SPRAWOZDANIA ARCHEOLOGICZNE 73/1, 2021
PL ISSN 0081-3834
DOI: 10.23858/SA/73.2021.1.2558

Marcin Szeliga[1], Katarzyna Gawryjołek-Szeliga[2]

THE EARLIEST PHASE OF THE LBK IN THE LUBLIN REGION: NEW EVIDENCE FROM THE HRUBIESZÓW BASIN

ABSTRACT

Szeliga M., Gawryjołek-Szeliga K. 2021. The Earliest Phase of the LBK in the Lublin region: New Evidence from the Hrubieszów Basin. *Sprawozdania Archeologiczne* 73/1, 269-301.

This article is an attempt to initially characterize the oldest phase of the LBK in the Lublin region, or more precisely – within its eastern part, where all related discoveries are concentrated. The main point of reference is the inventory discovered in 2011-2012 in Świerszczów (Hrubieszów Basin), which is currently the largest homogenous collection originating from this region, related to the early phase of the LBK. The artefacts described herein, as well as the stylistic differentiation of other similarly dated ceramic inventories from the eastern Lublin region (and from neighbouring Volhynia) currently allow us to distinguish two essential stages of the colonisation of this area in the oldest phase of the Neolithic. The older stage corresponds to the Gniechowice-Milanovce horizon (moderte and ephemeral settlement), and younger (Zofipole style), should be correlated with the Moravian phase Ib, including at least the younger section of its development (sub-phase Ib2).

Keywords: Early LBK, Gniechowice and Zofipole style, eastern Lublin region, Volhynia, settlement, colonization

Received: 25.01.2021; Revised: 15.03.2021; Accepted: 29.06.2021

1 Institute of Archaeology, Maria Curie-Skłodowska University in Lublin, Pl. M.C. Skłodowskiej 4, 20-031 Lublin, Poland; marcin.szeliga@poczta.umcs.lublin.pl; ORCID: 0000-0002-5185-073X
2 National Museum in Lublin, Zamkowa 9, 20-117 Lublin, Poland; katarzyna-szeliga1@wp.pl.

INTRODUCTION

The oldest horizon of LBK settlement is undoubtedly the most enigmatic stage of its development in the Lublin region. It results, on the one hand, from the small amount and specific nature of the existing source materials, and on the other, from the incomplete degree of their development and publication. Until recently, the remnants of the pre-music-note phase of the LBK in the discussed area come almost exclusively from the discoveries from Gródek, Hrubieszów municipality. These are represented by a single cremation grave from the site No. 2 (Kempisty 1962, Fig. 1-2), a few features and collection of diagnostic ceramic finds from site No. 6 (Uzarowiczowa 1964, 431, Fig. 3; Kulczycka-Leciejewiczowa 1983a, 88) and a single vessel discovered accidentally at site No. 1B (Buszewicz 1990, Fig. 3: 4). General reports on materials from the Zofipole phase obtained during excavations on site 5 in Hrubieszów-Podgórze (Niedźwiedź and Panasiewicz 1994, 52, fig. 2) and on the surface of site 1 in Sumin, Tarnawatka municipality (Brzozowski 1988, 2), supplemented these data.

These discoveries have never been the subject of a dedicated study, but were only superficially discussed in the literature, limited only to materials from Gródek and Sumin. Information on the finds most often was presented collectively (*i.e.* without taking into account particular sites in Gródek), and often also incorrectly (Kulczycka-Leciejewiczowa 1979, 51; 1983a, 88-89; 2000, 200; Czekaj-Zastawny 2008, 138; Kadrow and Okoński 2008, fig. 16; Zakościelna 2007, 38-39, fig. 1-2; Dębiec and Saile 2015, Abb. 1; Saile 2020, fig. 1). Although many times attention was paid to their remote location and great importance in context of the spread of the early LBK (*e.g.* Gurba 1970, 178; Kulczycka-Leciejewiczowa 1968, 62-63; 1979, 51; 1987, 299), the small number of sites and the ambiguous nature of the finds precluded the possibility of undertaking wider studies on the oldest LBK phase in the Lublin region. New, very important data in this regard was provided by the latest discoveries from the Hrubieszów Basin, or more precisely from site 3 in Świerszczów. Currently this is the richest collection related to the pre-music-note phase of the LBK in the eastern Lublin region, providing a basis for undertaking wider studies on the beginnings of Neolithic settlement both in this area, as well as within the entire Lublin-Volhynian loess upland zone. Those issues, along with the presentation of this extremely important collection, constitute the main subject of considerations undertaken in this study.

LBK SITE IN ŚWIERSZCZÓW

The site of Świerszczów 3 (AZP 86-94/90), Hrubieszów municipality, Lublin voivodeship, is situated about 1.5 km NE of Hrubieszów, within the edge zone of the broad and wet lower Huczwa valley, occupying part of a distinct elevation at the base of a loess headland with south-western exposure (Fig. 1: 1). Geographically, it is situated within the Hrubieszów

Fig. 1. Świerszczów, site 3: location of site (1) and features of the early LBK discovered during the rescue excavations proceeding construction of the Hrubieszów bypass (2), along with a partial reconstruction of a potential longhouse outline (1 – fragment of map at a scale of 1: 10 000 used on the basis of licence No. DGK-I.7522.7.2021.JKO_06_CL1; 2-3 – *cf.* Jóźwiak and Wilczyński 2012, modified)

Basin microregion, which is part of the Polish share of the Volhynian Upland, *i.e.* the Western Volhynian Upland (Kondracki 1998, 295-296, fig. 43). It was discovered during AZP surface surveys in 1986 by Sławomir Jastrzębski, who obtained 23 pottery fragments and 2 flint flakes related to the LBK, Trzciniec, Lusatian and Przeworsk cultures. In the years 2011-2012, in relation to the plans of the Hrubieszów bypass construction, rescue excavations were carried out on the site. Their executor was the *Pracownia Badań i Nadzorów Archeologicznych* [Laboratory of Archaeological Research and Custody] in Lublin, and the manager of the excavations was Jadwiga Jóźwiak. These studies led to the recognition of a total area of 53.13 ares and the discovery of 185 features, confirming the long-term and multicultural nature of the site, from the oldest phase of the Neolithic (Jóźwiak and Wilczyński 2012, 3). The LBK materials obtained in this research constitute the main and initial focus of considerations undertaken in this study.

FEATURES

During the research in 2011-2012, four LBK features (Nos. 11, 19, 174 and 176) were discovered and explored. They were located in the central part of the studied area, creating an irregular concentration in a relatively small space (Fig. 1: 2). Two features (11 and 19) were fully explored, while the other two (174 and 176) were only partially investigated, *i.e.* within the strip of the planned road construction. The largest and best-preserved feature (No. 19) consisted of a vast and elongated pit with an irregular vertical outline and dimensions of 10.26 × 3.42 m, oriented approximately on the N-S axis (Fig. 1: 2-3). In the longitudinal section, the pit appeared to be trough-shaped. Its fill was characterized by a non-uniform thickness, oscillating between 10 and 30 cm, exceeding 90 cm only in the central part (Fig. 2: 1), as well as a uniform structure and consistency and a dark grey-brown co-lour. The remaining features were much smaller in size and depth, and were characterized by oval or irregular vertical outlines and sections similar to the trough-shaped ones (Fig. 2: 2-4).

The size, morphological properties and orientation of feature 19 justify its interpretation as a construction pit, related to the creation and functioning of an above-ground long-house-type residential structure. Other, much smaller and shallower features, should probably be interpreted in a similar way. They may be the bottom parts of objects originating from the construction and functioning of the same household. In addition to morphological characteristics, this may also be indicated by their location and orientation, and in the case of features 174 and 176 also by the distance from pit 19 (Fig. 1: 3). The conducted research did not reveal the clear layout of post-holes, which are typical for this type of construction, reflecting their original outline and orientation. The lack of evidence of post-holes, however, may simply be a result of the general stratigraphic situation recorded within the site (a layer of black soil thick enough to make it difficult, and very often even

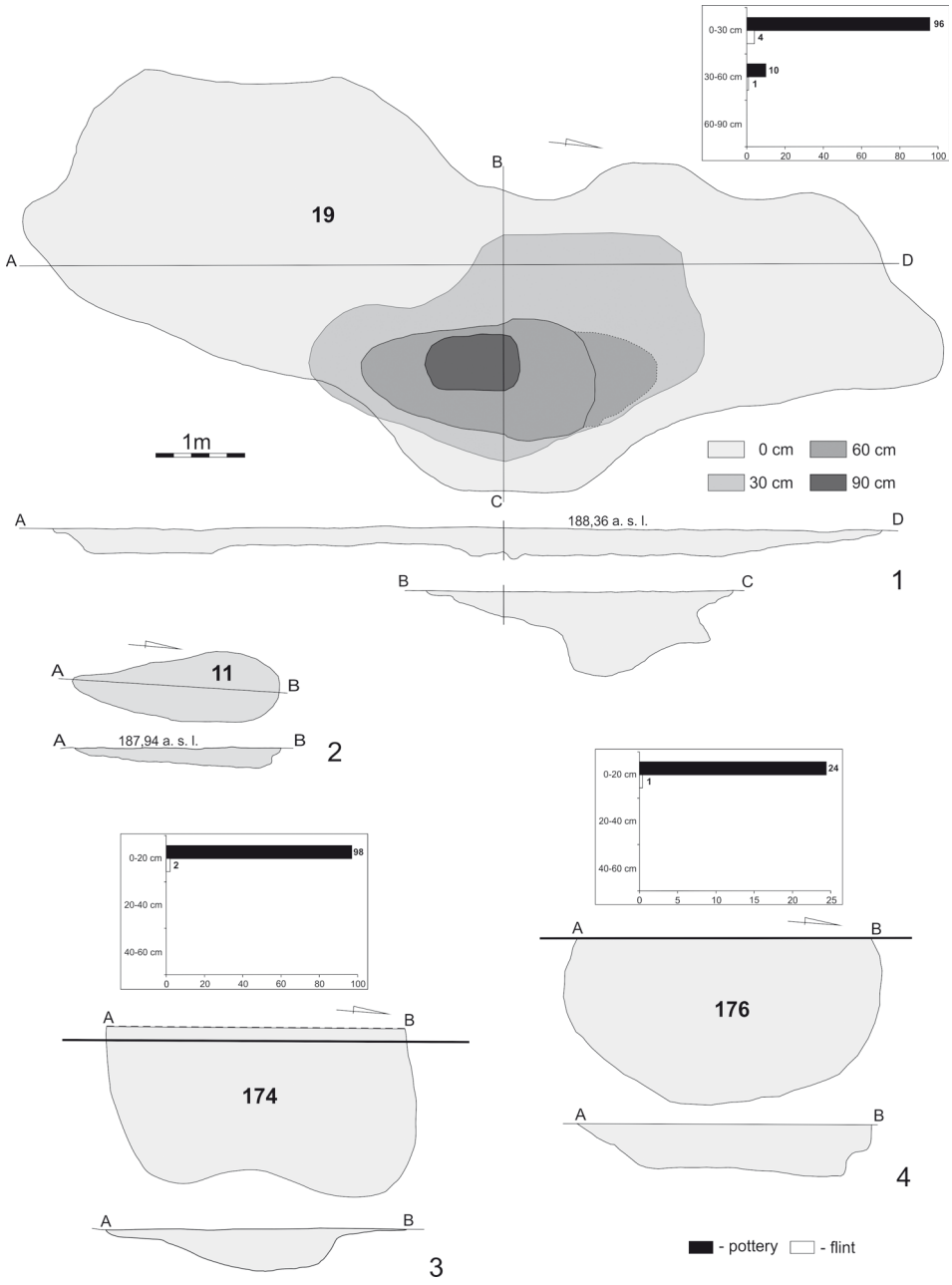

Fig. 2. Świerszczów, site 3: horizontal plans and sections of the early LBK features along with the amounts of artefacts at particular depths: 1 – feature no. 19; 2 – feature no. 11; 3 – feature no. 174; 4 – feature no. 176. Illustration by W. Kozieł and M. Szeliga

impossible, to record the outlines of the features). In this context, a very important role is also played by the serious degree of destruction of Early Neolithic settlement remnants during later settlement episodes (Jóźwiak and Wilczyński 2012, 3), which is recorded especially in the zone directly adjacent to the north (Fig. 1: 2-3). Thus, the site in Świerszczów, along with a hypothetical residential structure with a width of approx. 8-9 m and with an undefined length (probably more than 20 m), would be the first in Lublin region, and the fourth in the entire area of the upper Vistula and Odra River basins – an early LBK settlement with remnants of permanent, above-ground residential architecture. The only current unquestioned remains of houses are known from Stary Zamek (Kulczycka-Leciejewiczowa and Romanow 1985, fig. 14; Kulczycka-Leciejewiczowa 1987, fig. 6), Targowisko 10-11 (Zastawny and Grabowska 2014, fig. 1) and Gwoździec (Czekaj-Zastawny *et al.* 2020, fig. 3).

ARTEFACTS

In total, 237 artefacts were obtained from the LBK features, forming inventories that are diverse in terms of quantity and represented predominantly by fragments of vessels, and only to a minimal extent by flint products (Tab. 1). These were complemented by a large group of daub fragments of various sizes, almost exclusively in the fill of feature 19, as well as a modest collection of animal bones. Only a few LBK ceramic materials were obtained during the exploration of off-feature layers and fills of younger features.

The analysis of the quantitative distribution of flint and ceramic artefacts within the fills of particular features reveals their clear concentration within current top layers, and occasionally also in the middle parts, with their complete absence at deeper levels (Fig. 2: 1, 3-4). This situation corresponds with the data obtained for many other LBK sites in the upper Vistula basin (*e.g.* Kadrow 1990, fig. 5b; 6b; 7b; 8b; 9b; 12b; 13b; Szeliga and Zakościelna 2007, fig. 13-14), indirectly indicating the considerable degree of destruction of features in Świerszczów.

Pottery

The collection of ceramics from LBK features includes a total of 229 vessel fragments (Tab. 1). These are characterized by a considerable degree of fragmentation, with the domination of fragments of bodies, making up as much as 72.93% of the entire collection and significantly exceeding the frequency of parts of rims (18.34%), and especially of bases (8.73%). No vessel has been entirely preserved, and only a few have been refitted to a degree that allows for the reconstruction of their forms, sizes and ornamental motifs. Among the ceramics, non-ornamented specimens have a decisive advantage, constituting a total of approximately 84.38% of the entire collection (Tab. 2). Sherds that were able to be refit represent *ca.* 20% of the whole collection. These data, as well as the differentiation and

Table. 1. Świerszczów, site 3, Hrubieszów municipality: qualitative and quantitative comparison of artefacts originating from the LBK features.

Feature No.	Pottery	Flint	Daub	Animal bones	Total
11	1	-	-	-	**1**
19	106	5	79	7	**197**
174	98	2	1	1	**102**
176	24	1	-	3	**28**
Total	**229**	**8**	**80**	**11**	**328**

Table. 2. Świerszczów, site. 3, Hrubieszów municipality: condition of the ceramics in the LBK features: O – ornamented fragments; NO – non-ornamented fragments

Feature No.	Rims		Bodies		Bases		Total	
	O	NO	O	NO	O	NO	O	NO
11	-	-	-	-	-	1	-	**1**
19	3	9	10	73	1	10	**14**	**92**
174	8	18	11	56	-	5	**19**	**79**
176	-	4	3	14	-	3	**3**	**21**
Total	**11**	**31**	**24**	**143**	**1**	**19**	**36**	**193**
	42		**167**		**20**		**229**	

presence of diagnostic fragments (*e.g.* rims, bases and ornamented sherds) allow us to estimate that the whole collection covers the remains of at least 25 vessels.

VESSEL SHAPES

The sherds that were able to be refit and the presence of rims for which the vessel shape could be reconstructed indicate the low diversity of vessel types. Without a doubt, bowls form the dominant group, along with globular pots (ger. *Kümpfte*; see also Pyzel 2019, 48) Among the bowls, the most common are wide-open conical forms, both thin-walled and thick-walled, with rims that were most often straight (Fig. 7: 1, 3, 4-5, 7, 10-12; 9: 1), and only occasionally slightly bent inward (Fig. 7: 3, 8). There are very few hemispherical bowls. In fact, the only reliable form of this type – with an undefined height and a diameter of about 25 cm at the opening – occurred in feature 174 (Fig. 5: 2). Globular pots are represented by forms with rims curved inward both slightly (Fig. 4: 1, 3, 5, 7; 6: 2, 4; 8: 2, 5, 7) and strongly (Fig. 6: 1; 8: 1). These are supplemented by a relatively few tall forms with ovoid profiles (Fig. 8: 3-4, 6), as well as at least one biconical form (Fig. 5: 1). The remaining vessels in the collection had a more complex morphology. These include a vessel (flask or amphora) with a short neck and an outwardly curved rim (Fig. 3: 1), as well as two pedestalled vessels, probably bowls, but possibly beakers (Fig. 9: 4-5). This collection is

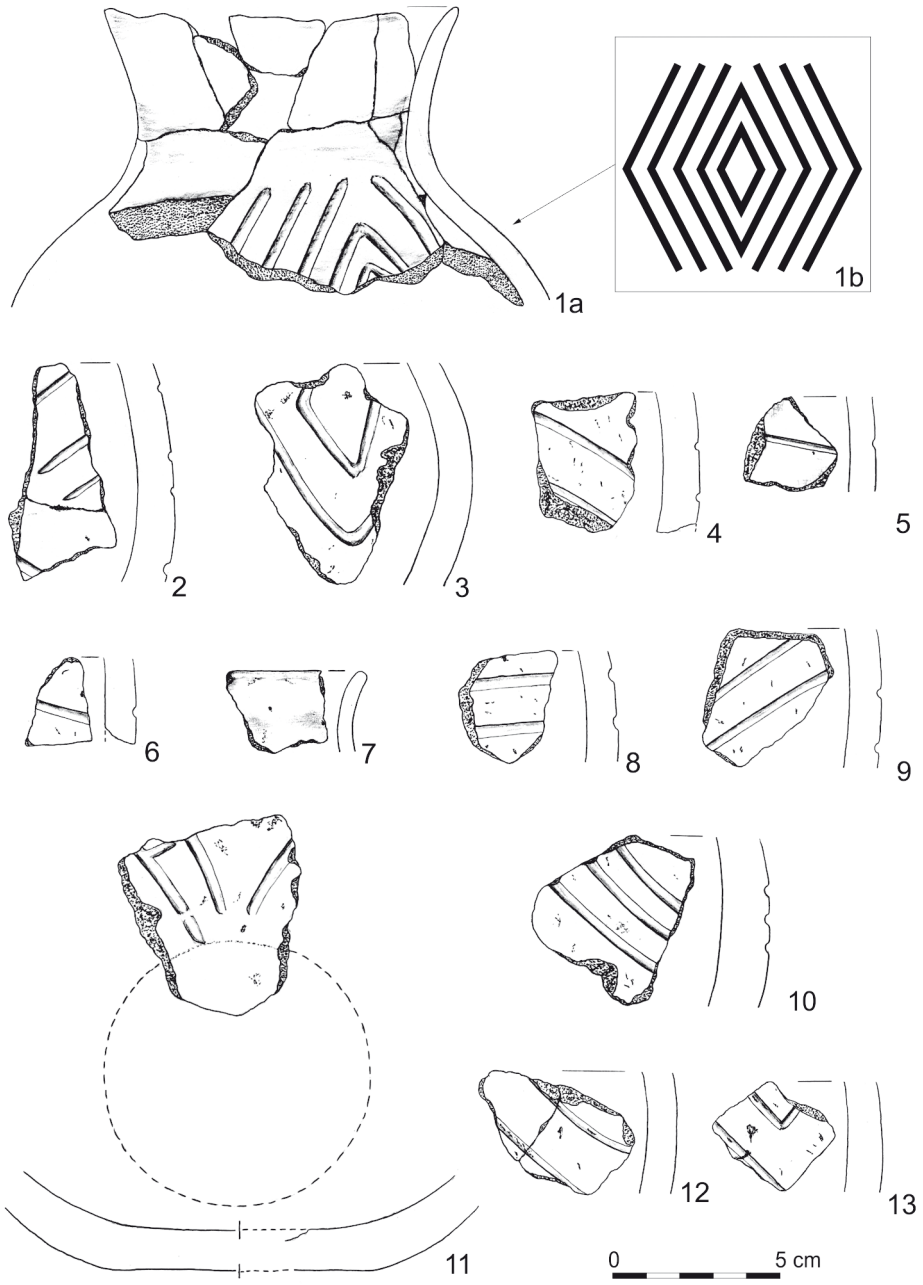

Fig. 3. Świerszczów, site 3: 1-13 – ceramics decorated with the incised ornament: 1a (along with the reconstruction of the ornament – 1b), 3, 5, 7, 10-11 – feature No. 19; 2 – feature No. 176; 4, 6, 8-9, 12-13 – feature No. 174. Illustration by K. Gawryjołek-Szeliga

supplemented by a small fragment of an undefined, thin-walled vessel with an outturned rim (Fig. 3: 7), possibly in the form of a flask.

MORPHOMETRIC AND TECHNOLOGICAL PROPERTIES

The analysis of the basic morphological and metric properties – including wall thickness, properties of the ceramic mass, ornamentation techniques and methods of vessel surface finishing, reveals a very weak and ambiguous division into fine and coarse pottery.

Fine ware is represented by fragments of bowls of various sizes (*e.g.* Fig. 5: 2; 7: 1, 3-5) and globular pots, most often with slightly incurved rims (*e.g.* Fig. 8: 1-4, 6), and – definitely less frequently – by vessels with a more extensive and diversified morphology (Fig. 3: 1; 9: 4-5). These vessels were made of greasy clay, containing mostly fine and very fine sand and an organic addition, occurring within particular fragments in various compositions and intensities. In a few cases, the presence of crushed stone and grog (chamotte) of various degrees of granulation, as well as ochre, was also recorded. The walls of the vessels are usually even, smooth, and matte – smooth or rough – depending on the state of their preservation, as well as the amount and type of temper. The wall thickness ranges from 4 to 9 mm, and only sporadically larger (Fig. 3: 2-4; 5: 1). The colour of the surface reveals a fairly large degree of differentiation, with a predominance of grey and dark grey forms with uniform fractures, indicating firing in a reducing atmosphere. Some of the vessels were engobed, as evidenced by exfoliated external surfaces observed on a few fragments.

Coarse ware is represented only by globular pots with rims that were most often slightly inclined inwards (*e.g.* Fig. 4: 1, 3, 5; 5: 1; 6: 1-2, 4; 8: 5, 7). Their wall thicknesses ranged between 9 and 17 mm. Among the decorative motifs are plastic ornaments, represented by nodules (Fig. 9: 3), fingernail impressions (Fig. 4: 1, 3-7) and plastic strips (Fig. 4: 8). In two cases, the surface of the vessel was decorated with longitudinal and shallow, horizontal "pseudo-cuts" (Fig. 9: 2). In the ceramic mass in this category of pottery, there is a significant amount of organic additions, as well as sand and occasionally also gravel, crushed stone, grog and ochre. The granulation of the additions is quite varied, ranging from fine (0.5-1 mm – mainly sand) to very coarse (5-10 mm – mainly gravel). The surfaces of the vessels are usually rough, porous and even rugged, and are yellow-orange-grey in light shades. They are most often characterized by poor firing in oxidative conditions.

DECORATION

The total share of ornamented ceramic fragments originating from LBK features was estimated at only about 15.72% (36 pieces; *cf.* Tab. 2). An incised ornament was observed on a small number of fragments of fine pottery, most probably originating only from a few vessels. This ornament occured in various compositional arrangements, consisting of

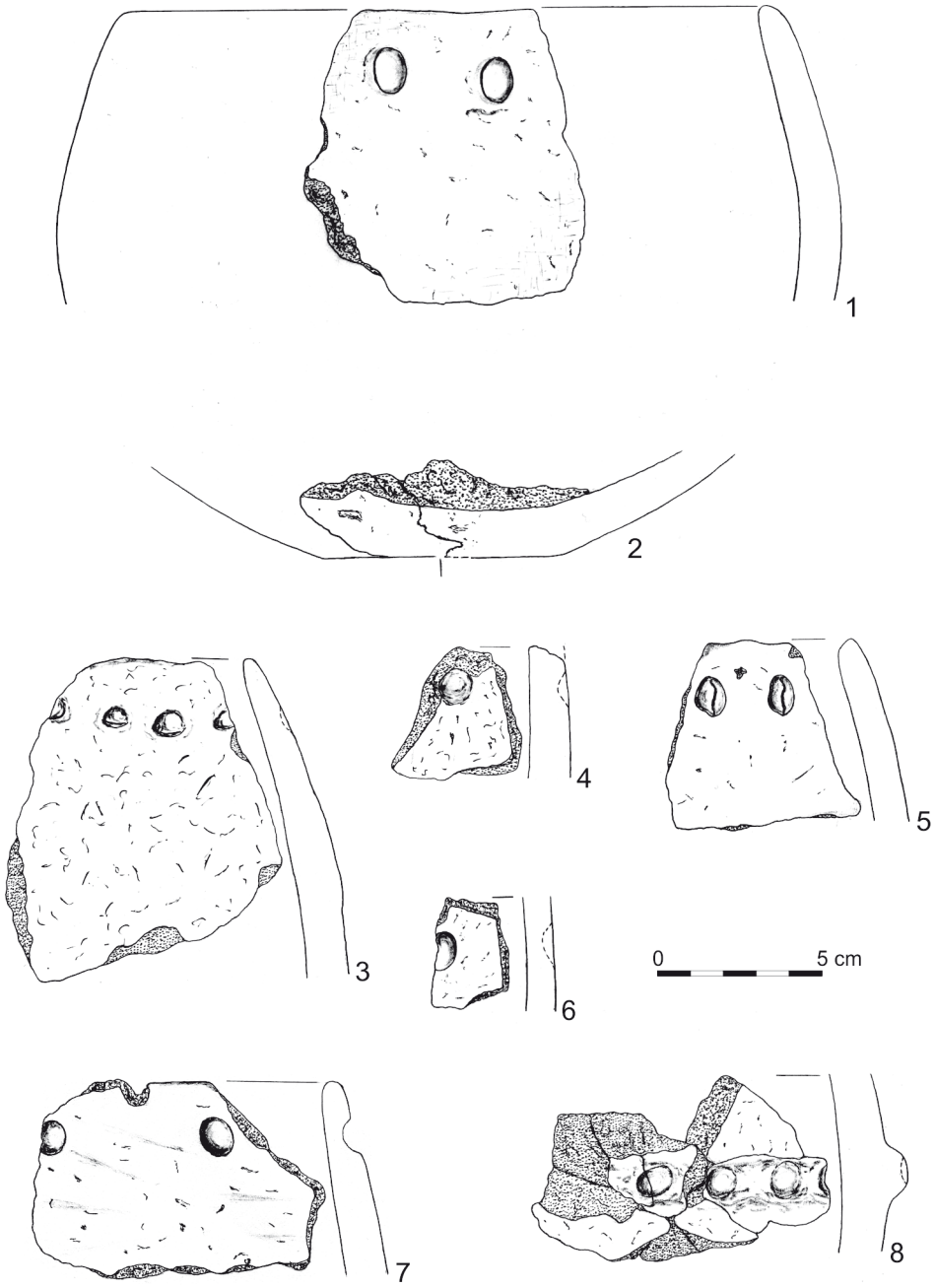

Fig. 4. Świerszczów, site 3: 1-8 – ceramics decorated with fingerprints:
1-4, 6 – feature No. 19; 5, 7 – feature No. 174; 8 – on the secondary bed in the fill of the Malice culture feature. Illustration by K. Gawryjołek-Szeliga

rectilinear (Fig. 3: 1, 3, 13; 8: 1, 3) and curvilinear (Fig. 3: 4, 9-10, 12; 5: 1) motifs, made with single or multiple lines and arranged vertically, horizontally or obliquely to the vertical axis of symmetry of the vessels. The width of the incised lines ranges from 2 to 4 mm, with a clear quantitative predominance of lines varying between 3-3.5 mm. All of them are characterized by a relatively large depth and a U-shaped profile in cross-section.

Referring to the classification system of J. Pyzel (2010a; 2019), main motifs are the most common ornamentations among the analyzed vessels (*ca*. 58,33% of all incised decorative motifs), which are represented mainly by simple horizontal arched and/or wavy

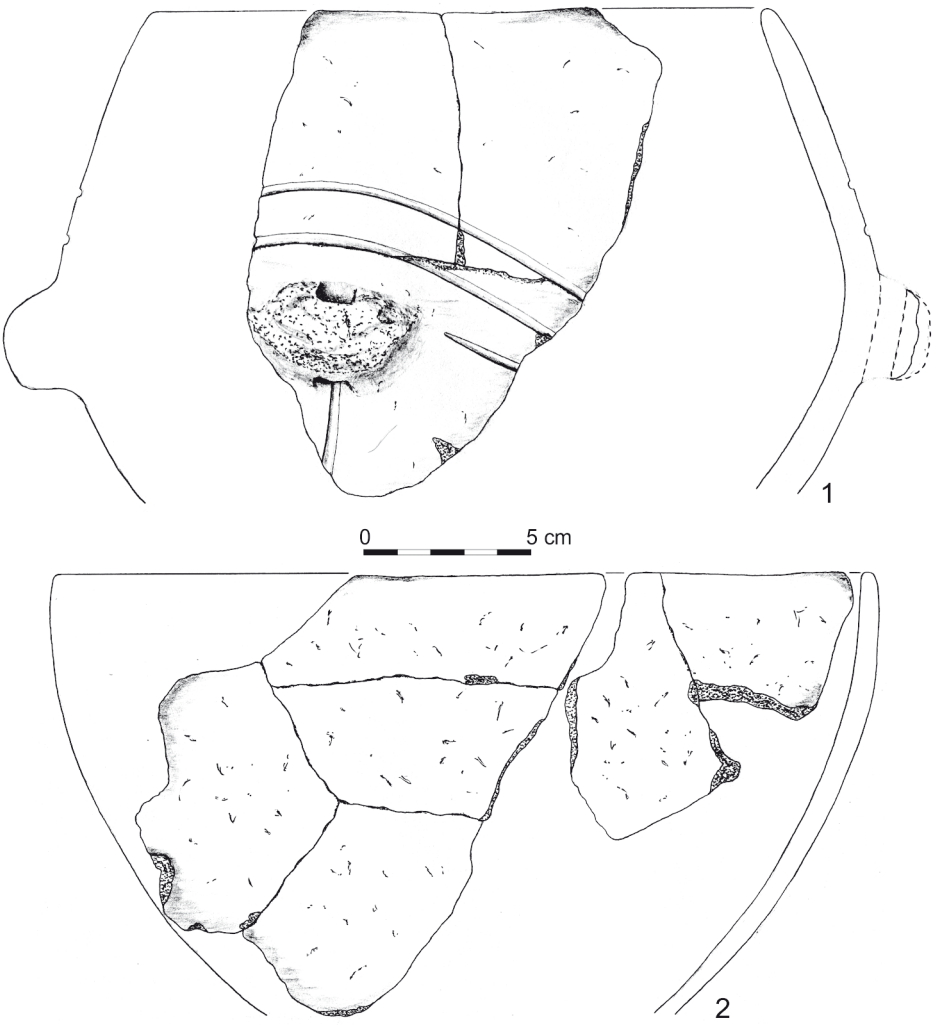

Fig. 5. Świerszczów, site 3: 1-2 – ceramics from feature 174. Illustration by K. Gawryjołek-Szeliga

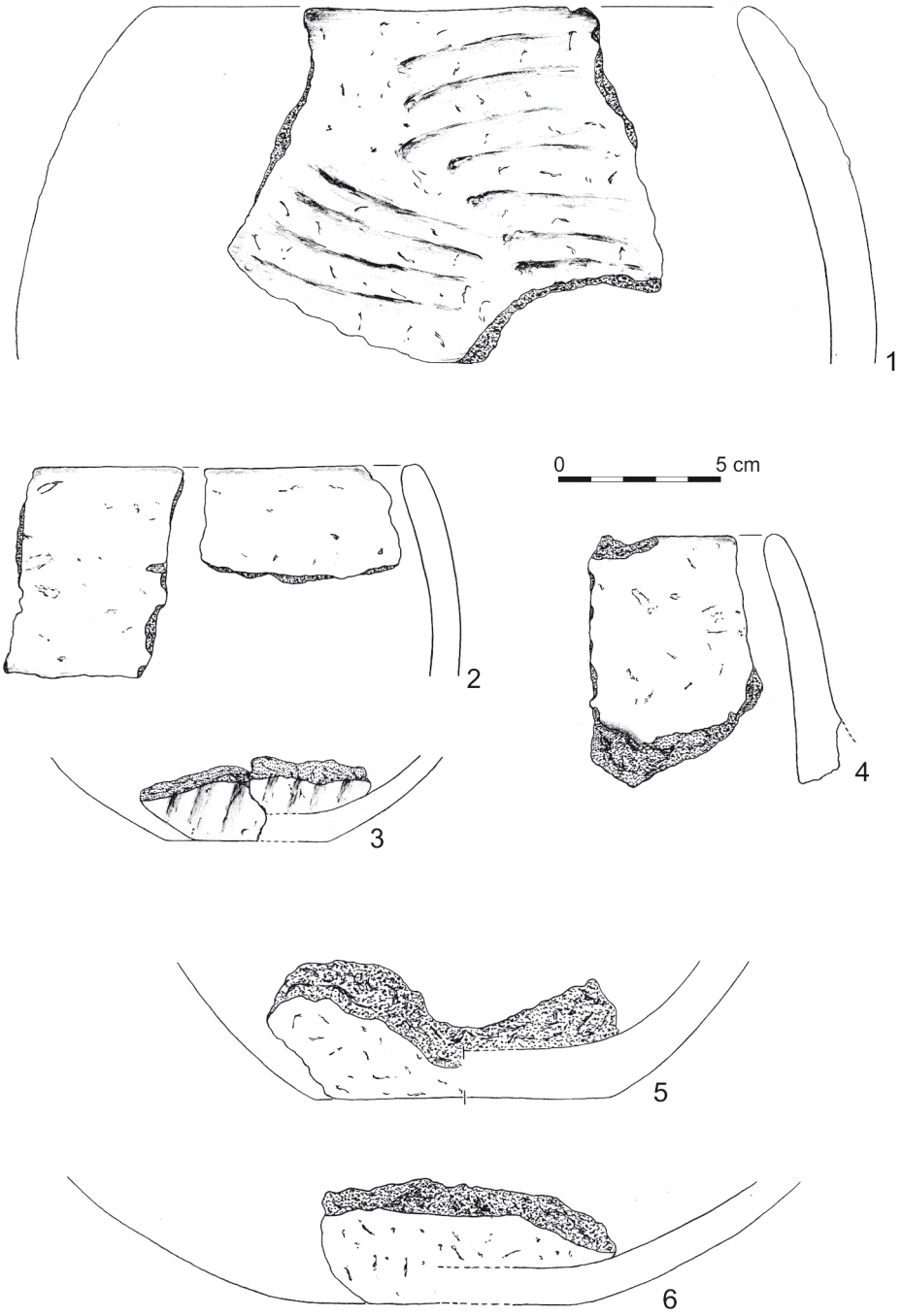

Fig. 6. Świerszczów, site 3: 1-6 – ceramics from feature 174. Illustration by K. Gawryjołek-Szeliga

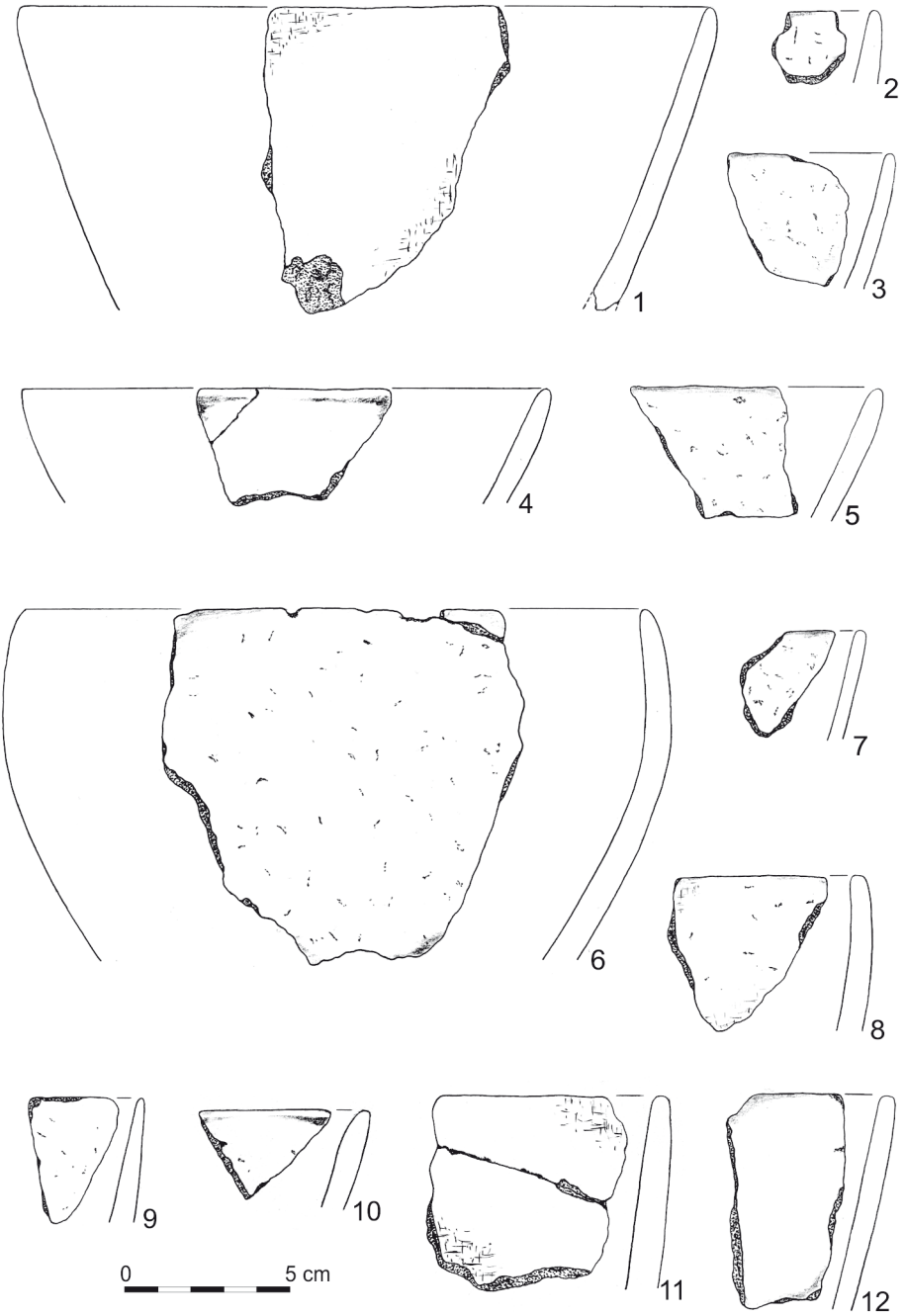

Fig. 7. Świerszczów, site 3: 1-12 – fragments of bowls: 1, 2, 4, 6, 8-9, 12 – feature No. 174; 3, 5, 7 – feature No. 19; 10-11 – feature No. 176. Illustration by K. Gawryjołek-Szeliga

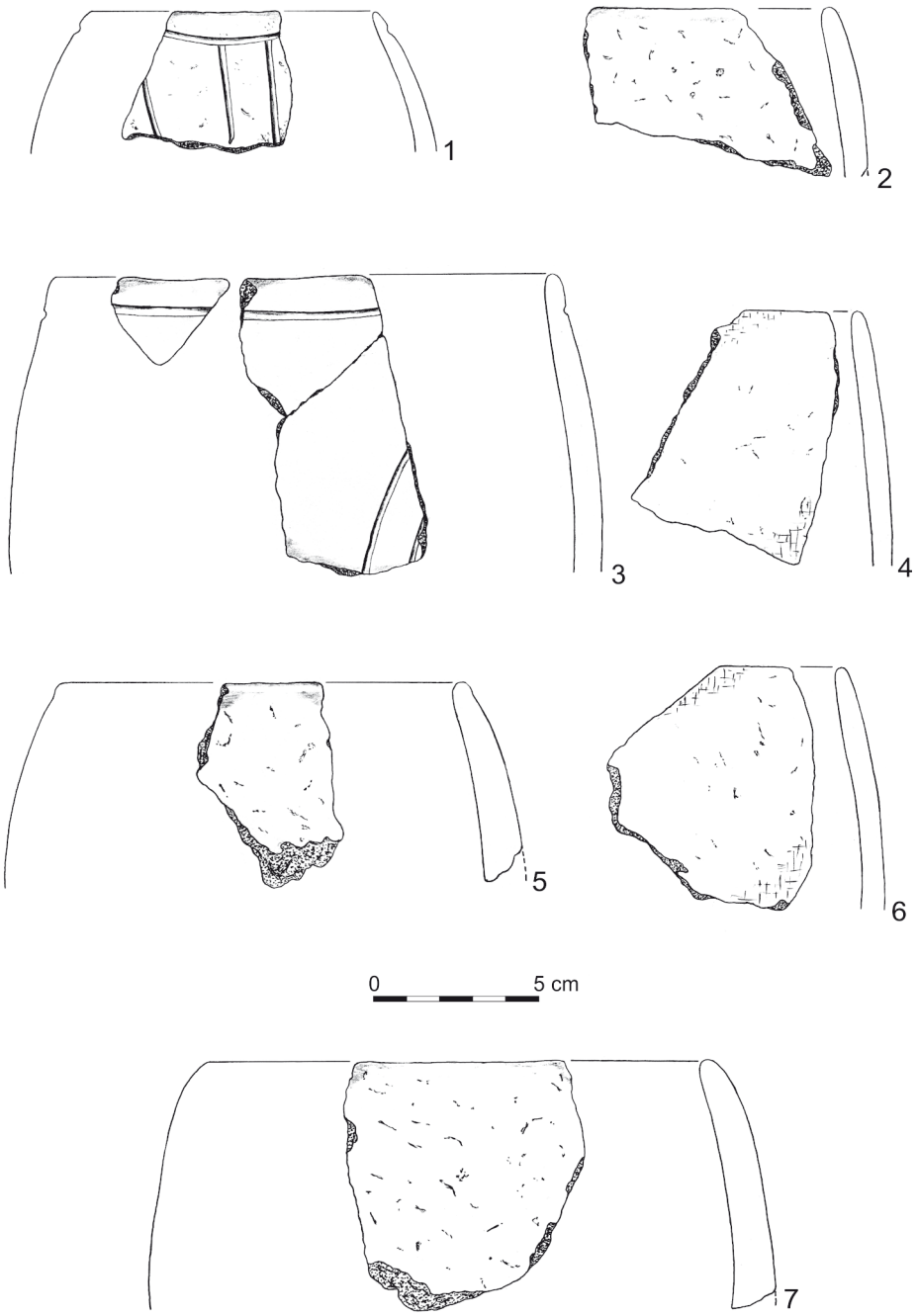

Fig. 8. Świerszczów, site 3: 1-7 – fragments of globular pots: 1 – feature No. 19; 2-4, 7 – feature No. 174; 5-6 – feature No. 176. Illustration by K. Gawryjołek-Szeliga

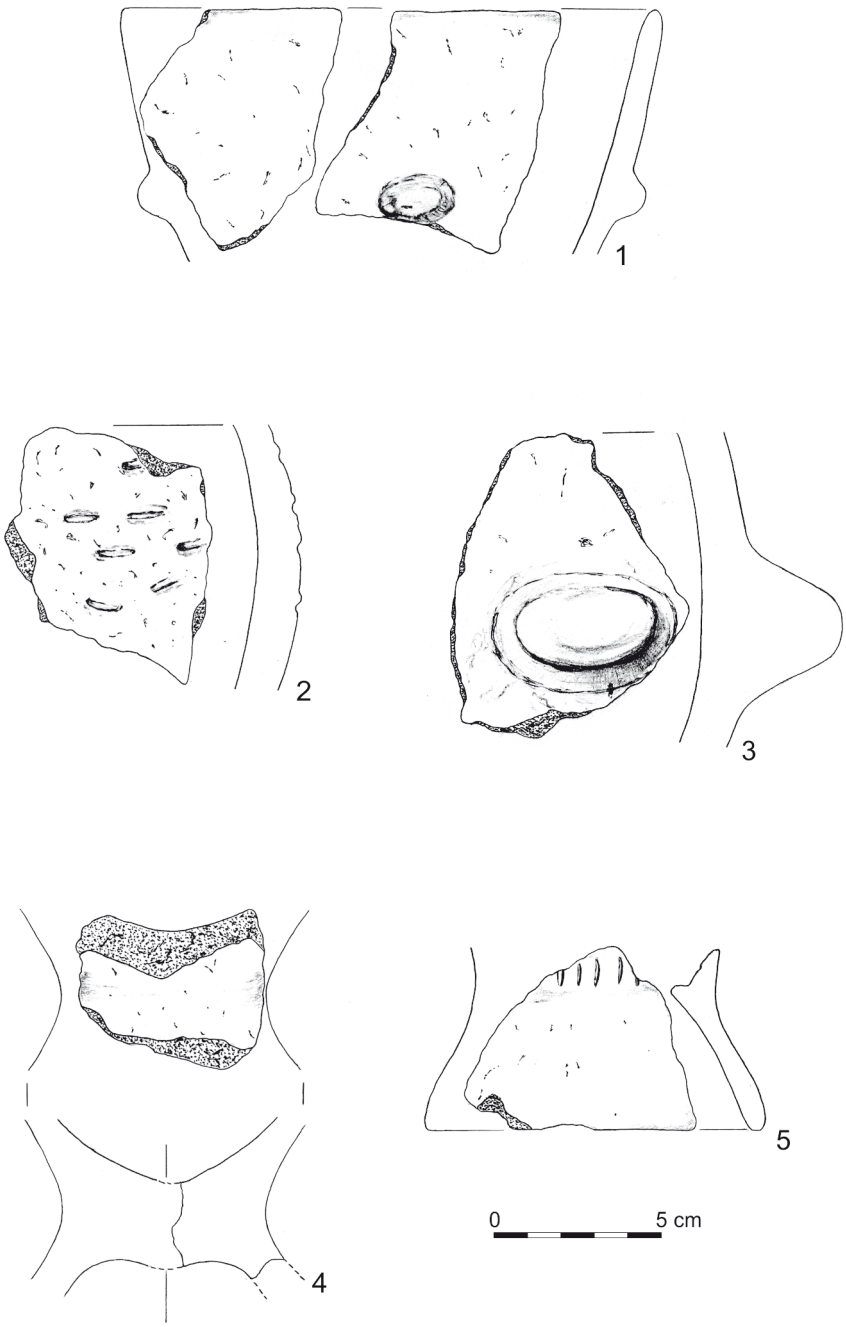

Fig. 9. Świerszczów, site 3: 1-5 – selection of ceramics from feature No. 174.
Illustration by K. Gawryjołek-Szeliga

motifs (Fig. 3: 2, 4-5, 9-12; 5: 1; 8: 3) and vertical geometric ones (Fig. 3: 1, 3, 13). The surfaces of two body fragments were covered with a sequence of longitudinal, fairly shallow and short quasi-incisions, made with a narrow and blunt tool (Fig. 9: 2). One of them, next to the furrows, has also a massive, vertically dissected nodule. A single row of quite densely arranged, short, vertical incisions has also been preserved on the surface of the pedestalled bowl/beaker, located on the narrowing, at the point where the pedestal passes into the body (Fig. 9: 5). Rim motifs were recorded only in the case of two vessels, and are represented by single, encircling lines (Fig. 8: 1, 3). With the exception of one example (Fig. 5: 1) the presence of secondary motifs was not recorded in the collection.

Plastic elements were recorded on 12 (33.33% of the decorated pottery) fragments of pottery in total, occurring almost exclusively on thick-walled globular pots. In seven cases, quite large (10 × 12-13 mm), oval fingerprints, forming single, circumferential rows under the rims of the vessels were found (Fig. 4: 1, 3-7). On three fragments, oval nodules of different sizes were recorded (Fig. 9: 1, 3). The surfaces of two vessels were covered with a barbotine ornament, applied in lines with bare fingers (Fig. 6: 1, 3). In addition, a plastic strip with three preserved fingerprints occurred on a single fragment, deposited on a secondary deposit in a Malice culture feature (Fig. 4: 8). In only one case did the plastic element (a vertically pierced handle) co-occur with an incised ornament (Fig. 5: 1).

Flints

Flint materials constitute a very modest group of finds, consisting of only 8 artefacts made of Volhynian flint. Despite the minimal quantitative content of the collection, it corresponds very well with the previous findings on the resource preferences of the oldest agricultural communities occupying the areas of the eastern Lublin region, including the Hrubieszów Basin area, oriented primarily towards high-quality cretaceous raw materials from the central-western part of the Volhynia-Podole Upland (Zakościelna 1981, tab. 1; Balcer 1983, 56-58).

Flint artefacts reveal a low degree of morphological differentiation (Tab. 3). Half of the collection consists of flakes and their fragments – of various, usually undefined techno-

Table. 3. Świerszczów, site 3, Hrubieszów municipality: morphological structure and frequency of particular types of flint products originating from LBK features

Flints artefacts	Feature 11	Feature 19	Feature 174	Feature 176	Total
Cores	-	1	-	1	**2**
Blades and fragments	-	1	-	-	**1**
Flakes and fragments	-	2	2	-	**4**
Retouched tools	-	1	-	-	**1**
Total	**-**	**5**	**2**	**1**	**8**

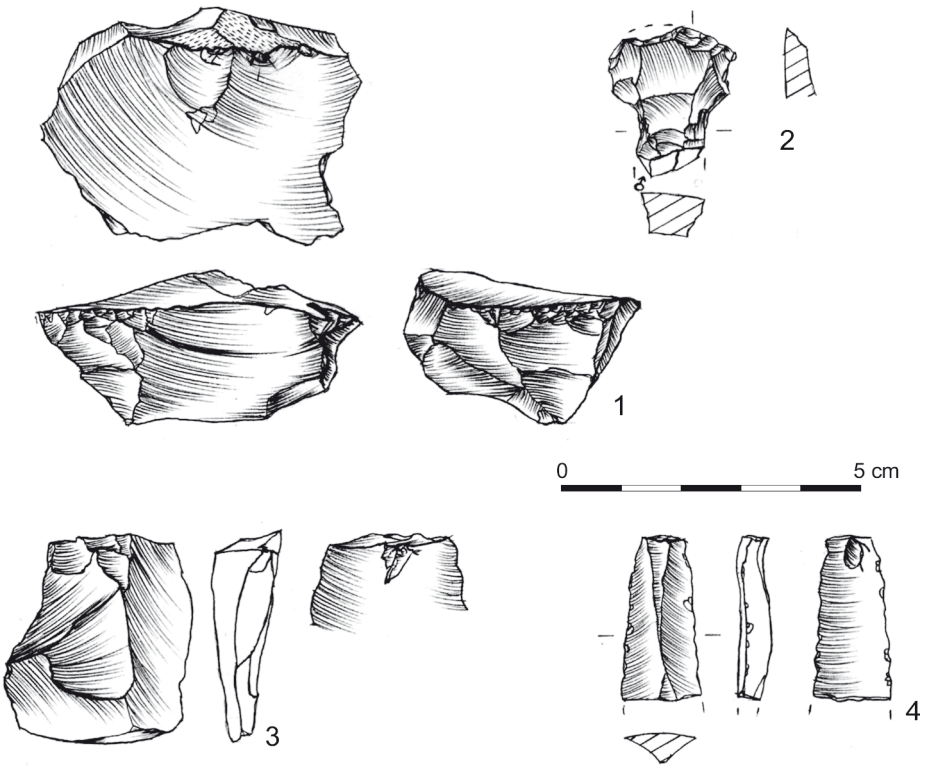

Fig. 10. Świerszczów, site 3: 1-4 – flint artefacts from feature 19 (1-4 – Volhynian flint). Illustration by M. Szeliga

logical origins (Fig. 10: 3). The second position is occupied by flake cores, represented by one residual, multi-platform specimen bearing traces of numerous orientation changes, and one single-platform specimen made of a massive flake (Fig. 10: 1). Rounding out the list of finds is a proximal fragment of a regular blade (Fig. 10: 4) and a rather unusual, small flake endscraper with retouch on both sides, forming a kind of handle (Fig. 10: 2).

RELATIVE CHRONOLOGY OF MATERIALS AND SETTLEMENT IN ŚWIERSZCZÓW

The analysis of ceramic materials reveals the homogeneous nature of the entire inventory, clearly justifying its relation with the pre-music-note stage of LBK development, and more precisely with its earliest sub-phase, correlated on the northern side of the Carpathians and the Sudetes with the Gniechowice phase/style (Ia phase; *cf.* Kulczycka-Leciejewiczowa

1968, 61-67; 1979, 48-51). This is clearly indicated by both the technological and morphological attributes of the vessel fragments present in the collection, as well as the stylistic parameters, especially the range of differentiation and the methods of ornamental motif creation. This is also reflected in the lack of a clear division of ceramics into "table" and "kitchen" ones, so typical for the classical and late stages of LBK development (*e.g.* Kulczycka-Leciejewiczowa 1983a, 74, 75; 2008, 81; Kadrow 1990, 33).

Such an early classification of the Świerszczów inventory is indicated primarily by the presence of wide and deep incised lines with an exclusively U-shaped cross-section, forming simple, single or double (less frequently more numerous) rectilinear or curvilinear ornamental compositions within the central parts of the vessels' bodies (Fig. 3), and only occasionally also on their rims (Fig. 8: 1, 3). The metric parameters and the method of ornamentation of the incised lines are diagnostic for the oldest stage of the LBK, clearly different from the Zofipole style (*e.g.* Kulczycka-Leciejewiczowa 1983a, 91-92; 2008, 80; 2010, 552). This also applies to ornamental threads, or more precisely, to the presence of a double rhombus motif, framed on the sides with triple, broken vertical lines on the body of a flask vessel with a short neck and outwardly curved rim – an ornament that most likely reached the base of the vessel (Fig. 3: 1b). In this case, not only the decorative composition, but also the form of the vessel itself reveals a clear relation with the oldest LBK phase (*e.g.* Tichý 1962, fig. 4: 4; 13: 2; Pavlů and Vokolek 1992, fig. 29; Cladders 2001, 21-23, 150, Kulczycka-Leciejewiczowa 2008, fig. 47). A very similar ornament was recorded on the surface of a small, richly decorated amphora with an open neck from pit 3a at Stary Zamek (Kulczycka-Leciejewiczowa and Romanow 1985, fig. 17: a3), and also on a seemingly analogous form discovered at Rívne in Volhynia (*cf.* Piasetskiy and Okhrimenko 1990, fig. 4: 9; Dębiec and Saile 2015, Abb. 8: 4).

Additionally, of particular importance for the relative chronology of the collection from Świerszczów, is the presence of a fragment of a large biconical globular pot, with a vertically pierced, "corded" handle, located on the bend of the body and an incised ornament in the form of double and single arch motifs, located strictly in relation to the position of the handle (Fig. 5: 1). Vessels of this type are among the most characteristic and common components of early LBK ceramic inventories in Central Europe (*e.g.* Tichý 1960, fig. 19: 1-3; Kneipp 1988, Abb. 1; Pavlů and Vokolek 1992, fig. 28; Cladders 2001, 8-19, 148; Pavúk 2005, Abb. 7), including the Gniechowice phase (Kulczycka-Leciejewiczowa and Romanow 1985, Fig. 10: d; 22: e-f; 24: f). They are also known in the Zofipole-stage collections (*e.g.* Godłowska 1976, tabl. LXI: 8), but are interpreted as archaic, diagnostic elements of the oldest stage of the LBK (Kulczycka-Leciejewiczowa 1983a, 86, 89).

For A. Kulczycka-Leciejewiczowa (*e.g.* 1987, 328; 2008, 72-77; 2010, 550), the presence of biconical globular pots with vertically pierced handles in the collections of the Gniechowice phase was one of the arguments justifying its correlation with the Biňa LBK phase of SW Slovakia. A different theory was presented by J. Pavúk, who limits the range of the Biňa phase only to the Danubian LBK formative zone, and the spread of this culture

to more distant areas of Central Europe is related only with the Milanovce phase (Pavúk 2004, 77-80). According to this concept, the Gniechowice phase should be correlated only with the Milanovce phase (*e.g*. Czekaj-Zastawny 2008, 116; Pyzel 2014, 83). The data from Świerszczów, including the aforementioned globular pot from feature 174, seem to confirm this theory. Its biconical, though relatively gentle profile, as well as its straight rim, clearly differ from the forms known from the Biňa phase, which have a characteristic profile of the edge parts, due to a slight deflection of the edges (Pavúk 2004, 75, fig. 2). However, this reveals a very close, even strict resemblance to the non-carinated vessels with straight rims known from the Milanovce phase inventories, with vertically pierced handles and decorated on their bodies with a wavy ornament composed of one to four incised lines (Pavúk 2004, 78-80, fig. 7). This correlation is also well-related to other elements present in the pottery collection from Świerszczów, and more specifically, the methods of finishing and ornamenting of thick-walled globular pots. The first example is the ornament of single rows of fingerprints located below the rims of the vessels (Fig. 4: 1, 3-5, 7), common in the Gniechowice phase (*e.g*. Kulczycka-Leciejewiczowa and Romanow 1985, fig. 7: b, g-h; 9: l; 10: p-r; 15: a-b; 18: b, g; 21: b; 23: a, c, n; Kulczycka-Leciejewiczowa 2008, fig. 11: 4), and diagnostic for the Milanovce phase stylistics (Pavúk 2004, 78, fig. 5). The second example is a barbotine ornament applied in lines with fingers, recorded on the surfaces of two vessels from Świerszczów (Fig. 6: 1, 3). This ornament was a characteristic method of finishing the surfaces of thick-walled vessels, performed on their still-wet outer surfaces. It became popular in the Milanovce phase in place of the *Schlickbewurf* ornament applied by splashing semiliquid clay paste on the dry surfaces of vessels, which was characteristic of the Biňa phase (Pavúk 2004, 75, 78; 2005, 28-29; Pavúk and Farkaš 2013, 229-230). The coexistence of these elements seems to allow us to unambiguously correlate the collection from Świerszczów with the Milanovce phase.

The diagnostic elements in the collection from Świerszczów also include fragments of two pedestalled vessels, probably bowls or beakers with low, conical pedestals (Fig. 9: 4-5). These forms, derived from the Balkan Neolithic tradition, are quite common in the earliest LBK ceramic inventories, both in the Danubian and the Central European regions (*e.g*. Tichý 1960, fig. 13: 1; 20: 7; Pavúk 1980, tab. 1, Abb. 12; 17: 4-7; 25; Pavlů and Vokolek 1992, fig. 28; Cladders 2001, 23-25, 149; Lenneis and Lüning 2001, Taf. 25: 5-153/11, 5-142/49; 27: 6-56/45; Bánffy 2004, 231-232; Pavúk and Farkaš 2013, Abb. 4: 5), including those known from Lower Silesia and Lesser Poland (Kulczycka-Leciejewiczowa 1983a, fig. 3: 11, 13; 2008, fig. 6: 7; 7: 9; 8: 12; 13: 2-3, 5 7-9; Kulczycka-Leciejewiczowa and Romanow 1985, fig. 4: r-v; 12: j; 17: m-o). The occasional presence of non-decorated forms was also recorded in the inventories of the Zofipole phase (Kulczycka-Leciejewiczowa 1983a, 90; 2008, fig. 15: 18, 21; Czekaj-Zastawny and Przybyła 2012, tab. 17: 11), but in this context they were only stylistic reminiscences of archaic forms, or possibly redeposited materials from the older phase.

In turn, the fragments of two, probably quite tall, ovoid vessels decorated with single incised lines under the rim, and with accompanying rectilinear or curvilinear main motifs

(Fig. 8: 1, 3), should be considered as quite unusual elements in the analysed collection. In the areas of the upper Vistula and Odra River basins, the occurrence of similar ornamental compositions in the context of ceramic materials of the oldest LBK has not been unambiguously confirmed so far. This applies to both the rim motif (an encircling incised line) and to total motif compositions present on both vessels from Świerszczów. In fact, the only similar ornament was recorded on one of the globular pots from pit 3 in Samborzec (Kulczycka-Leciejewiczowa 2008, fig. 7: 3). Unfortunately, the stratigraphy and the structure of the ceramic collection from this pit allow us to exclude the homogeneous nature of this inventory, as well as its relation with the Gniechowice phase. On the other areas of the oldest LBK, similiar motifs were recorded extremely rarely. They were recorded on the surfaces of only a few globular pots in the area of the Milanovce phase collections from Slovakia (Pavúk 2004, fig. 7: 2), as well as the oldest LBK inventories from Austria (Lenneis and Lüning 2001, Taf. 8: 1-397/744). In any case, the aforementioned examples do not represent direct formal and stylistic analogies to the specimens from Świerszczów. Similar ornamental compositions are much more common in the collections of the Zofipole phase, although they are present mainly on thin-walled bowls or globular pots (*cf.* Kulczycka-Leciejewiczowa 2008, fig. 15: 1, 4, 7, 15; Kadrow and Okoński 2008, fig. 6: r; Doros *et al.* 2019, Tab. III: 1, 6-7).

Therefore, the presented data reveal a fundamental problem in the unambiguous assessment of the relative chronology of both of the aforementioned vessels from Świerszczów, and at the same time they justify doubts as to their relation with the oldest phase of the LBK. However, such a classification may be supported by the presence of wide and deep incised lines with U-shaped cross-sections, typical for the Gniechowice style. The very concept of such an ornament, and the way it is arranged on the surfaces of both vessels, seems to have a slightly younger date.

The remaining elements of the collection from Świerszczów also have close analogies in other assemblies of the oldest LBK phase. This applies, on the one hand, to wide-open, undecorated conical bowls with strongly protruding, straight rims (Fig. 7: 1, 3-5, 7, 9, 12; 9: 1), and on the other hand, to the ornament in the form of a rain pattern, composed of short pseudo-cuts, which is present on two fragments from feature 174 (Fig. 9: 2). Originally, this ornament covered a larger surface – perhaps even the entire surface of the vessel – probably additionally equipped with a large, vertically and deeply notched, bipartite knob.

Both the above-mentioned forms of bowls, as well as the rain-pattern ornament and the vertically notched, bipartite knob find close and numerous analogies in the oldest stage of the LBK, both in the upper Vistula and Odra basins (*e.g.* Kulczycka-Leciejewiczowa and Romanow 1985, fig. 7: a; 10: a; fig. 12: i; 17: e; 21: n-o; Kulczycka-Leciejewiczowa 1983b, fig. 3: 10; 2008, fig. 6: 5; 8: 8) and in other areas of Central Europe (*e.g.* Tichý 1960, fig. 11: 9-10; 12: 10; Pavúk 1980, Abb. 8; 18: 1-2; 22: 1-6; 31; 32: 5; Cladders 2001, Taf. 1-2; 5: 8; 12; 15: 1; 22: 4; 23: 4; 43: 1-2, 4; Lenneis and Lüning 2001, Taf. 12: 100-46/80; 15: 102-

6/270; 24: 5-135/91, 5-153/10). They are also present in the younger stage of the pre-music-note LBK phase, which is confirmed by numerous finds related to the Zofipole phase (*e.g.* Uzarowiczowa 1964, fig. 3: a; Kulczycka-Leciejewiczowa 1983a, fig. 4: a; 5: b, d; 2008, fig. 9: 10; 15: 8-14; Kadrow and Okoński 2008, fig. 7: z; Zastawny and Grabowska 2014, tabl. 40: a-b; 57: b; 59: c, f; 65: h, j; 79: j; 88: j).

Summing up, the relative chronology of the LBK settlement in Świerszczów, considered in terms of the formal and stylistic differentiation of ceramic materials, defines a narrow range corresponding to the oldest LBK phase, or more precisely to the Gniechowice phase (Ia), which, according to the latest findings, should be correlated with the Milanovce phase (*cf.* Pavúk 2004, 78-80; Czekaj-Zastawny 2008, 116; Pyzel 2014, 83). This is clearly reflected in the numerous formal and stylistic components of the analysed collection, which find many close analogies within the similarly classified inventories in the Transcarpathian areas. It would seem that such an interpretation also applies to the aforementioned fragments of two globular pots with oval cross-sections (Fig. 8: 1, 3). Although, in terms of stylistics, they include the youngest ornamental motifs of whole collection, their manner of ornamentation is typical for the oldest LBK. Therefore, it cannot be ruled out that their presence in the Świerszczów inventory is a manifestation of the adaptation of newer ornamental trends in the oldest LBK tradition or – in a broader perspective – of the coexistence of different traditions in the same area.

The discussed collection is currently the stylistically oldest excavated LBK settlement complex in the Lublin region, and the second – next to Samborzec (Kulczycka-Leciejewiczowa 1983b, fig. 1; 2008, 103-106) – within the entire upper Vistula basin. These inventories are also supplemented by a few diagnostic cave finds (Maszycka Cave and Okopy Wielka Dolna Cave; Kulczycka-Leciejewiczowa 1968, 63, 64; 1983b, 51; Rook 1980, 89, 91), interpreted as the remains of camps (Czekaj-Zastawny 2008, 154-156; Czekaj-Zastawny *et al.* 2020, 32), as well as single surface materials (Michalak-Ścibior 1993). The other finds of Gniechowice phase pottery, known from the Małopolska and Podkarpacie regions, did not form any compact and homogeneous feature complexes, each time coexisting with Zofipole materials (*cf.* Godłowska 1976, 88; Kulczycka-Leciejewiczowa 1983a, 69-73; Kukułka 2001, 13-22; Kadrow 1990, 60; Czekaj-Zastawny *et al.* 2020, 5). The vast majority of these finds should probably be considered as secondary, archaic elements, accompanying the contemporary wave of colonization of these areas, initiated only in the younger section of the early LBK, *i.e.*, in the Zofipole phase (*e.g.* Kulczycka-Leciejewiczowa 2008, 128-129; Czekaj-Zastawny 2008, 116; Czekaj-Zastawny *et al.* 2020, 27). It seems that this also applies to a small (24 pieces) ceramic inventory from three features in Zwięczyc*a*. In this inventory, apart from the elements typical for the oldest LBK phase (Dębiec 2014, 88; 2015, 33), an extensive, horizontal nodule with at least three fingerprints (Dębiec 2014, Taf. 56: 3; 2015, 35, Abb. 2: 5) was also found, which is a common decorative element of thick-walled vessels of the Zofipole phase (*e.g.* Kulczycka-Leciejewiczowa 1983a, 92, fig. 6: k, ł; Zastawny and Grabowska 2014, tabl. 5: a-e; 16: g-h; 21: e; Grygiel 2004, 624). However,

taking into account that the above-mentioned concentration of features has not yet been fully excavated (Dębiec 2015, Abb. 1), the issue of their unambiguous classification within the early periodization of LBK still should be considered as open.

The highly homogeneous nature and small size of the Świerszczów collection allows us to assume its relatively narrowly defined chronological position, as well as the likely single-phase (transitory) nature of the LBK settlement within the site. Unfortunately, the lack of radiocarbon dates makes it impossible to verify this hypothesis, as well as to determine the moment of settlement construction. The attempts made to date two animal bones from the fills of features 19 and 176 provided, unfortunately, highly incorrect dates, going far beyond the LBK time frame (Poz-96696: 3495 ± 35 BP; Poz-97220: 5290 ± 40 BP).

THE EARLIEST PHASE OF THE LBK IN THE LUBLIN REGION

In light of the current state of research, a total of six sites are related to the oldest phase of the LBK in the Lublin region, concentrated only in its eastern part, mainly in the Hrubieszów Basin, and only in one case in the northern part of Central Roztocze (Fig. 11). Along with the other four sites known from the Ukrainian part of the Volhynian Upland, they form a clearly isolated zone, farthest to the East in relation to the other clusters of the early LBK known from the upper Vistula basin (Fig. 11). Most of the early LBK finds from the Lublin region were obtained during excavations. Except for a single cremation grave at site no. 2 in Gródek, all the others are of a settlement nature. They are usually represented by relatively poor inventories or single ceramic materials obtained both from the fills of features, as well as from off-feature layers. Unfortunately, only some of them have been published to a degree that allows for an unambiguous assessment of either their quantitative and qualitative structure or their chronological and stylistic verification. Despite these significant interpretive limitations, the scope of currently available data allows for a preliminary characterization and a very general reconstruction of the course of the oldest LBK phase in these areas. Taking into account the concentration of most of the finds within the Hrubieszów Basin, the observations fit into a slightly larger territorial context, clearly spreading also into the remaining Ukrainian part of the Volhynian Upland.

Apart from the inventory from Świerszczów, the earliest horizon in that area is marked only by finds from Gródek, represented by a cremation grave with a poor collection of pottery from site 2 (Kempisty 1962, fig. 1-2) and a few ceramic materials from sites 1B and 6 (Uzarowiczowa 1964, Fig. 3, 8; Buszewicz 1990, Fig. 3-4a). Among the finds, the best known is the cremation grave from Gródek, site 2. Its relation to the Gniechowice phase may be indicated by the presence of ceramics decorated with deep, U-shaped, incised lines, including fragments of globular pots with biconical profiles (Fig. 12: 13, 15). However, such a functional and cultural classification of the feature is sometimes called into question (Czekaj-Zastawny 2009, 36, fig. 8). It would seem that ceramics in the Gniechowice style

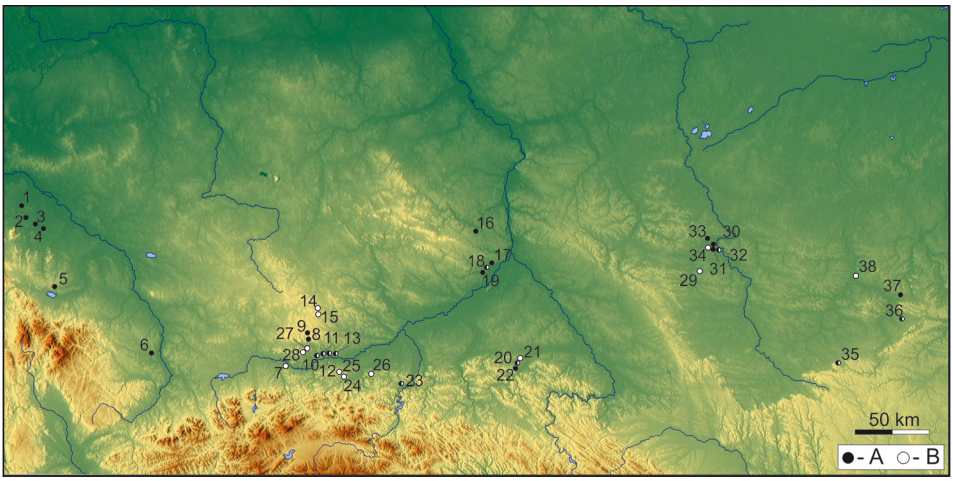

Fig. 11. Location of LBK pre-music-note phase sites in southern Poland and Volhynia (A – Gniechowice phase; B – Zofipole phase): 1 – Gniechowice; 2 – Stary Zamek; 3 – Dankowice; 4 – Strzelin; 5 – Ligota Wielka; 6 – Pietrowice Wielkie; 7 – Spytkowice; 8 – Ojców, Okopy Wielka Dolna Cave; 9 – Maszyce, Maszycka Cave; 10 – Kraków-Bieńczyce; 11 – Kraków-Mogiła; 12 – Kraków-Pleszów; 13 – Zofipole; 14 – Pstroszyce; 15 – Miechów; 16 – Ćmielów; 17 – Andruszkowice; 18 – Samborzec; 19 – Sośniczany; 20 – Rzeszów, Os. Piastów; 21 – Rzeszów-Staromieście; 22 – Zwięczyca; 23 – Gwoździec; 24 – Zagórze; 25 – Zakrzów; 26 – Targowisko; 27 – Modlnica; 28 – Modlniczka; 29 – Sumin 1; 30 – Gródek 1B; 31 – Gródek 2; 32 – Gródek 6 (1D); 33 – Świerszczów 3; 34 – Hrubieszów-Podgórze 5; 35 – Josipivka; 36 – Mežirič; 37 – Rivne; 38 – Baïv (map based on https://maps-for-free.com/, dispersion of sites after Kulczycka-Leciejewiczowa 2000, fig. 3; Czekaj-Zastawny 2008, tab. II; Kadrow and Okoński 2008, fig. 16; Pyzel 2010, fig. 1; Dębiec and Saile 2015, Abb. 1, modified)

from Gródek 6 are represented only by a few fragments of vessels, including a body fragment with a vertically pierced, so-called "corded" handle (Fig. 12: 10), which is considered to be a secondary, archaic element in the collection, among the dominant Zofipole materials (Kulczycka-Leciejewiczowa 1983a, 88). The fragment of the globular pot with the motif of a horizontal rectangle with a single horizontal line incised inside is also archaic (Fig. 12: 7). This specimen was assigned to the Zofipole phase (Kulczycka-Leciejewiczowa 1983a, 88), but such a classification seems doubtful due to the presence of identical decorations in the Gniechowice phase collections (Kulczycka-Leciejewczowa and Romanow 1985, fig. 22: e) and their absence in the Zofipole inventories (*cf.* Kadrow and Okoński 2008, 10, 11; Zastawny and Grabowska 2014, 90, 91; Doros *et al.* 2019, 133-135). Most likely, an incomplete vessel discovered accidentally at site 1B in Gródek should also be related to the Gniechowice phase (Buszewicz 1990, fig. 3-4a). It is a small, asymmetrical (deformed before firing?) vessel with a relatively small rim diameter, a flat base and a more or less biconical profile (Fig. 12: 1). It was adorned with massive, pointed knobs, located on the bend of the body, and decorated with an incised ornament in the form of a simple composition of three arched lines placed between the knobs above the bend of the body. Both the form and style

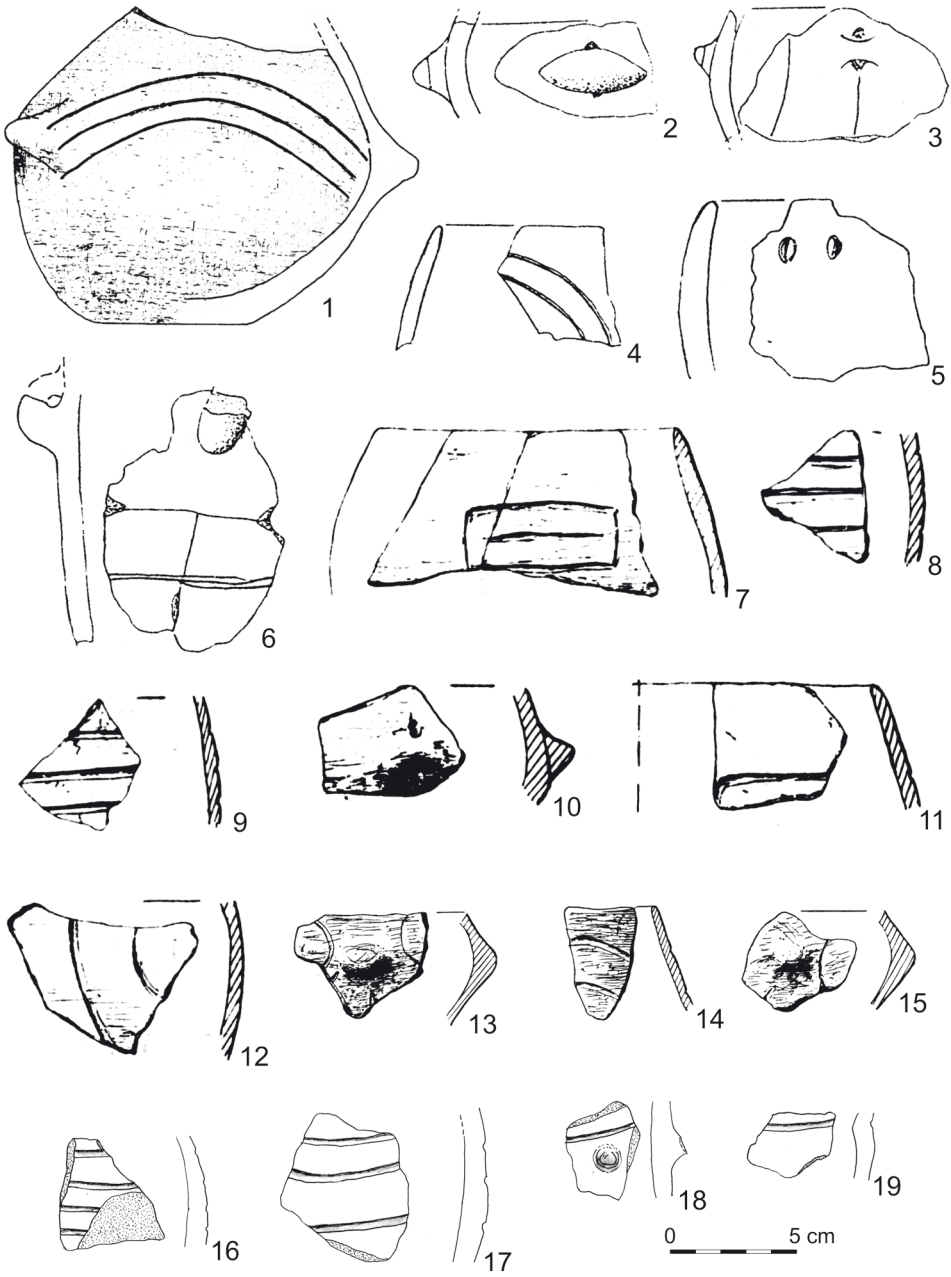

Fig. 12. Selection of ceramics of the early LBK from the Lublin region: 1 – Gródek, site 1B (after Buszewicz 1990, fig. 3: 4); 2-6 – Hrubieszów-Podgórze, site 5 (after Niedźwiedź and Panasiewicz 1994, fig. 2: 2, 4, 6-8); 7-12 – Gródek, site 6 (1D) (after Uzarowiczowa 1964, fig. 3: b, h, n, r; 8: w-z); 13-15 – Gródek, site 2 (after Kempisty 1962, fig. 2: a-c); 16-19 – Sumin, site 1 (after Brzozowski 1986, tabl. 23: a-d)

of ornamentation of the discussed vessel are definitely archaic in nature, finding their closest analogies among the vessels from the Biňa phase inventories in SW Slovakia (Pavúk 1980, Abb. 6: 1-2). The off-feature context of the discovery of this single vessel, unfortunately, excludes the possibility of assessing its real nature and chronological position within the studied areas (archaic element within the inventory of phase Ia?). The collection of materials dated to the oldest LBK from the Hrubieszów Basin is also supplemented by Volhynian materials. Their most numerous series originate from the site in Rěvne (*e.g.* Piasetskiy and Okhrimenko 1990, fig. 3-4; Okhrimenko 2001, 18-25), correlated with the Gniechowice and Milanovce phases (Dębiec and Saile 2015, 6). At least some of the ceramics discovered in Mežirič, and presumably also in Josipěvka, are very similar in nature (Milian *et al.* 2008, fig. 1; Chernovol *et al.* 2009, fig. 4; Dębiec *et al.* 2014, fig. 2-3; Dębiec and Saile 2015, Abb. 2; 12: 2-6). However, the current degree of development and publication of the materials from both sites prevents their comprehensive and unambiguous interpretation.

The vast majority of the early LBK finds from the eastern Lublin region is related to the younger stage of its stylistic development, *i.e.*, the Zofipole phase (Fig. 11). This horizon is represented by numerous finds from site 6 in Gródek, including three features (two pits and a fire-pit) and a collection of several dozen fragments of vessels obtained from their fills, as well as an unspecified amount of ceramic materials from off-feature layers (Uzarowiczowa 1964, 431, fig. 3, 8). The analysis of the ceramics revealed the presence of delicate forms and coarse work with flat bases, including globular pots, undecorated conical and hemispherical bowls, as well as vessels with tall necks and outwardly curved rims. The surfaces of the vessels were decorated with rectilinear and curvilinear incised motifs (Fig. 12: 8-9, 11-12), as well as plastic fingerprints and fingernails or knobs with dimples or incisions (Uzarowiczowa 1964, fig. 3: 1). Finds from site 5 in Hrubieszów-Podgórze are also related to the Zofipole phase, including four immovable features and an undefined collection of historic materials (Niedźwiedź and Panasiewicz 1994, 52). The limited degree of analysis of the finds from this site and the perfunctory nature of their publication make it impossible to fully verify the validity of such an early dating of this inventory. Some of the decorated forms (Fig. 12: 2-6) allow us to consider such a possibility as highly probable. A small collection of surface materials from site 1 in Sumin has also been analogously classified (Brzozowski 1988, 2). It includes a total of eight fragments of vessels, including four body sherds with straight and curved decorative motifs, composed of 1 to 4 wide incised lines with a V-shaped cross-section (Fig. 12: 16-19). Although such an early classification of the collection is widely accepted (*e.g.* Kulczycka-Leciejewiczowa 2000, 200, fig. 3; Czekaj-Zastawny 2008, fig. 68; Kadrow and Okoński 2008, fig. 16; Dębiec and Saile 2015, Abb. 1), its superficial nature excludes the possibility of assessing either the degree of its homogeneity or the actual form and scale of activity of the early LBK community within the site. The list of finds related to the horizon in question is also supplemented by the site in Baïv in Volhynia (Fig. 11) – more specifically, a single, incomplete flask vessel obtained from a grave (Sveshnikov 1954, Taf. V: 10; Passek and Chernysh 1963, fig. 4). This form is

decorated with a spatially extensive motif of a rhombic meander composed of quadruple incised lines, additionally enriched with large music note pits, irregularly arranged on the bends of the lines (Bardec'kyj *et al.* 2013, Abb. 2-3). Based on analogous finds related to the Ib2 phase of the LBK from the cemetery in Vedrovice, the vessel from Baïv was related with the declining episode of the Zofipole phase (Bardec'kyj *et al.* 2013, 256; Dębiec and Saile 2015, 4). The presence of the music note ornament indicates a very similar chronological position to that of the materials from Mežirič (Dębiec *et al.* 2014, fig. 4-5; Dębiec and Saile 2015, Abb. 13: 5-6; 14). Such dating also cannot be ruled out in the case of some materials discovered at Yosipevka (Milian *et al.* 2008, fig. 1; Chernovol *et al.* 2009, fig. 4).

SUMMARY

The stylistic diversity of the ceramic inventories from the eastern Lublin region (as well as from the Volhynian Upland) currently allows us to assume two basic stages of colonization of these areas by the early LBK community. The first stage corresponds to the Gniechowice phase (Ia) in the upper Vistula and Odra basins, correlated with the Milanovce phase. The small number of such classified collections indicates that settlement within those areas was most likely ephemeral and of a low intensity, and was associated with the formation of relatively few small settlements. Despite this, the potential presence of permanent settlement relics in Świerszczów allows us to assume that the LBK settlement in that period was relatively permanent, not only a short-term "reconnaissance", which may be indicated by materials from western Lesser Poland, including cave finds (*cf.* Kulczycka-Leciejewiczowa 1968, 63; Rook 1980, 89, 91; Czekaj-Zastawny *et al.* 2020, 32). The main wave of colonization of the eastern Lublin region and Volhynia by the communities of the early LBK was related only with the dissemination of the Zofipole style. This is indicated by the vast majority of the previous finds (Fig. 11), although the current scope of identification of particular sites, as well as the development and publication of ceramic materials, makes it difficult to clearly assess the form and the actual intensity of settlement processes in this period. This stage, later than the Milanovce phase, should be correlated with the Moravian phase Ib (Pyzel 2010b, 545; 2014: 90), including at least its younger stage of development (sub-phase Ib2), characterized by, *i.a.*, the presence of music-note holes in the ornamentation of vessels (Čižmář 2002, 178, fig. 13). This is confirmed by, among others, Volhynian materials (Baïv, Mežirič), which have very close analogies among the funerary collections in Vedrovice (Bardec'kyj *et al.* 2013, 256; Dębiec and Saile 2015, 6). It also corresponds very well with the marked increase in the settlement dynamics of the LBK in the younger section of the Zofipole phase, visible in the remaining areas in the upper Vistula basin (*e.g.* Kadrow and Okoński 2008, 19). The lack of unequivocal evidence allowing the correlation of Zofipole materials from the eastern Lublin region with the Moravian sub-phase Ib1 may only be due to the incomplete degree of analysis of the source materials. Some of

the published data from the sites in Hrubieszów-Podgórze (site 5), Gródek (site 6) and Josipĕvka allow us to consider such an interpretation as highly probable.

In the context of the postulated two-stage colonization of the discussed areas by the early LBK community, one of the most important research problems is the issue of their mutual chronology. The discoveries made so far regarding the chronology of the early LBK allow us to assume that the emergence of a community with ceramics decorated in the Gniechowice style in the eastern Lublin region took place after 5400 BC, but probably no later than 5350/5300 BC (see Jakucs *et al.* 2016, fig. 24). The upper limit of this range is purely arbitrary and is determined by the ^{14}C range of the oldest music-note inventories in the upper Vistula basin, revealing chronological similarity with most of the previous LBK dates in these areas (*cf.* Dębiec and Dzbyński 2007, Abb. 5; Kulczycka-Leciejewiczowa 2008, fig. 55; 2010, 551-553; Czekaj-Zastawny 2008, pl. I; 2014, pl. XI; Czekaj-Zastawny *et al.* 2020, fig. 16). This range also corresponds partly to the ^{14}C range obtained for the early LBK inventory in Rívne in the Volhynian Upland (Kotova *et al.* 2007, 415, tab. 2; Okhrimenko 2009, 82).

A separate and much more problematic issue is the moment when collections with Zofipole-style ceramics appeared in the eastern Lublin region. Taking into account the radiocarbon dates from Gwoździec and Samborzec, it could not have happened until around 5300 BC or later. Earlier dating of assemblies containing, among other things, features typical for the Zofipole style from Kuyavia and Chełmno Land (Kukawka *et al.* 1990; Grygiel 2004, 633; Pyzel 2014, Abb. 5), as well as the ^{14}C date of a fragment of Zofipole pottery from Brzezie (Czekaj-Zastawny 2014, pl. XI), does not allow us to explicitly exclude the possibility of an earlier date for this phenomenon. In the case of the analysed area, this problem seems to be particularly important, at least due to the presence of elements stylistically deviating from the ornamental convention typical for the Gniechowice phase and having analogies in the Zofipole inventories (Fig. 8: 1, 3). This situation implies the possibility of at least a partial co-existence of old and new ornamental traditions in the oldest phase of the LBK in the Hrubieszów region. The lack of absolute dating precludes the verification of this hypothesis; however, such a possibility cannot be ruled out, due, for example, to the quite short duration of the entire early LBK period (Jakucs *et al.* 2016). This extremely important issue is still open today.

Another open issue is the identification of initial areas of settlement and potential routes of the influx of the early LBK community into the eastern Lublin region. The dispersion of such dated sites in the upper Vistula basin (Fig. 11) seems to imply at least two likely possibilities in this respect. In previous studies, the colonization of these areas was directly linked to the migration of early LBK groups from the Sandomierz Upland, travelling up the San and then the Tanew River (Brzozowski 1988, 2). This hypothesis, although highly probable, is unfortunately not supported by source materials (due to the complete lack of early LBK finds between the Sandomierz and eastern Lublin regions; *cf.* Fig. 11). However, it is also worth considering another, purely hypothetical concept, taking into

account the entirety of the current "eastern" finds of the early LBK – that is, the possibility of the colonization of Volhynia and the eastern Lublin region as a result of the shifting of the oldest LBK communities from the upper Vistula basin (*i.e.* from Podkarpacie) to the east, to the areas on the upper Bug and Horyń, and then north, down the course of both these rivers, or only the Horyń (Fig. 11). The latter option implies the possibility of colonization of the Hrubieszów Basin by communities who came directly from Volhynia. This may be indicated by the presence only of products made of Volhynian flint in the flint inventory from Świerszczów. Regardless of this, the processes initiated in the oldest phase of the LBK were also continued in its younger episode related to the spread of Zofipole stylistics. This may be inferred from the presence of sites dated to the Zofipole phase in the Horyń and Bug basins, and indirectly also in the Hrubieszów Basin and Central Roztocze (Fig. 11). However, the increase in the number of Zofipole sites visible within the eastern Lublin region, allows us to consider the possibility that the LBK community penetrated these areas by other routes as well, leading directly either from the Sandomierz region (San – Tanew – Huczwa) or from the Podkarpacie zone – more precisely from the Rzeszów region (Wisłok – San – Tanew – Huczwa). This issue, due to the lack of sufficient source materials, remains open at the moment, but it is undoubtedly one of the most important aspects of research on the neolithization of areas between the Vistula and Bug Rivers – all the more so, because the phenomena initiated in the oldest phase of the LBK within the eastern part of the Lublin region (especially in the Hrubieszów Basin) constituted a specific prelude of fundamental, dynamic and permanent settlement processes documented in its remaining areas in the next, *i.e.*, classical, period of LBK development (*cf.* Brzozowski 1986, 2; Szeliga 2021).

Acknowledgements

The authors would like to thank Edmund Mitrus, Jadwiga Jóźwiak and Damian Wilczyński for making available for study the early LBK materials discovered during rescue research at site 3 in Świerszczów. Thanks are also due to Tomasz Myśliwiec for translating the text into English. An attempt to date animal bones from features 19 and 176 was undertaken in order to obtain comparative data in connection with the implementation of the National Science Centre in Poland project (project No. 2015/19/B/HS3/01720).

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