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Editor's Address

INSTITUTE OF ARCHAEOLOGY
RZESZÓW UNIVERSITY
ul. Moniuszki 10, 35-015 Rzeszów, Poland
e-mail: iarch@univ.rzeszow.pl
Home page: www.archeologia.rzeszow.pl

THE UNIVERSITY OF RZESZÓW
PUBLISHING HOUSE
ul. prof. S. Pigonia 6, 35-959 Rzeszów, Poland
tel. 17 872 13 69, tel./fax 17 872 14 26
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RZESZÓW ARCHEOLOGICAL
CENTRE FUND
ul. Moniuszki 10, 35-015 Rzeszów, Poland
email: froa@froa.pl
Home page: www.froa.pl/

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Marcin Szydłowski

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Institute of History, University of Szczecin, Krakowska 71-79, 71-017 Szczecin, Poland;
e-mail: marcin.szydlowski@usz.edu.pl; ORCID: 0000-0002-9071-5848

Some Remarks on Social and Symbolic Significance of the Early Neolithic Longhouses Based on the Applications and Spatial Distribution of Ground Stone Type Tools. The Case of the Linear Pottery Sites from Lesser Poland

Abstract

Szydłowski M. 2022. Some Remarks on Social and Symbolic Significance of the Early Neolithic Longhouses Based on the Applications and Spatial Distribution of Ground Stone Type Tools. The Case of the Linear Pottery Sites from Lesser Poland. *Analecta Archaeologica Ressoviensia* 17, 7–23

This article attempts to present some aspects of the spatial reconstruction, modes of use, and social relations in the longhouse settlements of the Linear Pottery culture (LBK) by means of a contextual distributional analysis of ground stone artefacts. Three LBK settlement complexes from Lesser Poland (southern Poland) were selected for analysis based on a considerable number of finds of ground stone tools yielded by the excavations. Accurate determination of the intended use of a stone object, as indicated by the traces of use on its surface, was of central importance. Based on the above data, the author has distinguished two types of household sectors in LBK settlements with longhouses, namely domestic and communal. It is argued that the inhabitants of a given longhouse used the domestic sector for their purposes, while the latter served the community. Significant differences in the proportions of ground stones were found between settlements and between the settlement phases of a village. This leads the author to consider whether there might have been specialized settlements for a particular microregion in addition to the function served by a single longhouse. Each settlement would have specialized in different household tasks.

Keywords: Neolithic, Lesser Poland, longhouses, stone tools, Linear Pottery culture (LBK)

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Introduction

Stone artefacts form a group of archaeological evidence that has already proven many possible interpretations. In addition to raw material, provenance, indications and modes of use, the context of the finds is an object of analysis that has already received much attention and has been meticulously studied. In recent years, an extensive literature has addressed the contextual approach to the finds analysed. It focuses primarily on ground stone objects and attempts to examine how they were used in the past and how they were disposed of and deposited. The contextual approach has been used to hypothesize about the social organization and relationships between members of a particular community (Adams 1989; 2002; Edmonds 1995; Baysal and Wright 2005; Tsoraki 2007; 2011; 2016; 2018; Hamon 2008; 2020; Graefe *et al.* 2009; Wright 2013; 2014; Rosenberg and Garfinkel 2014; Pavlů 2016; Li *et al.* 2020).

Previous studies have shown that the analysis of ground stone artefacts can shed light on many important aspects of human life in Neolithic houses, particularly how households may have functioned. They prove useful in distinguishing house zones within a settlement and in assessing functions and external relationships between houses and groups of houses between settlements (Tsoraki 2007; 2011). Studies of the spatial distribution of ground stones within a house provide information about the relationships within the house. Depending on the find context, ground stones may also indicate the spaces that may have been used as production or disposal sites (Zimmermann 1995; Wright 2008; Tsoraki 2016; 2017). The number of zones and their location in relation to houses reveal how the interior of the settlement may have been organized (Hachem 2000; 2011; Lenneis 2004; Cutting 2005; Stäuble 2005; Bánffy 2013; Hoffmann 2013; Czerniak 2016; 2018; 2019). Analysis of use marks on ground stones can also provide evidence of how tools were disposed of or recycled (Szydłowski 2017, 84–90; Bocquentin *et al.* 2020; Li *et al.* 2020). This evidence has been shown to be particularly important when examining, for example, the realm of religious belief, such as ritual offerings prior to house construction or deposition at a specific, prepared site (Tsoraki 2018). The importance of ground stones for the study of the functioning of households of different types in prehistory is therefore undeniable.

The significance and function of LBK longhouses has been widely discussed, and approaches to the subject have evolved considerably in recent decades (Lenneis 1997; 2008; 2012; Borić 2008; Bickle and Whittle 2013; Czerniak 2013; 2016; 2018; 2019; Hodder 2013; Hofmann 2013; Hofmann and Smyth 2013; Pyzel 2013; Coudart 2015; Bickle *et al.* 2016). Differences in the size and layout of the longhouses and the presence or absence of an upper storey have recently been surmised from reconstructions and visualizations of architectural objects. The corridors in these houses and their significance in social contexts are currently being studied (see Czerniak 2019, further reading ibid.). However, the study of Neolithic longhouses suffers from a considerable lack of interest in the reconstruction of social relations, as well as the functioning of these structures based on the distribution of ground stone tools.

Can the analysis of the distribution of the ground stones also contribute to the discussion of the meaning and the way the LBK longhouses were used and functioned? It is not only insights into the relationships within longhouses, the distinction of zones, and the function of longhouses within a settlement that should be studied. Rather, it is the external relationships between longhouses and longhouse groups between settlements that are important.

Aims

Therefore, the analyses conducted in this article focused on exploring the context of ground stone artefacts in LBK settlements with longhouses to obtain information about the functioning of their inhabitants' households. Ground stone artefacts were selected because they were considered by the author to be the most appropriate for determining the range of use and function of zones in the longhouse and its immediate surroundings. Based on information about the find context of ground stone objects, the author attempted to test whether the different use of tools could be used to infer the use of spaces such as longhouses, zones within them and the settlement, activity spaces, or places of disposal, as well as a broader organization of space and interrelationships between stone artefacts and the structure of the longhouse. The final objective was to examine the relationships between groups of artefacts found in a particular settlement and those from neighbouring sites, in order to assess how much they differed in their meaning and the uses attributed to them. From this, the author derived hypotheses about the function of longhouses within a settlement and in regional settlement complexes. In addition, by examining ground stone material, he attempted to substantiate opinions about the role of this source in religious beliefs, such as the deposit of ritual offerings prior to house construction or deposition in a special, prepared location.

Methodology

To put all this in perspective, however, it is necessary to consider the context of the stone artefacts within the settlement and their relationship to other sites nearby. To this end, it was necessary to typify a settlement complex that had the characteristics that would allow us to examine these questions. The selected sites had to meet several conditions. They should be covered by excavations in open areas. Each site should have at least one longhouse. The sites with longhouse(s) should be from one region so that they can be compared, especially with respect to soil types, relief, and climatic conditions. They should also be multiphase sites in order to examine changes over

time and to show differences between sites in the same chronological phases. All stone finds recovered during excavation should be catalogued, and a large proportion of them should be from homogeneous objects with a known chronology. At least one of the sites should have an associated contemporary cemetery to compare settlement and burial contexts. Thus, it should be a settlement complex that, if possible, does not cover a large area, has complete inventories of all types of stone artefacts and documented find contexts, and the settlements that comprise it have a similar chronology in order to determine the relationships mentioned above. As for the ground stone artefacts, the stipulation was that all should be objects from excavated and homogenous layers or features with a known chronology.

A complex of this type, exhibiting all these characteristics and selected for study in this article, is an Early Neolithic assemblage of sites attributed to the Linear Pottery culture in Lesser Poland, Brzezie and Targowisko (Wieliczka County) and Modlnica (Kraków County) (Fig. 1).

The excavations yielded several thousand stone finds with clearly defined contexts. All stone objects were subjected to macroscopic analysis to separate out polished stone artefacts and intact tools, which were then used and subjected to use-wear analysis to determine possible uses according to detailed description (Wright 1992; Korobkowa 1999; Szydłowski 2017). To identify type and function, the surface of stone objects was examined under a microscope at up to 45x magnification, with light directed at the dry and wet surface at various angles. The observed use marks were compared with the database of surface use marks compiled by the author for Neolithic ground stone tools (see Szydłowski 2017). Particular attention was paid to grinding plates and querns, as they had similar macromorphology, but each had a completely different range of uses. Accurate distinction of uses was considered essential for drawing further conclusions about this tool category. The functional distinction between hammerstones, handstones, and the pounder/grinders was also important (Szydłowski 2017, 69–80).

On this basis, a collection of tools was selected that are believed to have been used for important household tasks, such as flour extraction (querns, grinders, pounders, pounders/grinders), grinding (grinding plates), and woodworking (adzes).

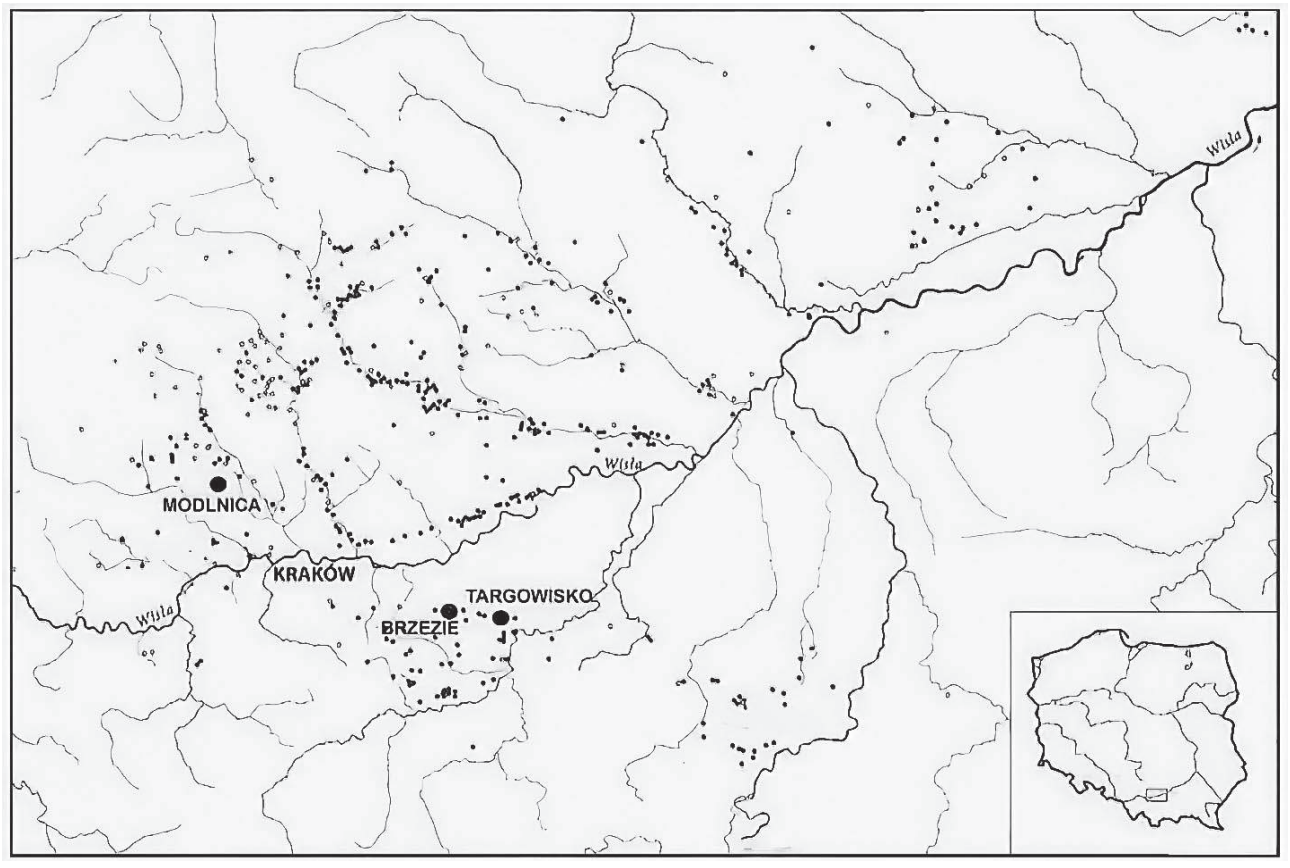

Fig. 1. Distribution of LBK sites in the upper Vistula basin. Larger black dots mark the location of LBK sites mentioned in the text (after Czekaj-Zastawny 2008, fig. 53; Czerniak 2016, fig. 2. 1; with modifications by M. Szydłowski).

The grinding plate. Unlike the polishing stone discussed below, this tool is flat and has a fairly extensive use surface with similar, but somewhat fainter, elongated use marks covering more of the face than the edge (Fig. 2). Grinding plates are usually about 3 cm thick and have one large active area or optionally two. The wear marks are visible over the entire surface, although they are much more pronounced on the edges. Grinding plates with more sophisticated craftsmanship have also been documented. They have a small opening, heavily rubbed sides about 1 cm thick, and a curved cross-section.

The polishing stone. This object is relatively large, not flattened, in most cases with one active surface (the smaller ones may have two) compared to the grinding plate. Based on the shape of the surface, two variants of this tool were distinguished: flat and semicircular. Long wear marks, which are easily visible during megascopic examination, characterize the tool. They are deeper and wider than those of whetstones. Unlike whetstones, such tools were used for polishing larger and heavier objects.

The polishing pebble. This is a small, spherical, ovoid, multipolar tool with well-polished and scratch-free active surfaces that are flattened to varying degrees. The surfaces bear shine marks from use and abrasions indicating that they have been used extensively.

The pad. This is a flat object, so large that a pot or other object can be placed on it for processing. The upper horizontal surface is active, while the lower is shaped to ensure the stability of the tool. In the plane, it is a circular tool created by hammering the edges. Tools like this were made from rock fragments that naturally have a flat surface, occasionally smoothed by grinding. Signs of use in the form of sheens and abrasions can be seen, especially in the centre, indicating long-term use for various purposes. However, no longitudinal scratches or circular abrasions can be observed, which distinguishes them from grinding or rubbing tools.

The handstone. This artefact (other names: grinder, muller, meule active, and percutant) has one or more grinding surfaces. It is approximately flat, plane-convex, or loaf-shaped and bears only circular grinding marks and abrasions on the active surfaces.

The hammerstone. A hammerstone or pounder is described as an elongated, egg-shaped, or cylindrical object. Its exterior surfaces bear patch-like abrasions that attest to the presence of at least one usable surface. Two subtypes of shapes are distinguished: oblong, with lenticular and cuboid variants, and round. This type is typologically and practically similar to a pounder/grinder.

The pounder/grinder. This is the most common type attested in archaeological contexts (Fig. 3). It is typically a multi-sided, elongated, or round artefact that has at least two active surfaces (one flat and one polar). The plane surface shows signs of use due to grinding and polishing activities. On both sides there are signs of use: horizontal – wider, and verti-

Fig. 2. Sandstone grinding plate from Brzezie 40 (photo by M. Szydłowski).

Fig. 3. Granite pounder/grinder from Targowisko 16 (photo by M. Szydłowski).

Fig. 4. Sandstone quern from Targowisko 16 (photo by M. Szydłowski).

cal – pointed. This feature distinguishes the tools in question from hammerstones and grinders, which usually have only one active face. Several subtypes of pounders/grinders have been distinguished based on variations in shape. However, since shape can indicate different modes of use that are not apparent from initial examination, it is necessary to perform a macro-analysis of use wear at the same time.

The quern. This artefact belongs to the large-sized objects (Fig. 4, 5). There are grinding marks on the active side. There are two main types of querns: trough querns – with raised sides, showing different depth of cavities, and saddle-shaped querns – with straight sides and flat active face, slightly lowered from use. The lower parts are reduced to form similar shapes. Querns are also divided according to the size of the active surface into large "stationary" querns and small "pocket" querns.

The adze head. It is a typologically differentiated blade tool (Fig. 6). Two main types and several subtypes are known. All adze heads have one (lower) flat side from which the blade rises upward at an angle, while the other (upper or dorsal) side is convex and shaped in different ways. Considering these proportions, two types have been distinguished: high adze heads with short tip and long cross-section (approximately square in vertical arrangement and with slightly rounded sides) and low adze heads with wide blade and short cross-section (square, horizontal and less than 1 cm high). Depending on the cross-section, three variants can be distinguished: circular, loaf-shaped, and pointed. Among the

Fig. 5. Sandstone quern from Modlnica 5 (photo by M. Szydłowski).

Fig. 6. Amphibolite adzes from Targowisko 16 (photo by M. Szydłowski).

low adze heads, two variants were recognized: a high trapezoidal one with a flattened head part and a three-sided one with a small round head part. The entire group of adze heads embodies large and small objects; intermediate forms are rarely encountered. Each specific type compares to another in its typological group in terms of size. For large objects within a given variant, the greatest difference in size is no more than 1 cm. In contrast, a stronger size match was observed for smaller objects. Other types of this group of devices are found rather rarely, and these are usually damaged primary forms that have been modified.

Non-tools

The paving stone. It is a solid element of ten to several dozen centimetres in size, with a flat or slightly convex upper surface and a semi-circular lower surface. There are wear marks in the centre of the flat surface, and there are many shiny spots on the rounded edges. The wear marks on the top surface, visible to the naked eye, are the result of many years of use, which was so heavy that even a patina has developed. Stone pavers were laid to pave paths, house floors, backyards or squares in settlements and cemeteries. Since they are everyday objects, they are exceptionally rarely documented, not to say neglected in studies of Neolithic stone management. All paving stones were divided into two classes according to their shape and size: Paving slabs (large, roughly square with two flat surfaces) and so-called "cobblestones" (cuboid, the upper surface is approximately convex, the lower surface rounded).

The stone flake/splinter. This is an elongated piece of rock that is relatively thin in relation to its length. Flakes are the only type associated with the processing of rock raw materials, so they may testify to the pre-treatment of the rock when found at a site. The number of flakes documented in settlements is small, suggesting that stone working was in all likelihood a spontaneous activity, with no evidence of a specialized stone working workshop. The following types of flakes are distinguished: cortical flakes-the entire outer surface is natural; subcortical flakes-only one surface is natural, indicating that it was removed from the secondary core; and core flakes have one to a few negatives indicating earlier removal. Stone splinters usually have a distinct impact mark, indicating that the strike was often made several times, and depending on the rock type, it may have a prominent bulb. Some flakes may also have negative scars marking the previously detached flakes. Their sides show attempted retouching in the form of small negatives of chipped pieces. Small dents are occasionally visible on one edge when viewed microscopically, suggesting that the flake in question may have been used as a scraper of some sort. Scrapers (flakes) vary in size, from tiny (about 1 cm) to large (even 0.5 m). The shape, size, characteristics, and degree of accentuation of the bulbs are determined primarily by the type of rock from which they were detached.

The core. This is a piece of rock that has a few distinct ridges of detached flakes (Fig. 7). From the shape and thickness of the internegative ridges, the presence of a bulb and the length of the waste pieces, combined with a parallel analysis of the technological parameters of the rock that makes up the core, it is possible to determine the technique used to work the stone.

The drill pin. This manufacturing waste is a "negative" produced when drilling holes, for example, shaft holes of axes (Fig. 8). The object is slightly tapered, alternatively straight or hourglass shaped and is found mainly in fragments due to the method used.

Fig. 7. Sandstone core or flake from Targowisko 16 (photo by M. Szydłowski).

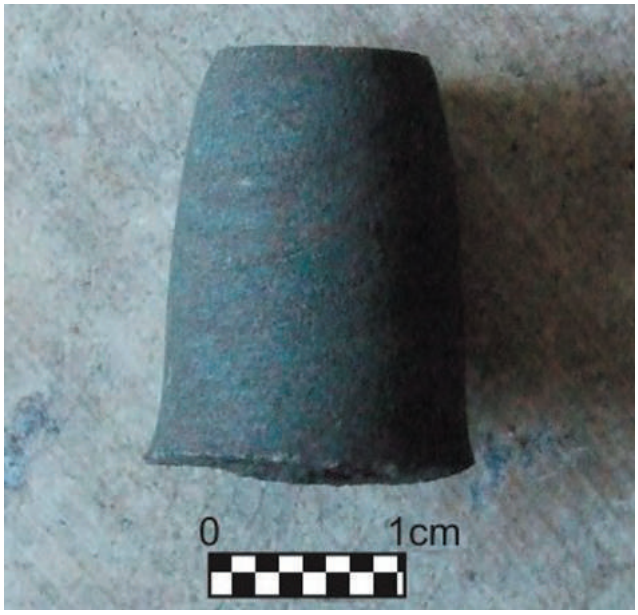

Fig. 8. Amphibolite drill pin from Modlnica 5 (photo by M. Szydłowski).

Analysis and discussion

The Early Neolithic site complex analysed in this article includes three groups of sites: Brzezie (sites 40 and 17), Targowisko (sites 16, 12/13, 14/15, and 10/11), and Modlnica 5 (Fig. 1). These sites are part of an extensive and unique settlement group that represents the remains of the earliest agricultural communities that inhabited this area. With the exception of Modlnica, which is located on the other side of the Vistula River, the sites discussed are close to each other. The settlement complex in question here was the subject of extensive rescue excavations a few years ago in the run-up to the construction of the A4 motorway. Despite the considerable scale of the excavations, insufficient attention has been paid to studying the contextual significance of the deposition of ground stone artefacts and their relationship to the longhouses in these settlements. These are the sites with three or four settlement phases, distinguished mainly by ceramic features (Czerniak *et al.* 2011; 2012a; Czerniak 2018; Kadrow *et al.* 2021). They were found to cover a limited period between the late phase of the Music Note subphase and the earliest or middle phase of the Želiezovce subphase of the Linear Pottery culture, ca. 5200–4900 (Czekaj-Zastawny 2014, 94; Kadrow *et al.* 2021, tab. 1).

Settlement complex in Brzezie

This settlement complex with longhouses includes two adjacent sites, Brzezie 40 and 17.

Brzezie 40

At least three settlement phases were identified in the settlement development of Brzezie 40 (Fig. 9), which roughly corresponded to the early and classical stage (IIb) of the Želiezovce phase (Czerniak *et al.* 2012b, 276–277). However, the exact duration and development dynamics can hardly be specified. The houses varied in size, layout, and construction techniques (Czerniak 2019, 234). House 6 is particularly noteworthy with its unusual parameters and length-to-width ratio (Czerniak 2019, fig. 2).

A total of 1100 stone objects were uncovered. The category of ground stones is represented only by four querns, four pounders/grinders and a considerable number of grinding plates, namely 32, of which two are complete and one is very small (Fig. 2). All the mentioned tools were made of sandstone, except for one pounder/grinder made of granite and one grinding plate made of amphibolite. Ground stone artefacts

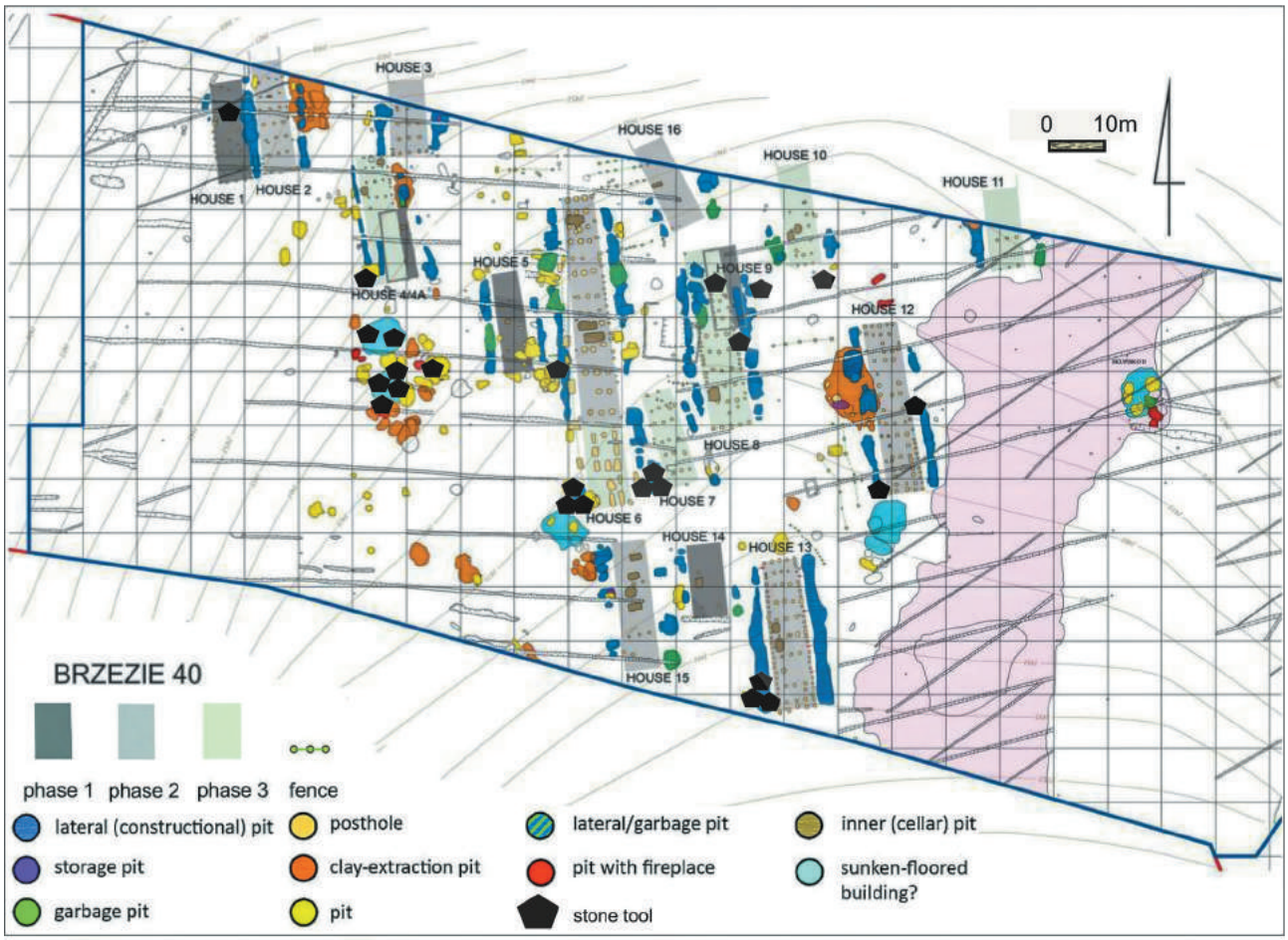

Fig. 9. Plan of the Brzezie 40 settlement (fragment), indicating the location of the longhouse (after Czerniak 2018, fig. 4; with modifications by M. Szydłowski – only stone tools from LBK objects are included in the map).

represent about 4 percent of the total stone assemblage. This seemingly small percentage is relatively high for the microregion in question, as the following statistics show. For comparison, 19 adzes should also be mentioned, all but one of which are preserved in fragments (Szydłowski 2017, 222–226).

Almost all the analysed ground stone artefacts (their fragments) were randomly distributed over different sectors of the site. However, this is not to say that no specific regularities were observed between stone objects and longhouses. Some tools show signs of what was probably intentional deposition.

Of the four querns, two were documented in longhouses 1/1a and 8/9, assigned to phase I. They were definitely found on the northern rear side in the third section from the entrance. Another was discovered near house 4a (phase I) in its front section to the left of the entrance. The last object of this type was discovered not far from the front of house 10 in an internal pit (phase III). According to the excavators, the internal pit was a feature "other than a posthole" found inside the house (Czerniak *et al.* 2012b, 230). In this case, it was a rectangular pit containing pottery, flint, and clay fragments. However, it is difficult to determine whether this feature was a small "cellar" or a structure associated with foundations that were intentionally placed there prior to the construction of the house. Its function as a waste pit was probably secondary and was converted to this when the settlement was abandoned.

Two pounders/grinders, tools related in function to querns, were discovered outside the features in houses 8 (phase III) and 12 (phase II) in the area between zones 2 and 3. The other two were excavated in a construction pit (feature 1, phase III) on the southwest side of house 7 to the left of a suspected entrance. Feature 1 is particularly notable for its content of other stone artefacts, which, in addition to pounders/grinders, consisted of four grinding plates, two polishing stones, 37 pieces of stone, and four pebbles. The substantial number of tools found in feature 1 and its vicinity suggests that this area must have served as an

activity (manufacturing) zone. Another assemblage, consisting of fragments of ten grinding plates, was found in several features of cluster A, several dozen meters from houses 4 and 5.

The analysis of the distribution of the adzes showed that these tools were even more widely scattered over the site than the ground stone tools. Almost half of them (nine adzes) were found on the surface of the site, while the remaining ten adzes each came from a different site. However, some patterns can be discerned here as well, in terms of the distribution of the adzes and the arrangement of the longhouses. In the rear area of house 9 (phase I), fragments of three adzes were found on the east side – one in the fill of an excavation pit and two on the ground surface. A fragment of an adze was also found from the east side of house 16 (phase II). One tool each was found in two pits with economic function (phase II) and one construction pit (phase I), located directly on the southwestern edge of house 6. This cluster of pits with economic use is an interesting premise for the role of this area in the hierarchy of activity areas in villages with longhouses. It is another case where stone objects were distributed in the same configuration in relation to the longhouse and clustered in the southwestern part of the house.

The distributional analysis conducted in Brzezie 40 to examine the relationship between stone tools and longhouses revealed some basic patterns that allow for a more comprehensive consideration.

It is possible to distinguish two hypothetical spheres of activity: "domestic" and "communal". The domestic sphere could have included a household area organized by a family that occupied a particular house. The family members may have concentrated their various activities in the back of the house, usually in the southwestern and, to a lesser extent, in the northeastern area. Another activity area, referred to as "communal", is located between a dozen or more and several dozen meters from the longhouses. It was intended to serve the needs of the entire settlement community. Therefore, it can be called a "common" or "communal" area. Thus, both areas indicate that the village community carried out its activities at two levels of social organization – the lower one, which was connected with the domestic, family sphere (only the members of the house participated in it) and the higher one, the "communal" sphere, which involved the members of the entire settlement community.

It was observed that stone tools were found mainly in the activity zones but were hardly registered in the houses. Based on this observation, we can assume that household activities took place outside the houses. A house was probably not used as a workshop or working space and as a dwelling at the same time. The only fragments of two querns found in the back part of the house indicate that a symbolic action might have taken place there.

The overwhelming majority of the documented tools were preserved in fragments, badly worn and broken. Only two pounders/grinders and a small adze, the result of repeated reworking of a larger adze, were found intact. Thus, the condition in which the tools were found strongly suggests that they were not intentionally and symbolically deposited, but rather disposed of as damaged, unusable items exactly where they were last used. The situation is probably different for the two querns already mentioned, which were left in longhouses. As already mentioned, practically no stone tools other than querns were recovered in the longhouses of the settlement we are concerned with here. Therefore, it is reasonable to assume that these objects were intentionally deposited and had a symbolic meaning (for analogy to the case discussed, see Nakamura 2010; Nakamura and Pels 2014). Unfortunately, due to the unclear chronology of the sites where the querns were found, it is not possible to say exactly when they were placed. The difficulty is that the remains of the huts from the first and third phases overlapped exactly where these objects were found. So, the most likely scenario is that the ritual of depositing the querns was performed when the first houses were built. Fragments of querns would have been buried where a longhouse was built. They could have been deposited as offerings before house construction began (Beneš *et al.* 2019, 134–137). Querns would be a symbolic representation of agriculture, a successful harvest, and abundance expressed through flour. However, this custom was not confirmed in the discussed settlement or in the two others analysed below.

Striking differences in tools were noted between settlement phases. Fragments of querns mostly belong to phase I, phase II – none, and phase III – only one. The situation is different for pounders/grinders: phase I – none, phase II – a few, and phase III – most artefacts. This disproportionate number of tools per settlement phase suggests that people may have taken querns with them when they left the settlement.

To support the above conclusions, we would like to refer to some examples from other regions where similar patterns have been observed. In a post-LBK settlement at Hrdlovka, a hoard of 35 grinders was discovered, thought to have been deposited during

the construction of the longhouse (Beneš *et al.* 2016, 79–80; 2019). Similar practices were observed in other post-LBK sites, such as Holubice and Goseck (Beneš *et al.* 2016, 80). An association of the Hrdlovka case with feature 1, which is located right next to house 7, is obvious. However, it would be more correct to assume that it was a pit used for economic functions associated with house 7. Rituals involving the deposition of stone objects prior to the construction of a longhouse must be studied separately.

Brzezie 17

The situation of Brzezie 40 can be compared with Brzezie 17, another settlement with LBK longhouses located about a kilometer to the west (Czekaj-Zastawny 2014). Brzezie 17 is dated to the Music Note and Želiezovce phases (Czekaj-Zastawny 2008, tab. 1). Remains of 24 houses and 619 LBK stone finds were discovered. Six settlement phases were distinguished in the development of the village. Although the number of stone objects is only half as large as in Brzezie 40, significantly more tools made of the ground stone were found. Fragments of 47 querns, 20 grinders or pounders/grinders, 18 grinding plates, and several polishing stones were catalogued, as well as 35 intact or fragmented adzes. Feature 1 in this settlement is again particularly noteworthy as it contained fragments of 10 querns, four grinders, two grinding plates, and one polishing stone. It partially overlapped the remains of Longhouse 2 from phase III and surrounded house 1 from phase VI, with which it was directly connected economically (Czekaj-Zastawny 2014, 15).

The enormous disproportion between these two neighbouring sites in terms of the number of ground stone finds should not be ignored when discussing the functions of the longhouses. They cause us to reflect on another problem. Whether we should not discuss less the function of individual houses, but instead consider the importance and function of entire settlements.

The settlement complex in Targowisko

The LBK settlement complex at Targowisko consists of several extensive settlements (sites 10/11, 12/13, 14/15, and 16) dated mainly to the Želiezovce phase (IIa and IIb), ca. 5100–4900 BC (Czekaj-Zastawny 2014, 94; Kadrow *et al.* 2021, 167). Targowisko 16 was the most extensive and rich in stone finds.

Targowisko 16

About 40 longhouses were documented at this site, associated with four settlement phases (Fig. 10; Czerniak *et al.* 2012a). It yielded the most extensive assemblage of stone objects (9264 in total) of any site discussed in this article. However, only about half of these came from features with a confirmed LBK chronology, including only three querns (fragments) (Fig. 4), one grinding plate, one grinder, one pounder (Fig. 3), and three pads. One chisel, one scraper, and one probable core were recorded from other rarely occurring Early Neolithic stone tools in settlement contexts. In contrast, 17 characteristic blade tools (three of which were complete) were documented, but only seven, including one intact, were found in features with a confirmed LBK attribution. All of the querns and one grinding plate were sandstone and a pounder/grinder was granite. All adzes were of amphibole shale of the same origin (Szydłowski 2017, 247–258). No finds of stone tools from the LBK features of the phase I longhouses were documented.

The potential sandstone core mentioned above (Fig. 7) is one of the rarest finds in LBK settlements. It was discovered in a construction pit on the east wall of house 4. Although this object has vertical signs of chipping on each side, and six negatives of previously removed flakes, one must admit that there is some doubt as to whether it is a core. It is perhaps more likely that this object is a chipped flake. In any case, it is evidence of stone working in this settlement area, especially since over a hundred stone chips, chunks, and splintered pieces have been found there.

Similar to the settlements Brzezie 40 and 17 described above, the activity areas in Targowisko 16 were also located along the walls of the houses, especially in their southwestern, western and eastern parts. In contrast, household features are relatively rare in the western part of the houses.

Such a small number of tools of the ground stone type for such a large polyphasic site is perhaps surprising. Nevertheless, it was possible to prove relationships between stone artefacts and no fewer than 15 longhouses. Only one object (adze) is associated with settlement phase I (Fig. 6: C). For phase II we can show the correlation of stone artefacts with five houses, for phase III with two houses. In contrast, the most remarkable accumulation of stone artefacts can be associated with phase IV – they were documented in features near seven houses. Fragments of querns can be assigned to a specific phase, one for each phase (II, III, and IV), with the exception of phase I, for which no finds of this type were documented. The pounder/grinder occurred only in phase III.

The modest number of tools necessary for the first agricultural communities must be surprising. It stimulates a discussion of the extent to which the in-

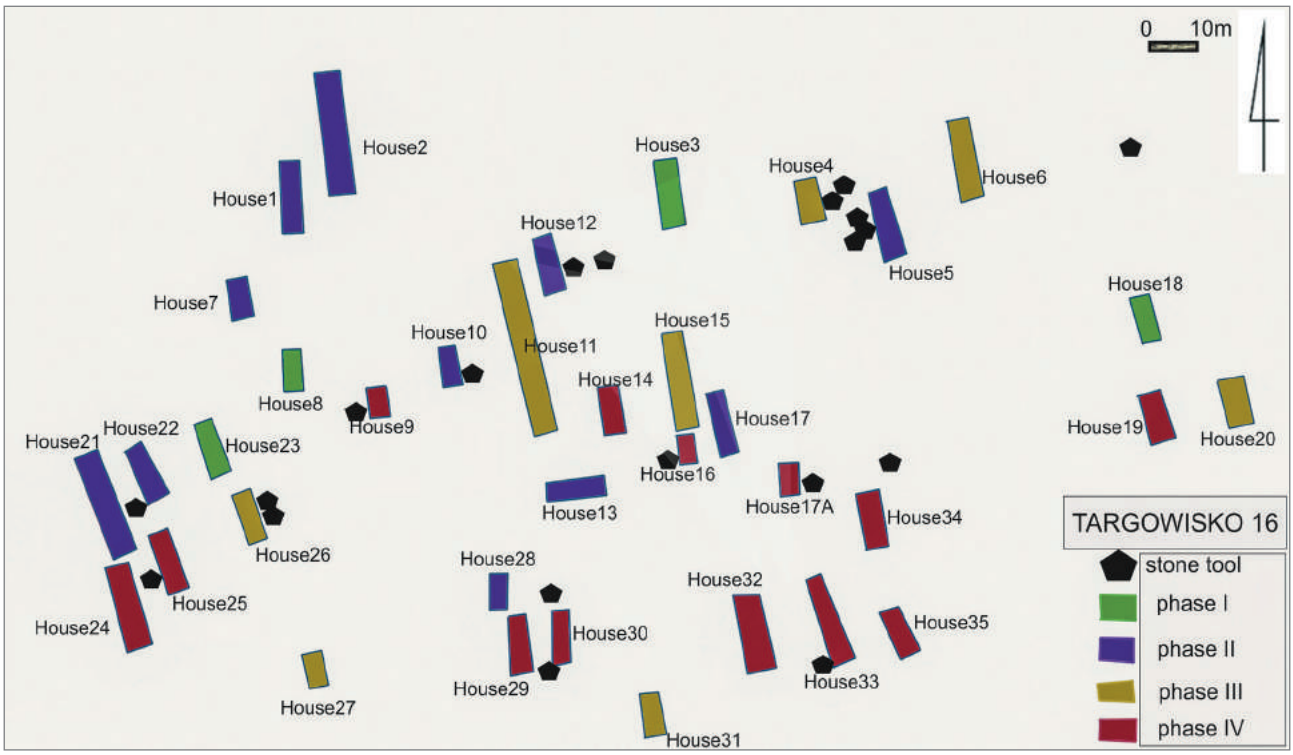

Fig. 10. Plan of the Targowisko 16 settlement (fragment), indicating the location of the longhouse (after Czerniak *et al.* 2012a; with modifications by M. Szydłowski – only stone tools from LBK objects are included in the map).

habitants considered these objects valuable to pass on to other generations and to take with them when they moved to another place. It also suggests that the essential activities of the people in the settlement may have been other than farming. Then the assumption may be quite wrong that villages with longhouses were those where the main activity of the population was agriculture. Other sites of the Targowisko complex do not show significant differences.

Targowisko 12/13

This site yielded a total of 3600 stone objects, but only fragments of two querns, one piece of a grinding plate, and six pounders/grinders represented the ground stone assemblages. They were all made of sandstone and came from different features (each from a different one), with the exception of two pounders/grinders and the grinding plate. The artefacts were widely scattered around the site, so it was not possible to relate them to each other. Although Targowisko 12/13 was a relatively extensive site with many stone artefacts, the proportion of ground stone objects was very low, only 0.025 percent, compared to the other stone classes found there (Szydłowski 2017, 239–245). The distribution pattern of pounders/grinders may indicate that they were disposed of in a disorderly manner, suggesting that they were probably less significant than the querns. As for the querns, we observed something different. They were virtually absent from this site. Several small fragments found here may indicate that this category of tools was used but not discarded.

Targowisko 14/15

Out of the total 265 stone objects documented at this LBK site, only a small fragment of a quern, a complete grinding plate, and fragments of four other plates can be considered as representatives of the ground stone type. It is very telling that not a single artefact of the pounder/grinder category was found. Apart from the mentioned fragment of a quern and a piece of a grinding plate found in a pit, all the remaining objects were chance finds collected from the surface of the site, thus they were found in a disturbed context (Szydłowski 2017, 245–247).

Targowisko 10/11

At this site, another extensive LBK settlement of the Targowisko group, the situation was not different. The excavations of this extensive settlement with longhouses yielded about 300 stone objects, including 31 tools made of raw materials other than flint (Wilczyński 2014, 461). Especially the site with a deposit of large grinding plates of sandstone attracts

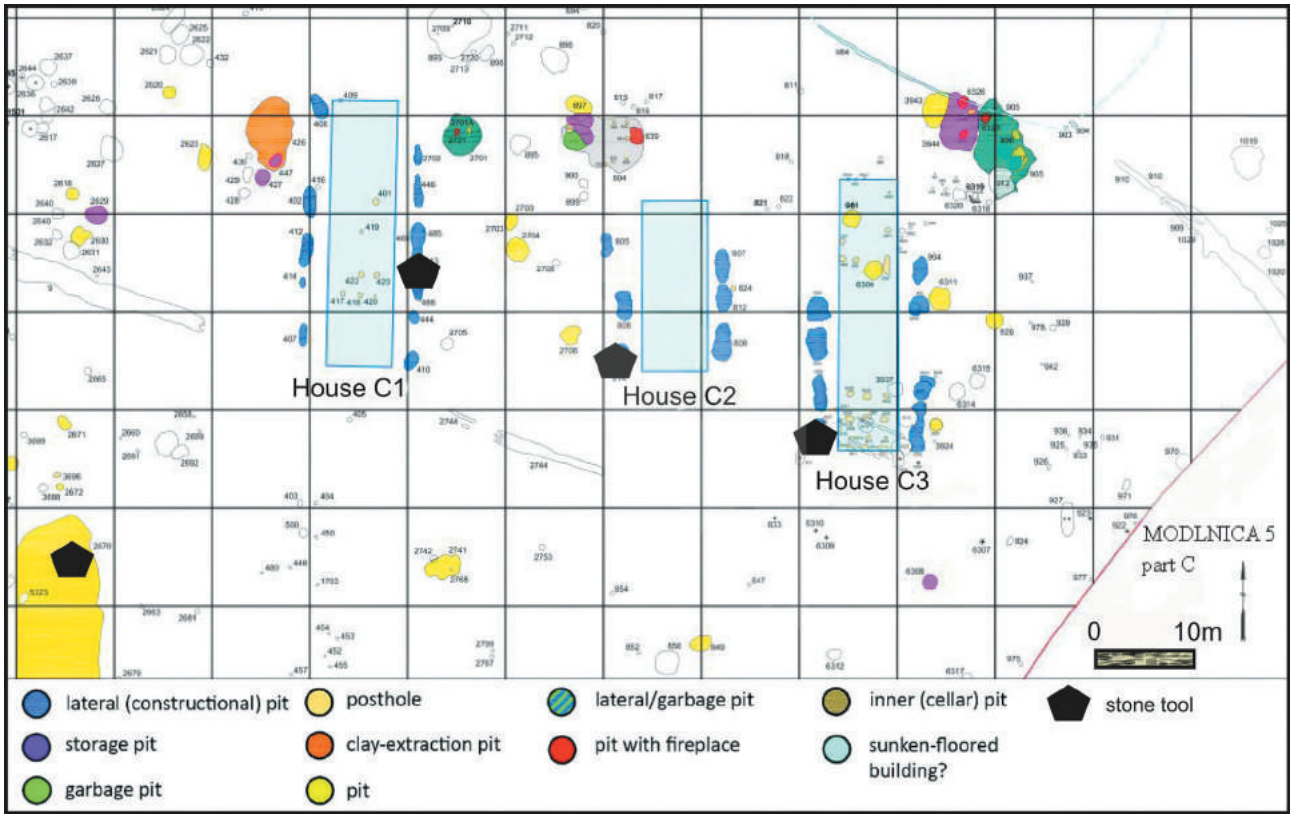

Fig. 11. Plan of the Modlnica 5 settlement (fragment) showing the location of the longhouse (after Czerniak *et al.* 2011; with modifications by M. Szydłowski – only stone tools from LBK objects are included in the map).

attention. Although the site was dated to the Music Note phase of the LBK, the longhouses were associated with the Zofipole phase (Zastawny and Grabowska 2014). Only some stone artefacts were associated with longhouses.

Modlnica 5

During excavations of the Modlnica settlement, site 5 (Fig. 11), a few kilometres northwest of the above complexes, 116 LBK stone objects were found (Czerniak *et al.* 2011). Three different zones (A, B, and C) were distinguished at the site, each with a different chronology, covering the period from the Zofipole to the Music Note and the Music Note/Želiezovce phases (Czerniak *et al.* 2011, 12–13). Zone A has been assigned to the Zofipole phase, but there is a likelihood that it may be chronologically broader. Some houses may be dated later, probably to the Music Note phase (Czerniak *et al.* 2011, 23). Zones B and C are more or less contemporary (zone C is probably slightly younger than B). Both B and C comprise the settlement sector that was occupied somewhat later than zone A. In Sector C, significant amounts of pottery typical of the Želiezovce phase were found, suggesting an earlier subphase of settlement development (Czerniak *et al.* 2011, 25). It is far from conclusive to establish an absolute chronology by dating ceramic features. However, the period between ca. 5100 and 4900 BC can be accepted as the extent of this settlement, but it was not a continuous settlement. The successive phases were separated by interruptions in settlement (Czerniak *et al.* 2011, 31; Kadrow *et al.* 2021, tab. 1).

Stone artefacts were grouped in "common" zones in most cases, with no assignment to a specific farmstead. Some individual objects were associated with the western area of house C2 and C3 and the eastern of house C1. In Zone B, excavations on the west wall of house B1 revealed a distinct household area with several stone objects and significant flint and ceramic remains. The situation was similar at houses A2 and A4. However, it should be emphasized that the number of stone finds was minimal compared to other sources discovered at this site. Stone artefacts were found mainly in fragments, damaged and worn. Of the many LBK settlements with longhouses in Lesser Poland, this settlement was poor in stone artefacts. The only complete quern (Fig. 5) was found in Zone C in a group of household features in a "common" area some distance from the farmsteads. Fragments of two

others were found in the household areas of houses A2 and C1. One piece of a quern was recovered from group Aa (Czerniak *et al*. 2011, tab. 4). In other words, for each phase of settlement development there were one or two finds of querns. For comparison, nine fragments of adzes made of amphibolite shale and one drill pin, indicating processing of raw material in Zone B, were recovered from the site discussed. The drill pin (Fig. 8) was found together with polished stone fragments and a slab in a waste pit.

With regard to the stone material distribution of the settlement Modlnica 5, we had an opportunity to compare it with a cemetery at Modlniczka 2, about 250 m to the west of Zone A. All graves revealed were cremations. Stone artefacts were recorded in 14 of 39 burials (Czekaj-Zastawny and Przybyła 2012, 31–43) and included 24 blade tools (adzes) or fragments and an unknown stone object with a hole. Therefore, a significantly greater number of adzes has been discovered in several graves compared with extended settlements containing longhouses. Most adzes found in graves were whole tools, while in settlements, they were mainly in fragments and destroyed. This simple fact illustrates that the adzes must have been valuable economically and for the spiritual sphere. Obvious differences were also observed in the extent to which graves included goods, with the majority lacking them. It has been noted that the graves where stone tools were placed also contained other goods in most cases Czekaj-Zastawny and Przybyła 2012, 31–43, tab. IV).

Raw material perspective

The respective groups of stone artefacts discussed above may also illustrate the choice of raw material by LBK stone artisans. Almost all of the adzes were made of amphibole shale from the area of the present-day Czech Republic (Krystek *et al*. 2011), with the exception of one artefact made of siltstone from the Targowisko 10/11 site (Wilczyński 2014, 464) and one adze made of unidentified raw material from the Modlniczka 2 cemetery (Czekaj-Zastawny and Przybyła 2012, 41). The consistency of the raw material was also observed in other types of tools at all investigated sites. These tools were almost all made of sandstone. The exceptions include two granite querns and one conglomerate quern found in Brzezie 17. Similarly, all but one (amphibolite) of the stone plates from Brzezie 40 were made of sandstone. In the group of tools, which includes pounders, grinders, pounders/grinders, 45 pieces were made of granite, three of quartzite and sandstone. It is also worth mentioning an aplite piece with an opening from the Modlniczka 2 cemetery (Czekaj-Zastawny and Przybyła 2012, 42). The comparable uniformity of raw material in the production of the respective tool classes was observed at all sites. However, it is important to note that sandstone is a widely used raw material in this region. We should take these characteristics into account when thinking about why this raw material, which is hardly suitable for the production of tools, gained such popularity (Szydłowski 2017). On the other hand, amphibole slate is the best material for the

Table 1. List of stone tools from the sites included in the study.

Site No.	Number of stone objects	Number of stone tools	Adzes, including fragments	Querns, including fragments	Grinding plates, including fragments	Grinders, pounders, pounders/ grinders	Others
Brzezie 17	619	more than 121	35	47	18	20	?
Brzezie 40	1100	70	20	4	32	4	10
Modlniczka 2 (settlement)	19	19	18	0	0	0	1
Modlniczka 2 (cemetery)	25	25	24	0	0	0	1
Modlnica 5	116	18	9	1	0	0	8
Targowisko 10/11	31	31	6	4	0	3	18
Targowisko 12-13	3600	83	9	2	1	9	62
Targowisko 14-15	278	16	5	4	6	0	1
Targowisko 16	9266	65	17	5	3	9	31
Sum	**15054**	**more than 458**	**143**	**67**	**60**	**45**	**more than 133**

production of adzes. It is also a raw material that, due to its technical properties, determines the production of specific tool shapes. Such tools are much easier to make from this raw material and are more ergonomic, with adzes being one of them.

Conclusions

The stone artefacts analysed in this paper are a highly sensitive diagnostic indicator of the household tasks performed in a settlement and the social relations depending on the find context. The results presented above, which include the analysis of several thousand stone artefacts from a few LBK settlements in Lesser Poland, can be considered statistically reliable. However, the number of artefacts considered for the present study was significantly reduced after the author conducted an analysis of use marks, which eliminated objects without evidence of processing and use, and a chronological selection, which allowed him to exclude all artefacts for which the LBK relationship was not proven.

The first revealing observation is that the rock material in LBK settlements containing longhouses is many times less than artefacts made from other raw materials such as pottery or flint. At Brzezie 40, for example, a 25-fold disproportion was found between ceramic and stone finds. It is unlikely that this condition is related to excessive erosion of the surface of the site. If this were the case, other artefacts would not have been recorded, particularly pottery, which is more susceptible to destruction than stone. Stone artefacts found in features and pits in settlements are recorded primarily along with pottery and flint. Osteological material or daub fragments are less frequently found. The most diverse site in this regard was Modlnica 5, where stone finds were discovered together with pottery, flint, bone, daub fragments and even an amber fragment and an anthropomorphic figure (Czerniak *et al.* 2011; Wąs 2021). Targowisko 12/13 differs significantly. In addition to stone artefacts, daub fragments were found in large quantities in the backfill of pits and other features. In the other discussed settlements, daub with stone objects were found only rarely.

The correspondence between stone artefacts and longhouses at the sites studied is difficult to find and not remarkably repeatable. Nevertheless, some firm conclusions can be drawn, and some patterns become apparent, despite the limited data which is ultimately available.

In this paper, we were mainly interested in discussing the possible use of longhouses based on the distribution of ground stones. The presence of household zones was confirmed on the southwest corner of most of the houses and along their eastern and western walls. However, they were practically not found on the northern side. This absence suggests communication routes and a second entrance in the north.

In addition to the function of the longhouses, the question of the specialization of settlements (groups of houses in a settlement) was also raised. Specialized settlements can probably be identified, for example, by significant differences in the quantity of querns between two settlements of approximately the same age, located several hundred meters apart (the sites in Brzezie). In Brzezie 17, querns were found in large numbers, while in Brzezie 40, hardly any were found. This suggests a specialized settlement that was active in a group of settlements that would have been part of a much broader settlement community than individual villages. In contrast, typical production remains, a drill pin, and stone flakes were documented in the settlements where hardly any querns were found. Therefore, it can be assumed that Brzezie 17 could have been a village of farmers and Brzezie 40 a village of stone craftsmen. However, this opinion should be treated as a hypothesis that requires further investigation. It cannot be ruled out that there was only occasional increased activity in the settlement during this period, and not necessarily that it is the same as the specialized settlement.

Based on the context of the deposition of the stone artefacts at issue, the author identified two activity zones: "domestic/family" and "collective". The domestic zone was probably associated with the activities of an individual or a "family" that lived in a particular homestead. It is assumed that there would also be a communal area in the settlement some distance from the homesteads that served the general public. This zone would not be associated with a homestead. However, the proposed division into two activity zones is only based on the distribution analysis of the ground stone artefacts, leaving open the question of whether the use of other sources would confirm this division. At this time, the problem cannot be resolved (the statistical sample is too small), nor can the following questions be answered: Would some tasks be done for the needs of a particular household and others collectively for the entire settlement community? Can we speak of "house specialization" or "settlement specialization"? Do the fragments of querns deposited under the house suggest that a "family" of peasants would have inhabited the house? Nevertheless, the above classification can be considered as a basis for discussions about the organization of LBK societies.

Stone tools were undoubtedly valuable commodities for early Neolithic manufacturers. Their value can be inferred from grave finds. As the grave goods suggest, adzes would have been such a necessary type of tool, as they were often placed in the grave, even in pairs, while the category of ground stones was absent from the Modlnica cemetery. Such an object as the adze may have served as a distinguishing mark of wealth and social status. These items were most often placed in the graves, along with other objects. However, several adjacent graves contained no items. Complete adzes are rare finds in settlements as they are almost always broken and only a few querns are completely preserved. The rather small number of querns and adzes in most of the sites discussed may indicate that the inhabitants took them with them when they left the settlement, perhaps as a symbol of the longevity of the extended family.

This article should be considered at this point as a preliminary contribution to further research and evidence gathering on the function and space of LBK settlements with longhouses and the social organization of LBK communities. It raises several questions and hypotheses that need to be developed and tested in future studies.

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Wojciech Pasterkiewicz[1], Patrycja Skała[2]

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[1] Institute of Archaeology, Rzeszów University, Moniuszki 10, 35-015 Rzeszów, Poland;
e-mail: wpasterkiewicz@ur.eu.pl; ORCID: 0000-0002-0625-7232

[2] Institute of Physics, Rzeszów University, Pigonia 1, 35-310 Rzeszów, Poland;
e-mail: pskala@ur.edu.pl; ORCID: 0000-0002-8955-8291

New Finds of Bronze Axes from the Carpathian Foothills

Abstract

Pasterkiewicz W., Skała P. 2022. New Finds of Bronze Axes from the Carpathian Foothills. *Analecta Archaeologica Ressoviensia* 17, 25–36

This article presents the results of archaeological and metallurgical research on two axes made of bronze, discovered in 2020 in two locations: Izdebki, Brzozów district and Gogołów, Strzyżów district. It was possible to determine the cultural context and chronological affiliation of the artefacts. The axe from Izdebki was classified as a type with elevated edges, dated to the BrB phase and associated with the Otomani-Füzesabony culture, whereas the item from Gogołów was classified as a socketed axe with ornamented sides, dated to the period corresponding to HaB1–HaB3. An analysis of the metallurgical composition of objects was carried out, examining the cores and their surfaces (corrosion layers). It was established that both axes represent so-called tin bronzes. The discovered artefacts should probably be considered loose finds.

Keywords: Carpathian Foothills, bronze axes, Otomani-Füzesabony culture, Gáva culture

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In 2020, two bronze axes were donated to the Institute of Archaeology of the University of Rzeszów by anonymous finders. Along with the items, information about the detailed location of the finds (geographic coordinates) was provided with a description of the circumstances of the discovery and the context (depth, presence or absence of other objects in the vicinity of the finds).

The first of the axes comes from the village Izdebki, located in Brzozów district. The artefact was found on a vast elevation at an altitude of 456.7 m above sea level and 100 m above the valley floor (Fig. 1). This prominence is part of a hump divided by the valleys of two streams which are tributaries of the San river – the Magierka and the Wydrna. The item was supposed to be located in a small clearing, at a depth of about 30 cm, under a layer of modern turf.

The aforementioned axe is in fairly good condition (Fig. 2). It is covered with a patina of light and dark green colour, sometimes slightly brown. The artefact is damaged in several places, probably in the process of being excavated from the ground. It has defects on some parts of the outer surface, including the faces and the blade. The item has the shape of a slightly elongated rectangle with arched edges, approaching each other in the central part of the object. The blade is semi-circular in shape and slightly defined. The butt is slightly asymmetrical with a distinct narrowing in the middle part. In the side view, the axe has an axis of symmetry with a slightly convex shape, narrowing towards the blade and the butt. The faces are slightly faceted and have an "T"-shaped cross-section. The axe bevel is flat, quite neatly formed. Casting defects are visible on the tool in the form of mesh-like cracks covering the body (Fig. 3: A, B). They are quite extensive and have the character of unevenly spaced lines, longitudinal, diagonal and transverse, which intersect each other, dividing the surface of the axe into polygons. These defects were most likely caused by the rapid shrinkage of the liquid metal alloy while cooling down in the casting mould. There are no remnants of the casting flash mark on the surface of the object, which allows us to state that the artefact underwent careful treatment after casting. The axe has traces that suggest its use in

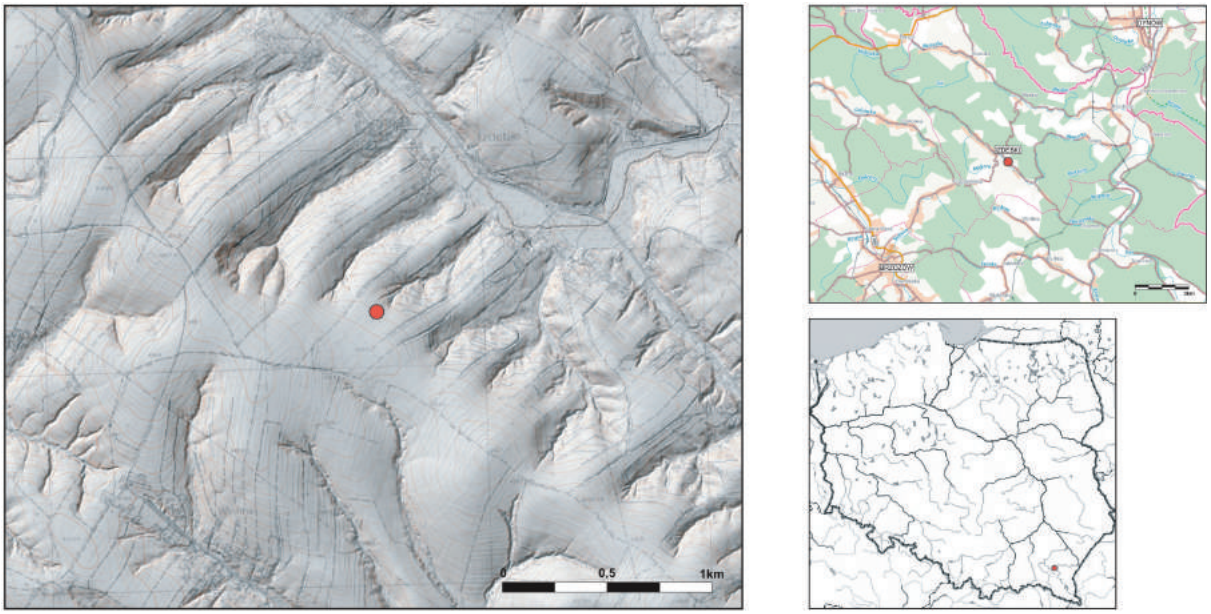

Fig. 1. The location of the place where the bronze axe was found in Izdebki, Brzozów district (prepared by W. Pasterkiewicz).

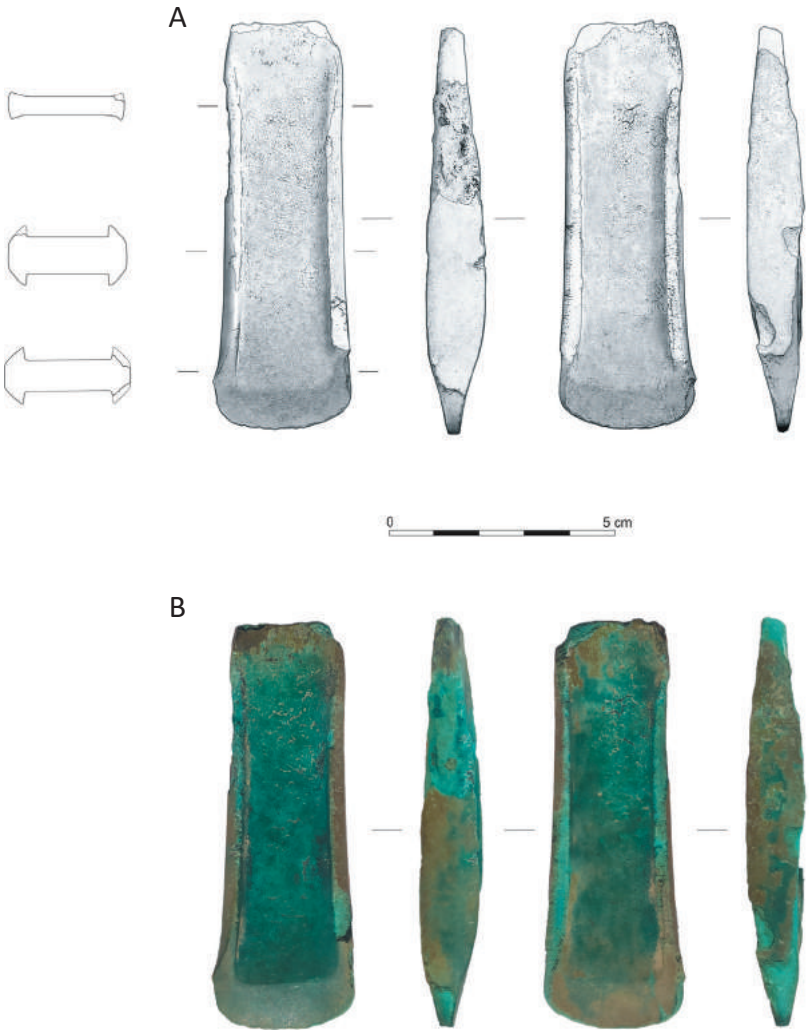

Fig. 2. The axe with elevated edges made of bronze from Izdebki, Brzozów district (drawn by A. Bardetsky, photo by W. Pasterkiewicz).

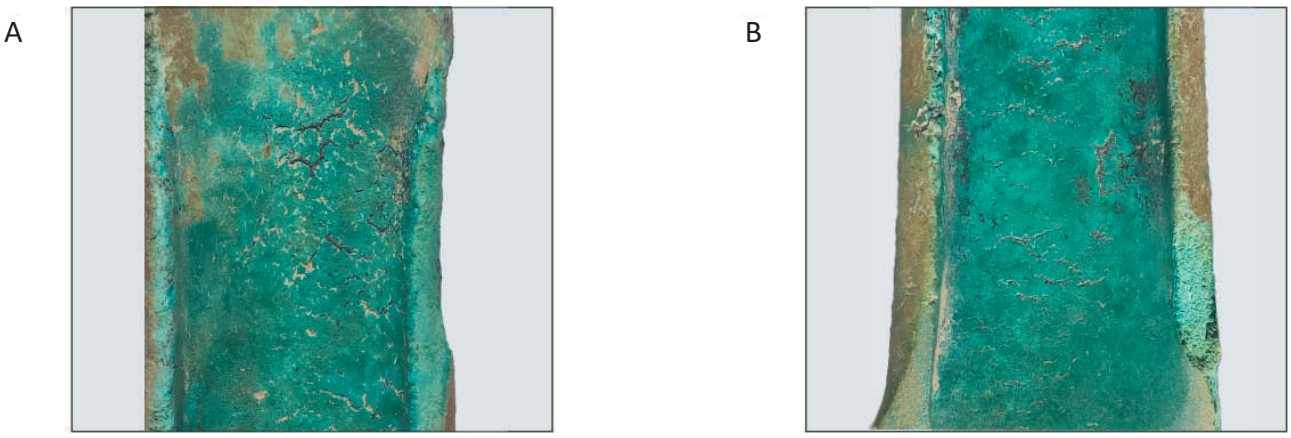

Fig. 3. Izdebki, Brzozów district. Casting defects in the form of mesh-like cracks on the surfaces of a bronze axe (photo by W. Pasterkiewicz).

prehistory. This is indicated by the slight deformation of one of the edges caused by forging or hammering with a hard object. Moreover, the cutting edge of the axe was frequently repaired (grinding), which led to a narrowing of the object and deformation of the shape of its faces. This might have changed the original shape and metric parameters of the tool, which is important in determining the type of the artefact (Szpunar 1987, 7, fig. 6). The metric features of the artefact are as follows: length – 9 cm; width at the blade – 3 cm, width at the middle part – 2.6 cm, width at the butt – 2.5 cm; thickness at the blade 1.2 cm, thickness at the middle part 1.4 cm, thickness at the butt 0.6 cm; the height of the edges – 0.35 cm; weight 114 g.

The typological features of the axe from Izdebki affiliate it to axes with elevated edges. This group of axes is quite plentiful in Poland among the cultures of the Early and Older Bronze Age (Sarnowska 1969, 63–66; Gedl 1975, 53–55; Szpunar 1987). They are numerous in north-western Poland, and their large concentration coincides with the territorial range of the Unietyce culture. In the case of south-eastern Poland, the extent of these axes coincides with the settlement zone of the Otomani-Füzesabony culture (Fig. 4). Currently, there are 7 known cases of such axes, which represent mainly single finds, discovered by accident in: Kobylany, Krosno district, site 37 (Gancarski *et al*. 2021a, 569–571, fig. 3, 4), Miejsce Piastowe, Krosno district (Pasterkiewicz and Dziedzic 2019, 280, fig. 2), Nowy Żmigród, Jasło district, site 38 (Gancarski *et al.* 2021a, 580–583, fig. 18, 19), an unknown village near Sanok (Blajer *et al.* 2021, 513–517, fig. 2), Trzcianiec, Bieszczadzki district (Blajer *et al.* 2021, 517–519, fig. 4), Krościenko Wyżne, Krosno district, site 14 (Gancarski *et al.* 2021a, 573–576, fig. 9, 10). Moreover, there is an item that is part of the deposit uncovered within the defensive settlement in Trzcinica, Jasło district, site 1 ("Wały Królewskie") on the Ropa river (Gancarski 2011, 25, photo 206). Single axes referring to such types are also known from the settlement in Jasło, site 29 (Gancarski 1988, 75, 78, fig. 10: 1) and Trepcza, Sanok district, site 2 (Gancarski and Ginalski 2001, 311, fig. 7: A).

The described axes with elevated edges can be classified into two groups differentiated by slight morphological features. The first one covers the Grodnica type according to A. Szpunar, i.e. axes with the influence of the Unietyce culture with the time frames BrA2/BrB1–BrB1 (Szpunar 1987, 51–52; Blajer 2001, 319). These artefacts occurred, among others. in the villages Kobylany, Jasło, Nowy Żmigród, Trepcza, Trzcinica, site 1, an unknown village near Sanok, Miejsce Piastowe. An item from Trzcianiec, belonging to the Brusy type, corresponding to I–II OEB, may have a slightly older chronological determination (Szpunar 1987, 18). In addition, there is one more artefact, from Krościenko, which can be linked with the culture of our interests. It represents flat axes with poorly marked edges, referring to the Eneolithic copper axes. It was included in a horizon corresponding to the BrA phase and the beginning of BrB1 according to Reinecke. The state of preservation of the artefact from Izdebki and morphological features classify it as an object in the group of axes with elevated edges, the Łuszczewo type or the Grodnica type, dated to the BrB period (Szpunar 1987, 47–49, 51–54). Due to its slender form, it has also several features in common with the item from Nowy Żmigród. These include the narrowing of the faces and the small height of the edges, a similar form of a side view, a notch in the butt and a narrow blade. It is also possible to notice the similarity in terms of the sizes.

Most of the axes discovered thus far in south-eastern Poland can be associated with the metallurgical

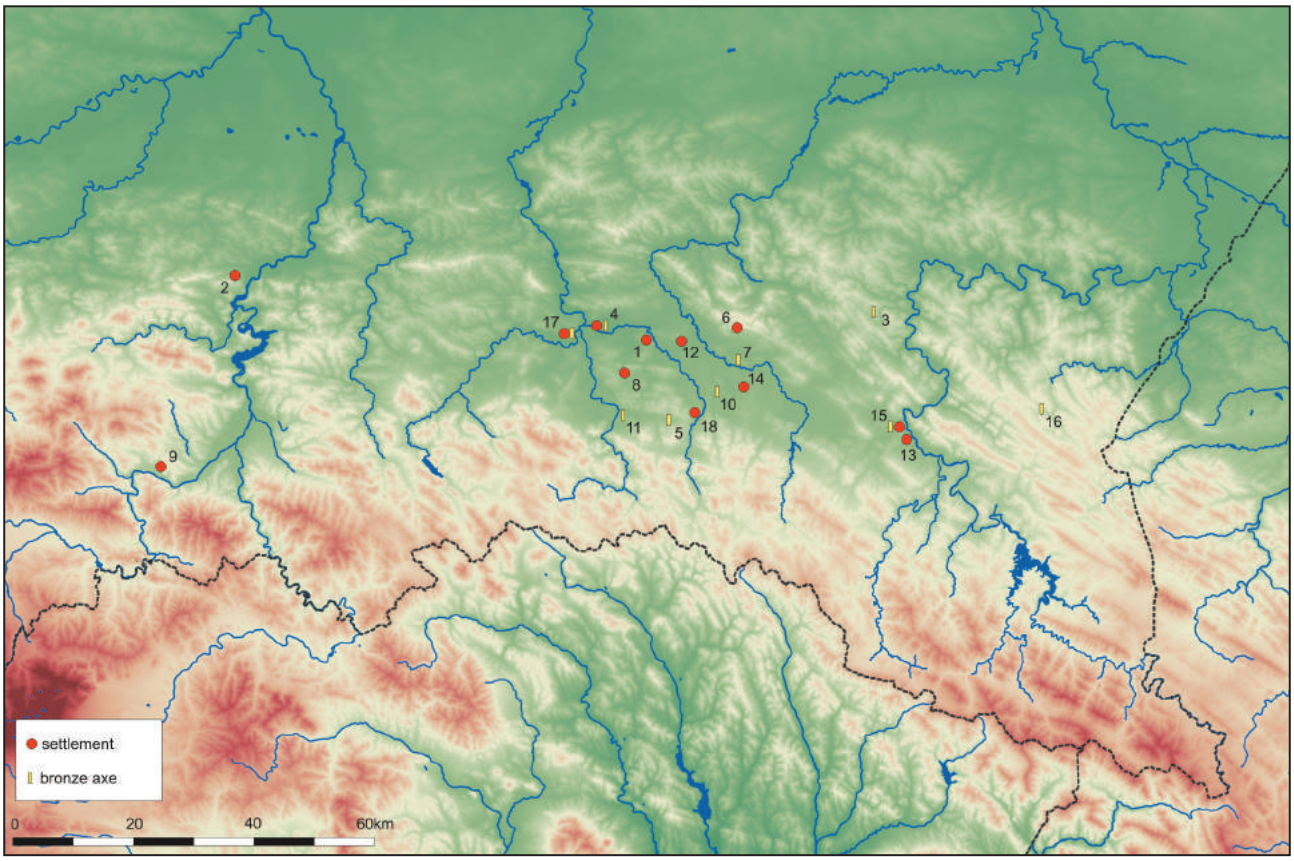

Fig. 4. Arrangement of axes with elevated edges on the background of the settlement of the Otomani-Füzesabony culture (prepared by W. Pasterkiewicz).

1. Brzezówka, Jasło district, site 10 (Gancarski et al. 2021b); 2. Czchów, Brzesko district, site 10 (Madej and Valde-Nowak 1999); 3. Izdebki, Brzozów district; 4. Jasło, site 29 (Gancarski 1988); 5. Kobylany, Krosno district, site 37 (Gancarski et al. 2021a); 6. Korczyna, Krosno district (Gancarski 2002); 7. Krościenko Wyżne, Krosno district, site 14 (Gancarski et al. 2021a); 8. Łajsce, Jasło district, site 9 (Gancarski 2002); 9. Maszkowice, Nowy Sącz district, the "Góra Zyndrama" site (Jędrysik and Przybyła 2019); 10. Miejsce Piastowe, Krosno district (Pasterkiewicz and Dziedzic 2019); 11. Nowy Żmigród, Jasło district, site 38 (Gancarski et al. 2021a); 12. Potok, Krosno district, site 6 (Gancarski 2002); 13. Sanok, site 56 (Gancarski 1994); 14. Targowiska, Krosno district, site 14 (Muzyczuk 2007); 15. Trepcza, Sanok district, site 2 (Gancarski and Ginalski 2001); 16. Trzcianiec, Bieszczadzki district (Blajer et al. 2021); 17. Trzcinica, Jasło district, the "Wały Królewskie" site (Gancarski 2011); 18. Wietrzno-Bóbrka, Krosno district, site 11 (Gancarski 1994).

production of the Otomani-Füzesabony culture. Similar axes with elevated edges are known from Slovakia as loose finds and artefacts from settlements that can be dated to the corresponding chronological frames of the developed and late phases of the Otomani-Füzesabony culture (e.g. Hájek 1961). It is also possible that some of these axes are local products, coming from workshops located outside the Carpathian Basin. It may be indicated by the repeatability of the shapes of some items and their concentration in a small area of south-eastern Poland. Some of the moulds could have been produced there, in a local metallurgical workshop in Trzcinica (Gancarski 2011). In the light of the existing data of the Otomani-Füzesabony culture, it appeared at the earliest in the A2/B1 phase within the Jasło Basin (the settlement in Trzcinica), when there were late-Mierzanowice complexes in this area, whereas the disappearance of the discussed unit took place in the BrC phase (Gancarski 1999; 2002). The axes published to date range within the entire chronological framework of the development of the Otomani-Füzesabony culture in south-eastern Poland.

The discovery site is in the area no. 109–77 of the Polish Archaeological Record. No traces of the Bronze Age were found in the vicinity of the mentioned area. There are only Neolithic settlement points (a settlement and a flint workshop) in the area more than 1 km to the south-east marked as site no. 10 and 11 in Izdebki. As for the place where the axe was discovered, there were no other movable artefacts that could have indicated the presence of the hoard. It is also worth mentioning that the discovery of an axe with elevated edges took place in the middle San basin, i.e. beyond the compact range of the settlements of the Otomani-Füzesabony culture.

Considering the axe from Izdebki, a metallographic analysis was performed using a FEI Quanta 3D 200i scanning electron microscope (SEM) performing chemical microanalysis Energy Dispersive Spectroscopy (EDS), located in the Laboratory of Electron Microscopy and Preparation Centre for Innovation and Transfer of Technical and Natural Knowledge of the University of Rzeszow. As a result, information was obtained on the chemical composition of this item and the processes taking place under post-deposition conditions. As shown in Tab. 1, the object is made of bronze with a high tin content (over 29%). Apart from copper, the following elements have been identified: arsenic, silicon, phosphorus, lead and an increased content of oxygen and carbon (Fig. 5–7). On the other hand, a low share of copper in the samples taken was found, amounting to 21%, which is caused by the oxidation of the top layer up to a depth of 2 mm.

The second axe comes from Gogołów in Strzyżów district, in the part of the village known as Równie. The artefact was found within the flattened, lower part of the hill slope, 337.4 m above sea level, which descends in the tongue like form to the south-east (Fig. 8). From the north it is surrounded by a deep gorge and tributaries of the Gogołówka River. Currently, it is the area of a vast forest complex with a beech and hornbeam stands.

The axe has a rectangular shape with arched long sides bent towards the inside (Fig. 9). The socket mouth has the shape of a flattened oval, smooth inside and rounded at the bottom. The blade is fan-shaped and runs smoothly to the middle part. The cutting edge is semi-circular, sharpened on both sides. In the side view, the axe is symmetrical, wedge-shaped, and in its cross-section it has a hexagonal shape. On the sides there are wide (about 3 mm) casting flash marks. The sides of the axe at the socket mouth are quite significantly displaced from each other, which indicates that the two parts of the mould did not fit well together during the casting process. On the narrower side, at the point of contact of both side planes, there is also a small hollow caused by the lack of alloy. It can also be a trace of the wedge-shaped plug being removed too quickly after the casting process. The tool also has a decoration in the form of convex ribs with a semicircular profile on each face. They are in groups of three, parallel to the outer edges. Towards the axis of the tools, they are gradually shortened diverging into an arc. Below the outer edge of the axe, there are also three horizontal rings, quite thick and not very regular in profile. They run around the tool, descending on the sides in the place of the casting flash. The entire surface of the artefact is covered with a green to dark green patina. Looking at the body, the sides, between the ribs and the loop, there are light brown coatings caused by corrosion processes taking place in the soil in which it was deposited. Similar traces are visible inside the socket mouth, additionally with a thin layer of hard and compact fine mineral grains of a light green colour. In several places (mainly on the faces) there are small scratches – damages caused during the excavation of the object by the finder. Moreover, there are also traces on the surface of the axe that may indicate its use in prehistoric times for work, such as

Table 1. Izdebki, Brzozów district. List of the results of the quantitative analysis of the EDS chemical composition of a sample taken from a bronze axe (analysis by P. Skała).

	First measurement		Second measurement		Third measurement		Mean and standard deviation	
	Wt%	At%	**Wt%**	At%	**Wt%**	At%	**Wt%**	At%
C	**14,3**	30,0	**14,3**	31,6	**17,9**	40,64	**15,5±1,7**	34,1±4,7
O	**34,2**	53,7	**28,6**	47,4	**24,3**	41,4	**29,0±4,0**	47,5±5,0
Cu	**20,8**	8,2	**30,1**	12,6	**14,0**	6,0	**21,7±6,6**	8,9±2,7
As	**1,6**	0,5	**1,8**	0,6	**1,3**	0,6	**1,6±0,2**	0,6±0,1
Si	**2,0**	1,8	**2,9**	2,7	**2,1**	2,0	**2,3±0,4**	2,2±0,4
P	**0,3**	0,2	**0,1**	0,1	**0,3**	0,3	**0,2±0,0**	0,2±0,0
Pb	**0,6**	0,1	**0,3**	0,1	**0,9**	0,1	**0,6±0,2**	0,1±0,1
Sn	**26,2**	5,5	**21,9**	4,9	**39,2**	9,0	**29,1±7,4**	6,5±1,8

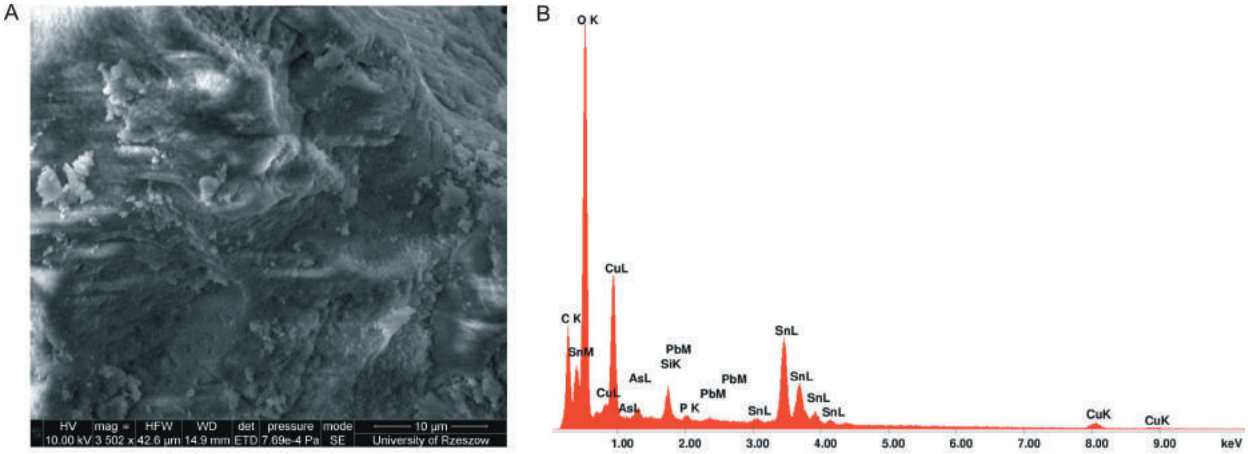

Fig. 5. Izdebki, Brzozów district. Research results of the EDS chemical composition of the bronze axe; the microstructure image, EDS spectrum; the first measurement (analysis by P. Skała).

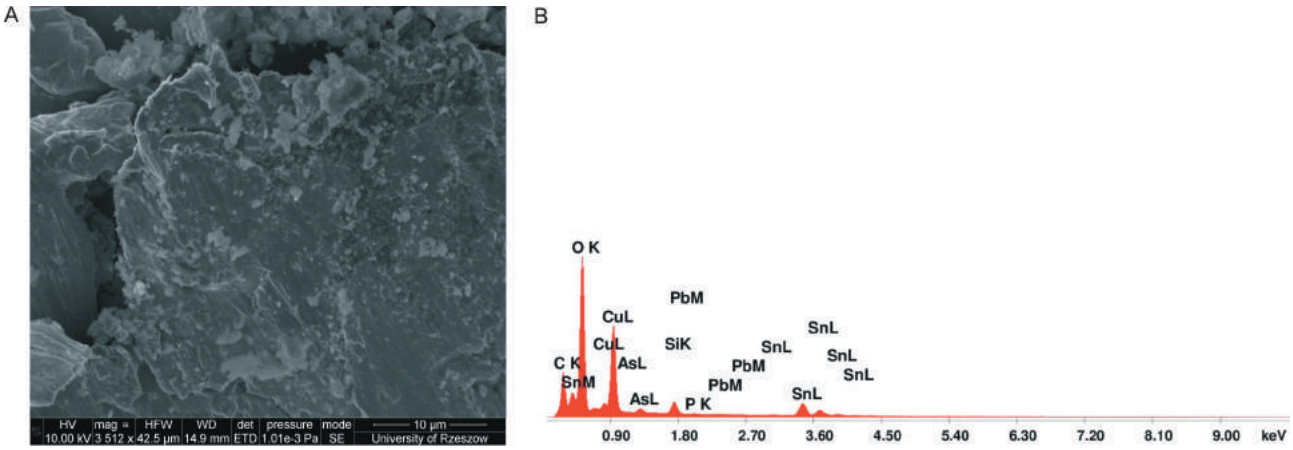

Fig. 6. Izdebki, Brzozów district. Research results of the EDS chemical composition of the bronze axe; the microstructure image, EDS spectrum; the second measurement (analysis by P. Skała).

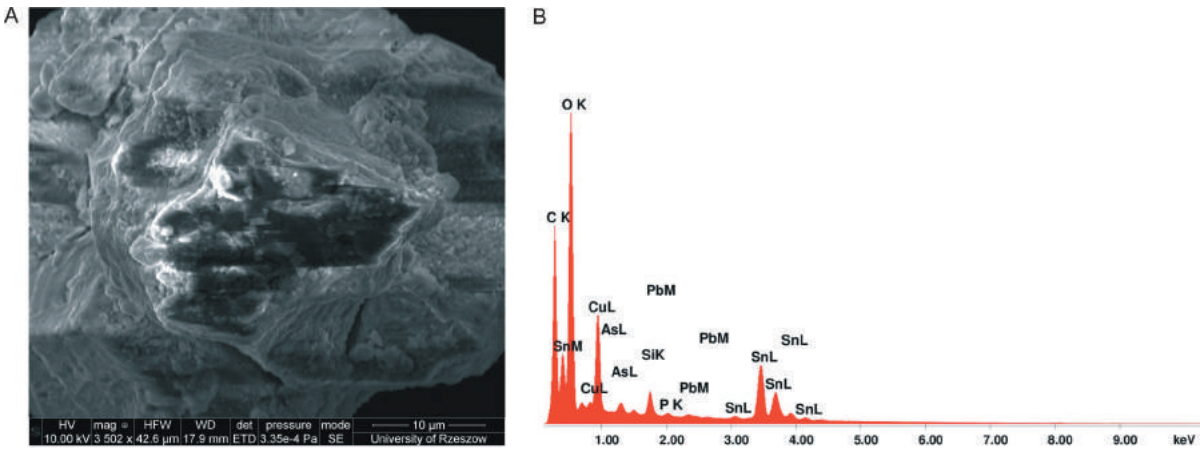

Fig. 7. Izdebki, Brzozów district. Research results of the EDS chemical composition of the bronze axe; the microstructure image, EDS spectrum; the third measurement (analysis by P. Skała).

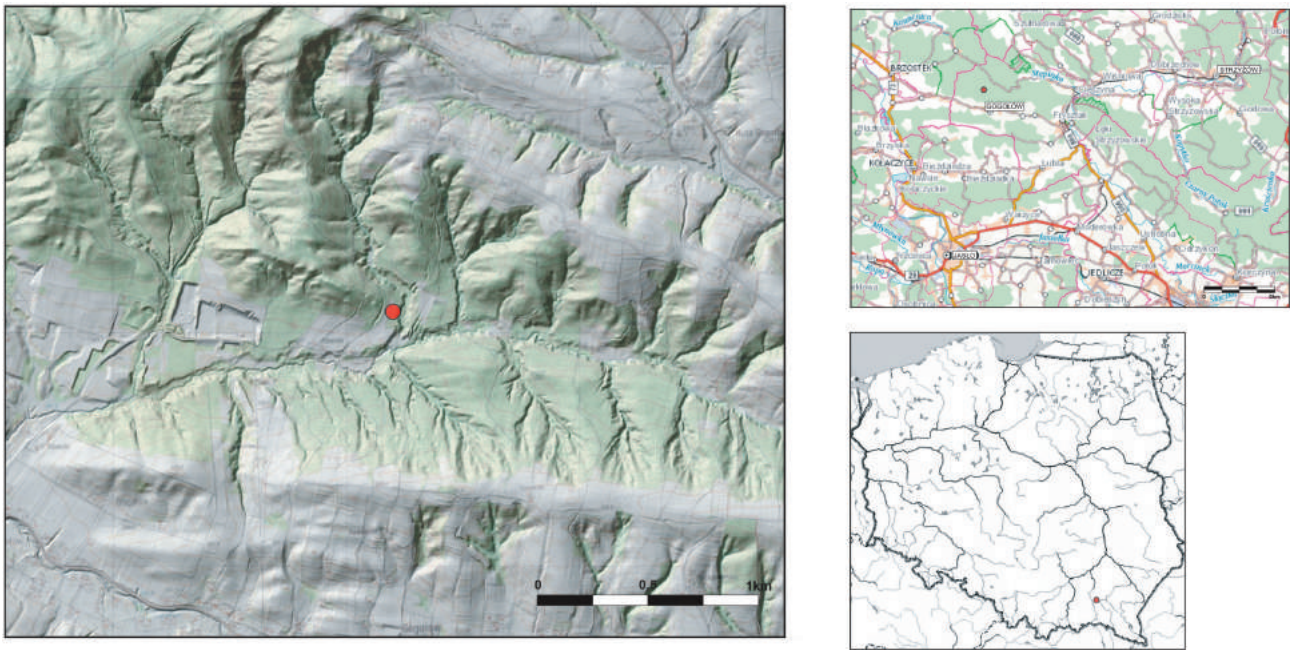

Fig. 8. The location of the place where the bronze axe was found in Gogołów, Strzyżów district (prepared by W. Pasterkiewicz).

the dulling on the edge along almost its entire length and scratches running parallel to the axis of the tool (Fig. 10: A). The blade has traces of multi-stage repair by hammering with a hard object. As a result of mechanical process, the casting flash was removed above the cutting edge and almost the entire blade was narrowed, changing its shape from trapezoidal to rectangular (Fig. 10: B, C). At the edge of the socket mouth, abrasions from the wooden shaft are also visible (Fig. 10: D). At the height of the middle part of the body there is a small, transverse crack, probably caused by the stress in the structure of the object when the blade was hammered (Fig. 10: E). Currently, the artefact has the following parameters: length – 10.4 cm; width at the blade – 4.4 cm, width at the middle part – 3.4 cm, the socket mouth – 5.1 cm; thickness at the middle part – 1.8 cm; the socket dimensions – 2.4 x 2.9 cm; the socket depth – 7 cm; weight 220 g.

Socketed axes were a very common form in Polish area in the Bronze Age, from III OEB to HaD (Kuśnierz 1998; Blajer 1999, 27–29; 2013, 30–38; Gedl 1975, 59–60). Their number is now, according to conservative estimates, almost a thousand and, as a result of numerous accidental discoveries, is constantly increasing (Blajer 2015, 162). General features of the item from Gogołów indicate a similarity to the axes classified by J. Kuśnierz to the Middle Danube type, a variant with richly decorated faces ("mit reich verzierten breitseiten"; Kuśnierz 1998, 21–24). Due to its ornamentation, the axe does not have faithful analogies among similar socketed axes from the Polish territory. The only good counterpart is an artefact discovered and published recently from the area of Wola Wyżna, Krosno district, near the border with Slovakia (Fig. 11: 1; Gancarski *et al.* 2021a, 590–594, fig. 28–29). However, the item is a bit shorter and has a poorly defined blade. On the wider sides there is a decorative motif with groups of quadruple, vertical ribs, and only two rings at the socket mouth. The find from Wola Wyżna was dated to the period corresponding to HaB2 and affiliated to the Gáva culture. Among the axes known from Poland, a slightly similar copy is known from Suchoręcz near Bydgoszcz (Kuśnierz 1998, fig. 5: 66). However, it has two rings at the socket mouth and slightly shorter ribs on the body. The collective deposit from Suchoręcz can be determined to the HaB1 period or to the half of IV OEB (Kuśnierz 1998, 22). Much more equivalents, formally close to the artefact from Gogołów, can be found in the areas south of the Carpathians. As for the bronze axes from Slovakia, collected and published by M. Novotná, the finds from Blatnica, Martin district (Fig. 11: 2; Novotná 1970, 94, fig. 41: 746), Medovarce, Zvolen district (Novotná 1970, 94, fig. 41: 747) and Slopná, Považská Bystrica district (Novotná 1970, 94, fig. 41: 750) have similar features. Moreover, the ornaments similar to those found on the axe from Gogołów are also found in large numbers on axes with a "beaked" widening of the socket mouth. These are the items known from Bošáca, Trenčín district (Novotná 1970, fig. 32: 570).

Fig. 9. The socketed axe made of bronze from Gogołów, Strzyżów district (drawn by A. Bardetsky, photo by W. Pasterkiewicz).

Individual, similar items are known from the area of today's Hungary. These are i.a. finds from Prügy, Szerencs district (Fig. 11: 3; Mezsolics 2000, 66–67, fig. 76: 8–10; 77: 1, 2, 4, 5), coming from a great hoard with a total of 44 axes and 18 bracelets. Hungarian artefacts are stockier, have more circular ribs, and the longitudinal ribs are slightly shorter. The hoard from Prügy is dated to the period corresponding to the horizon of Bükkszentlászló, i.e. to HaB3. Similar axes with longitudinal ribs (although not identical) can be identified in today's Romania, i.a. in the hoard from Uioara de Sus, Alba district (two double ribs on the sides; Petrescu-Dîmboviţa 1978, fig. 161: 17), Fizeşu Gherli II, Cluj district (two or three rings under the socket mouth, double or triple ribs on the sides; Petrescu-Dîmboviţa 1978, fig. 257: 21, 22), Hida, Sălaj district (Fig. 11: 4; three rings under the socket mouth, triple ribs on the sides; Petrescu-Dîmboviţa 1978, fig. 259: 4), Sângeorgiu de Pădure I, Mureş district (Fig. 11: 5; three rings under the socket mouth, double ribs on the sides; Petrescu-Dîmboviţa 1978, fig. 263: 30, 31), Mintiu Gherli II, Cluj district (two rings under the socket mouth, double ribs on the sides; Petrescu-Dîmboviţa 1978, fig. 266B: 2). The Uioara hoard is

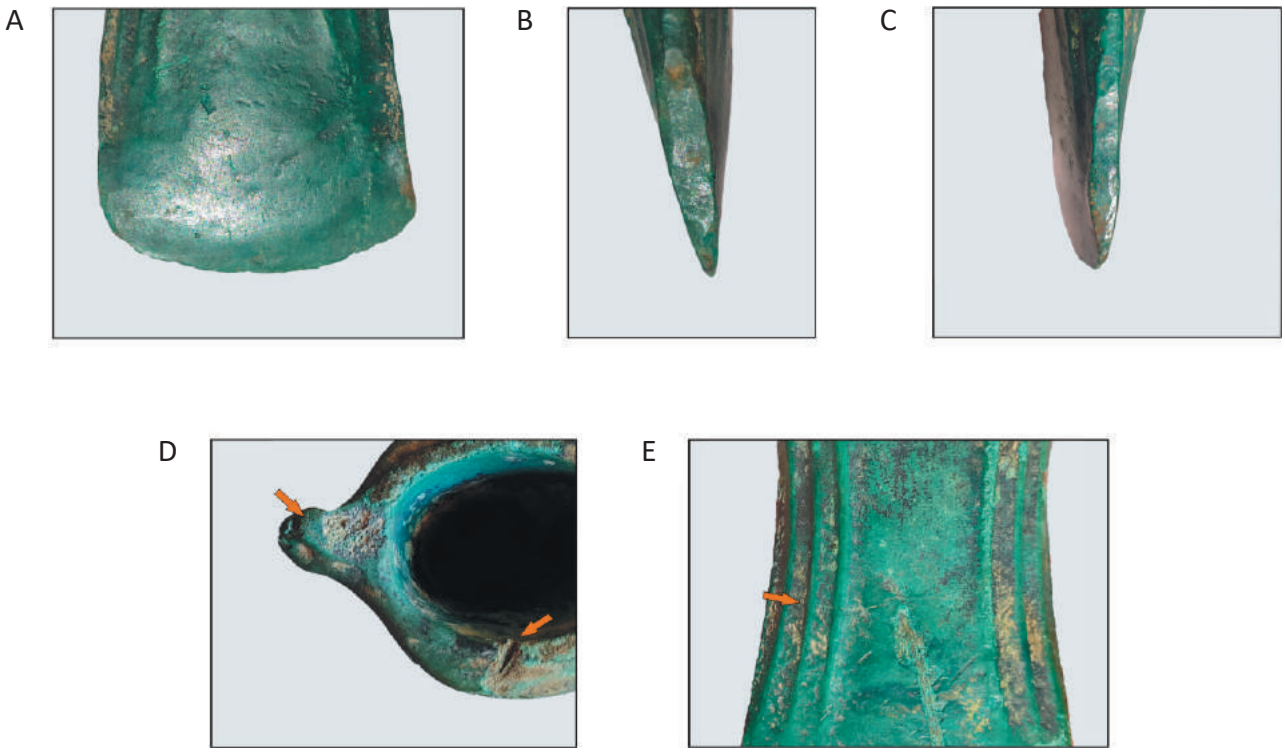

Fig. 10. Gogołów, Strzyżów district. Use-wear traces on the surface of the bronze axe (photo by W. Pasterkiewicz).

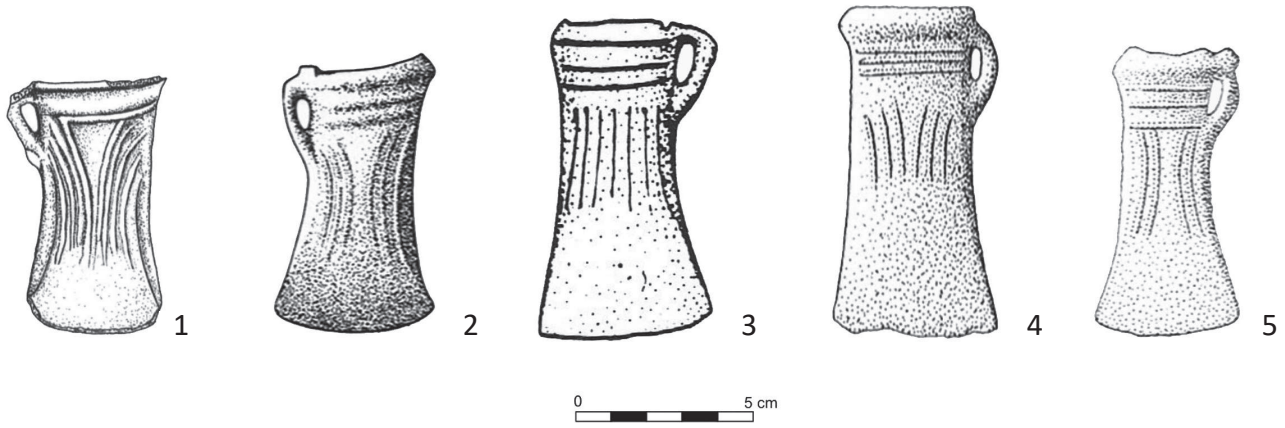

Fig. 11. Selected analogies to the bronze axe from Gogołów, Strzyżów district (prepared by W. Pasterkiewicz).

1. Wola Wyżna, Krosno district, Poland (after Gancarski *et al.* 2021a, 593, fig. 29); 2. Blatnica, okr. Martin, Slovakia (after Novotná 1970, 94, fig. 41: 746); 3. Prügy, kom. Borsod-Abaúj-Zemplén, Hungary (after Mezsolics 2000, fig. 76: 14); 4. Hida, jud. Sălaj, Romania (after Petrescu-Dîmboviţa 1978; fig. 259: 4); 5. Sângeorgiu de Pădure I, jud. Mureş, Romania (after Petrescu-Dîmboviţa 1978, fig. 263: 30).

dated to HaA1, Fizeşu Gherli, Hida and Sângeorgiu de Pădure I to HaB2 (Petrescu-Dîmboviţa 1977; 1978). It is worth noting that there are no formally similar items from Transcarpathia Ukraine in the collection of hoards published by J. Kobal (2000). All aforementioned closer or further analogies – if they can be dated – indicate the HaB1–HaB3 phases (i.e. the second half of the IV period and the V period of the Bronze Age), to which the Gogołów axe can be included.

Near the place of the axe discovery, within the Gogołówka and Stępinka river basins, there are many sites from the Bronze Age and the Early Iron Age, known from surface collection surveys (i.a. Gogołów, Strzyżów district, sites 1 and 2; Januszkowice, Dębica district, sites 3 and 4; Sowina, Jasło district, sites 2, 4, 5). Most of them indicate the existence of an intensively developing settlement in this area. Numerous remains of settlement from the Bronze Age are also

concentrated in the neighbouring areas, including the Warzyce Ridge (Gedl 1998; Czopek and Poradyło 2008). Excavation research carried out in one of the settlements – Warzyce, Jasło district, site 17 uncovered the traces of settlement in the Bronze Age and the Hallstatt period. There are numerous references to materials from the southern part of the Carpathians regarding the ceramic assemblage, which can be associated with the influences of the Kyjatice and Gáva cultures (Czopek and Poradyło 2008, 180). Based on ^{14}C dating as well as analyses of ceramic materials, the functioning of the older phase of the settlement can be related to the HaA period or slightly younger (Czopek and Poradyło 2008, 185, fig. 130). The axe from Gogołów seems to be contemporary to the "Warzyce" type sites coming from the Warzyce Ridge. It is most likely a trace of economic exploitation of the area. This suggestion is confirmed by numerous use-wear traces on the item.

As part of the metallurgical analyses for the axe from Gogołów, quantitative measurements of the chemical composition of the artefact were made (Tab. 2; Fig. 12–14). They have indicated that the material of the axe is almost pure tin bronze. Apart from copper (78.6%), the second, significant element is tin (over 10%). The chemical composition also includes carbon and oxygen in small amounts, less than a few percent, which should be interpreted as contemporary contamination.

Taking everything into account, the discovered artefacts are highly valuable, increasing the collection of sources necessary in the research on the Bronze Age period in the Carpathian Foothills. The axe from Izdebki completes the collection of bronze products related to the metallurgy of the Otomani-Füzesabony culture. It could have been a trade item or a trace left by the population of the Otomani-Füzesabony culture migrating to the north. It may indicate the existence of a trade route at that time, with the axis running along the San basin.

Table 2. Gogołów, Strzyżów district. List of the results of the quantitative analysis of the EDS chemical composition of a sample taken from a bronze axe (analysis by P. Skała).

	First measurement		Second measurement		Third measurement		Mean and standard deviation	
	Wt%	At%	**Wt%**	At%	**Wt%**	At%	**Wt%**	At%
C	**6,3**	22,6	**3,5**	16,2	**7,1**	25,1	**5,6±1,5**	21,3±3,6
O	**7,6**	20,8	**1,6**	5,5	**7,7**	20,9	**5,7±2,9**	15,7±7,2
Cu	**79,1**	54,1	**84,4**	73,4	**72,3**	49,2	**78,6±4,9**	58,9±10,4
Sn	**7,0**	2,5	**10,5**	4,9	**12,9**	4,8	**10,1±2,4**	4,1±1,1

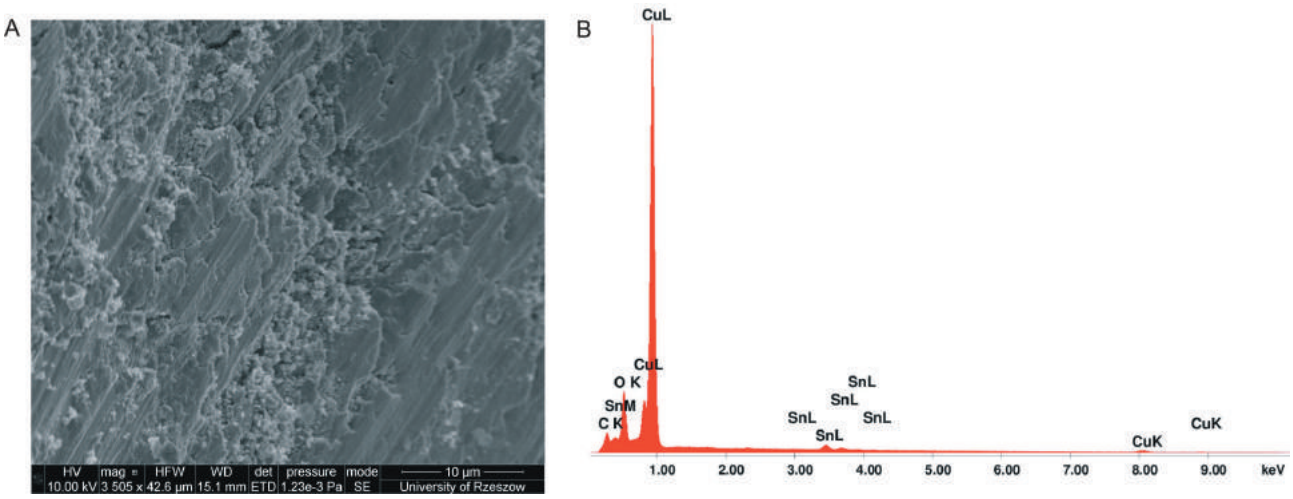

Fig. 12. Gogołów, Strzyżów district. Research results of the EDS chemical composition of the bronze axe; the microstructure image, EDS spectrum; the first measurement (analysis by P. Skała).

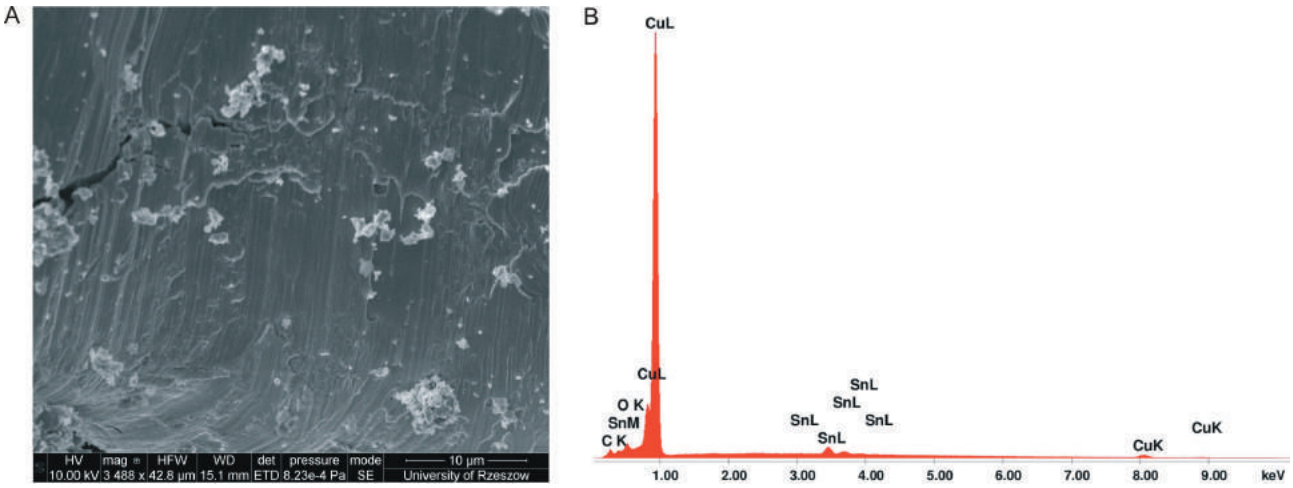

Fig. 13. Gogołów, Strzyżów district. Research results of the EDS chemical composition of the bronze axe; the microstructure image, EDS spectrum; the second measurement (analysis by P. Skała).

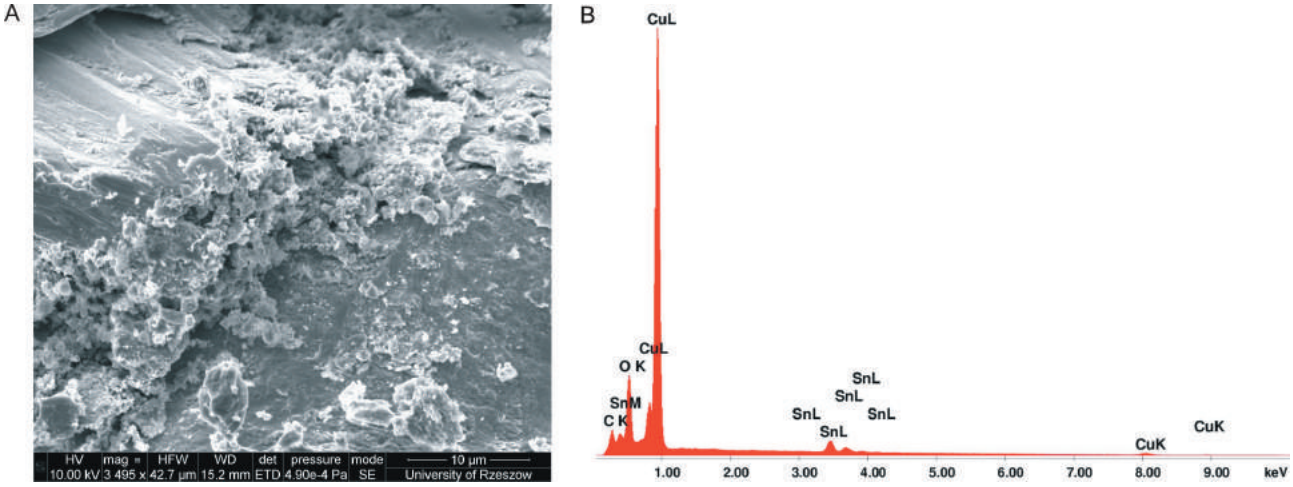

Fig. 14. Gogołów, Strzyżów district. Research results of the EDS chemical composition of the bronze axe; the microstructure image, EDS spectrum; the third measurement (analysis by P. Skała).

An indirect confirmation of this thesis may be the find of a dagger in Sieniawa near Przeworsk, about 60 km north-east of Izdebki (unpublished find). The axe from Gogołów has many features that indicate its distinctiveness from the products of local metallurgical production. It is clear evidence of lively contacts of the people living in the area of the Strzyżów and Jasło Foothills with the Carpathian Basin, which has been visible so far mainly in ceramic collections.

Acknowledgments

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Marek Florek

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Institute of Archaeology, Maria Curie-Skłodowska University in Lublin,
M. Curie-Skłodowskiej Sq. 4, 20-031 Lublin, Poland;
e-mail: marek.florek@poczta.umcs.lublin.pl; ORCID: 0000-0002-9917-710X

A Preliminary Report on a Search for Artefacts and Verification Excavations Conducted within the Limits of the Old Village of Trójca in 2020 and 2021

Abstract

Florek M. 2022. A Preliminary Report on a Search for Artefacts and Verification Excavations Conducted within the Limits of the Old Village of Trójca in 2020 and 2021. *Analecta Archaeologica Ressoviensia* 17, 37–49

In 2020–2021, within the limits of Trójca – a medieval village located near a ford on the Vistula River that is today part of Zawichost – artefacts were sought with the use of metal detectors. Next, a survey excavation was conducted, resulting in the discovery of e.g. two silver hoards from the 11th and 12th c., single coins from the 11th–12th c. (over 140 specimens) and from later times, merchant's weights, adornments, minor devotional articles and military accessories (especially from the 11th–13th c.) and many other artefacts. Their discovery makes us suspect that Trójca was one of the most important supralocal trade centres of Lesser Poland in the early Middle Ages. The conducted excavations and research are only the first stage for future archaeological prospections to be conducted in Trójca and will be continued in the years to come.

Keywords: Zawichost, Trójca, early medieval period, Zawichost ford, searching for artefacts

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Introduction

Trójca is a former separate village which today is part of Zawichost (Świętokrzyskie Voivodeship). It is located west of the town proper, on the edge of the fluvial terrace of the Vistula River, in the place where the Czyżówka River runs into the valley of the Vistula (Fig. 1). The name of the locality comes from the fact that the local parish church – the history of which goes back at least to the middle of the 12th century – was dedicated to the Holy Trinity (Chyła 2019, 23; 2021). In the times of Jan Długosz – and often in later periods – Trójca was considered to be part of the old outskirts of Zawichost (Wiśniewski 1907, 503). Nevertheless, starting from the 17th c., Trójca was always treated as a separate village. In the 19th c. and in the first half of the 20th c., it belonged to the municipality of Czyżów Szlachecki (Chlebowski 1892). It was only incorporated into Zawichost as late as 1954.

Zawichost and Trójca are located in an exceptional place, at the junction of six physical-geographical regions: Sandomierz Upland, Iłża Piedmont, Biłgoraj Plain (which is part of the Sandomierz Basin), Lublin Upland (specifically the Urzędów Heights), Vistula Lowland and Małopolska Gap of the Vistula River (Fig. 2; cf. Maruszczak 2018; Nogaj-Chachaj 2018; Wyczółkowski 2018, to learn more about the topography of Zawichost). This region had one of the most convenient fords used in medieval times (and probably even earlier) due to the fact that directly north of Zawichost starts the Małopolska Gap of the Vistula, where the river valley becomes considerably narrower and, as a consequence, more profound, its current becomes more rapid, and the topography of both banks of the river (where the majority of the borders between the mesoregions are arranged longitudinally) also changes. Two trans-European trade routes crossed near the ford: one leading from the east (Ru-

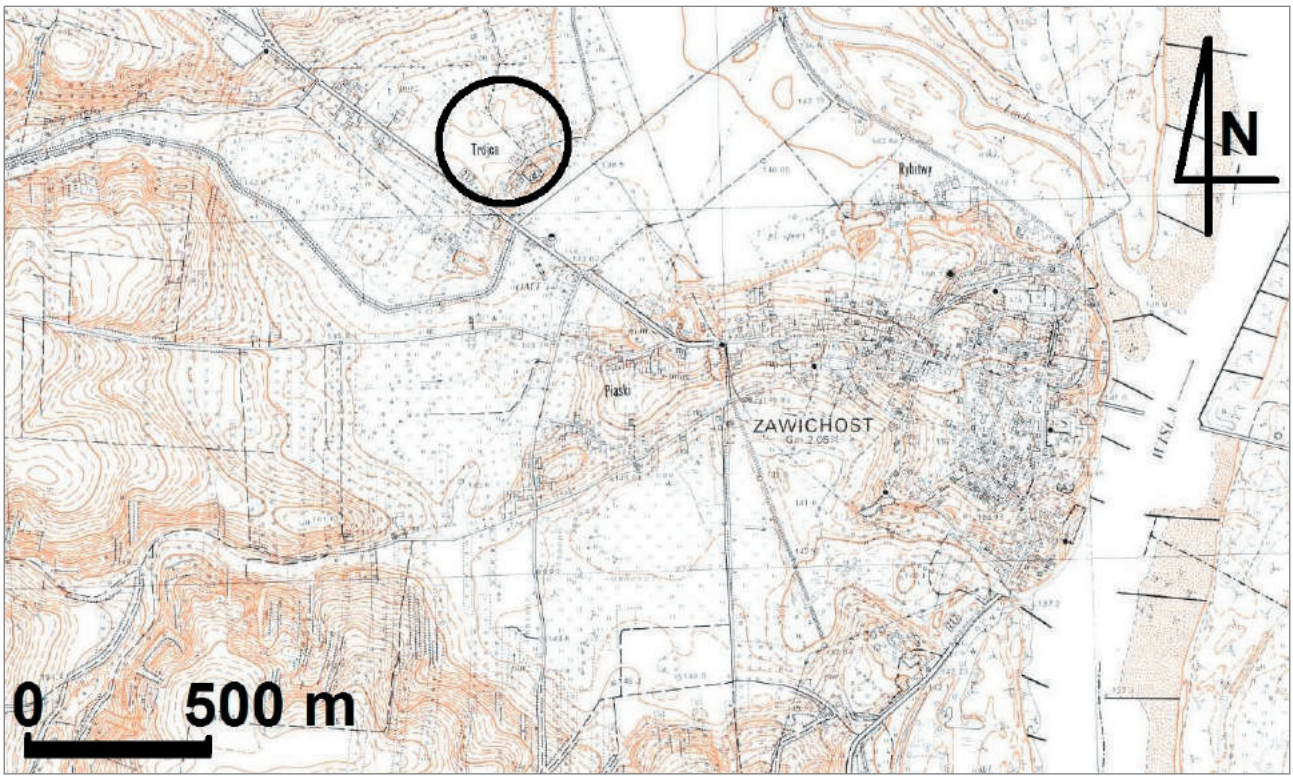

Fig. 1. Trójca and Zawichost, Sandomierz dist., on the modern topographic map. The area researched is marked with the circle (prepared by M. Florek).

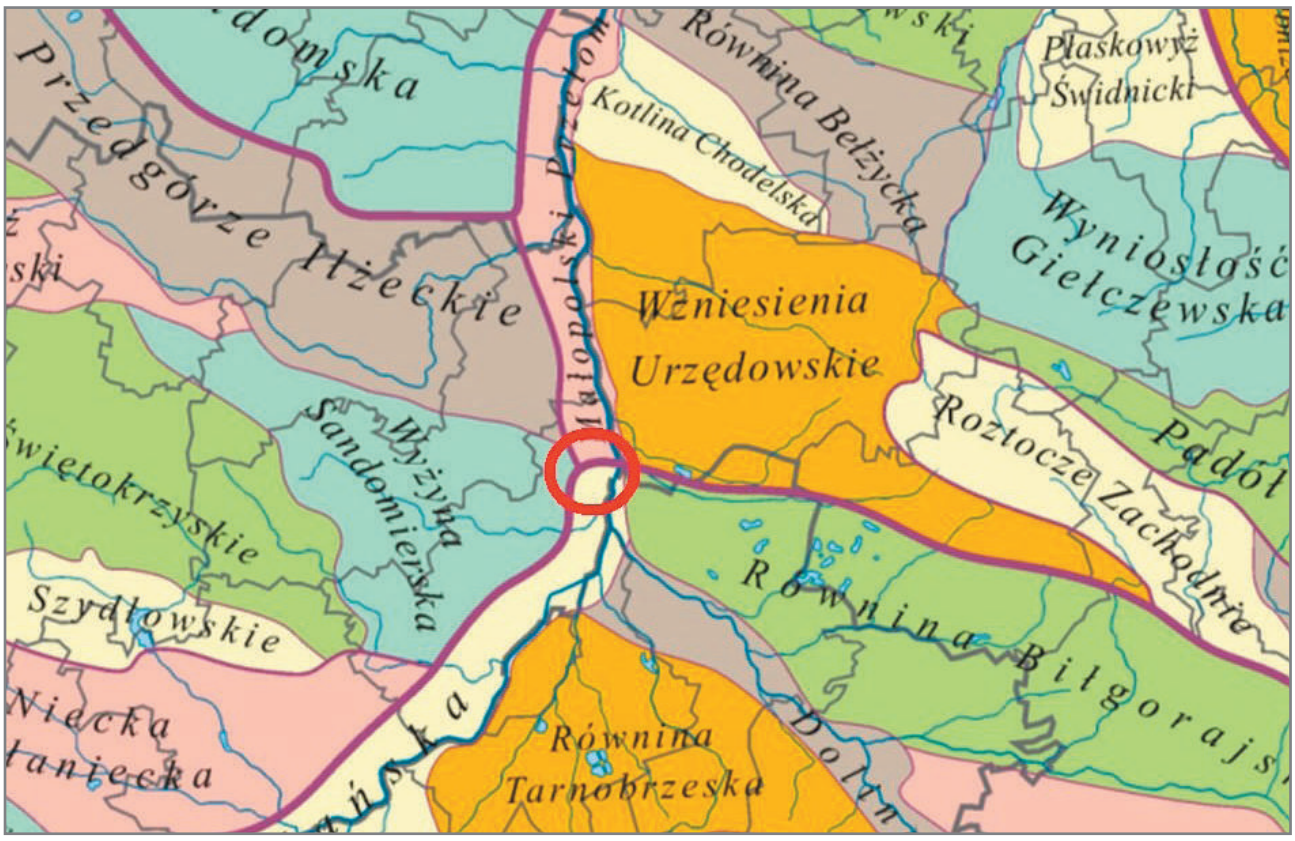

Fig. 2. Location of Trójca and Zawichost, Sandomierz dist. (marked with the circle) against the division of Poland into physico-geographical units according to J. Kondracki (2002) (prepared by M. Florek).

thenia) through the territories of Poland to Western Europe, and the other going along the Vistula, connecting the Baltic shore – through the Carpathian mountain passes – with the Hungarian Basin and Adriatic Sea. The location of the ford which existed in medieval times should probably be placed north of the so-called Town Island on which Zawichost is located, although it is vital to remember that its position might have altered with consecutive changes of the riverbed (cf. Wąsowicz 1967; Hoczyk-Siwkowa 1996).

The ford and the communication routes crossing nearby meant that the region of Trójca and Zawichost played the role of a trade centre – where supralocal exchange was practiced – and at the same time served the function of a military post exercising control over the ford (Chyła 2010, 35). Zawichost itself, being an important centre of the state government (castellany) and ecclesiastical administration (collegiate, archdeaconry) appeared in written sources as late as in the 12th c. (cf. Kiryk 1990, 37–40; Lalik 1999, 40–41; Chyła 2010, 40–41). This fact is the reason why it was suggested that the earlier centre – the "original" Zawichost – was located in Trójca. It is believed that in the 11th and 12th c. the Zawichost stronghold, built after the liquidation of a tribal centre located in nearby Podgórze, stood here and accompanied a market settlement (Gąssowski 1969, 378–380; Widawski and Wyczółkowski 2005; Florek 2010).

The above-presented assumptions were based on the following circumstantial evidence: the previously mentioned location of Trójca near the ford on the Vistula, the crossing of the supralocal communication routes in its vicinity, the construction of a church within the limits of the locality in the middle of the 12th c. at the latest (it was later transmitted to the archdeacon of Zawichost, which indicates that the locality was a considerable population centre), the local tradition according to which the church stood in the place of an earlier castle-stronghold, and the discovery of an 11th c. silver hoard in the village as early as in the 1930s. The hoard consisted of at least 900 coins, mainly Saxon and Polish cross denarii and single German and Hungarian denarii. It is worth mentioning that 878 whole specimens and several dozen fragments were deposited in two clay vessels buried next to one another after 1063, most probably in the 1080s (Różańska 1960; Widawski and Wyczółkowski 2005, 164–165).

The site of the original church in Trójca, supposedly already existing in the 12th c., remains unknown (Kiryk 1990, 37–40; Lalik 1999, 40–41; Chyła 2010, 40–41; 2019, 17–20). In the walls of the present temple, whose form is the effect of remodelling its architecture in the 18th c., large parts of an older stone church are preserved, which must have been constructed no earlier than in the 13th c. (Polanowski 2005, 160). Previous archaeological research – which admittedly encompassed a small area within the church and in its nearest vicinity – did not provide us with information on the potential earlier phase of the building, nor did it allow us to confirm or negate the local tradition according to which the present structure was built within the limits of an earlier stronghold (Misiewicz 1992; 1993; Bajka 2019; Niedźwiadek 2020). It is possible that the original church was wooden – although located where the present temple is standing – thus there are no material remains of this building. On the other hand, the fact that we have no remains that could be interpreted as the remnants of stronghold fortifications may be the result of the fact that only a small area was researched or maybe it was caused by the type of methods employed.

In the context of the supposed Trójca stronghold from the 11th–12th c., it should be mentioned that the church in Lublin that was transferred to the archdeacon of Lublin approximately at the same time as the establishment of the archdeaconry in Zawichost was also dedicated to the Holy Trinity (Myśliński 1966, 163). This temple, whose dedication was assumed by the still standing gothic castle chapel from the 14th c., was located in the centre of the castellan's castle, which was later transformed into a royal castle (Florek 2015, 25–26; 2019, 262–268).

No relevant information about Trójca and the role it played in the early Middle Ages was provided by surface surveys – including the research conducted within the framework of the Polish Archaeological Record (Polish AZP) in 1987. During the latter, only a small group of early medieval pottery was discovered: 24 fragments, mainly in fields located west of the church. At that time, it was dated from the second half of the 9th to the first half of the 10th c. (Bargieł *et al.* 1987). A new analysis of this material indicated that the pottery is not earlier than the second half of the 10th c., whereas most of the vessel fragments discovered during the survey come from the 11th and 12th c. Also, two attempts to search for artefacts with metal detectors – in 1993 by Borys Paszkiewicz and in 2003 by Maciej Widawski – did not considerably contribute to our knowledge of the history of Trójca (except for determining the approximate place where the above-mentioned silver hoard had been discovered in the

interwar period and discovering another three Saxon cross denarii (Paszkiewicz 1993; Widawski 2003).

There were also several serendipitous discoveries of artefacts from different times made independently of the archaeological research conducted in Trójca. Besides the above-mentioned hoard of 11th century coins, e.g., several Roman denarii were found here before 1956 (Kunisz 1958, 209–211), and in recent years a silver pendant in the shape of a miniature stylised axe from the Roman period, two coins (one Polish and one Saxon cross-denarius), fragments of unspecified silver adornments and a spindle whorl made of Volhynian slate were discovered (Florek 2009).

In 2020, the research group Nadwiślańska Grupa Poszukiwawcza Stowarzyszenia Mieszkańców Gminy Annopol "Szansa" – led by Wojciech Rudziewski-Rudziewicz – in cooperation with the "Wspólne Dziedzictwo" Association from Opatów commenced a systematic search for archaeological artefacts in Trójca. It was conducted based on a permit issued by the Provincial Office of Monument Preservation in Kielce. The substantive supervision of the research was exercised by Dominik K. Płaza from the Regional Museum in Sandomierz and Marek Florek from the Institute of Archaeology at the Maria Curie-Skłodowska University in Lublin. Initially, its main purpose was to locate – based on potential discoveries of military accessories – the site of a battle fought on 19 June 1205 between the Ruthenian army and Polish knights, which resulted in the death of Roman II Mstislavich (to learn more about the battle, see: Słupecki 1999; 2018; Kollinger 2018). With time and new discoveries, the goal of the research was expanded to include, e.g., establishing the extent of the early medieval settlement in Trójca and determining the location of the market place within this settlement.

The results of the search and excavations – commenced in its wake and (for the time being) covering a small area – allow us to treat Trójca as one of the most important archaeological sites associated with the early medieval period in Poland. In their light, 11th c. Trójca appears to be not only a trade settlement of a supralocal character, but also an international trade emporium intermediating in the exchange of goods between the north and south, east, and west. It is difficult – at least at the present stage of the research – to compare it with centres located by the Baltic shore such as Wolin – Jomsborg or Janów Pomorski, identified with Truso, which was described in King Alfred's Chorography (cf. Jagodziński 2010; 2013; Filipowiak and Stanisławski 2014; Stanisławski 2013) or even with Cracow, whose importance in international trade was indicated in Ibrahim Ibn Yaqub's narration (Kowalski 1946, 48). Undoubtedly, however, Trójca can be considered one of the most important trade centres located by a ford on the Vistula, perhaps even the second most important after Cracow. This is why – although the survey and excavations are to be continued and the artefacts discovered during the survey and first excavations are still being analysed – it was decided to present a broader overview of the conducted works.

Results of the search for artefacts conducted in Trójca in 2020–2021

The research mainly encompassed the ID No. 946 plot of land, having the area of 3.66 ha and located west of the Holy Trinity Church, and some adjacent plots (Fig. 3).

The research was conducted with metal detectors. Only artefacts found on the surface or in the arable layer, occurring at the depth of up to 25–30 cm, were collected. Each discovered item was separately packed, labelled with a unique number, together with the number of the land plot in which it was found, the depth at which it was discovered and GPS coordinates. Photographic documentation was prepared during the research, also with the use of a drone. The discovered artefacts were successively sent to the Sandomierz Delegation of the Provincial Office of Monument Preservation, and next, if necessary, subjected to conservation.

During the research, conducted from September 2020 to the end of 2021, several hundred archaeological artefacts were found – items from different time periods ranging from the Neolithic to the modern period, but mainly from the early Middle Ages, especially from between the end of the 10th to the end of the 11th c. Among them especially noteworthy are:

- a polished tetrahedral axe made of Świeciechów flint, dated to the Late Neolithic;
- fibulae and a bronze belt buckle from the Roman and Migration periods, including a fragment of a digitated fibula (Fig. 4) and two Roman denarii from the times of the Roman Empire;
- a hoard of nearly 1900 silver coins , mainly denarii of Boleslaus IV the Curly (*Kędzierzawy*) and Ladislaus II the Exile (*Wygnaniec*) as well as single denarii of Boleslaus II the Bold (*Śmiały*) and Boleslaus III Wrymouth (*Krzywousty*), and cross denarii, deposited in a clay vessel and buried in ca. 1165 (Fig. 5);
- over 140 single coins, mainly Polish and Saxon cross denarii from the 11th c., as well as single Hun-

Fig. 3. Trójca, Sandomierz dist. Area researched in the years 2020 and 2021 – view towards the east (photo by T. Mazur).

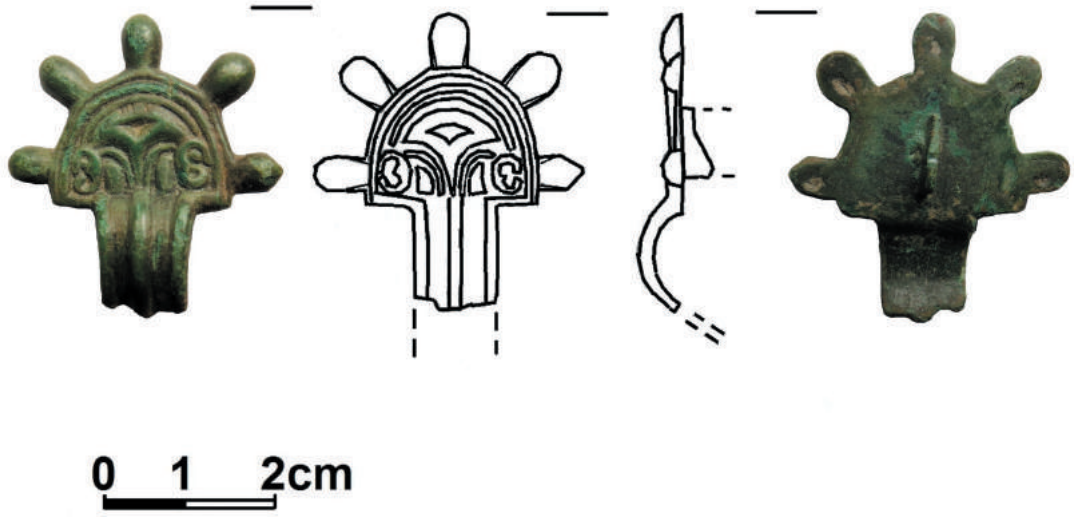

Fig. 4. Trójca, Sandomierz dist. Finger-shaped fibula from the 5th–6th centuries (photo by M. Florek).

Fig. 5. Trójca, Sandomierz dist. Hoard of coins from the 12th century (photo by M. Florek).

garian, Bohemian, German and English coins from the same time and later coins from the 12th and 13th c. (Fig. 6);
- coins from the late Middle Ages and modern period, including denarii of Ladislaus I the Short (*Łokietek*), Ladislaus II Jagiello (*Jagiełło*) and Ladislaus III of Varna (*Warneńczyk*);
- over 40 iron weights coated with bronze from the end of the 10th c. – beginning of the 11th c., having different sizes, both barrel-shaped and in the form of polyhedrons (Fig. 7);
- several dozen iron and lead weights probably from the 12th and 13th c.;
- adornments and garment elements made of copper alloys, silver or lead: openwork beads having different shapes, crescent-shaped pendants (lunulae) (Fig. 8), fragment of an earring, temple rings, fittings of strap ends, belt buckles, bell pendants, frag-

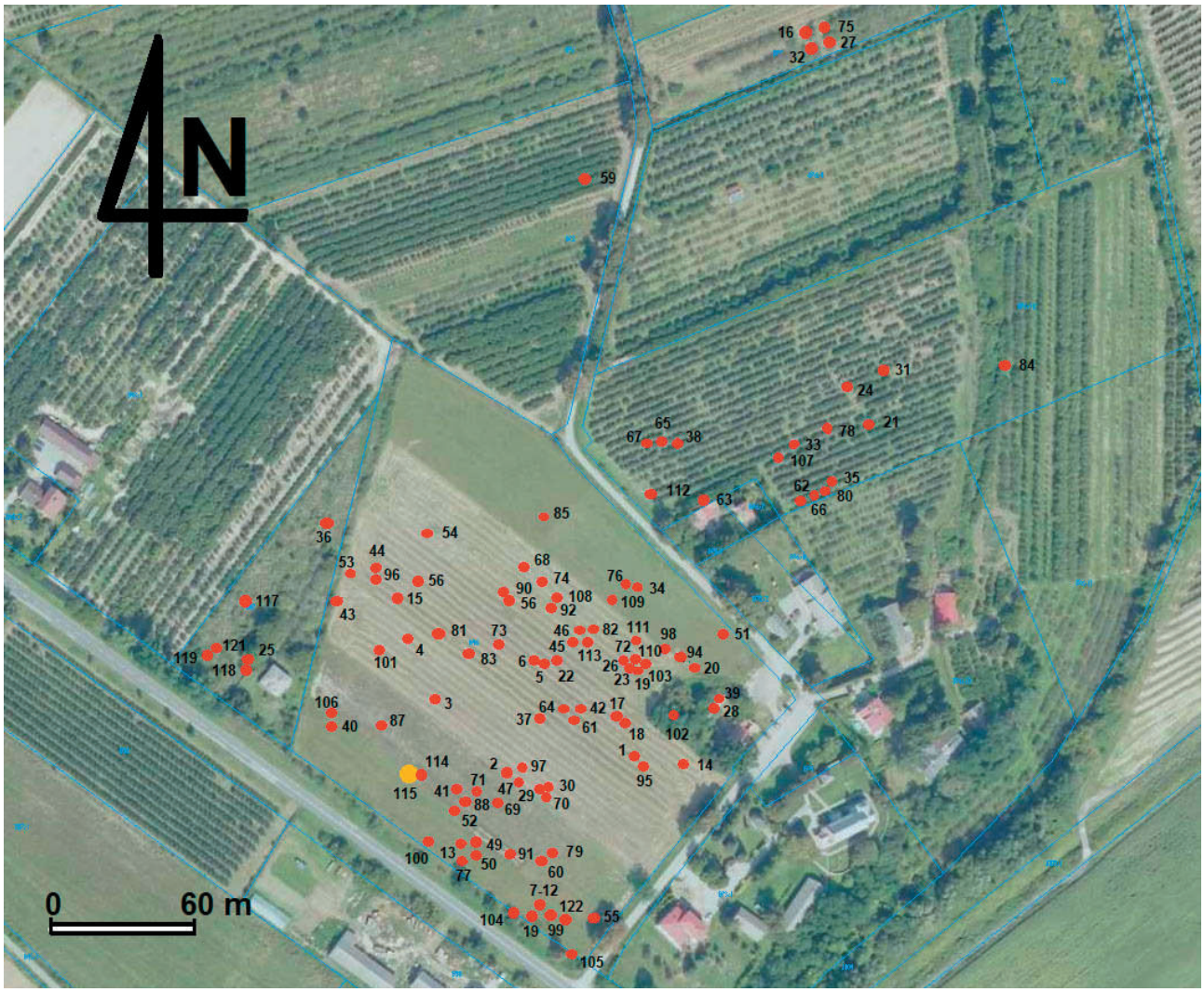

Fig. 6. Trójca, Sandomierz dist. Planigraphy of the discovered coins from the 10th, 11th and 12th centuries. The site where the 12th century hoard was discovered is marked with a yellow circle (prepared by M. Florek).

Fig. 7. Trójca, Sandomierz dist. Iron weights coated with bronze from the 11th century (photo by M. Florek).

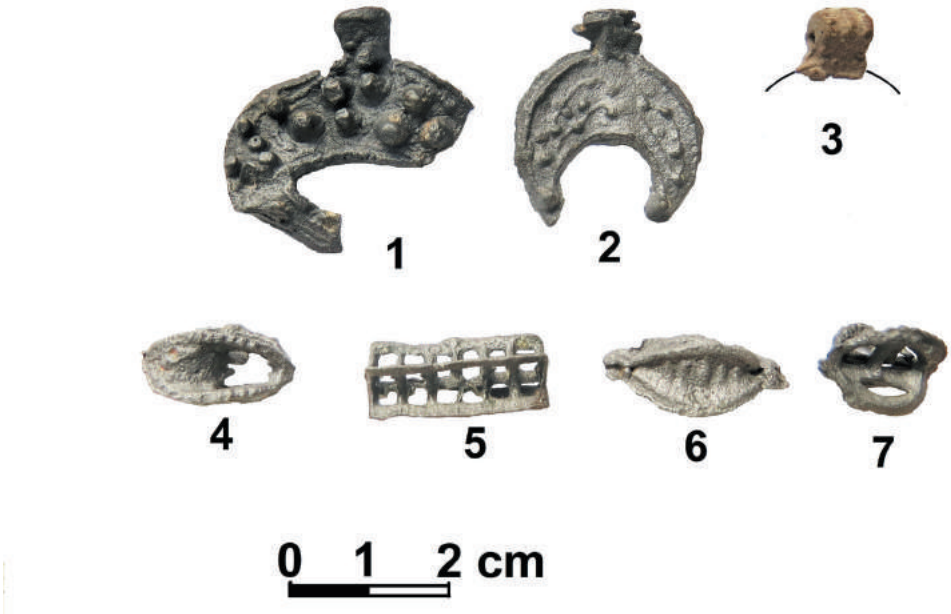

Fig. 8. Trójca, Sandomierz dist. Lead crescent-shaped pendants (lunulae) and beads (photo by M. Florek).

ment of a horseshoe-shaped fibula, etc. dated from the end of the 10th to the end of the 13th c.;
- early medieval, medieval and modern devotional articles, especially crosses made of copper alloys or lead, including specimens ornamented with enamel, fragment of bronze encolpions;
- military accessories and elements of weaponry used by mounted warriors (different types of iron arrowheads, sword pommels, a handle of a knobbed shaft-hole axe, spur elements, stirrups) from the 11th–14th c.;
- a fragment of a Ruthenian lead seal from the turn of the 11th and 12th c., probably belonging to Sviatopolk II (Michael) Iziaslavich;
- Polish princely lead seal (*bulla*), probably of Boleslaus III Wrymouth (*Krzywousty*) or Boleslaus IV the Curly (*Kędzierzawy*) (Fig. 9);

Additionally, the research resulted in finding clusters of iron slag and waste left after smelting lead, which are probably the remains of metallurgical production from the Roman period or early Middle Ages.

All of the discovered artefacts, after being analysed, will be transferred to the Castle Museum in Sandomierz.

Fig. 9. Trójca, Sandomierz dist. Lead prince's seal (bulla), probably of Bolesław III Wrymouth (photo by M. Florek).

Results of archaeological excavations conducted in October 2021

In October 2021, due to the above-described discoveries, the Institute of Archaeology at the Maria Curie-Skłodowska University in Lublin, in cooperation with the archaeological company Trzy Epoki – Monika Bajka conducted survey excavations in Trójca. Their task was to determine the context of the 12th c. hoard and verify the places where the coins from the 11th c. were discovered in order to check if new treasures could be found at those sites. To that end, three test trenches were dug. Their joint area was ca. 50 sq. metres (Fig. 10).

In trench 1, located where the hoard of 12th c. coins had been found in the spring of 2021, a large feature (feature 1) was discovered. It was oval, with a flat bottom and the depth of ca. 90 cm. There was pottery in its fill, including fragments of sharply profiled vessels (Fig. 11) – characteristic of the so-called Wielkopolski trend of Sandomierz pottery (cf. Buko 1981) – numerous animal bones, daub lumps of different sizes and slab blocks, charred flints, a spindle whorl made of Volhynian slate, a fragment of a decorated folding comb made of bone (Fig. 12), small flint products and fragments of Funnel Beaker culture vessels. Apart from the Neolithic artefacts, which were not the original components of the fill, all the materials discovered inside should be dated to the 11th c., probably to its first half. The feature was only partially excavated, thus its function (a half-dugout?, a large

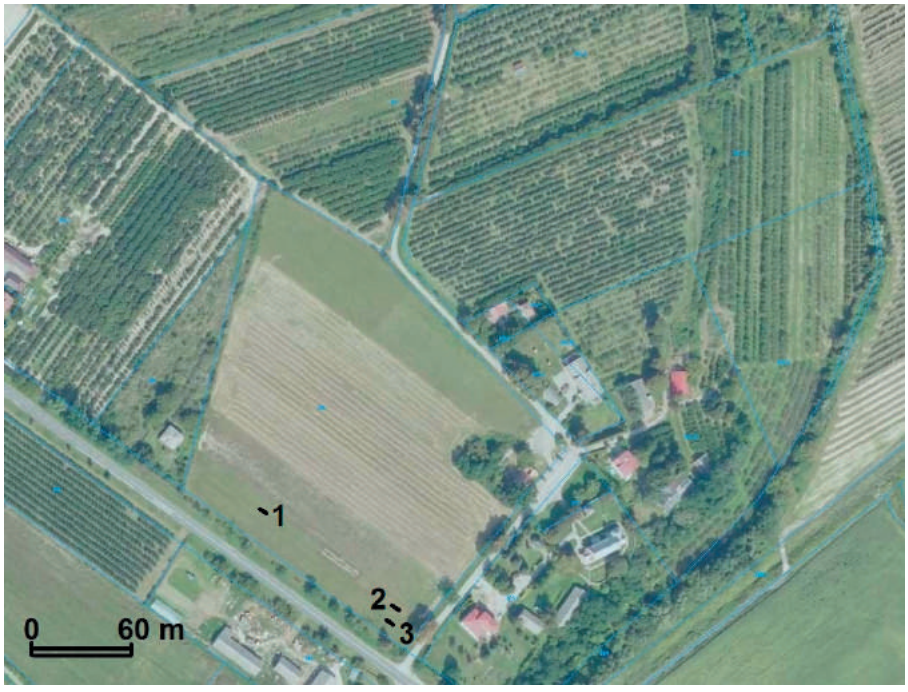

Fig. 10. Trójca, Sandomierz dist. Location of archaeological excavations (prepared by M. Florek).

waste pit?) is difficult to determine. The before-mentioned vessel containing the collection of 12th c. coins was dug into the top layer of the fill.

In trench 2, there was a thick cultural layer of a considerable depth (60 cm). It contained prehistoric materials (vessel fragments and flint products, e.g. of the Mierzanowice culture), artefacts dated to the early Middle Ages (mainly pottery from the 12th and 13th c. and single coins from the 11th c.), late Middle Ages and modern period (vessel fragments, fragments of unspecified metal items) as well as animal bones from an undetermined time. What is more, in the northern profile of the trench, there was a fragment of a small pit, the fill of which contained fragments of a vessel from the end of the 10th or beginning of the 11th c.

In trench 3, just as in trench 2, a thick (up to 70 cm) cultural layer was unearthed. It contained prehistoric materials (e.g., pottery sherds linked with the Trzciniec, Lusatian and possibly Pomeranian cultures as well as small flint products), early medieval pottery (mainly from the 12th and 13th c.), pottery from the late Middle Ages and modern period and fragments of unspecified items made of copper alloys, lead, and iron. What is more, it contained 26 silver coins and their fragments (dated from the end of the 10th to the beginning of the 11th c: denarii of Otto II, Otto III, Otto and Adelaide and Henry IV the Saint, Saxon cross denarii, English coins of Aethelred I, an Arabic dirham and fragments of silver adornments decorated with granulation (Fig. 13). Some of the fragments were stuck together with whole coins, which means that they had been probably kept together in some sort of a container made of organic material (pouch?) rather than in a ceramic vessel. Together with the coins discovered earlier on the surface and in the arable layer – they should be considered the remains of another hoard, dug approximately in the middle of the 11th c. It might have been damaged/scattered as a result of the building and use of a farm construction – dismantled in the beginning of the 21st c. – in the direct vicinity of trench 3.

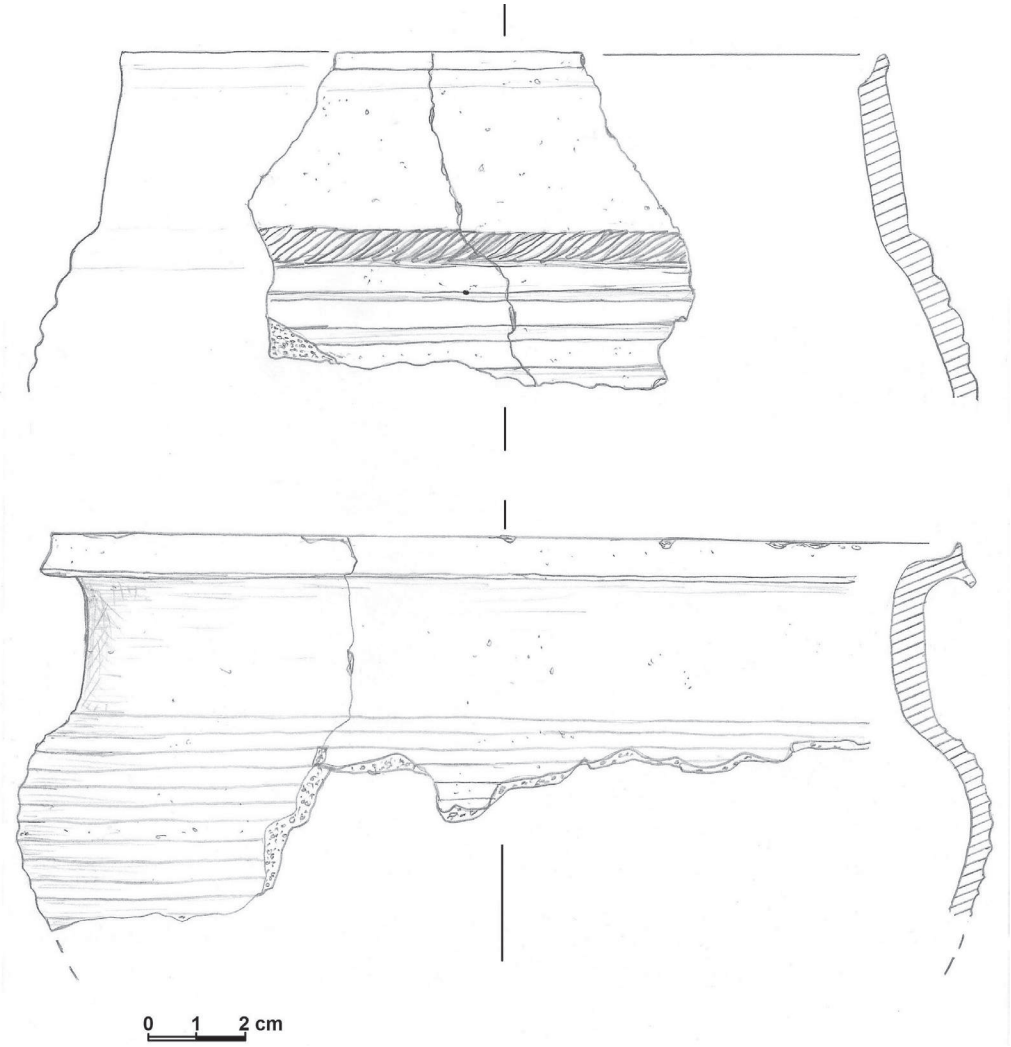

Fig. 11. Trójca, Sandomierz dist. Fragments of vessels from feature no. 1 (drawn by M. Florek).

Fig. 12. Trójca, Sandomierz dist. Bone comb from feature no. 1 (photo by M. Florek).

Fig. 13. Trójca, Sandomierz dist. Hoard of coins from the 11th century from the excavation no. 3 (photo by M. Florek).

Conclusion

The artefacts discovered during the search conducted in 2020–2021, as well as those found as a result of the survey research carried out in October 2021, are being analysed and prepared for publication. To date, it has been possible to analyse military accessories (Florek 2022) and single coins not included in hoards (Nakielski 2022). Introducing all the artefacts in archaeological publications is hindered by the necessity to preserve them and subject them to specialist analyses, which takes time and – especially – money, not to mention the need to involve specialists from different fields.

Nevertheless, the results of the previous research and excavations allow us to formulate several conclusions and hypotheses.

Firstly, it was established that there had been previously unknown intense settlement in Trójca in the Middle Neolithic (the Funnel Beaker culture), Bronze Age (the Mierzanowice and Trzciniec cultures) and at the beginning of the Iron Age (the Lusatian culture and probably the Pomeranian culture).

Secondly, the research confirmed the existence of the local settlement in the Roman and Migration periods, although its character remains unclear. The discovered lumps of iron slag – indicating that there were specialist workshops at the site where iron was produced and processed – can be dated to the Roman period or early medieval times. So far, no pottery from the Roman period has been found. On the other hand, the works resulted in the discoveries of such artefacts as Roman denarii, garment elements (fibulae) and items that can be considered as imported (the silver pendant in the shape of a stylised axe, the digitated fibula). This indicates that the ford at the Vistula existed in that period, but without an adjacent settlement.

Thirdly, it was stated that among the early medieval artefacts – discovered during the recent research as well as in earlier times – there are no items from before the second half – end of the 10th c. (with the exception of single coins) – including pottery. This fact allows us to suspect that the early medieval settlement in Trójca was established no earlier than after the middle of the 10th c., most probably at the end of the century, after the annexation of this territory by the Piast state. Since its beginning – at least from the 11th c. – it was a market settlement of supralocal importance due to its location by the ford, at the crossroads of trans-European communication routes. Iron weights coated in bronze are the principal evidence of the role played by Trójca in the supralocal trade. Such items were used mainly across the regions of the Baltic Sea and North Sea by Scandinavian tradesmen or those trading with Scandinavia and thus using the local system for weights and measures. In Polish territories, such weights are mainly known from Greater Poland – which was the central part of the Piast state – and Pomerania, a region with such trade emporia as Wolin and Truso, which were controlled to a great extent by the Vikings. Until recently, only single specimens of such weights were known from other parts of Poland (Florek 2018). Those discovered in Trójca are the most numerous known from the region of Lesser Poland. Coins from the 11th–12th c. – mainly single specimens – found across the whole area of the locality (probably lost by their owners) indicate that in the Trójca settlement there was a market place of a supralocal importance. They are the greatest set of such artefacts from Poland. At the same time, the discovered lumps of iron slag and waste products left after lead smelting indicate that the settlement in Trójca was not only the market place, but also a venue where specialist workshops operated.

Fourthly, the considerable share of products from Eastern Europe – especially from early medieval Ruthenia and dated to the 11th–12th c. – among the artefacts discovered in Trójca is noteworthy. Among them, there are adornments and garment elements, spindle whorls made of Volhynian slate, devotional articles (the crosses, the encolpion fragment), the lead princely seal and certain military accessories (mainly tanged arrowheads). Some of the latter might be possibly linked with the Battle of Zawichost that took place on 19 June 1205.

Fifthly, the results of the previous research and surveys indicate that the trade settlement in Trójca maintained its importance in the 12th c. Still, international contacts, probably not only of commercial character, were limited almost entirely to Ruthenia, whose frontier extended not more than 50 km from the ford on the Vistula. The significance of Trójca in the 12th c. is attested not only by the recently discovered hoard of Piast coins and the foundation of the church dedicated to the Holy Trinity, but also by the lead princely seal (*bulla*), probably of Boleslaus III Wrymouth. It is the sixth known specimen of such a seal, but previously these artefacts were discovered only in the main power centres or in their vicinities (cf. Suchodolski 2009, 207–231). Taking into consideration the preliminary dating of the *bulla*, we can attempt to link it with some unspecified grants to the church dedicated to the Holy Trinity – which was a princely foundation – or to the Zawichost Archdeaconry that was being formed at that time. It was only at the end of the Middle Ages,

with events such as the founding of the town of Zawichost by Boleslaus V the Chaste (*Wstydliwy*) in the middle of the 13th c. (cf. Chyła 2010, 127–130) and the establishment of a market place there, consecutive Mongol and Mongol-Ruthenian raids, and especially the shifts in the bed of the Vistula River (which caused the change of the location of the ford) that led to the marginalisation of Trójca. The same change of the riverbed also caused the depopulation and subsequent destruction of the stronghold in Zawichost, which was later replaced by a castle founded by Casimir III the Great (*Wielki*) and situated in a different location, in the valley of the Vistula by the new ford.

The survey in Trójca conducted in 2020–2021 by the research group Nadwiślańska Grupa Poszukiwawcza Stowarzyszenia "Szansa" and people cooperating with it is a good example of what can be achieved from the cooperation between detectorists, archaeologists and monument preservation officers. Without them, our knowledge of Trójca would not exceed what is known from the surface survey conducted within the framework of Polish Archaeological Record at the end of the 1980s. The search and excavations commenced in 2021 will be continued in close cooperation with archaeologists from different institutions and specialists in various fields, including historians and numismatists, with kind support from the authorities of Zawichost.

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Małgorzata Grupa[1], Krzysztof Jasiak[2],
Dawid Grupa[3], Filip Nalaskowski[4]

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[1] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland;
e-mail: m.grupa@wp.pl; ORCID: 0000-0001-5128-9754
[2] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland;
e-mail: kjasiak452@gmail.com; ORCID: 0000-0001-6304-7947
[3] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland;
e-mail: d.m.grupa@gmail.com; ORCID: 0000-0002-6393-8528
[4] Faculty of Philosophy and Social Sciences, Nicolaus Copernicus University in Toruń, Yuri Gagarin 11, 87-100 Toruń, Poland;
e-mail: filipn@umk.pl; ORCID: 0000-0001-6973-9960

A Child's Grave Robe from the Northern Crypt of St Anne's Church in Konotop, Lubuskie Province, Poland

Abstract

Grupa M., Jasiak K., Grupa D., Nalaskowski F. 2022. A Child's Grave Robe from the Northern Crypt of St Anne's Church in Konotop, Lubuskie Province, Poland. *Analecta Archaeologica Ressoviensia* 17, 51–59

An ossuary was found in a brass sarcophagus, dated to 1720 based on a medallion. The archaeological material was mixed with rubbish and sand. Inside the sarcophagus, the remains of both adults and children were discovered. These are believed to be members of the von Kottwitz family, former owners of Konotop. The separation of the material into different types of cloth was quite painstaking and lengthy. Only one of the grave robes has survived in an almost intact condition. It was a simple grave robe without a back. During the analysis of the skeletal remains, it was matched to the red stained skeleton of an infant.

Keywords: crypt, child, funeral dress, silk, modern period, Konotop, Poland

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Introduction

In October 2021, during research in the northern crypt of St. Anne's Church in Konotop, a metal sarcophagus dating to 1720 was discovered (Fig. 1, 2), in which an ossuary was found. During the exploration of the sarcophagus, human remains belonging to at least six people were removed (the precise number of skeletons will only be known after detailed anthropological analysis), together with fragments of silk fabrics, wooden coffins, and rubbish.

Research methods

Among the fabrics, at least four types could be distinguished and which is only a prelude to further research. The fabrics were placed in thick plastic bags to prevent drying. Despite the involvement of students in the research, all staff involved in work in the crypt had completed a course in the conservation of archaeological artifacts. There were no problems in protecting either the botanical samples or the fabrics found. Their contact with atmospheric conditions was limited by placing the textiles in bags. Any change in the humidity in textiles leads to the decomposition of the fibers, which can eventually lead to further damage (Drążkowska and Grupa 1998, 121–124; Grupa 2007, 209–212; Grupa *et al.* 2015, 41). Due to the chemical structure of the fibers, silk fabrics are susceptible to damage caused by radiation, especially ultraviolet – the fibers are significantly weakened and become brittle and yellow, so they should be protected from both natural and artificial light. Although silk is believed to be resistant to fungi and most bacteria, its accumula-

Fig. 1. General view with metal sarcophagus and relics of wooden coffins with rubbish (photo by J. Gawroński).

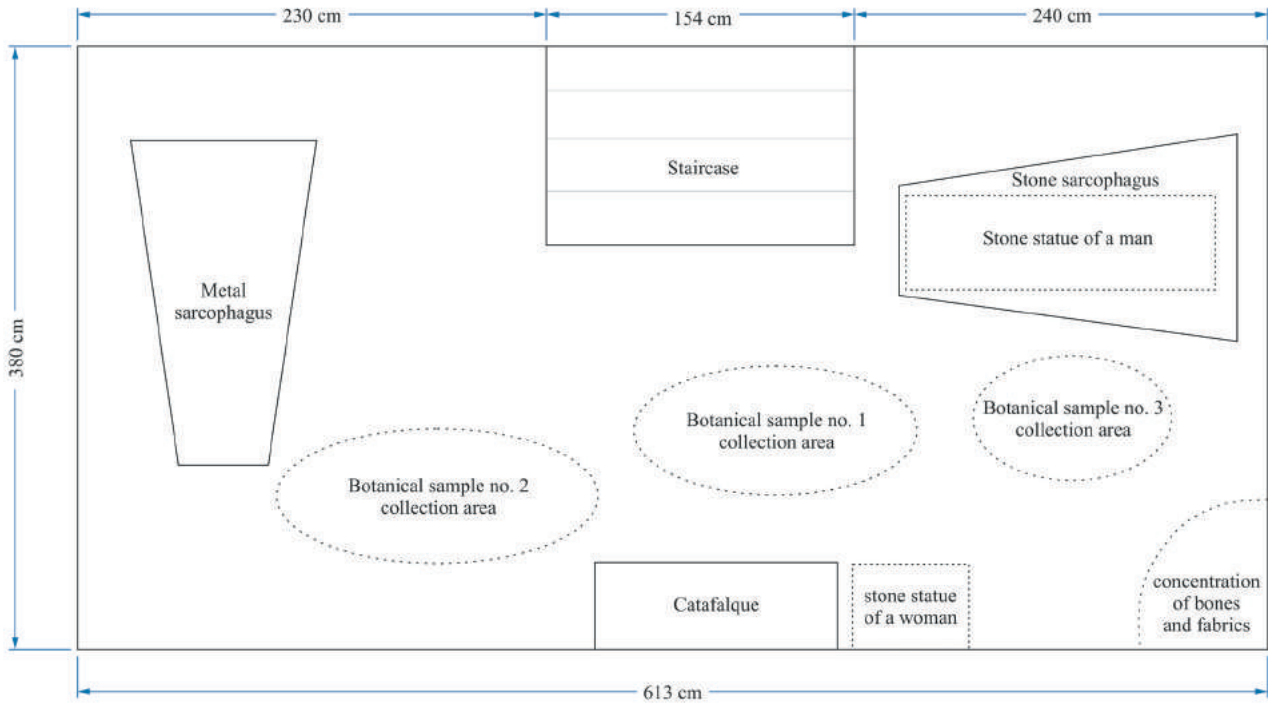

Fig. 2. Plan of the crypt indicating the main elements in its space (photo by J. Michalik).

tion over centuries leads to the slow decomposition of the fibers and sometimes even to destruction (Garside and Wyeth 2006, 75–76; Grupa *et al.* 2015, 42).

Even though each fabric retained its moisture content, the wetting process in the lab was still prolonged, as they were loaded with various contaminants: sticky sand particles, plant fragments, wooden shavings, or corrosion products from metal objects. For example, rust stains are residues from iron objects, and green ones from the products of copper alloy objects (Grupa 2013, 135). Removing these impurities was primarily aimed at reducing the weight weighing down the fabric fibers. During the cleaning process, it was noticed that the lower parts of the cloths were much more weakened, and the most significant losses were registered in these parts. After an extensive rinsing of surfactants used to soften the layers of dirt and make the fibers more flexible, disinfection proceeded. Fabrics soaked in the biocide remained for a week in thick plastic bags. After this time, they were impregnated using a composition of polyethylene glycol 400 (PEG 400), Paraloid B-72 in ethanol, and toluene in proportions of 1/1. The impregnation process was stabilized in a vacuum chamber at a temperature of –20°C (freeze-drying). Since the textile material was highly fragmented, it was only during their restoration that they could be separated and matched to individual types (Grupa 2007, 213–215).

The child's funeral dress and its reconstruction

Only one of the dresses was entirely preserved (Fig. 3, 4). It was a child's dress, in which the deceased newborn was most likely dressed. Therefore, it was possible to proceed with fabric duplication and reconstruction immediately after the stabilization of the impregnation process. In the next step, an examination under the microscope was carried out. The surfaces of the fabrics are observed from different angles of light, which sometimes allows a colored glow to be observed on the object. The dress was sewn from silk fabric in a 1/1 linen weave, which was originally red. After the decomposition of the dye, most of its surface was light beige. The front of the dress was decorated along its entire length with bows made of ribbon 2.5 cm wide. Currently, the ribbon is green, but it was probably originally blue (the decomposition of the blue dye was traced during the conservation and reconstruction of the żupan of Michał Szczuka buried in the crypt under the chancel of the Church of the Blessed Virgin Mary in Szczuczyn (Grupa *et al.* 2014, 69; Nowosad *et al.* 2021b, 124–129). The robe was of straightforward construction. It was sewn together from 3 fragments 115 cm in length each, (27, 27.7, and 75 cm in width) with a straight stitch – a fastener. Then one of the longer edges was wrinkled and thus formed the dress's neckline, trimmed with piping of the same fabric. The design of the sleeves differed significantly from the

Fig. 3. A child's grave robe decorated with pasamons immediately after excavation (photo by J. Gawroński).

Fig. 4. One of the ribbons from a child's gown (photo by K. Jasiak).

classic ones because the holes in the base fabric were cut, and two rectangles were attached with a fastener.

Before preserving the fabric of the children's dress, each element was stripped and marked with colored thread (each seam with a different color). This way of marking the details allows for easily matching the dress pieces after conservation. The fabric was then cleaned, followed by all the steps described above. Since there was no problem reproducing the gown's shape, it was decided to reconstruct it fully. First of all, all fragments of the fabric were ironed out. A mixture of Akrylkleber glues (498 and 360 in a ratio of 1 to 1) was applied to the silicon paper. Then, each dress piece was placed on the glue layer and glued to the fabric – ironed through a wet cloth. The most challenging part of this reconstruction is lifting the fabric with glue and applying it to the doublage fabric. In order to prepare the doublage fabric, it is necessary to know all the dimensions and prepare the appropriate size of the dress blanks because every wrong move causes the fabric to be glued together. This procedure is often combined with the removal of glue and repeating all the steps once again. In all steps, it is essential to remember that archaeological fabrics are so weakened that it is not always possible to repeat these actions. Once the fabric has been applied to the doublage, reconstruction can begin (Fig. 5: a, b). Since the edges of the fabrics to be stitched together have been previously marked with colored threads, merging them should not pose any problems. In addition to physically marking the seams with colored threads, descriptions of these actions and photographs are also taken, as not all additional details are always preserved during restoration procedures.

Fig. 5. Children's dress after reconstruction; a – front, b – back (photo by D. Grupa).

Usually, all elements are stitched with the stitches initially determined during the analysis of the details. Such a stitching technique is not always reproducible since this element is often obscure. These were stitches "behind the needle" in the children's dress, so all the elements were joined similarly. Only the sleeves were fixed with a straight stitch – a fastline. Originally, double-threaded silk thread (ss/Z) was used, while synthetic thread from Amanda was used in the reconstruction.

Children's grave gowns in the form of an apron, and comparative analyzes

As previously mentioned, the children's grave robe rescued from the sarcophagus was of a simple construction, without any elements that might indicate the time of its manufacture. In this situation, only the relics found in the furnishings, elements of the coffins, or at least the iconography on the sarcophagus offer the possibility of approximate burial dating. It appears to have occurred between the 1720 burial of Adam von Kottwitz (Fig. 6) and the burial of another representative of the family around 1770. The most important find inside the sarcophagus was the discovery of medallions that were missing on the outside of the sarcophagus. On one of them we find the date 1720, and on another, much larger one, there is an inscription concerning the death and foundation of a marble epitaph in the church by Adam von Kottwitz, who died in 1720. Before the insertion of the stone sarcophagus in 1770 (the last burial in the crypt), the floor of the crypt was cleaned up from earlier burials contained in wooden coffins (hence the ossuary in the metal sarcophagus). An analysis of the crypt situation suggests that the burial in the stone sarcophagus was the last. However, the caveat should be made that a full analysis of the sarcophagus has not yet been completed, and these findings are subject to change.

Such simple long gowns have been found before in children's graves and elsewhere. The earliest dated are the dresses found in the Church of the Assumption of the Blessed Virgin Mary in Toruń of the Majerman sisters – Ania died in 1619, Zuzanna died in 1623 (Grupa 2005, 54–55). The first of them was buried in a gown made of silk cloth in 1/1 linen weave. The only decoration recorded was a rectangular collar decorated around three edges with laid embroidery made with gold-colored metal thread (Grupa 2005, 148). With Ania's gown, it was first discovered that it was only the front with sleeves. The back of the gown was missing, but it had not been there from the very beginning, as it was constructed like an apron. Information about such a practice has not been found before in written sources. Of course, we do not always know how the elements of dresses were merged together ("behind the needle", fastening, or pinning) and whether the back of a particular dress can be identified. Zuzanna"s dress was sewn from fabric with a geometric-plant pattern obtained by altering the weave. It used long weft interlacing of several and a dozen threads (Grupa 2005, 149). Discovered in a crypt in Bytom Odrzański, at least 170 years later, two children's gowns of the Schönaich family were of the same construction. The front was arranged in folds decorated with bows pinned in the middle and the sleeves pinned. The gowns were much longer than the bodies of the deceased infants and were folded under the feet (Grupa 2011, 35, 43). As the gowns were found on the remains, it was possible to confirm previous information about the much longer children's gowns than the deceased child's height. this was the case with the gowns from Konotop, where the height of the deceased child was about 50 cm, and the length of the dress was 115 cm, also this may be the answer to the damage to the lower garments.

Fig. 6. Medallion from the sarcophagus with an inscription dedicated to Adam von Kottwitz, who died in 1720 (photo by J. Gawroński).

Similar information was provided by the burials in Szczuczyn, where clothing (shirts and gowns) was found reaching both the ankles and flowing freely beyond the feet (Grupa *et al.* 2014, 60–75). The custom

of putting longer gowns on the bodies of deceased children was also practiced in other countries. An example of this is an epitaph from the Protestant St. Nicholas Church in Køge, Denmark, depicting a pastor's family praying for two deceased children (Johannsen 1988, 39; Grupa *et al.* 2015, 163). The children are dressed in long, wide, white gowns wrapped under their feet. An additional feature is the tight-fitting white headpieces adorned with threadbare white lace, just like their gowns.

Grave robes with an apron design can be found at a number of archaeological sites, including Gdańsk (Drążkowska 2012, 178–180), Gniew (Grupa *et al.* 2015, 99–100), Kostrzyn nad Odrą (Drążkowska 2007, 221), Lublin, Tworków (Drążkowska 2007, 216) or Roskilde, Denmark (Johannsen 1988, 48–49). Despite the simple workmanship of these gowns, they are still among the richest child burials due to the silk used. Dresses made in this way lost nothing of their grandeur. Efforts were made to decorate them according to the latest fashion trends (Grupa 2005, 55). Perhaps in such situations, one can realize how valuable silk was among the textile raw materials.

It is quite problematic to only describe children's grave costumes through the prism of silk dresses derived from archaeological research. It is a small slice of the history of this type of clothing, albeit demonstrating the wealth and prestige of a particular family. Only research in the Szczuczyn crypts has provided the opportunity to describe the full grave clothing (Grupa 2012a, 111–122; Grupa *et al.* 2013, 99–106; 2014; Dudziński *et al.* 2015; 2017). On the mummified remains were preserved not only silk but also linen, cotton, and wool clothing items of both adults and children (Kozłowski and Krajewska 2013, 91–97).

An analysis of children's burials from Szczuczyn (N=26) shows that only 14% of outerwear was made of silk. The other part were linen dresses decorated mostly with silk ribbons, block lace, and gauze. Only 9% of the garments were worn by children during their lifetime (Grupa *et al.* 2014, 77). However, the most significant information gleaned during the study concerned the undergarments, i.e. underwear. Until now, it had only been guessed that linen shirts were put under silk gowns, which decompose at a rapid rate in the graves. The material from Szczuczyn confirmed this, as it is difficult to assume that a child laid to rest in March was only dressed in a gown of transparent gauze (Grupa 2012b, 181–185). The most critical piece of information concerning the undergarments, however, was that there were two instead of one linen undershirt. The one clinging to the body was usually made of more delicate, thin fabric, the top one of a thicker one. Even if the deceased was dressed in a "czecheł", there were still two shirts underneath. "Checheł" were linen shirts (otherwise known as "funeral shirts") that church and state administrations recommended as grave shirts (Kuchowicz 1975, 204; Grupa 2005, 30). In addition to burial shirts, a linen shroud was also recommended (Binski 2001, 81). However, linen shrouds were not found at the described site. On the other hand, silk shrouds have been preserved from studies in Bremen and Gdańsk (Petrascheck-Heim 1977, 108; Kizik 1998, 85; Grupa 2017, 205–206).

After performing a comparative analyzes, we can assume that it is possible to describe the clothing of the newborn from Konotop. As we know from the earlier description, the upper gown was made of plain silk fabric. We can only guess at the rest of the clothing and think that the newborn was dressed in two more linen shirts which have decomposed. Since woolen stockings were found in Szczuczyn and Bytom Odrzański, we can assume with a high degree of probability that the child from Konotop also had them, but it has decomposed. The same must have happened to the linen cap. Loose bows very similar to those of the gown were found in the sarcophagus, so it can be assumed that the cap may have been decorated with them.

Children's grave robes in iconography

The most significant number of depictions of children can be found on tombstones, various types of epitaph paintings, and gravestones. All images are usually similar, differing only in the material they were made (stone, canvas). When analyzing them, they should be approached with a considerable degree of caution, as they depict, for example, children dressed in period clothing rather than grave clothes. A similar phenomenon has been reported for the clothing of adults, both lay people (Nowosad *et al.* 2021a, 64–69, 77–79) and clergy (Grupa 1998, 287–291). Already in previous eras, and even in antiquity, children were depicted in miniaturized adult clothing, and this was also the case in the Baroque period (Johannsen 1988, 39; Grupa 2005, 60, 84; Stankiewicz 2015, 88; Nowosad *et al.* 2021b, 131, 142). If we wanted to rely only on the rationale of the iconography, then the infant from Konotop should have been dressed in wrappers. This, however, was not the case, and the child was dressed in a grave robe, in which children from the first year of life were usually dressed. Also,

examples of grave dress from Roskilde, Toruń, and Bytom Odrzański confirm observations about dressing infants and even newborns not only in wrappers but also in grave cloths (Johannsen 1988, 48–49; Grupa 2005, 53–55; Grupa 2016, 175–180).

The confrontation of these sources should keep researchers from making definitive and unambiguous conclusions.

Despite some inaccuracies, the base of iconographic sources is an indispensable complement to the costume analyses performed by archaeologists specializing in conserving and reconstructing grave clothing. The legible details in the iconography make this work possible for them. In the case of the Konotop gown, there was no need to search for such details, as it was entirely preserved. The arrangement of the wrinkles and the ornamentation in the form of bows could be confirmed in very similar representations from children's grave slabs found in Silesia and elsewhere (Stankiewicz 2015, children's grave slabs 1, 77, 82, 83, 150, 157, 158; 2021, fig. 34, 59, 65, 66, 90, 92, 100, 122).

Conclusion

With the knowledge already gained about child burials, it can be surmised with a high degree of probability that the child from Konotop was buried in a similar manner to other children from noble families. However, depositing them secondarily in the sarcophagus disrupted the orderly arrangement and only previously acquired information on the grave clothes allowed them to be put in order. There were at least three such cases (according to our knowledge), as the fabrics extracted from the sarcophagus indicate similar burials in the described crypt. It seems that the

Fig. 7. Attempt to reconstruct the castrum doloris of Maria Anna Szczuka (d. 1705) on the basis of written sources and archaeological research (photo by M. Nowak).

burial ceremonies of the buried children followed the established pattern in force in the Baroque *Pompa funebris*. Based on written and archaeological sources, it was possible to reconstruct the *castrum doloris* of Maria Anna Szczuka (d. 1705). It would not be overstepping the mark for this vision to be transferred to the burial of a child in a silk dress from Konotop (Fig. 7).

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Mikołaj Dobek

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Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland;
e-mail: mikolaj.dobek@interia.pl; ORCID: 0000-0003-4333-9146

True or False – Difficulties in Interpreting the Funeral Dress from the Burial of the "Bride" in the Szczuczyn Crypt, Poland

Abstract

Dobek M. 2022. True or False – Difficulties in Interpreting the Funeral Dress from the Burial of the "Bride" in the Szczuczyn Crypt, Poland. *Analecta Archaeologica Ressoviensia* 17, 61–69

Funeral costumes are elements of funerary furnishings with very different characteristics. Their form has not only been influenced by local funeral customs but also by the property status of the families of the deceased and the fashion trends prevailing in a given region. The study of funerary clothing clearly translates into the general development of knowledge about the evolution of fashion, and thus the issue is no longer only the domain of costume specialists, but also archaeology. This is clearly discernible on the example of the results of archaeological research conducted in the crypts of the Church of St. Name of the Blessed Virgin Mary – over 100 burials turned out to be hiding the largest archaeological collection of modern funerary clothing from the former Polish-Lithuanian Commonwealth. Against the background of these costumes, the clothes in which the woman placed in burial no. 8 (EA crypt) stands out. Her attire took an exceptionally impressive form, as evidenced by the fact that this tomb aroused the interest of the local population long before archaeologists arrived in Szczuczyn. According to the stories of the locals, she was buried in a wedding dress. As a result of the verification carried out both on the stand and as a result of laboratory analyses, it was determined whether this theory can be confirmed with the use of scientific methods. The analyses, apart from referring to the theory of stories told by local history enthusiasts, turned out to contribute a lot to the current state of knowledge on the development of 18th-century women's fashion.

Keywords: women's clothing, textiles, crypts, Szczuczyn, Poland

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Introduction

Archaeology also contributed to the state of knowledge on the history of women's clothing both in Europe and the former Polish-Lithuanian Commonwealth. The exploration of crypts located in churches throughout Poland allowed for the verification of theoretical assumptions and the determination of what Polish noblewomen actually wore in the modern period. Textile material obtained as a result of conducting archaeological research in churches in the territory of the Republic of Poland is still a relatively small collection, but one which is gradually growing. We have the oldest information on grave clothing thanks to research carried out in 1946 at the castle in Szczecin, albeit modest because it is in a very bad state of preservation. In 1977, during the works carried out in the Słupsk church of St. Jacek, a rich collection of fabrics was obtained from the tombs of Ernest and Anna de Croy. The clothes were secured, and the results of the reconstruction works and analyses were presented in the article *Conservation of garments from the sarcophagi of the Słupsk princes* (Rawa-Szubert *et al.* 1981). The next grave dresses which were subjected to detailed analyses come from the crypt of the church of St. Assumption of the Blessed Virgin Mary in Toruń, published by Małgorzata Grupa (2005, 62–66, 80–81, 164–176) and then Anna Drążkowska (2008, 15–16). Since then, however, a number of discoveries have been made that broaden the knowledge of women's grave clothing. Their group includes material

from the following sites: Lublin, Dubno (Drążkowska and Grupa 2002; Drążkowska 2006; Drążkowska *et al*. 2015), and Szczuczyn, Gniew, Strzelno, Przemyśl, Białowąs, Biała Rawska, Końskowola, Przeczno, Przeworsk, Konotop, Radzyń Podlaski, Kraków (Badzińska and Schild 2007; Drążkowska 2008, 15; 2020; Grupa 2012a, 110–112; Grupa *et al*. 2013, 102–104, fig. 5–9; Majorek 2014; Sulkowska-Tuszyńska and Wielocha 2019, 318–327; Nowosad *et al*. 2021, 64–73, 120–126). The research in Szczuczyn provided the largest number of women's dresses. In twelve women's burials, material was discovered which amounts to almost 45% of the total collection of archaeological evidence of women's fashion in Poland.

Research into the crypts of the Blessed Virgin Mary Church in Szczuczyn

The existence of crypts under the floor of the church of the Blessed Virgin Mary in Szczuczyn (Fig. 1) were not a secret for the local community – the unblocked entrance to the basement under the presbytery meant that many inhabitants visited them long before the arrival of archaeologists. Due to this fact, even before the first recognition of the crypts, it was possible to determine that it was an exceptional place – the remains of a significant number of the dead were naturally mummified, and the grave dress still adorned their bodies (Dudziński *et al.* 2013, 14; Kozłowski and Krajewska 2013). Local activists wanting to learn about the history of the region saw the need to conduct a fully methodical inventory, and document and analyse the historic material deposited in the church's crypts. Thanks to the initiative of Tomasz Dudziński, with the support of the city and the parish, a group of archaeologists associated with the Toruń NCU began research in 2011 in the basement of the chancel. The works, which with time took the form of multi-season research, are managed by Małgorzata Grupa. The first inventory of the crypt space showed that it would be necessary to carry out systematic archaeological works – a number of burials were covered with a layer of sand deposited over the centuries (Michalik 2020). Also present was a considerable amount of refuse left by outsiders (Grupa 2019). A significant number of coffins and bodies had been translocated and this meant that one coffin often contained many mummified remains, as well as loose bones (Fig. 2; Dudziński *et al*. 2013, 14; 2015; 2017; Grupa *et al*. 2014).

As a result of this work, it was found that Szczuczyn is a unique site on the archaeological map of Poland – the microclimate prevailing for decades resulted in the preserved fabrics in over eighty burials (not only silk but also clothing made of linen, wool, and cotton fabrics), which provides a fresh opportunity

Fig. 1. Location of Szczuczyn on the map of Poland (compiled by J. Michalik).

to learn about the history of fashion in Poland in the modern period (Dudziński *et al*. 2013, 16–18; Dobek 2021, 303–304). The multi-season archaeological work has been carried out intermittently since 2011.

Based on the archaeological research conducted in the crypts (Fig. 3) of the Blessed Virgin Mary church, we were able to distinguish four groups of burials from over a hundred inventoried graves: burials of children, clergy, men, and women (Grupa 2012a, 110–123; Dobek 2021, 305–311). The latter constitute a relatively small percentage of the total number of people buried there – this group includes thirteen graves: seven of them were originally located in the western crypt, while the rest were discovered in the eastern crypt. Ten of these burials were not mixed up, which significantly influenced the completeness of the funerary furnishings, both in terms of costumes and devotional items. It is worth noting that during the archaeological research, elements of women's clothing trampled into the threshing floor were also discovered. However, it is impossible to assign the found elements (e.g. caps, grave dress) to the remains of a person placed in a specific coffin, and it seems too bold to put forward the thesis that this garment was surely originally part of one of the three displaced burials. It is worth noting that the identities of two women buried in the crypts in Szczuczyn, Regina Karwowska and Teresa Umińska, are identified by name and surname. The top of the first coffin is decorated with a metal cartouche, while on the side of Umińska's coffin her name and surname were placed. Karwowska's coffin is also the youngest burial, among those whose dating could be determined (either on the basis of data from the coffin or thanks to the information contained in parish books) – buried on January 25, 1830. The dress found in the burial of Teresa Umińska is the first gown which has been fully reconstructed and displayed at the museum exhibition in the monastery (Grupa 2012a). Despite its simple form, it has elements that can be considered characteristic of 18th-century women's costumes, including numerous folds and ruffles (Fig. 4). In terms of the state of preservation and the form of the dress, a very interesting example is the burial outfit found in burial no. 2 (WB crypt) – an anonymous woman placed in a simple coffin was dressed in an unornamented dress

Fig. 2. Western crypt – view from the vestibule (part B) towards the catafalque (part A) (photo by M. Majorek).

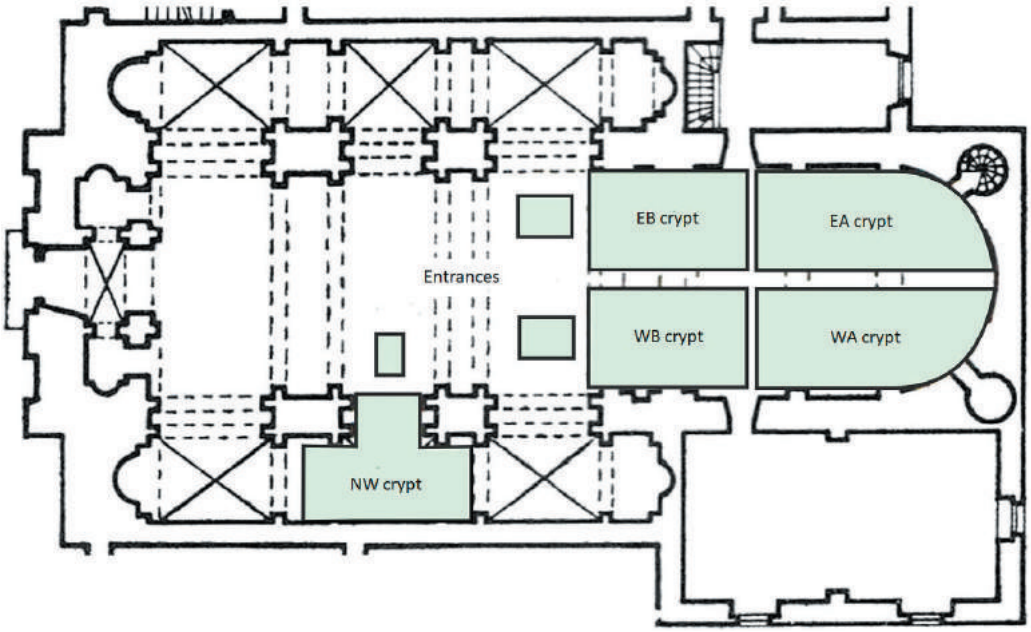

Fig. 3. Plan of the church of the Name of the Blessed Virgin Mary in Szczuczyn with marked crypts (compiled by T. Dudziński).

Fig. 4. Szczuczyn, western crypt, part A. Burial no. 8 – *in situ* (photo by M. Majorek).

made of green taffeta, with the cut *a'la déshabillé*. The dresses were complemented by a number of clothing accessories – mesh gloves, a silk cap, and a scarf with a printed floral and geometric pattern (Grupa 2012a; Przymorska-Sztuczka 2013, 215; Dobek 2022, 36–37). As of today, the historical material related to the burials of women from Szczuczyn has not been published in a monographic form, but now, on the basis of field documentation and laboratory analyses, it is possible to define the collection in Szczuczyn as exceptionally diverse and contributing considerably to the cross-sectional knowledge of women's fashion functioning in the territory of the Republic of Poland in the 18th and 19th centuries. Bobbin laces, of which the largest number were recorded in Szczuczyn, are largely from women's graves. Additionally, a very reliable and valuable collection from a scientific point of view consists of the caps with which women placed in seven coffins were equipped (one cap was found in the layers of the threshing floor) (Przymorska-Sztuczka and Majorek 2013, 33–34).

Burial of the "Bride" (western crypt, part A, no. 8)

Of all the coffins where the remains of women were placed in the Blessed Virgin Mary church, one in particular is distinguished by its funerary equipment: burial no. 8 together with the older woman bur-

ied in it (over 50 years old – analysis made by Tomasz Kozłowski). What makes it unique from the others is the surprising richness of the diversity of the historic material, as well as the completeness of the funerary dress of the deceased. For many years there have been stories among the local population about the "Bride" buried in the basement, whose body is dressed in a wedding dress. The described burial was located in the main part (A) of the western crypt, near the catafalque erected for the Szczuka family (Dudziński *et al*. 2013, 15). Despite the fact that the coffin lid was pulled back, it should be stated that it did not adversely affect the quantitative condition of the sites and their destruction – the burial was not plundered. This is also true in the case of the remaining burials in Szczuczyn. While no jewellery and ornaments were found there, their absence in the grave equipment is a phenomenon typical of burials from crypts studied in the territory of present-day Poland – including the church of the Blessed Virgin Mary (Dobek 2022, 46). The buried woman is still an anonymous person – we have no source data on the basis of which we could identify her personal data. The deceased was placed in the grave in an outfit consisting of the following elements: a dress, textile shoes, stockings, gloves, a shirt, and a cap (Dobek 2022, 46). The light beige colour of the clothes, the headgear reminiscent of a wedding veil thanks to the use of gauze as the top decoration, and her thick, black hair actually stimulated the imagination of the local population. However, labelling the deceased as the "Bride" is not necessarily correct, and certainly the confirmation that she was buried in a wedding dress is currently unrealistic from a scientific point of view. Being guided by this type of traditional oral communication may lead to a number of interpretative errors, and thus act to the detriment of the conducted research. It is a fact, however, that the equipment of burial no. 8 attracted attention with its exceptionally rich form long before the start of research in the crypts in Szczuczyn, and in 2011 it also surprised the archaeologists from Toruń (Grupa *et al*. 2013, 102–103).

Dress

Funeral dress no. 8 is 124 cm long. It was made of light silk, perhaps in a natural white colour. The background of the fabric was made in a plain weave 1/1 and non-twist threads were used for this. Its entire surface is divided by blue-brown red stripes that divide it into segments. Between the stripes, there is a repeating and alternating plant motif. Its form is reminiscent of small bunches of multi-coloured motifs on twigs surrounded by greenish leaves. They were made with the brooch technique and arranged every 40 cm. Different colours of threads were used to shape the flowers, although they were all similar in tone: lilac pink, lilac, ecru, also as contrast, green was used in the creation of the leaves. Vertical stripes were made by introducing warp threads. Each of the stripes formed a system of threads in the warp: two threads in the background colour – break – brown thread – six blue threads – brown thread – break – four threads in the background colour – brown thread – six blue threads – thread brown – break – two threads in the background colour. The dress was lined with a snow-white, silk lining (Dobek 2022, 47–48).

Both the skirt and the outer dress with the bodice cut off were made of the same fabric described above. The sleeves were long, narrow, and measured 48 cm. Below the wrist, there were cuffs fastened with sewing pins and decorated with wide bobbin lace. The vertical edges of the dress are trimmed with a decorative pleat made of the same fabric, widening downwards. On top of each pleat, two bobbin laces of different widths were sewn – the same decorative elements also trimmed the neckline of the dress. It is deep and square, reaching 23 cm from the shoulders. It is also decorated with the lower edge of the skirt to which the dome is sewn, a strongly wrinkled wave, and a narrower spool (Fig. 5).

Shirt, stockings

Under the dress of the deceased was a knee-length linen shirt. It was made of linen fabric with a plain weave 1/1. For this reason, its circumference was not known for certain, as it was impossible to lift its edge and straighten the folded surface. It was certainly very wrinkled around the neckline, which could be described as roughly 2.5 to 3 meters in width of the fabric used. From the knee height, the underwear function was performed by stockings made of white, silk yarn (in fact, they reached above the knees). They were decorated from the ankles upwards with an ornament located on the sides of the inner part of the leg covering. The embroidery applied to their surface was made with the same material as the stockings, without twisting thread. The openwork is a system of rhombuses arranged in a geometric-plant motif, increasing by a given, regular number of eyelets (from the ankle to the middle of the calf), thanks to which a conical shape was obtained. The stockings were knitted with the foot being made, which allowed for the formation of the heel. It is likely that

Fig. 5. Szczuczyn, western crypt, part B. Burial 8 – funerary dress during conservation (photo by M. Dobek).

they were machine-made from very good yarn, which translates into the high quality of the product (Grupa *et al*. 2013, 102; Dobek 2022, 49).

Other elements of the outfit

The funeral outfit was supplemented with gloves, a cap, and shoes. The gloves were made of thin, delicate leather, which made them match the colours of the dress perfectly (Fig. 6). They were 19 cm long, reaching more or less to the middle of the forearm (from the tips of the fingers towards the elbow joint), which means that they can be classified as semi-long (Przymorska-Sztuczka 2013, 215).

The cap was made of a blue silk fabric (taffeta), decorated with two bows. The first was tied to a piece of beige silk formed into a Gauze weave. The other one is made of ecru silk pasamon in a satin weave, which gives the effect of a smooth, shiny surface. The edges of the ribbon are finished with insets. An additional warp of gold-coloured metal threads was introduced along the edges. As a result of oxidation, the surface of the braid of the metal thread became silvery with time (due to the high silver content in the alloy). The bows were shaped by attaching a large number of brass pins and pins to the front of the cap. One of the unique finds is the discovery of the cap's insulation with cotton wool, which was sewn to its inner surface with a much lighter silk thread made in the zz/S twist (Dudziński *et al*. 2013, 103; Przymorska-Sztuczka and Majorek 2013, 34; Dobek 2022, 52–53).

Some elements of the footwear are made of the same leather material as the gloves. They were textile slippers with a wooden heel and covered with white leather. The red silk vamp was lined with the same material. The sole and the top of the heel are made of thick brown leather. Textile shoes had a cut characteristic of mulet shoes – almond-shaped, strongly bent toe, low top, light form, and a wooden heel (Kulesz 2019).

A look through the prism of contrast – burial dress no. 8 against the background of a similarly dated outfit by Teresa Umińska

The cut of the dress with an additional skirt and a cut-off bodice (supplemented with a *bavette* at the front) indicates the *à la française* dresses that dominated European salons in the 18th century. These dresses were decorated with various accessories: needle and bobbin laces, ribbons, artificial flowers or heavily wrinkled pleats or ruffles (Możdżyńska-Nawotka 2002, 156–157; Grupa 2005, 62; 2016; Boucher 2012, 264–266; Nowosad and Grupa 2020, 251–252). The dress described above with all the accessories was made according to the prevailing fashion patterns. Meticulousness in the selection of accessories and the high quality of workmanship created a perfect image of an eighteenth-century lady. None of the tiniest elements in the tomb furnishings was accidental. At about the same time, Teresa Umińska, whose dress was cut in accordance with the prevailing fashion, was

Fig. 6. Szczuczyn, western crypt, part B. Leather gloves from burial no. 8 – *in situ* (photo by D. Grupa).

Fig. 7. Szczuczyn, eastern crypt, part A. Reconstructed tomb dress of Teresa Umińska (photo by A. Zamorowska).

buried in the neighbouring crypt. Despite the use of plain silk (currently dark brown in colour), the dress gave the impression of being sad and poor in relation to the above-mentioned (Fig. 7). The bodice was tightly fitted, lined with a lining made of three types of linen fabric and one cotton fabric. The sleeves were narrow, reaching to the elbow and also on the lining. The lower part of the dress from the waist down was arranged in centimetre pleats. The edge of the dress is decorated with a frill made of the same fabric (Grupa 2012a, 110–111). Both dresses are sewn in the same style, and there is a gap in the selection and finishing of details. In the first case, a festival of various top-class accessories, in the second case, there are no decorations, apart from a frill. One gets the impression that the owner of the brown dress was a working woman (this is confirmed by her biography as a secular sister of the Beguinage Order). On the other hand, the one with a light dress with lace was presumably a regular at salons, a woman that had been watched and admired.

At the present stage of research, it is the most representative example of a grave dress. It seems that the children's dresses from St. Jana in Gdańsk, made of various types of gauze, are an immoderate demonstration of wealth (Drążkowska 2012, 173, 175; Grupa 2012b, 182–184). However, the dress of the so-called Bride tops the list of 18th-century funerary costumes and more.

The uniqueness of the described outfit lies in its uncommon nature and complexity – there is no other dress in Polish archaeological collections that combines so many different forms of decoration, including

a combination of embroidered floral motif with a large number of lace elements. Such a unique appearance of the dress makes it impossible to assign to it any analogies from archaeological research and Polish museum collections.

The refinement of every detail of the outfit is noticeable in the portraits of representative women from that period, which undoubtedly indicated their belonging to a social elite. Regardless of whether it was the image of a French court lady or a Gdańsk patrician, luxury was present in every element (Birecki 2020, 179–181; Nowosad and Grupa 2020, 241–258).

Summary

The funeral dress found in the crypt, and in particular the dress from burial no. 8, can be considered to be garments typical of 18th-century fashion. However, the number of accessories and lace ornaments makes the entire dress exceptionally rich, despite the traditional cut for women's costumes of that time (Możdżyńska-Nawotka 2002, 156–157; Boucher 2012, 264–266). The numerous folds and decorations, and above all the light colour, bring to mind the idea of a wedding dress. However, costume analyses do not distinguish between such dresses. To distinguish them, it would be necessary to rely on written sources, but in these, however, such costumes are not mentioned. Therefore, all inquiries about the "Bride" outfit remain the stories of the local society and are not supported by scientific research. The research on burial no. 8 may provoke reflection on how much we perceive objects from the distant past through the prism of everyday life and customs prevailing in the modern world. Is assigning a buried woman a wedding dress in grave furnishings just because it stands out from the others with the colour and quantity of lace, a rational and objective inference? Definitely not. In a world where communities are hungry for sensational information, and each headline becomes a coloured version of the truth, it is very easy to fall into the enrichment of one's own interpretations with information that carries emotional baggage. This also applies to scientific works, which by presenting unusual – from the layman's point of view – discoveries can reach a wider audience and even the mainstream. However, the role of an archaeologist is primarily to recreate the past, to combine facts, and these do not allow speculations in any way, even at the cost of refuting the "truths" previously presented and established in local accounts. It is clearly visible in the above-mentioned example of an 18th-century burial dress from the crypts in Szczuczyn.

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Jakub Michalik

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Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland;
e-mail: michalik@doktorant.umk.pl; ORCID: 0000-0002-7495-2528

The Yew Cross from Szczuczyn – a Symbol of Life and Death or an Unusual Memento?

Abstract

Michalik J. 2022. The Yew Cross from Szczuczyn – a Symbol of Life and Death or an Unusual Memento? *Analecta Archaeologica Ressoviensia* 17, 71–79

Archaeological research in the crypts of the Church of the Holy Name of the Virgin Mary in Szczuczyn has been carried out since 2012. Many years of research have made it possible to identify some of the buried people, including the Piarists who served as the hosts of the church. One of the monks identified was Stanislaw Marszycki, who took the name Simeon of St Joseph after his monastic vows. Identification of the Piarist was possible thanks to the information on the coffin. On the deceased's vestments rested a wooden crucifix, which can be interpreted as part of the deceased's individual equipment. The crucifix was subjected to wood species identification using a microscope with transmitted light. This made it possible to determine that it was made from the wood of the common yew tree (*Taxus baccata L.*). Yew wood is a valuable material and was used to make both large boatbuilding components, furniture, and weapons, and was also readily used in 18th-century gardens. The yew was also a tree around which there was a great deal of superstition. Because of its toxicity and longevity, it was treated as both a tree of death and life. The cross from the monk's coffin, according to superstition, might have guarded the deceased against evil, been an individual object with which the deceased was associated, or perhaps was chosen because yew wood was eminently polishable and with a beautiful colouration.

Keywords: Szczuczyn, crypts, yew, piars, wood, cross

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Introduction – archaeological research in Szczuczyn

The town of Szczuczyn is located near Grajewo in Podlaskie Voivodeship (Fig. 1). It was founded in 1692 on the initiative of the Lithuanian sub-chancellor Stanisław Antoni Szczuczka. The founder's greatest dream was for his town to become an important point on the map of the Polish-Lithuanian Commonwealth. For this reason, in 1697 he funded the construction of a monastery and the Church of the Holy Name of the Virgin Mary and brought in Piarist monks. The Piarists, as the church's hosts, buried their confreres in the vaults of their temple according to custom. The construction of the crypts was planned by the city's founder himself in 1709 (who was the first to be laid to rest in them). Before the commissioning of the crypts, the deceased Piarists were buried in a tomb in the nearby cemetery (Dudziński *et al*. 2017, 23–28).

Archaeological research in the Szczuczyn crypts carried out under the direction of Dr Małgorzata Grupa has been the subject of study by archaeologists, archivists, historians, and botanists since 2012. The original aim of the work was to document and inventorize the preserved coffins. However, in order to do so, it was first necessary to clean up the rubbish that had been deposited through an unsecured vent or left behind by visitors to the crypts (who entered through the same opening through which the rubbish had been thrown). An important part of the research was also to identify the deceased persons in the crypts, and to determine the approximate number of burials, both lay and Piarist. Thanks to the favourable environmental conditions prevailing in the crypts, spontaneous mummification of the remains of the deceased occurred (Kozłowski and Krajewska 2013, 91–97). This allowed for the preservation of, among other things, clothing and other artefacts

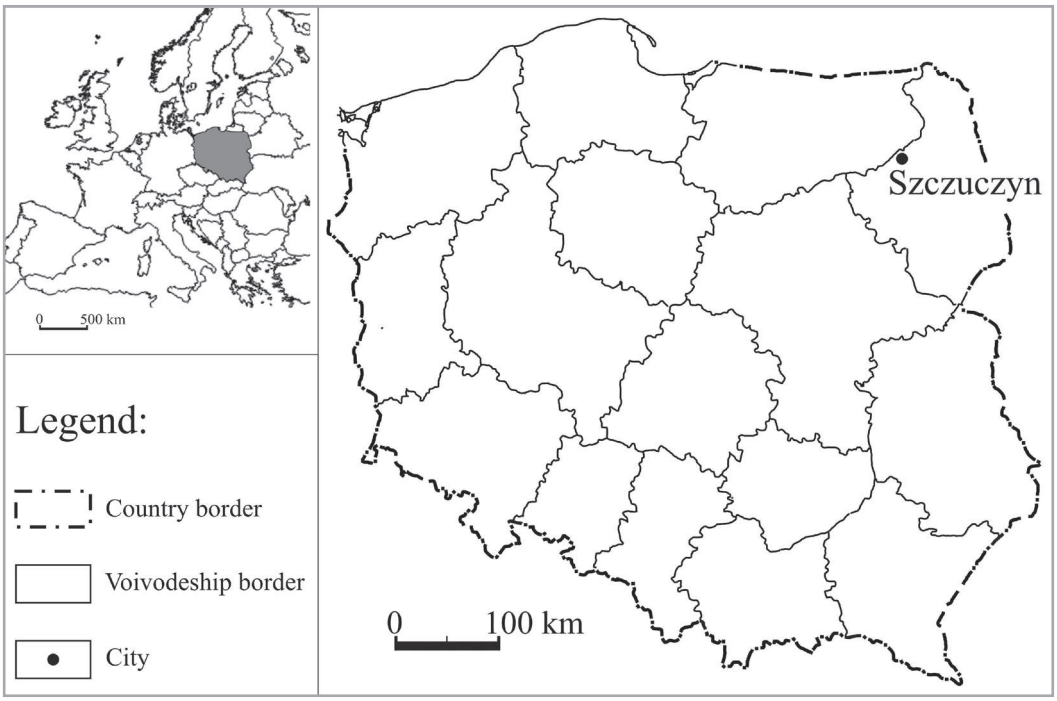

Fig. 1. Location of Szczuczyn on the map of Poland (drawn by J. Michalik).

made of organic materials, which are often destroyed in earthen graves.

The burial of Simeon of St Joseph (Stanisław Marszycki)

One of the monks identified was Stanislaw Marszycki, who took the name Simeon of St Joseph after his monastic vows. The identification of the Piarist was possible thanks to the inscriptions painted on the coffin: "P. Simeon a S. Joseph SP" (Fig. 2: A), as well as "Obijt Anno 1754 aug 15" (Fig. 2: B; Dudziński *et al.* 2013, 19; 2017, 34, 55, 129). The coffin contained the body of the deceased, which had undergone natural mummification thanks to the favourable environmental conditions in the crypt. A large number of scattered clothing fragments were documented next to the body of the deceased, which were identified as liturgical vestments (Fig. 3). A cross was found on the vestments, which can be interpreted as a piece of the individual equipment of the deceased (Fig. 4; Dudziński *et al.* 2017, 104–105).

Wooden cross

The cross from the coffin of Simeon of St Joseph was wooden, with additional metal elements. The height of the vertical beam was 13.6 cm and the span of the horizontal beam was 7.1 cm. The other dimensions of the beams were identical, with a width of 1 cm and a thickness of 0.3 cm. The metal elements consisted of a cast figure of the crucified Christ, as well as an appliqué below it depicting a stylised skull with crossed tibias. A nail hole in the top of the vertical beam may indicate the placement of the Titulus Crucis there. The ends of the beams were finished with metal caps. The cap at the top had an eyelet hanging on a small chain or ribbon, for example. It can be assumed that all of the metal parts were made of a metal alloy containing copper in large amounts – this is evidenced by the greenish colour of the corrosion (Grupa 2013, 133; Dudziński *et al.* 2017, 106–107, 130).

Wood identification process

The wood fragment from the cross was collected during archaeological work in 2020. The research conducted at that time focused on collecting, among other things, botanical samples from burials, such as herbs deposited in coffins, pillow and mattress fillings, as well as wood from coffins and devotional items (Michalik 2020, 221–222). The identification of the wood collected from the cross from the coffin of Simeon of St Joseph was carried out using a transmitted light microscope, a Scope.A1 model from Zeiss with a Zeiss AxioCam ICc 3 camera and Axio Cam software.

Fig. 2. Szczuczyn. Coffin of Simeon of St. Joseph. A – view of inscriptions on lid; B – view of inscriptions on top of coffin from head side (photo by A. Wojciechowska).

Fig. 3. Szczuczyn. Burial of Simeon of St Joseph. Visible shuffling of the deceased's clothes, traces of feathers and scratches indicate the presence of rodents in the coffin seeking shelter (photo by A. Wojciechowska).

Fig. 4. Szczuczyn. Cross found in the coffin of a monk (photo by A. Wojciechowska).

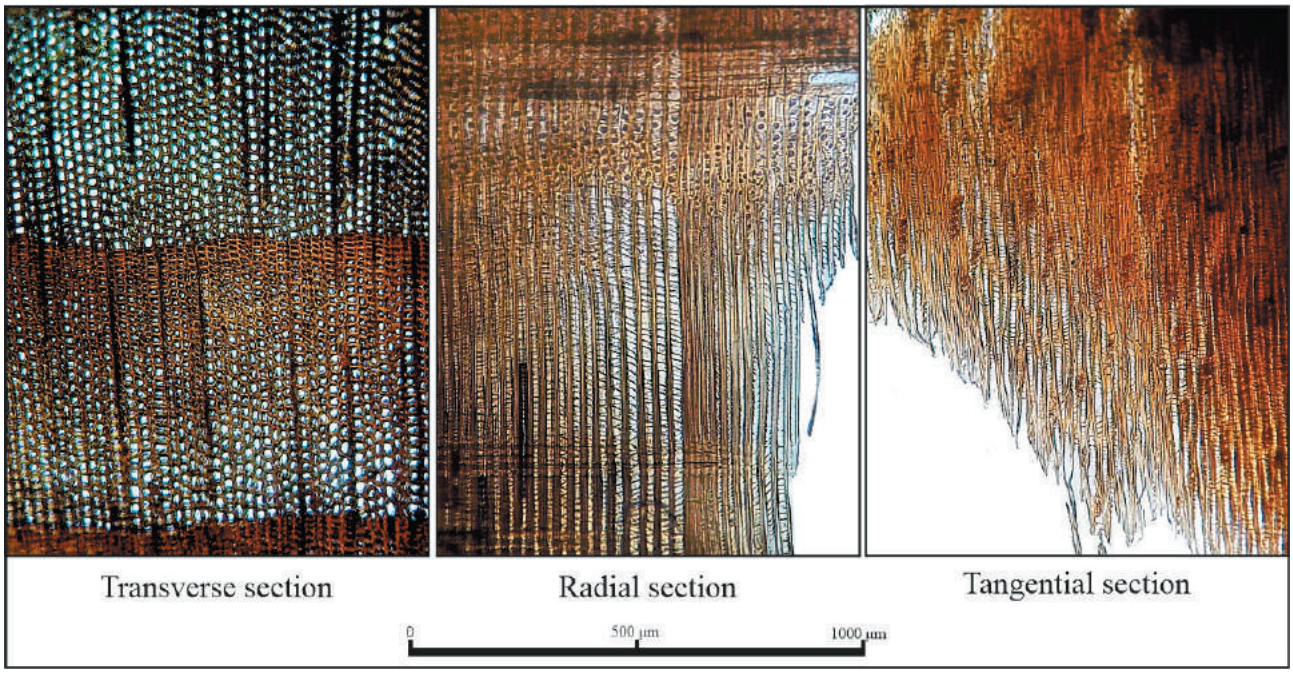

Fig. 5. Szczuczyn. Wood tissue from a yew tree (*Taxus baccata L.*) taken from a cross (photo by J. Michalik).

Observation of the wood tissue with the transmitted light microscope required exposing and aligning the surface of the monument in three planes: transverse, tangential, and radial. In the case of the cross from Szczuczyn, the situation was simple in that its arms were made longitudinally to the grain, thus the cross-section of the wood tissue was located at the two ends of the beams. This ensured that interference with the structure of the object during sampling with aligned cross-sectional planes was minimal. The next step, already carried out in the laboratory, was to take and prepare on microscope glass three, thin slices of wood from the aforementioned cross sections. The preparations were then examined under a microscope.

The observation of the anatomical structure makes it possible to identify the species, or at least the type of wood. The observation of general differences in the structure of the transverse anatomical system of wood should already initially allow a preliminary separation of wood type into coniferous and deciduous trees, with a division of the latter into ring-porous and diffuse-porous, which is due to the completely different structure of these three types of wood. In contrast, capturing more detailed relationships and common features in the tissue structure allows for more precise identification. The catalogue publications of F. H. Schweingruber (2011), P. Greguss (1959), D. Grosser (1977), and A. Warywoda (1957). Observation of the transverse cross-section of the tissue at the outset led to the conclusion that the crucifix was made of coniferous wood. Another quite characteristic feature was the absence of resin ducts, as well as the clear demarcation of the annual rings into thin-walled earlywood and thick-walled latewood. The coils in the radial and tangential sections have another characteristic feature, which is the intersecting spiral thickenings found on the coils. In addition to these, funnel cavities of the taxoid type were observed, arranged in a single row. In addition, the woody rays are arranged in a uniform and single row. All these features indicate that the crucifix was made from the wood of the common yew (*Taxus baccata L.*) (Fig. 5).

Characteristics of yew wood and products

The common yew is the only tree representative of this genus in Poland. It is also found in Europe (except for the northeast), and North Africa. It grows for a very long time, which is why it is considered one of the slowest surviving conifers. Its lifespan is estimated to be up to 1000 years or more, reaching heights of up to 15–20 m and a trunk diameter of approx. 70 cm (Warywoda 1957, 32; Godet 2008, 42; Seneta and Dolatowski 2012, 26, 28).

Yew wood is a highly valued material. It is hard, heavy, and strong yet flexible, making it one of the hardest conifers, not least because it has no resin ducts. Its noble qualities are also evidenced by its colour, usually slightly shiny, reddish, or brown, with

light, narrow sapwood. The wood also polishes very well and can take on a purplish colour underwater (Warywoda 1957, 34; Godet 2008, 42; Seneta and Dolatowski 2012, 28). The durability and ease of polishing the wood, as well as the beauty of the evergreen needles, were noted and described by researchers living in the 17th–18th centuries. From their accounts, one can learn that yew wood painted black could imitate exotic ebony wood (Kluk 1778, 38; Jundziłł 1799, 433–434; Gerald-Wyżycki 1845, 113–114).

Yew wood was used to make both large pieces used in shipbuilding and smaller pieces to make everyday life easier. Some of them were shaped into various forms during turning and including among other things, parts of furniture. Mention should also be made of the long tradition of making crossbows, arrows, and bows from this wood, of which Italian products were particularly popular (Marcin z Urzędowa 1595, 384). Yew was used in various ways. Due to its high burning temperature, it was used in glassworks whilst another use saw its tannins extracted from the bark (Fischer 1938, 8–9; Warywoda 1957, 34; Czartoryski 1975, 137; Biedermann 2000, 111; Godet 2008, 42; Kobielus 2014, 44; Kujawska *et al*. 2016, 120). In many medieval and modern houses, it was used as a torch to illuminate the chambers if a pine firewood was not available (Moszyński 1929, 589; Kujawska *et al*. 2016, 120). Furthermore, yews tolerate shearing well, which influences their density. As a result, they were readily planted in 18th-century French-type gardens. At that time, they were used to form hedges and rows, but also fancy figures and geometric shapes (Fig. 6; Seneta and Dolatowski 2012, 28).

The versatile properties of yew wood made it an excellent export material, and the first mention of yew trade with the Netherlands dates back to 1287. The trade took place through the port of Gdansk, and the wood was floated down the Vistula River from as far away as the Carpathian Mountains, Ruthenia, and Tyrol. Less than 150 years later, the demand for yew almost caused it to be completely exploited, to the extent that felling was banned by a law issued by King Władysław Jagiełło in 1423 (Czartoryski 1975, 138; Falencka-Jabłońska 2004, 31; Cywa 2018, 126). Unfortunately, intensive felling of yew trees took place throughout Europe, so their stands never again returned to their original form. The former ubiquity of yew trees in Poland even today is evidenced by the nu-

Fig. 6. Postcard from 1930 depicting formed yew trees in the park by the Łączcy palace in Posadowo, near Lwówek (Wielkopolskie Voivodeship) (https://polska-org.pl/foto/9409/Palac_Lackich_Posadowo_9409597.jpg, access: 21.10.2022 r.).

merous city names that refer to them (Turowska 1928, 63; Kujawska *et al*. 2016, 120). In the Podlasie region, where Szczuczyn is located, these include Ciszewo (Grajewski County), Cisów (Augustów County), or Cisówek (a village in Augustów County and a hamlet in Suwałki County).

The information contained in the written sources confirms the artefacts discovered at the archaeological sites which are made of yew wood (Hageneder 2008, 201; Cywa 2018, 126–127). These are mainly staved vessels of various sizes, but mostly medium and small, handles, decorated woodcarving details, spoons, and playing pawns (Woźnicka 1961, 14; Cywa 2018, 118–119; Michalik 2018, 96–97). It is worth mentioning that yew was also very popular in prehistory. Its wood was used to make the famous bow belonging to Ötzi, the Neolithic man discovered in an Alpine glacier (Hageneder 2008, 201; Oeggl 2009, 3). Relics of yew arches from the Neolithic period have also been found in Poland, with the find from Kamiennik in the Carpathian region serving as an example (Margielewski *et al*. 2010).

Yew – the wood of life and death

A particular feature of yew is also its toxicity. All parts of the plant apart from the thistles contain an alkaloid, taxin, which is highly poisonous to humans (Biedermann 2000, 110; Seneta and Dolatowski 2012, 27–28; Cywa 2018, 126). Yew needle extract has been used as a poison for centuries, including by the Celts to commit ritual suicide and also to poison arrowheads (Biedermann 2000, 110; Wilson *et al*. 2001, 929; Kobielus 2014, 43–44; Cywa 2018, 126). According to accounts, a stealthy assassin of the time may have given his victim wine in a yew cup to secretly murder them (Falencka-Jabłońska 2004, 31; Cywa 2018, 126). The fear of yew in terms of its toxicity was to such an extent that it was advised against sleeping under it, or even passing under it, as its very shade was venomous (Marcin z Urzędowa 1595, 384; Rostafiński 1893, 14; Fischer 1938, 8–9; Kujawska *et al*. 2016, 120). Some scholars have denied this myth in their herbaria, which only shows how ingrained it was in the local consciousness (Kluk 1778, 39).

The longevity and immense benefits of the yew must have made it a very important tree in spiritual cultures. As an example, there were high customary penalties enforced by the Celts when someone tried to cut down a yew, which they considered a sacred tree. A similar situation occurred in 10th-century Wales, where cutting down a consecrated yew tree was punishable by a fine that exceeded the lifetime wealth of most subjects (Hageneder 2008, 202; Kobielus 2014, 44). There is also a theory that the sacred tree of the Norse people, Yggdrasil, was not (as is commonly believed) an ash tree, but a yew (Hageneder 2008, 202).

Often, yews were seen as a symbol of death and afterlife forces, probably influenced by the, already mentioned, toxicity of this wood, as well as its longevity. For this reason, they were often planted in cemeteries already in ancient times. For the Greeks, the yew was the gateway to the underworld and the guardian of the souls of the dead. The Romans, on the other hand, associated it with the Furies – demons of the underworld – according to Stacius. A similar custom prevailed in the British Isles, particularly in Wales, where the presence of yew trees was found even on sites dating to the Neolithic period (Hageneder 2008, 202, 205; Kobielus 2014, 43). It was also customary in Poland to plant yew trees in cemeteries. This tree was planted when one wanted to commemorate a deceased person for eternity (Gerald-Wyżycki 1845, 113–114).

On the other hand, yew trees in cemeteries were also planted in the hope of resurrection. At the time, the tree was a symbol of life, or more precisely immortality. This perception was certainly influenced by the tree's longevity, resilience, and evergreen needles, and its use in funerary ceremonies was meant to represent a balance between life and death (Biedermann 2000, 110; Hageneder 2008, 205). The yew was also said to have healing and protective functions in folk medicine, with smoke from burnt yew twigs used to heal cattle and horses and ward off misfortune, and its bark applied to a wound or drunk as a decoction to cure rabies (Jundziłł 1799, 433–434; Fischer 1938, 8–9; Kujawska *et al*. 2016, 121). Yew twigs bought in Częstochowa from herbalist women who sold them at Jasna Góra were said to be particularly powerful (Fischer 1938, 9; Kujawska *et al*. 2016, 121).

The protective power of the yew was also reflected in the folk beliefs which developed over time as part of the Christian religion. The evergreen tree came to symbolise immortality and thus resurrection, and it was therefore believed that the cross on which Christ was crucified was made from this wood. For this reason, yew branches began to be hung and carried (Fig. 7), and children in south-eastern Europe were given yew crosses to protect them from the evil influence of demons (Biedermann 2000, 111; Kobielus 2014, 44–45). Nevertheless, the use of yew wood in crosses can be considered rare. Similar wooden crosses found in crypts and under the floors of churches are known from other archaeological sites and, for the

most part, their wood has been identified. Examples include finds from studies in Gniew (Fig. 8; Grupa *et al*. 2015, 134) or Szprotawa (Wrzesińska 2009, 86–87), among others. In Lublin, on the other hand, the cross found was made of coniferous wood (Niedźwiadek *et al*. 2015, 71–84, 104), as was the cross from a study of crypts in Płock (authors's own research). The situation was different at Końskowola (Dobek and Michalik 2021; Nowosad *et al*. 2021, 97–99), where two pilgrim crosses were identified as an ebony cross and a birch cross, which, painted black, were thought (like the yew) to imitate ebony wood (Fig. 9).

Fig. 7. Portrait of a princess of the house of d'Este, painted between 1435 and 1449 by the Italian master Pisanello. A branch of yew can be seen at the left shoulder, which was supposed to protect the bearer from evil powers (Louvre, France; photo by Franck Raux; https://collections.louvre.fr/en/ark:/53355/cl010064951, access 21.10.2022 r.).

Fig. 8. Gniew. Wooden cross from archaeological research of the south crypt (photo by D. Grupa).

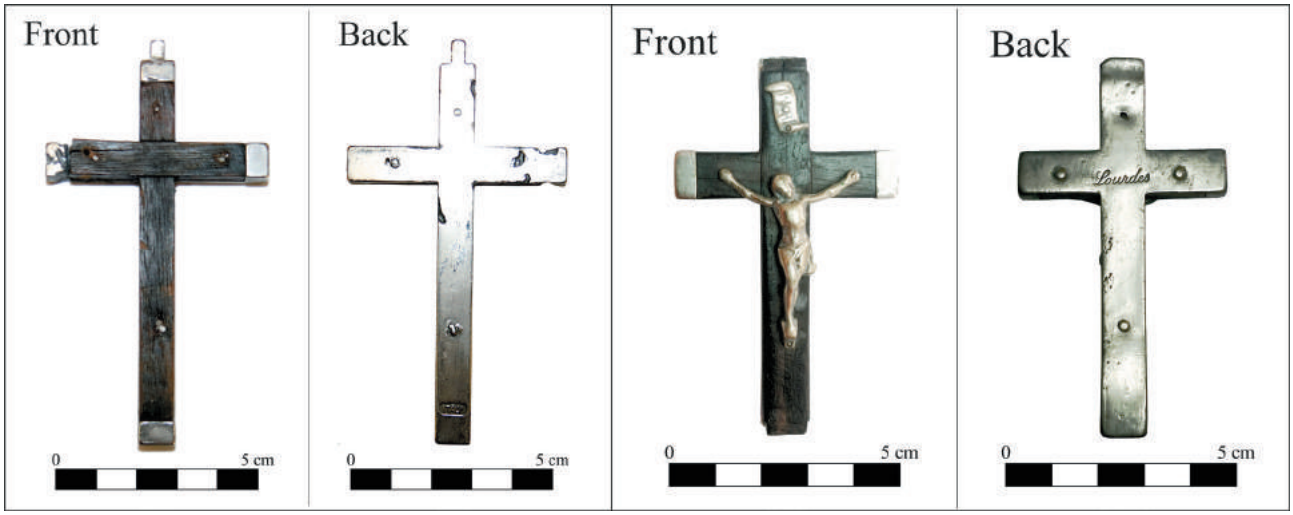

Fig. 9. Końskowola. Wooden crosses from the archaeological research of crypts (photo by J. Michalik).

Conclusion

It is difficult to determine at what time Simeon of St Joseph became the owner of the yew cross. It is possible that this cross accompanied him throughout his entire religious life, being intended to protect his body and soul from evil during his life and after death, and may have given him hope of eternal life in his final moments. It is difficult to determine unequivocally whether this was a symbol of the cross in Christianity (in the monastic life) or whether there was any significance in it being made from yew. This remains an unanswered question at this stage of the research but what is certain, however, is that yews have played an important role in human spirituality throughout history, from prehistoric times to the modern era. The once meticulously cultivated customs associated with this species of tree are no more than a curiosity today, although, given the yew's longevity, we can be sure that trees which our ancestors held in real fear and respect still live on in some places.

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Jan Jarosz[1], Małgorzata Grupa[2]

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[1] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: jaroszjas@wp.pl; ORCID: 0000-0001-5965-1711
[2] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: m.grupa@wp.pl; ORCID: 0000-0001-5128-9754

Kontush Sashes from the Northern Crypt of the post-Bernardine Church of the Elevation of the Cross in Łuków (Lublin Province)

Abstract

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An archaeological exploration conducted in 2019 in the crypts of the post-Bernardine church of the Elevation of the Cross in Łuków brought various finds of burial goods, excavated in fragments, probably transferred together with human remains in the 19th century to ossuaries located in the crypt. The artefacts included fragments of three kontush sashes, being the most indispensable and splendid element of the Polish national costume. The analysis of these objects, both in terms of ornamentation and technology, helped us to estimate their probable manufacturing location.

Keywords: kontush sash, Polish costume, silk, modern period, Łuków

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Introduction

In the course of the excavation season conducted in 2019 exploring the crypts of the post-Bernardine church of the Elevation of the Cross in Łuków (Fig. 1), various artefacts related to the persons buried there were found, together with other valuable insights. Unfortunately, our finds also consisted of numerous pieces of rubbish deposited in ventilation holes and on the floor (Michalik *et al.* 2020, 230). However, the unique finds included three kontush sashes located in survey trenches 1 and 2 in the northern crypt situated under the presbytery (Fig. 1). The sites contained ossuaries probably created during the cleaning of the crypts in the 19th century (Michalik *et al.* 2020, 236–237).

Kontush sash construction

From the end of the 15th century, textile, leather and metal sashes were regarded as the most significant elements of the Polish national costume (own research carried out on Polish costume – Małgorzata Grupa). Each of them had its own history – a place of production, purchase, sale, or transfer in a will. In the 18th century, a textile sash was regarded as the most readable element. They were imported both from Persia, Turkey, and France (Mańkowski 1959, 105; Wasilkowska 1967; Taszycka 1990; 1994; Grupa 2005, 58–59). In the middle of the 18th century, sash manufacture also began within the territory of the Polish Republic, namely in: Słuck, Grody, Kobyłka, later also in Gdańsk (Żelewska 1962; Kałamajska-Saeed 1987; Grupa 2012, 120–123; 2018, 36; Majorek 2013, 199–209). There were solid sashes or semi-solid, or soft, a matter depending on whether a weft of gold or silver thread covered the background surface completely, partly or did not occur at all (Taszycka 1994, 15, 17, 23). The unique kind of these textile products depended on wool, silk yarn quality and the type of metal thread mentioned above which was

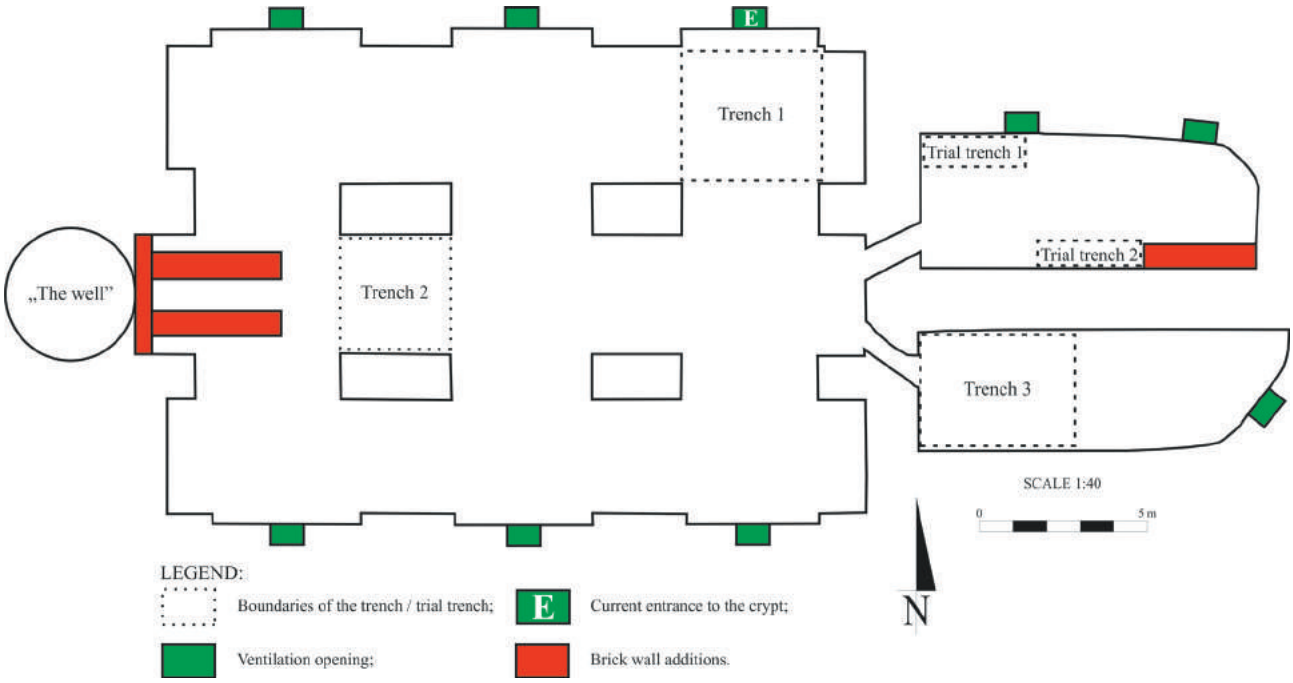

Fig. 1. Łuków. Plan of the crypts of the church of the Exaltation of the Holy Cross (drawn by J. Michalik).

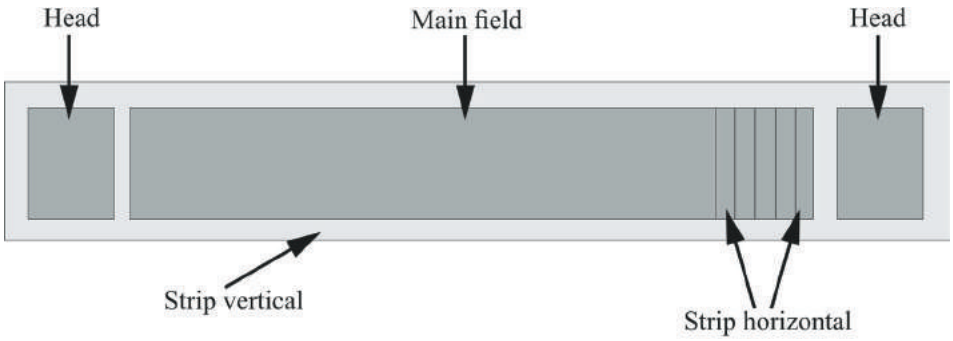

Fig. 2. Plan of a kontush sash (after Kałamajska-Saeed 1987).

used for production (Grupa 2005, 58; Drążkowska 2008, 221).

In its construction, a Persian sash type, followed by Armenian, Polish, Russian, Venetian or French types, is divided into three parts, two of which are at both ends and are called heads (on the surface of the heads there was usually a composition of twin floral arrangements growing out of clods of earth or placed in vases; depending on the manufactory, the composition could also consist of three or five bushes), while the third, being the central element is called the "wciąż" (continuation of a small pattern) (Fig. 2). It consists of dozens of small fields with the homogenous central field. Sash edges, being the most decorative elements, are called "szlaczek" (strip) – respectively – horizontal or vertical.

They could be one-sided, with only one decorative side, two-sided or four-sided, when the fields inside a sash were symmetrically separated along the whole textile length (Kałamajska-Saeed 1987, 10). Four-sided sashes are undoubtedly of Polish provenance, and original Polish contribution to their manufacturing sophisticated technique (Bartkiewicz 1974, 224). They were of various lengths and widths, depending on their origin. Persian sashes were from 4 to 5 m long, about 60 cm wide, while other European and Armenian – about 3–4 m as rule, and around 30 cm wide. These differences were so characteristic that it was easy to estimate at a glance if it was a Persian item or a European one, although we cannot forget that Persian weavers sometimes produced belts with Armenian proportions, and European craftsmen pro-

duced sashes according to Persian measures. In such cases, only careful raw material and technological analysis could answer the question, of attributing an object to particular centers or countries.

Kontush sashes from Łuków

Istanbul sash (Armenian)

In the soundings (1, 2) carried out in the northern crypt under the chancel of the church, fabric fragments measuring 1–2 cm and 29.5 cm wide (80 fragments) were found that were very similar to each other. Our suggestion that it might have been a kontush sash was confirmed by another fragment about 100 cm long, found on the crypt earthen floor. Upon assembly of these fragments, we obtained an object measuring approximately 240 cm long and 29.5 cm wide. Sash ornamentation composition is in accordance with manufacturing rules, distinguishing three elements (unfortunately, the heads were not identified in the excavated material – therefore its origin is not readable on the base of a signature, placed usually in bottom head corners). The central long part is filled with two kinds of fields, sized 23 x 1.5 cm, composed alternately. Vertical strips measure 2 cm each (Fig. 3).

Fig. 3. Łuków. Istanbul (Armenian) sash (photo by J. Jarosz).

We are able to identify only two colors at present: ecru and silver-grey. Although the ecru color is one of the most frequently used colors in Armenian sashes, we cannot exclude that in this case, it can be a result of post-depositional conditions in the crypt, and its original color was different. The silver-grey color, on the other hand, results from the high silver content in the metal thread alloy, and it served for ornament motif shaping. These motifs include geometrical compositions and tendrils placed alternately. The length of one field is always composed of three flattened, hexagonal medallions, ending on both sides with three, small leaf. The center of each medal is filled with an image of an eight-petalled flower, or a rosette. These pattern elements are separated from two neighboring fields with a simple motif of the single-line checker. Another pattern is composed of tendrils with turned four-leaf motifs, symmetrically joined, using big diagonal leaves with tiny serrated edges. Tops of flower calyxes are finished with two symmetrical leaves. The ornament of the massive sash body is separated from the vertical strips with two triangle columns of 0.6 cm. Identical ones are along the textile edges, but asymmetrically – on one side there are two columns, on the other – only one. Vertical stripes are composed with flower tendrils with regular semicircular twists. Semicircles made in this way contain single flower motifs of two kinds. The stems have flowers, single leaves and buds.

Analyzing the ornaments and taking up comparative studies with archaeological materials and museum deposits (sash collection of the National Museum in Kraków), we can assume that it is an example of an Armenian sash (Majorek 2013, 204; Grupa 2019, 169–172).

Persian sash (?)

The second belt found in Łuków is actually part of the lining in an Armenian belt (described above) fastened, using a long straight stitch, about 6.5 cm. Its length corresponds with the longest part of the sash discussed above – 94 cm (Fig. 4) and was the first discovery of its kind to date. There seem to be two pos-

Fig. 4. Łuków. Persian sash (photo by J. Jarosz).

sible explanations for lining the Armenian sash with another one. First – the lining served as the other sash filling, being an additional element making the sash thicker. The thickness of both textiles is a counterargument to that explanation. The Armenian example is a solid sash, and it makes the textile much thicker than the soft analyzed sash (the sash might have originally contained a significant amount of metal thread, which was completely destroyed due to prolonged usage). On the other hand, contrary to what we can observe on 18th-century portraits, sashes in everyday use were folded many times (width of 6–8 cm). Signs of folding are observed on every intensely used item, and this is the case with these two sashes. The folding width is about 6.5 cm. Even thin textiles folded several times give an impression of thickness. The other explanation is very practical – the user wished to protect a very worn-out Armenian sash from further damage by lining it with another textile, however, the real effectiveness of that treatment remains unknown. Nevertheless, it is certain that for the 18th-century user of the Armenian sash, the one used as the lining was not of great value.

The sash was cut to 27 cm in width and the edge was finished with an overhand stitch. It can be supposed that originally it had been twice as wide. However, some reservations should be made since only the central long part has been preserved, without its heads. Analysis of that fragment proved to be difficult because the original colors have not survived. Only by using proper light were we able to observe a red glow every second field (at present it is light beige color). The fields are 23 cm long and wide – 2.7 cm and 3 cm. In some sections, sizes differed due to substantial bulging and loosening of the fibers. Looking at the first narrower field pattern, we can see a geometrical ornament with a motif of flattened oval medallions, made by stylized branches and a rosette in the center, built on an X-letter plan, with small isosceles triangles between its arms. Every second geometrical field is moved, and they are separated from the ones with branches with simple single-line checkers. Tendril fields contain two kinds of floral motifs. S-shaped sections have a reversible flower motif from their profile with a calyx emerging from a leaf base. The other element consists of a flower presented frontally, with symmetrical short branches. Geometrical fields are the axis of symmetry for fields with branches. A vertical strip 2 cm wide is decorated with a branch ornament and three kinds of flowers (Fig. 5), two in profile and one in frontal projection. The frontally shown flower is equipped with four symmetrical branches. Two of them have buds of calyxes turned apart from each other, with single leaves touching branches growing from the frontal projection flower tops. The tendril goes through calyxes to the last flower motif with two short branches with trifoliate bunches. Branch fields and strips as far as floral motifs appear are in a sequence: 1, 2, 3, 2, 1. The ornament decorating the sash length is separated from vertical strips with a simplified motif of a medachyl, sized 0.8 cm. It appears analogically on the other side of a vertical strip, at the textile edge.

The exceptional precision in drawing, rich ornamentation, and the original sash width, being about 60 cm, all indicated that we should attribute the analyzed object to Persian production.

Despite large-scale queries, we did not find analogical designs for the geometrical fields. Similar me-

Fig. 5. Close-up of the string of the Persian sash (photo by J. Jarosz).

dallions, although not identical, were detected on two sashes from The Metropolitan Museum of Art with no MMA 33.18.80 and MMA 15.70.02, on an artefact from Centralne Muzeum Włókiennictwa [Central Museum of Textiles] in Łódź with no CMW 944/Z/156, and in a sash from Tokyo National Museum with no TI 510. All these four examples of Persian sashes' medals are almost identical, and they present the same four-petal motif in the center, surrounded by dense plant branches. In comparison with the analyzed object, that motif replaced a rosette which is also circled by plant branches that do not touch the rosette directly but only surround it. Branches in geometrical fields are also less sophisticated in their form, shaping only the general outline of the medallion.

Lyons sash from Łuków

A silk Lyons sash is the last artefact of that type excavated in Łuków (Fig. 6). It was found under the coffin planks in the ossuary located against the western wall of the northern crypt under the presbytery. It was deposited there together with other historical textiles, like silk gallons, and fragments of silk fabric rimmed with plaited string with small geometric patterns, which turned out to be the relics of a classical czechman coat.

The Lyon sash was preserved in the best condition compared to the two others excavated in the crypt, which may have resulted from the shortest period of its use. In spite of the unfavorable post-depositional conditions, causing numerous spots (microorganisms decomposition) and torn fragments (Grupa 2007, 209), the sash has been preserved practically with unchanged colors in many places, consisting of four distinguished colors: brown, beige, red and blue. This two-sided object presents only three colors on one side, because if the background on one side of the geometrical field is red and the ornament is beige, on the other side the ornament is blue and the background beige. A similar situation is observed in the case of other fields and branch strips – on one side the background and the field filling are beige with ornament contours shaped in brown, and on the other side, it is the other way total. The total length of the preserved sash is 368 cm, although, despite three longer fragments, the others are loose pieces of various sizes. One part, including the object's head, is lined with tassels (Fig. 7). A 10 cm long tassel is the only sash element made of metal threads with silk core, therefore the object can be classified as a soft sash. Its width was estimated as 31.5 cm. Signs of folds running along the length evidence that it was folded for the width of about 8 cm. Each field has sizes of 24 ×

2.2 cm, while the strips are 2.2 cm wide. In horizontal strips situated near the tassels, signs of repairing (darning) are visible.

Similarly to other examples of sashes, we are able to distinguish two kinds of fields – geometrical and branch ones, appearing alternately. Geometrical fields include four pairs of isosceles triangles arranged symmetrically to one another, separated by small rhombi which mark the lengthened axis of these fields. Each triangle with the longest arms includes three smaller isosceles triangles inside. The triangles separate the main ornamentation motif of these fields, which is a four-petal flower surrounded by six teardrop shapes. These elements are surrounded by sharp arches joined together, which – together with their background create a shape of a medallion. Similarly to the Armenian sash analyzed earlier, geometrical fields in this example have their constant position as follows: half of a medal, three medals, and half of a medal. The pattern of branch fields includes a simple vegetal ornament, which also appears on vertical and horizontal stripes. They are trapezoidal bent branches with two floral motifs placed alternately – carnations and geometrically stylized roses. All edges of fields and strips are matches the simple motif of a zigzag.

In contrast to the other two sashes, in this case we were able to observe the ornamentation composition of heads. Although a relatively small fragment of the

Fig. 6. Lyons sash (photo by J. Jarosz).

Fig. 7. Head of the Lyons sash (photo by J. Jarosz).

head has been preserved, compared to a collection of PRELLE, a complete reconstruction of the ornament was possible (Taszycka 1994, 7–32). Sample no 3128 (a product of the PRELLE manufactory) demonstrates a motif of two geometrically transformed shrubs set on small mounds, covered with symmetrically placed flowers. The composition is based on ornaments from Persian sashes.

As with most Lyons sashes, this object is made using the technique of classical lampas with upholstery. It is a textile with a double warp and many weft compositions. The pattern is obtained by interlacing additional wefts with a binding warp, the background is made by combining the basic weft with a figurative warp. One of the wefts creates a pattern, which in the obverse is seen solely in small elements, and the pattern outline makes it in reverse of the background surface. In the case of the Lyons sash from Łuków, we can observe this by comparing the obverse and reverse geometrical fields. Identical branch fields are detected in sample no 5246 from the collection of PRELLE, and very similar ones in the object from the collection of the National Museum in Kraków, inv. no MNK XIX-8259. Branch fields in the latter are only different in terms of the color of the sash half, as it is four-sided. In both, geometrical fields are identical and present motifs of "szelążek" coins against the background of lengthened, flattened hexagons, between which there are isosceles triangles of the same construction and place as in the Lyons sash found in Łuków, having only broader bases and joining with one another with their tops.

Unfortunately, to date no other sash with identical geometrical fields has been excavated. We have similar examples with sequences of flattened hexagonal medallions filled with symmetrical stylized plant ornament, composed on a crossed axis with four-leaf forms in the middle, which are in turn placed inside rhombi. Between these medallions, there are, like in the Lyons sash from Łuków, motifs of isosceles triangles, but they stick to one another with their tops. The fields described above were observed on an unmarked sample from the collection of PRELLE, presented by M. Taszycka (1994), and the sashes from the National Museum in Krakow with inv. no MNK-2499, MNK-2487, and MNK-2320 (Taszycka 1994, 30). On each of them, there is one of two kinds of ornament: vertical and horizontal strips of significantly stylized branches. Besides the geometrical fields described earlier, each of the sashes has fields with the same branch ornament, with two kinds of axis floral motifs joined symmetrically with branch sections and a leaf in the middle.

Heads, strips and branch fields' ornaments, presence of gold thread limited only to tassels, using red and blue colors creating a base surface of obverse and reverse, identical with samples from the collection of PRELLE indicate the origin of the examined sash as coming from the workshop from the Company of Guyot, Germain and Dechazelle (Taszycka 1994, 11).

Summary

The kontush sashes presented in the article were divided into three types, defined by their manufacturing technique and ornamentation patterns used, which helped indicate their supposed origin and the trade routes through which they had been transported to find their final destination in the northern crypt in the church of the Elevation of the Cross in Łuków. Despite the differences in ornamentation motifs, they all (three) used the Persian division into heads, fields and strips (Mańkowski 1938, 114–117; Grupa 2005, 94–95).

The item defined as of Istanbul/Armenian origin presents characteristics typical for that group of sashes; it is a double-layer textile, where patterns were introduced using a technique called "taqueté reversiblé", hence the color used on one side is the reverse of the other side. Moreover, characteristic patterns were used, with popular axis four-leaf motifs joined by big diagonally situated leaves with serrated edges. Despite one sash being used to line another sash, the only element distinguishing it from similar ones is an absence of moving every second field with geometrical ornament.

In the case of the "Persian" sash, estimating its univocal origin is impossible; it may have had original possessed Persian sizing and characteristics: the high precision of the art and rich ornamentation directly imitate Persian patterns. However, the object's condition interferes with and limits the complete analysis of the ornaments used and the technique of manufacturing.

The last presented object was estimated as being of Lyons origin thanks to the comparison with the PRELLE collection discovered in 1972, including samples of sashes manufactured by the Company of Guyot, Germain and Dechazelle. The studied artefacts have identical head ornaments, strips and branch fields, the presence of gold threads is limited only to tassels, and the use of red and blue creates surfaces with an obverse and reverse, which indicates that the analyzed material comes from that workshop.

The kontush sashes coming from archaeological excavations are perfect additions for museum collec-

tions. The objects confirm in every case the way they were used since regardless of their original width, every example was folded to obtain a 6–8 cm belt, which enabled free movement of the person wearing it and was convenient for joining other leather belts for hanging sabres, being used both in combat and as an element of ceremonial national costume. Nobles and members of the aristocracy were very careful about these details, which emphasized their belonging to the leading social group in the Polish Republic. The Sarmatian idea treasured for centuries was also affirmed by this special attire, and a kontush sash was one of the indispensable elements of Polish national costume.

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Igor Dabralet[1], Jakub Michalik[2],
Małgorzata Grupa[3], Barbara Gałka[4]

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[1] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: igor.dobrolet.98@bk.ru; ORCID: 0000-0002-4442-5479
[2] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: michalik@doktorant.umk.pl; ORCID: 0000-0002-7495-2528
[3] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: m.grupa@wp.pl; ORCID: 0000-0001-5128-9754
[4] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: bgalka2709@gmail.com; ORCID: 0000-0002-1628-7232

A Double Child Coffin from the Southern Crypt of the Holy Trinity Church in Radzyń Podlaski (19th Century)

Abstract

Dabralet I., Michalik J., Grupa M., Gałka B. 2022. A Double Child Coffin from the Southern Crypt of the Holy Trinity Church in Radzyń Podlaski (19th Century). *Analecta Archaeologica Ressoviensia* 17, 89–100

The lives of children in the past were both ephemeral and fragile. The birth of a child, although expected and prayed for, was inevitably connected with the fear of death of both the mother and child, and every childbirth was a kind of a challenge. Unfortunately, in many cases, it finished with death during the delivery or just after. Surviving childhood safely was a constant struggle for the smaller members of a community. This information is evidenced during archaeological explorations of churches and burial grounds. No matter whether they were rich or poor, death took its toll on every social group. There was only the difference in the way of burial ceremony and accessories attributed to it. Some of the child burials were comparable with the richest burials of adults. One of them, a burial in a double coffin, attracted archaeologists' attention at the very beginning of exploration in Radzyń Podlaski. A child burial in a double coffin can be classified as a unique find, not only in the area of Poland but also in Europe.

Keywords: child, crypt, coffin, wood, microscope, 19th century, Radzyń Podlaski, Poland

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History of the town and the church

The history of the town of Radzyń reaches back to the 15th century. In 1456 Mikołaj Cybulka and his brother Zbigniew took up the attempts to establish a parish there and they built the first wooden church in Niżna Białka, i.e. in Kozirynek Stary (a part of Radzyń Podlaski, the old name of the town) – Sitkowski st. at present, probably at the site of the present chapel of The Guardian Angels (erected in the 17th century, thanks to the financial support of the vice-chancellor Stanisław Antoni Szczuka, supposedly located on the site of the oldest wooden church). In 1540, the parish priest Jan Kazanowski (buried in the old church of the Holy Trinity – the information is not confirmed in any source) converted to Calvinism and donated the Radzyń churches to the dissenters. The church of the Annunciation of the Blessed Virgin Mary was given back to the Catholics in 1583, while the old church of the Holy Trinity remained in the hands of Protestants until the end of the 16th century (*Tygodnik Ilustrowany* 1860, 533–538; *Liber beneficiorum* 1864, 559; Litak 2000, 291–293; Rogalski 2011, 127–128; Hapka 2017, 58–59).

In the middle of the 16th century, the town of Radzyń together with the suburb Kozirynek was rent-

ed by the king to the Mniszech family, who founded here a late Renaissance church of the Holy Trinity and the Annunciation of the Blessed Virgin Mary on the site of the current church of the Holy Trinity. The construction of the church was a drawn out process, lasting nearly 30 years. It was started in 1612 by Jan Mniszech (1541–1612), the Łuków starost and the oldest son of Mikołaj. It can be supposed that the Mniszechs constructed it as a propitiation for the various sins of the family, not only for the participation of the *paterfamilias* in the Reformation movement against the Catholic Church. The church is the work of Jan Wolf, a mason from Torobin-Zamość, and it represents one of the best examples of the so-called Lublin Renaissance (Jarmuł 1995, 15–16; Kurzej 2009, 79–84; Michalska *et al*. 2011, 13; Zawada 2011, 135).

Archaeological exploration of the church of the Holy Trinity in Radzyń Podlaski

The exploration of the crypts in the church was carried out in 2017 and 2018. The program focused on excavating the contents of three crypts, two situated under the chapels (northern – under the chapel of Our Lady of the Rosary, and the southern one – under the chapel of Jesus), as well as one in the nave (Fig. 1). Our main goal was not only to document and estimate the state of preservation of these three crypts, but also to identify the burial of Konstancja from the Szczuczyna branch of the Potocki family in the southern crypt. The works in the two remained crypts were limited to conducting basic documentation.

The southern crypt was the same size as the chapel above (4.5 m long, 2.5 m wide), and was prepared at the request of Konstancja Szczuczyna, who lived in a palace opposite the church. Despite the fact that her husband Stanisław Antoni Szczuka and their four children (Michał, Anna, Jan, and Marcin) were buried in the family crypt in Szczuczyn (Dudziński *et al*. 2013, 15; 2015, 48–57, 84–86; Grupa *et al*. 2014, 60–63), she wished to be laid to rest in her favorite place where she had spent most of her life. Hence, her wish concerning the southern crypt, the planned place of her eternal rest. Entering the crypt, one can appreciate the care taken with implementing all of the projects ordered by Konstancja. The architecture of the interior was

Fig. 1. Radzyń Podlaski. Plan of the Holy Trinity Church with marked crypts (drawn by T. Dudziński).

Fig. 2. Radzyń Podlaski. The interior of the crypt under the Chapel of Our Lady (photo by J. Michalik).

comparable to the structures of other churches of that time (Grupa *et al*. 2015, 11–14), although it differed in terms of the wall decorations. They are usually whitewashed, with one exception of the southern crypt in Byszewo (Nowak and Kaźmierczak 2019, 173–183). The Radzyń crypt's walls were covered with frescos associated with *vanitas* subjects (Białostocki 1961, 105; Grupa and Grupa 2015, 92). The southern wall had images of two dancing skeletons (Fig. 2), holding in their hands a spade and a scythe, and a sandglass and an axe. It seems that Konstancja Szczuka had planned her funeral ceremony precisely together with the place of burial. Frescos and a bier standing in the middle of the crypt were decorated by the same person who put his signature there in 1733 and this is the same year in which Konstancja died. The brownish color of the painting is not probably identical with the original one. It might have been originally a red paint (it can only be confirmed or denied by archaeometrical tests), but time and microbes have changed it to brown. It is difficult to establish how long she had been deposited on the catafalque and if she was the only person buried in the crypt at the time. One thing is certain – in the 19th century, the next burials were deposited there (it may have happened at the end of the 18th century), and her coffin was removed from the bier and placed behind it. Examining the decomposing relics of a wooden coffin mixed with rubbish, we were able to decipher information concerning Konstancja Szczuczyna, the Lithuanian vice-chancellor's spouse, on two small coffin sides (Fig. 3). The catafalque was occupied by a child coffin, in fact, two (double) coffins with the shield informing about the burial of three-year-old Antonina Bronisława Załoziecka.

Description of the child's coffin

The child coffin on the bier was the only complete and undamaged coffin in the crypt, therefore it was possible to make a detailed descriptive and photo documentation of the object and take some samples for analysis. The coffin was painted black, with the inscription painted with white paint from the head side: "R. P.", the date "1838". On the same side of the top, on the chest, there was a Christ monogram "HIS", with a cross emerging from central part of the letter H, with the symbol of a blazing heart below (Fig. 4). The external coffin was 117 cm long, head side 58 cm wide, feet side 38 cm wide, head side's height – 52 cm, feet side's height – 43 cm. Particular coffin planks were joined together using the wedging method, cutting in two

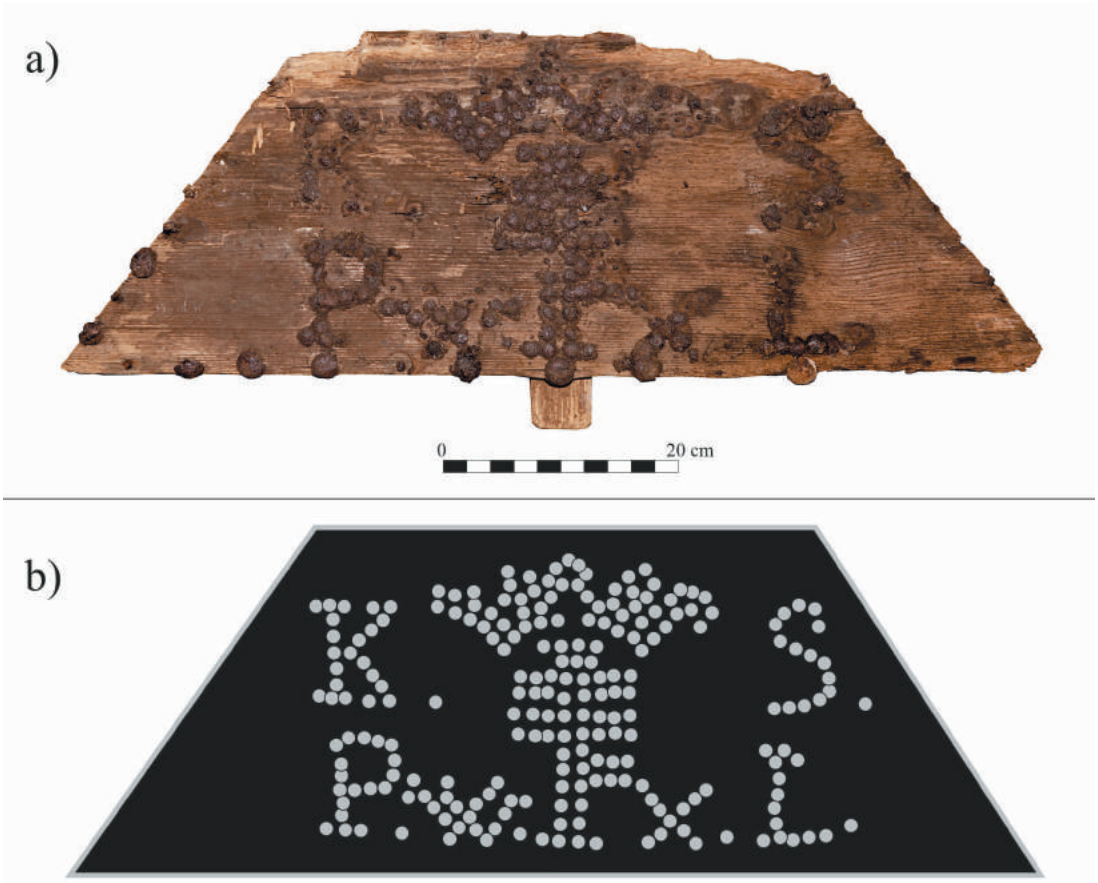

Fig. 3. Radzyń Podlaski. The top of the coffin of Konstancja née Potocka Szczuczyna; reconstruction of inscriptions arranged from studs (prepared by W. Nowosad, T. Dudziński, J. Michalik).

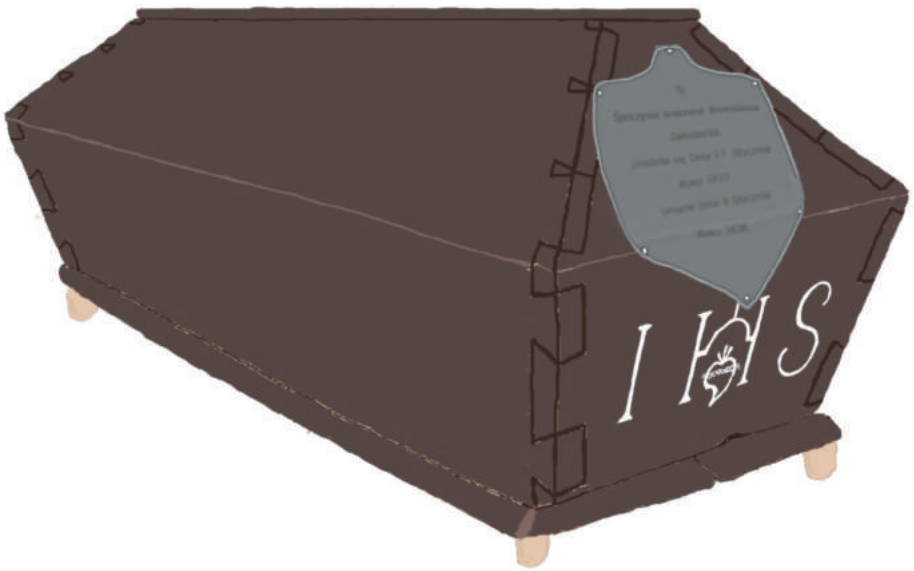

Fig. 4. Radzyń Podlaski. External coffin belonging to Antonina Załoziecka (drawn by I. Dabralet).

joined elements tenons placed in special holes, sometimes strengthened with glue (Skuza 2006, 49). Signs of the carpenter's indention made with a sharp instrument are seen, which were helpful in cutting tenons and holes in the right place. To make these precise works, craftsmen used a small handsaw, a chisel, and a woodcarving knife (Skuza 2006, 49). Having joined together the side and top walls, a bottom was added, usually made of one broad plank, sometimes two, glued together. The side walls and the bottom were fixed together with wooden pegs (Skuza 2006, 49–50). The coffin rested on four wooden legs narrowing downwards, 5 cm high, with a diameter of 2–3 cm.

The external and another one inside (Fig. 5, 6), are 102 cm long, 48 cm wide at the head side, 28 cm wide at the feet side, 44 cm high at the head, and 32 cm high at the feet. The planks are also worthy of our attention because they were decoratively polished and made the impression of being decagonal. Only wooden pegs were used to fix all the construction. The coffin also had four decorated legs, made of precisely cut square wooden blocks 5 cm high, with sides of 10 cm.

The internal coffin was unpainted, with the bright natural wood color remaining. The head side also had the inscription "R. P." and the date "1838", painted (or rather drawn) in black, using a thinner tool than in the case of external coffin inscription (Fig. 5, 6). The coffin cover was equipped with the sign of the cross, consisting of two beams topped with a trifoliate shape. The

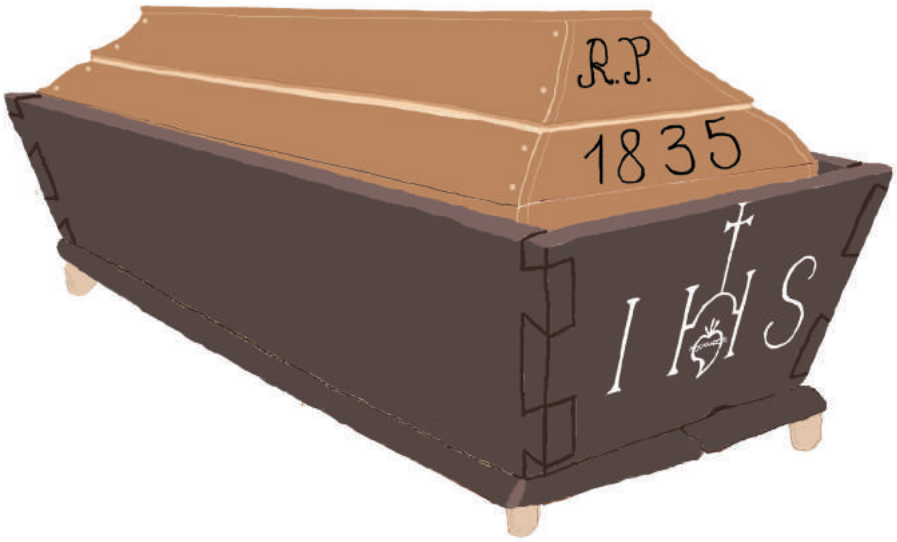

Fig. 5. Radzyń Podlaski. Burial of Antonina Załoziecka after removing the lid of the outer coffin (drawn by I. Dabralet).

Fig. 6. Radzyń Podlaski. The internal coffin belonging to Antonina Załoziecka (drawn by I. Dabralet).

precision in the cross outlines suggests that the carpenter used a readymade pattern or a ruler to make it.

The holes and scratches present around the girl's coffin are also worthy of our attention (Fig. 7) because they were not made intentionally and are not man-made products. The permanent visitors and crypt inhabitants are their authors: animals (e.g. small rodents, cats, martens), which enter crypts most frequently through ventilation holes, attracted by peaceful solitary places, which are cool on hot days and provide protection from the cold in winter (Grupa *et al.* 2015, 15, 36–37; Grupa 2019, 193–195). The Szczuczyn crypts reported pine marten activity and the presence of a mole, whose mummified remains were spotted among the coffins.

Coffin signboard

The coffin board was placed on the external coffin and it was lying on the coffin top when archaeologists entered the crypt, although signs of nails indicated that it had originally been fixed to the top, from the head side. It was cut from a steel sheet and its sharp edges were turned downwards. The tin was 32.5 cm high, and 25 cm wide. The inscription carved on it enabled us to identify the dead girl: "Here Antonina Bronisława Załoziecka rests in peace. She was born on 17th January 1835. She died on 9th January 1838" (Fig. 8). The decorative shape of the board suggests that its intention was to be placed on the internal coffin, more precisely at the feet. The decision to make another external coffin may have been taken after the board had been prepared or it was meant to be visible when entering the crypt, therefore it was placed on the external coffin from the head side. Thanks to the nail holes, we were able to reconstruct the place in which

Fig. 8. Radzyń Podlaski. Coffin plaque of Antonina Załoziecka (photo by J. Michalik).

Fig. 7. Radzyń Podlaski. Traces of animal activity on the coffin (photo by W. Nowosad).

it was fixed – one hole was on the lid in the upper part from the head side, and another one on the chest in the central part of the top. The board was too small to cover all of the coffin top with its surface.

Coffin wood analyses

The exploration in Radzyń Podlaski delivered numerous samples of coffin wood, including the one belonging to Antonina Załoziecka. They were taken from the inside part of the coffin's feet side and from the joints of the external chest. We were unable to obtain test samples from the joints of the internal coffin, mainly due to the poor condition of the pegs and the risk of damaging the historical object.

In the Toruń Laboratory, wood samples were examined to identify wood growth ring composition and to find the perfect section to chip off thin slices of wood tissue for tests. Wood tissue structure observation requires uncovering and flattening a small section of an object on three surfaces (transverse, tangential, and radial). The identification process of these wood elements was performed using a microscope with transmitted light (Scope.A1, Zeiss, with the magnification of ×50–200, and a microscope with reflected light, Leica M205 C with a Leica MC190 HD camera). Moreover, to observe objects using the microscope with transmitted light, it was necessary to take additional thin slices from three surfaces. The collected slices were placed on microscope slides and tested in order to identify wood types, comparing them to the database from the catalog of F. H. Schweingruber (2011), P. Greguss (1959), D. Grosser (1977), and its online version (Schoch *et al*. 2004). Observing general differences in the anatomy of transverse composition, it was possible to establish that the coffin was made of a deciduous wood – diffuse-porous, without a clear distinction between early and late growth rings. The next step was to identify more particular dependences and common features in tissue structure, which could be helpful in obtaining a more precise identification.

The wood of the external coffin was identified as alder. Its tissue observed in the cross-section has irregular vessels joined in groups in radial rows from 2 to 7. Alder wood characteristics are bending the border of annual growth in wood rays. In the tangential section, wood rays are homogenic and most often single-layered , built of 4 to 10 narrow cells, separated by one or two layers of fibers. In both longitudinal sections, ladder vessel perforation is seen (Warywoda 1957, 162; Grosser 1977, 96; Schweingruber 2011, 170; Antkowiak 1999, 34–35; Kokociński 2005, 130).

The internal coffin, in turn, was made of linden wood. In cross-section, the vessels are irregular and are combined radially into nests from 2 to 6. Wood rays are placed widely and are laminated, evidently expanding at the border of annual growth. In the longitudinal section, on vessel walls, the clear thickness of the spiral composition is visible. Fibrous coils with spiral thickness are also seen (Warywoda 1957, 128; Grosser 1977, 186; Antkowiak 1999, 38, 41; Kokociński 2005, 132).

Coffin contents

The coffin contained a child's relics and fragments of grave goods. As the board informs us, the burial should belong to A. B. Załoziecka. The skeleton was incomplete, with only single bones being preserved and a skull with a mandible which was helpful in estimating the child's age at three years. Apart from the bones, the coffin included various haberdashery products of different widths, made of silk, which might have decorated a linen grave gown. Half of the child's skull was colored red, perhaps indicating the decomposition of a dyed bonnet (linen, woolen). We can also assume that the bonnet was decorated with a wreath of artificial flowers which were also red in color because such flowers were found inside the coffin. Silk flowers were fixed to iron stems (Fig. 9, 10). Around the girl's feet, archaeologists found painted leather laced boots, which might originally have also been red.

Antonina's burial – exceptional or common?

A child burial in a double coffin is a unique find since to date we have only found such burials in the cases of adult and eminent persons, and who usually died far from the place of their eternal rest. St. A. Szczuka died in Warsaw at the end of May 1710, and he was transported to Szczuczyn, where he was buried in a catafalque in his family crypt. His body was placed in two coffins and this is perhaps unsurprising due to the long distance of transportation and the warm May temperatures (Majorek and Grupa 2013, 76–77). However, the burial of Antonina in a double coffin is rather curious. Her date of death is placed on the coffin board, and the date of the funeral is reported briefly in the death register of Radzyń parish on the day of 1st February 1838. In fact, there is inaccuracy in this note, as the source informs us of her death one day before, in the afternoon (Fig. 11; *Księga urodzeń, małżeństw i zgonów* 1838, 91). This difference can be

Fig. 9. Radzyń Podlaski. The remains of Antonina Załoziecka in an inner coffin (photo by S. Nowak).

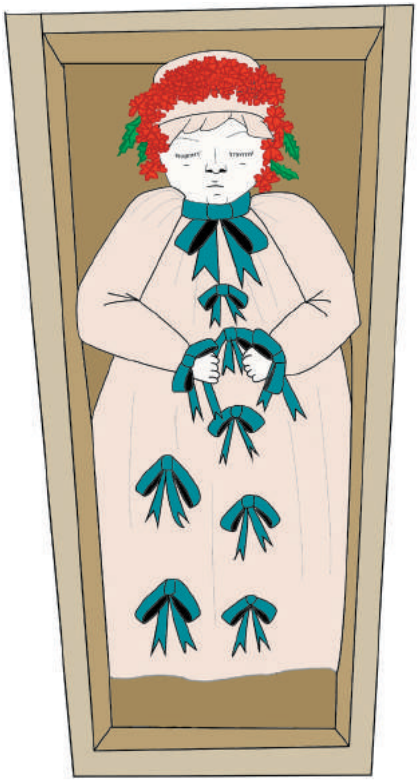

Fig. 10. Radzyń Podlaski. Reconstruction of the sepulchral attire of Antonina Załoziecka (drawn by B. Gałka).

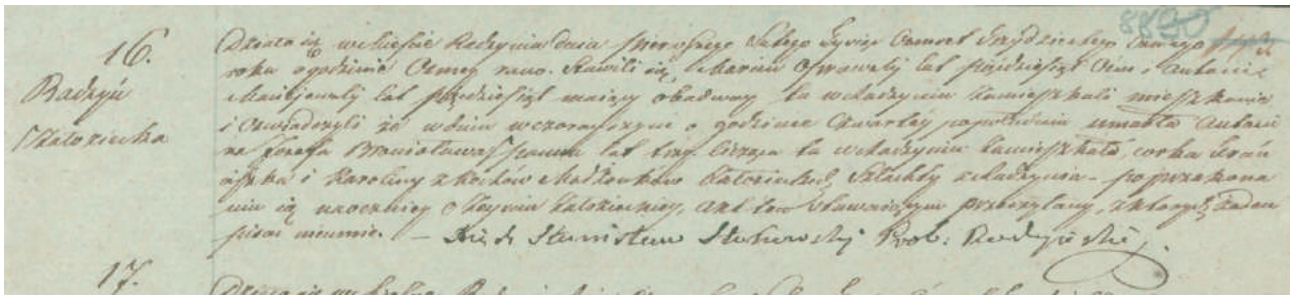

Fig. 11. Radzyń Podlaski. Note from the death register on the death of Antonina Załoziecka (photo by W. Nowosad).

explained in many ways, although nothing is known about the circumstances of her death. She might have died away from Radzyń and been brought home as late as the 31st of January, which could explain why her body had been placed in two coffins. However, since it was January and the temperature was almost certainly low, there was no danger of rapid bodily decomposition. Yet here we should remark that the profession of the girl's father is probably very significant. He had been a medical doctor since 1829 and he was aware of all the dangers resulting from any delay in burying a dead body. He had contact with death every day, and his participation in the November Uprising only increased that knowledge. Dr. Franciszek Dobina Załoziecki, together with General Chłapowski, crossed Prussian border after the defeat of the Uprising, possibly saving him from exile to Siberia. After the amnesty decree and swearing allegiance to the Russian tsar, he was allowed to return to Radzyń and practice as a poviat vice-doctor (Jabłoński 2003, 105–108). In 1833 he married Karolina, a daughter of Jan Oświata Koch, and two years later a daughter Antonina Józefa Bronisława was born. The reasons for her death are unfortunately unknown but she was certainly a beloved daughter and her premature death was a disaster for her parents. Her burial in the southern crypt at a time when there were already strict regulations prohibiting burials inside churches can be proof of that parental love.

The perception of a child's position in a family during the late Middle Ages and modern periods was reported in the literature as unimportant, increasing with time and the development of medicine. There existed a schematic opinion that a child was only valued when it grew, achieving some age and the prospects of its premature death decreased to some extent. This was meant to be due to the much higher rates of infant mortality as a result of childhood diseases such as scarlet fever, measles, influenza, and others. Low levels of hygiene also generated favorable conditions for the development of food poisoning and diarrhea, which dehydrated younger and weaker organisms (Kizik 1998, 22; Grupa 2005, 28). The high fertility rate in families and frequent deaths supposedly meant that the deaths of children in the Middle Ages and in modern times were treated as inevitable. The situation changed a little at the end of the 16th century, when children started to be treated as a part of a functioning family, although mortality amongst them was still very high. From birth until the age of one, only about 65% survived, until the 5th year – about 45%, and maturity was only achieved by 35%. This proportion applied to all children, regardless of their family wealth, status, or access to medical care. Evidence for this claim would be the examples of the premature deaths of the children of Stanisław A. Szczuka and Konstancja from the Potocki branch of the Szczukas (Szymańska 2010, 28; Kozłowski and Krajewska 2013; Grupa *et al*. 2014, 13–14).

However, the latest archaeological explorations negate the general opinion that referred to child deaths as unimportant and neglected. During our studies, we found rich child burials in decorated coffins of expensive wood, buried in locations reserved for eminent Church people or nobles, and in graves dug inside churches and crypts (Grupa *et al*. 2014; Grupa and Łukaszewicz 2019, 137–139; Dudziński *et al*. 2020, 248; Kolaska *et al*. 2020, 57–70). These rich coffins, deposited in important places, could not have belonged to children who were indifferent to their parents.

The case of Antonina Załoziecka's burial depicts the important role of a child in a family, despite their young age. The fact is also confirmed by the fact that the girl was buried in clothes decorated with silk bands, wearing leather boots, and with a wreath of artificial flowers imitating red poppies. What was untypical for a child burial was the use of a double coffin made of an untypical wood, since coffins are usually made of pine or oak. The coffin was placed on the catafalque occupied originally over one hundred years before by the vice-chancellor's spouse, Konstancja Szczuka from the Potocki family.

The external coffin was made of alder, which is soft and easy in processing and valued for its orange-red color (Krzysik 1975, 648). It was commonly used as a main component of brown, black, and violet dyes for textiles (Fischer 1938, 13; Maciej *et al*. 2011, 361; Kujawska *et al*. 2016, 233). In the case of superstitions and beliefs concerning this wood type, opinions differed within communities. Some attributed devilish properties to it due to its red bark, while others saw it as a protective tree. During Pentecost, festive branches of black alder decorated windows and doors, and were meant to protect houses from storms, heavy rains, and thunder (Bystroń 1960, 61–62; Maciej *et al*. 2011, 359–360; Koprowska-Głowacka 2016, 127; Kujawska *et al*. 2016, 233–234). This wood type was also frequently used in furniture manufacturing. It perfectly absorbed dark paint and was applied to make an imitation of ebony wood (Kluk 1778, 30–31; Gerald-Wyżycki 1845, 26).

The internal coffin was manufactured of basswood, which was popular in furniture making due to its easy processing. It is a light wood, easy to chop

(Krzysik 1975, 650). There was a folk saying concerning its usefulness: "it is good for a wooden horn, and a fiddle, and a cradle, and a coffin and a cross for a grave" (Kujawska *et al*. 2016, 418). In Polish lands, linden is treated almost as a sacred tree, bringing happiness, and for centuries it has been regarded as a tree of reconciliation and friendship (Pleszczyński 1892, 100; Kujawska *et al*. 2016, 416). It was also believed that a linden coffin protected the dead from disturbances during eternal rest (Maciej *et al*. 2011, 333). That may have led to the selection of linden for Antonina's coffin.

Typical child coffins were rather cheap. In the 17th century, a Gdańsk journeyman earned 2 pence for making a small unplaned coffin. Extra planing was 2 groshen more (Bogucka 1962, 344; Kizik 1998, 96). In the West, prices were different. In the 18th century in Nijmegen, a child coffin cost one gulden, while a double oak coffin for an adult person cost 16 guldens. A similar price list was prepared in Vienna at the end of the 17th century. A large coffin of cheap wood (one can suppose coniferous wood) cost 3 florins and 30 kreutzers, while a child coffin cost 45 kreutzers (Kizik 1998, 97). It often happened that expensive coffins made for elite funerals were not even included in price lists, as burial expenses were generally extremely high. The small coffin from Radzyń was rather more expensive than standard child coffins, and we can suppose that a double coffin was a cheaper counterpart to a tin sarcophagus, where usually a wooden coffin was deposited.

The burial ceremony preparation was finished by fixing a signboard on the coffin which placed little Antonina Bronisława Załoziecka on the charts of the history of Radzyń Podlaski. Boards informing about the dead person were usually prepared in the case of adults, not children, and they included data on their social status, distinctions, coat-of-arms, and individual information useful in the identification and characterization of the deceased person. They were names and surnames, like in the case of Antonina Załoziecka, dates of birth and death, functions, and notable acts performed for their town or country. Sometimes, short poems commemorating the deceased person or fragments of sermons were also placed on them (Kizik 1998, 99–100; 2001, 207; Grupa 2005, 102–103; Trybuszewski 2005, 64–65). Child boards were not so rich, of course. Similar information was found on the boards of Anna (died in 1619) and Zuzanna (died in 1623) Majerman, who were buried in the presbytery of the church of the Assumption of the Blessed Virgin Mary in Toruń (Grupa 2005, 54–55).

Summary

Archaeological research rarely delivers complete or precise information concerning excavated persons. In the case of children, the possibilities are even more limited, therefore every instance, like the burial of Antonina Bronisława Załoziecka should be treated individually. Luckily, except for grave goods analyses and coffin tests, we were able to study the family history, first of all, her father, a participant of the November Uprising.

As already mentioned, we could not establish the reason of using a double coffin in this particular burial. It is an exceptional find, but is it really unique? There were some other ways of expressing parental grief and honoring the dead, like richly decorating the coffin, adding some ornaments to the grave attire, or *Pompa funebris*. We present various possibilities, but at this stage of the study, we can only make suppositions without any certainty.

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Jakub Michalik[1], Filip Nalaskowski[2]

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[1] Institute of Archaeology, Nicolaus Copernicus University in Toruń, Szosa Bydgoska 44/48, 87-100 Toruń, Poland; e-mail: michalik@doktorant.umk.pl; ORCID: 0000-0002-7495-2528
[2] Faculty of Philosophy and Social Sciences, Nicolaus Copernicus University in Toruń, Yuri Gagarin 11, 87-100 Toruń, Poland; e-mail: filipn@umk.pl; ORCID: 0000-0001-6973-9960

Holy Medals with Secondary Holes as Examples of the Recycling of Historical Devotional Objects

Abstract

Michalik J., Nalaskowski F. 2022. Holy Medals with Secondary Holes as Examples of the Recycling of Historical Devotional Objects. *Analecta Archaeologica Ressoviensia* 17, 101–108

Holy medals belong to a group of historical artefacts known as devotional objects and they appear in this category beside crosses, scapulars or prayer beads. They are regarded as miniature forms of large medals and are seldom made of noble metals, but rather corrosion resistant alloys. Medals occur the most often in an oval form, with a separated loop for hanging, but there are also circular, rectangular or octagonal forms. The work below is an attempt to study a special form of medals – perforated secondarily – as a historical form of recycling. Such a treatment led them to be regarded as retrieved objects, retaining their original function. Studying the manufacturing features of these objects allows us to distinguish between original and secondary perforations. The latter were made when the original eye was broken or lost. The intentions of persons who decided to recycle devotional objects for material, spiritual or mystic reasons are an important part of this paper. The article is based on studies of artefacts obtained during archaeological excavations at sites in Gniew in Pomerania (Poland) and Dubno in Volhynia (Ukraine).

Keywords: holy medals, devotional objects, recycling, Gniew, Dubno

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Introduction

Holy medals belong to an artefact group called devotional objects. They appear together with small crosses, scapulars and prayer beads and traditionally are associated mainly with the Christian faith. As material objects, they are not only of interest to students of phaleristics and sacramentals, numismatists, and specialists of theology and history, but also to archaeologists, because they occur in archaeological sites.

The fact of their occasional appearance in the inventories of archaeological works confirms their popularity and good characteristics of preservation in post-depositional processes. Analysing local (Polish) excavations of recent years, we can observe the presence of devotional objects, including medals, at sites such as: Maniowy (Chudzińska 1998), Lubiń (Białobłocki 1992), Trzemeszno (Wiewióra 1995), Toruń (Grupa 2005a; 2005b, 20–21), Strzelno (Sulkowska-Tuszyńska 2006), Pułtusk (Kołyszko 2007), Lublin (Niedźwiadek *et al.* 2015, 71–82), Płonkowo (Grupa *et al.* 2015b, 40, 46), Sandomierz (Rostkowska 1996), Gliwice (Furmanek and Michnik 2004), Warszawa (Dąbrowska 2012), Wrocław (Pankiewicz and Witkowski 2012; Wojcieszak 2012), Stargard (Majewski 2013), Końskowola (Nowosad *et al.* 2021; Dobek and Michalik 2022) or Gniew (Grupa *et al.* 2015a, 130–134; Niedźwiadek *et al.* 2015, 98; Grupa and Warecka 2018; Michalik 2018; 2020) and others.

This article examines one special form of the appearance of medals, namely secondary perforations, as a kind of historical recycling process. We refer here to more general meaning of recycling, as literally the process means converting waste materials into new

materials, and in the more general sense, reusing an old object for the same or new function. Therefore, the description below treats perforated medals as retrieved objects given a new life.

In addition, we know of traditions of the deposition of consecrated objects, including damaged medals, by burning them, digging into sacred ground or depositing them in coffins or burial pits (Chudzińska 2008, 287). Because we only have medallions with secondary holes available in the archaeological materials, the authors limited their presentation to medals, despite the fact that other devotional articles with remade holes are also present.

What is a holy medal?

Holy medals are miniature forms of larger medals, made rarely of noble metals, but rather of alloys resistant to corrosion. The tradition of wearing and using talismans has been known since the pagan and Gnostic eras. The development of holy medals was a Christian response to the needs of the newly baptized to have a material sign testifying their attachment to God (Pałubska 2008). In the researchers' opinion, one of the hypotheses of the creation of modern medals evolved from wax discs called *Agnus Dei*, with a pressed image of the Lamb of God, distributed to commemorate the Paschal Triduum. Sometimes discs were embedded in capsules or medallions. Originally, medals were only rarely decorated with inscriptions and worn around the neck or on clothes (Szkopek 2008, 22–23; Kołyszko 2013, 78–79).

An oval object with an eye for hanging has been the most popular form since the 19th century, but there were also round, rectangular or octagonal forms. The size of the medal represented a compromise between the clarity of an image (the bigger the surface, the better the image) and the daily practice of wearing it. Wearing a large object was uncomfortable, hence a standard size, measuring between 1 and 4 cm in diameter, developed.

The iconography presented on medals had to appeal generally to ordinary people who were frequently illiterate, helping to shape their morality according to the model lives of saints. Such was the teaching of the Council of Trent, which approved the development of the iconography of images of the Saints. Simultaneously, the Council decried both iconoclasm and idolatry (Pasierb 1987, 19).

Local medal variants issued because of important events should also be mentioned (e.g. a medal with an image of Our Lady of Gietrzwałd, to commemorate Her appearance in the village, situated in Warmińsko-Mazurskie province). Despite the fact that the area belonged to Prussia, it was largely inhabited by Poles who were adherents of the Catholic faith. The parish church was built at the end of 15th century, and the local painting of Our Lady of Częstochowa had been regarded as miraculous by villagers ever since Our Lady appeared in a nearby maple tree to two Polish girls on 27 June 1877, with the site becoming a pilgrimage sanctuary. Pilgrimages to the site continue to this day (Rewoliński 1887, 42; Michalik 2017b, 11).

The other forms of historical objects are two medals of the Sacred Heart (of Jesus) pierced with a sword and an arrow. The obverse presents a symbol of the burning Sacred Heart with a wound on the right and a radial rim. The various shapes of the flames and the radial rim can indicate different workshops or various methods of coining medals. In both cases, the image of a burning heart is surrounded with an inscription in German gothic script: HERZ JESU URQUELL ALLER GNADEN [Lord Jesus, Source of All Grace] (Michalik 2017c, 15). This fact shows that the symbolism on the medals was similar, but differences came down to details that were not significant for the pronunciation of the performance. However, inscriptions in Polish and German occur more rarely than in Latin, which was more popular until the 19th century.

Next, from the 15th century onwards, devotional objects were made using the die cutting technique from a readymade form (Pałubska 2008; Michalik 2017b, 10). In the light of historical material analyses, we can venture the claim that this technique was more popular, although it is difficult today to define particular manufacturing workshops, due to the insufficient knowledge of the problem and the fact that production centres were often anonymous (Chudzińska 1998, 15). Mass, "factory" medals production can be dated from the beginning of the 19th century with a noticeable uniformity in the form of the products (Pisarzak 1979). This "industrialization" did not always mean an improvement in quality, as we can observe how poorer material was used or there was a lack of precision in the stamp making. Examples of this are medals-scapulars produced at the beginning of 20th century of aluminium alloys, whose quality was susceptible to corrosion processes (Michalik 2019).

Pendant forms

Depending on common habits, devotional objects were worn on textile bands and strings around the neck, sometimes exposed on outer garments as

decoration elements. These practices are represented by iconography sources from the late Middle Ages and modern times (Pisarzak 1979; Kołyszko 2013, 236). However, medals were more frequently hidden under garments, and this may indicate a demonstration of personal intimate faith or due to practical reasons. In every case discussed above, the medal had to have a hole, an opening for stringing an object, using a band, string, cord, chain or thread. In die cutting medals, the holes were usually in a separated oval eye (Fig. 1: C), but round eyes are also found (Fig. 1: B). The last hanging form are examples with a "neck" (Fig. 1: D) – characteristic generally for cast forms. The eyes were from 3 to 5 mm long, but of course there were also much bigger medal forms with larger eyes.

Cast medals usually had holes with triangular (Fig. 2: A), semicircular (Fig. 2: B) or tear-shaped (Fig. 2: C) eyes. Perforation could also occur at the top of a medal. The majority of eyes were from 6 to 8 mm long, which in the case of the small holes (having usually diameter of about 2 mm) was at least half of the eye surface (Chudzińska 1998, 21). It sometimes transpired that holes were pierced or drilled too close to an eye edge and this caused them to break quickly (Chudzińska 1998, 21), and the protruding eye construction faced the danger of mechanical damage.

Original and secondary perforations

A significant medal form discussed in this paper relates to medals made without separate eyes, which only have an opening in the upper part of their contour (Fig. 1: A). This type of a hole should be regarded as the original perforation, despite the fact that it was not always pierced, since it could also have been

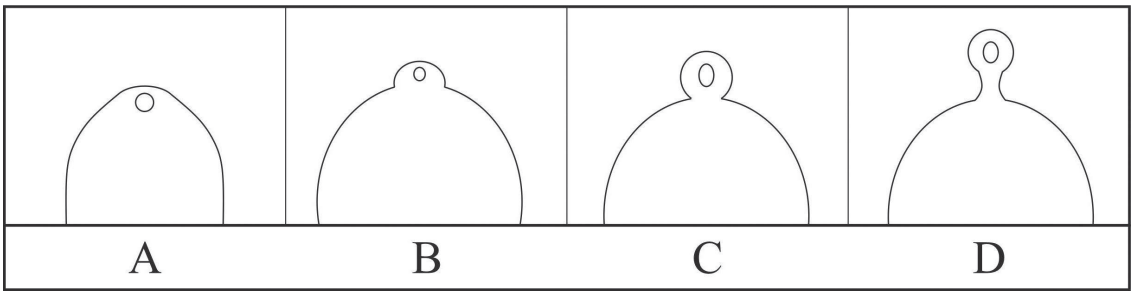

Fig. 1. Hole examples in die cutting medals.
A – on a medal plate; B – on a round eye; C – on an oval eye; D – on a separated eye
(drawn by J. Michalik).

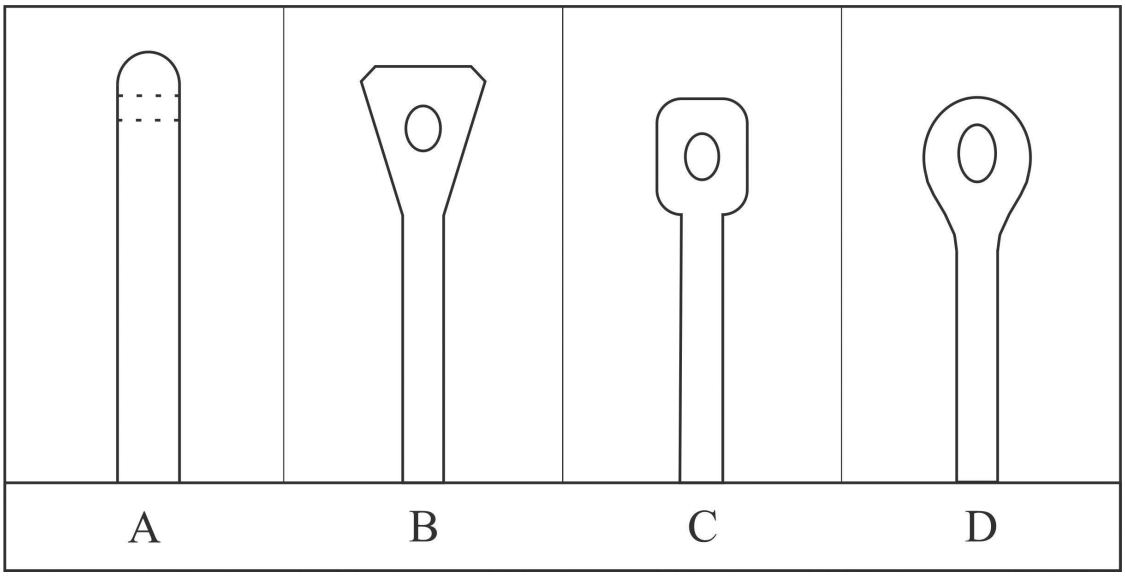

Fig. 2. Examples of holes in cast medals.
A – on a medal plate; B – on a semicircular eye; C – on a triangular eye; D – on a tear-shaped eye
(drawn by J. Michalik, after Chudzińska 1998, 21).

drilled. The whole pendant is in accordance with the artist's intention – hence, it is an integrated artistic composition. The hole is symmetrical and often profiled at the edge.

The following characteristics, namely composition cohesion, decoration, and symmetry, permit us to distinguish original perforation from secondary piercing, which could have been done resulting in the loss of, or damage to the original one. When preparing his medal collection catalogue, entitled *Medale religijne*… (1887), Rewoliński made precise drawings of objects with damaged eyes and secondary holes for a band (Fig. 3: A–C; Rewoliński 1887, no 7, 8, 20, 24, 541, 587, 726, 1007, 1056, 1112). There are numerous examples of such medals which have been found during archaeological explorations, e.g. finds in Dubno (Fig. 3: D; Niedźwiadek *et al.* 2015, fig. 81: A–B), Volhynia (present-day Ukraine).

In the examples presented here, all of the holes are situated in the upper parts of the medals, just below a damaged eye. In some cases, there is another hole at the bottom part or at the top, beside the first one, which could have served for fastening the metal to clothes or joining prayer beads together. What is interesting, secondary perforations were often made close to the edge, on reliefs and inscriptions around, and this has caused problems with deciphering them.

Presentation of selected objects

The situation is not sufficiently always clear for us to be absolutely sure whether the perforations are original or secondary – in this situation we try, using the discussed characteristics, to establish the category into which the object fits. Sometimes eye relics are helpful or as comparisons to similar artefacts.

For example, a medal of St. Benedict represents an interesting type with a hole which is not on a separate eye. This object belongs to a permanent museum exhibition entitled "Sztum i Ziemia Sztumska" ["Sztum and the Sztum Land"], situated in the one-time Evangelical church in Sztum (Michalik 2017a). It is an octagonal medal pressed in tin, not precisely cut with a round hole perforated on the upper part of its surface (Fig. 4). The object's size – 24 x 18 mm and was made by punching in a copper alloy plate. The medal's condition is poor and we are not able to describe its detailed features precisely, except the letters on the cross: CSPB CSSML NDMD and on its rim: IHS VRSNSMVSMQLIVB. The letters do not form a specific word and can seem mysterious. However, these are the first letters of the words that make up the St Benedict prayer: *C*[*rux*] *S*[*anc ti*] *P*[*atris*] *B*[*enedicti*]. *C*[*rux*] *S*[*acra*] *S*[*it*] *M*[*ihi*] *L*[*ux*]*! N*[*on*] *D*[*raco*] *S*[*it*] *M*[*ihi*] *D*[*ux*]*!* [The Cross of [our] Holy Father Benedict. May the Holy Cross be my light! May the Serpent never be my lord!], and *I*[*esu*] *H*[*ominum*]

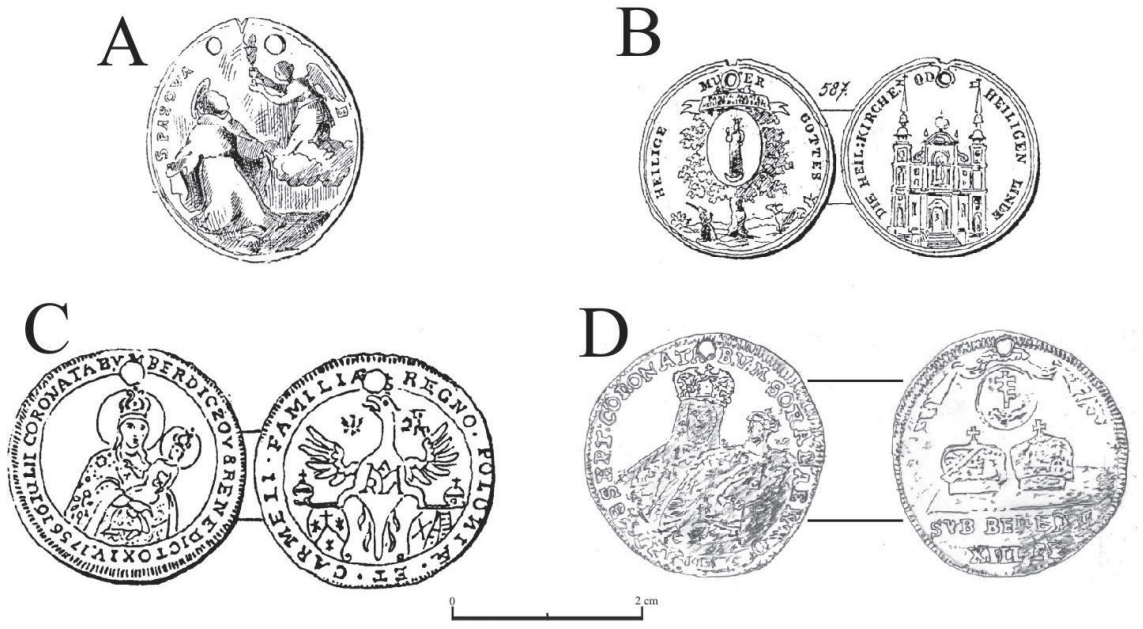

Fig. 3. Examples of medals with secondary holes.
A, B, C – medals from the collection of T. Rewoliński (after Rewoliński 1887, no 7, 587, 1007); D – a medal from Dubno church excavation (drawn by J. Michalik, after Niedźwiadek *et al.* 2015, fig. 81: A–B).

Fig. 4. The medal of St. Benedict from the exhibition "Sztum i Ziemia Sztumska" in Sztum (photo by J. Michalik).

S[*alvato*r]. *V*[*ade*] *R*[*etro*] *S*[*atana*]! *N*[*on*] *S*[*aude*] *M*[*ihi*]! *V*[*ana*] *S*[*unt*] *M*[*ala*] *Q*[*uac*] *L*[*ibas*]. *I*[*pse*] *V*[*enena*] *B*[*ibas*]*!* [Jesus is the savior of humanity. Get you behind me, Satan! Never tempt me with your vanities! What you pour me is evil. Drink the poison yourself!] (Białobłocki 1992, 181). The medal edge is decorated with an ornament of small pearls. The figure of St Benedict figure on the reverse has been considerably worn and eroded, although his long folded habit and his crozier are visible. The reverse rim is also decorated with pearls.

The first images of St. Benedict date back to the early Middle Ages (the fresco from the eighth-century Basilica of St. Ermete in Rome) (Wiewióra 1995, 436). From the 16th century, Italians took to presenting the Saint as a middle aged man with a beard and grey hair, although in regions north of the Alps this image appeared as late as the Baroque period (Seibert 2007, 47). His cult was characterized by devotional objects presenting St. Benedict's prayer on the obverse and the Saint's image on the reverse, and they appeared in the 17th century in various forms – oval, octagonal or knight's crosses (Chudzińska 1998, 30–31). Special powers were attributed to St. Benedict medals, as they were believed to protect the wearer from diseases, the devil and temptations (Sczaniecki 1976, 229). An analogous medal was excavated in material from the site in the village of Maniowy in Podhale (Chudzińska 1998, tab. I), among finds from Lubiń near Kościan (Białobłocki 1992, fig. 3), and Chojnice (Kołyszko 2008). Medals of St. Benedict were also found in St. Joseph's Church in Pułtusk during clearing work in the Wessl Chapel (Kołyszko 2007, 68), and in Trzemeszno, while exploring the monastery complex (Wiewióra 1995, 433).

Another medal worthy of our attention here due to its secondary perforation is a medal of St. Calasanz (Fig. 5). Joseph Calasanz was born in 1557 in Peralta de Calasanz in Aragon (Spain), and he is regarded as a founder of the Piarist Order. He is also the creator of the first free elementary school and a patron of Christian primary schooling. He died on 25 August 1648 in Rome. Joseph Calasanz was beatified in 1748 by Pope Benedict XIV, and canonized in 1767 by Pope Clement XIII (Duchmewski 2000). After his beatification his portrait frequently adorned medals and his name was popular with the Piarist fathers. When he joined the Order, Antoni Karwowski called himself Joachim of St Joseph Calasanz (Dudziński *et al.* 2017, 45). The medal was found during the course of excavations in Gniew in 2012, in the burial located in the southern part of the nave. Its diameter is 22 mm, and the preserved eye fragment is smaller than two millimetres. The obverse presents St. Joseph Calasanz, surrounded by the inscription [S.] [IOSEPH]VS A MATRE D[E]I, which means 'Joseph of the Mother of God', which is one of his names.

Images of St. Joseph Calasanz appear usually in monastic houses and Piarist monasteries. The Saint is presented there as an elderly bearded man in a black cassock and a biretta, sometimes with a lily. Some images add a clerical galero hat and a mitre lying at his

Fig. 5. The medal with St. Joseph Calasanz (photo by J. Michalik).

feet, as a symbol of his rejection ecclesiastical honours (Jacniacka 2000). The reverse has the letters M A, and underneath the letters M P θ Y (Mary's name in Latin and the Greek abbreviation for *Meter Theou*), which together and a circular disk surrounded by rays create the arms *Ordo Clericorum Regularium Pauperum Matris Dei Scholarum Piarum* [The Order of Poor Clerics Regular of Our Lady of the Pious Schools]. The medal was cast from a copper alloy and the eye remains suggest that the hole was placed perpendicular to the medal surface. After mechanical damage probably caused by its long use, a secondary hole was made on its surface and the remains of the eye were filed. The Saint's face was not damaged by moving the hole slightly to the left and into an empty space there. On the reverse side, however, the decoration was disturbed, as it covered all of the surface.

Medals of St. Joseph Calasanz occur rarely in archaeological material. Even excavations in the Piarists crypt in the Church of The Name of the Most Holy Virgin Mary in Szczuczyn did not uncover a single item of that type (Dudziński *et al.* 2017, 11). As *terminus post quem* date for the making of such medals is 1767, when St. Joseph Calasanz was canonized.

A medal from the excavations at Dubno Church (present-day Ukraine) also has signs of secondary perforation (Fig 3: D). It is a crown medal, made specially to commemorate the coronation of a miraculous picture. The Dubno medal presents Mary, Mother of Consolation (Our Lady of Sokal), which is simultaneously one of rarer images of the picture, which was destroyed many times (Niedźwiadek *et al.* 2015, 107). The coronation of this image was conducted by Archbishop Jan Skarbek on 8 September 1724, with the approval of Pope Innocent XIII (Niedźwiadek *et al.* 2015, 107). Due to the importance of this event, the medal's owner, who may even have been a participant in the coronation ceremony, seems to have wished to keep using the medal, despite its being considerably damaged.

An attempt at interpretation

Since the existence of medals with secondary perforations is an established fact, we should consider the intentions of the people who restored them to their original functions. The first is common for all recycling activity: we retrieve an object as it still has material value or its component parts (raw material) are valuable. We repair cars and telephones but recycle drink cans. The situation with medals is similar since they are made of metal (silver, alloys with copper admixture, brass), which have a more or less material value.

Moreover, medals are rather expensive items, considering their material costs and artistic value (sometimes they are small masterpieces). They were valuable when bought, and still valuable even with small defects – most frequently eye damage. The further we go back into the past, the more justified this opinion becomes. Today, commodity mass production is cheap, but when technological and economic conditions were different, the value of products such

as devotional objects was different, close to that of modern jewellery.

We may also assert that accessibility to these products may have been limited as well. They were only on the market in certain places, such as pilgrimage centres – Gietrzwałd in present-day Poland or Loreto in Italy, so repairing an old medal may well have been the only way of having one.

Another type of motivation discussed here is more indefinable – namely spiritual motivation. It is obvious that we are attached to devotional objects in a particular way and they are external demonstrations of our faith and spiritual concerns. Due to such special affection, we often find rosaries in Catholic burials. In the past, depositing devotional objects with the dead was a result of "pompa funebris" which developed in the Baroque, leading to sumptuous burial ceremonies, in contrast with earlier, poor funerals (Kołyszko 2013, 11–12). Despite the paucity of extant textual sources (Fischer 1921, 167–168; Chudzińska 2008, 287) describing the kinds of equipment to be deposited in the coffins of the deceased, we know of such cases from numerous excavation sites.

Taking all these facts into account, it is easy to state why today, in our opinion, we rarely come across medals with a secondary hole. Motivations for such practices weakened because medals became relatively cheap and societies wealthier. We do not pay our particular attention to spiritual values, the *sacrum* of the Church has weakened, and people have become "disenchanted" in some way, particularly in the face of present social-ideological changes. The tradition of repairing medals no longer serves a function.

Summary – old practices, modern ideas

The practice of secondary medal perforations described and briefly interpreted here belong to the past – we do not do it any longer, and archaeological sites of more recent periods do not deliver such finds. Research conducted in the area of the former St. Martin's Cemetery in Poznań, coming from the 19th century and the 1920s, has not revealed any medals with repairs (the authors own studies). As we have shown, conducting repairs meant that damaged medals were not treated as waste, and hence we see historical recycling here, albeit somewhat different from modern practice, and with an absolutely different spiritual attitude. However, the motivation remains the same – it was an attempt to save an object from being thrown away and abandoned.

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REVIEWS

Anna Zakościelna
ORCID: 0000-0002-1487-0117

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(review) Stefan Łęczycki. *Takson Jordanów w dorzeczu Odry środkowej, na południe od obecnego Wrocławia. Cmentarzysko z klasycznego oraz późnego etapu rozwojowego na eponymicznym stanowisku nr V na toponimie Biskupicka Górka, na pograniczu byłych katastrów Jordanowa Śląskiego oraz Wilczkowic, obecny pow. Wrocław* [*Settlement of the Jordanów taxon in the middle Odra river basin, south of present-day Wrocław. Funeral rite at the eponymous Site No V on the toponym Biskupicka Górka, on the border of the former cadastres of Jordanów Śląski and Wilczkowice, the current district of Wrocław*]. Wrocław, Augsburg 2016–2021: author's own release, 226 pages, A4 format, paperback, ISBN 978-83-963506-0-2.

Stefan Łęczycki, an archaeologist educated in Wrocław, Munich and Bonn, has been dealing with the Eneolithic of Central Europe and early copper metallurgy for many years and has published several important publications on this subject. In 2021, he self-published a book entitled *Takson Jordanów w dorzeczu Odry środkowej, na południe od obecnego Wrocławia. Cmentarzysko z klasycznego oraz późnego etapu rozwojowego na eponymicznym stanowisku nr V na toponimie Biskupicka Górka, na pograniczu byłych katastrów Jordanowa Śląskiego oraz Wilczkowic, obecny pow. Wrocław*.

The discussed publication is a monographic study of the Jordanów Śląski (*Jordansmühl*) culture cemetery discovered at the multicultural site V in Jordanów Śląski (*Jordansmühl*), investigated in the years 1898–1911 by Hans Seger and Günther Ullrich. To date, selective information about this object, eponymous for the Jordanów Śląski (*Jordansmühl*) culture, was only available from Seger's articles devoted to Neolithic finds from Silesia. The cemetery was mentioned many times in later literature, with selected remains or their sets being published, but – until Łęczycki's book – it was not fully elaborated and published.

The work, which unfortunately has not been assessed by reviewers prior to publication, has not been published by a professional scientific publishing house. For this reason, the presentation of my detailed, critical comments was abandoned. It consists of five chapters, a list of the literature used, 29 picture tables and an extensive summary in English. The text is illustrated with 50 figures presenting mainly photos of artefacts (vessels, copper, stone, and bone artefacts), as well as maps, skeletons arrangement diagrams and the arrangement of equipment for the deceased. There are also four tables listing the graves according to different features.

Regardless of the number of controversies and critical comments that arise when reading the study – starting from its title, through its construction (which is a reversal of the logical order of this type of work), the fact that the titles of individual chapters are not

always adequate to the content and the use of original (euphemistically speaking) language – it is a very important publication.

The author has done a great job of remains studies, penetrating the archives and museum collections in order to complete these scattered funerary complexes, allowing him to compile a catalogue of objects and reconstruct missing documentation. After more than 100 years, he has made this extremely important object for the Eneolithic of Central Europe available to a wide group of researchers. Łęczycki's book should permanently enter the canon of required reading for researchers dealing with this subject.

Anna Zakościelna

Institute of Archaeology,
Maria Curie-Skłodowska University in Lublin,
M. Curie-Skłodowskiej Sq. 4, 20-031 Lublin, Poland;
e-mail: anna.zakoscielna@mail.umcs.pl

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Elżbieta Sieradzka
ORCID: 0000-0003-2233-3634

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(review) A. Bronicki. *Pierwsi pasterze III tysiąclecia p.Ch. Groby podgrupy wschodniolubelskiej kultury amfor kulistych. Obrządek pogrzebowy. Chronologia*. [*The first shepherds of the 3rd millennium B.C.*]. Chełm 2021: Muzeum Ziemi Chełmskiej im. Wiktora Ambroziewicza w Chełmie, 284 pages.

Andrzej Bronicki is easily one of the most notable researchers specializing in the Globular Amphora culture (abb.: GAC) in Poland. The scholar has conducted extensive field research (e.g. Bronicki 2000; 2007; 2010) and authored several papers discussing more general issues (Bronicki 2016; 2019). His body of work mainly concerns the sites of the Eastern Lublin subgroup of the central group of the GAC, occupying the eastern part of the Lublin region and adjacent areas east the Bug River. The latest book by Bronicki, entitled *Pierwsi pasterze III tysiąclecia p.Ch* [*The first shepherds of the 3rd millennium B.C.*] was designed to act as a culmination of his long and successful period of interest in the issues of the GAC (p. 263). The publication came into being thanks to a research grant of the same name, financed by the Ministry of Culture and National Heritage of the Republic of Poland. Although it is not mentioned in the book, it is worth noting that the monograph was accompanied by an exhibition devoted to the Eastern Lublin subgroup of the GAC, which has been displayed in various regional museums from that area, such as Chełm, Krasnystaw, and Tomaszów Lubelski.

The publication consists of five chapters and is supplemented by a detailed English summary. It opens with a short *Introduction* (p. 7–13), containing a brief review of the history of research as well as the spatial and chronological scope of the volume. The main subject of the book is to describe and analyse graves of the titular subgroup of the GAC, being its most common type of archaeological site. The agglomeration of funerary sites in the eastern part of Lublin region is the easternmost subgroup associated with the central group of the GAC and is separated from other regional clusters by areas with no or very few graves (p. 10). The author decided to assign three graves from Ukraine to the discussed subgroup, as they had been uncovered in close proximity to the "Polish" finds (p. 10). These graves, bearing many characteristic traits of the Eastern Lublin subgroup of the GAC, are typically excluded from studies devoted to the funerary rites of the region (cf. Bronicki 2016). Thus, the decision to analyse them alongside many similar finds should be regarded as a step in the right direction.

The main part of the book is the comprehensive catalogue of archaeological sites (p. 14–205). Its layout, wording, and excellent illustrations recall one of the previous papers by Bronicki, describing the funerary rites of the GAC in the whole Lublin Upland (2016). The writing of this part of the book was preceded by an additional examination of archaeological sources in museum collections as well as fieldwalking surveys aimed at identifying the exact places of the discovery of a few GAC graves. As a result, the catalogue was expanded to include two sites (site 8 in Partyzantów-Kolonia, and site 7 in Zbulitów Mały), newly interpreted as probable remains of destroyed GAC graves (p. 77, 205). There is also the publication of materials from GAC grave no. 1 in Rudno, excavated by amateur explorers back in 1982 (Ścibior 1986, 110–119). The archaeological finds, still in the possession of the people who had uncovered the structure, were collected by Bronicki during recent field research (p. 99). The museum surveys resulted in confirming the present location of many finds from older excavations. An extremely valuable addition are the never-before-published original photos, drawings and plans of GAC graves. I would underline the fact that the illustrations of grave constructions unearthed in the first half of the 20th century BC, such as site 15

in Dobryniów-Kolonia, site 2 in Kryłów, and site 2 in Wola Gródecka, are the only (and first) known visual evidence of the construction details of these graves.

The third chapter of the book contains a short summary of funerary rites of the GAC communities of the Eastern Lublin subgroup. The analysis covers a diverse set of aspects, starting from the location of funerary sites, the spatial organization of the cemeteries, grave constructions, human and animal burials, traces of fire and cannibalism, to grave inventories. The attached multiple tables help to systematize the obtained data. I would like to express just one caveat. The author seems to use the term "Podolian type cist graves" as being synonymous with "cist graves" (cf. p. 211). The classical publication by Marzena Szmyt (1999, 26) defines the former category as *rectangular or trapezoid* [cist graves – ed. ES] […], *constructed from evenly-hewn slabs*. Not all of the cist graves of the discussed GAC subgroup meet this specific criteria. For example, the structure from site 33 in Stefankowice-Kolonia was an oval cist constructed from rough granite blocks (p. 149). On a related note, describing all the cist graves as being of the "Podolian type" automatically establishes the interpretation of such structures as examples of "eastern influences" in the discussed subgroup of the GAC (p. 246). This wording excludes the possible trends from other directions and, perhaps most importantly, their potential local development. Thus, in my opinion, the classification of the forms of cist graves would benefit from being expanded.

The fourth chapter of the book is devoted to the issues of absolute and relative chronology. The monograph brings a new radiocarbon date for the region, obtained for a cist grave from Tarnoszyn (p. 186). The analysis is concluded by an ambitious proposal for a periodization scheme of funerary finds of the Eastern Lublin subgroup of the GAC. Bronicki divided the period of the functioning of the analysed cultural phenomenon into three phases of development – early, middle, and late, each characterized by specific grave types, elements of ceramic style as well as other artefacts found in grave inventories. The presented periodization is one of very few such schemes prepared for materials of the central group of the GAC. While it was based on graves with radiocarbon dates, the author added an inspiring attempt to assign the remaining graves to the identified phases. The book concludes with some brief closing remarks (p. 264–265), containing the main points of the tome and suggested directions for further research.

All things considered, the book *Pierwsi pasterze III tysiąclecia p.Ch* [*The first shepherds of the 3rd millennium B.C.*] definitely makes a valuable read. I would consider it as a model example of a monograph of a small GAC subgroup. The amount of work by Bronicki – not just the field research, but also in trying to locate and compile the existing data of the GAC graves, is truly outstanding. We can only hope for similar publications devoted to the other regional groups of the GAC.

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Elżbieta Sieradzka

Museum in Jarosław – the Orsetti Burgher House,
Rynek 4, 37-500 Jarosław, Poland;
e-mail: elzbietasieradzka27@gmail.com

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Aleksandra Jabłkowska
ORCID: 0000-0002-4836-0801

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(review) E. Tomczak, A. Szczepanek and P. Jarosz. *Gogolin-Strzebniów, stanowisko 12. Cmentarzysko kultury łużyckiej na Wyżynie Śląskiej* [*Gogolin-Strzebniów, site 12. Cemetery of the Lusatian culture in the Silesian Upland*] (= *Ocalone Dziedzictwo Archeologiczne* 11). Pękowice 2021: Wydawnictwo Profil-Archeo, 147 pages.

A monograph of the cemetery in Gogolin-Strzebniów was published in 2022 as part of the *Ocalone Dziedzictwo Archeologiczne* publishing series. The presented publication, by Eugeniusz Tomczak, Anita Szczepanek and Pawel Jarosz, is the first comprehensive presentation of the materials obtained during the excavations of the Late Bronze Age biritual necropolis. In the 1970s, only mentions appeared in the literature in the form of reports on archaeological research (Tomczak 1973; Macewicz *et al.* 1975) and presentations of foundry moulds discovered at the aforementioned cemetery (Tomczak 1975; 2005).

The monograph in question presents a study of the results of the rescue excavations that took place 50 years ago in Gogolin-Strzebniów. The work consists of 11 main chapters, with a clear division into two parts. The first part of the publication is a classical analysis of archaeological material and consists of seven chapters. The considerations begin with an introduction, presenting the history of research at the site and its location in the field. Subsequent chapters contain typical archaeological analyses in the form of a description of individual graves, stylistic and typological studies of the monumental inventory, planigraphy of the cemetery and grave forms, and relative and radiocarbon chronometry. In contrast, the second part of the work presents the results of modern and specialized interdisciplinary studies. It begins with an anthropological analysis of the bone remains discovered in the cemetery (by Anita Szczepanek). This is followed by the presentation of the results of paleodemographic analyses, including those on the paleodiet of those buried in the necropolis (by Anita Szczepanek and Pawel Jarosz). Also presented are strontium and neodymium isotope analyses to determine the origin of the population buried in the cemetery and the provenance of the foundry moulds discovered in grave 24 (by Zdzisław Bełka). The part of the work devoted to specialized analyses closes with studies on the identification of traces of the use of ceramic and stone foundry moulds recorded during excavations in Gogolin-Strzebniów (by Aldona Garbacz-Klempka and Karol Dzięgielewski). The layout of the publication is therefore clear and understandable to the reader.

The first chapter, which is also the introduction of the study, contains general information on the history of the research of site 12 in Gogolin-Strzebniów. The site was discovered as a result of sand mining, which prompted rescue excavations in 1972 under the direction of Eugeniusz Tomczak. The extraction of raw material led to the partial destruction of the cemetery. The excavations uncovered a total of 71 graves (skeletal and corporeal), which form the source and analytical base of the reviewed work. This is a flat, biritual cemetery, which is located in the westernmost part of the Silesian Upland. Due to the specifics of its burial rites, it is typical of the Częstochowa-Gliwice subgroup of the Upper Silesian-Lesser Poland group of Late Bronze Age Lusatian culture.

The second chapter contains detailed information about the graves discovered at the site. It has the form of a descriptive catalogue including the characteristics of each burial, an inventory of the discovered relics and an anthropological analysis made for the graves in which bone material was recorded.

The third chapter focuses on analyses of the source material. The descriptions include a division of the monuments into pottery, items made of bronze,

and moulds. Typological and classificatory analyses begin with the description of pottery. Their division was made, highlighting such features as the form of the vessels, manufacturing technology and ornamentation. On this basis, the following types of vessels were distinguished: vases, pots, bowls, scoops, mugs, goblets and "snuff boxes". The second category of relics from site 12 in Gogolin-Strzebniów are items made of bronze. Functionally, they can be classified as ornaments, with wire-shaped ornaments and bronze buttons predominating. Then the authors of the monograph proceed to the description of the moulds discovered from grave 24. They were made of two types of raw material – clay or sandstone. In addition, the subsection is supplemented with information on the bronzing of the Lusatian culture and touches on issues related to the so-called graves of craftsmen. In the compilation of the literature used to discuss this issue, in addition to the traditional studies relating to the burials of craftsmen, the authors of the monograph supplemented the information using current literature showing a synthetic view of the issues presented.

The next chapter is devoted to aspects of the distribution of graves in the cemetery and elements of burial rites. A total of 71 graves (including 29 cremation burials and 38 inhumation burials) were discovered at the site, which, due to their homogeneous furnishings and lack of burial build-up, should be considered contemporary with each other. The authors of the monograph, after conducting planigraphic analyses of the cemetery, confirmed the regularity that the orientation of the graves (inhumation and cremation) is dominated by the location of the cavities on the northwest-southeast line, which is a characteristic feature of the Upper Silesian-Lesser Poland group.

Notes on the chronology of the Gogolin-Strzebniów cemetery are presented in chapter five. As a result of the calibration of the obtained radiocarbon determinations (only bone samples were used for 14C studies), the necropolis ceased to function at the end of the Period IV and Period V according to Oscar Montelius and can be synchronized with periods HaB2–HaB3 according to Paul Reinecke/Hermann Müller-Karpe. The absolute chronology of the cemetery's functioning corresponds to the morphological and stylistic features of the vessels discovered at the site and is related to the 10th century BC and the first half of the 9th century BC.

The second part of the monograph focuses on a presentation of the results of specialized interdisciplinary studies. The first part presents an anthropological analysis of the human remains discovered at the cemetery. At the beginning, the methods of the adopted research procedure were discussed in order to determine the following: the smallest number of people buried in the site, the age and sex of the deceased. Anthropological analyses also took into account data relating to the degree of burning of the bones and a determination of their weight. The chapter is enriched with a plan of the cemetery, tables and charts showing all the anthropological parameters analysed in the chapter.

The next chapter of this part of the monograph shows information on the paleodiet of individuals buried in skeletal graves in the Gogolin-Strzebniów cemetery. The introductory issues focus on presenting the research procedure of analyses using stable isotopes of carbon (δ13C) and nitrogen (δ15N). It should be noted that the use of this type of specialized analysis makes it possible to observe and reconstruct the life strategies of prehistoric communities, where, through comparative analyses of the data obtained with other archaeological sources, it is possible to infer the use of the environment by these populations. On the basis of stable isotope analyses of carbon and nitrogen for human and animal remains taken from the cemetery, the authors confirmed the type of economy characteristic of Lusatian communities, which is based on a sedentary lifestyle with a dominant role played by land cultivation.

The next chapter, presenting specialized analyses, covers the use of strontium isotope ratios (87Sr/86Sr) to determine the provenance of the population buried in the Gogolin-Strzebniów cemetery. Based on the study of 12 bone samples taken from both inhumation and cremation burials, the author of the analyses obtained results allowing 10 of the studied individuals to be considered local, as the strontium isotope ratio obtained is within the signatures obtained for the local geological substrate. And for the remaining two individuals (i.e., bone remains from graves 59 and 63), the strontium isotope ratio is outside the area of the signatures obtained for the local geological substrate, hence they were considered to be of non-local provenance. In addition, analyses of the isotopic composition of neodymium (δ143Nd/δ144Nd) were carried out for selected moulds to determine the origin of the raw material from which they were made. The analyses allowed the authors to conclude that the clay mould material was of local origin, while the sandstone moulds analysed were most likely made from material which was Scandinavian in origin.

The last chapter presenting specialized analyses shows the identification of traces of the use of stone

and clay moulds recorded in a skeletal grave, which was interpreted as the so-called grave of a craftsmen (grave 24). The artefacts were subjected to macroscopic and microscopic observations and chemical composition studies using energy dispersive X-ray fluorescence technique (ED-XRF). The purpose of these analyses was to record and identify traces of their use. The chapter was enriched with photographs showing traces of the use of the moulds, along with marking the locations of spectral measurements and maps of the distribution of copper, tin and lead on the fragments of individual moulds. Diagrams of XRF spectra for the monuments analysed in the chapter are also presented.

The reviewed publication focuses primarily on the material aspects of the site, while touching on many interesting issues in the field of interdisciplinary research. In conclusion, it is worth noting that modern archaeology should draw inspiration from many related scientific disciplines, which is presented in the reviewed monograph. Its authors emphasized the fact that *przeprowadzone analizy pokazują potencjał poznawczy tkwiący w materiałach pochodzących z tak zwanych „dawnych" badań, które stają się w ten sposób częścią nowoczesnej, interdyscyplinarnej archeologii* [*the conducted analyses show the cognitive potential of materials from traditional research, which are becoming part of modern, interdisciplinary archaeology*] (p. 104). The use of specialized analyses using archaeological data enabled the authors of the monograph to identify issues in a broader and more detailed manner: paleodiet, provenance of the population buried in the cemetery, origin of moulds, and the analysis of traces of their use.

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Aleksandra Jabłkowska

Institute of Archaeology, Rzeszów University,
Moniuszki 10, 35-015 Rzeszów, Poland;
The Doctoral School of the University of Rzeszów,
Rejtana 16C, 35-959 Rzeszów;
e-mail: aleksandrahab@dokt.ur.edu.pl

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