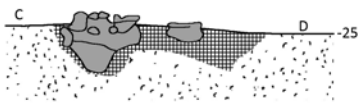
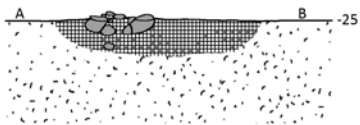
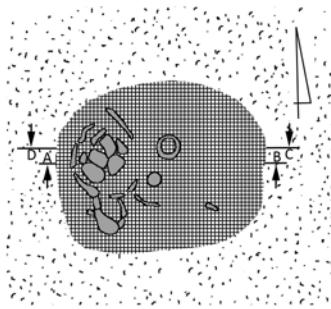


Plate XVI. Grave 21: 1-4, 11 – clay, 5-9 – copper alloy, 10 – iron.

Grave 22

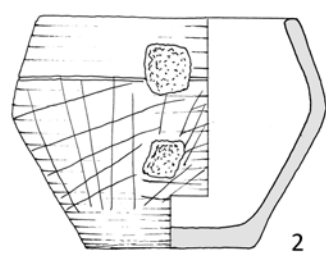
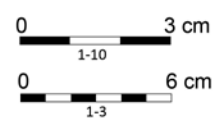
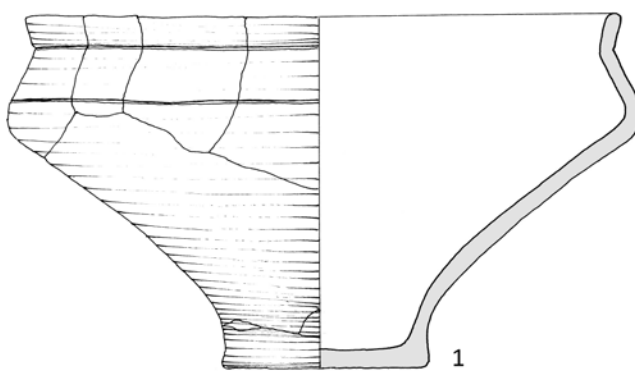
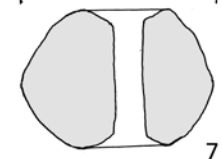
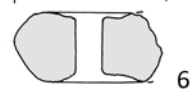
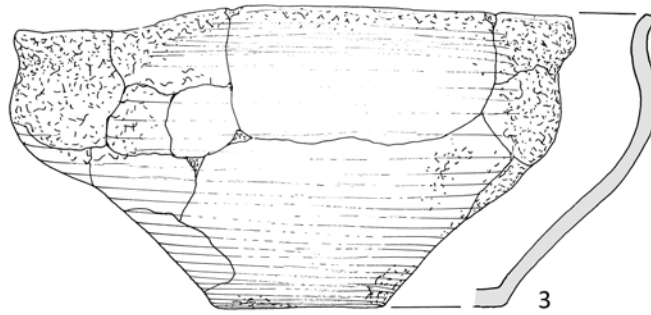
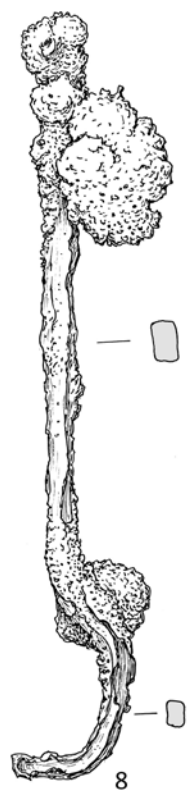
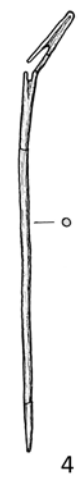
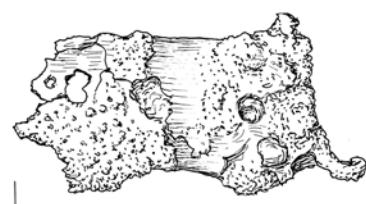
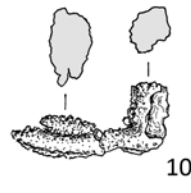
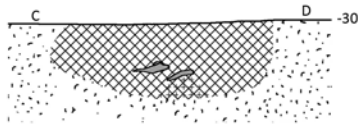
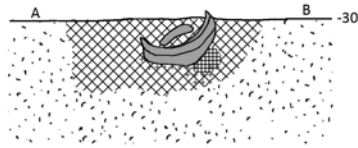
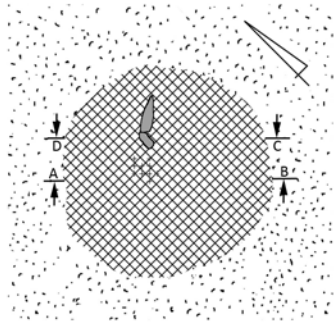


Plate XVII. Grave 22: 1-3, 6, 7 - clay, 4 - copper alloy, 5, 8-10 - iron.

Grave 23

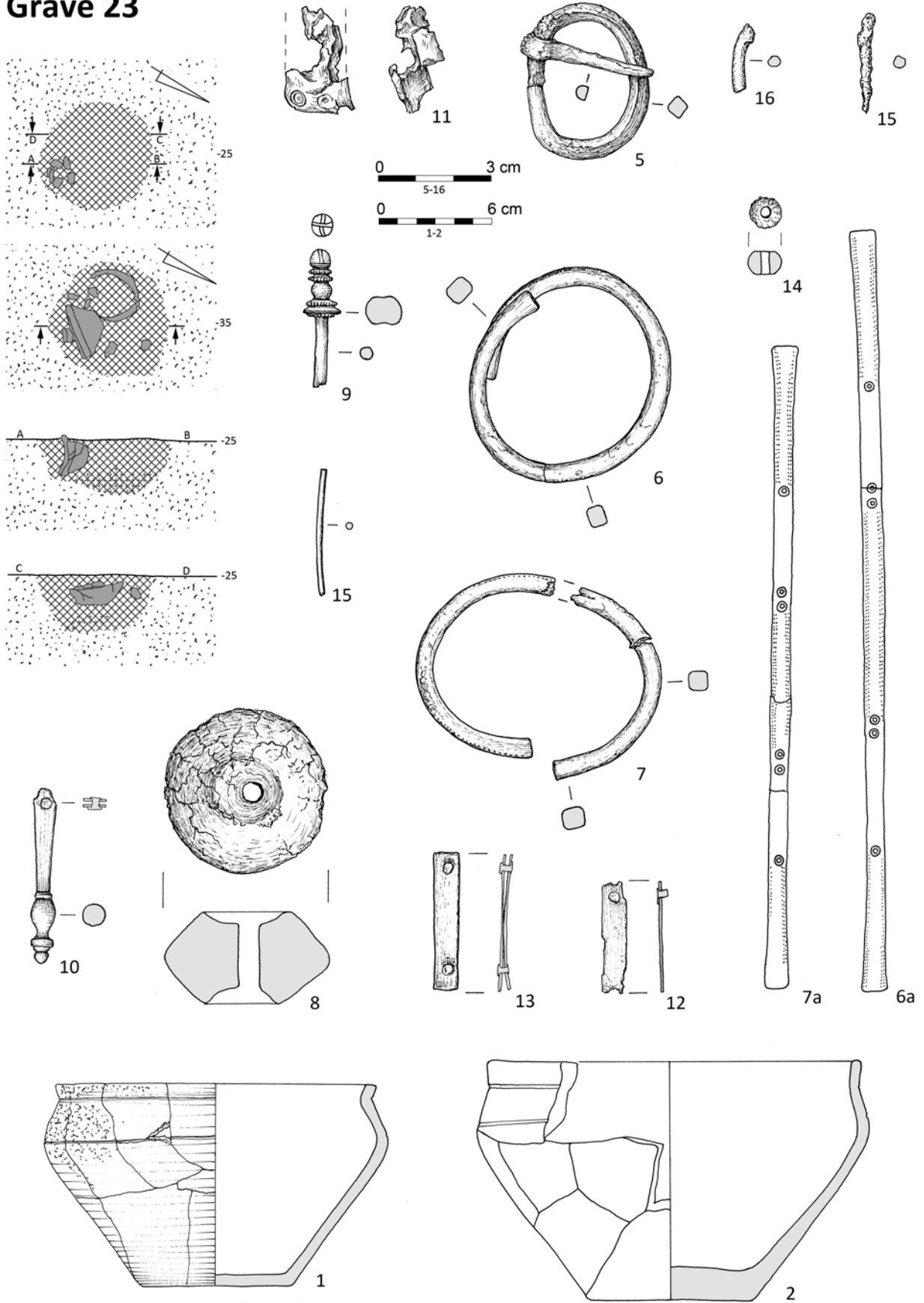
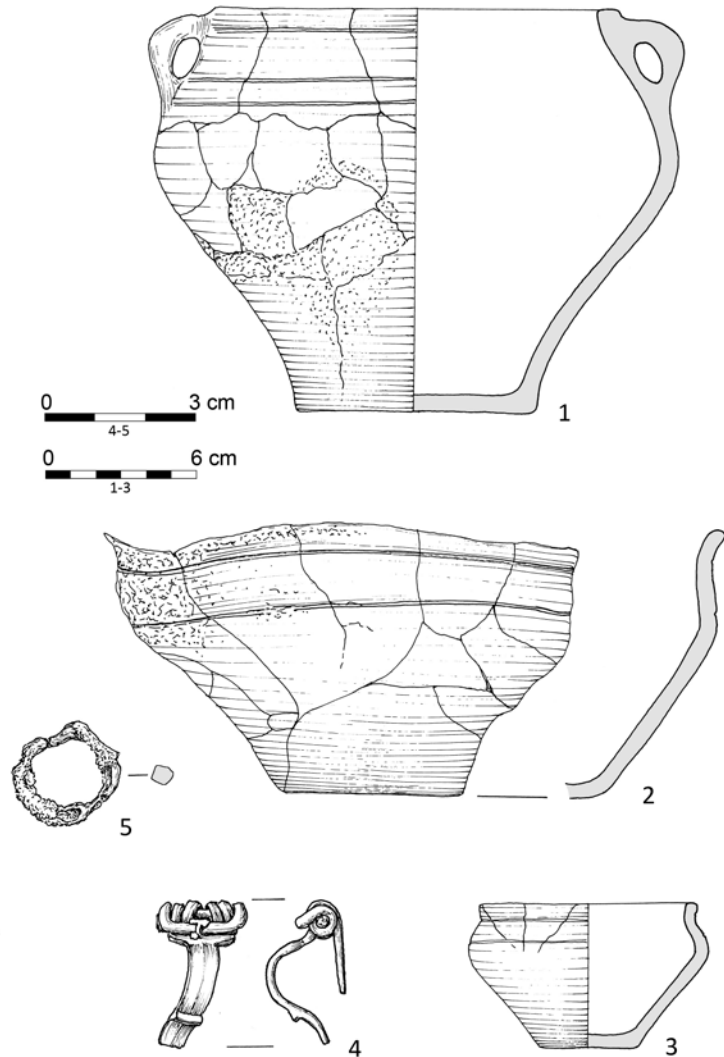
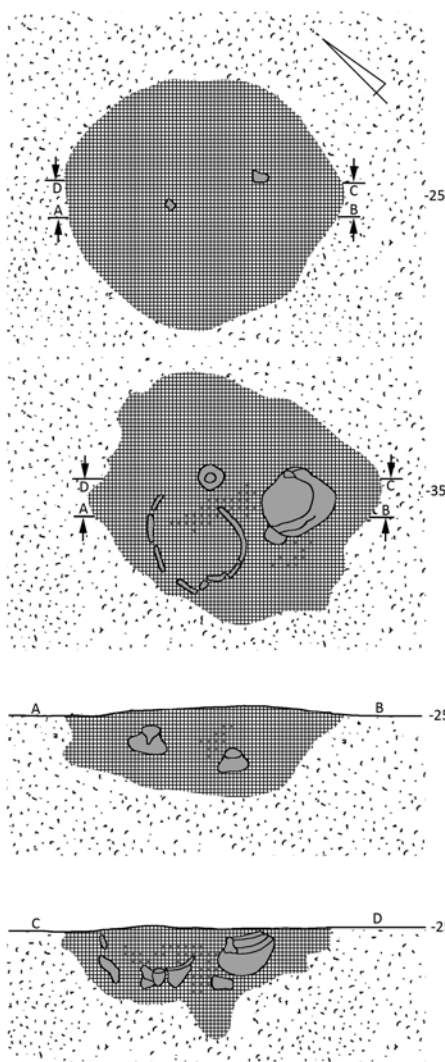


Plate XVIII. Grave 23: 1, 2, 8 – clay, 5 – iron, 6, 7, 9–13, 15, 16 – copper alloy, 14 – glass.

Grave 25



Grave 31

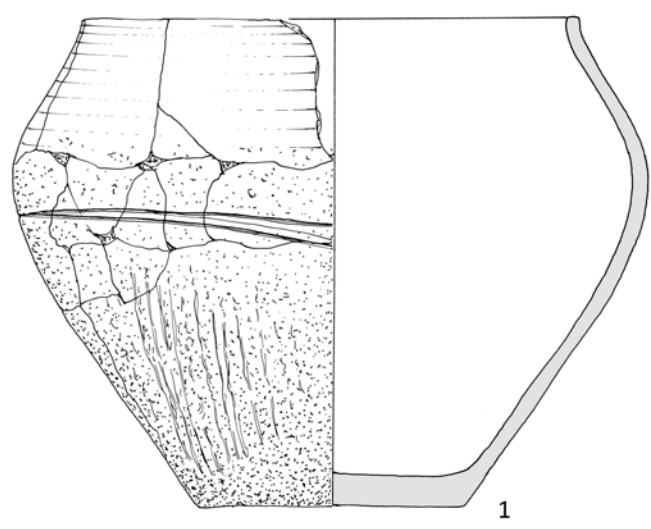
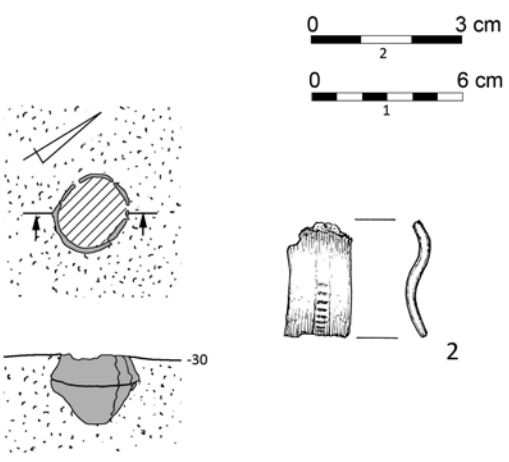
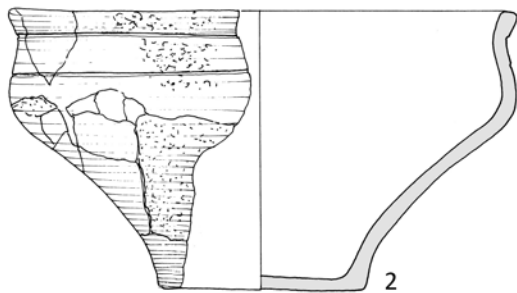
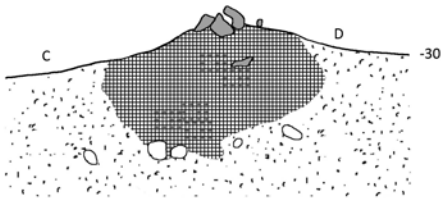
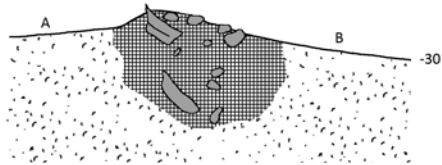
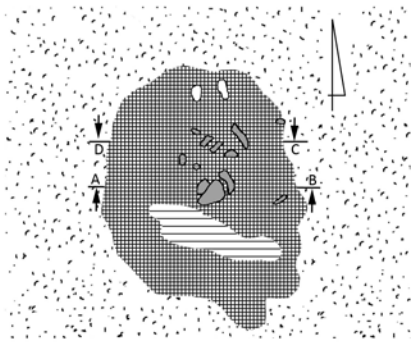


Plate XIX. Grave 25: 1-3 – clay, 4 – copper alloy, 5 – iron. Grave 31: 1 – clay, 2 – copper alloy.

Grave 26



3



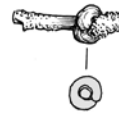
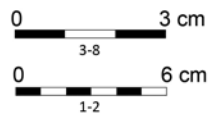
3



5



4



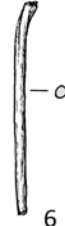
5



8



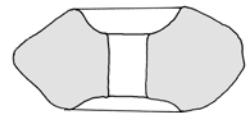
7



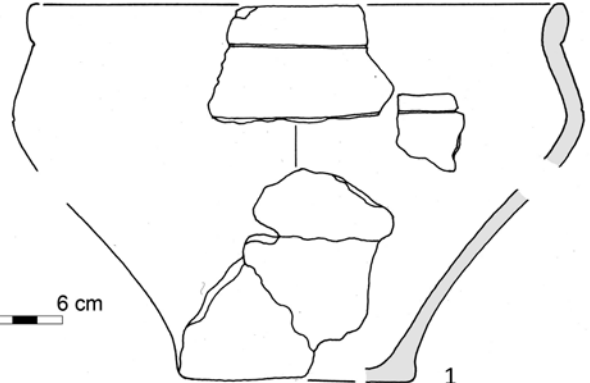
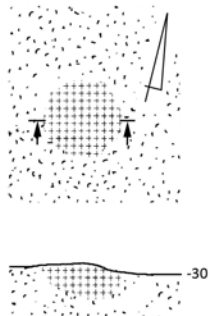
6



9



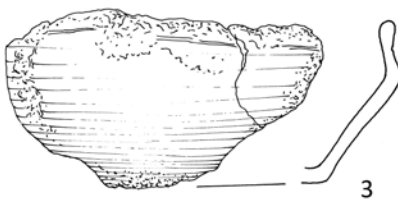
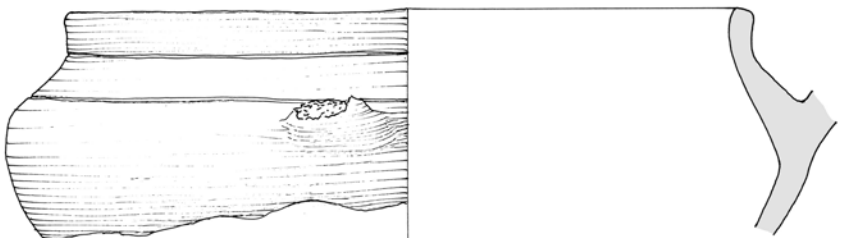
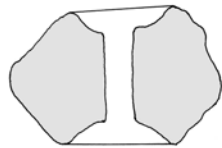
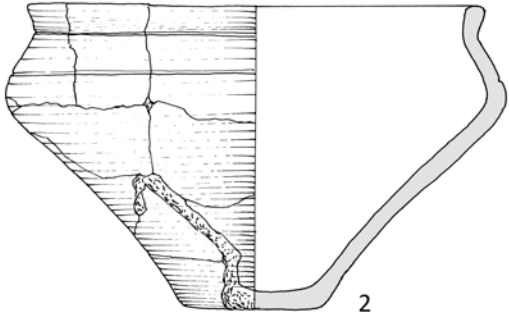
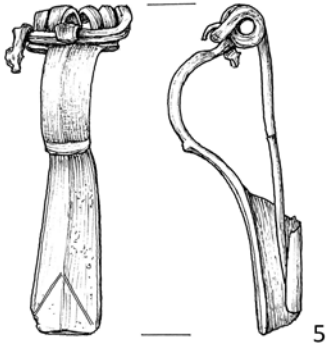
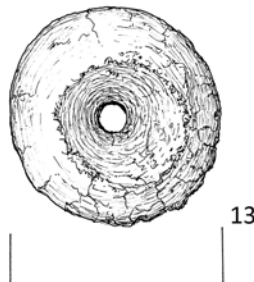
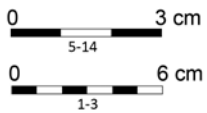
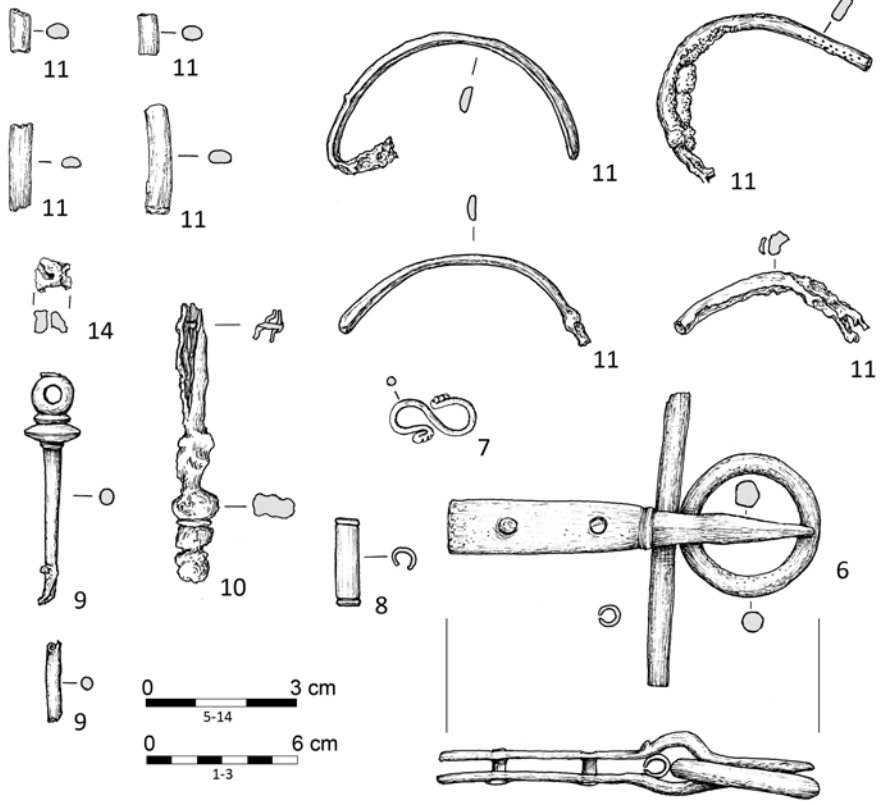
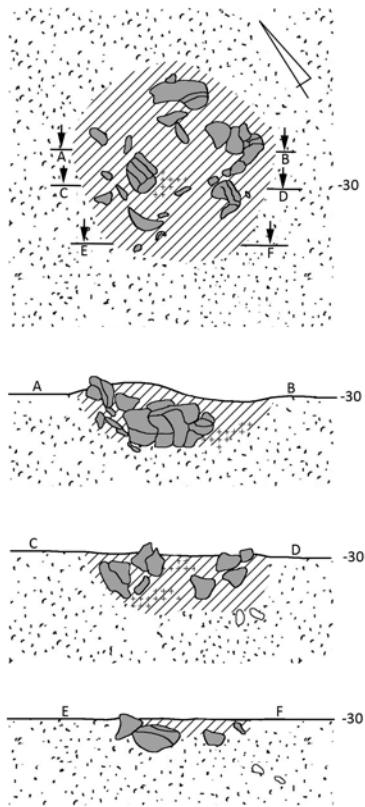
Grave 33



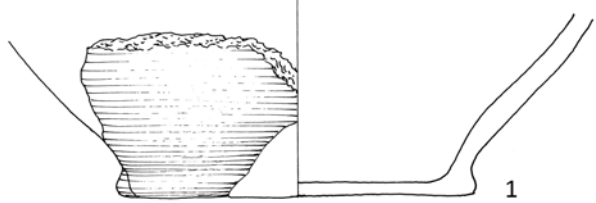
1

Plate XX. Grave 26: 1, 2, 10 – clay, 5, 7, 8 – iron, 3–6 – copper alloy. Grave 33.

Grave 27



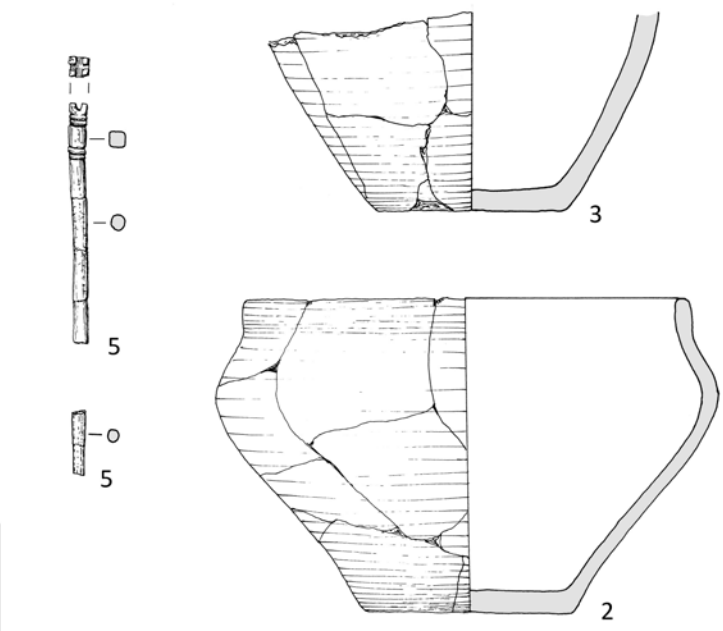
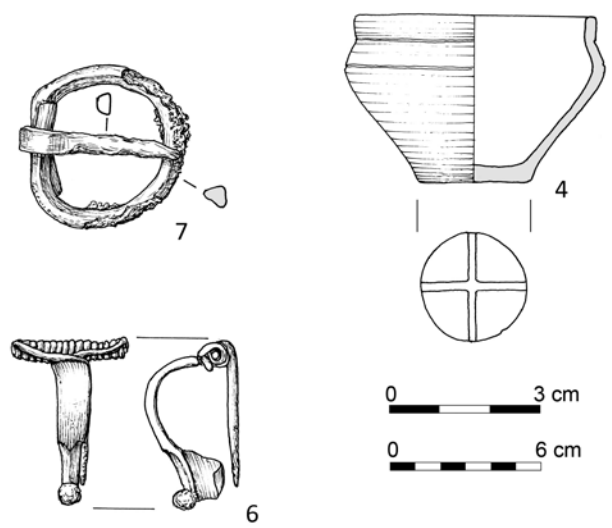
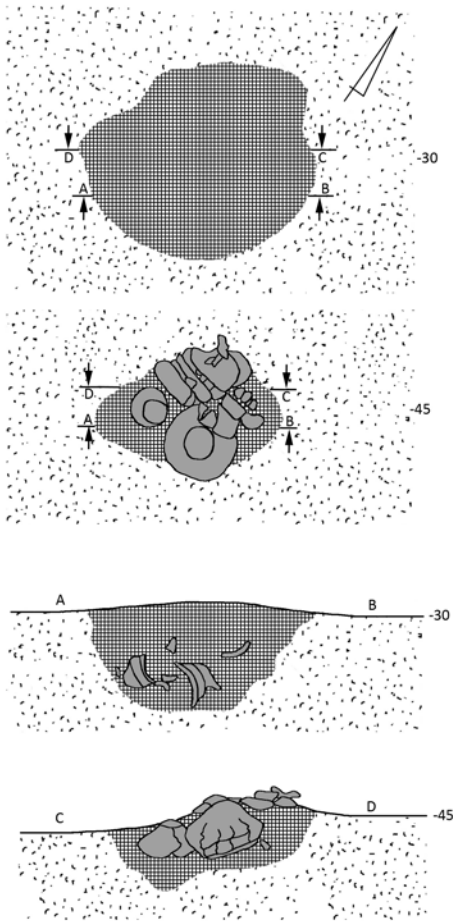
3



1

Plate XXI. Grave 27: 1-3, 13 clay, 6, 8, 12 - iron, 5, 7, 9-11 - copper alloy, 14 - bone(?)

Grave 29



Grave 35

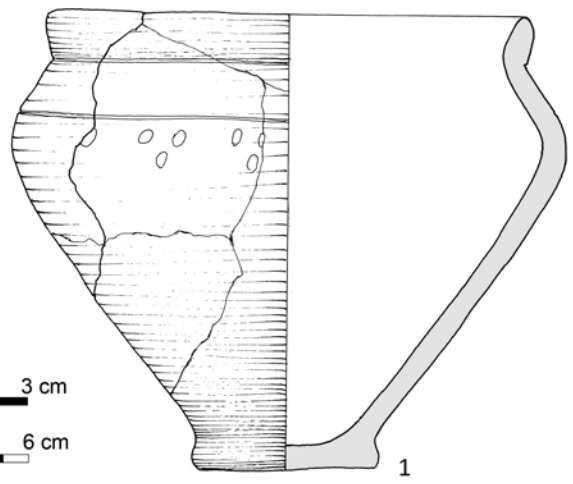
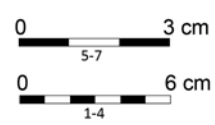
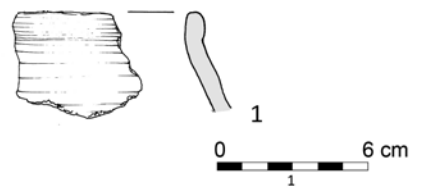
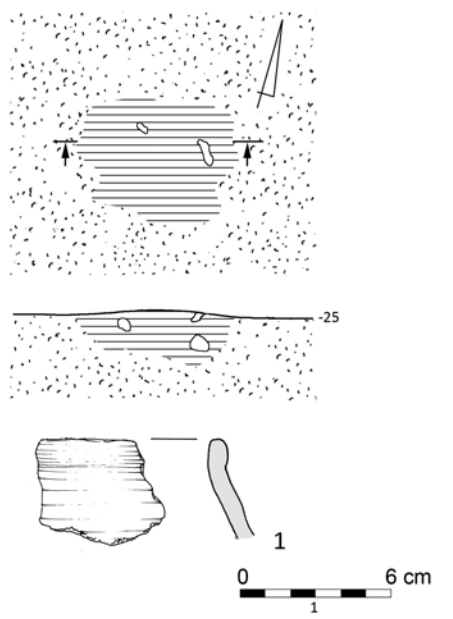
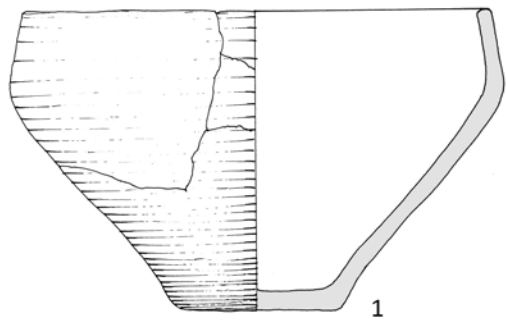
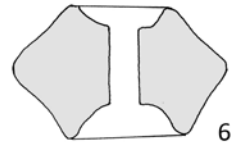
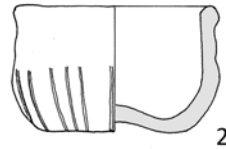
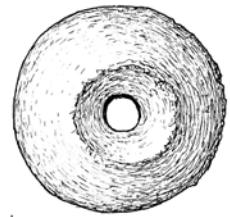
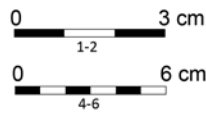
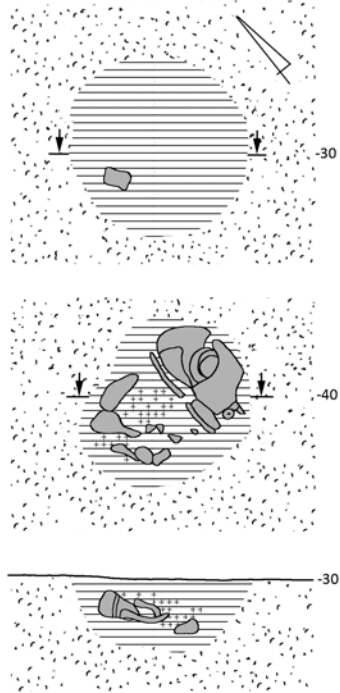


Plate XXII. Grave 19: 1-4 – clay, 5 – antler, 6-7 – iron. Grave 35: 1 – clay.

Grave 32



Grave 36

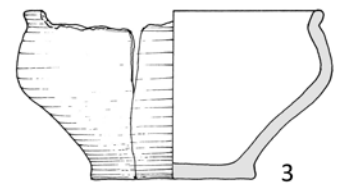
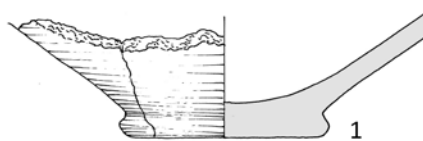
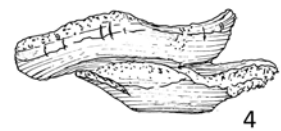
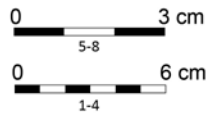
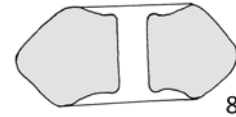
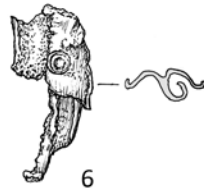
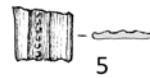
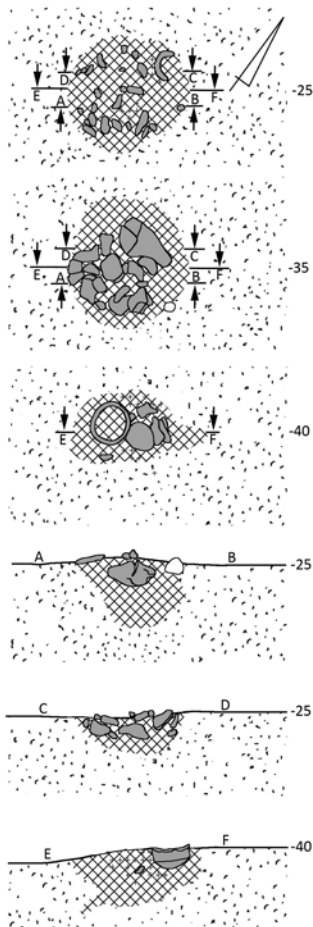


Plate XXIII. Grave 32: 1-2, 6 – clay, 4 – copper alloy, 5 – iron. Grave 36: 1-4, 8 – clay, 5-7 – copper alloy.

Grave 34

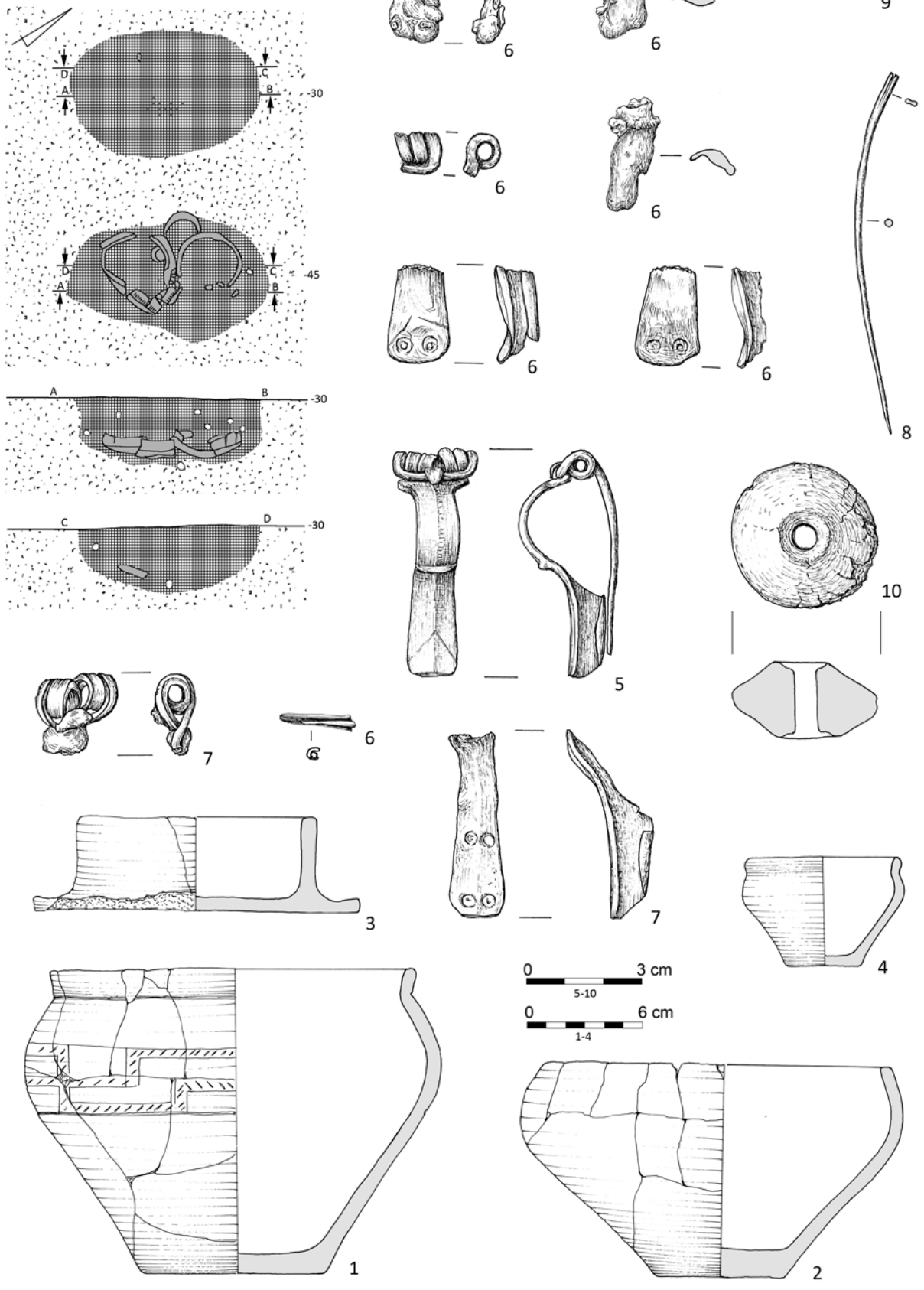
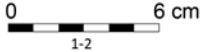
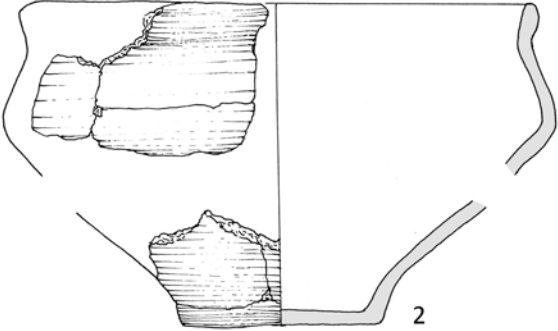
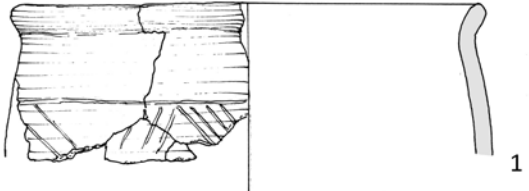
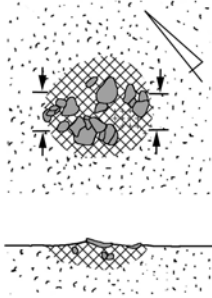


Plate XXIV. Grave 34: 1-4, 10, - clay, 6-9 - copper alloy.

Grave 37



Grave 48

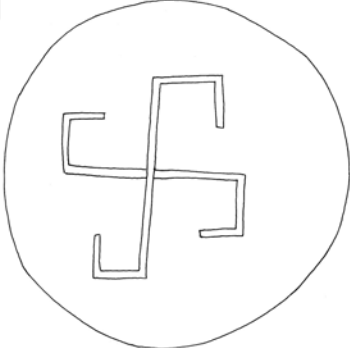
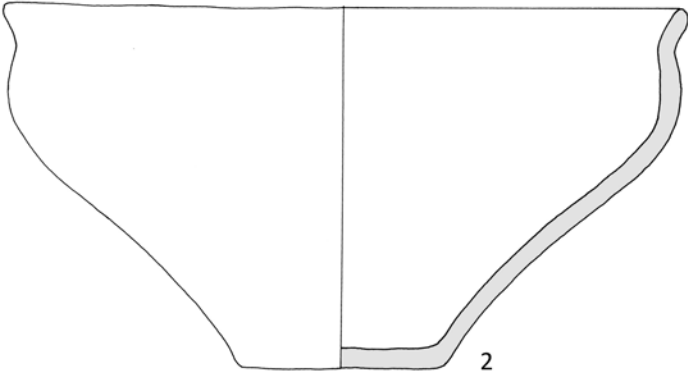
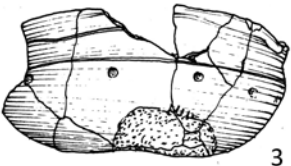
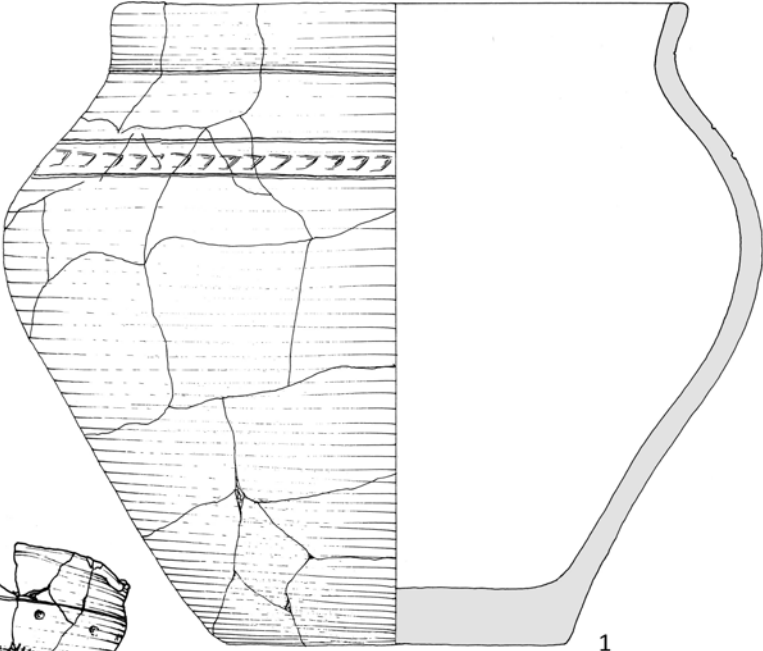
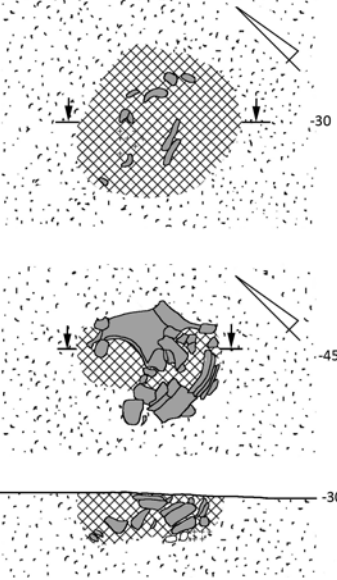
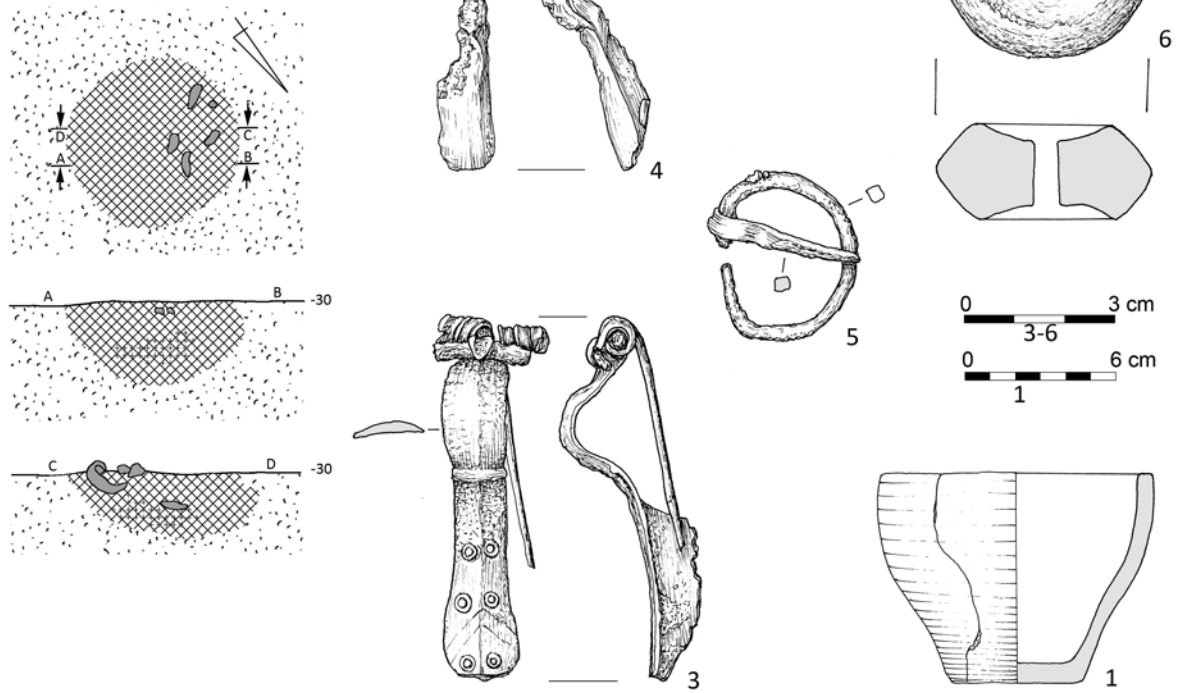


Plate XXV. Grave 37: 1, 2 – clay. Grave 48: 1–3 – clay.

Grave 38



Grave 39

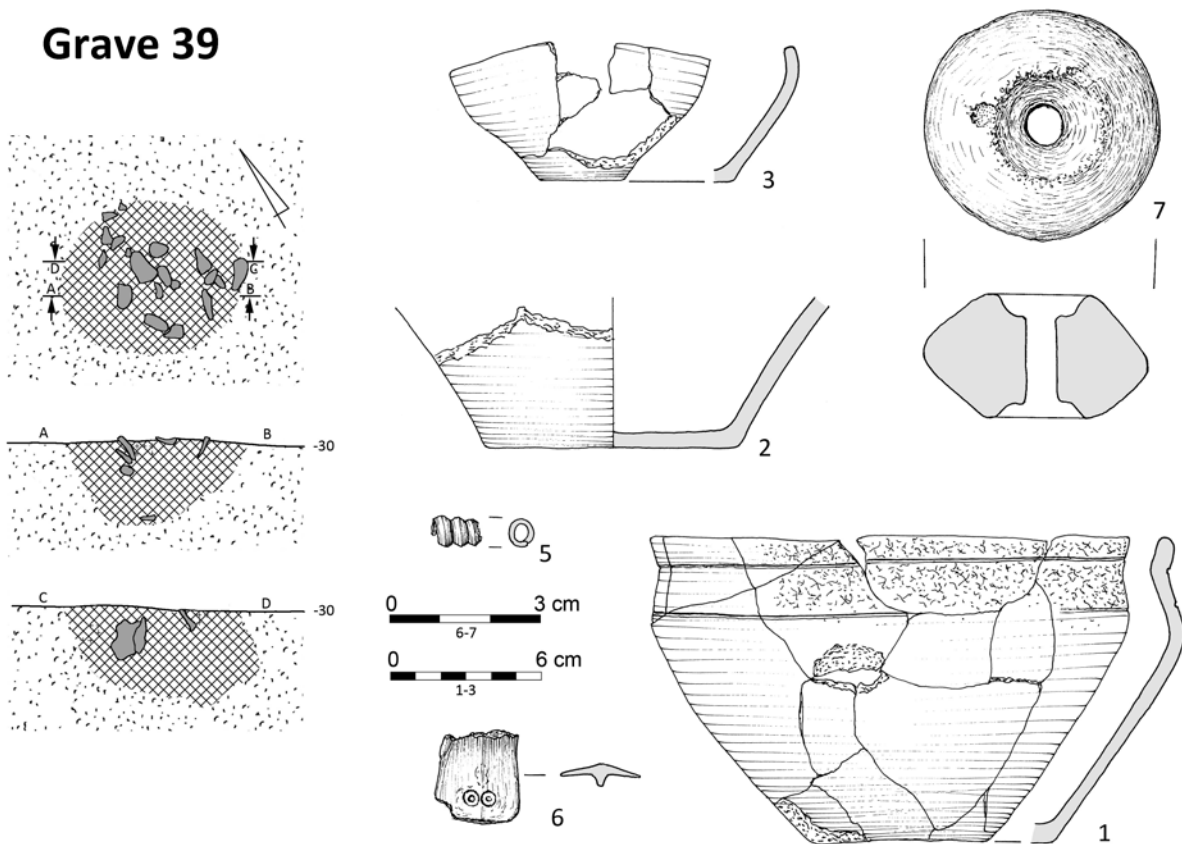
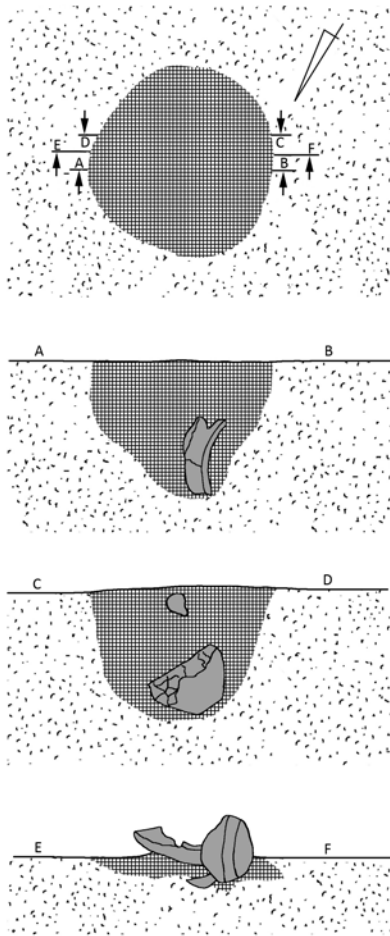
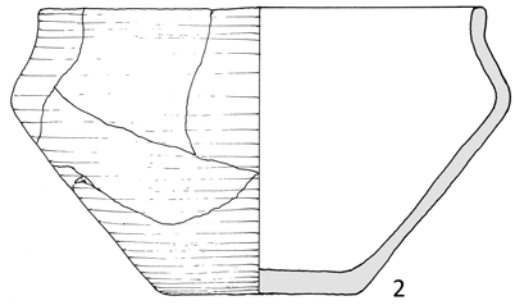


Plate XXVI. Grave 38: 1, 6 – clay, 3, 4 copper alloy, 5 – iron. Grave 39: 1–3, 7 – clay, 5, 6 – copper alloy.

Grave 40



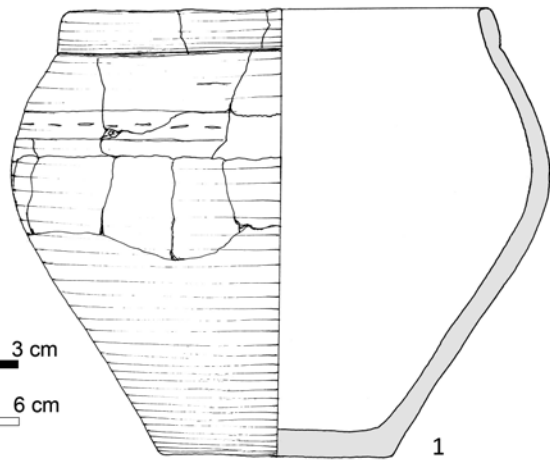
3



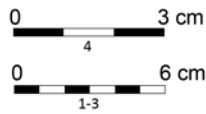
2



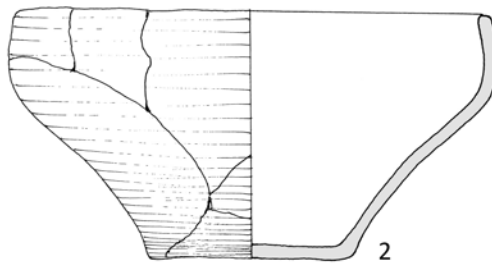
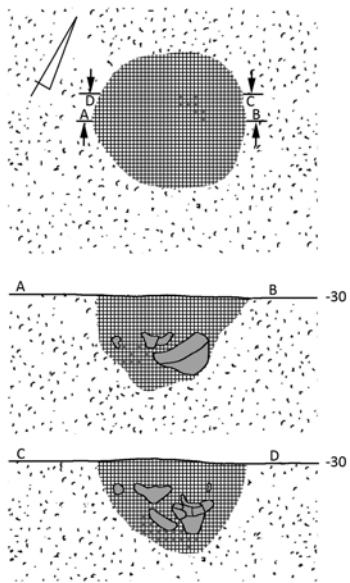
4



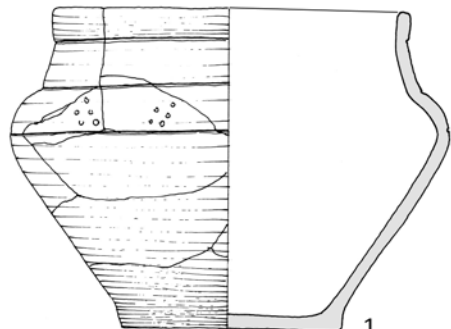
1



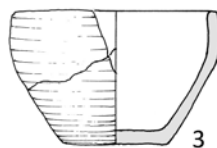
Grave 42



2



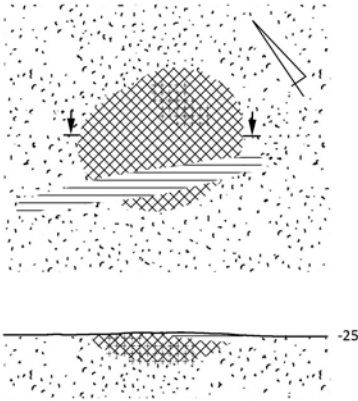
1



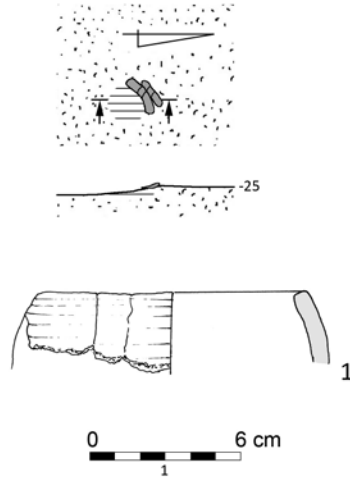
3

Plate XXVII. Grave 40: 1-3 – clay, 4 – iron. Grave 42: 1-3 – clay.

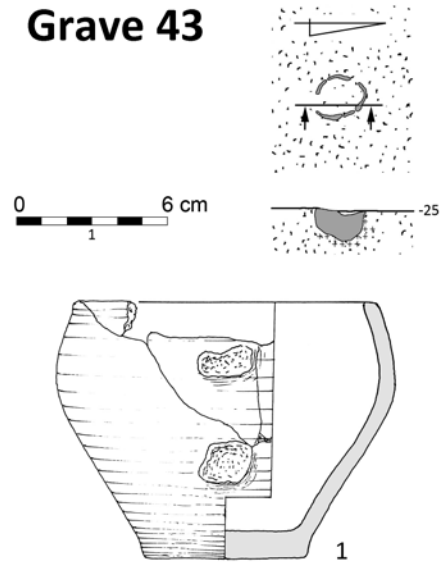
Grave 41



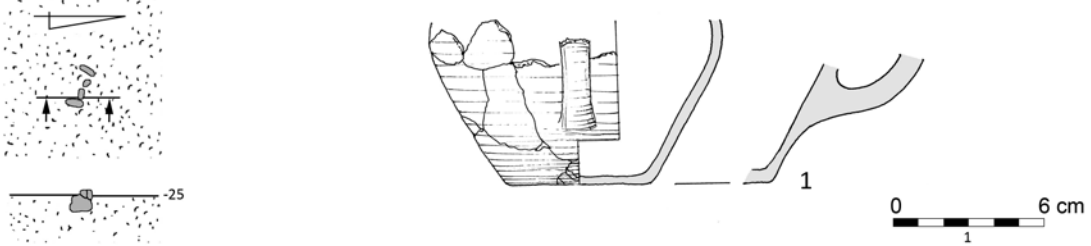
Grave 44



Grave 43



Grave 45



Grave 47

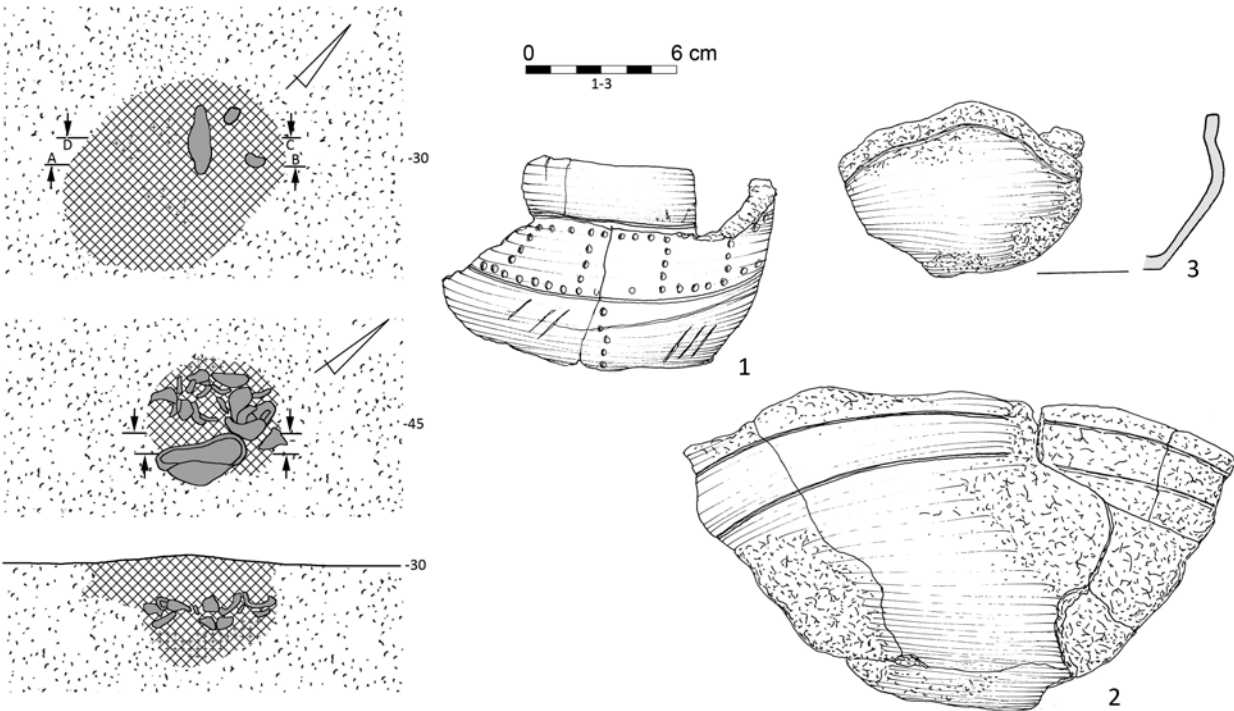
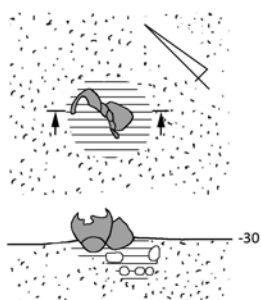
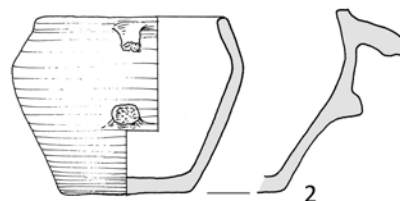
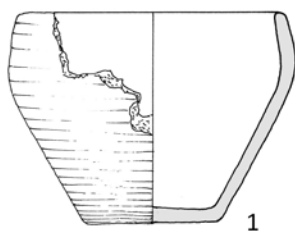


Plate XXVIII. Grave 41. Grave 43: 1 – clay. Grave 44: 1 – clay. Grave 45: 1 – clay. Grave 47: 1–3 – clay.

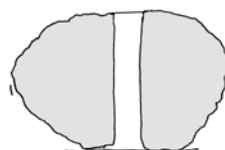
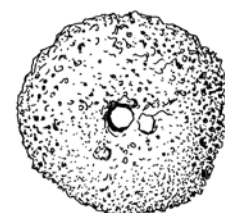
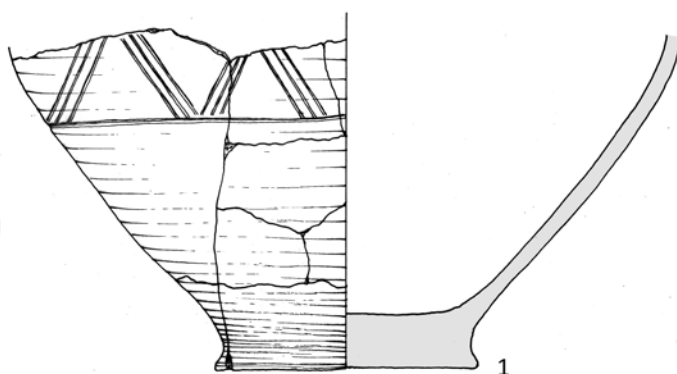
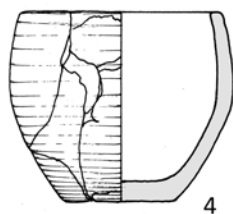
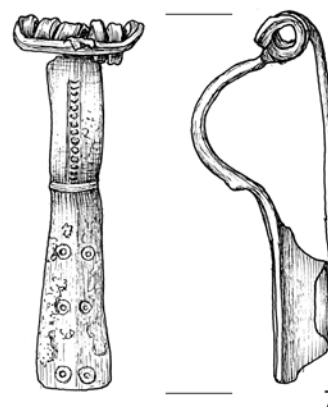
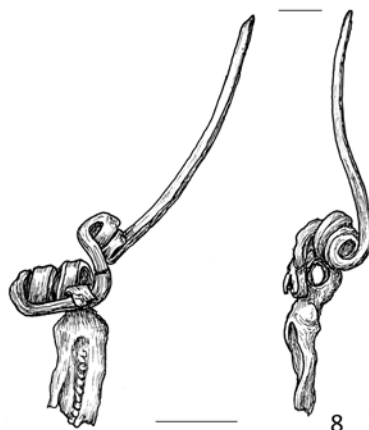
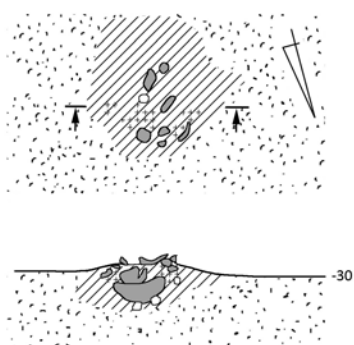
Grave 46



0 6 cm
1-2



Grave 49



0 3 cm
7-9

0 6 cm
1-5

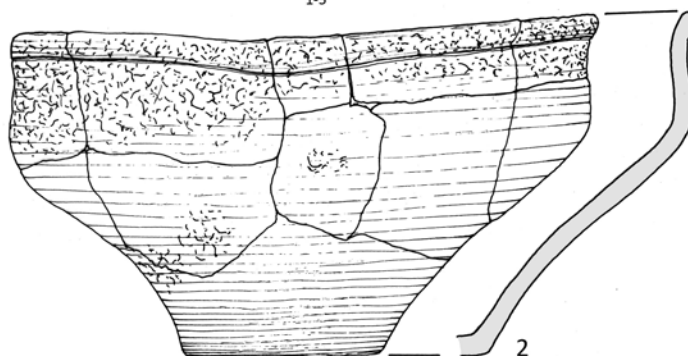
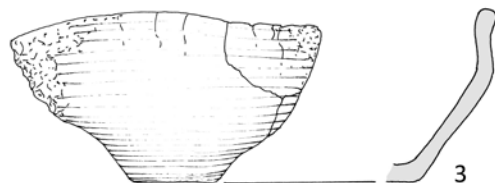
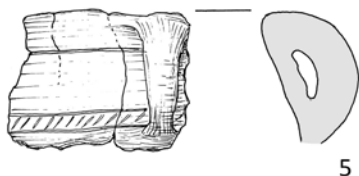
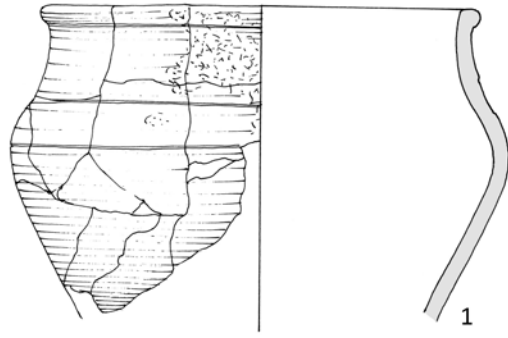
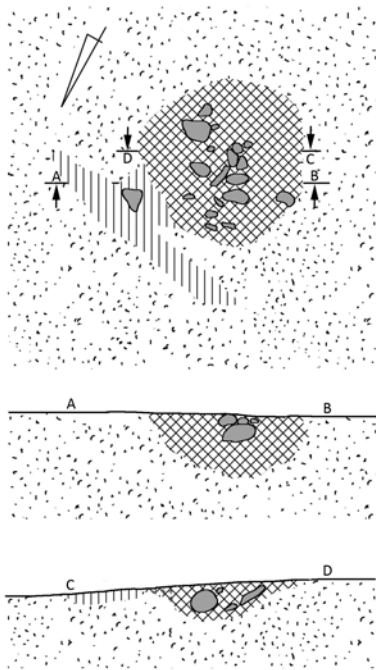
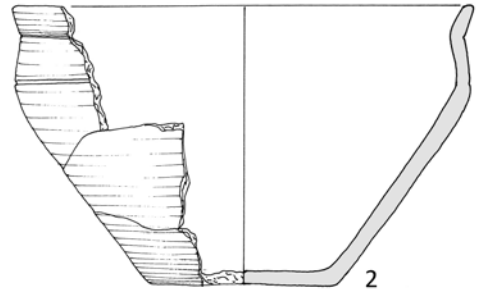
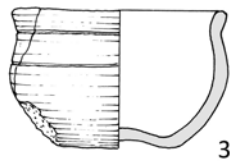


Plate XXIX. Grave 46: 1, 2 – clay. Grave 49: 1–5, 9 – clay, 7, 8 – copper alloy.

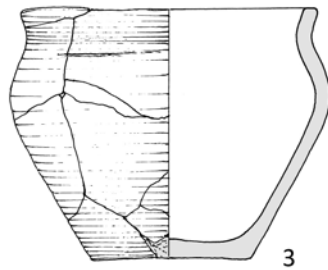
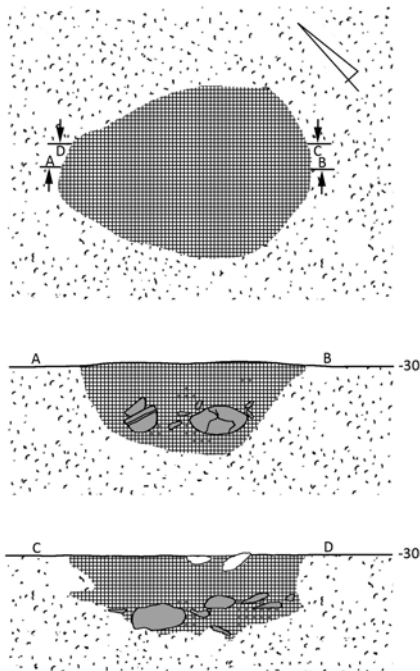
Grave 50



0 6 cm
1-3



Grave 51



0 6 cm
1-4

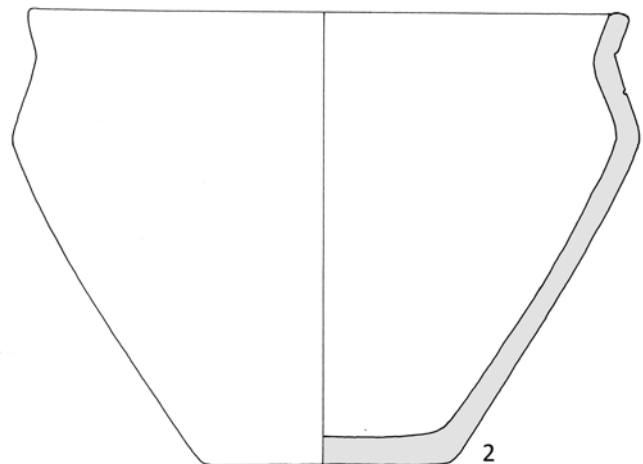
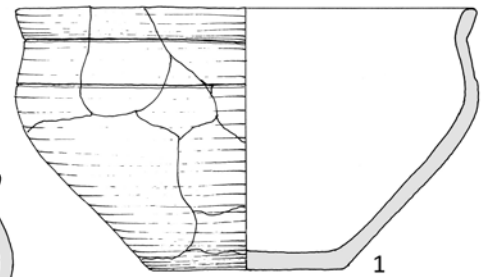
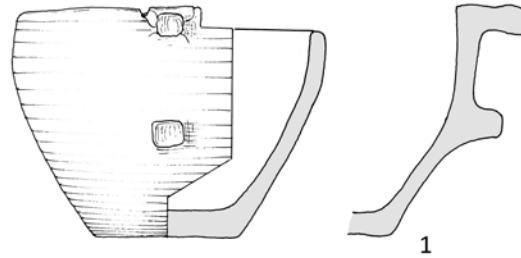
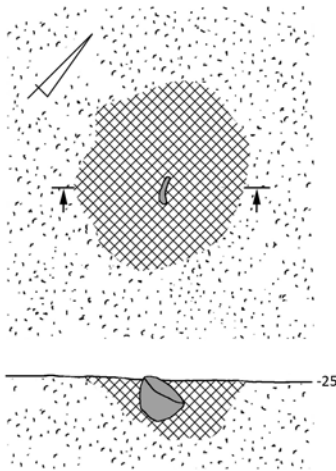
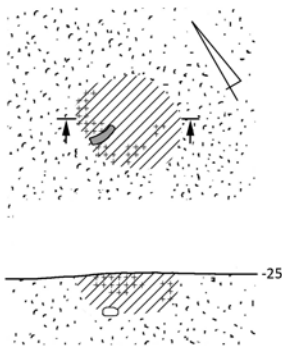


Plate XXX. Grave 50: 1-3 – clay. Grave 51: 1-4 – clay.

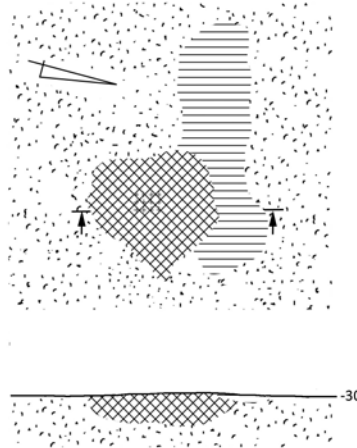
Grave 52



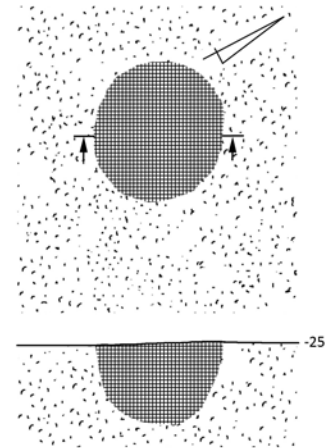
Grave 55



Grave 56



Grave 58



Grave 57

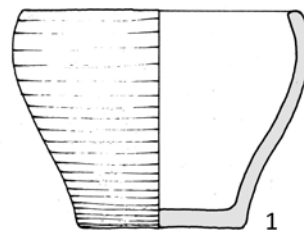
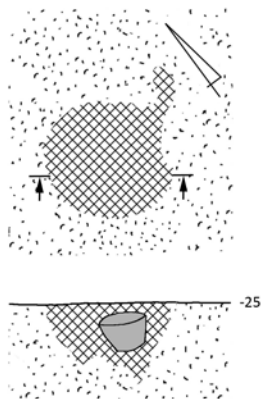


Plate XXXI. Grave 52: 1 – clay. Grave 55. Grave 56. Grave 57: 1 – clay. Grave 58.

Grave 53

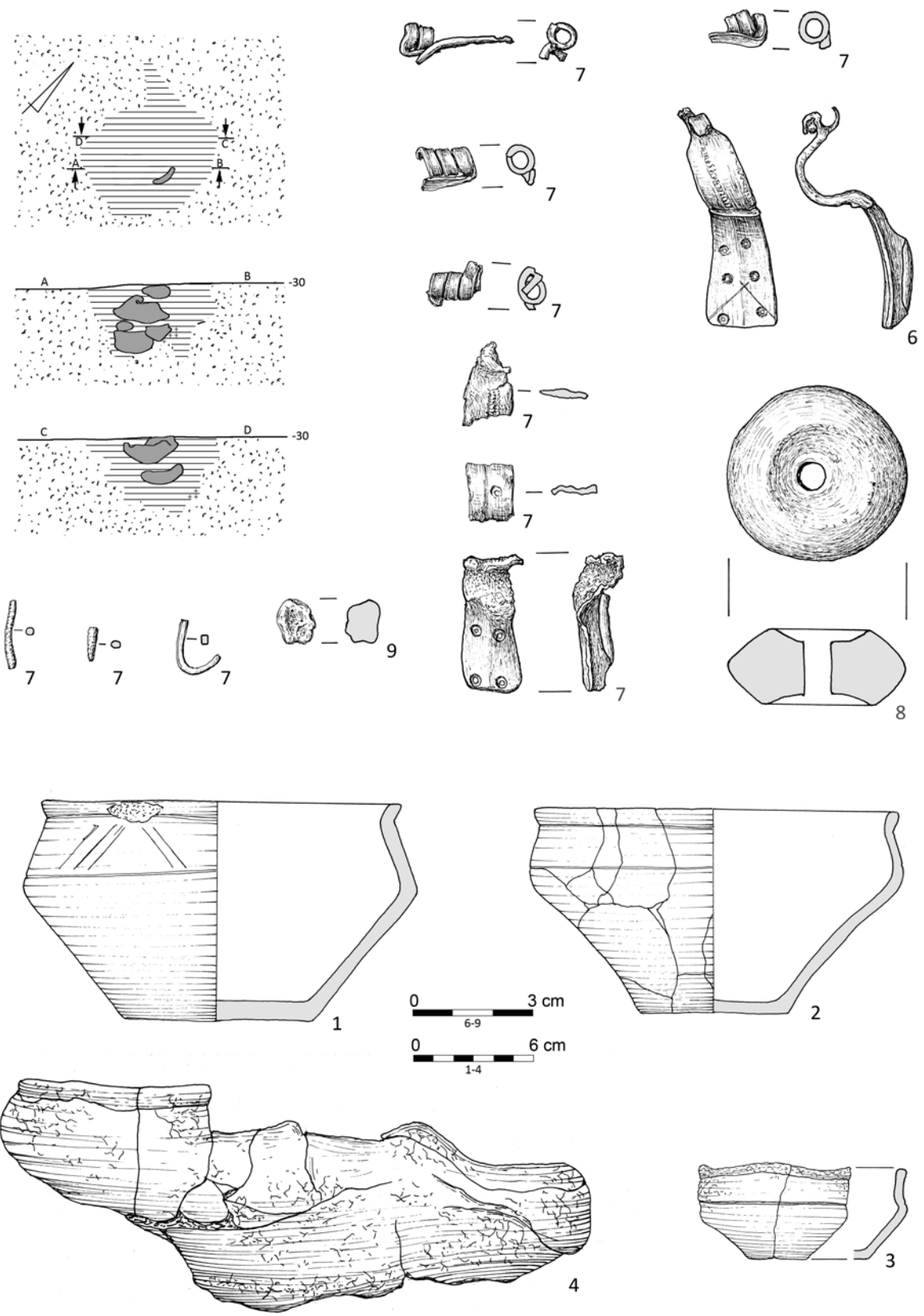


Plate XXXII. Grave 53:1-4, 8 – clay, 6, 7 – copper alloy, 9 – faience(?)

Grave 54

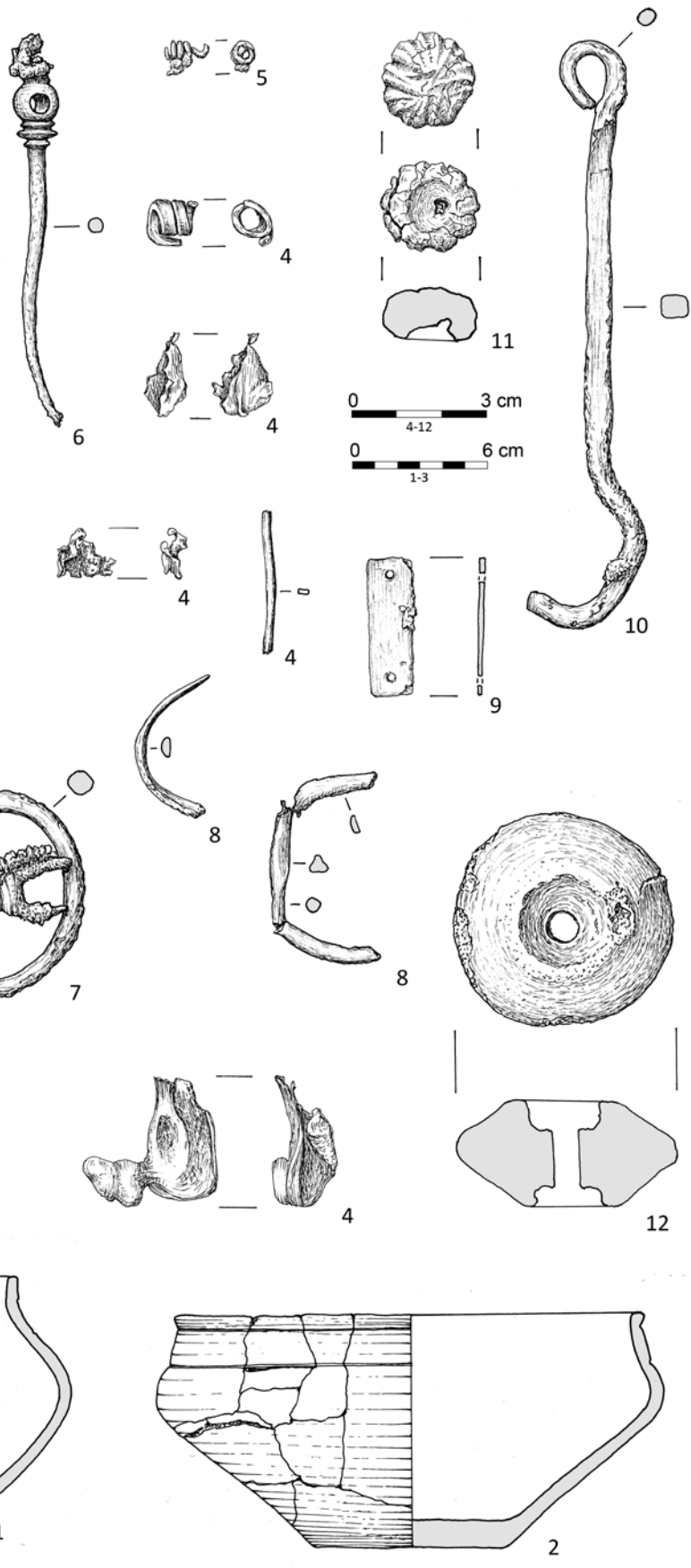
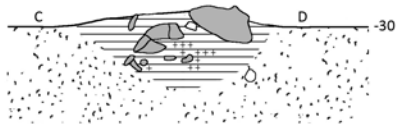
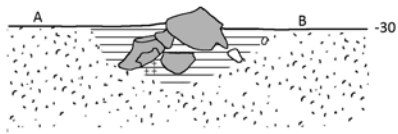
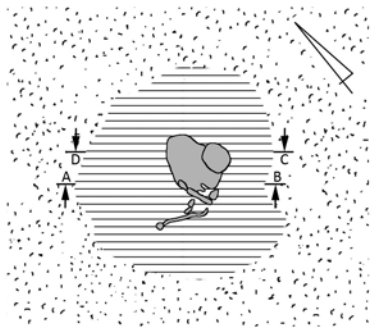
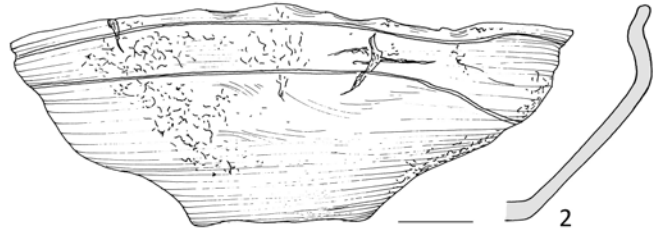
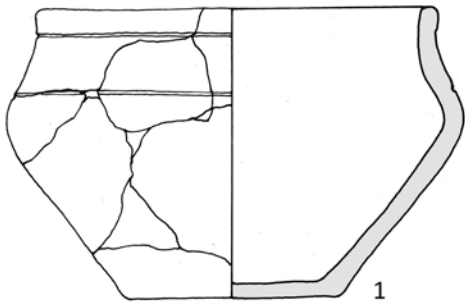
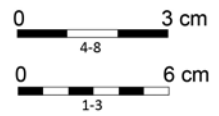
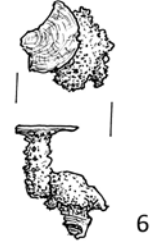
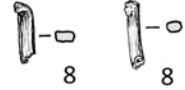
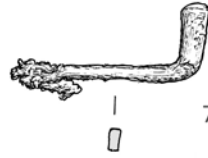
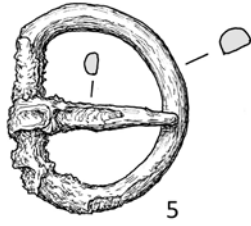
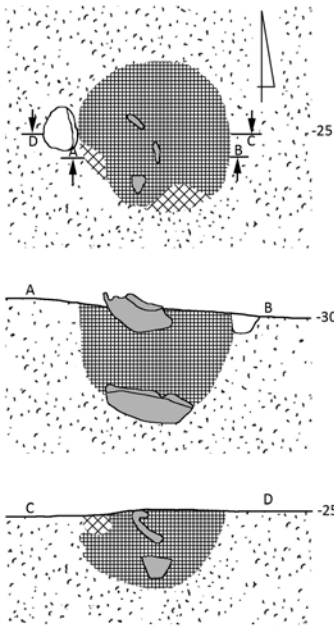
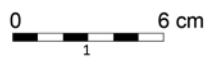
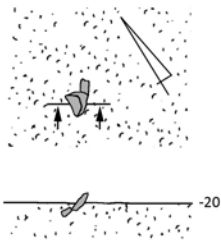


Plate XXXIII. Grave 54: 1-3, 11, 12 – clay, 4-6, 8 copper alloy, 7, 9, 10 – iron.

Grave 59



Grave 61



Grave 62

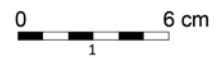
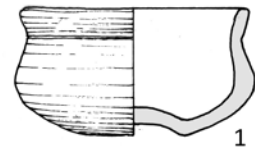
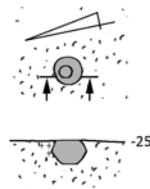


Plate XXXIV. Grave 59: 1-3 – clay, 4, 8– copper alloy, 5-7 – iron. Grave 61: 1 – clay, Grave 62: 1 – clay.

Grave 60

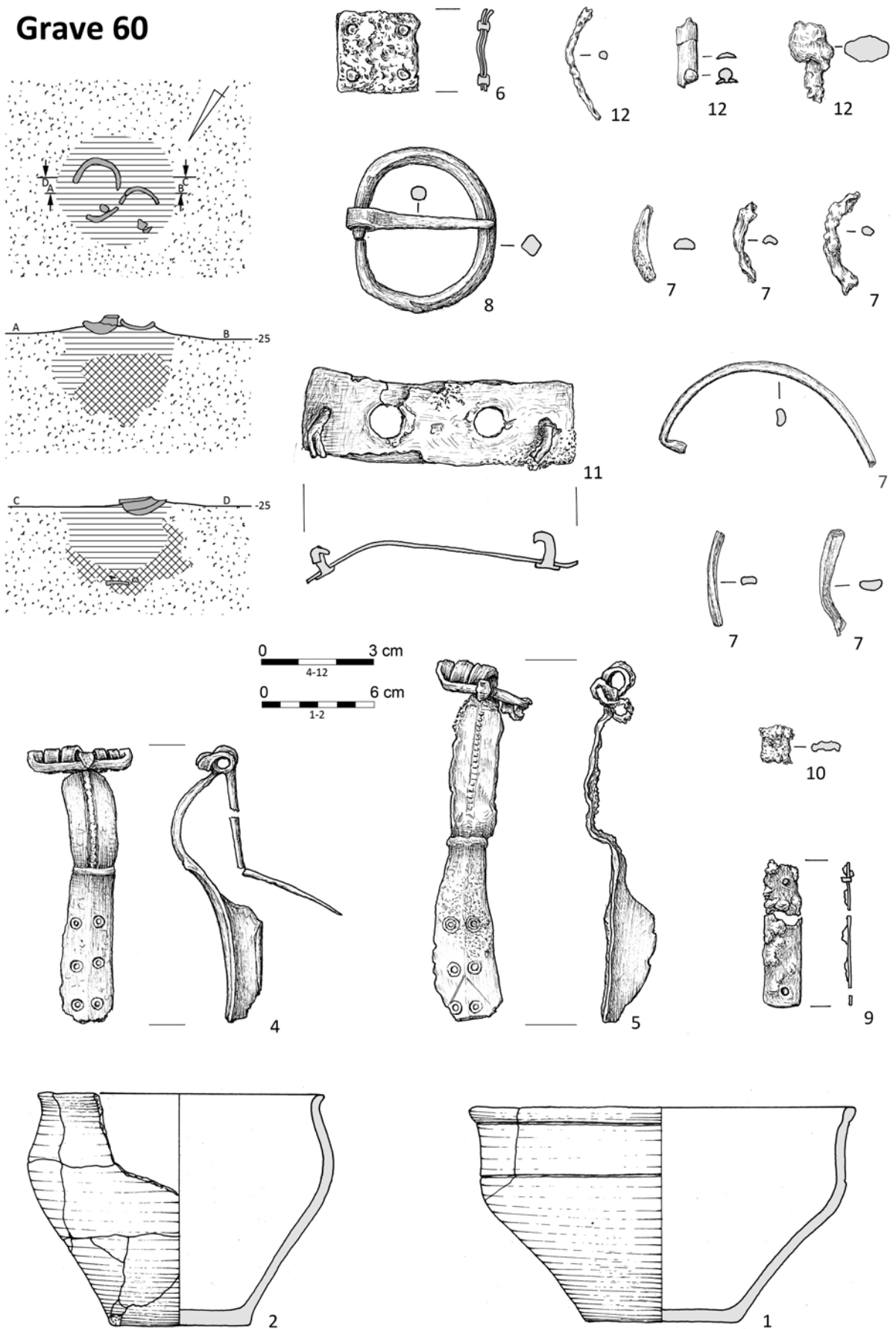


Plate XXXV. Grave 60: 1,2 – clay, 4–7, 12, 13 – copper alloy, 8–10, 11 – iron.

Grave 63

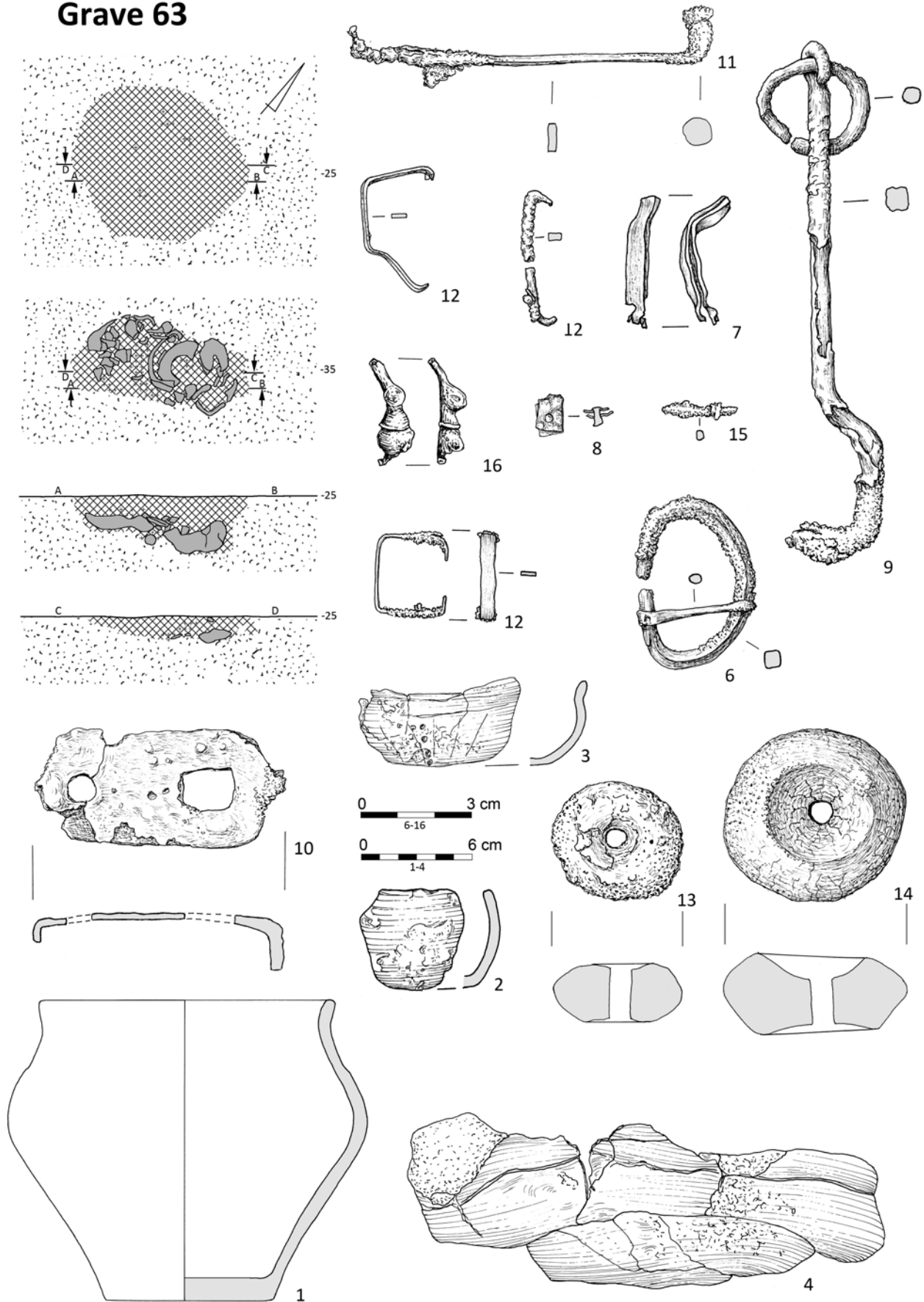
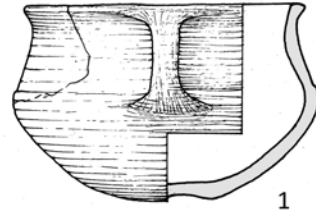
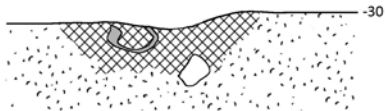
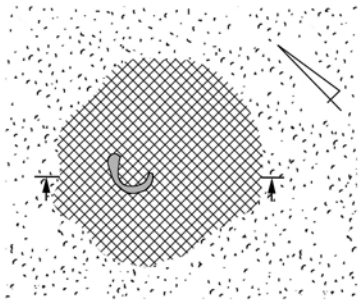


Plate XXXVI. Grave 63: 1-4, 13, 14 – clay, 6, 7, 9-12, 15 – iron, 8, 16 copper alloy.

Grave 64



Grave 65

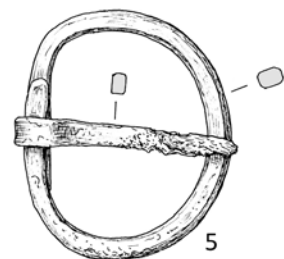
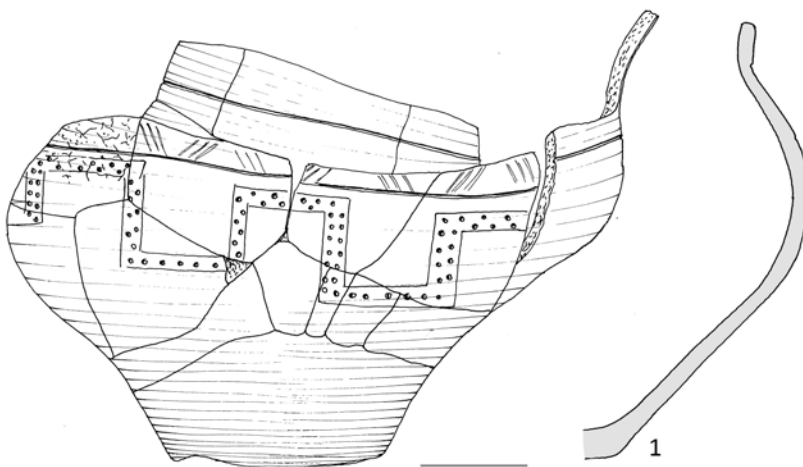
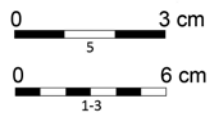
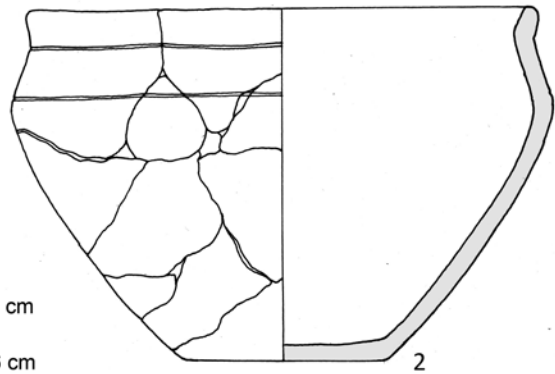
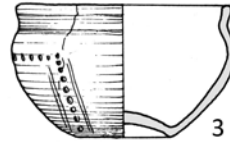
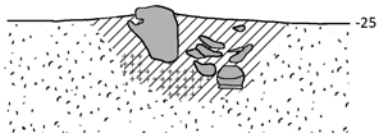
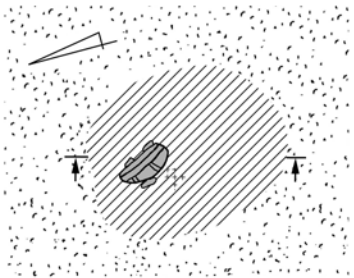
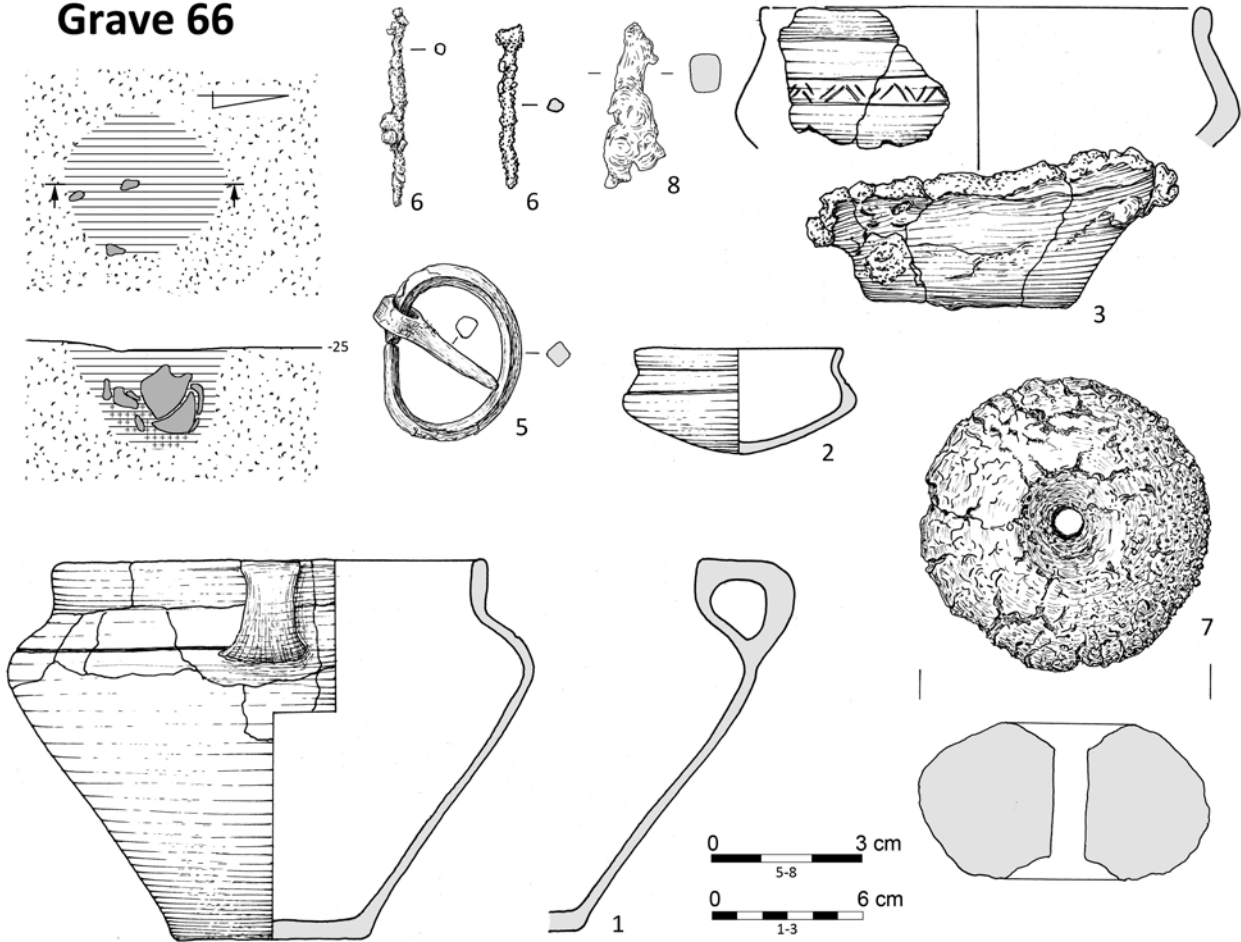


Plate XXXVII. Grave 64: 1 – clay. Grave 65: 1–3 – clay, 5 – iron.

Grave 66



Grave 76

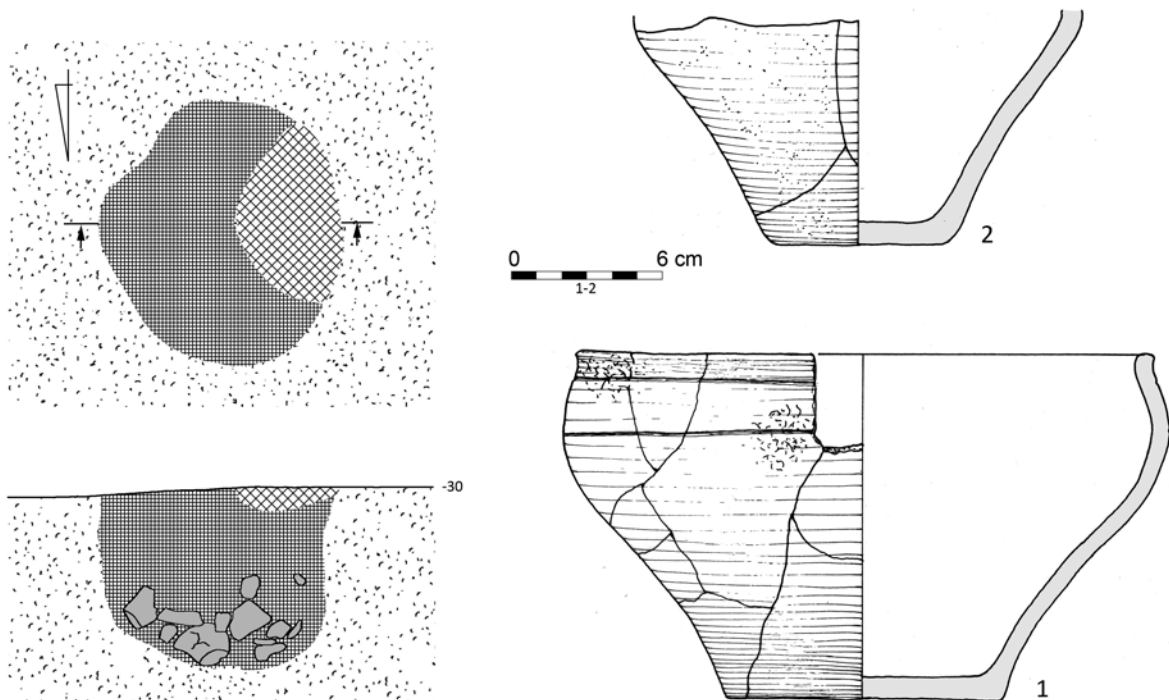
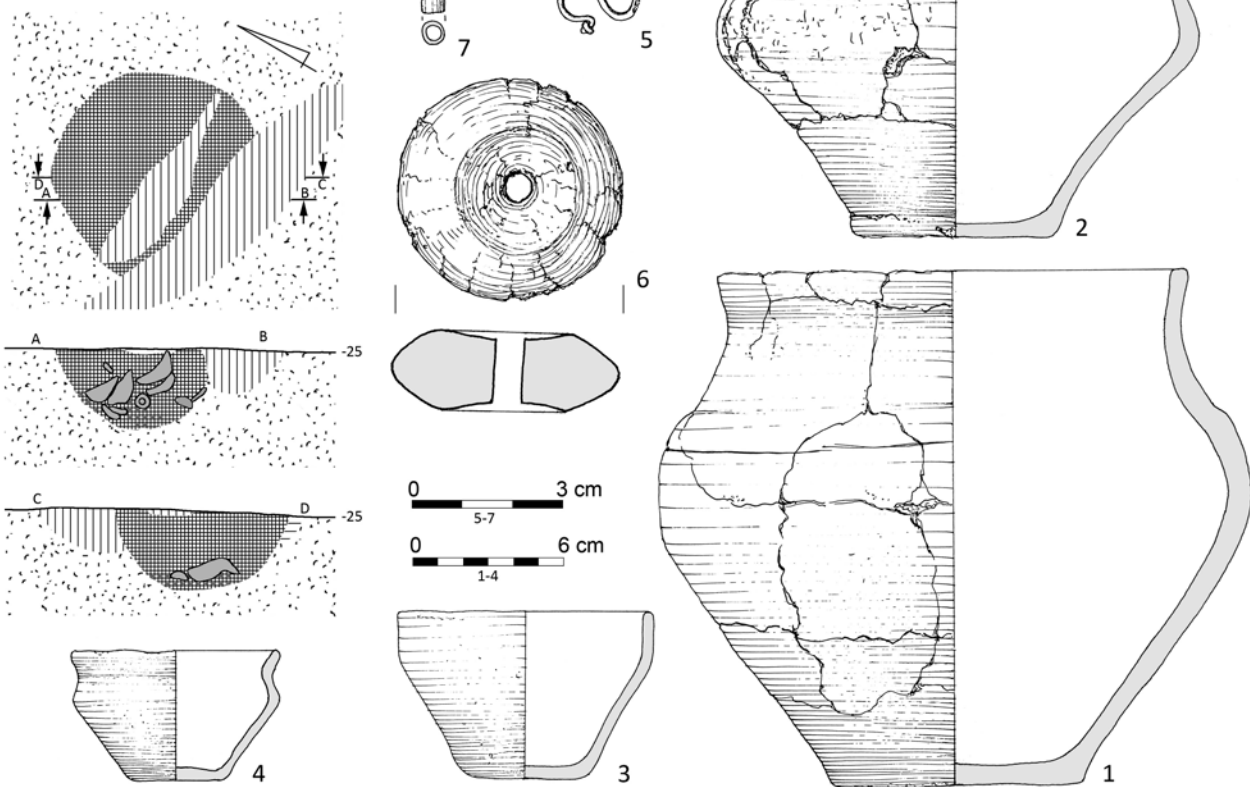


Plate XXXVIII. Grave 66: 1-3, 7 - clay, 5, 6 - iron, 8 copper alloy. Grave 76: 1-2 - clay.

Grave 67



Grave 68

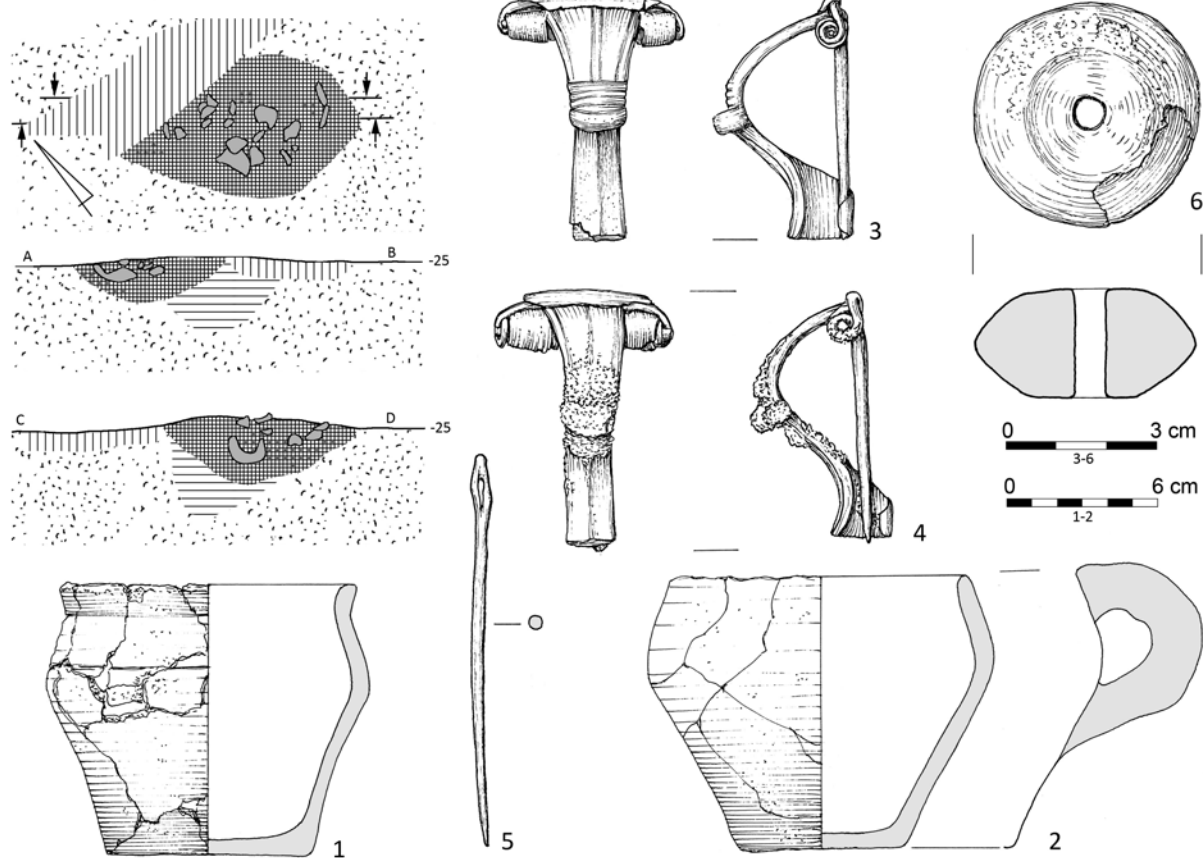


Plate XXXIX. Grave 67: 1-4, 6 – clay, 5 – silver, 7 – bone. Grave 68: 1, 2, 6 – clay, 3-5 – iron.

Grave 69

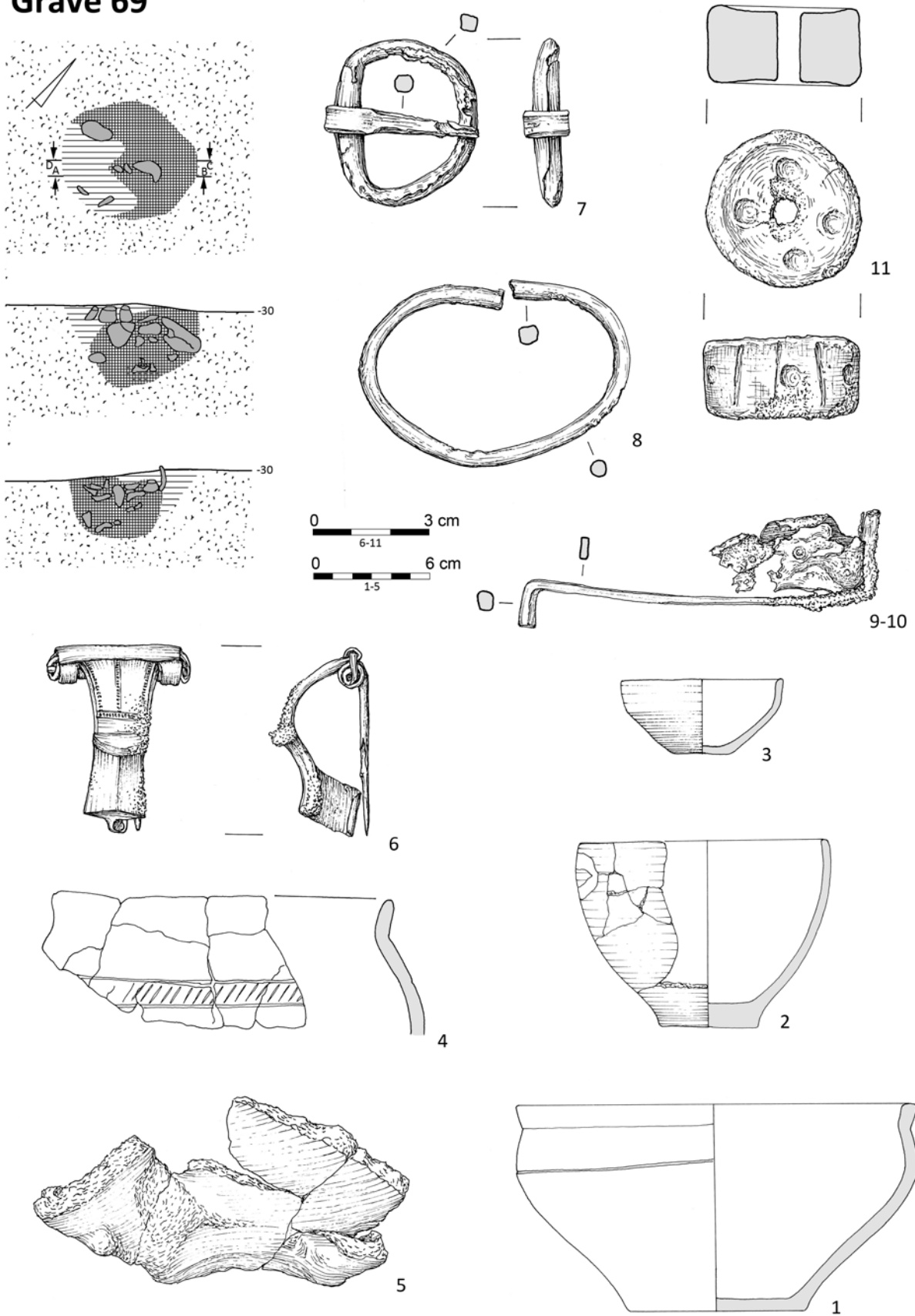
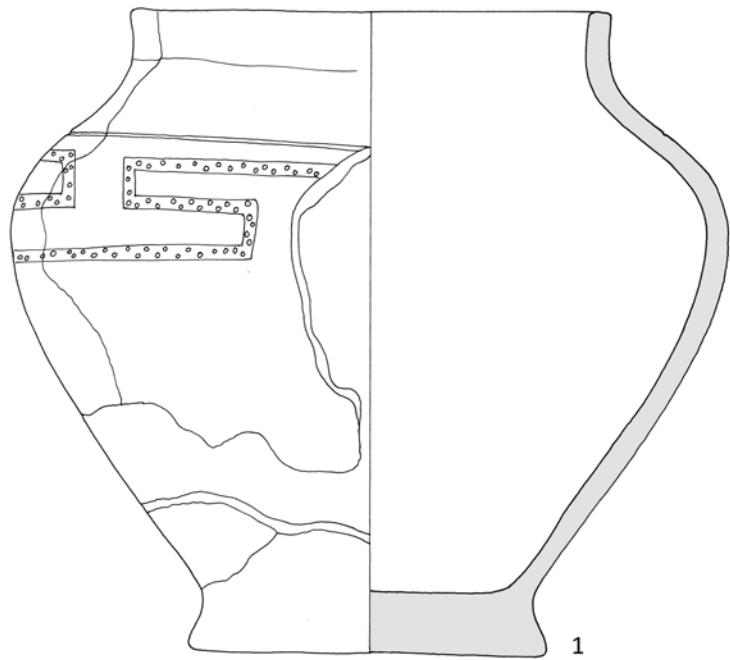
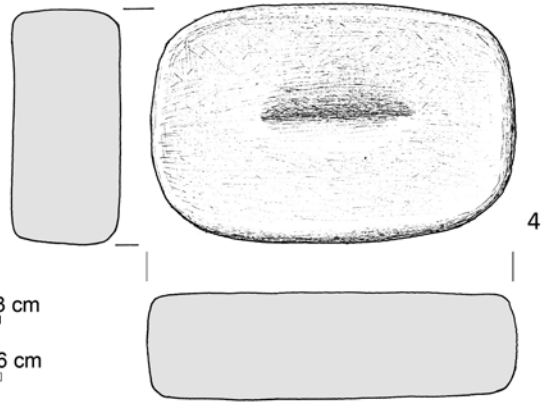
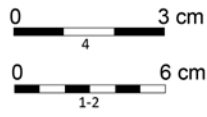
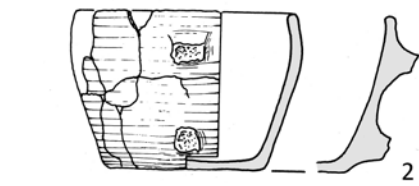
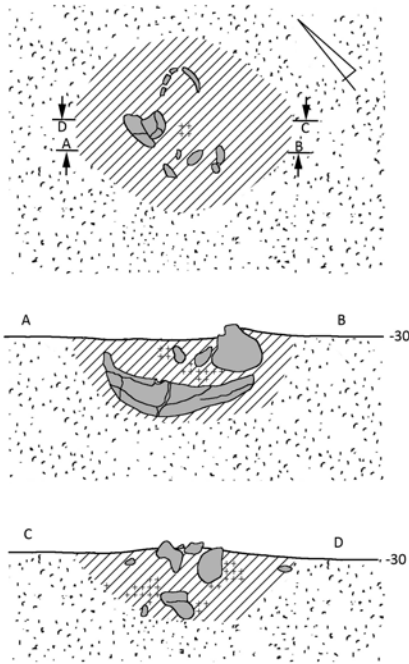


Plate XL. Grave 69: 1-5, 11 – clay, 8, 10 – copper alloy, 6, 7, 9 – iron.

Grave 70



Grave 75

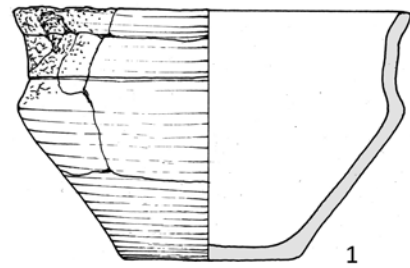
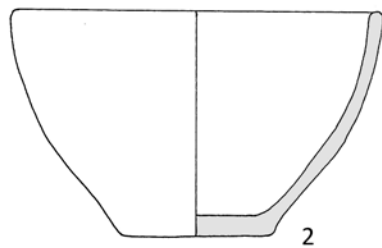
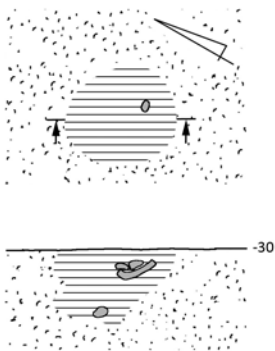
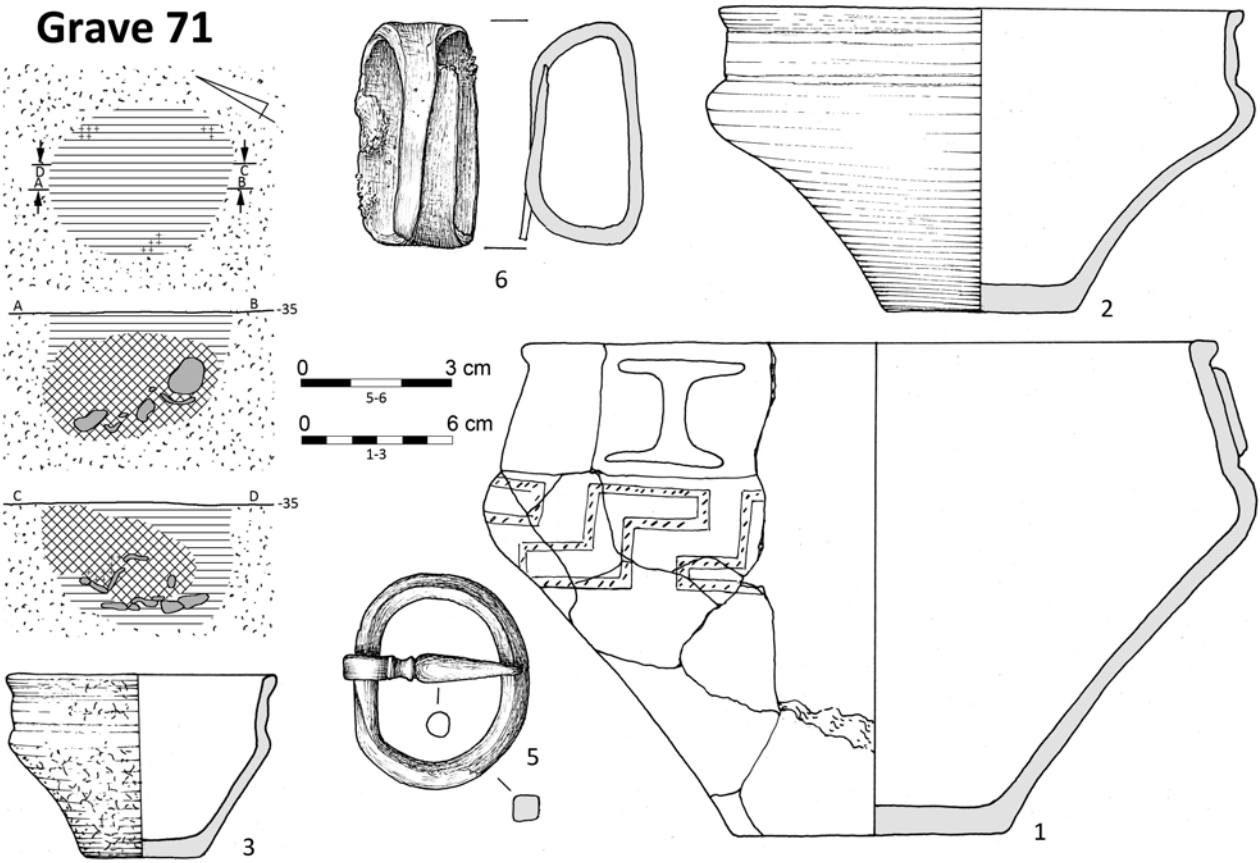


Plate XLI. Grave 70: 1, 2 – clay, 4 – stone. Grave 75: 1, 2 – clay.

Grave 71



Grave 72

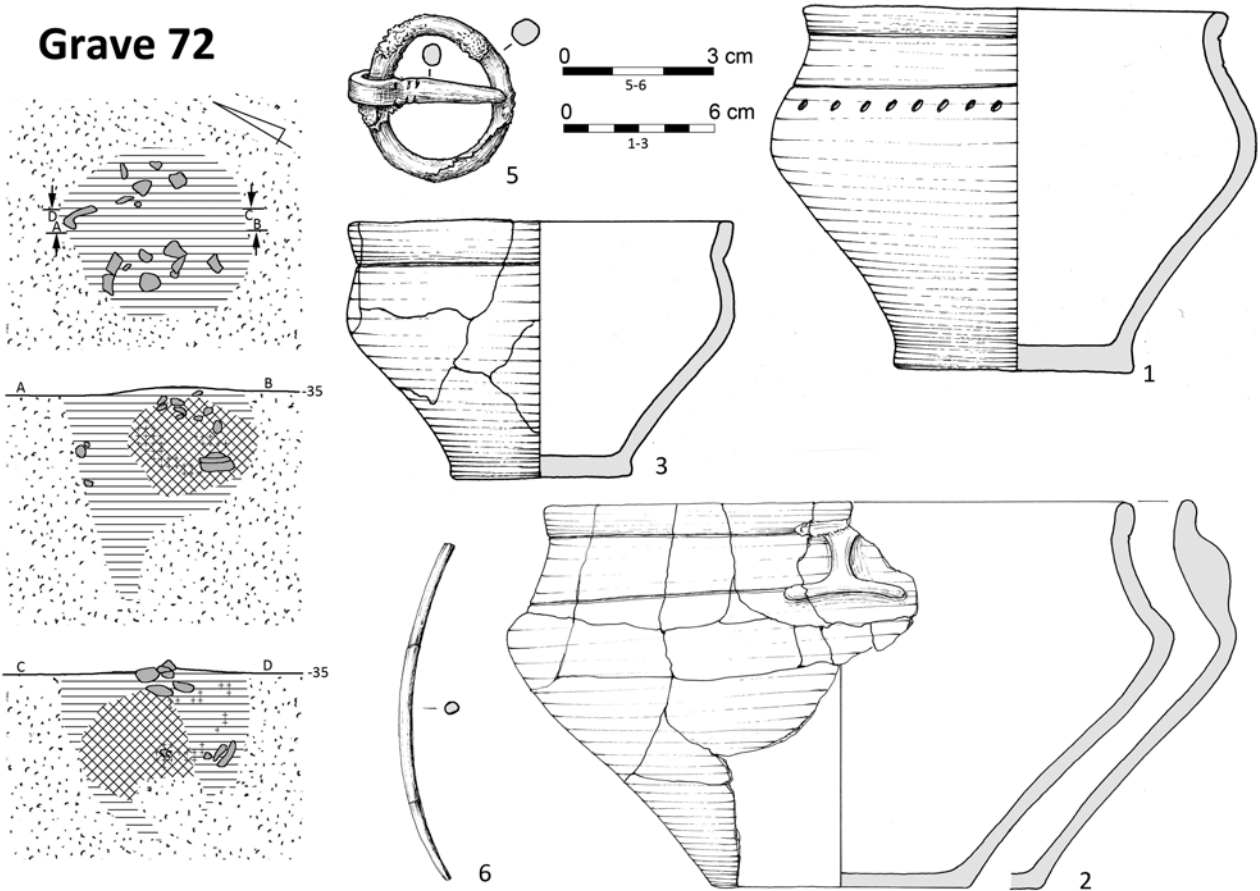
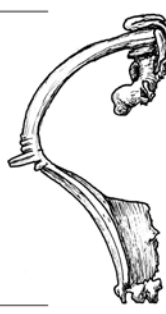
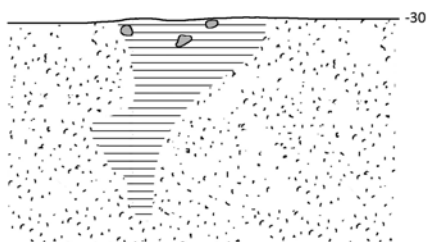
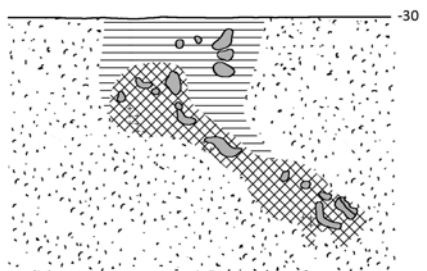
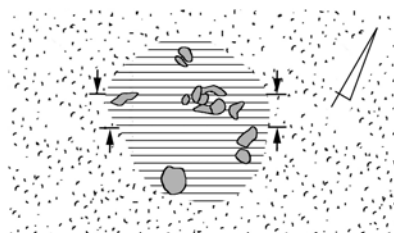


Plate XLII. Grave 71: 1-3 clay, 5 - iron, Grave 72: 1-3 - clay, 5 - iron, 6 - antler.

Grave 73



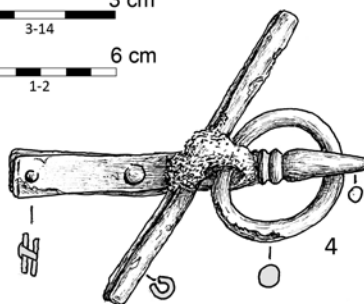
3

0 3 cm

3-14

0 6 cm

1-2



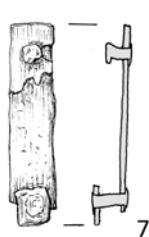
4



9



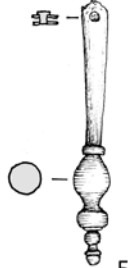
12



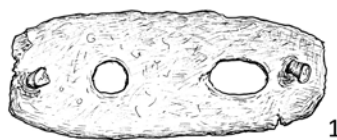
7



6



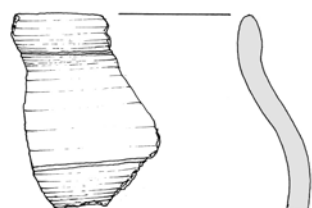
5



10



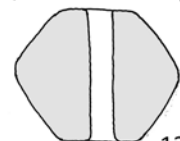
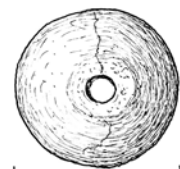
8



1



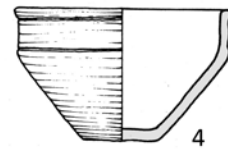
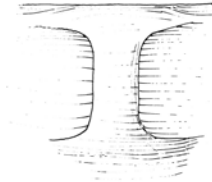
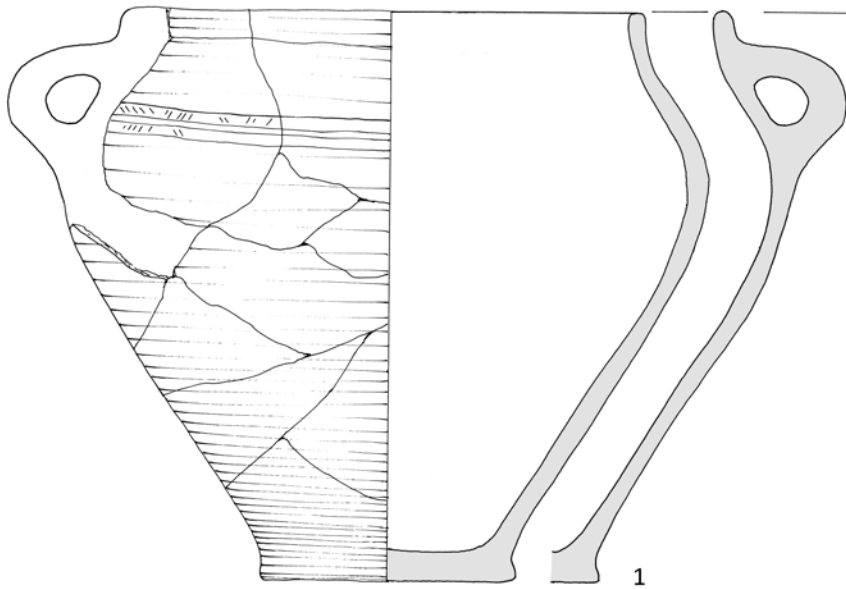
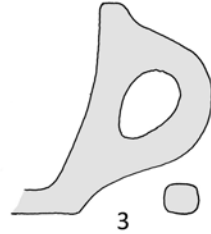
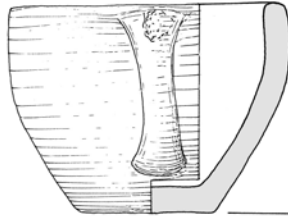
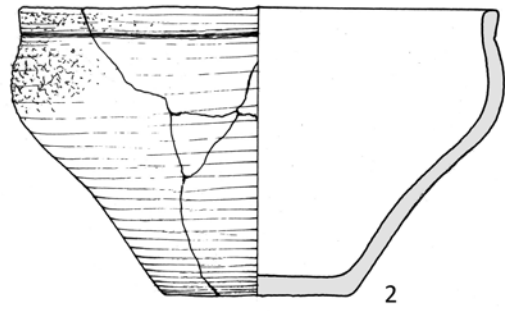
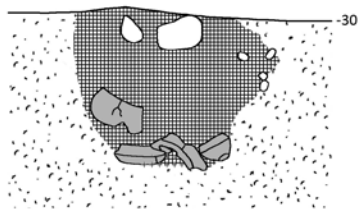
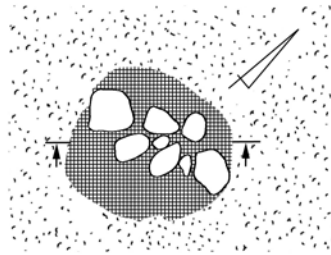
11



13

Plate XLIII. Grave 73: 1, 2, 12, 13 – clay, 3, 5, 6, 8, 14 – copper alloy, 4, 7, 9–11 – iron.

Grave 74



Grave 81

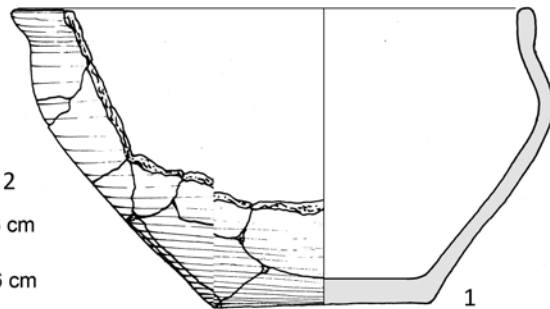
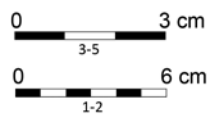
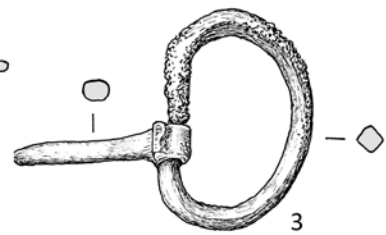
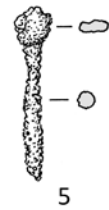
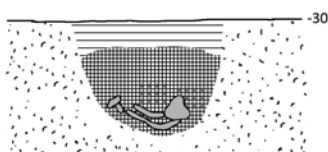
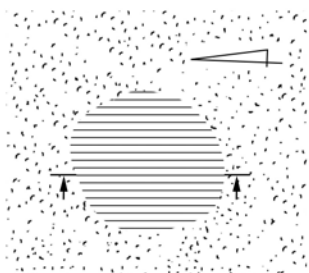
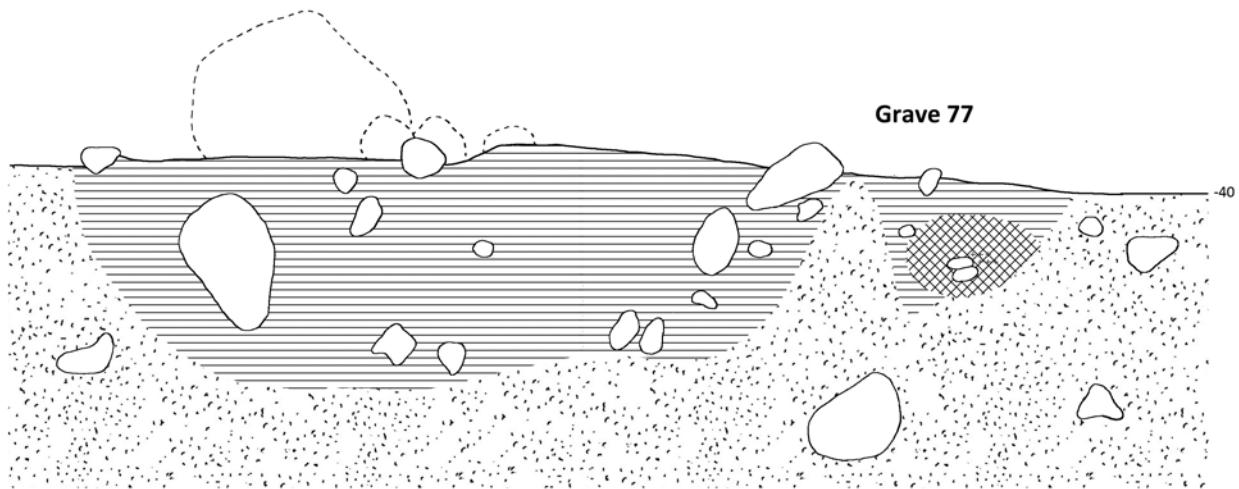
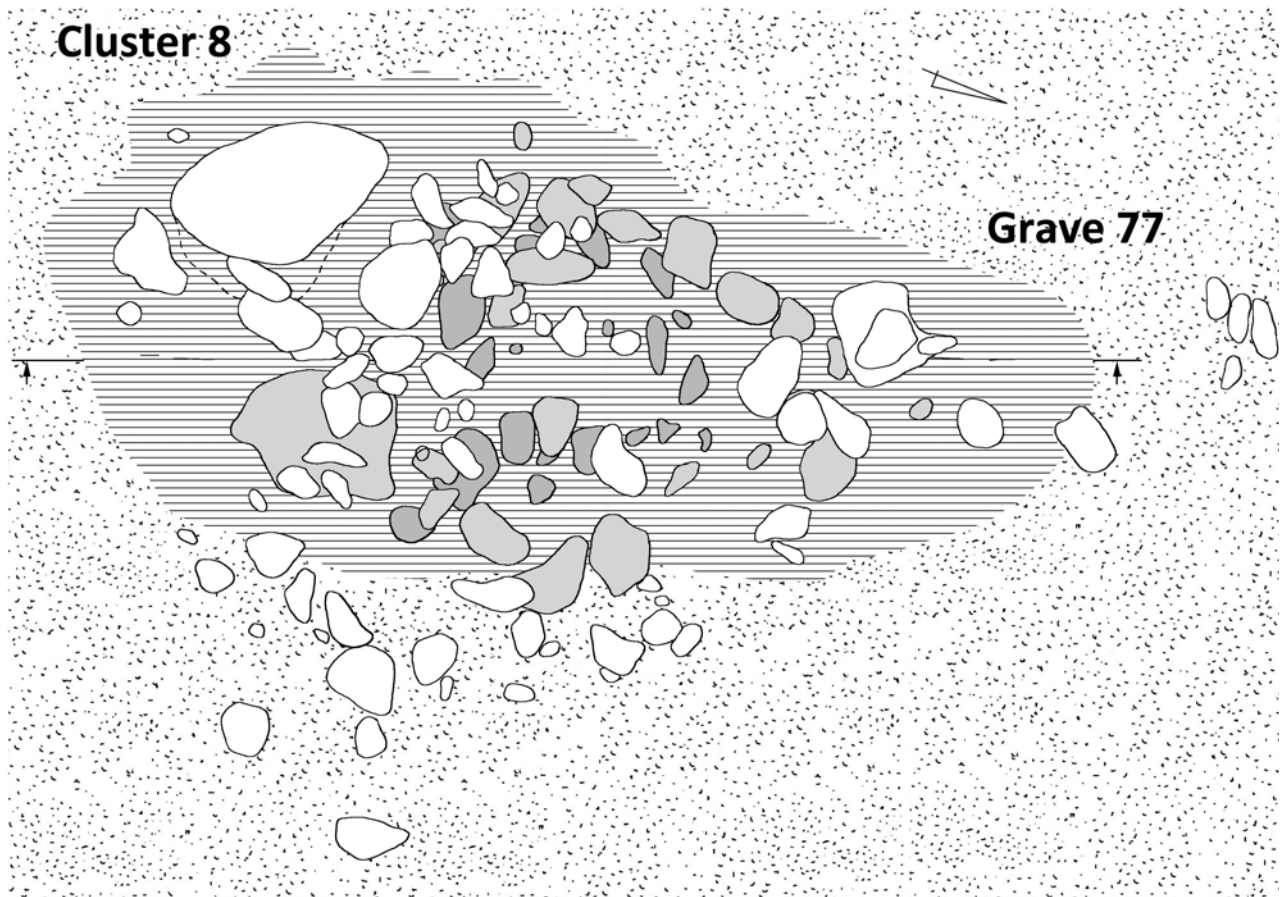


Plate XLIV. Grave 74: 1-4 – clay. Grave 81: 1, 2 – clay, 3, 5, 6 – iron, 4 – copper alloy.



Grave 77

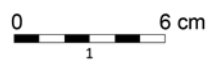
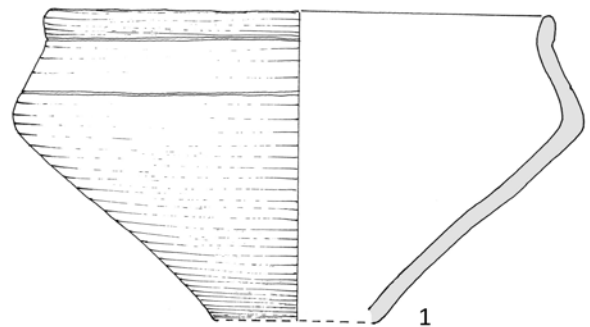


Plate XLV. Stone structures 8, Grave 77: 1 – clay.

Grave 78, Cluster 9

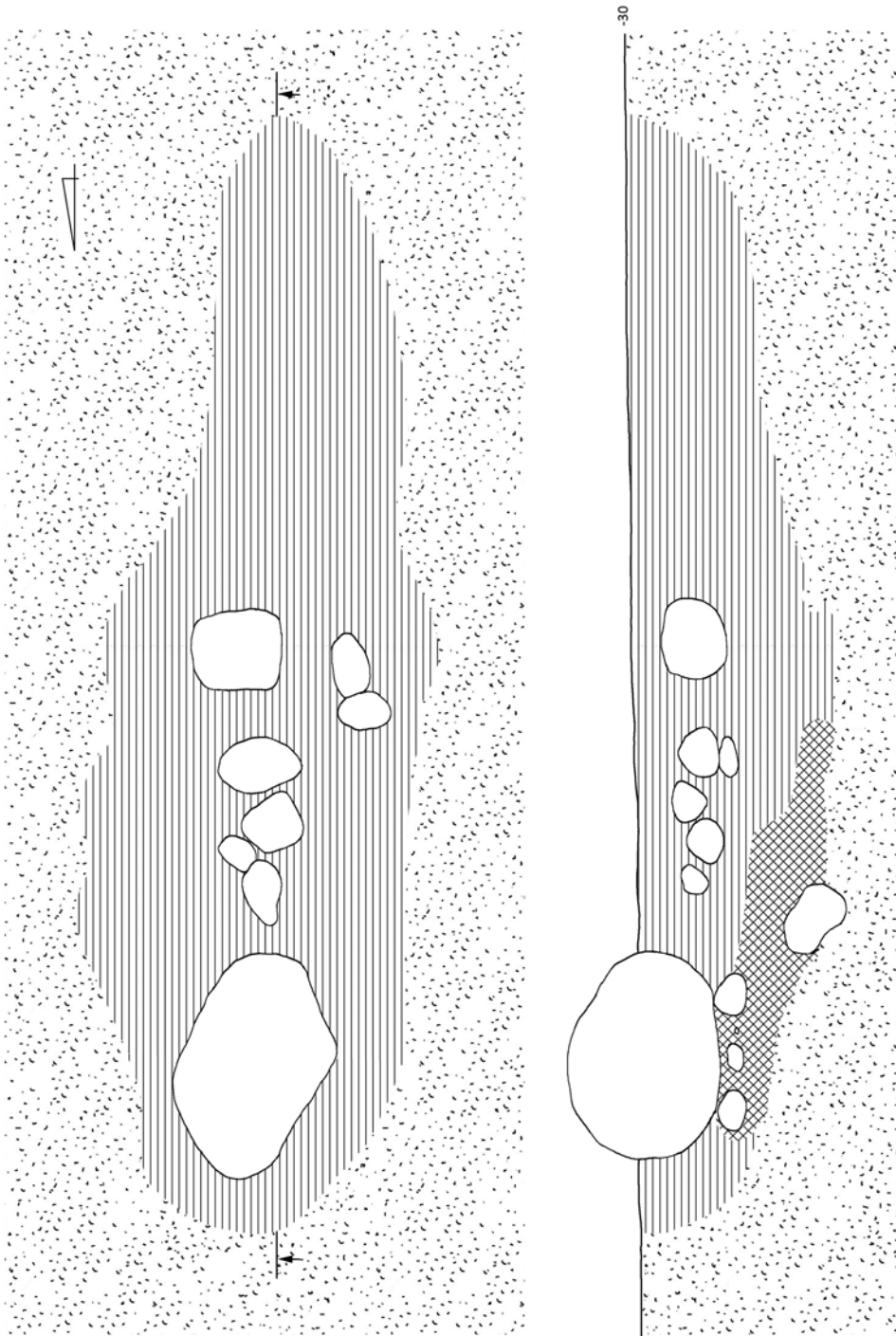
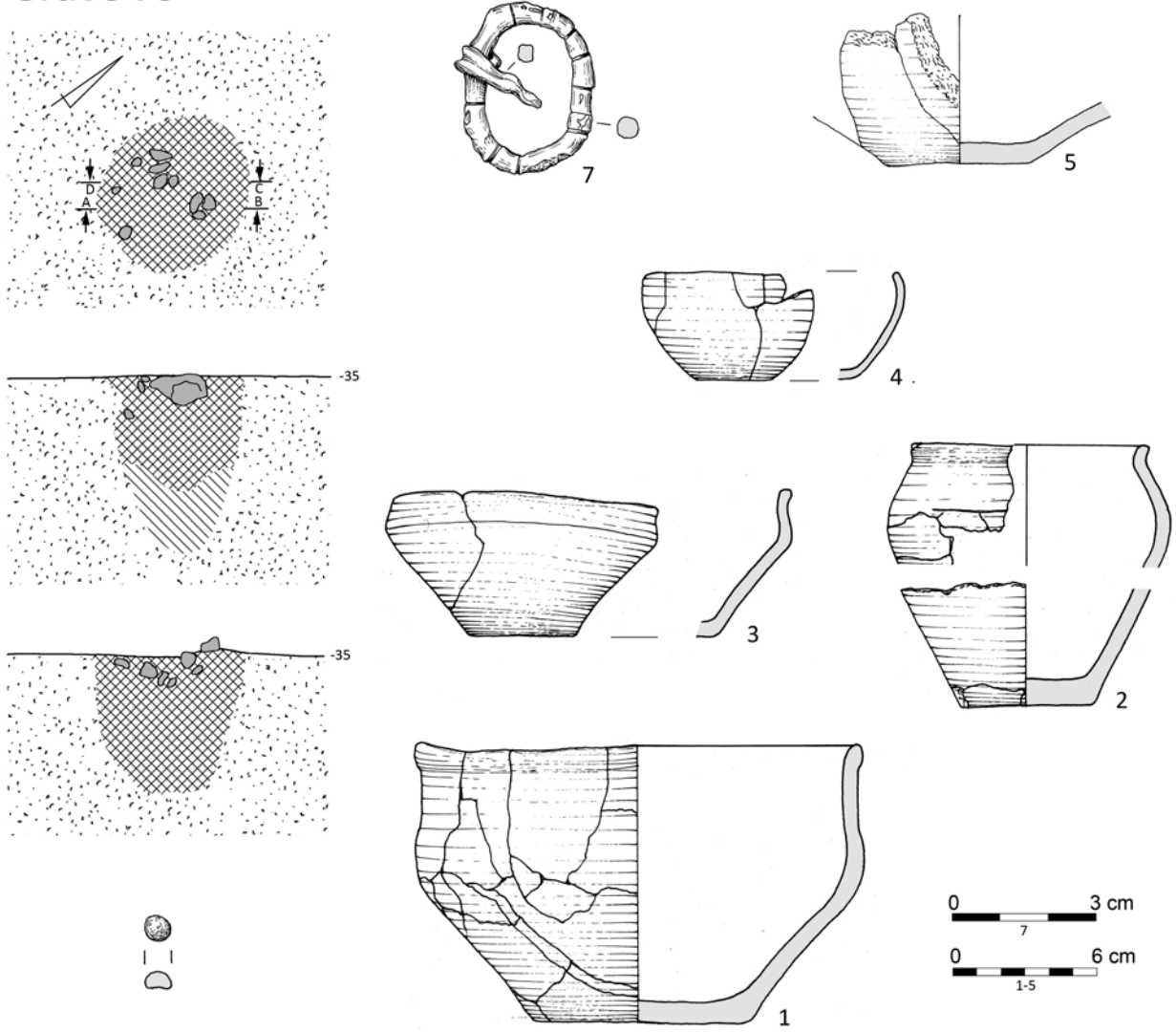


Plate XLVI. Grave 78. Stone structures 9.

Grave 79



Grave 82

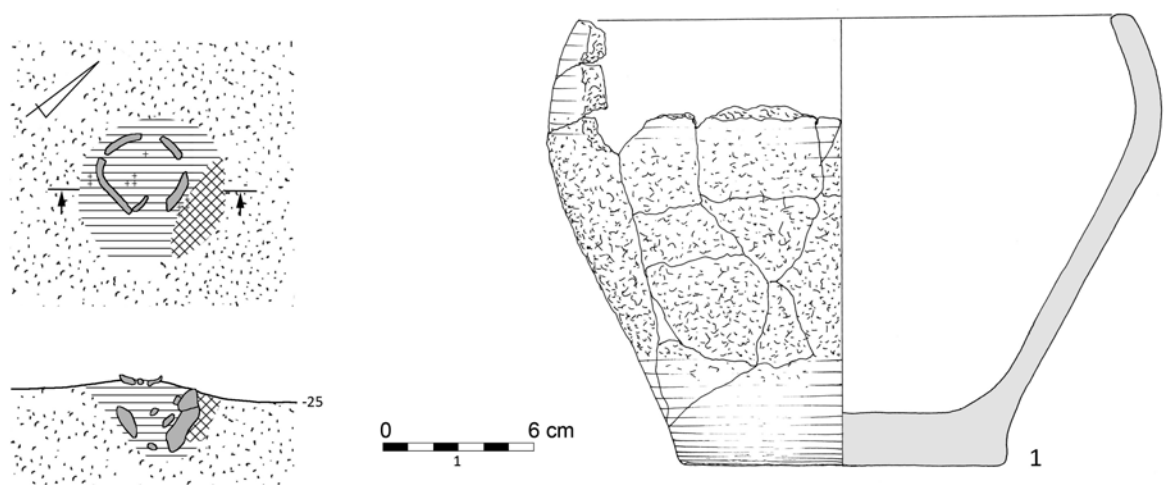


Plate XLVII. Grave 79: 1-5 – clay, 7 – iron. Grave 82: 1 – clay.

Grave 80

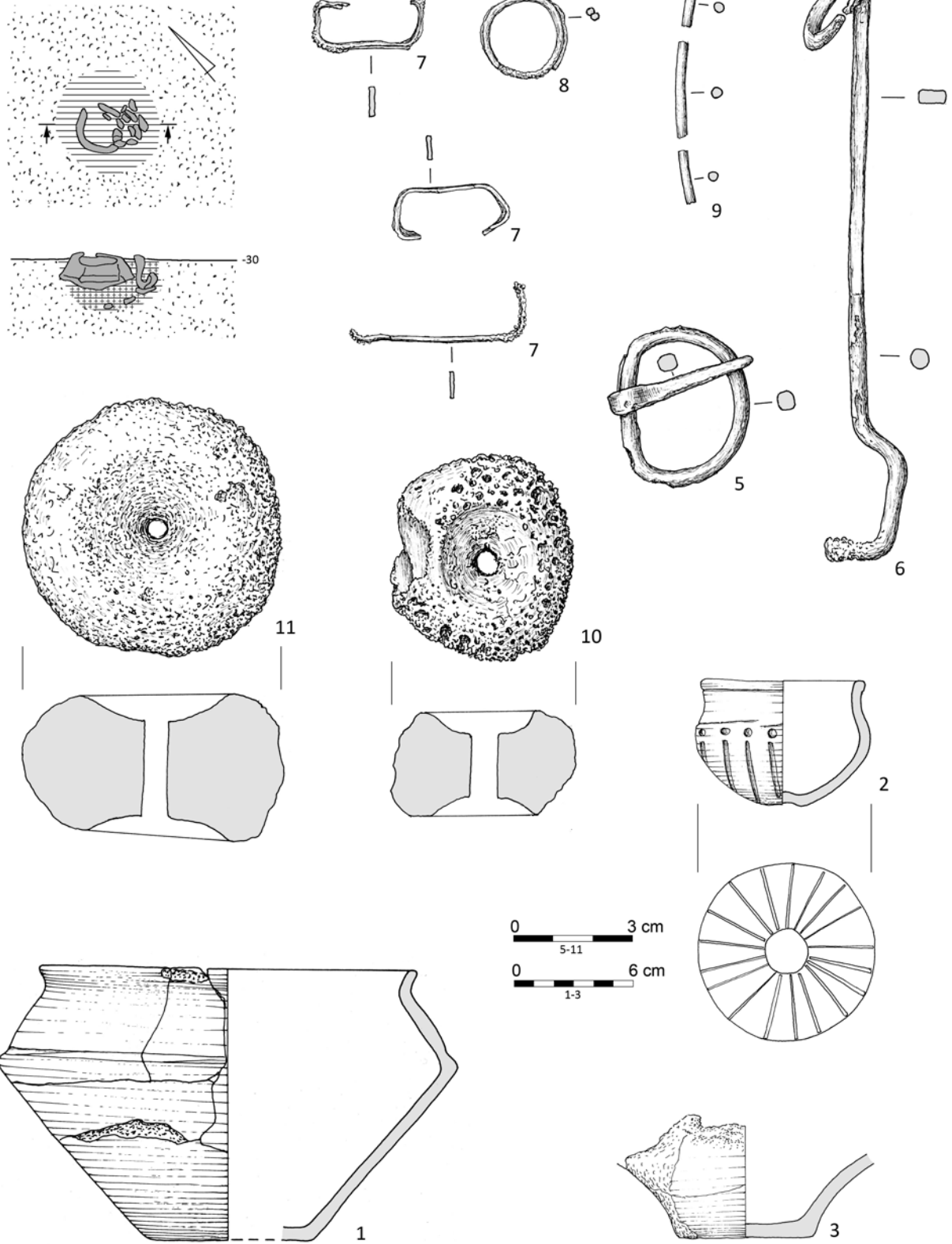
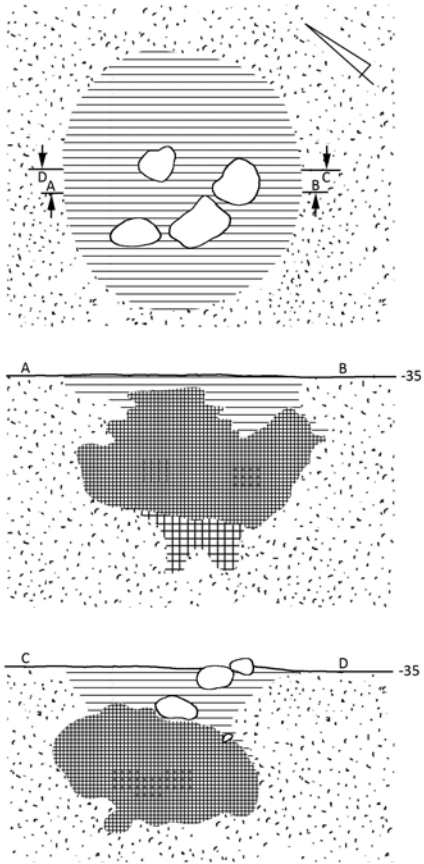
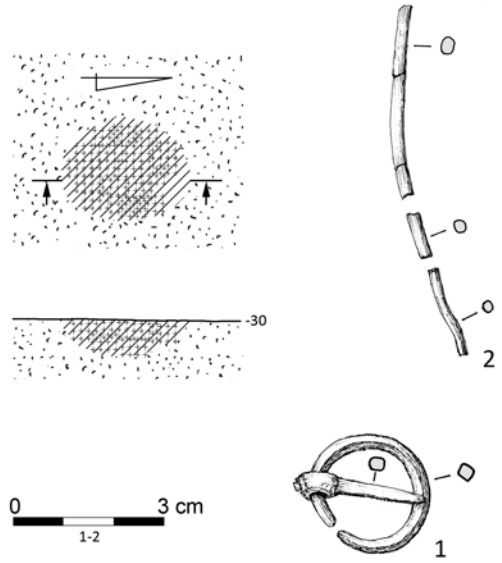


Plate XLVIII. Grave 80: 1-3, 10, 11 - clay, 5-8 - iron, 9 - antler.

Grave 83



Grave 84



Grave 85

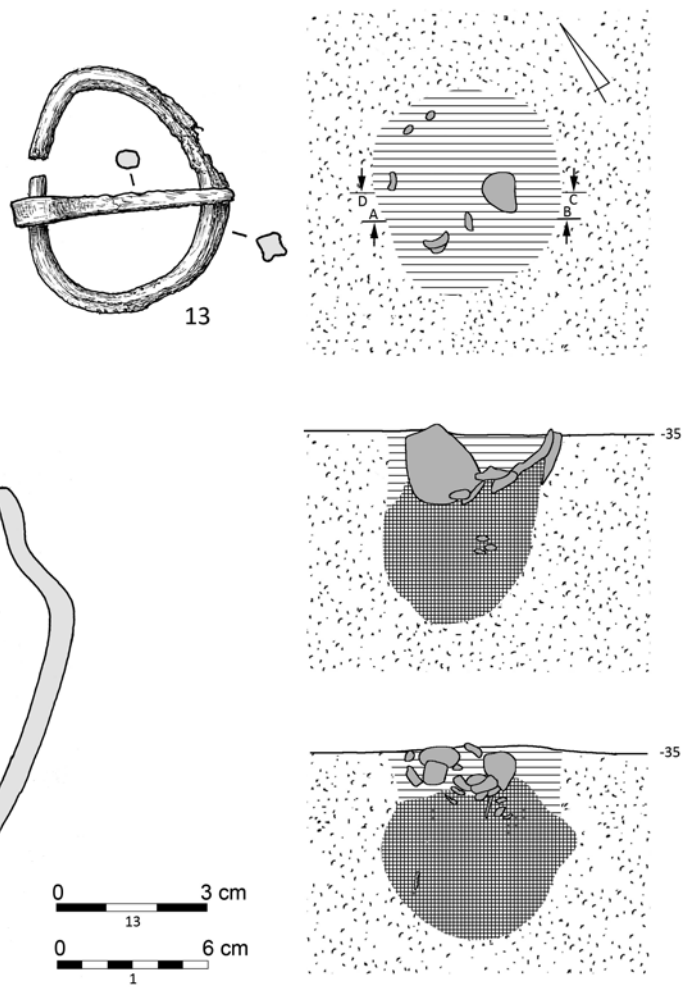


Plate XLIX. Grave 83. Grave 84: 1 – iron, 2 – antler. Grave 85: 1 – clay, 13 – iron.

Grave 85

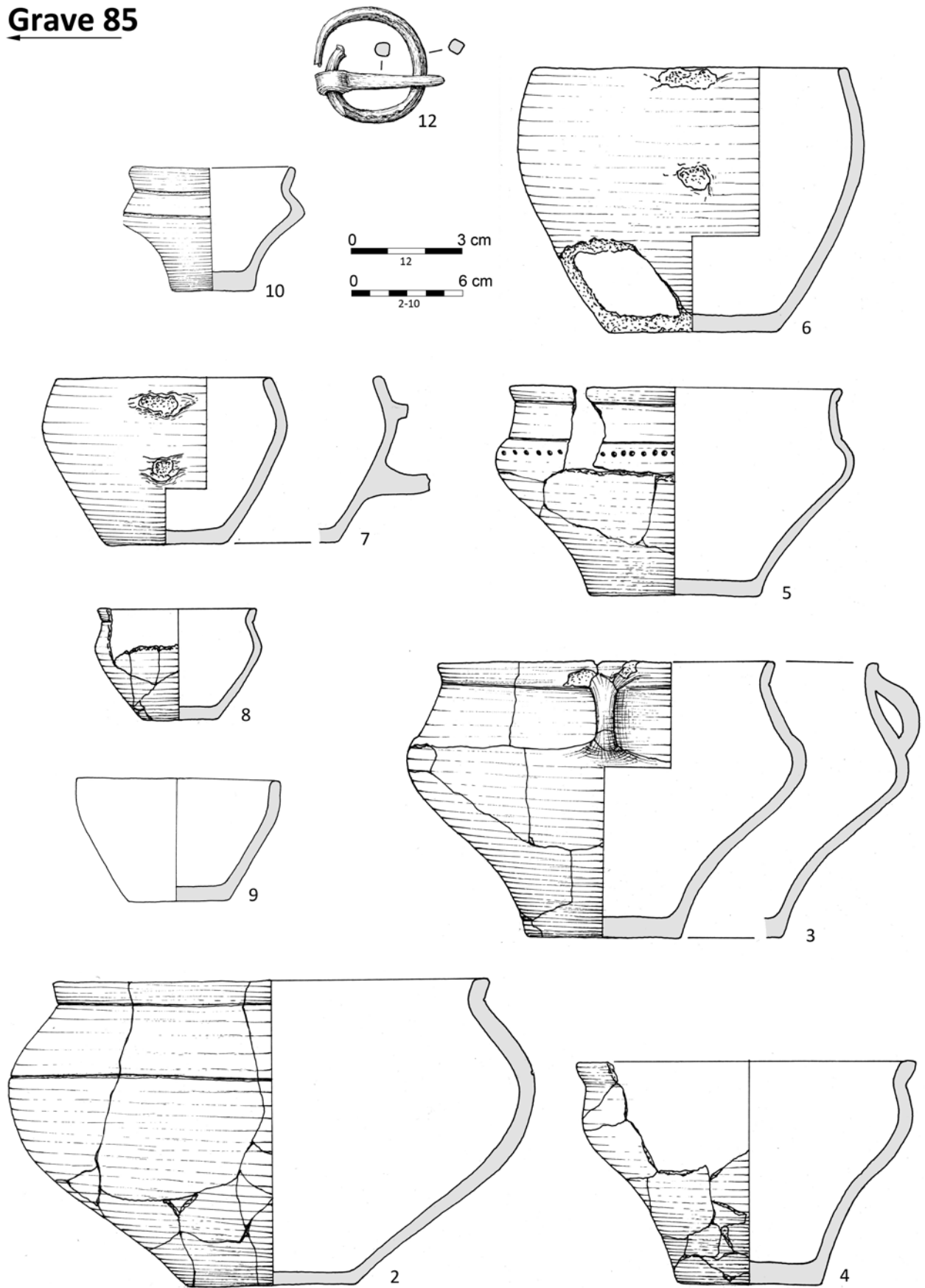
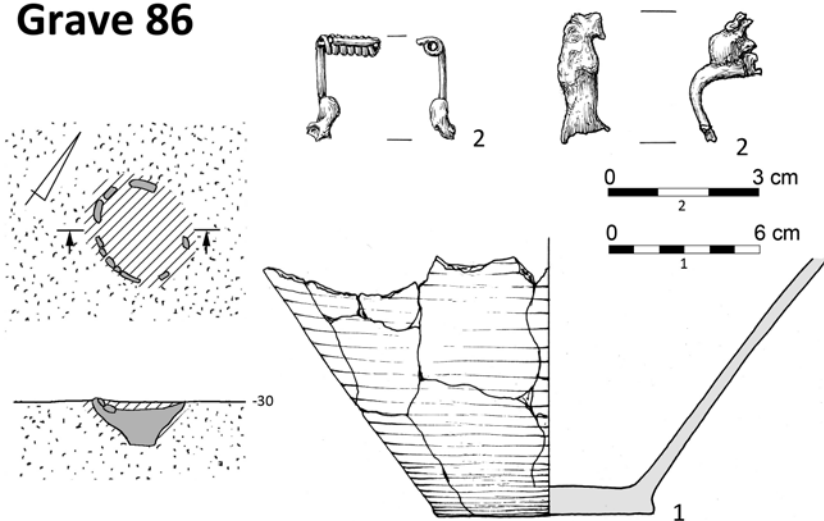
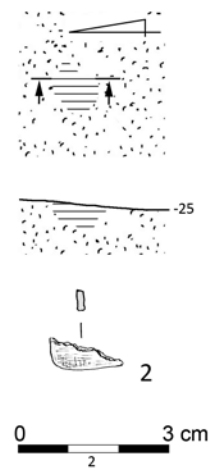


Plate L. Grave 85: 2-10 – clay, 12 – iron.

Grave 86



Grave 88



Grave 90

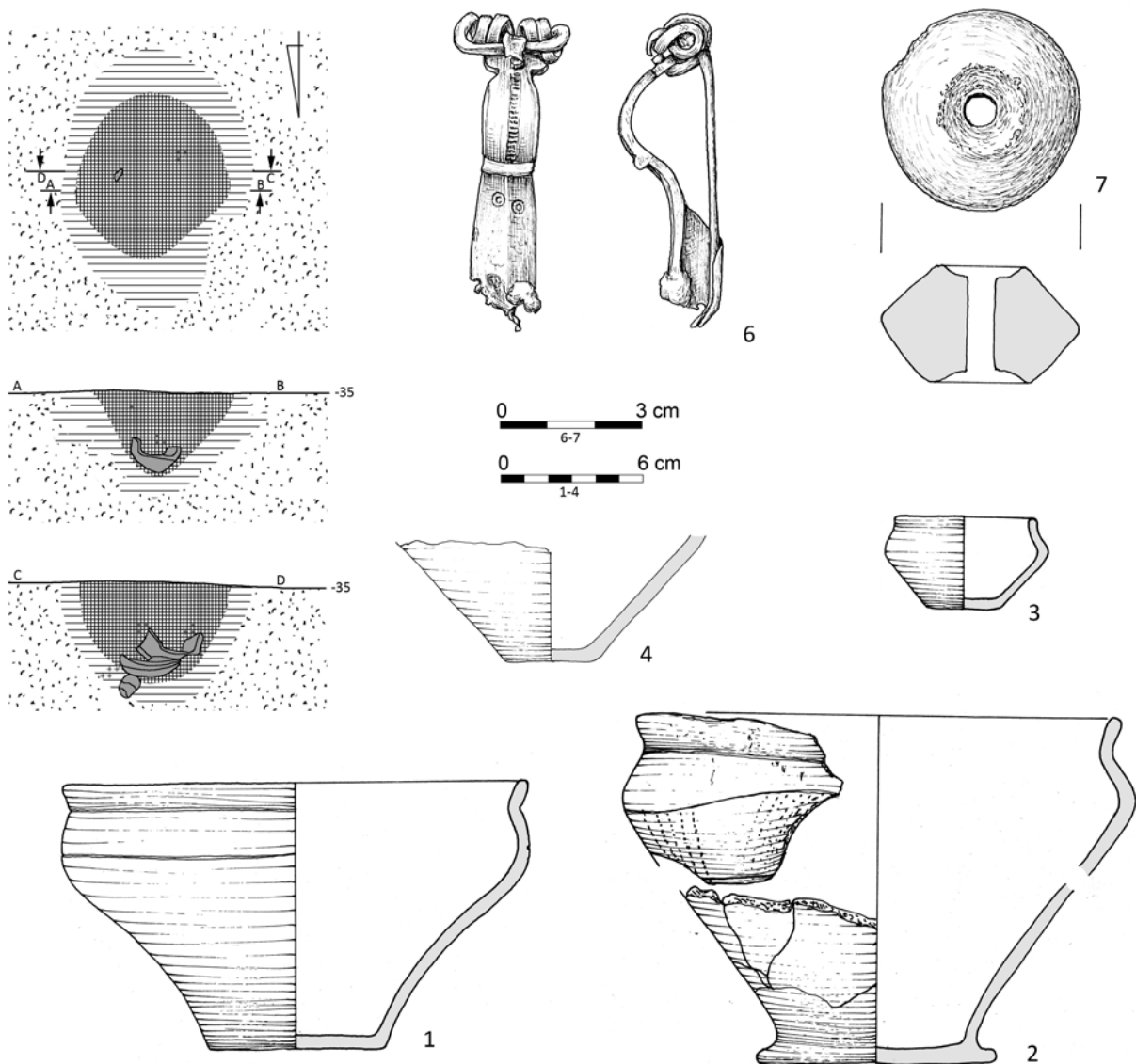
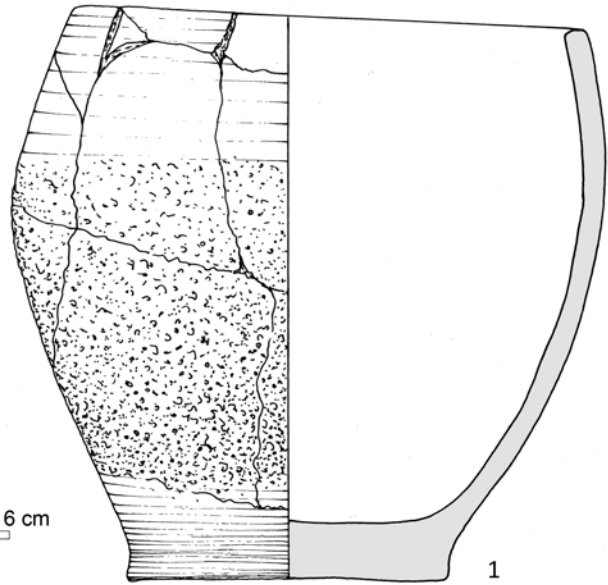
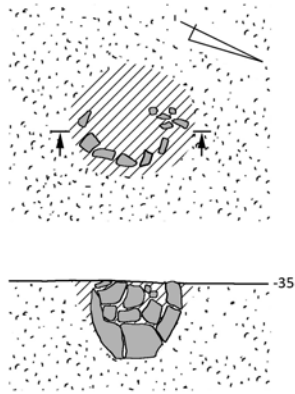


Plate LI. Grave 86: 1 – clay, 2 – copper alloy. Grave 88. Grave 90: 1–4, 7 – clay, 6 – copper alloy.

Grave 87



Grave 89

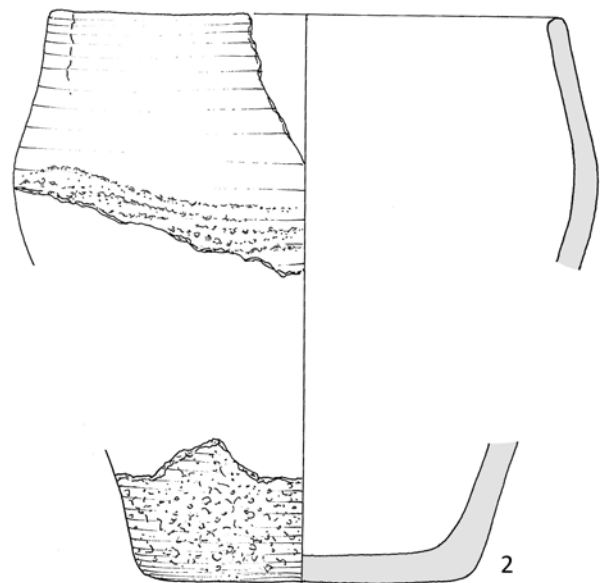
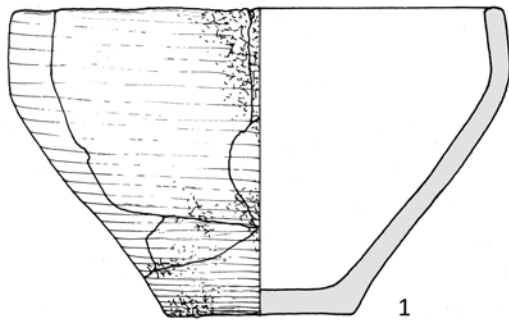
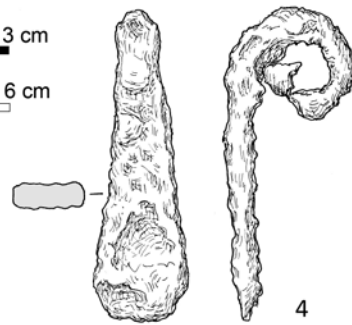
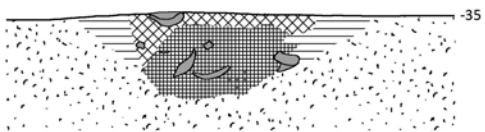
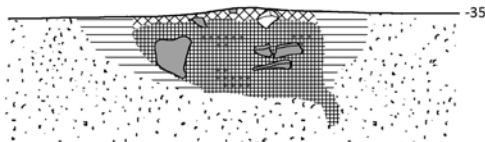
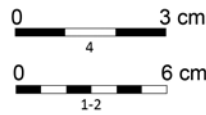
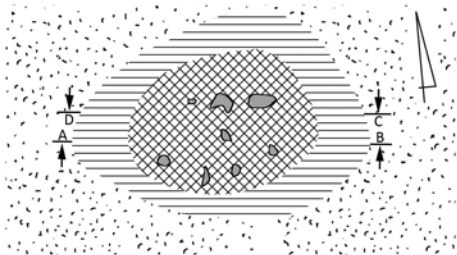
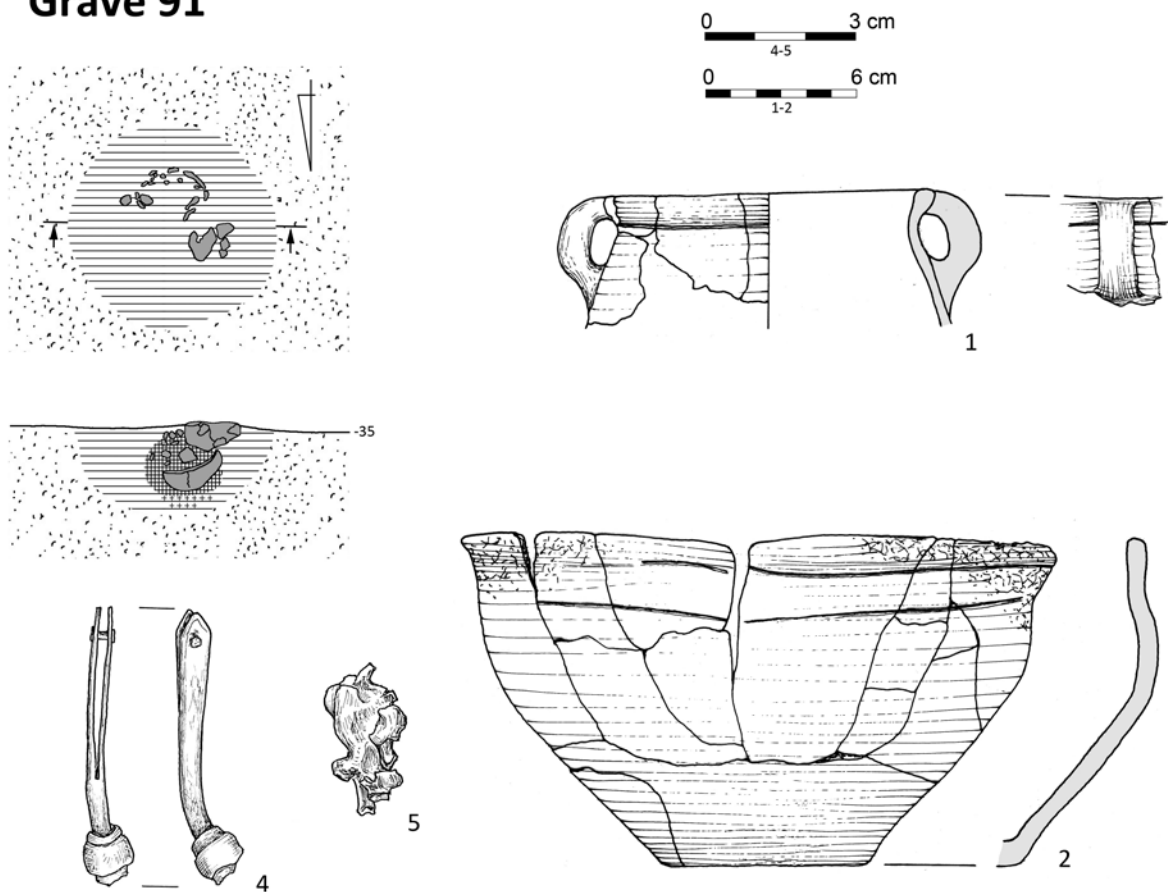


Plate LII. Grave 87: 1 – clay. Grave 1, 2 – clay, 4 – iron.

Grave 91



Grave 96

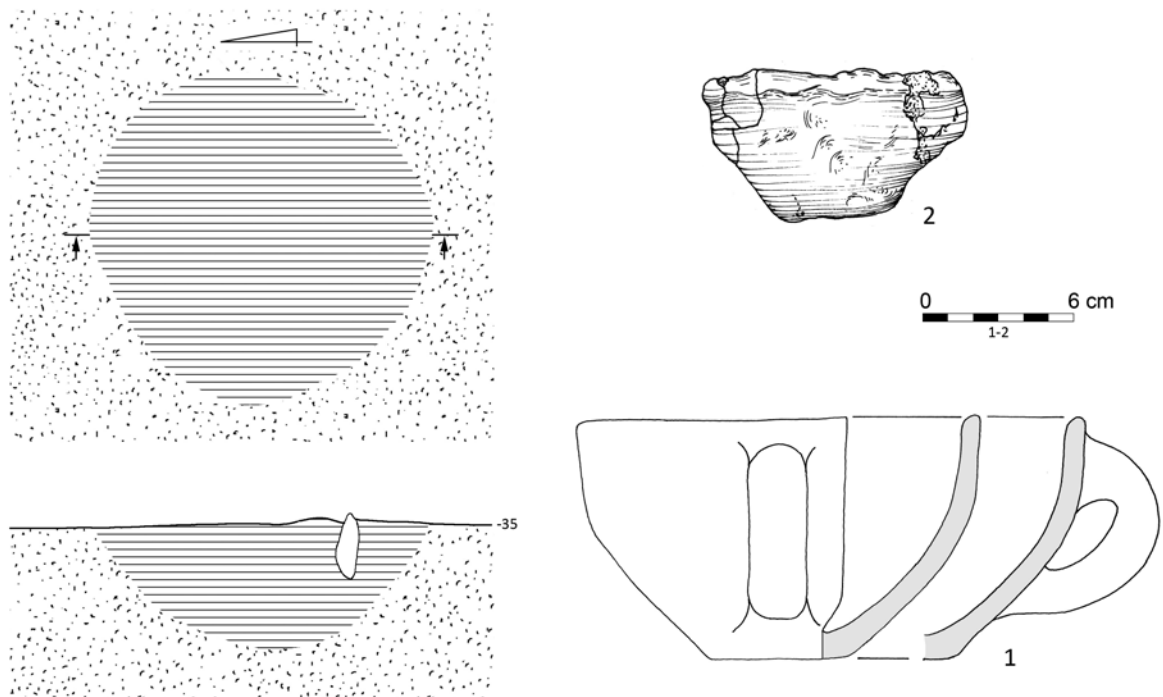


Plate LIII. Grave 91: 1, 2 – clay, 4, 5 – copper alloy. Grave 96: 1, 2 – clay.

Grave 92

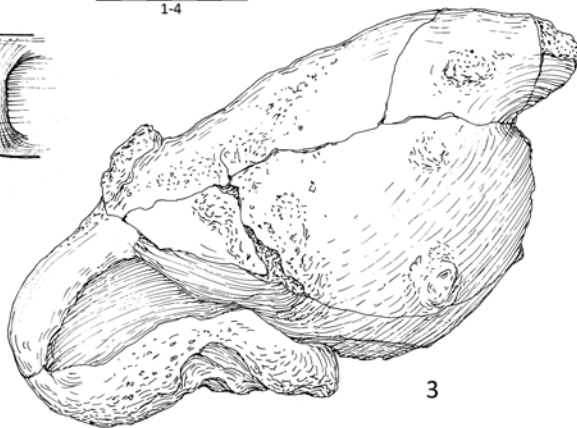
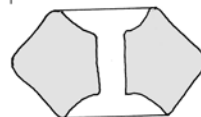
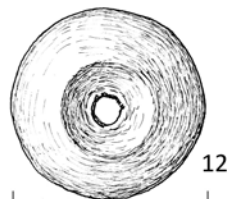
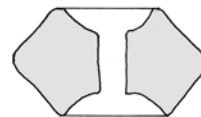
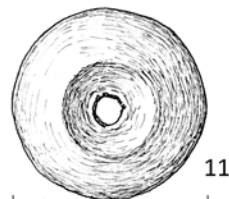
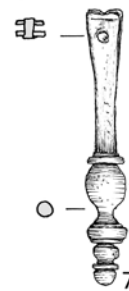
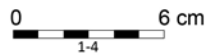
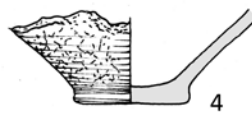
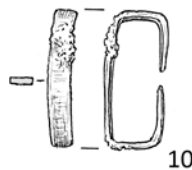
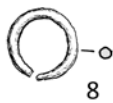
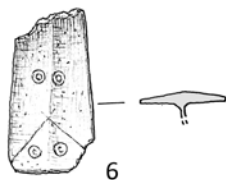
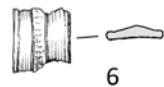
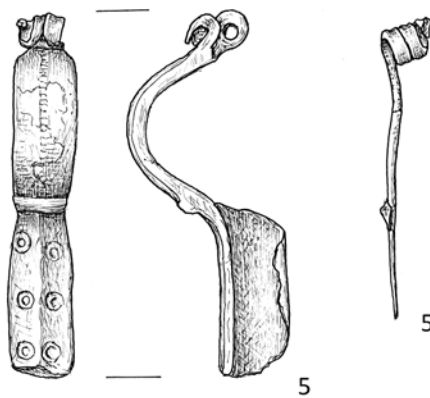
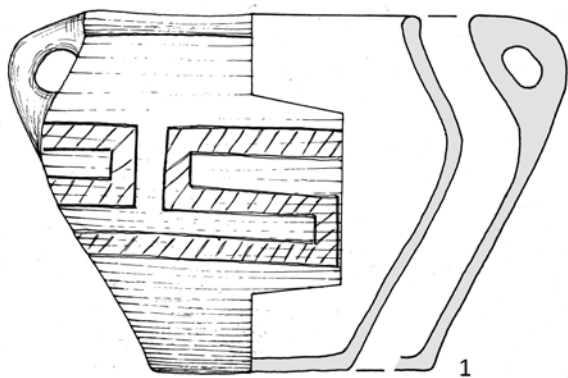
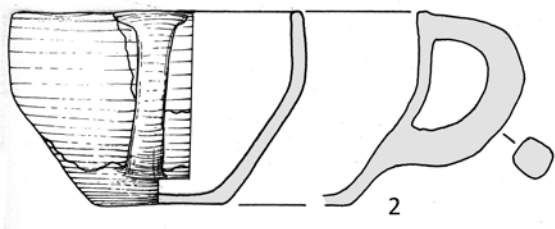
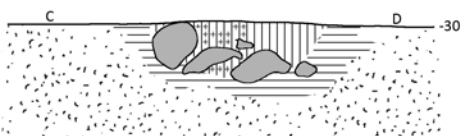
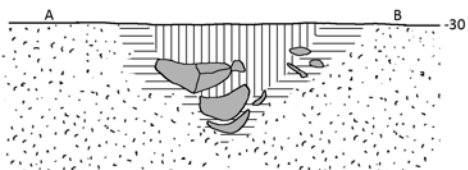
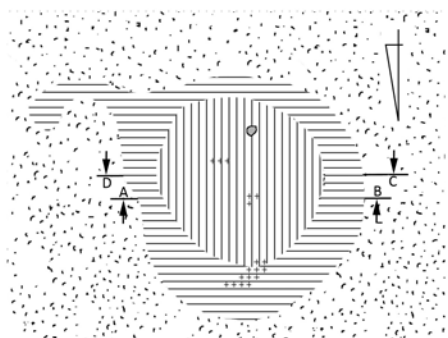
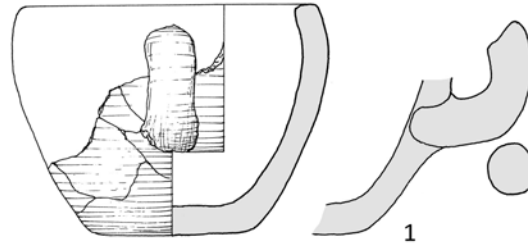
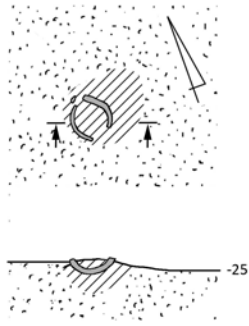


Plate LIV. Grave 92: 1-4, 11, 12 – clay, 5-7, 9 – copper alloy, 8, 10 – iron.

Grave 93



Grave 94

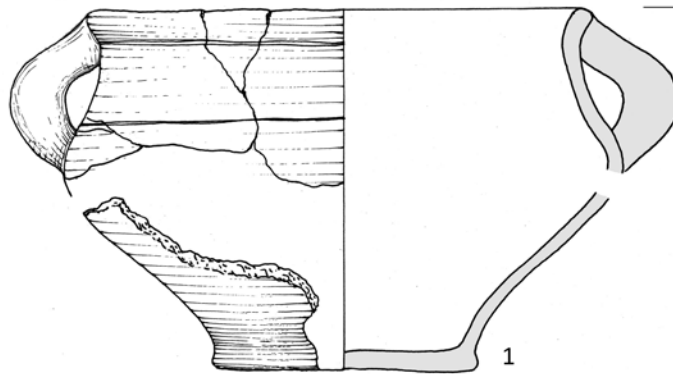
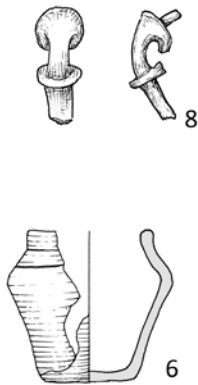
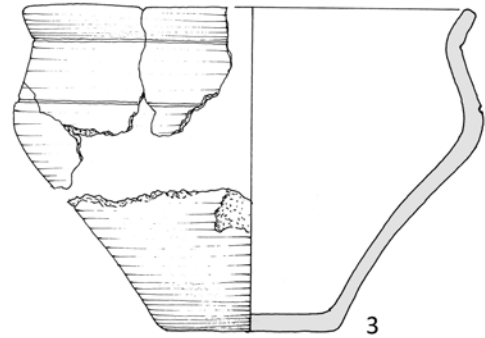
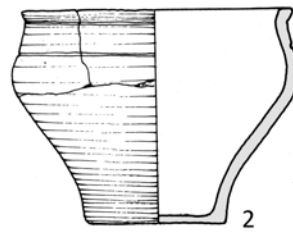
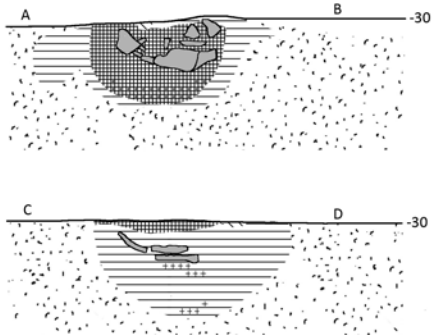
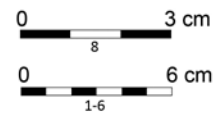
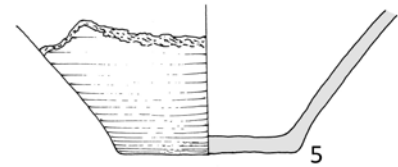
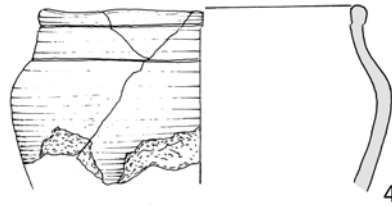
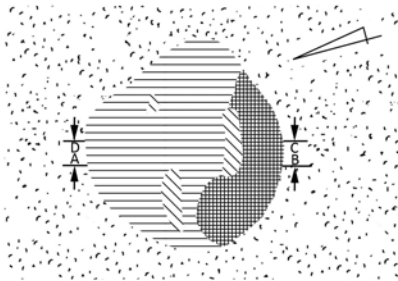


Plate LV. Grave 93: 1 – clay. Grave 94: 1–6 – clay, 8 – copper alloy.

Grave 95

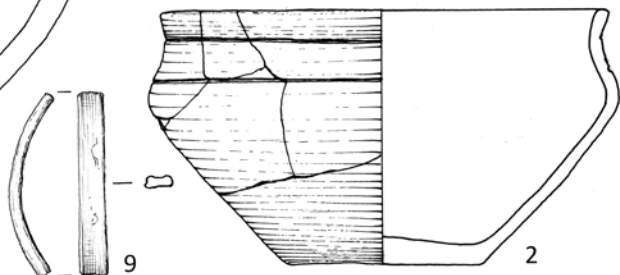
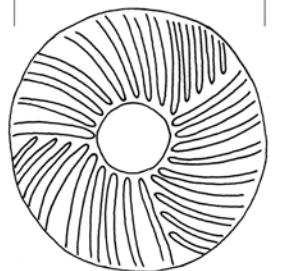
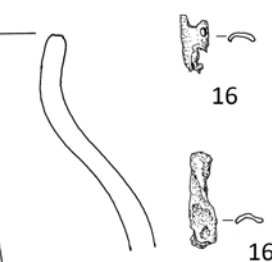
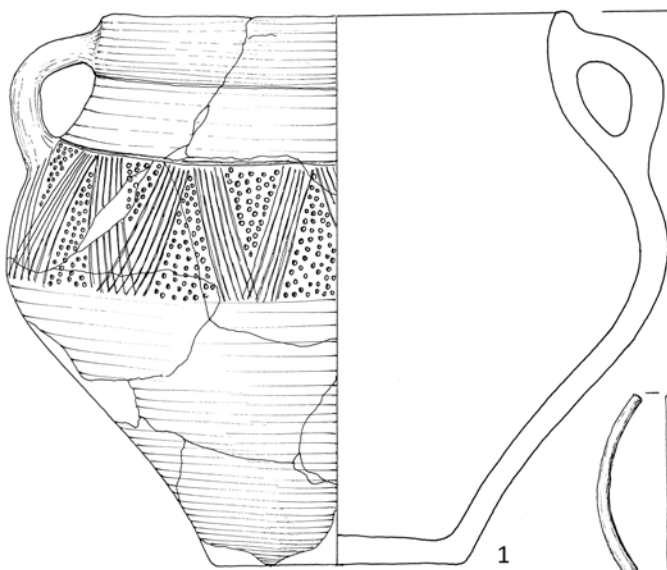
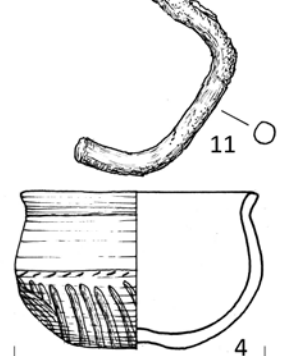
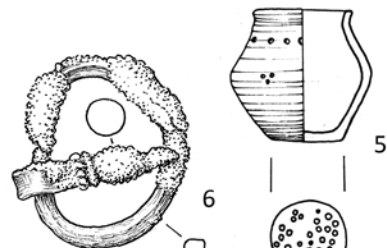
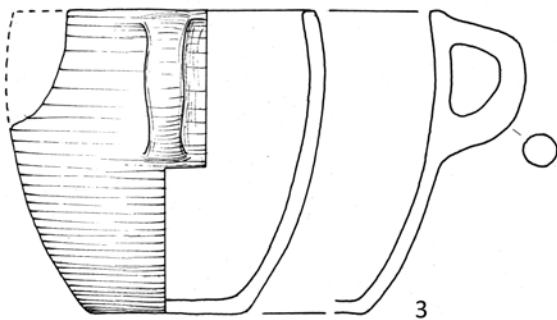
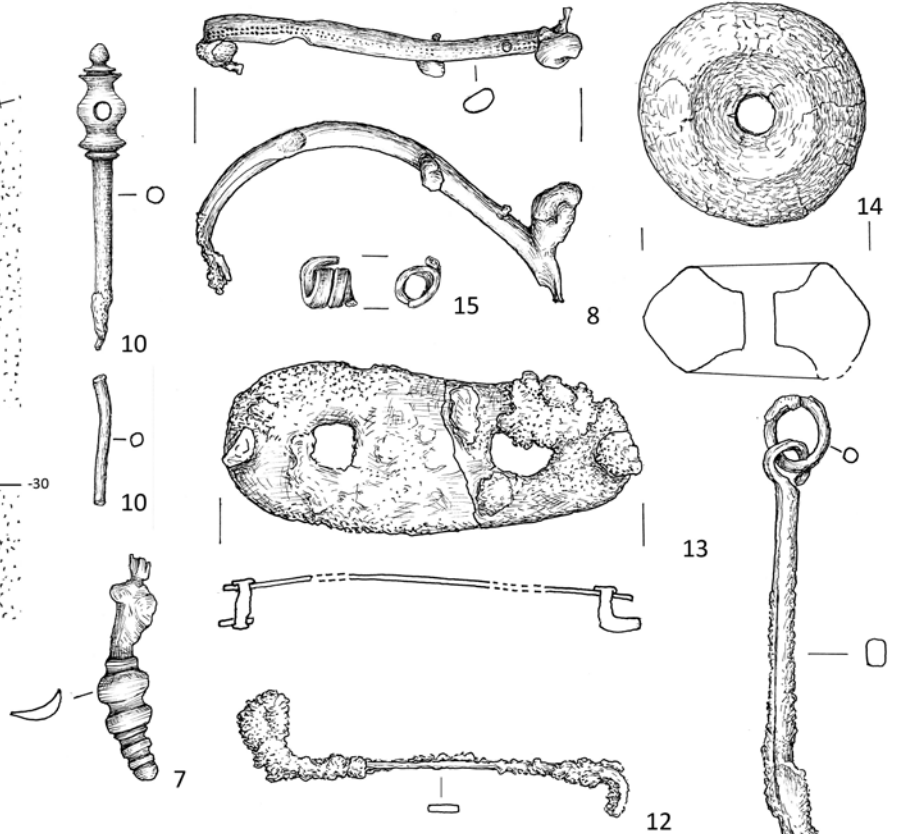
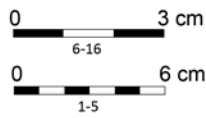
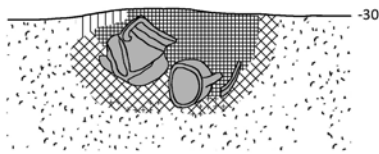
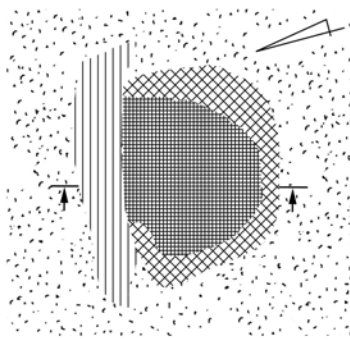
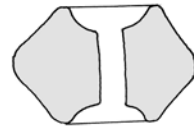
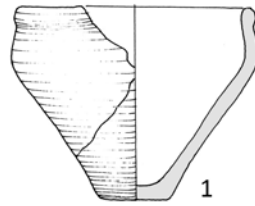
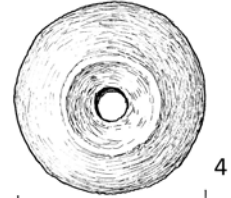
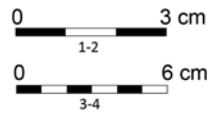
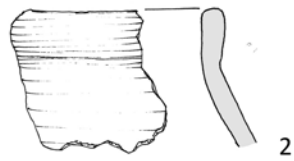
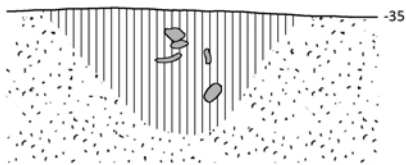
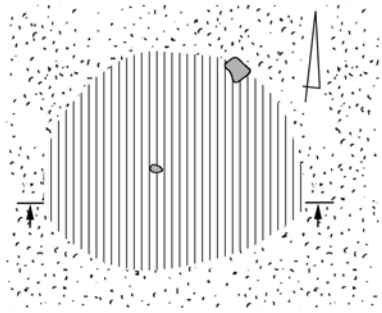


Plate LVI. Grave 1-5, 14 - clay, 6, 11-13 - iron, 7-11, 16 - copper alloy.

Grave 97



Grave 98

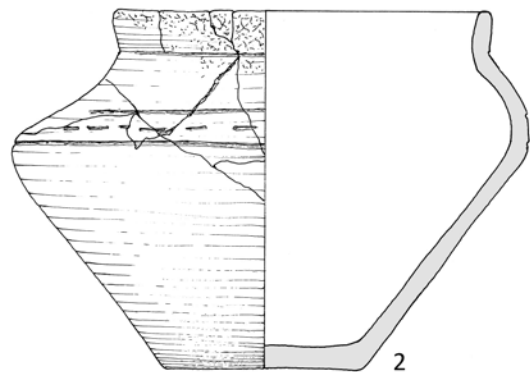
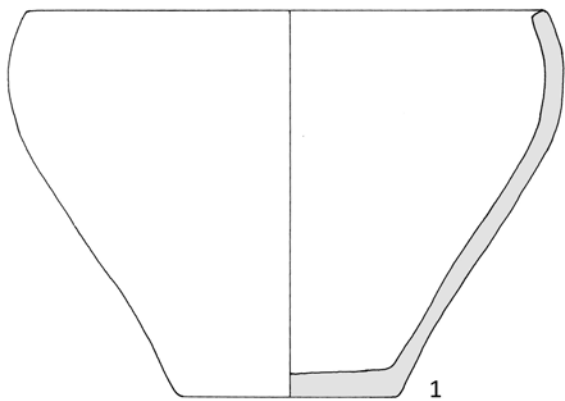
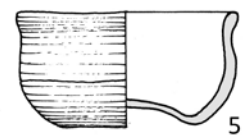
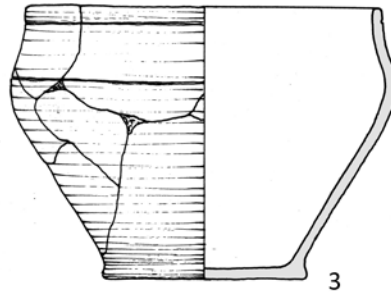
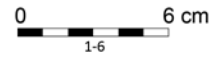
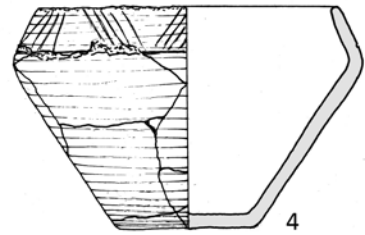
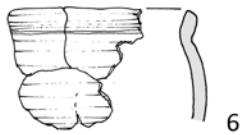
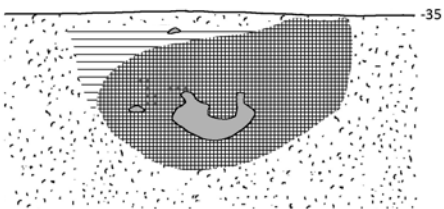
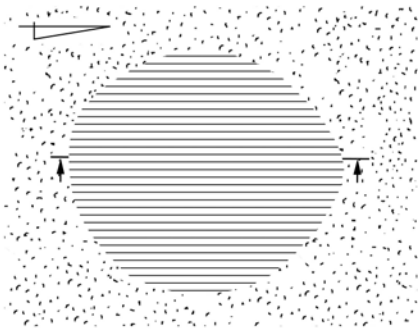
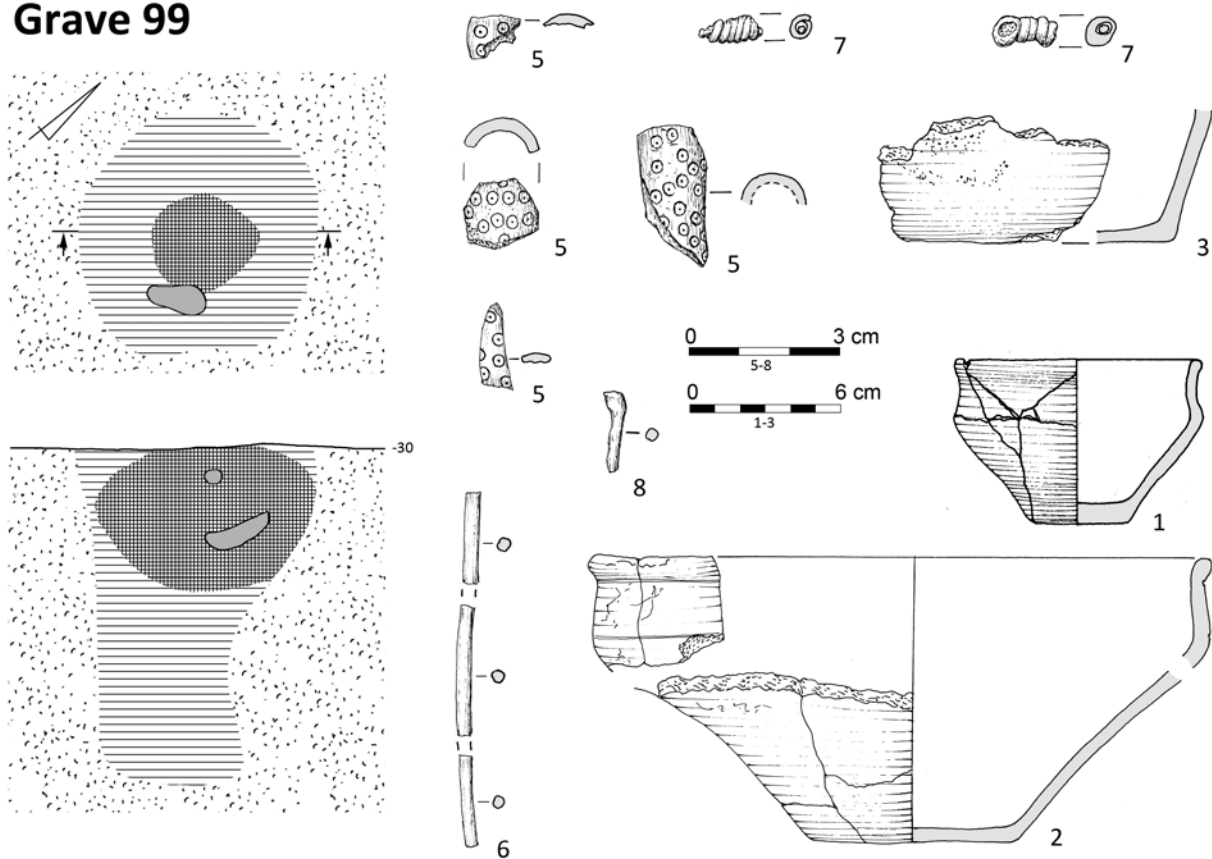


Plate LVII. Grave 97: 1, 2, 4 – clay, 3 – copper alloy. Grave 98: 1–6 – clay.

Grave 99



Grave 100

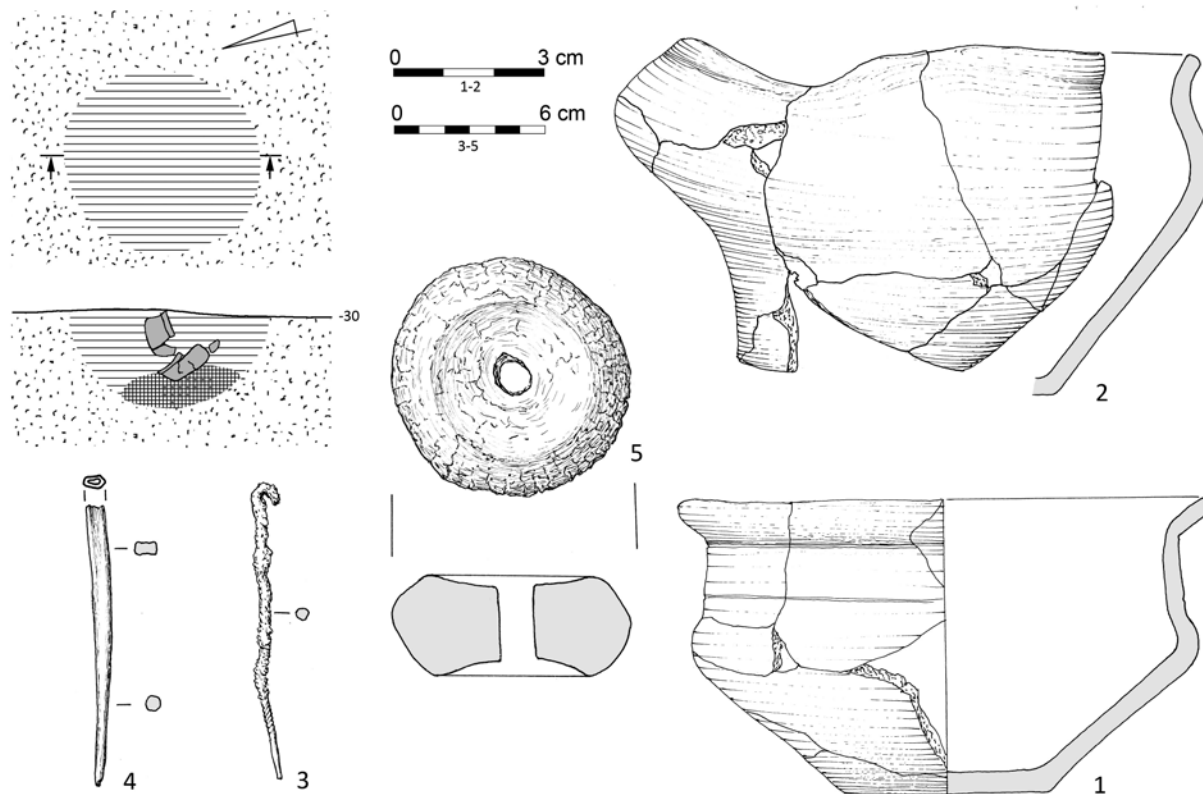
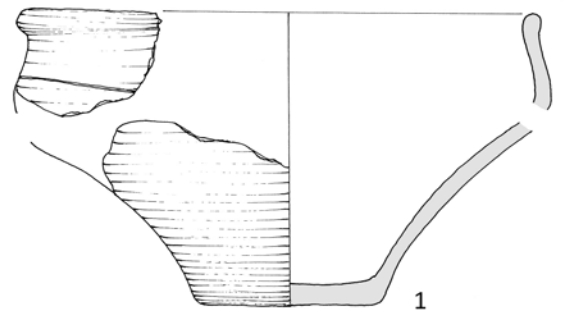
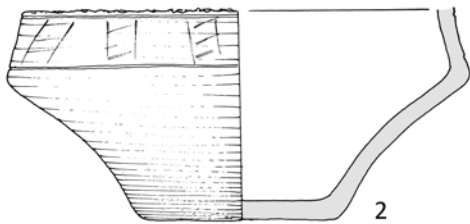
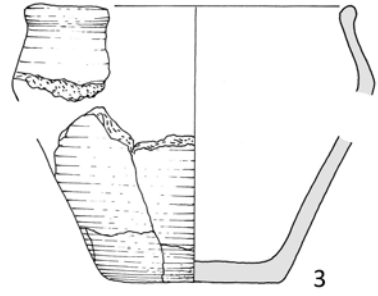
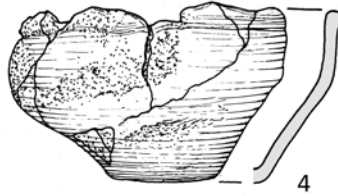
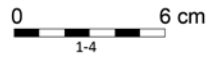
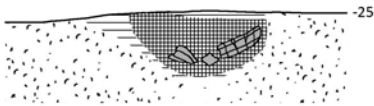
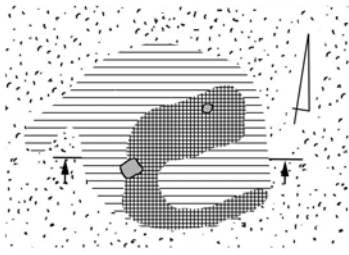


Plate LVIII. Grave: 1-3 – clay, 5, 6 – antler, 7, 8 – copper alloy. Grave 100: 1, 2, 5 – clay, 3 – iron, 4 – copper alloy.

Grave 101



Grave 107

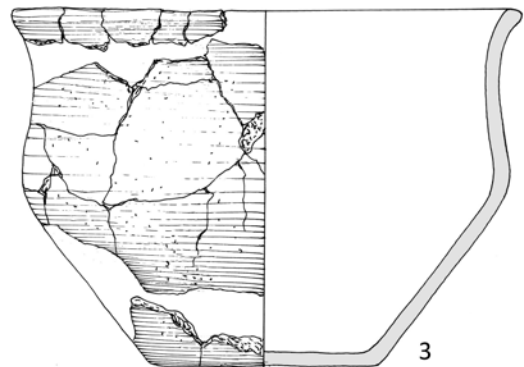
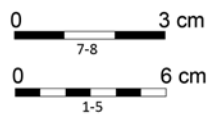
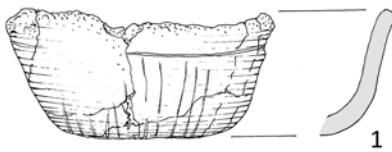
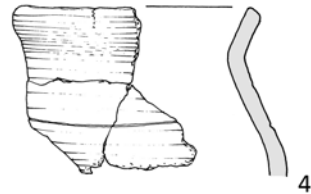
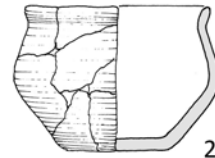
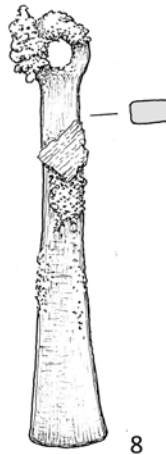
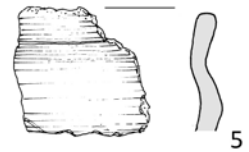
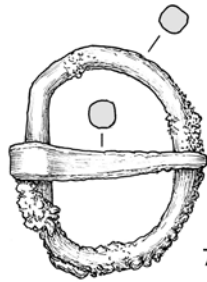
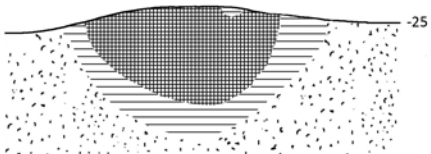
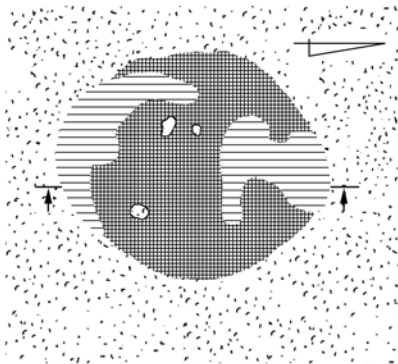


Plate LIX. Grave 101: 1-4 – clay. Grave 107: 1-5 – clay, 7, 8 – iron.

Grave 102

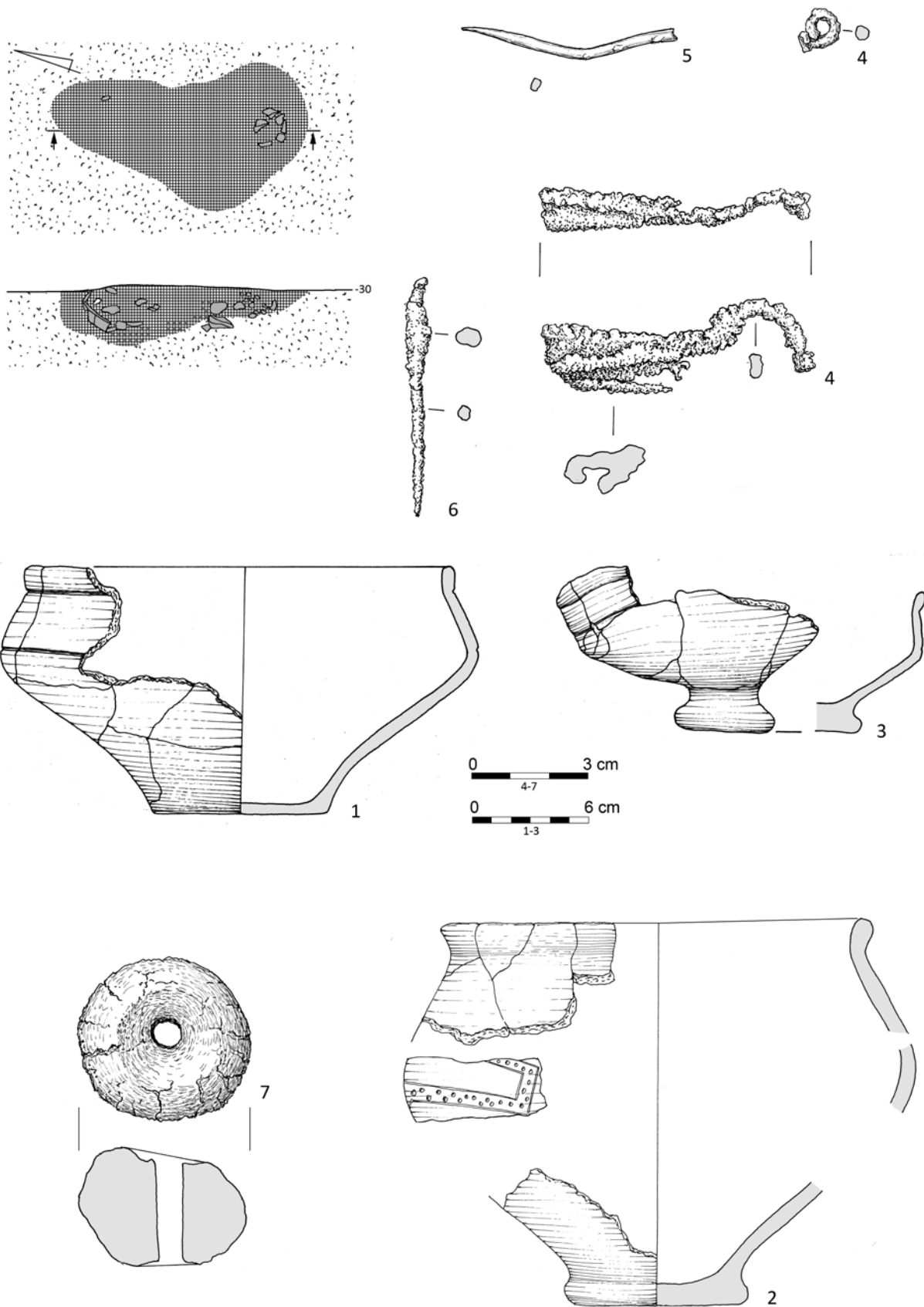


Plate LX. Grave: 1-3, 7 - clay, 4, 5 - copper alloy, 6 - iron.

Grave 103

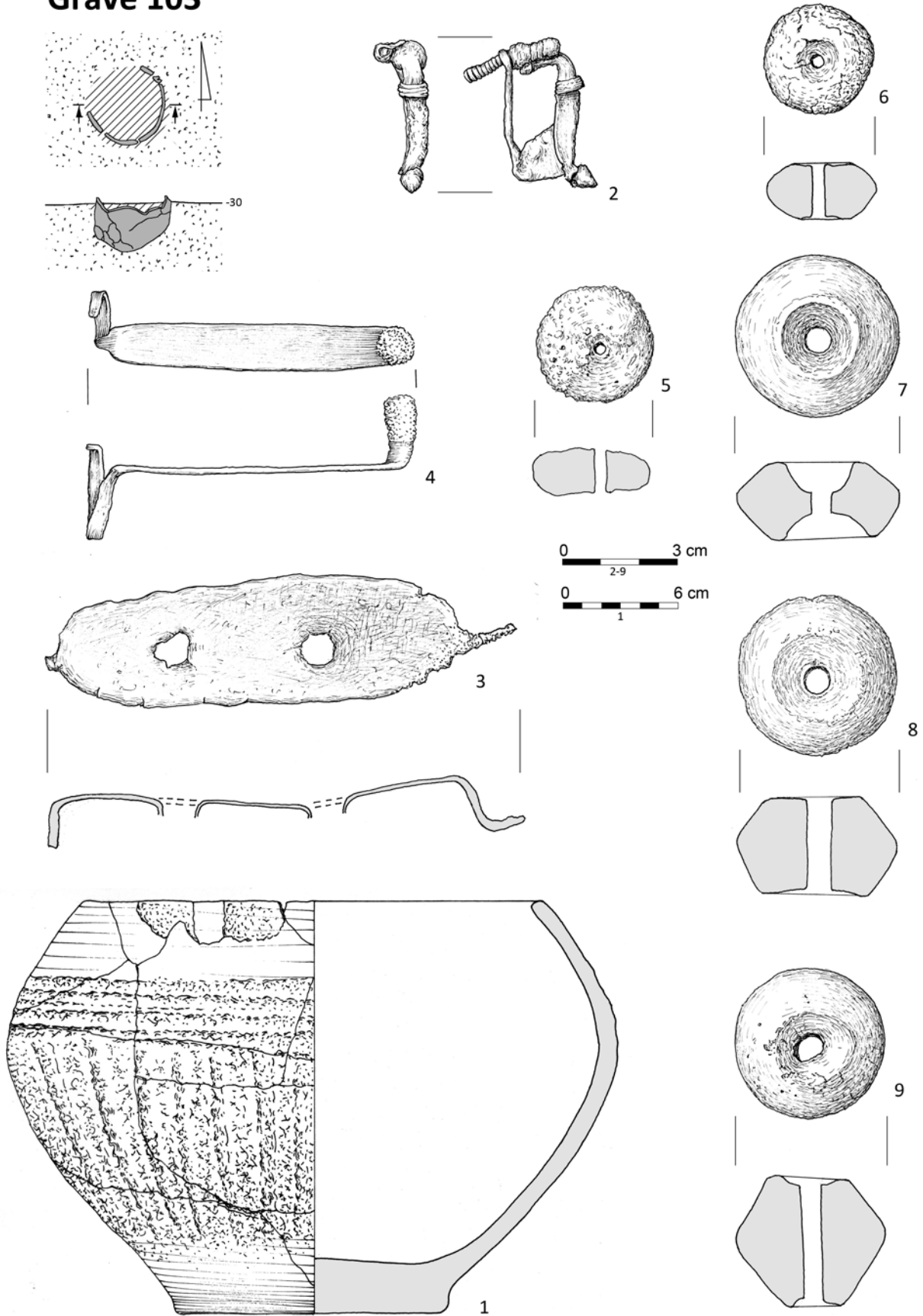
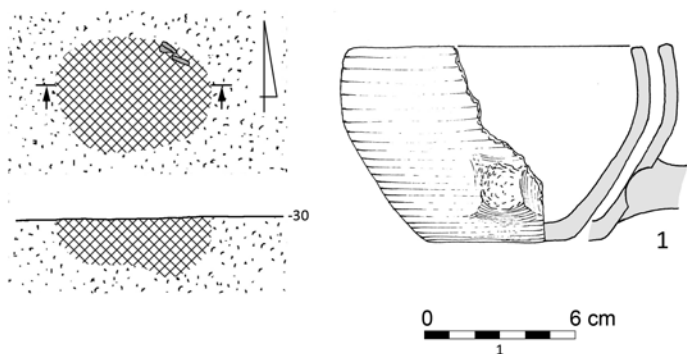
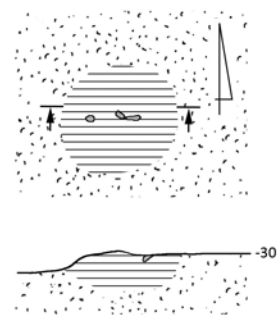


Plate LXI. Grave 103: 1, 5-9 – clay, 2 – copper alloy, 3, 4 – iron.

Grave 104



Grave 108



Grave 110

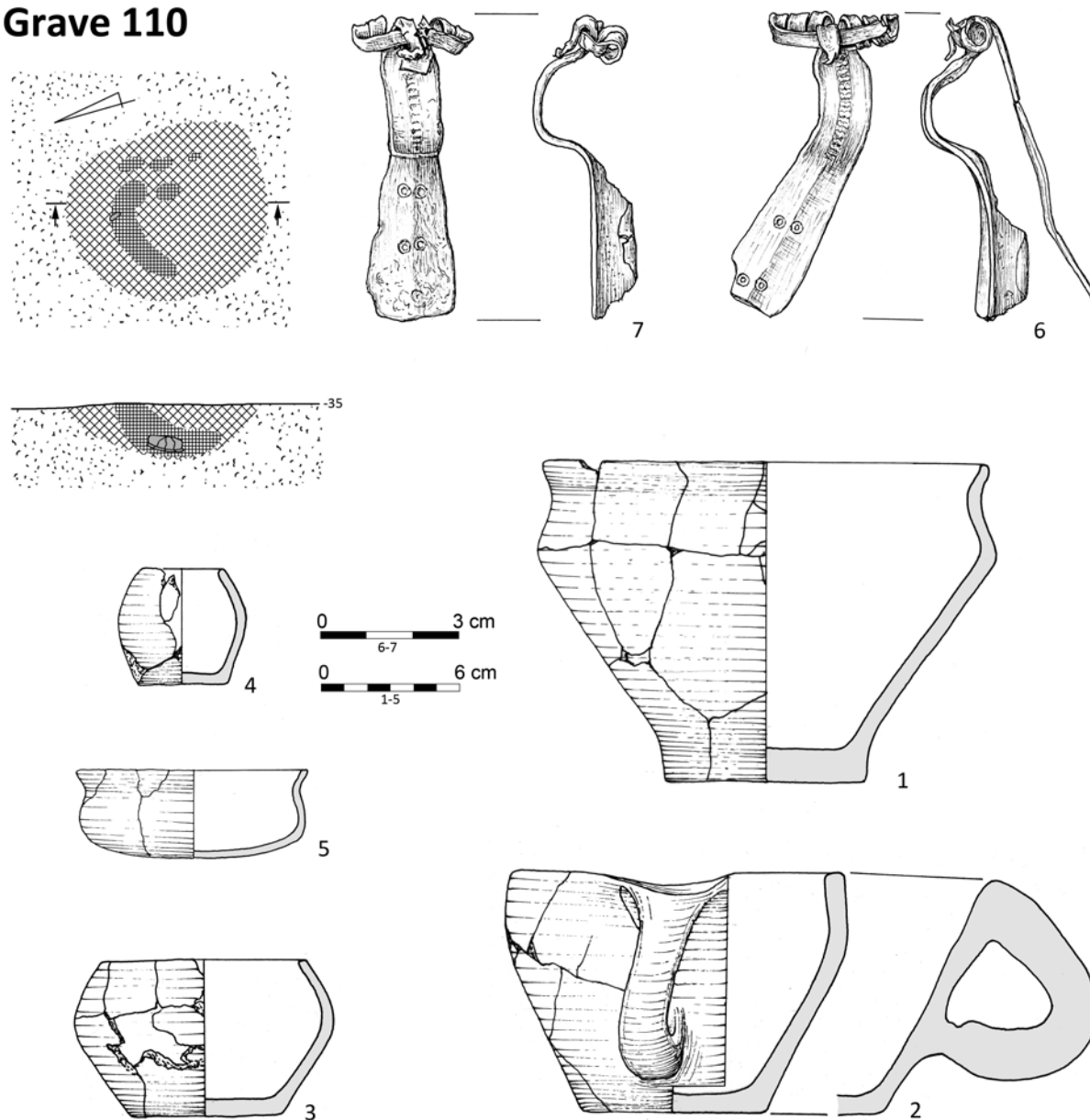
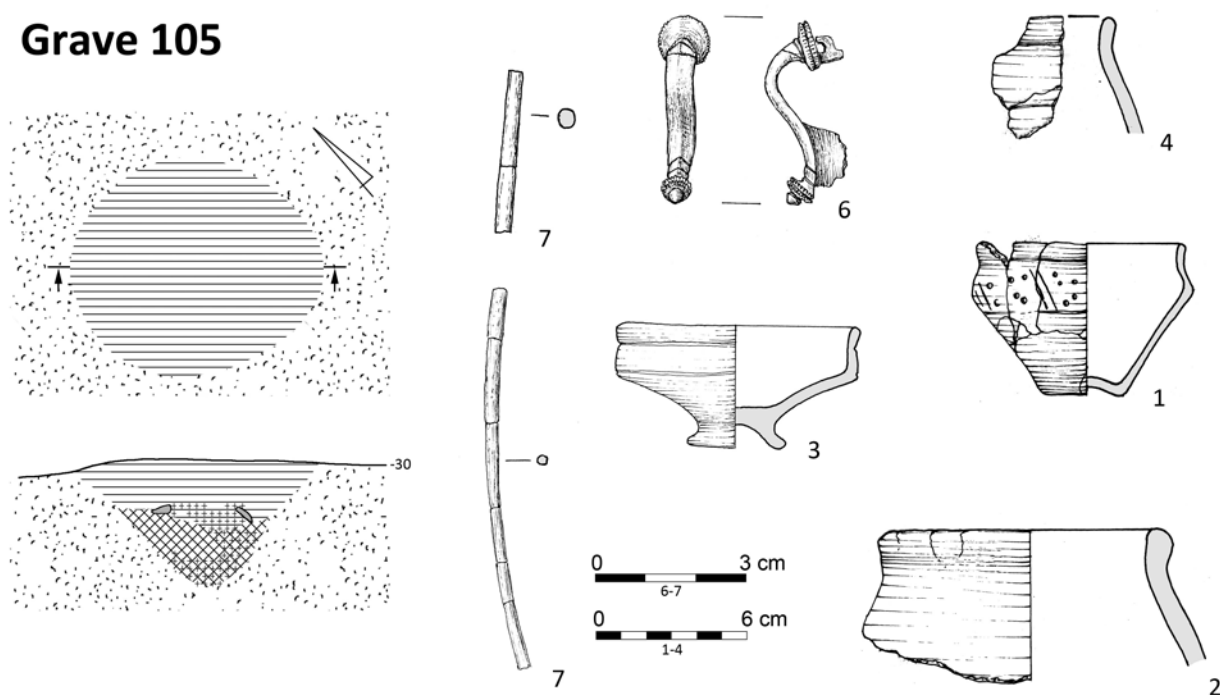


Plate LXII. Grave 104: 1 – clay. Grave 108. Grave 110: 1–5 – clay, 6, 7 – copper alloy.

Grave 105



Grave 106

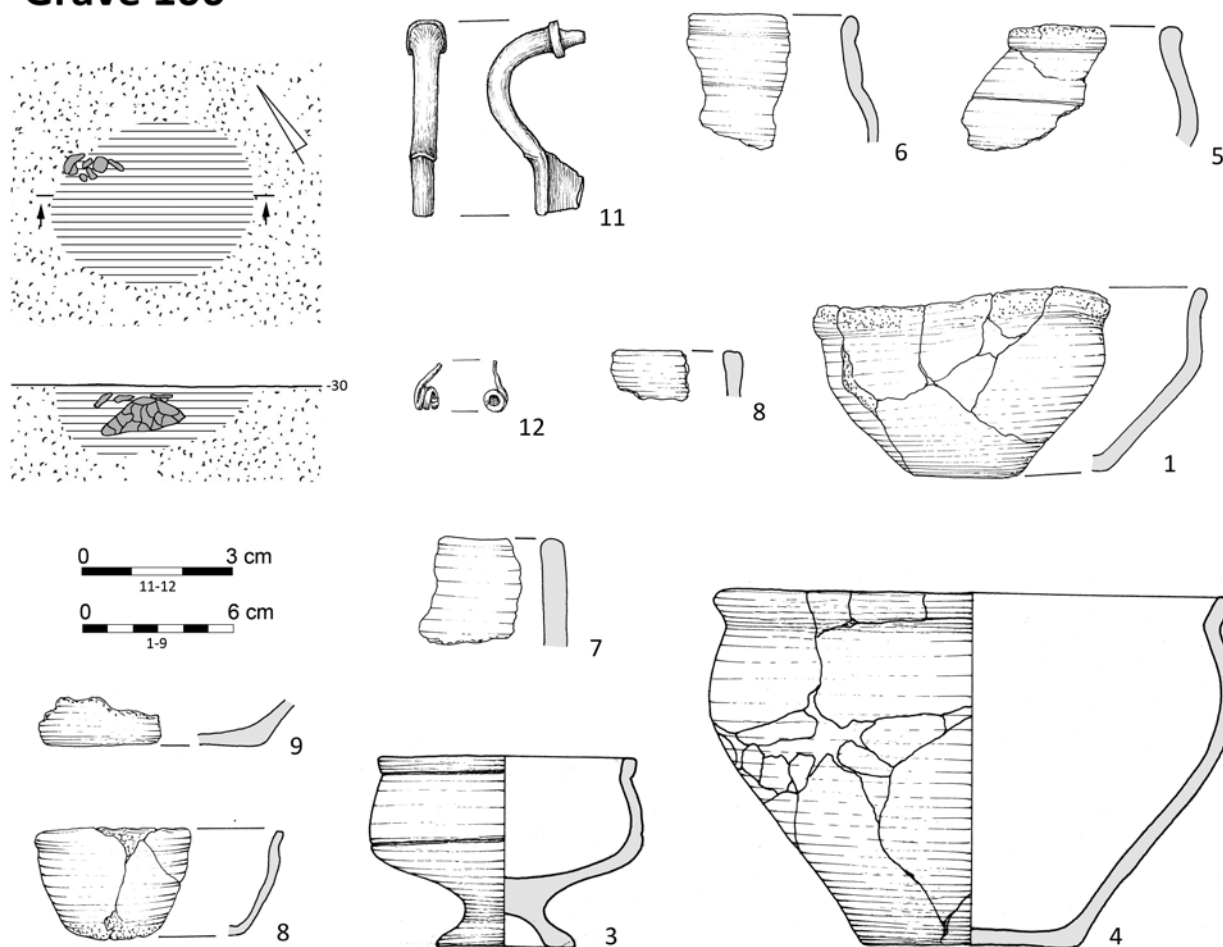
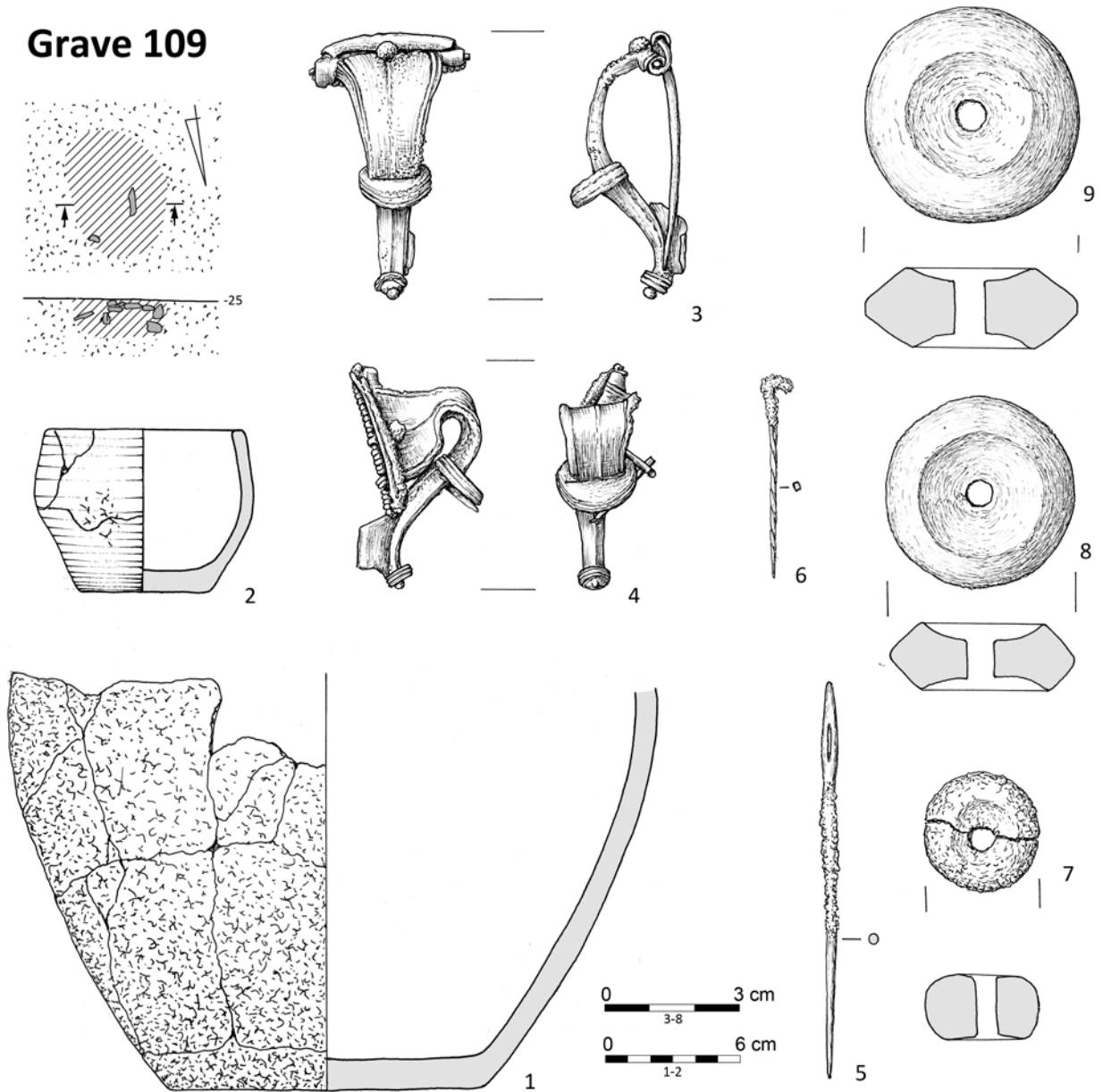


Plate LXIII. Grave 107:1-4 – clay, 6 – copper alloy, 7 – antler. Grave 106: 1-9 – clay, 11, 12 – copper alloy.

Grave 109



Grave 112

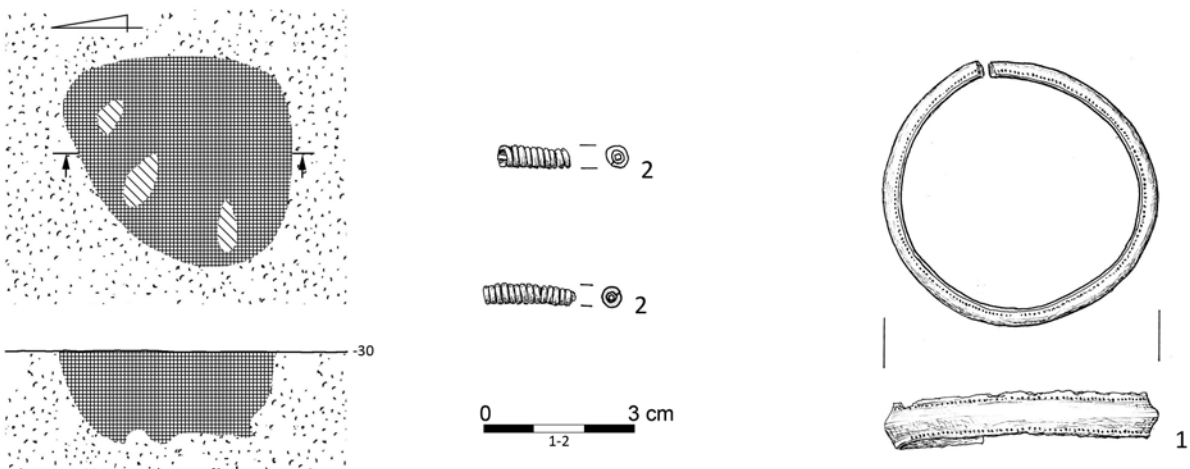
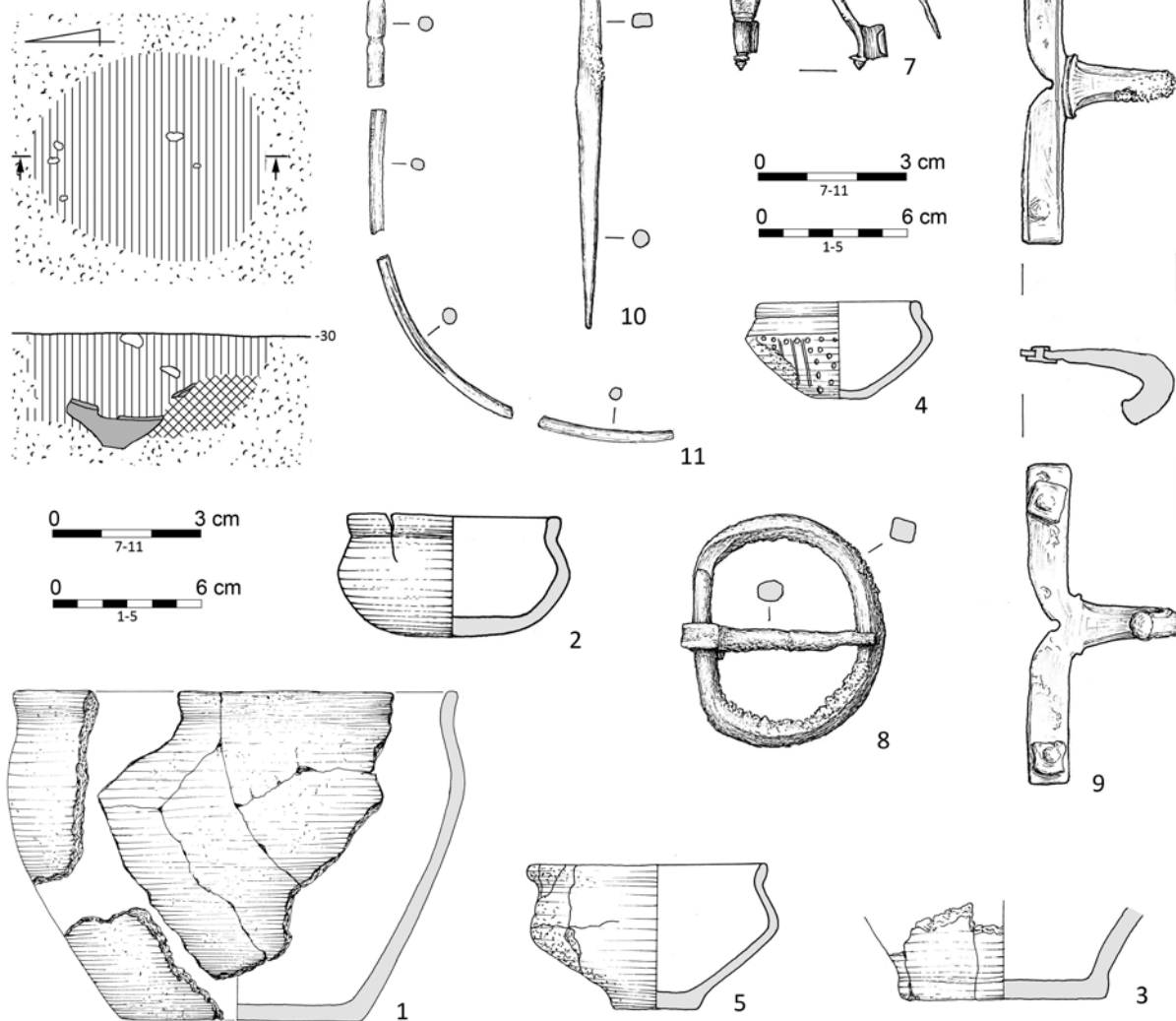


Plate LXIV. Grave 109: 1, 2, 7-9 – clay, 3, 4 – copper alloy, 5, 6 – iron. Grave 112: 1, 2 – copper alloy.

Grave 111



Grave 113

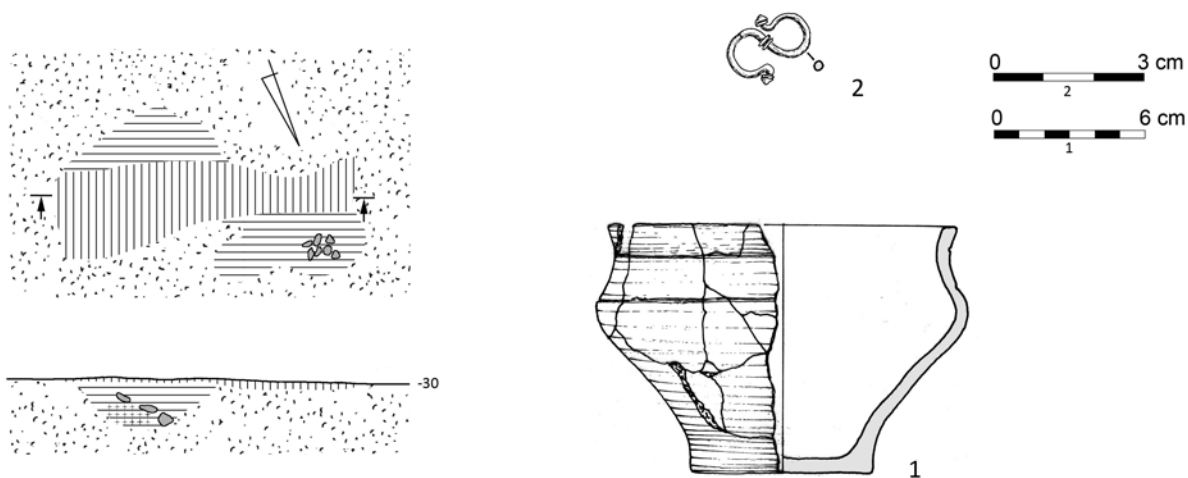
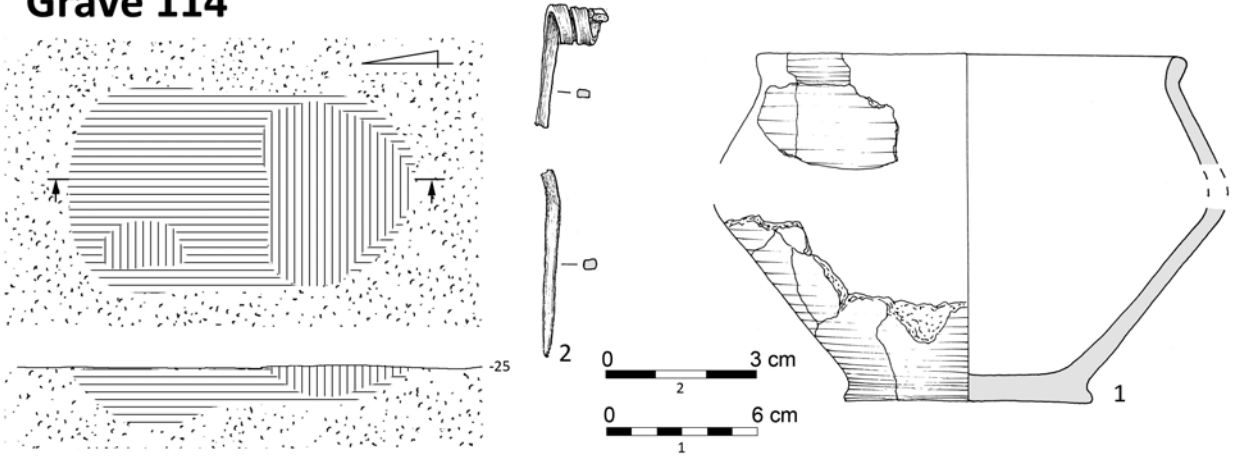
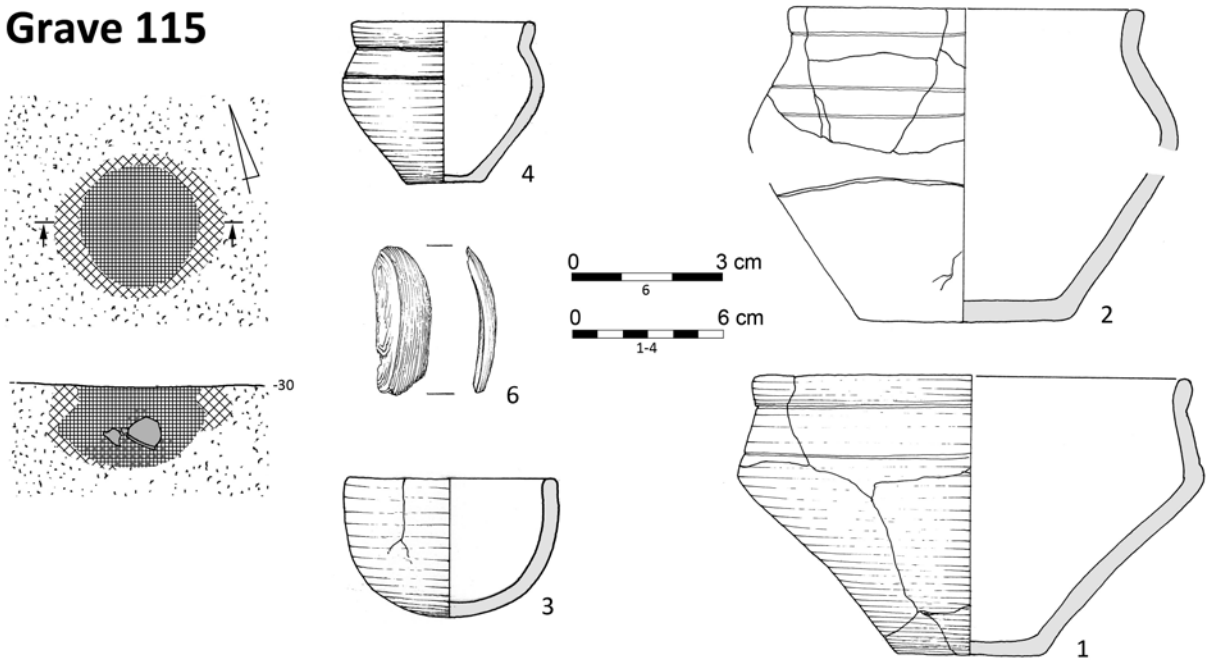


Plate LXV. Grave 111: 1-5 – clay, 7-9 – iron, 11 – antler. Grave 113: 1 – clay, 2 – copper alloy.

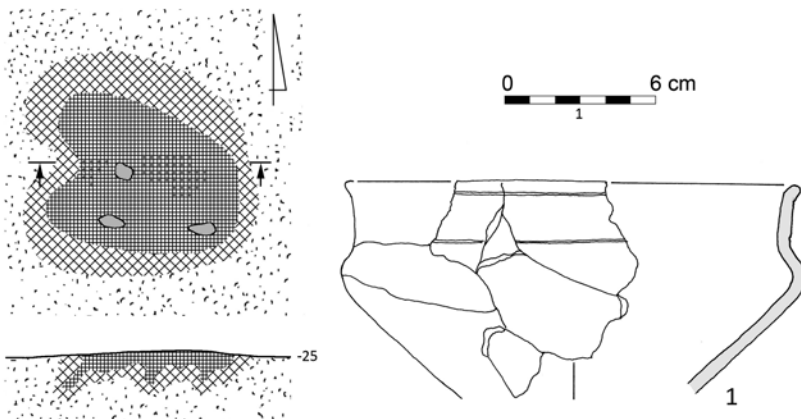
Grave 114



Grave 115



Grave 116



Grave 117

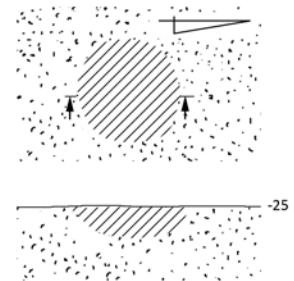
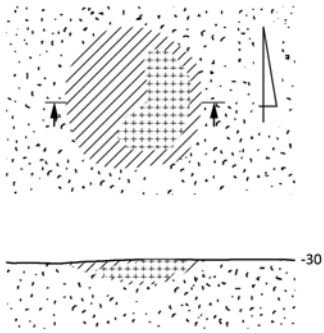


Plate LXVI. Grave 114: 1 – clay, 2 – copper alloy. Grave 116: 1 – clay. Grave 115: 1–4 – clay, 5 – shell. Grave 116: 1 – clay. Grave 117.

Grave 118



Grave 119

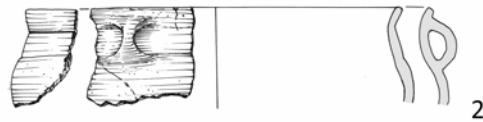
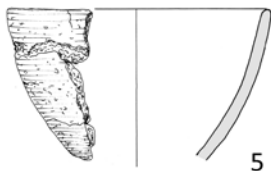
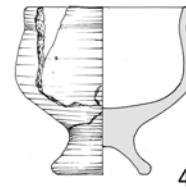
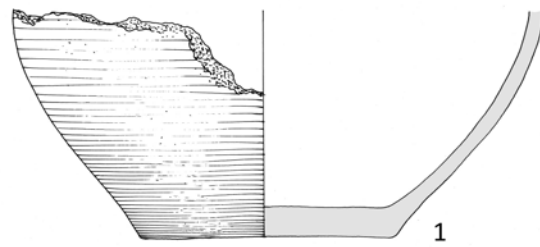
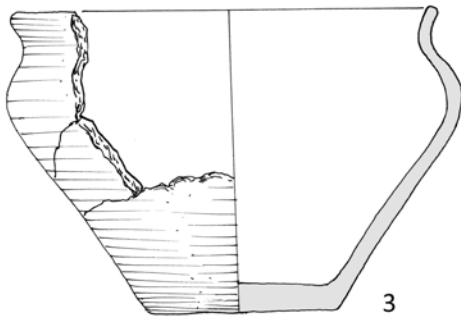
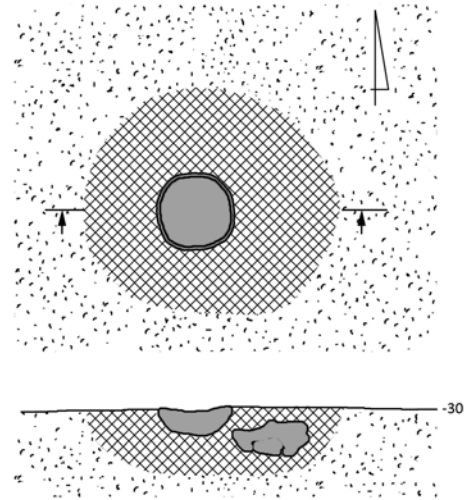


Plate LXVII. Grave 118. Grave 119: 1-5 - clay.

Grave 120

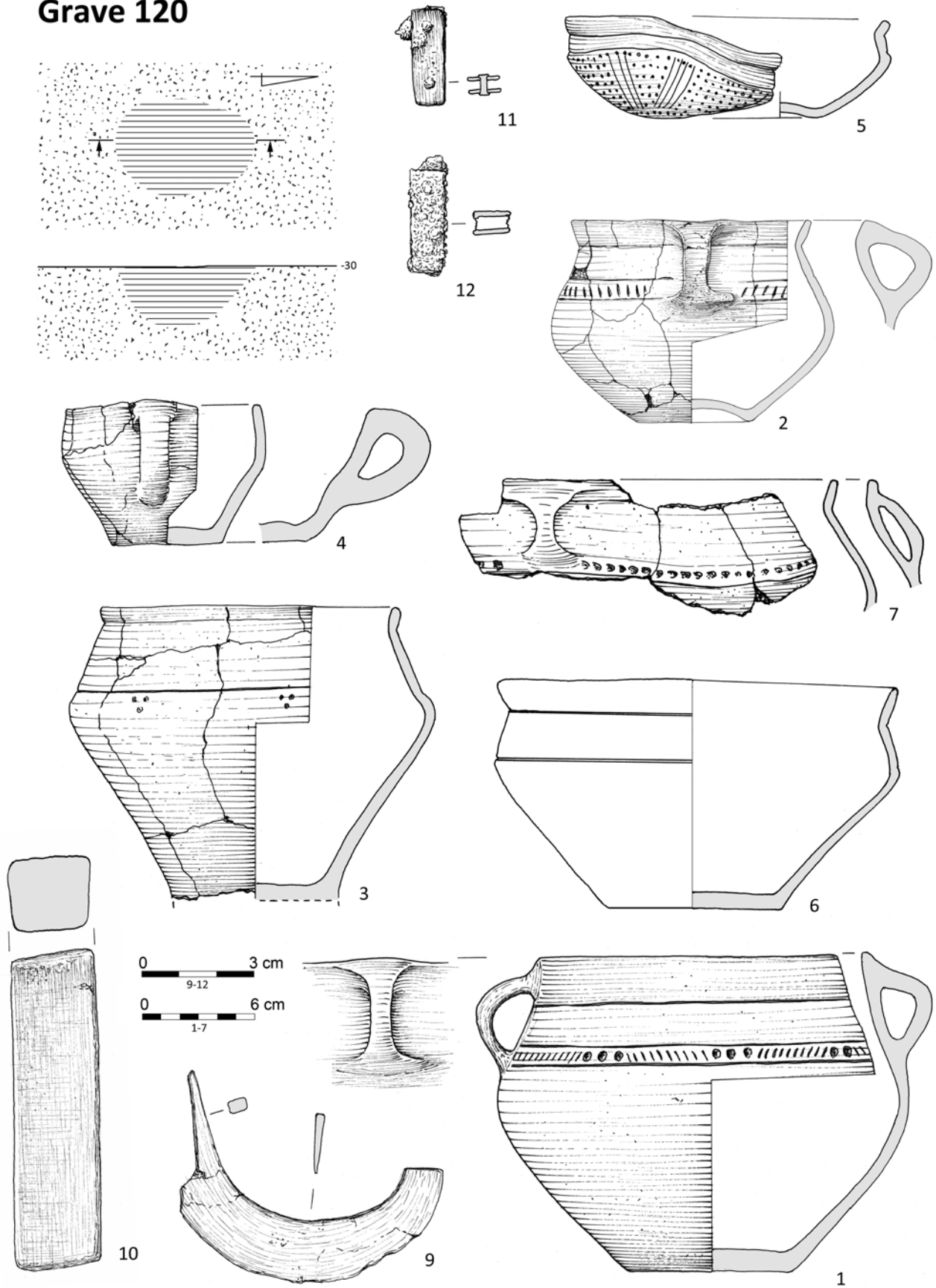
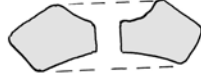
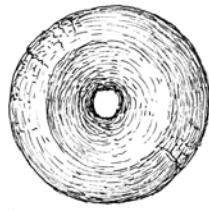
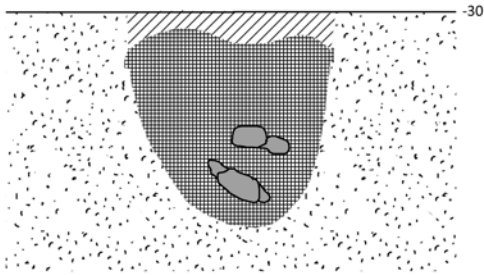
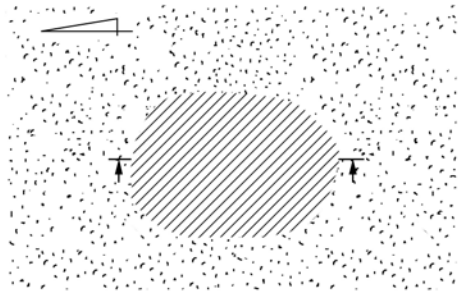
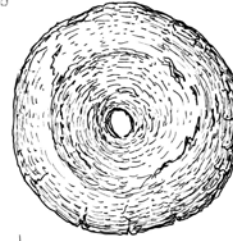


Plate LXVIII. Grave 120: 1-7 – clay, 9, 11, 12 – iron, 10 – stone.

Grave 121



19



20



18



17



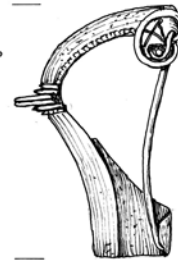
12



13



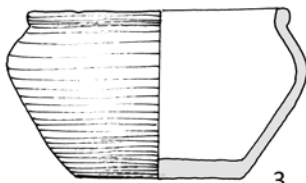
16



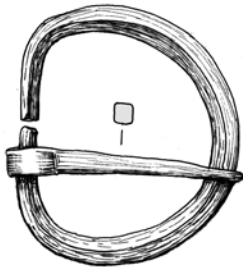
10



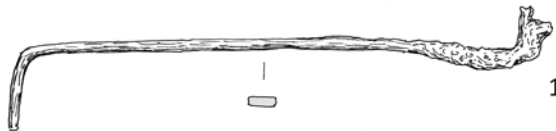
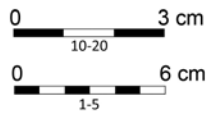
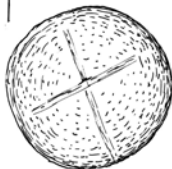
15



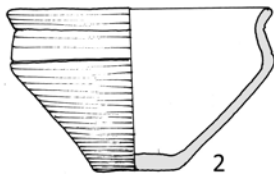
3



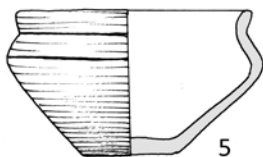
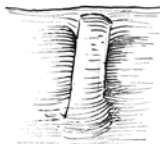
11



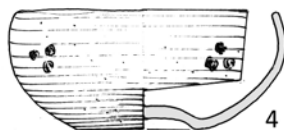
14



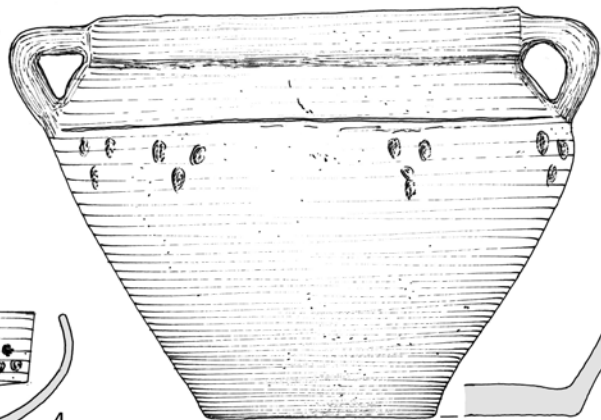
2



5



4



1

Plate LXIX. Grave 121: 1-5, 19, 20 - clay, 10, 12 copper alloy, 11, 13-18 - iron.

Grave 121

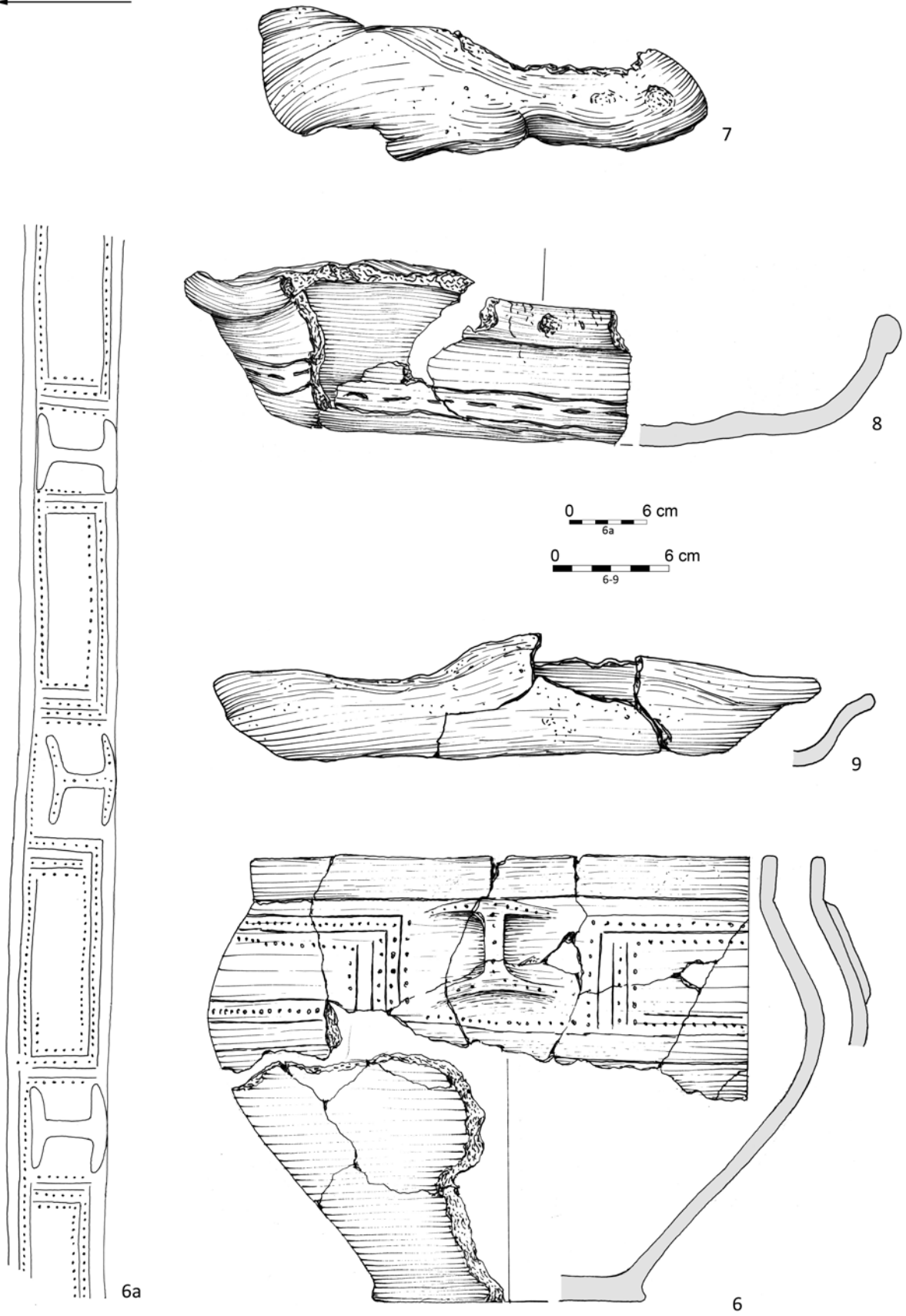
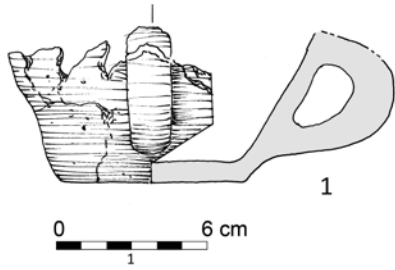
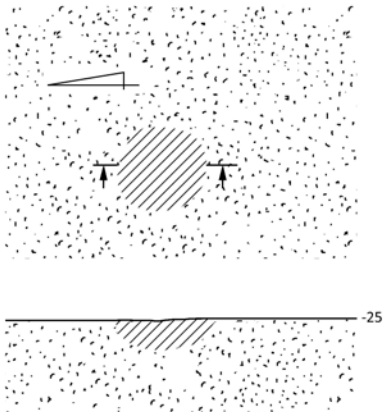
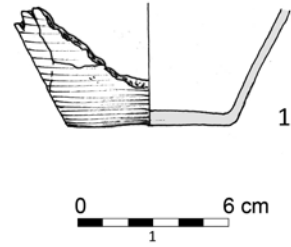
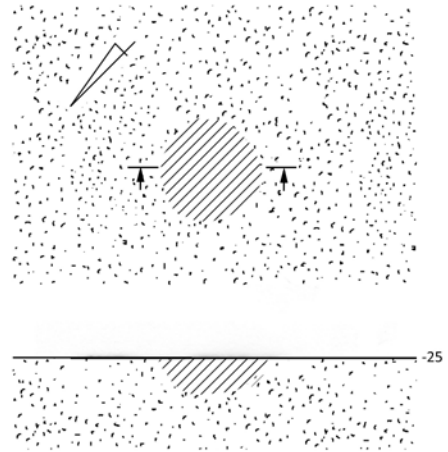


Plate LXX. Grave 121: 6-9 – clay.

Grave 122



Grave 123



Grave 134

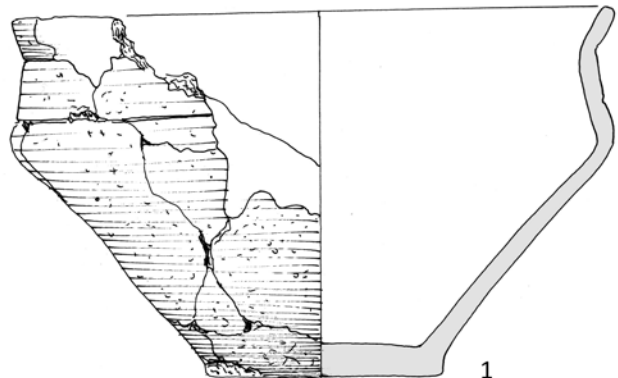
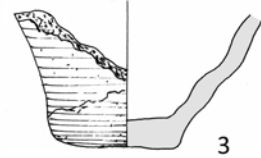
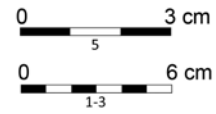
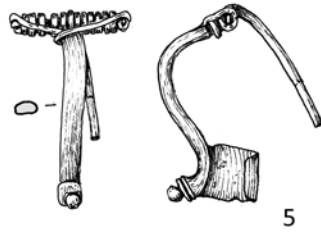
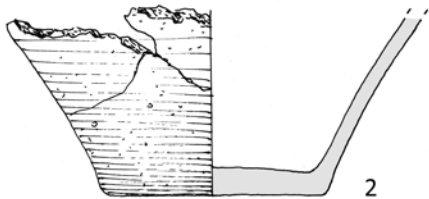
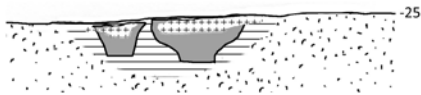
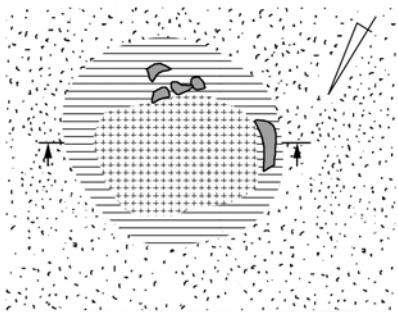
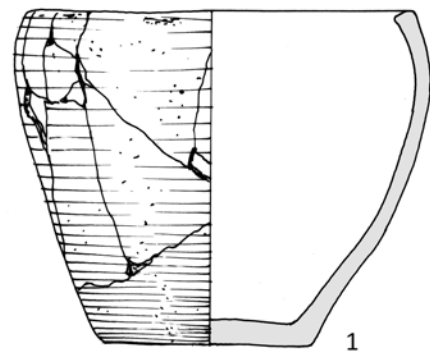
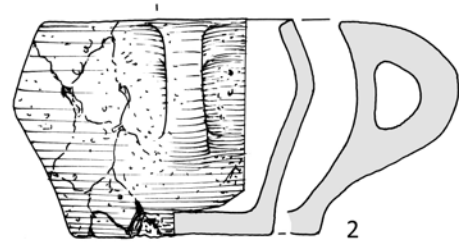
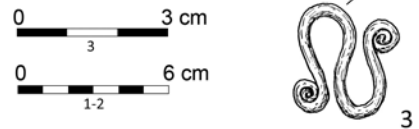
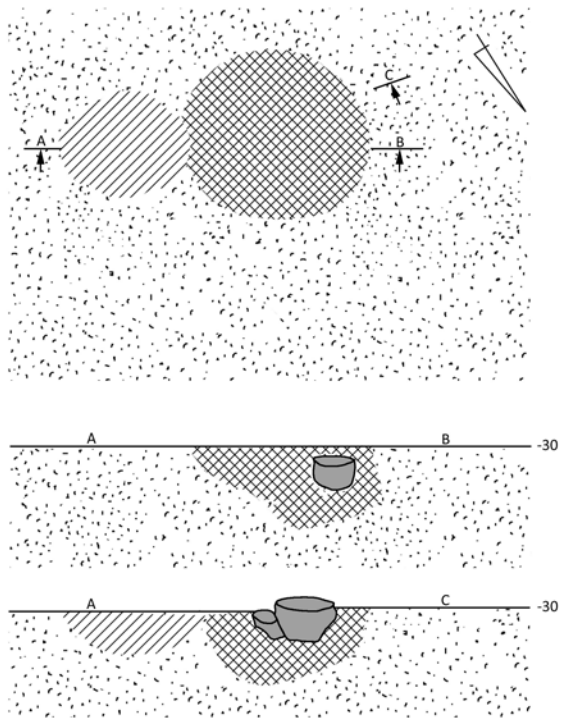


Plate LXXI. Grave 122: 1 – clay. Grave 123: 1 – clay. Grave 134: 1–3 – clay, 5 – copper alloy.

Graves 124 – 124a



Grave 126

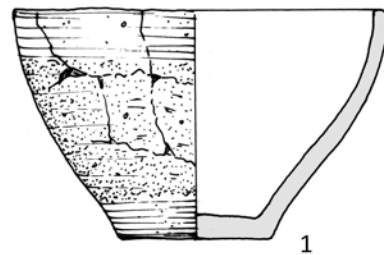
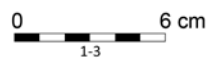
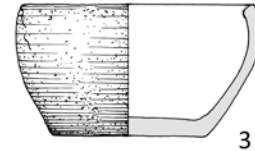
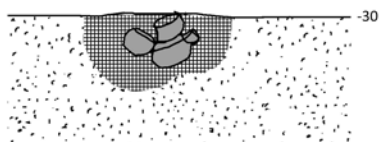
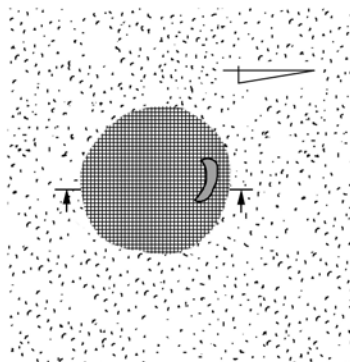


Plate LXXII. Grave 124–124a: 1–2 – clay, 3 – iron. Grave 126: 1–3 – clay.

Grave 125

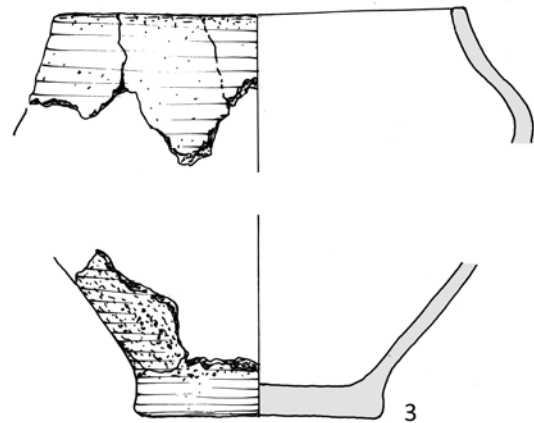
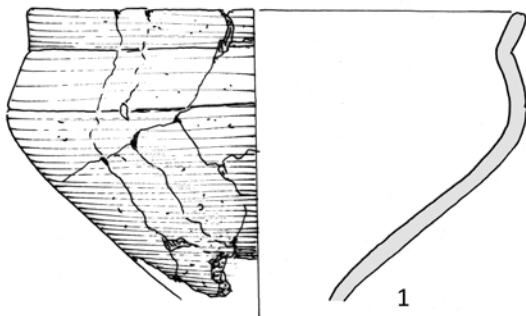
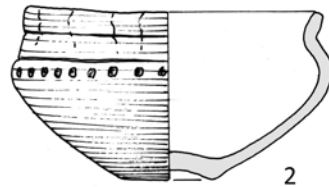
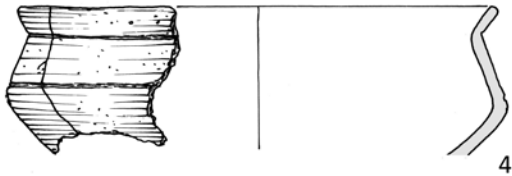
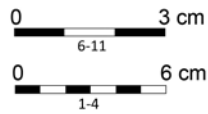
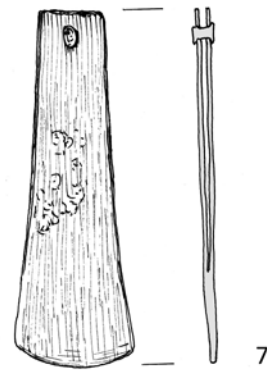
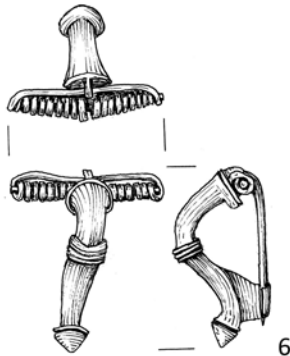
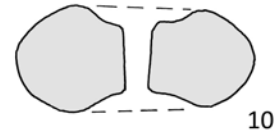
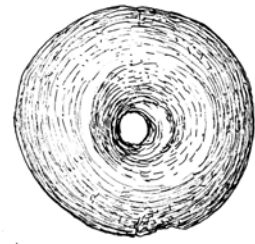
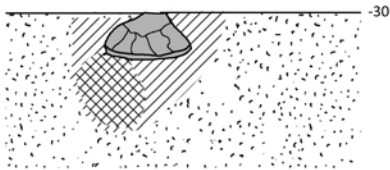
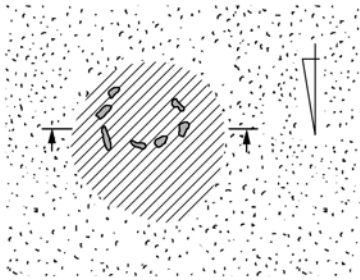
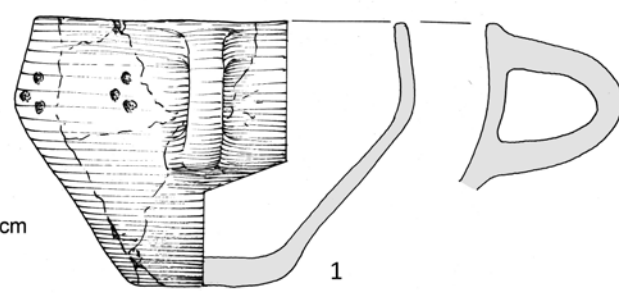
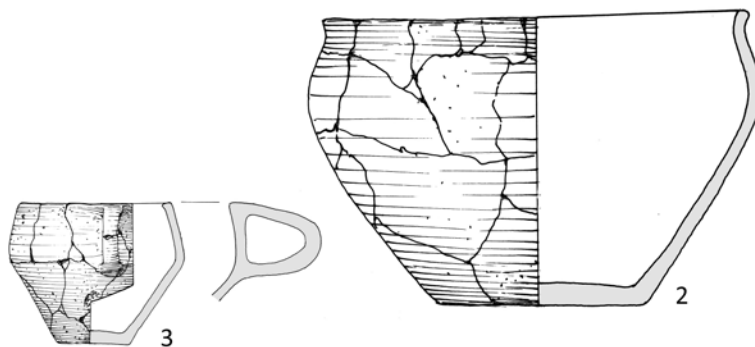
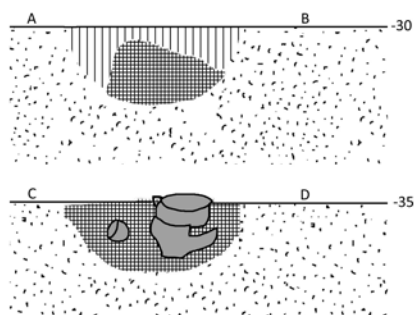
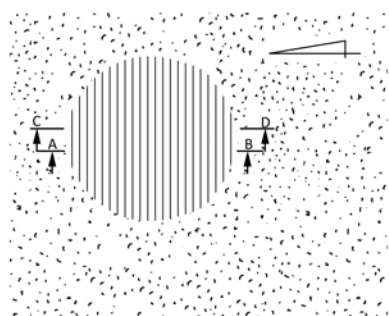


Plate LXXIII. Grave 125: 1-4, 10 – clay, 6, 8, 9, 11 – copper alloy, 7 – iron.

Grave 127



Grave 128

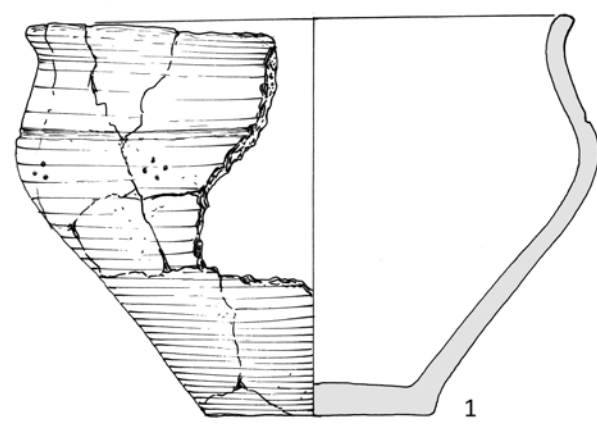
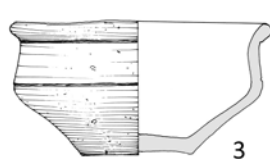
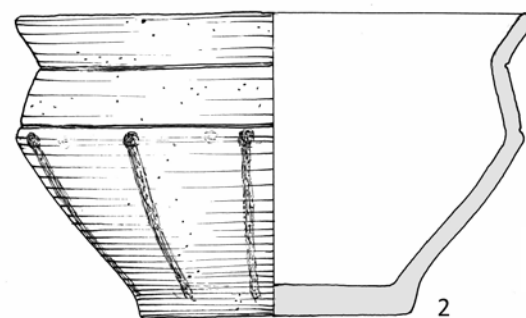
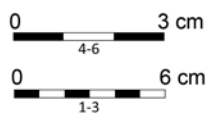
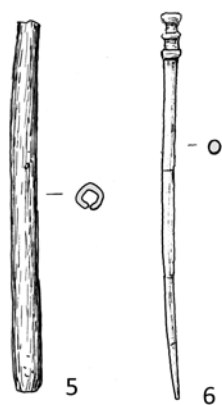
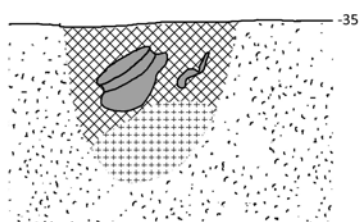
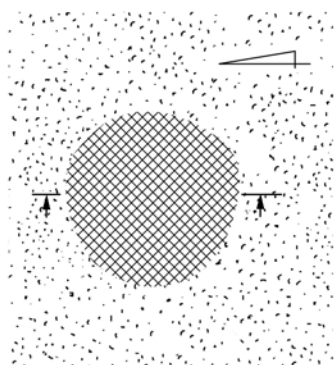
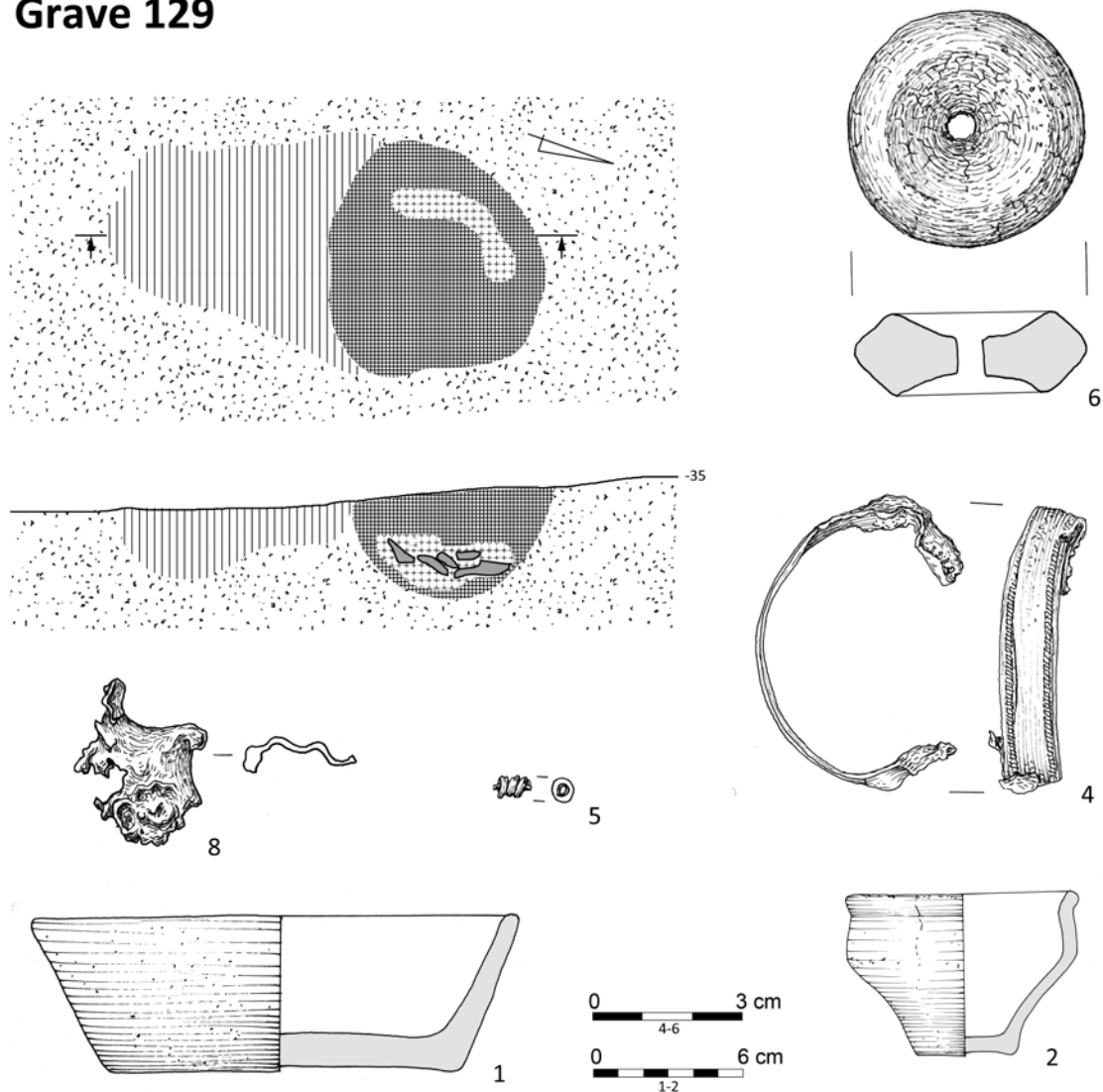


Plate LXXIV. Grave 127: 1-3 – clay. Grave 128: 1-3 – clay. 4, 5 – iron, 6 – antler.

Grave 129



Grave 130

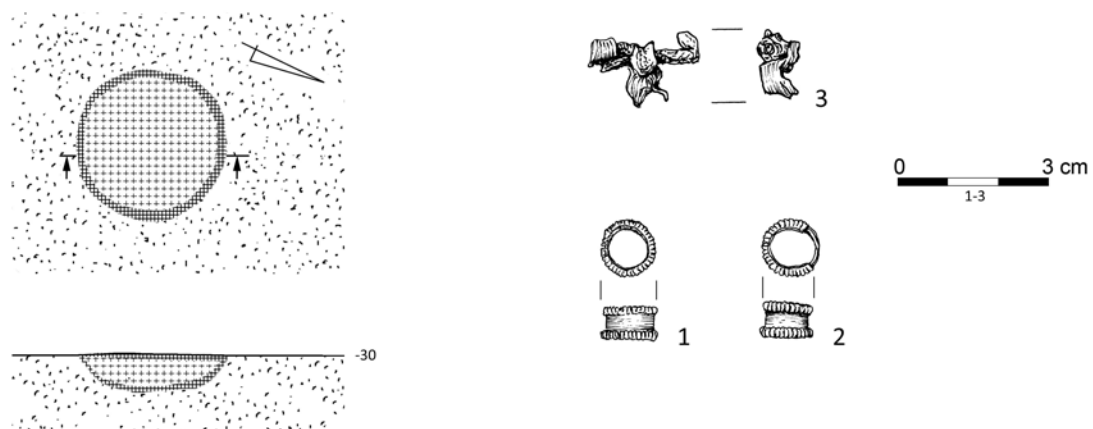


Plate LXXV. Grave 129: 1, 2, 6 – clay, 4, 5, 8 – copper alloy. Grave 130: 2, 3 – silver, 4 – copper alloy.

Grave 131

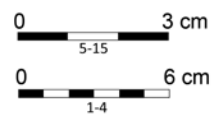
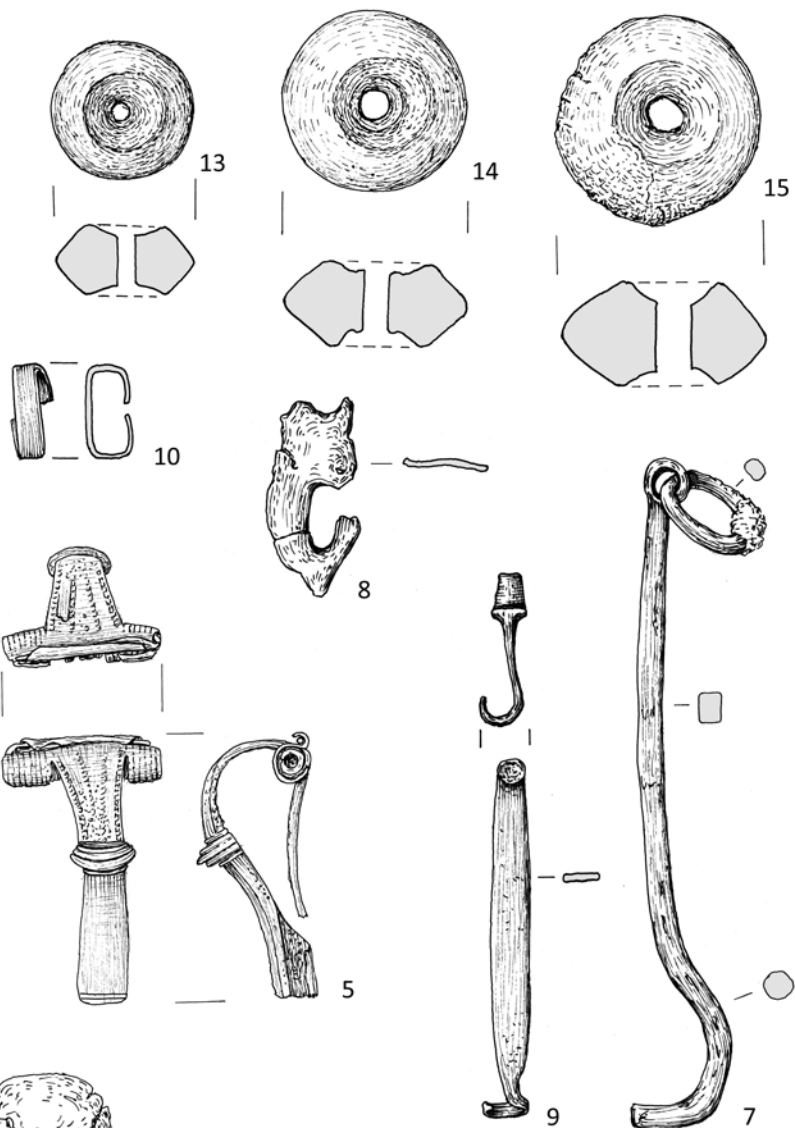
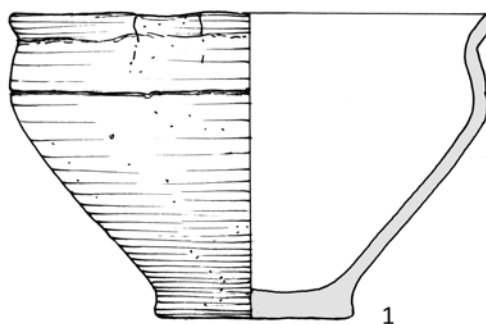
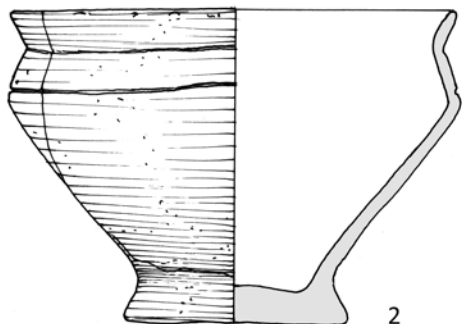
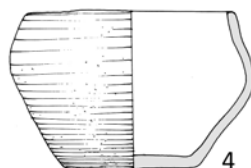
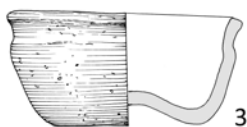
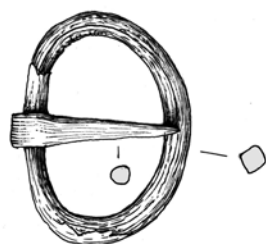
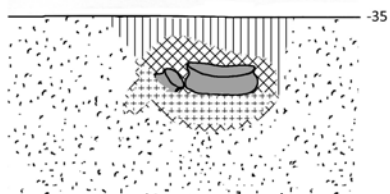
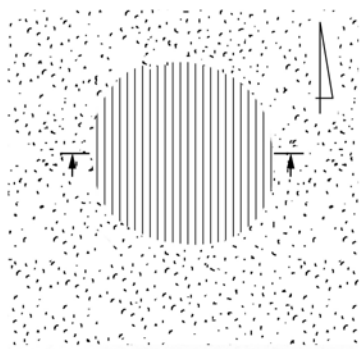


Plate LXXVI. Grave 131: 1-4, 12-15 – clay, 5 – copper alloy, 6-11 – iron.

Grave 132

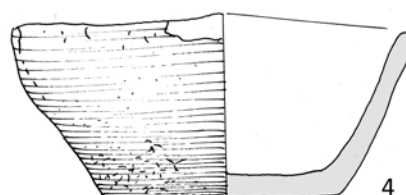
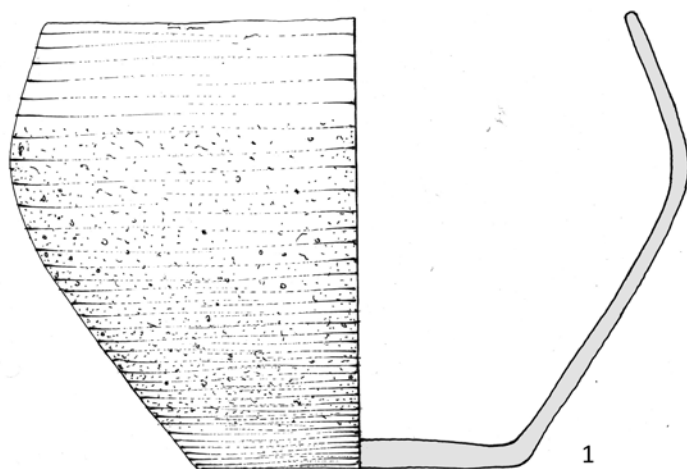
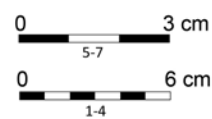
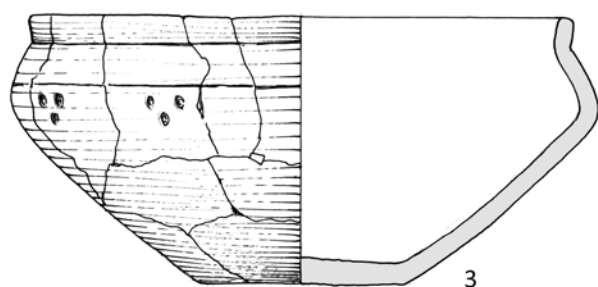
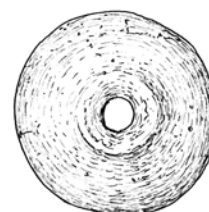
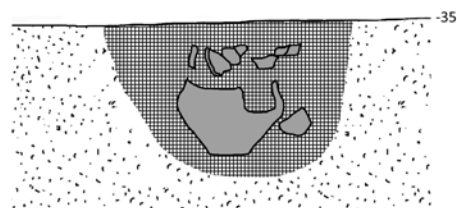
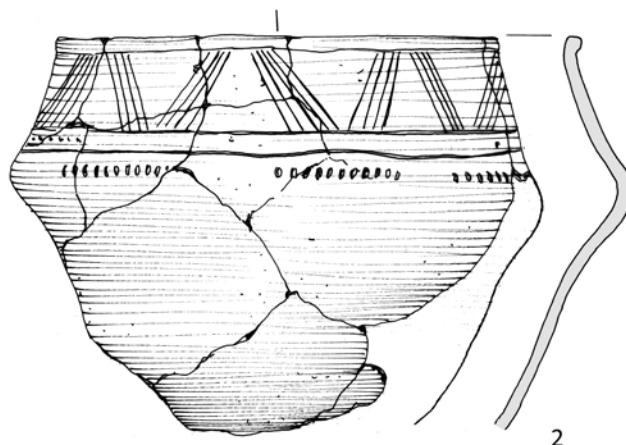
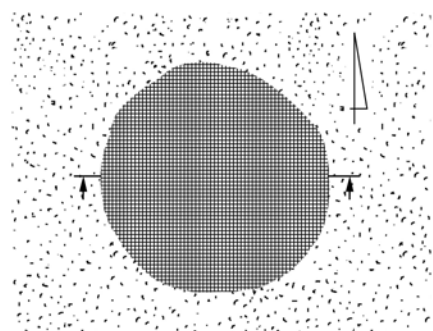


Plate LXXVII. Grave 132: 1-4, 7 - clay, 5 - copper alloy, 6 - iron.

Grave 133

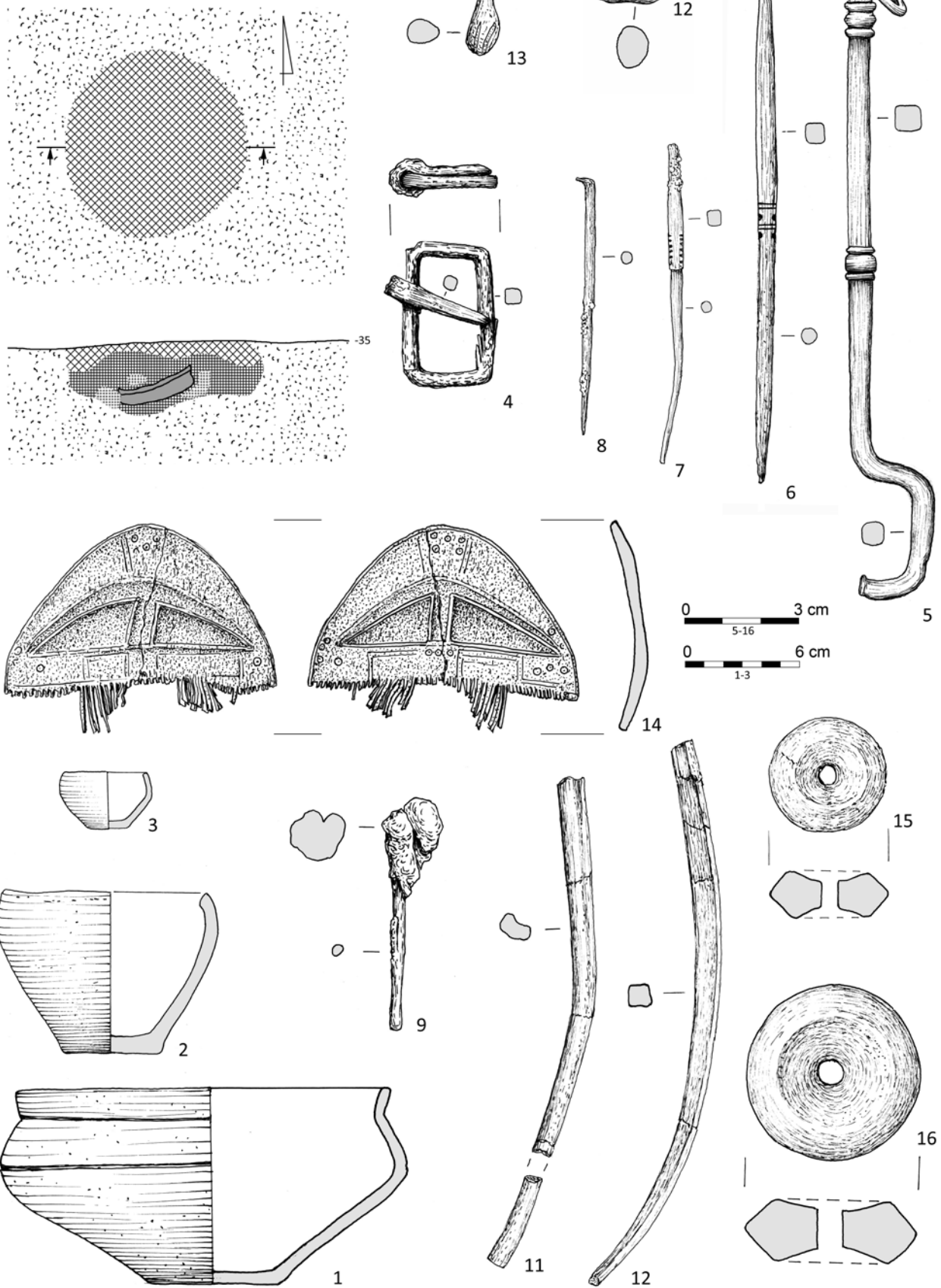


Plate LXXVIII. Grave 133: 1-3, 15, 16 – clay, 4-9 – iron, 10, 11, 14 – antler, 12, 13 – glass.

Grave 135

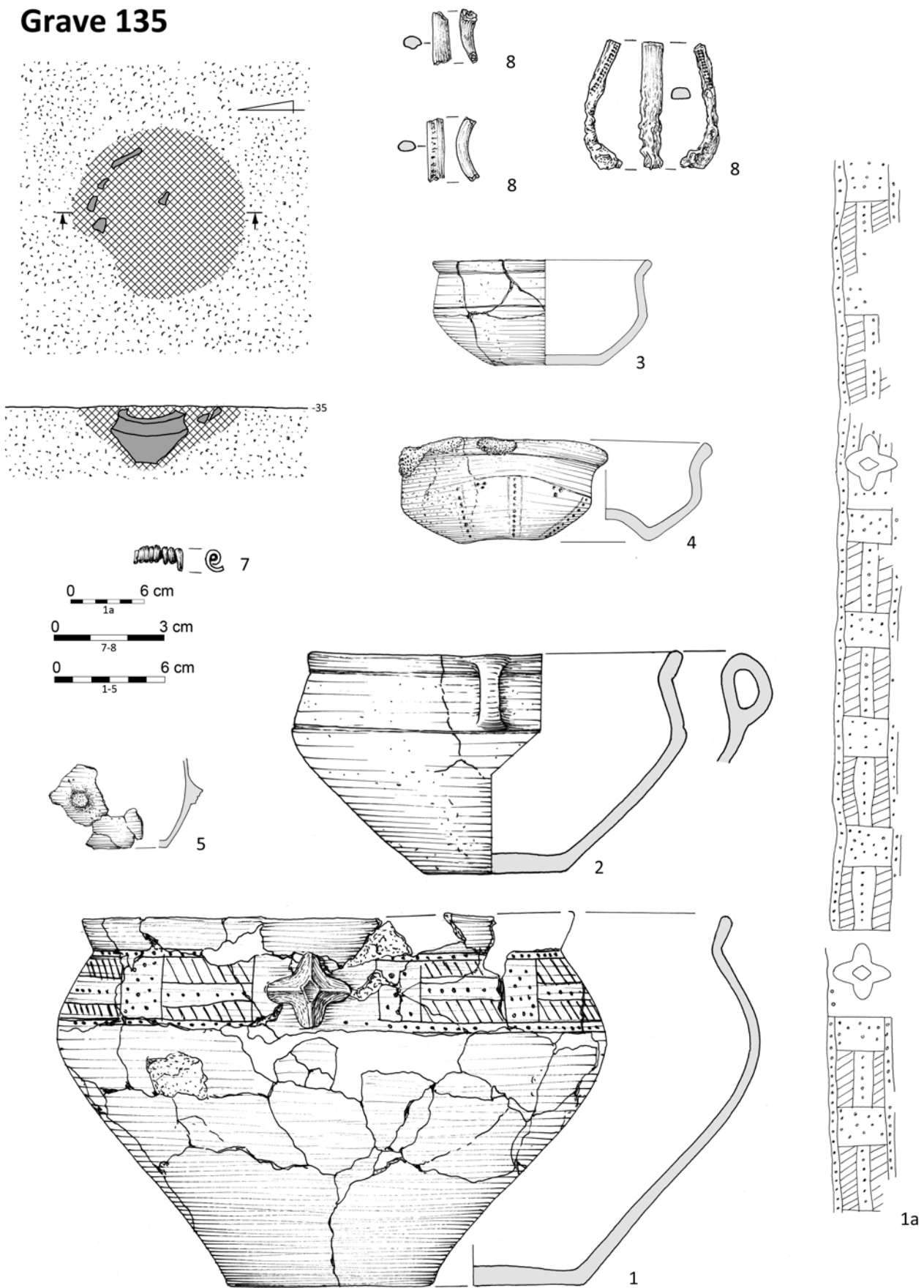


Plate LXXIX. Grave 135: 1-5 – clay, 7, 8 – copper alloy.

Grave 136

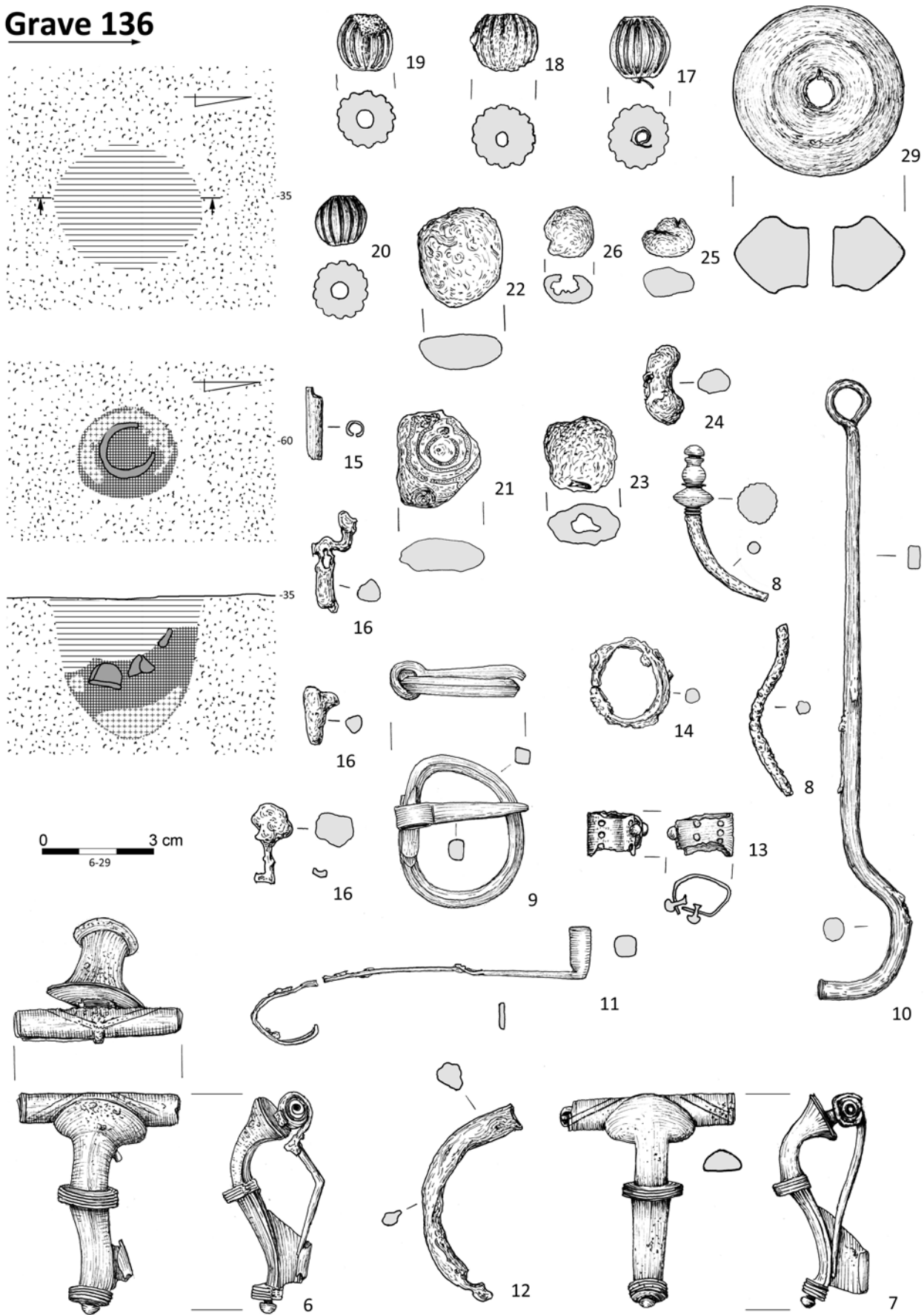
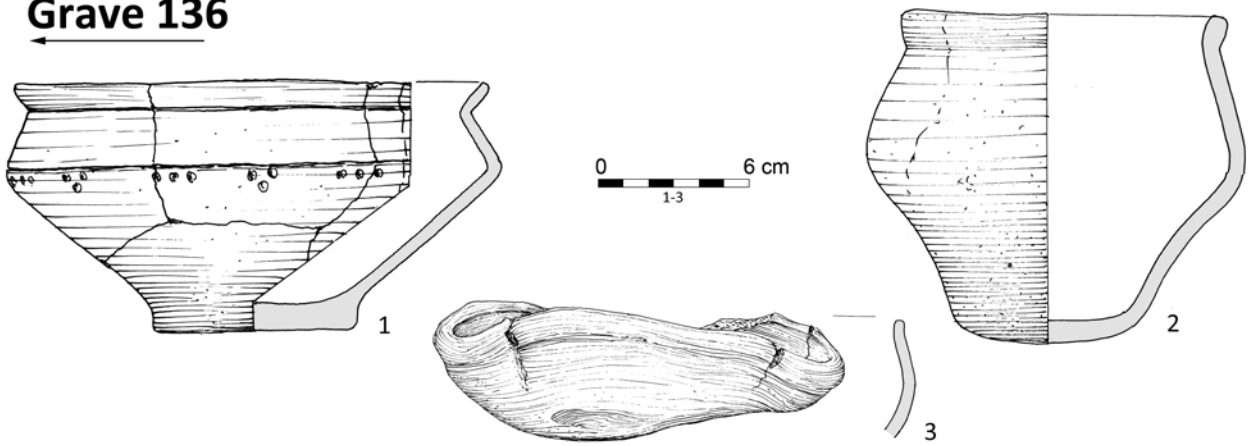


Plate LXXX. Grave 136: 6-8, 12, 13, 16 – copper alloy, 9-11, 14, 15 – iron, 17-20 – faience, 21-26 – glass, 29 – clay.

Grave 136



Grave 137

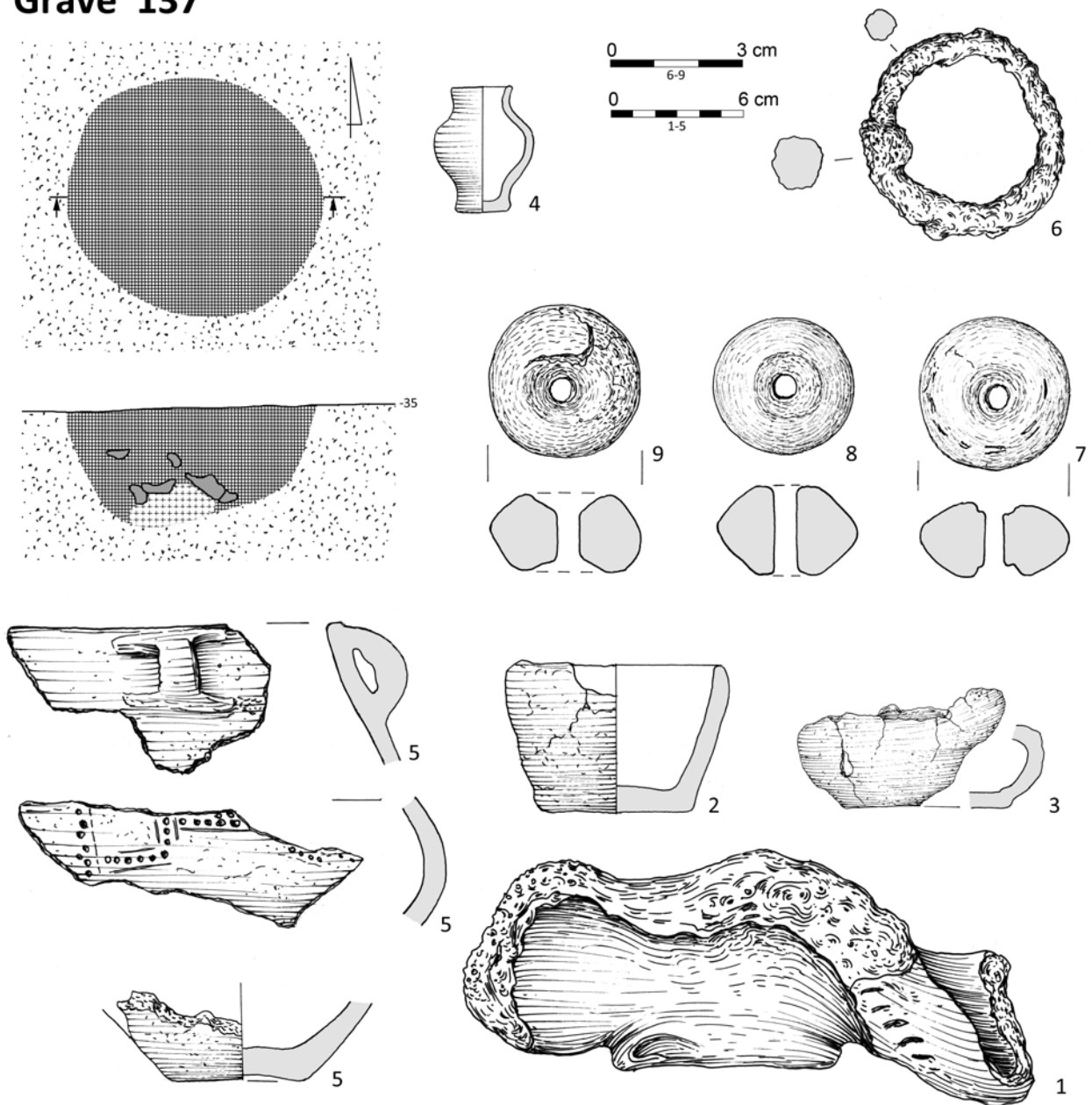
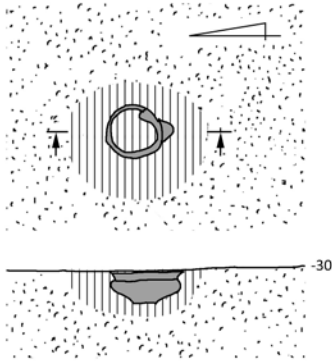
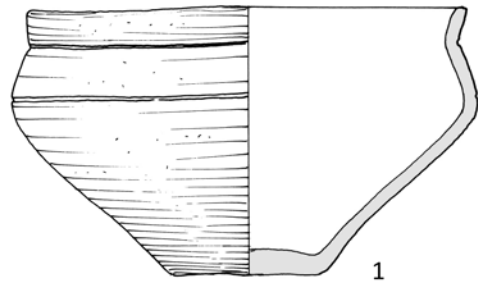
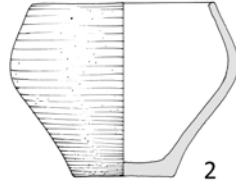


Plate LXXXI. Grave 136: 1-3 – clay. Grave 137: 1-5, 7-9 – clay, 6 – iron.

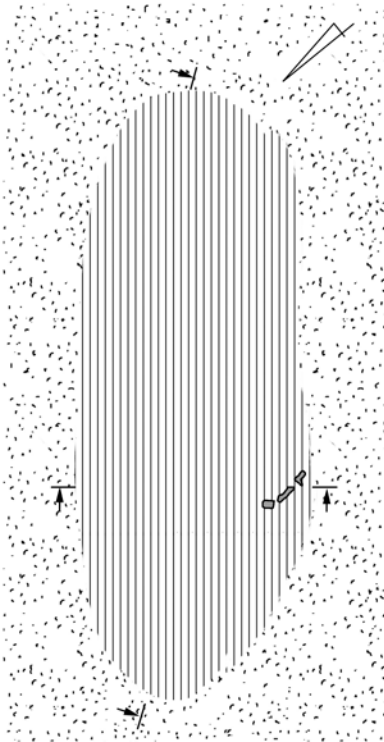
Grave 138



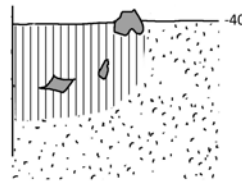
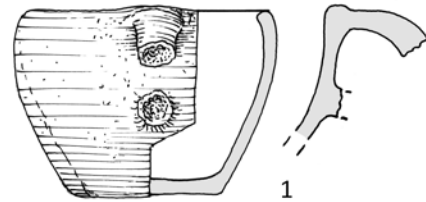
0 6 cm
1



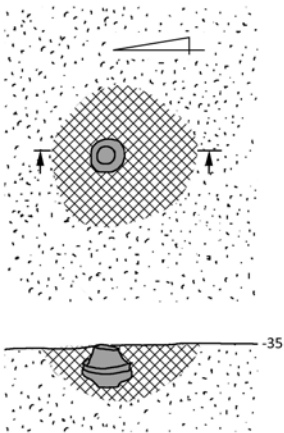
Grave 139



0 6 cm
1



Grave 141



0 6 cm
1-2

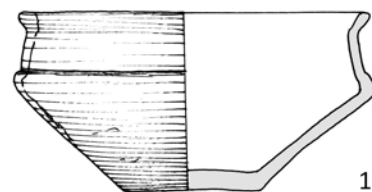
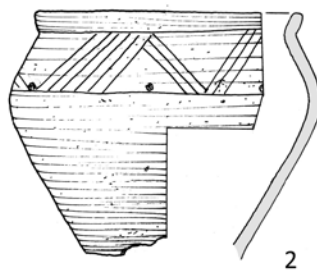
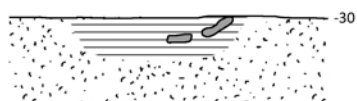
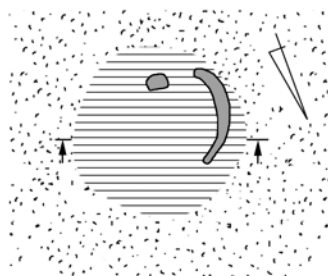
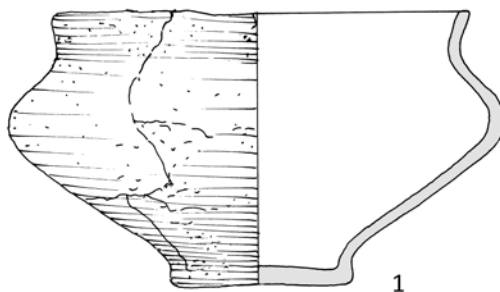


Plate LXXXII. Grave 138: 1-2 – clay. Grave 139: 1 – clay. Grave 141: 1, 2 – clay.

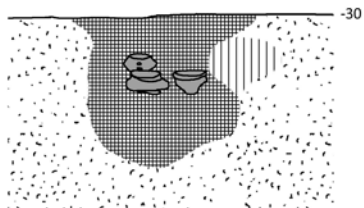
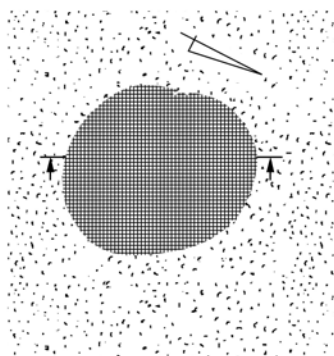
Grave 140



0 6 cm
1



Grave 142



0 6 cm
1-5

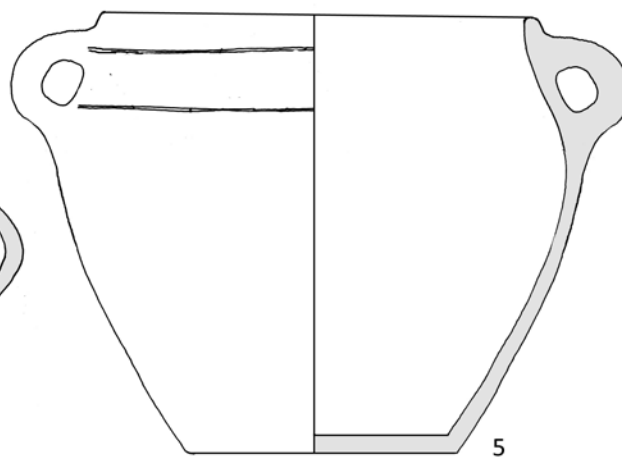
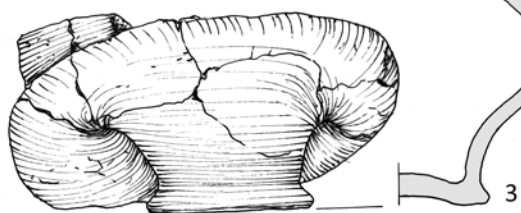
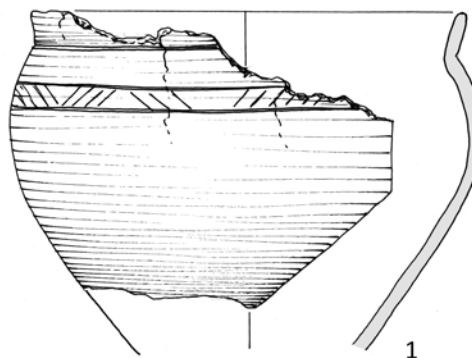
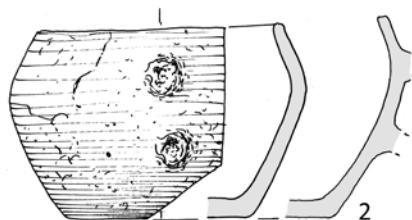
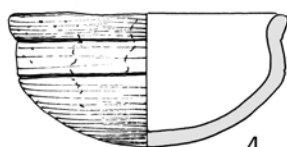
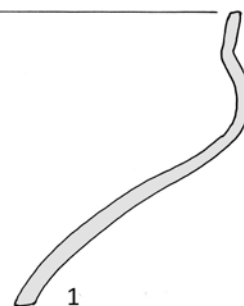
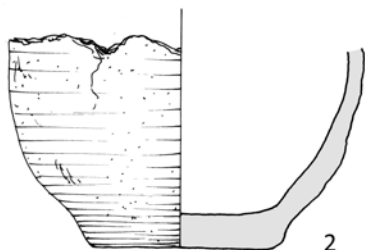
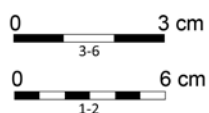
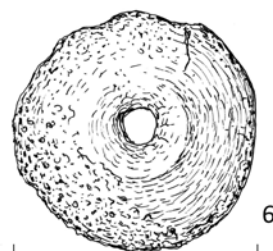
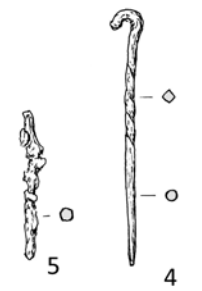
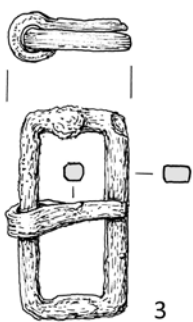
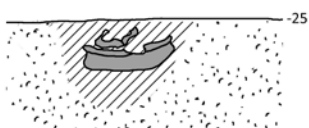
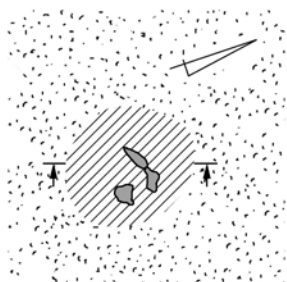


Plate LXXXIII. Grave 140: 1 – clay. Grave 142: 1–5 – clay.

Grave 143



Grave 145

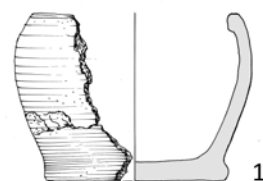
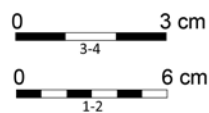
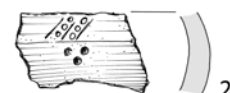
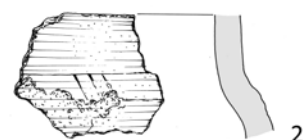
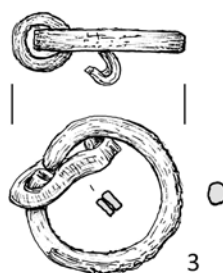
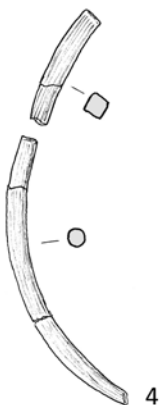
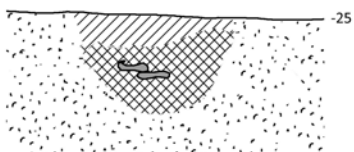
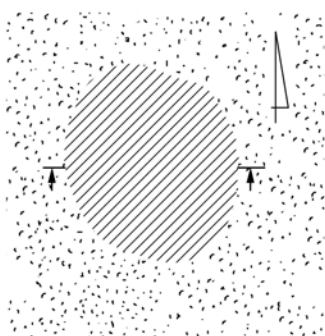


Plate LXXXIV. Grave 143: 1, 2, 6 – clay, 3–5 – iron. Grave 145: 1, 2 – clay, 3 – iron, 4 – antler.

Grave 144

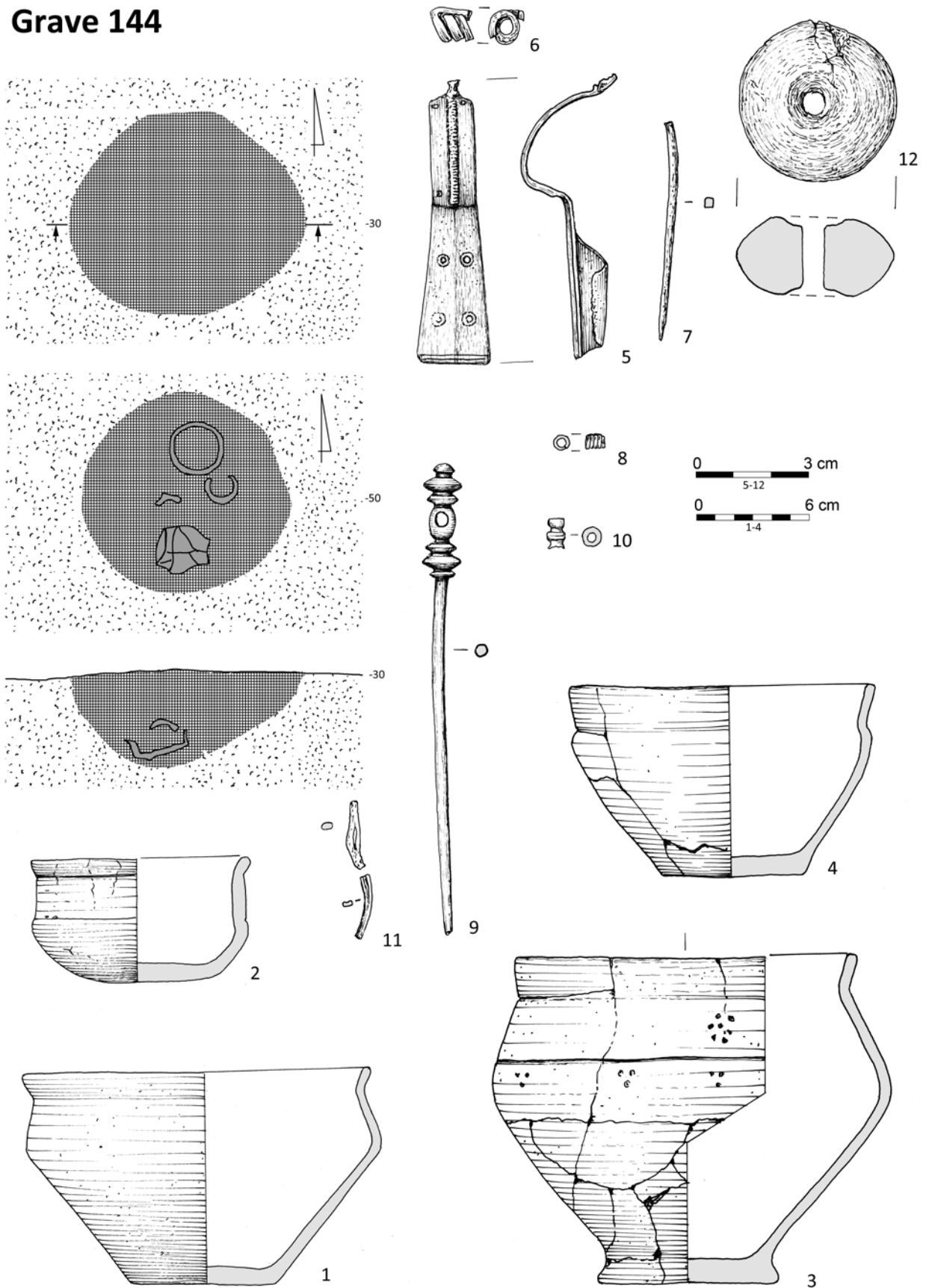
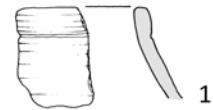
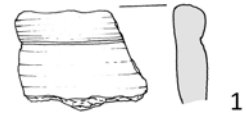
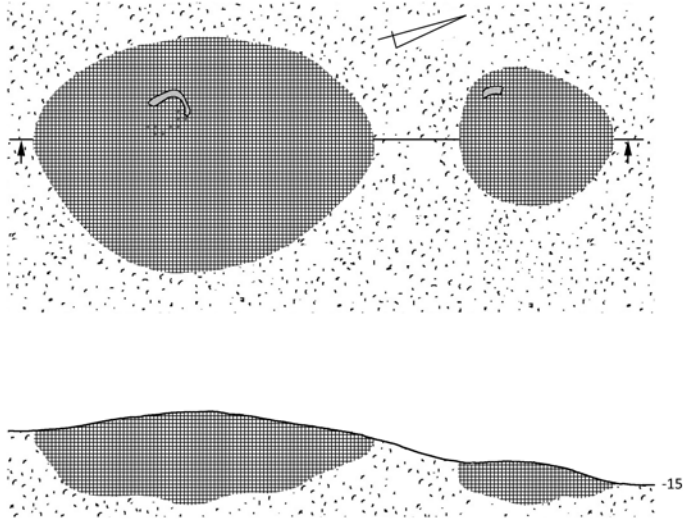
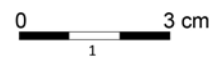
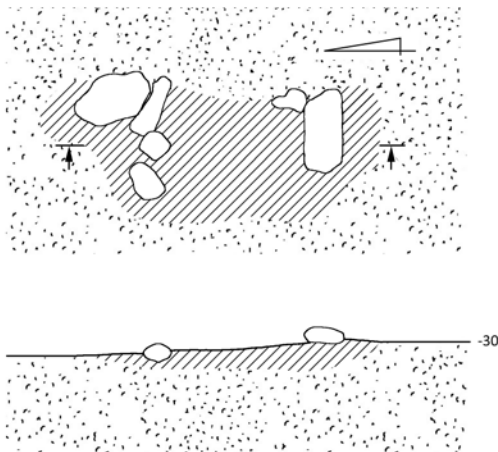


Plate LXXXV. Grave 144: 1-4, 12 – clay, 5-11 – copper alloy.

Grave 146



Grave 147



Stray finds

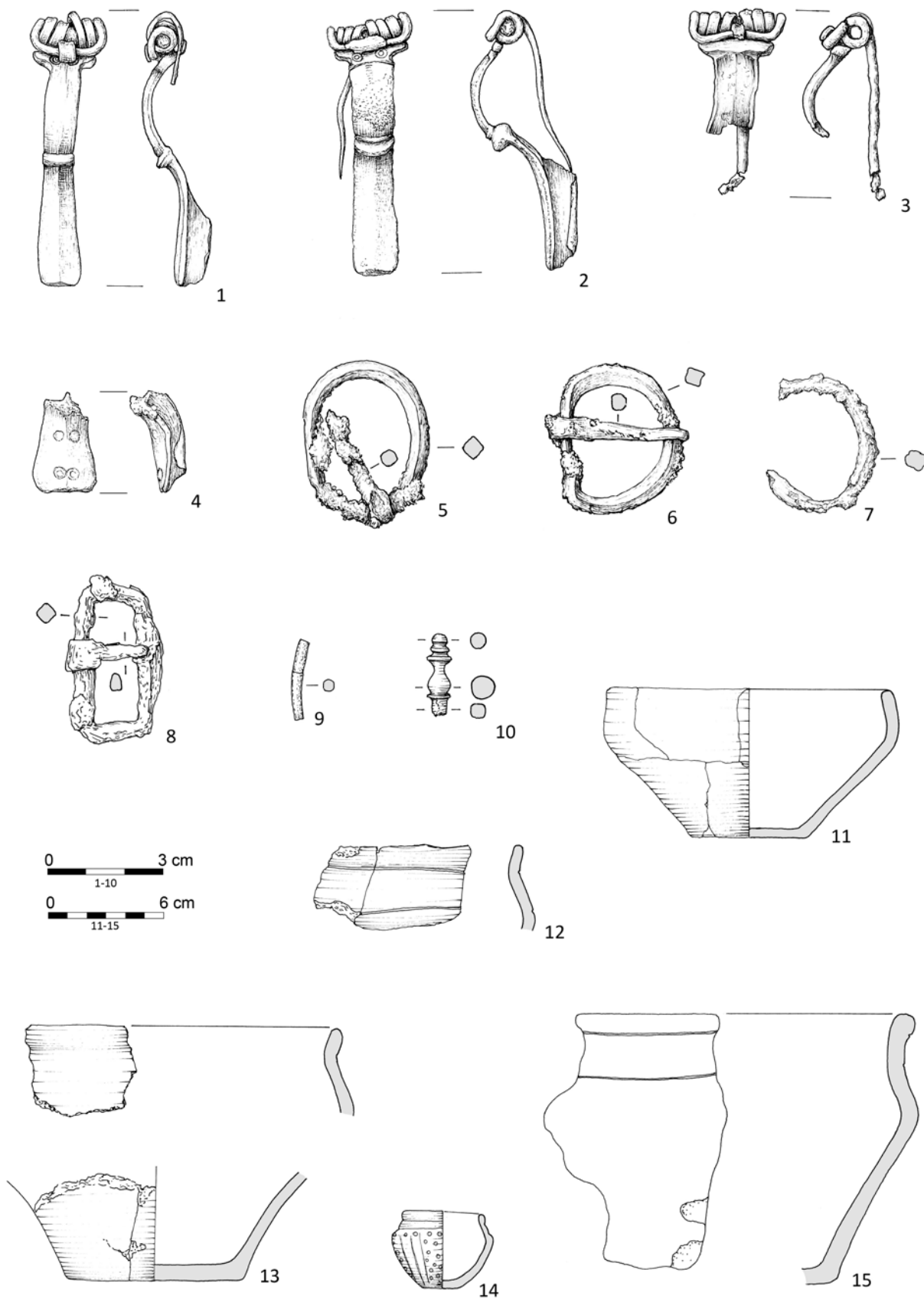


Plate LXXXVII. Stray finds: 1-4, 10 – copper alloy, 11-15 – clay, 5-8 – iron, 9 – antler.

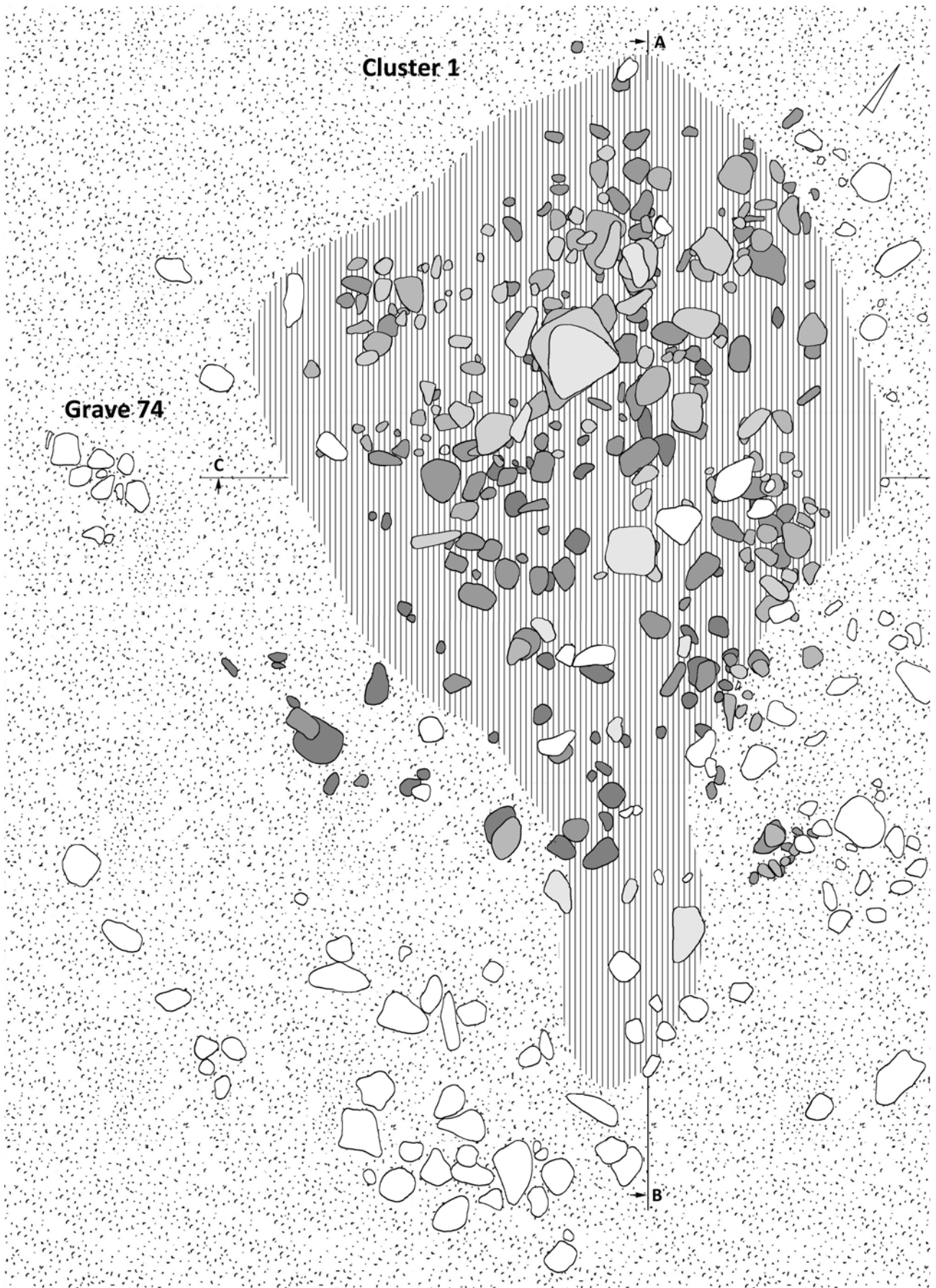


Plate LXXXVIII. Stone structures 1.

Cluster 1

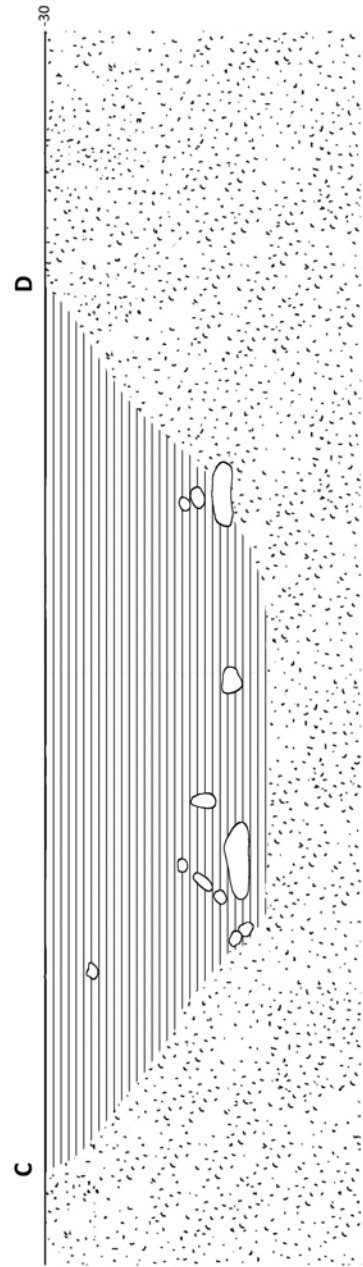
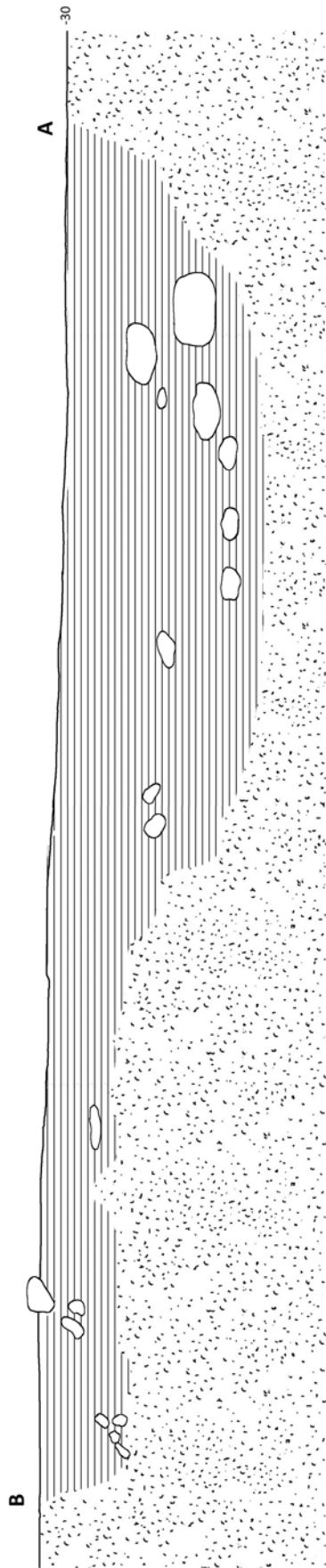


Plate LXXXIX. Stone structures 1.

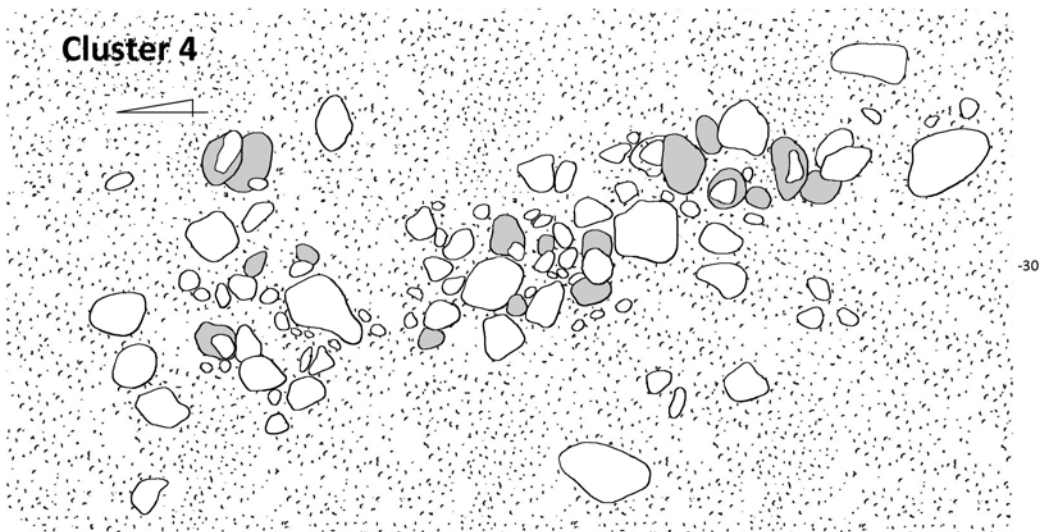
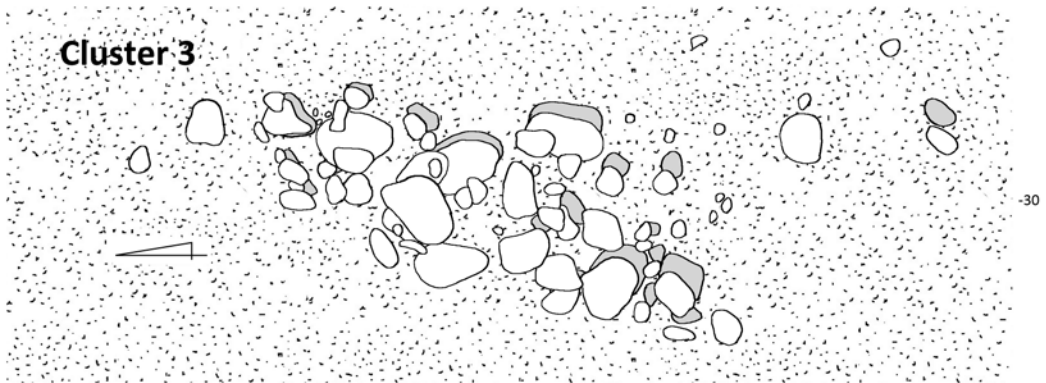
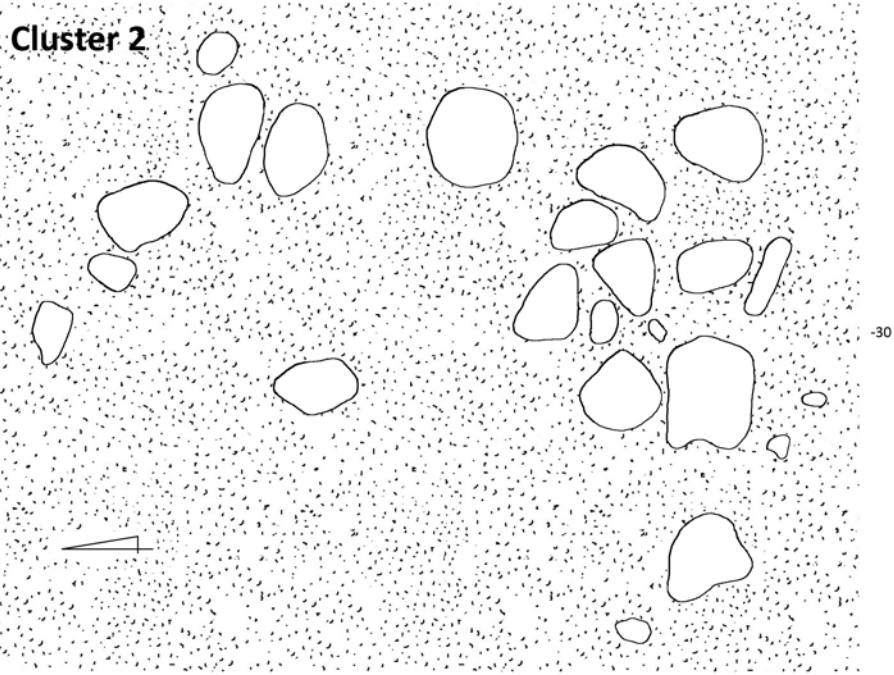


Plate XC. Stone structures 2, 3, 4.

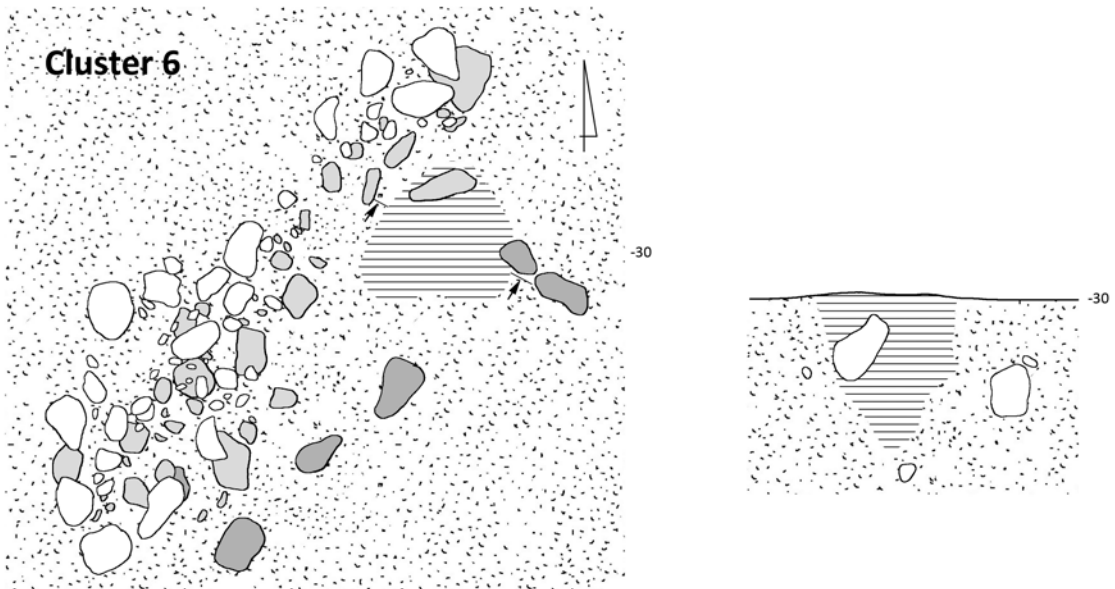
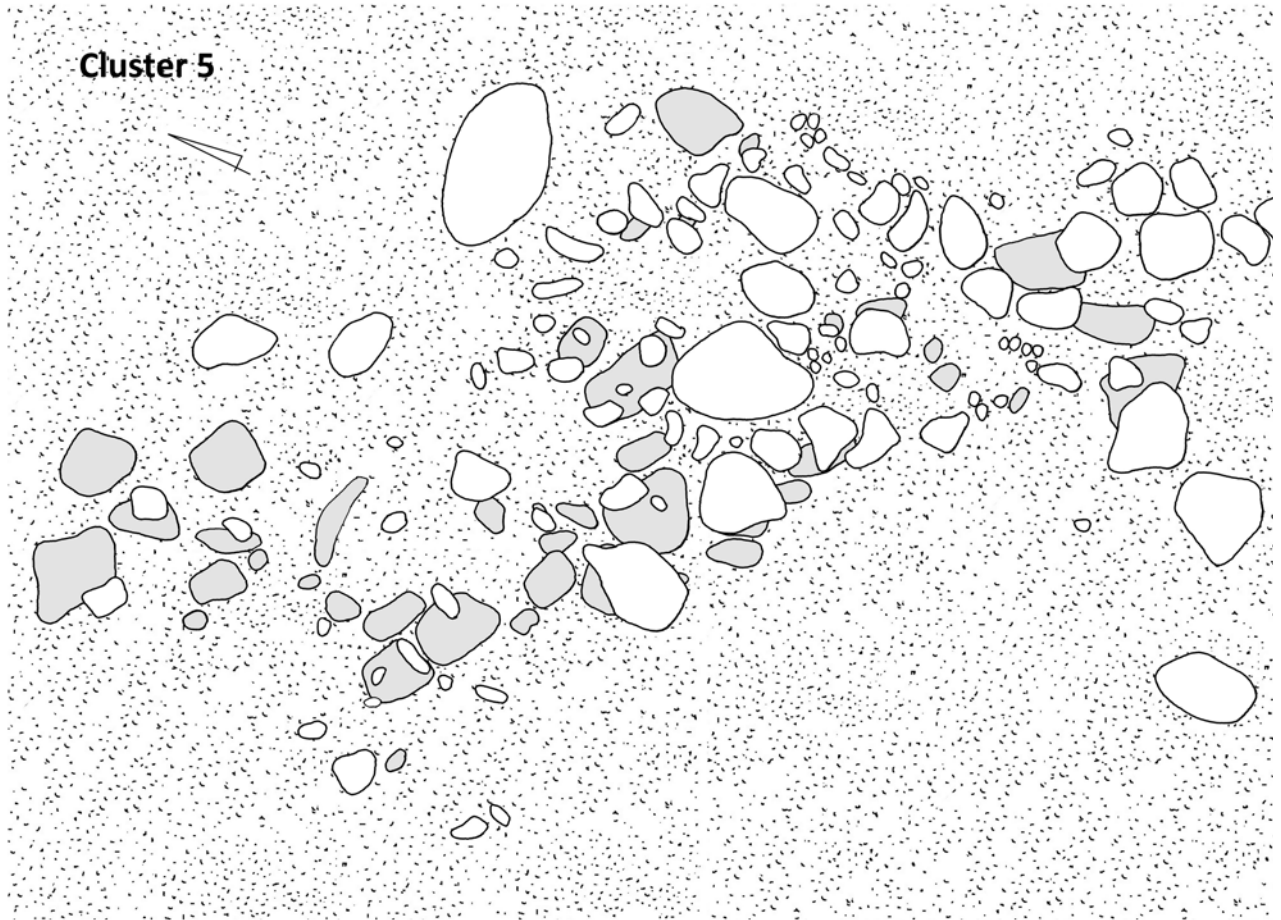


Plate XCI. Stone structures 5 i 6.

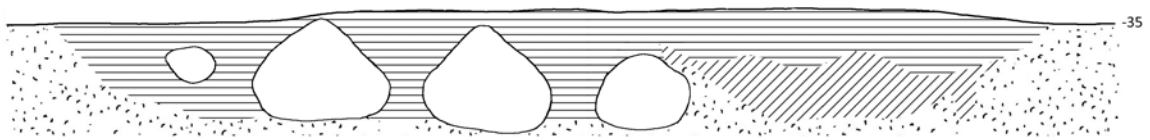
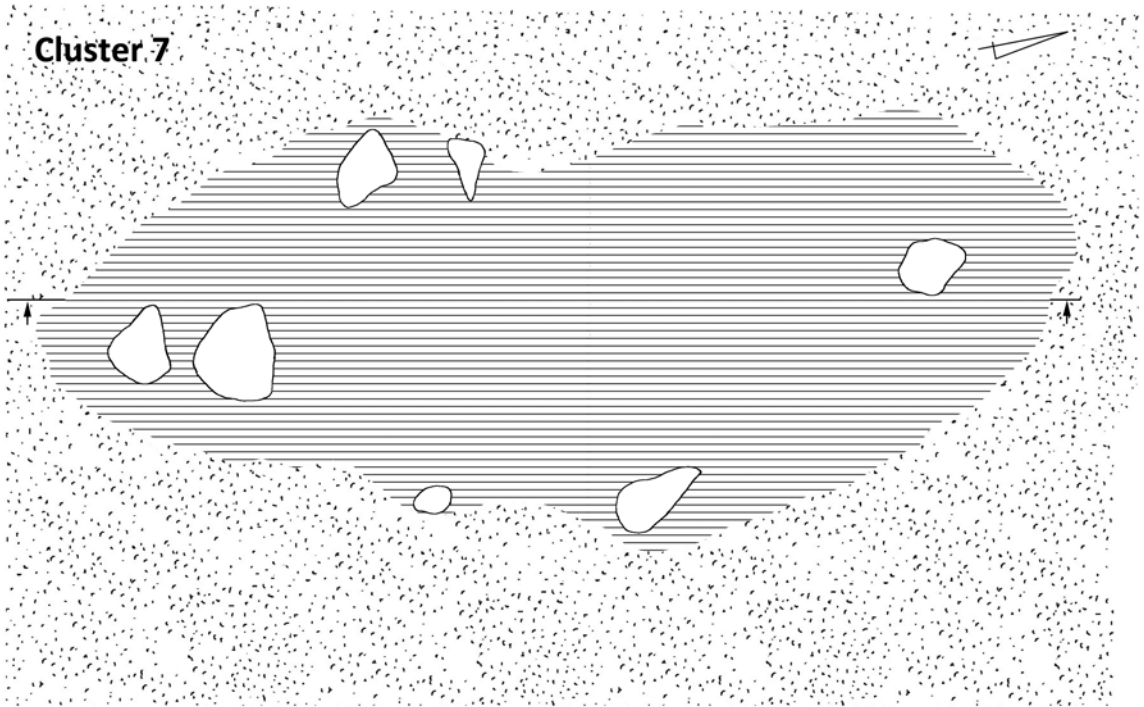


Plate XCII. Stone structures 7.



Grave 4



Grave 7



Grave 4



Grave 8



Grave 5



Grave 8



Grave 5



Grave 9



Grave 10



Grave 12



Grave 10



Grave 12



Grave 11



Grave 12



Grave 11



Grave 12



Grave 13



Grave 14



Grave 13



Grave 14



Grave 13



Grave 15



Grave 14



Grave 15



Grave 16



Grave 17



Grave 16



Grave 17



Grave 17



Grave 17



Grave 18



Grave 17



Grave 19



Grave 21



Grave 20



Grave 21



Grave 20



Grave 21



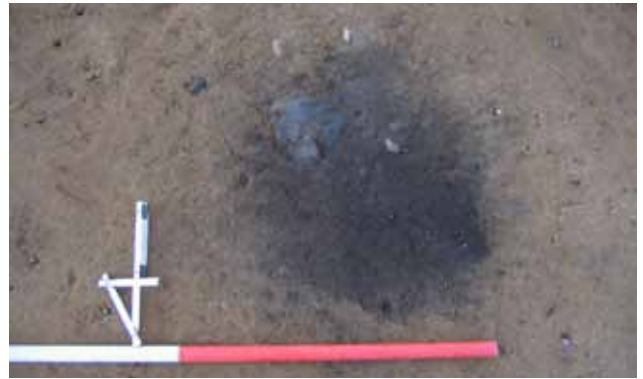
Grave 20



Grave 21



Grave 22



Grave 23



Grave 22



Grave 23



Grave 22



Grave 23



Grave 22



Grave 23



Grave 24



Grave 25



Grave 24



Grave 25



Grave 26



Grave 25



Grave 26



Grave 25



Grave 27



Grave 29



Grave 27



Grave 29



Grave 27



Grave 29



Grave 28



Grave 29



Grave 29



Grave 31



Grave 29



Grave 31



Grave 30



Grave 33



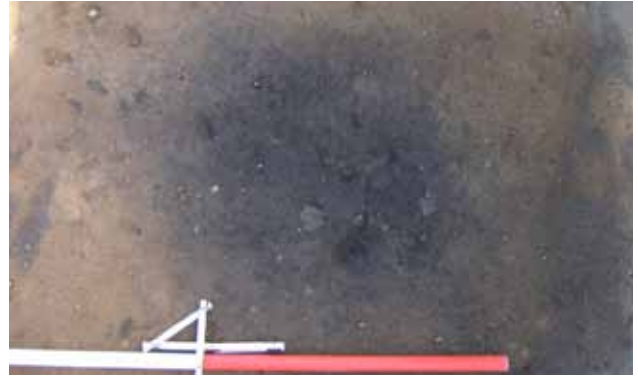
Grave 30



Grave 33



Grave 32



Grave 34



Grave 32



Grave 34



Grave 32



Grave 34



Grave 32



Grave 34



Grave 34



Grave 35



Grave 36



Grave 35



Grave 36



Grave 37



Grave 36



Grave 37



Grave 39



Grave 40



Grave 39



Grave 40



Grave 39



Grave 40



Grave 39



Grave 40



Grave 38



Grave 42



Grave 38



Grave 42



Grave 41



Grave 42



Grave 41



Grave 43



Grave 43



Grave 47



Grave 44



Grave 47



Grave 45



Grave 47



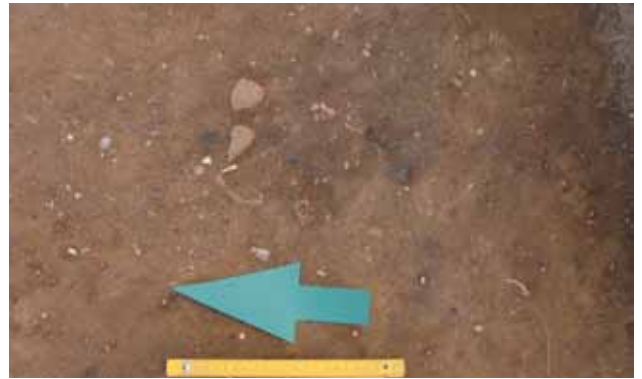
Grave 46



Grave 47



Grave 48



Grave 49



Grave 48



Grave 49



Grave 48



Grave 49



Grave 48



Grave 49



Grave 50



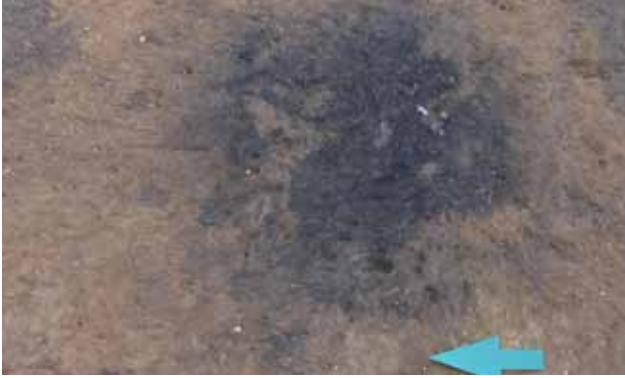
Grave 51



Grave 50



Grave 51



Grave 51



Grave 52



Grave 51



Grave 52



Grave 53



Grave 54



Grave 53



Grave 54



Grave 56



Grave 54



Grave 56



Grave 55



Grave 57



Grave 59



Grave 57



Grave 59



Grave 58



Grave 59



Grave 58



Grave 62



Grave 60



Grave 65



Grave 60



Grave 65



Grave 63



Grave 66



Grave 63



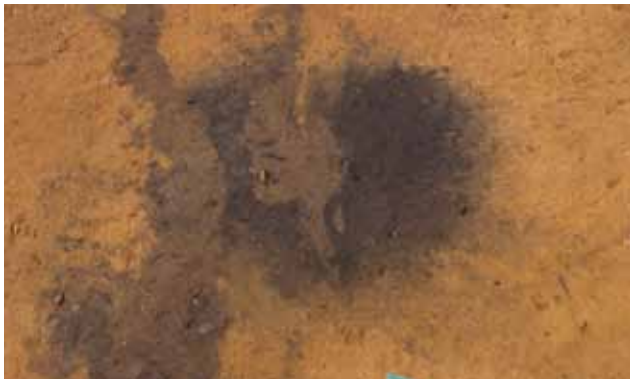
Grave 66



Grave 64



Grave 68



Grave 67



Grave 68



Grave 67



Grave 69



Grave 67



Grave 69



Grave 70



Grave 71



Grave 70



Grave 71



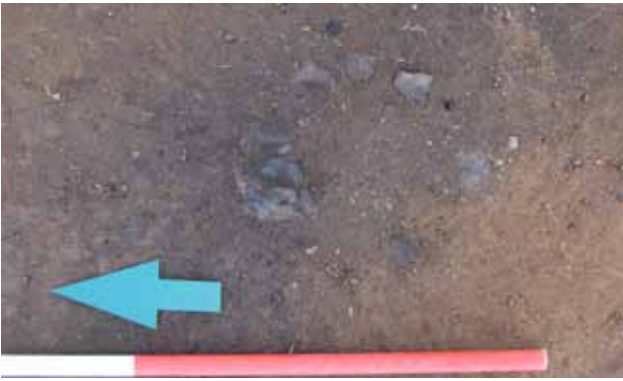
Grave 72



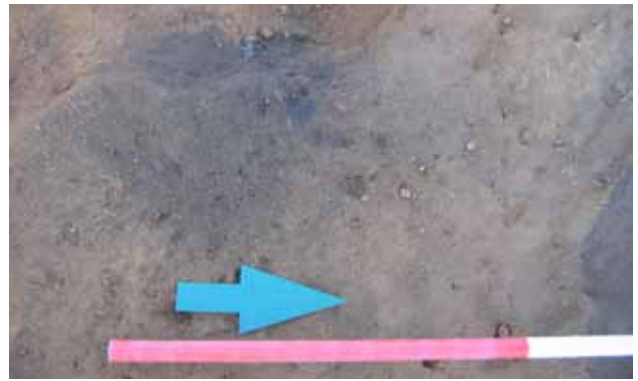
Grave 72



Grave 72



Grave 73



Grave 75



Grave 73



Grave 75



Grave 74



Grave 76



Grave 74



Grave 76



Grave 79



Grave 81



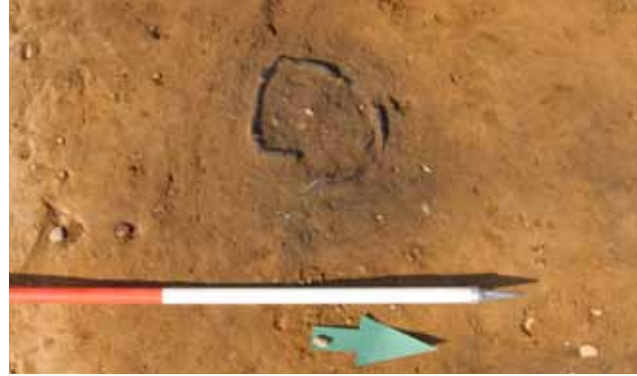
Grave 79



Grave 81



Grave 80



Grave 82



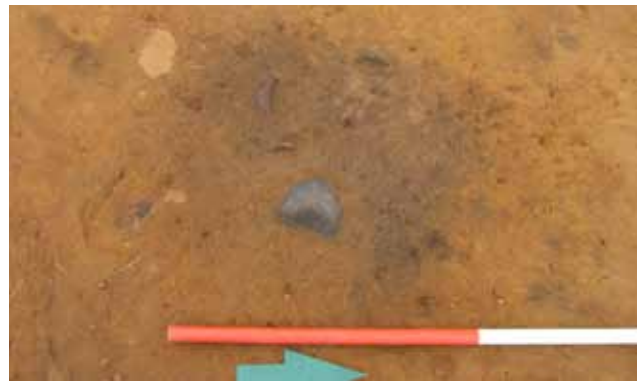
Grave 80



Grave 82



Grave 83



Grave 85



Grave 83



Grave 85



Grave 84



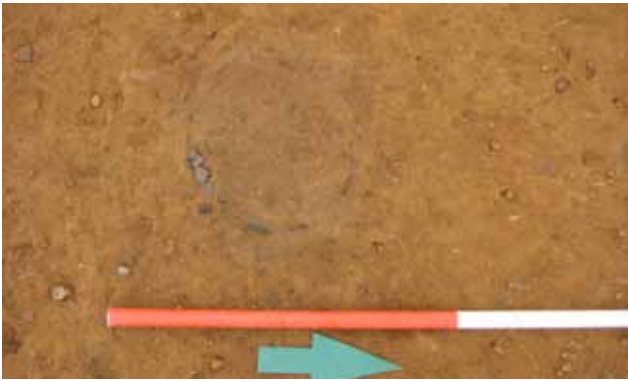
Grave 85



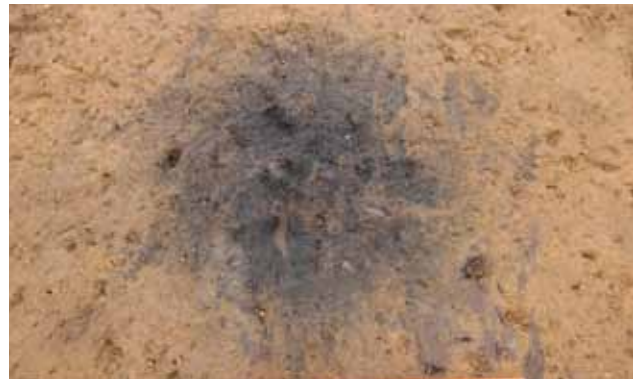
Grave 84



Grave 85



Grave 86



Grave 89



Grave 86



Grave 89



Grave 87



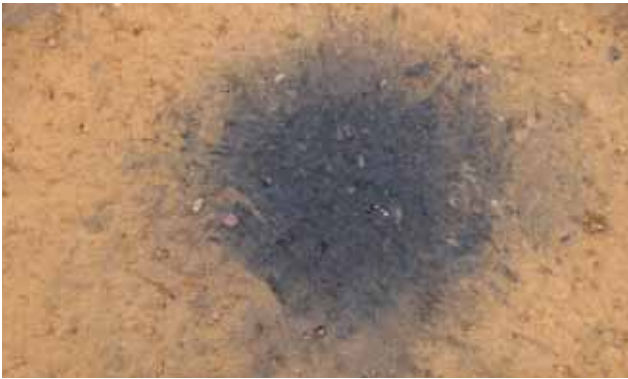
Grave 90



Grave 87



Grave 90



Grave 90



Grave 92



Grave 90



Grave 92



Grave 91



Grave 92



Grave 91



Grave 93



Grave 94



Grave 96



Grave 94



Grave 96



Grave 95



Grave 98



Grave 95



Grave 98



Grave 99



Grave 101



Grave 99



Grave 101



Grave 100



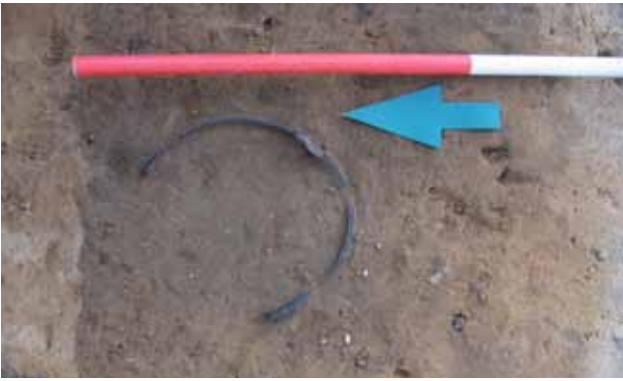
Grave 102



Grave 100



Grave 102



Grave 103



Grave 105



Grave 103



Grave 105



Grave 104



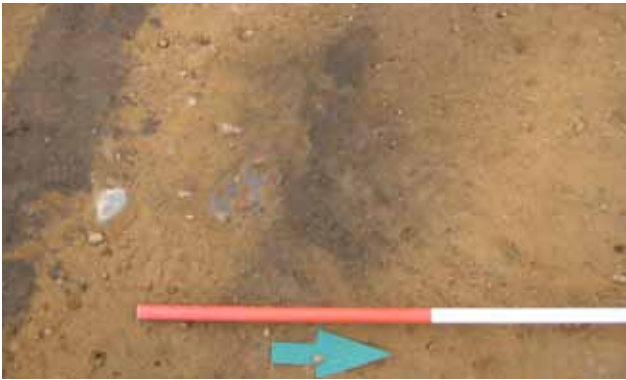
Grave 107



Grave 104



Grave 107



Grave 106



Grave 108



Grave 106



Grave 108



Grave 106



Grave 110



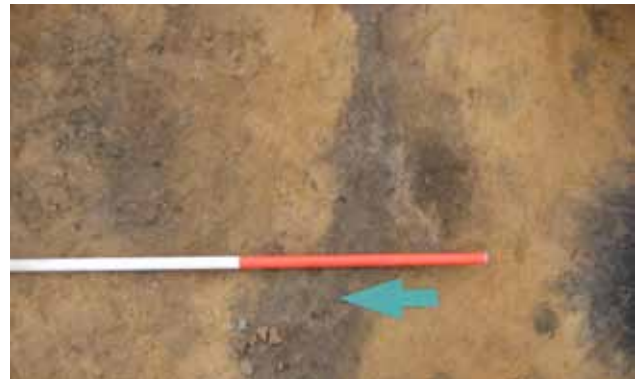
Grave 109



Grave 110



Grave 111



Grave 113



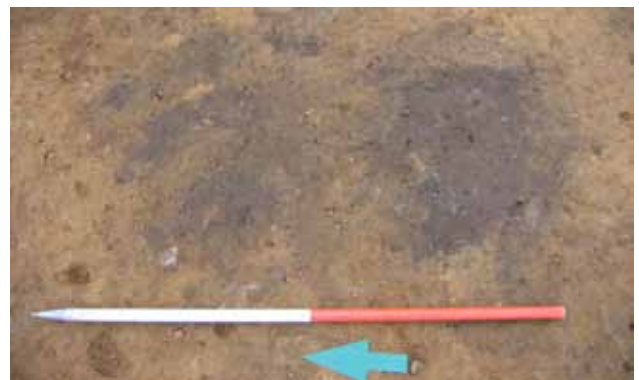
Grave 111



Grave 113



Grave 112



Grave 114



Grave 112



Grave 114



Grave 115



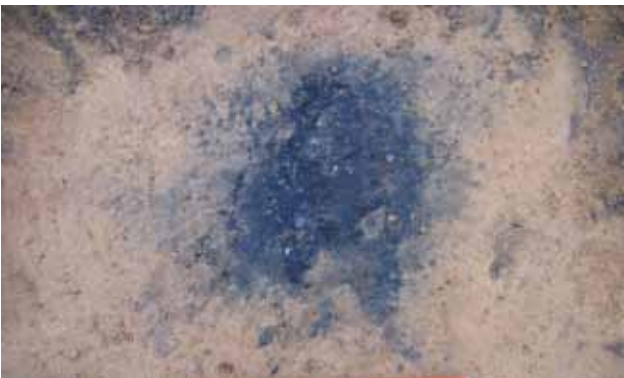
Grave 119



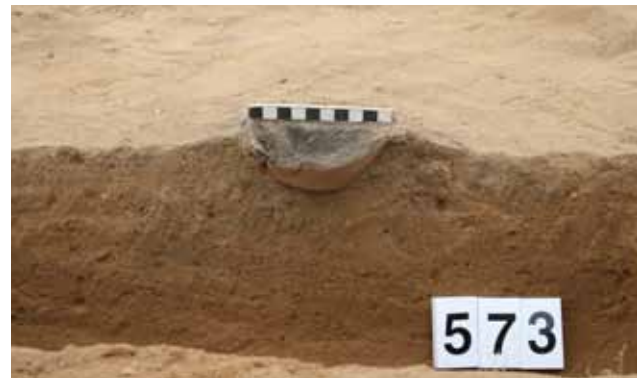
Grave 115



Grave 119



Grave 116



Grave 123



Grave 116



Grave 122



Grave 120



Graves 124, 124a



Grave 120



Graves 124, 124a



Grave 120



Grave 125



Grave 120



Grave 125



Grave 121



Grave 126



Grave 121



Grave 126



Grave 121



Grave 127



Grave 121



Grave 127



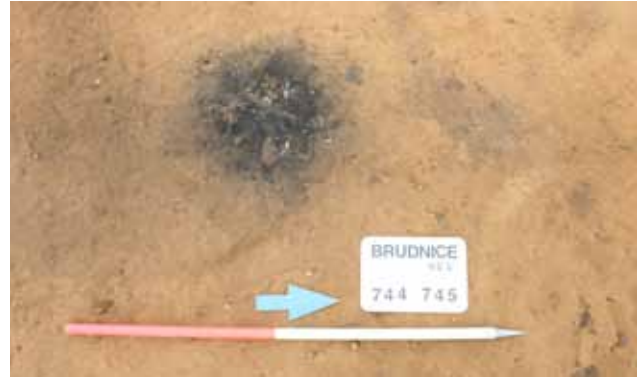
Grave 128



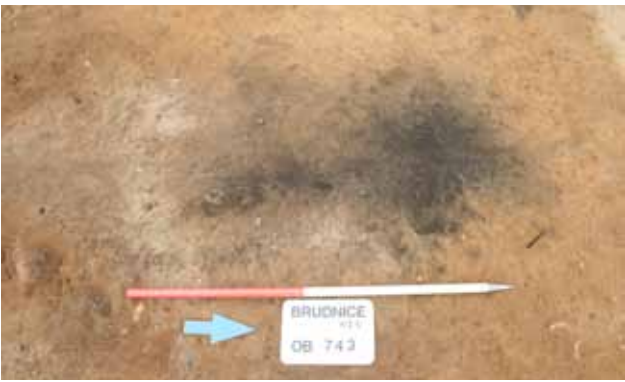
Grave 129



Grave 128



Grave 130



Grave 129



Grave 130



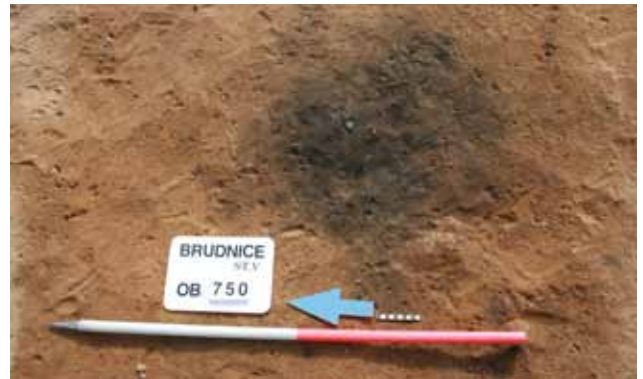
Grave 129



Grave 131



Grave 131



Grave 133



Grave 131



Grave 133



Grave 132



Grave 135



Grave 132



Grave 135



Grave 136



Grave 137



Grave 136



Grave 137



Grave 136



Grave 137



Grave 136



Grave 138



Grave 142



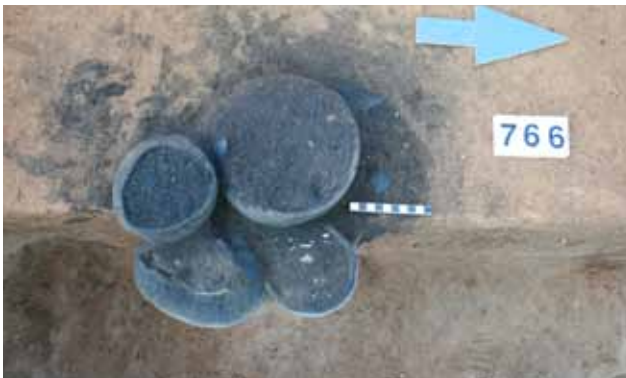
Grave 142



Grave 142



Grave 144



Grave 142



Grave 144



Grave 144



Grave 144



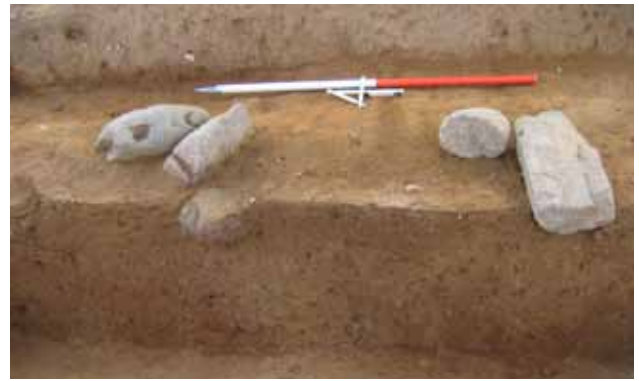
Grave 141



Grave 147



Grave 143



Grave 147



Grave 145



Cluster 1



Grave 146



Cluster 5, level I



Cluster 5, level II



Cluster 9 and grave 78



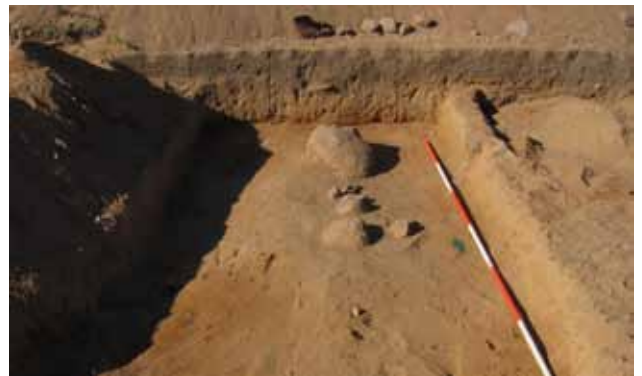
Cluster i 6 level I



Cluster 8 and grave 77



Cluster 6, level II



Cluster 9 and grave 78



Cluster 8



Cluster 9 and grave 78