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STYLISTIC CHANGES IN THE POTTERY PRODUCTION OF THE LINEAR POTTERY CULTURE IN THE LOWER Odra REGION IN THE LIGHT OF MOST RECENT STUDIES

ABSTRACT

This article is the first contribution to a multi-faceted study of the origins of food production in the lower Odra region. Since 2004, the author has conducted microregional surveys to identify Stone Age settlements in the studied region. Later, starting from 2015, a number of settlements of the Band Pottery horizon in the microregion have been investigated (Linear Band Pottery, Stroke-Ornamented Pottery Culture, and Rössen Culture), as well as the roundel at Nowe Objezierze. As of 2018, crucial research is taking place in a central settlement (7/10 ha) of the Linear Pottery Culture (LBK) in Mierzyn 5: PAR 30-04/106, where 20,000 artefacts, 25 homesteads, and 13 identified post-house structures were found.

The author's recent studies demonstrate the lower Odra region to be crucial for understanding stylistic

changes in the Early Neolithic. The results of recent research in the lower Odra region, conducted as microregional studies, provide numerous and valuable assemblages reflecting the overall LBK settlement development in the region. Already in the first phase of the work with ceramic materials, it became clear that there was a need to create a periodisation system that would take into account the specifics of the region and the archaeological material. As a result, it is proposed that the division of Phase II into Subphases A and B is not sufficient, thus making it necessary to distinguish new units within Phase III. At the same time, the Skoroszowice-type pottery seems to have been used in the lower Odra region. Currently, it is considered very likely that groups of people continued to exist in the Proto-Proto-Stroke-Ornamented Pottery Culture Horizon.

Keywords: Lower Odra, Early Neolithic, in-depth reading, LBK, farmers, pottery, Music-Note Phase

Introduction

This article is the first contribution to a multi-faceted study on the origins of food production in the lower Odra region. Since 2004, the author has been conducting microregional surveys to identify Stone Age settlements in the studied area. Next, since 2015, several settlements of the Band Pottery horizon in the microregion (mainly in the vicinity of Przecław, Stare Czarnowo, Stobno, and Przylep) were investigated, including the Linear Band Pottery (*Linearbandkeramik*; hereafter as LBK), Stroke-Ornamented Pottery Culture (*Stichbandkeramik*; hereafter as STbK), and Rössen.¹ As of 2023, crucial research is taking place in the LBK's central settlement (7/10 ha) in

Mierzyn-Ostoja-Przylep, Police county (the site is inventoried as Mierzyn 5 in the Polish Archaeological Register: PAR 30-04/106).² The discovery of a roundel at Nowe Objezierze in 2016 should also be seen in the context of this microregional project.³ Over 20,000 objects, more than 25 homesteads, 13 identified post-house structures (Fig. 2A), and one completely excavated homestead are the results of the last four years of research (Fig. 2B).

The following article conveys the main trends and conditions related to the postulated stylistic changes. Each aspect addressed will be treated in detail in more extensive future studies, to be published shortly as individual articles. At this stage of the work, the author considers the data and results related to the LBK in the

¹ Dziewanowski 2019a; 2021a, 51, 53; 2021b.

² Dziewanowski 2013; Dziewanowski, Żuk 2005.

³ Dziewanowski 2019, 250.

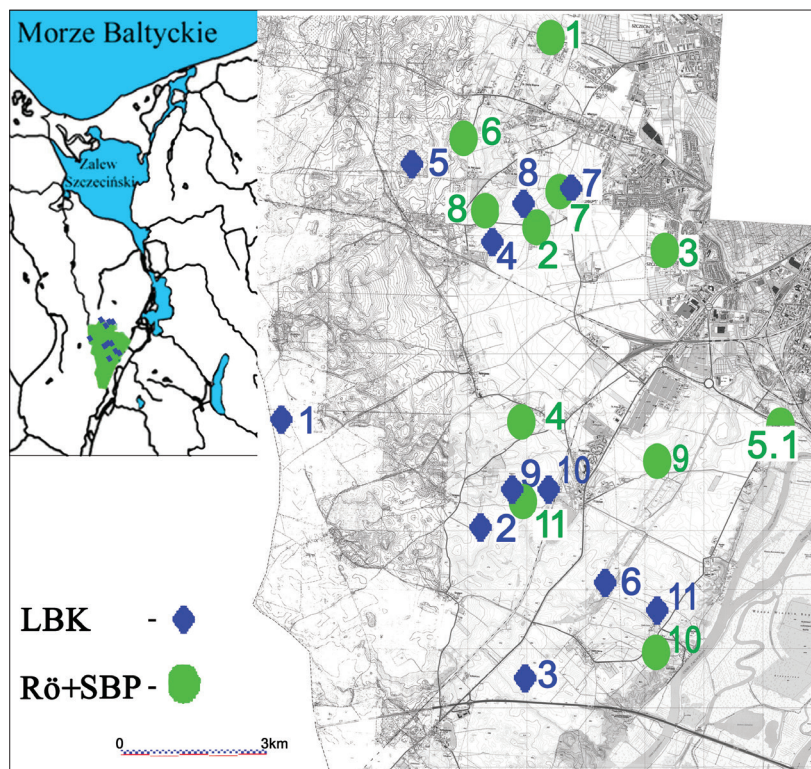


Fig. 1. Microregion of the Szczecin Hills. Elaborated by M. Dziewanowski.

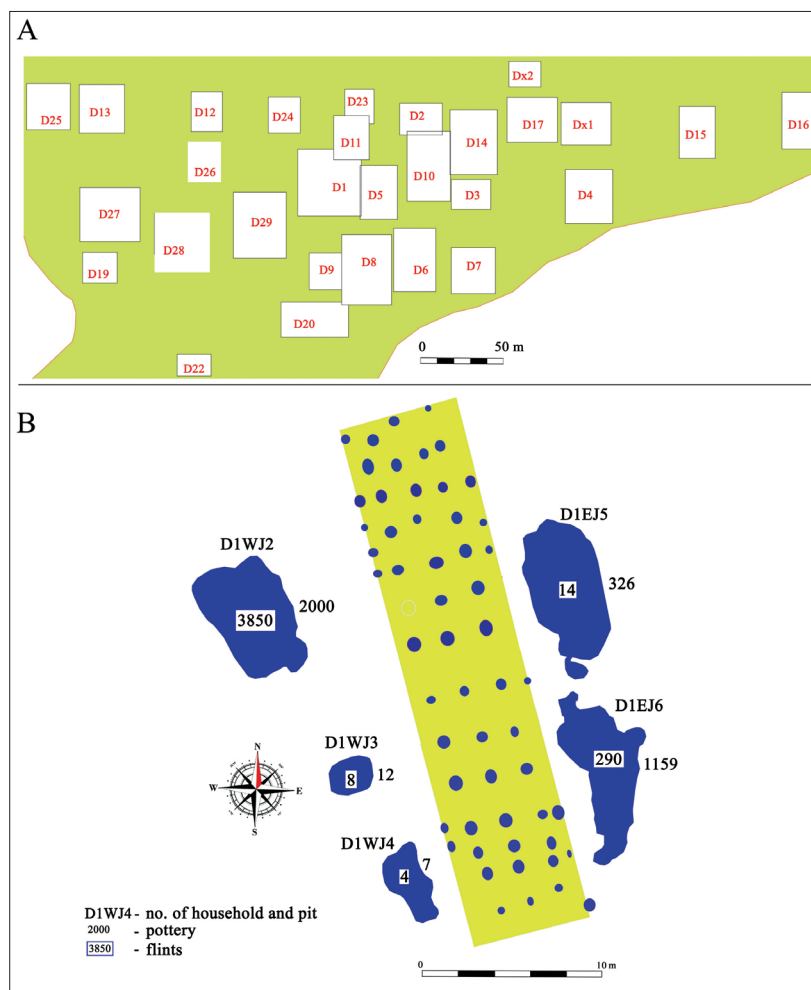


Fig. 2. Mierzyn, site no. 5. Dobra commune. An LBK settlement and homestead in the central settlement. Elaborated by M. Dziewanowski.

Vistula Basin as reference material. Comparative studies with other regions are planned at the next stages of data collection and processing.

Preparations are also being made to extend the study to the last Mesolithic groups and late hunter-gatherer populations of the Proto-Neolithic cultures.⁴ The immediate motivation is the need to reinterpret a Mesolithic triangle found in the LBK oven at Mierzyn 5.⁵ Of the recent finds, an axe with Early Neolithic (late 7th millennium BC) features found at the Mesolithic site in Bolków is particularly intriguing.⁶

So far, there have been no attempts at periodisation of the LBK in the lower Odra region. The available publications are limited to mentions,⁷ selective reports,⁸ and references to detailed studies of a few selected finds.⁹ Therefore, the author's study has a pioneering character, which requires making some initial considerations.¹⁰ Regrettably, a significant number of finds accumulated in the museum repositories have not yet been published as a monographic study.¹¹

The Linear Pottery settlements

Before 1945, German researchers had depicted LBK settlement patterns in the lower Odra basin as clusters scattered across the Wkra forests and the region of Pyrzyce on both sides of the glacial valley of Odra.¹² This model was widely accepted and repeated in the following decades. T. Wiślański conducted several archaeological expeditions in the 1970s to verify it, but these studies did not progress beyond the planning stage.¹³ In published materials on the Neolithic Period in the Polish Lowlands, the LBK settlement on the lower Odra River continues to be associated exclusively with the Pyrzyce Lowland.¹⁴ The group of sites on the Szczecin Hills is the most recent discovery in the region, but also the most important for the understanding of cultural processes in Central Europe at the end of the 6th millennium BC. The first LBK sites were identified by the author in 1994 (sites of the Rössen Culture and the STbK) and 1998 (sites of the LBK), but the first publication appeared in 2005, when the soundings of Mierzyn 5 were completed.¹⁵ Thanks to the author's in-depth settlement studies, 11 LBK sites are known from the Stobno cluster alone, and another dozen remain to be verified. Based on the results of the survey

conducted so far in the largest LBK settlement, the number of LBK homesteads is estimated at 60 (25 of them were documented on 2.5 ha out of 7/10 ha), with the total number in the Kołbaskowo commune being 80–100.

In the last two decades, several archaeological expeditions were carried out in connection with the large construction projects in the lower Odra region. Although they considerably broadened the source base, they did not generally bring significant changes in our understanding of chronological, stylistic, and settlement-related historical questions. Today, this region is a kind of a large construction site and, despite the huge area under archaeological supervision, there are no new discoveries. The region of Pyrzyce, once known as an important Neolithic centre, seems to lose its significance. Of course, this cannot be due to the lack of evidence, but rather to other systemic factors possibly driven by social and environmental reasons.¹⁶ Another problem is the low reliability of archaeological survey results associated with major construction investments. Many years of archaeological monitoring yielded negative results. Verification investigations carried out by the author in the LBK central settlement at Mierzyn 5¹⁷ showed that the area where construction activities took place was densely occupied by LBK longhouses; post structures are recognisable, as well as rows of lateral pits.¹⁸ In addition, overlaps of the LBK structures with settlement remains of the Rössen and STbK cultures were detected.

Conditions of stylistic dating

The basic LBK settlement unit is composed of a homestead with associated structures, including a post house, lateral pits, and construction pits, which form a kind of extension and roofing over the working spaces located in the lateral pits.

The construction of such a complex must have been a great effort. The use of high-quality tree species such as oak and intentionally charred logs made it more durable. Providing the domestic areas with drainage by digging ditches prevented the development of decay. All this leads us to believe that the natural durability of the structure of 30 to 60 years is quite reasonable. However, the reasons for the abandonment of the houses are currently difficult to determine.¹⁹

⁴ Galiński 1992; 2012; 2016.

⁵ Dziewanowski 2021, fig. 3: 1; see also Wąs 2005; 2012.

⁶ Galiński 2022.

⁷ Kowalski 1998; 2003.

⁸ Uciechowska-Gawron, Kamiński, Słowiński 2011.

⁹ Balcer 1983; 1985; Kulczycka-Leciejewiczowa 1975.

¹⁰ Dziewanowski, Żuk 2005.

¹¹ Nawrońska 1976.

¹² Kowalski 2003; Wiślański 1974.

¹³ Balcer 1983; Nawrońska 1976, 48.

¹⁴ Marciniak *et al.* 2022, 24–25, fig. 1.

¹⁵ Dziewanowski, Żuk 2005.

¹⁶ Dziewanowski 2013; 2019; 2021a.

¹⁷ Dziewanowski 2021a; 2021b.

¹⁸ Dziewanowski 2021a; 2021b.

¹⁹ Czekaj-Zastawny 2008, 50; Gackowski 2021, 88.

In the Central Polish Lowlands, Phase III of the LBK lasted between 5125/5060 and 5080/5000 cal. BC (95% confidence interval), as recent studies show.²⁰ Thus, the durability of a house might have roughly corresponded to the duration of this phase of cultural development. Lateral pits can contain the youngest and oldest materials, but also mixed elements from different phases of the life of the house. The case of multiphase sites is more complicated, since the deliberate deposition of younger finds in older pits cannot be ruled out.²¹ Therefore, statistical analysis of inventories assigned to houses according to their features and characteristics, while providing statistically important data, may give a false picture of stylistic changes.

The author's research on multiphase settlements, where Rössen and STbK occupations often overlap with LBK homesteads, has provided valuable information on taphonomic processes. Most of the lateral pits could have been backfilled even a few hundred years later. In such cases, only the distribution of pottery finds makes it possible to distinguish between the 6th-millennium layer and that accumulated in the second quarter of the 5th millennium BC. This shows that it is even more difficult to imagine that we can reliably distinguish the layers that have formed over a period of 100 to 150 years, while the settlement was growing and becoming more active.

Knowing that a layer of soil at least 100 centimetres thick disappeared due to erosion since the settlement was abandoned makes us more cautious and sceptical when interpreting the results of investigations of settlements, which in most cases consisted of homesteads.

Periodisation of the Linear Pottery Culture

For the Polish Lowlands, a periodisation in three phases (I–III) is common,²² developed for the Kuyavian assemblages.²³ Phase II (the so-called Music-Note Phase) is divided into IIA and IIB.²⁴ In southern Poland, a more detailed subdivision of Phase III is in use: the Żeliezowce Phase for Lesser Poland²⁵ and the Szarka Phase for Silesia.²⁶

The author's recent studies allow us to consider the lower Odra region as crucial for understanding stylistic changes in the Early Neolithic, although Phase I has not been confirmed and Phase IIA (early Music-Note) has

not yet been conclusively demonstrated in this region.²⁷ Often trivialised and described simply as younger and the youngest, the lower Odra materials are now proving to be of fundamental importance to the latest research trends on the Early Neolithic in Central Europe. During Phase III, which may have lasted for only 60 years according to recent findings, there may have been at least 200 homesteads. The riddle of the beginning and the end of Phase III will hopefully be solved by further research in the studied region.

Absolute chronology

Absolute dating based on ¹⁴C age determination is one of the most important, but also most controversial methods.²⁸ Even ignoring the implicit assumptions of this method, many limitations can be pointed out that reduce the reliability of dating if an event is to be dated with an accuracy of 100 years. This is all the more remarkable when one considers that the recent discussion is about whether the last LBK should be placed around 5000 or 4950 BC. Recently, some individual ¹⁴C estimates for features from Lower Odra have been published, the content of which has not yet been adequately studied and published,²⁹ not to mention the discussion on homogeneity of the discussed assemblage. Today, there is no doubt that the future of ¹⁴C-based chronology with a higher degree of reliability depends on obtaining a series of samples from an archaeological feature that is closely related to other features that can be dated. An example of such a desirable architectural feature would be a pit containing grains, bones, bark, and flint with remnants of organic material, as well as pottery covered with birch tar and carbon deposits. Such analyses would most likely reveal the limitations of the method. They would certainly also provide an opportunity to develop an account that would be consistent with the state of theory development. Samples of the same feature would need to be sent to multiple laboratories.³⁰ If the results obtained were similar, each of the dates could be considered reliable. The author aims to provide a compilation of ¹⁴C dates valuable for versatile studies in line with the current methodological trends.

In recent years, research has been conducted to obtain representative data. The first study will make it

²⁰ Marciniak *et al.* 2022.

²¹ see studies: Allard, *et al.* 2013, fig. 9; Bostyn *et al.* 2012, figs. 51, 80; Bosquet *et al.* 2010; Rück 2013, fig. 5; for the interpretation of re-fittings, see Fiedorczuk 2007.

²² Czekaj-Zastawny 2008, 13–18.

²³ Pyzel 2010.

²⁴ Pyzel 2010.

²⁵ Kadrow 2020, figs. 6–7; Pavúk 1969.

²⁶ Kulczycka-Leciejewiczowa 1979; Wojciechowski 1978.

²⁷ Dziewanowski 2021; see also Słowiński 1991, figs. 1.5–1.7.

²⁸ Denaire 2009.

²⁹ Marciniak *et al.* 2022, 17–18.

³⁰ Marciniak *et al.* 2022.

possible to establish criteria in the form of features and assemblages of diagnostic properties and exclude trivial characteristics.

Artefacts from the investigation of the settlement of Mierzyn 5 are crucial for the new periodisation. It is suggested to distinguish subphases to the already known phases, as well as to add the last phase as a transitional period connected to the transformation of the Early Neolithic into the Middle Neolithic (post-Linear) system. These new assemblages will play a key role in testing the feasibility and limitations of the ^{14}C method.

Selected aspects of the pottery style features of the Linear Pottery Culture

Spiral and single-line main motifs, including curved incisions as additional motifs, are the hallmarks of early LBK. The techniques are single “musical notes” that do not form rows, as well as broad and deep lines, while the pottery forms are flowerpots and ovoid specimens. I connect the question of criteria for evaluation of how the change in style from the classical to late Music-Note Phase manifested itself with the S-bands consisting of four lines. A crucial point is also the degree to which different parts of a vessel are filled with the “music note” motifs, which allows a connection to the “Szarka” ornamental patterns. Patterns consisting of five, six, seven, and nine lines reflect the successive phases of motif development. However, did these occur at such intervals that it was possible to obtain appropriate data for each of the postulated stages of development? The field research also focuses on these questions.

Period I – the pioneering phase

Already in the second research season, the complexity and multilinearity of the stylistics within the ceramic subgroups became clear³¹ and the search for comparative databases provided an incentive to recognise older ceramic admixtures in some of the finds. It should be noted that the finds represent stylistics and decorative (spiral) motifs that have not been confirmed this far to the north-west of the Noteć River valley. In the backfill of Oven Pit D1WJ2, undoubtedly in a secondary context, fragments of some vessels were found with spiral motifs and single “music notes” that do not form lines (Fig. 3B). A vessel discovered in the wall of an oven on the eastern side of Homestead D14 is particularly puzzling (D14EJ1). This

vessel is unique in every way, and no counterpart has yet been found (Fig. 3C). It has wide, deep incisions about 1 centimetre apart, forming a motif consisting of an incomplete spiral filled with two continuous lines. A model for this design is found in Saxony, in the Flomborn horizon, where bands filled with pairs of incised lines and the additional “swallowtail” motif were popular³². In addition, an assemblage of pottery representing at least five vessels was recovered from a partially investigated Pit D10WJ4, including a thin-walled form with a broad and deep line and several small beakers with trilinear S-band motifs and inset triangles (Fig. 3A). No “music note” pattern was observed in any of them. Instead, additional motifs in the form of three incised lines stand out. The only bowl is a specimen with thick walls and abundant plant admixture. In the group of stylistically homogeneous collections, this one is among the earliest.

Period II – the phase of settlement development

In several cases, groups of features typical of Phase IIB were found (Fig. 4). Subgroups of pottery documented in the homesteads D12(WJ1), D23 (WJ1) and D14 (WJ1-5) show only three-line motifs, whereas four-line patterns are absent or weak. The “music notes” are in rows but occur rarely and only at the end of the lines. Between the lines, there is a distance of at least 5 millimetres, and it happens that they are finely drawn.

Period III – the phase of intensive settlement colonisation

Subgroups with a significant proportion of four-line motifs found in the homesteads D1, D10, and D14 (EJ1) may be associated with the period of actual colonisation and intensive development of the central settlement (Fig. 5). Motifs that are considered the ‘proto-Szarka’ type can occur in several different variations and may be generally associated with the more common strokes. The earliest Szarka motifs were executed with clearly separated strokes, often placed not on lines but on the horizontal line formed by incisions. However, when looking at the ceramic materials as a whole, we can see that they indicate a rather archaic way of applying ornaments, expressed in the size of the strokes and the distances between them, as well as in their width and thickness, and so on.

³¹ Dziewanowski 2021a, 47; Dziewanowski 2021b, figs. 2–3.

³² Dziewanowski 2021b, fig. 3. 3.

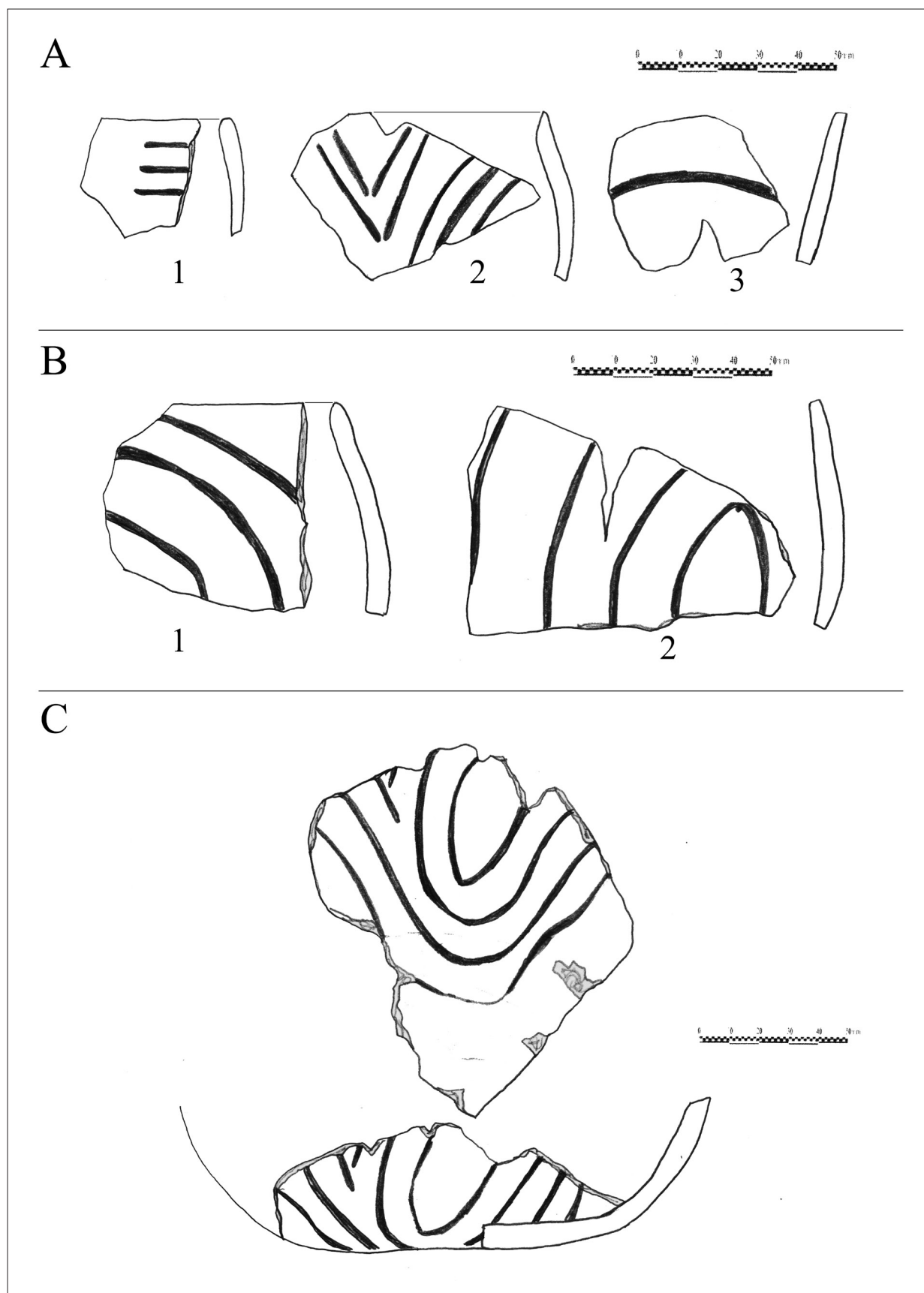


Fig. 3. Mierzyn, site no. 5. Dobra commune. Selection of pottery with early features: A- D14WJ4, B- D1WJ2, C- D14EJ1. Elaborated by M. Dziewanowski.

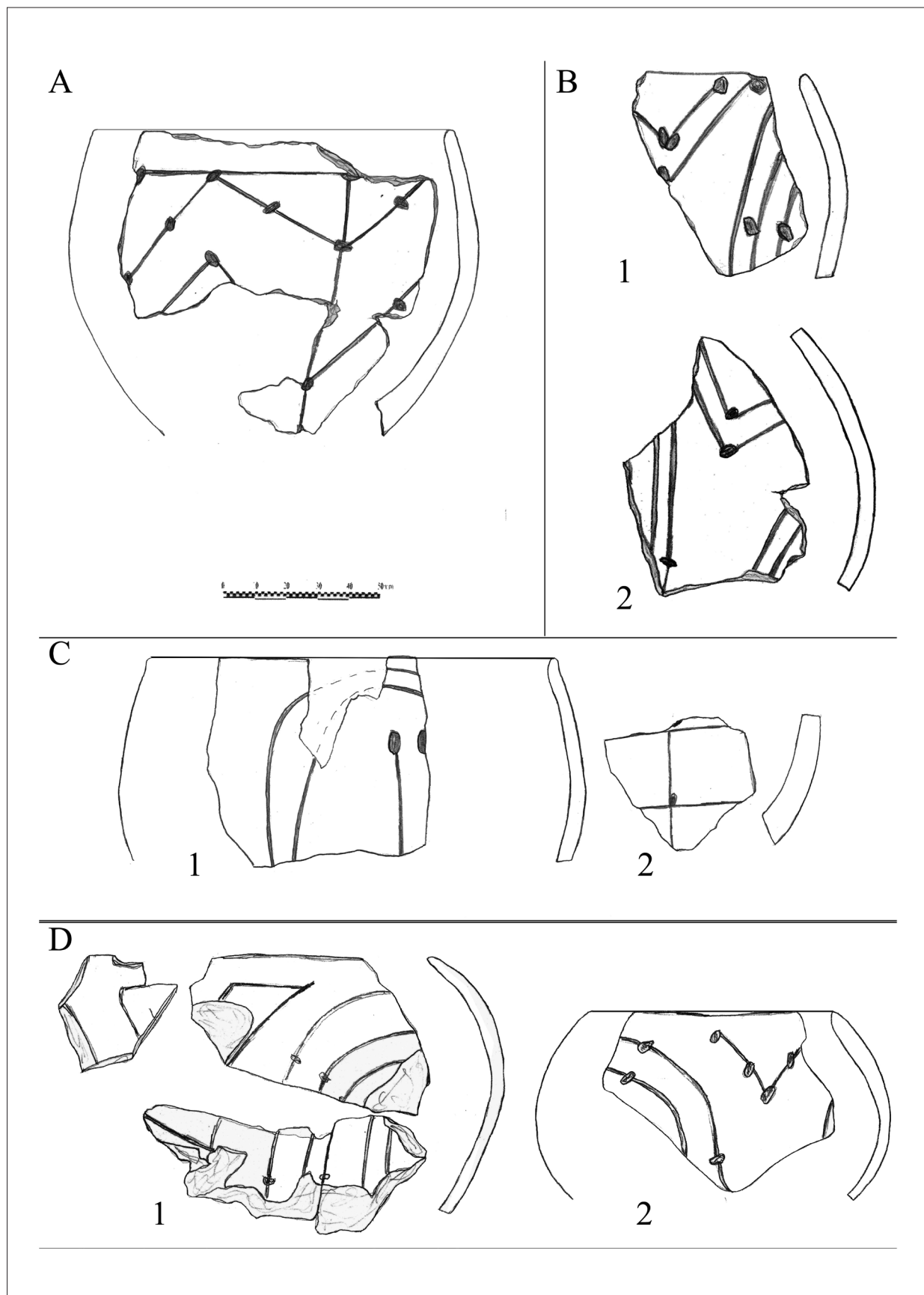


Fig. 4. Mierzyn, site no. 5. Dobra commune. Selection of music-note pottery: A- D10EJ1; B- D14WJ2; C- D12WJ1; D- D14WJ3. Elaborated by M. Dziewanowski.

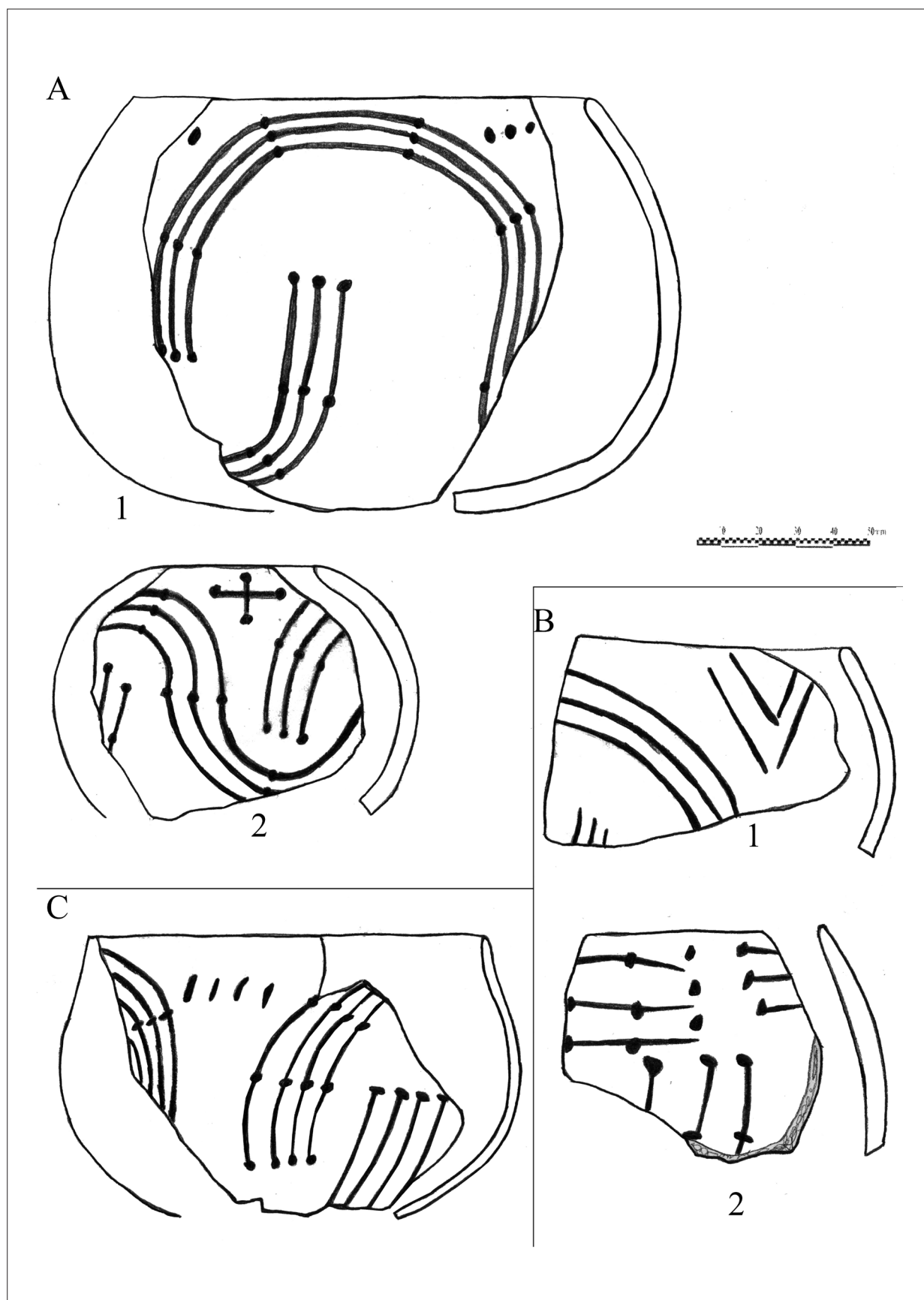


Fig. 5. Mierzyn, site no. 5. Dobra commune. Selection of late music-note pottery: A- D10WJ2; B- D10WJ1; C- D7EJ5. Elaborated by M. Dziewanowski.

Period IVa – the phase of permanent settlement

Another subgroup is characterised by the fact that the motifs of the Szarka type were used to varying degrees, but the incisions are much more precisely executed (Fig. 6A). In this respect, the ceramic assemblages of homesteads D16 and D7 are the most typical and representative of this period. Lines are fine, parallel, and more densely drawn. The patterns consisting of five lines are the most striking feature, but it could be that their appearance marks a new stage in the stylistic development. At this time, the “tooth” motifs known as *Kleberverzierung* gained importance.

Period IVb – the phase of settlement reduction

Another stylistic group shows more developed motifs in every respect and all likelihood the number of lines increases to six, seven, or even nine in approximately the same period (Fig. 6B). Most likely, it would be possible to prove the chronological sequence and indicate a subsequent phase in the development of the style or the next generation, which would involve a thickening of the lines. To prove this, however, field research would have to be intensified to obtain representative assemblages. This stylistic group was determined based on materials from Homestead D4 and finds from Stare Czarnowo, Site 63.³³ In general, the number of settlement relics in the region is increasing, but at the same time, there is evidence of a decline in older settlements.

Period V – time of crisis

The recent discovery at Mierzyn 5 adds a new insight to the studies on the Early Neolithic in the Polish Lowlands, namely that there could have been a transitional phase between the LBK and the STbK – the so-called Skoroszowice Phase.³⁴ In macromorphological and ornamental aspects, the peculiar character of this stylistic group is evident. Although the forms of the coarse and fine ware are similar in both cultures, the neck is an element that was much more frequently distinguished. A rather extensive collection of pottery was recovered from Feature D6WJ1 (Fig. 7). S-banded motifs seem to lose importance in favour of angular and rectilinear patterns. Linear patterns are multiplied and there are many

more “music notes” in the rows (Fig. 6B: 2, 4; 7: 2–7). Even though the strokes are small and often triangular, they are more densely packed and give the impression of furrow stitches (*Furchenstich*) (Fig. 7: 3–4). Also, the additional motifs are different; there are oblique and vertical lines, similar in idea to the STbK ornamental patterns (Fig. 7: 1).

Was there a great colonisation of the Lower Odra River region?

There are two main concepts for the development of the LBK in Kuyavia.³⁵ The first one states that the first LBK settlement lasted for a long time and there was probably no hiatus,³⁶ although the possibility of this culture disappearing in Phase III has been recently accepted.³⁷ It is very likely that the LBK disappeared in some regions and transformed in others during the late 6th and early 5th millennia BC. As a result of social and stylistic changes, for example in Bohemia and Silesia, the STbK may have emerged from the groups of the Szarka Phase of the LBK.

According to the other idea,³⁸ at the very end of Phase II, the Kuyavian populations could have made a great migration to the west, along the Noteć valley, and on their way settled, among others, the area of the lower Odra River. The studies and considerations delivered by the advocates of both concepts about the origin and the real nature of the cultural processes before the Middle Neolithic are complex.

However, inspired only by these strands of historiography, the author presents some important results of his studies and outlines the most probable pattern of Neolithisation of the lower Odra region. There is no doubt that the level of knowledge about the LBK settlement in the studied region is disproportionate to its potential and resources. It is through the recent microregional studies initiated by the author³⁹ that the overall perception of the region is changing, along with its importance for the dissemination of ideas and the establishment of interregional contact networks.

Virtually all published LBK material for the regions of Pyrzyce and the Stobniański Ridge has been, until recently, associated with the last phase (III) of the LBK, or with the terminal part of Phase II. An exception was the ceramic assemblage from Brzezina 7,⁴⁰ which, however, could not be better evaluated due to its small size. These facts rightly suggest that the LBK settlement took

³³ Dziwanowski 2018, fig. 6.

³⁴ see: Wojciechowski 1978.

³⁵ Marciniak *et al.* 2022, 4–5; see also Pyzel 2010, 221–226.

³⁶ Pyzel 2021, 211.

³⁷ Marciniak *et al.* 2022, 4.

³⁸ Marciniak *et al.* 2022, 5.

³⁹ Dziwanowski 2015.

⁴⁰ Słowiński 1991.

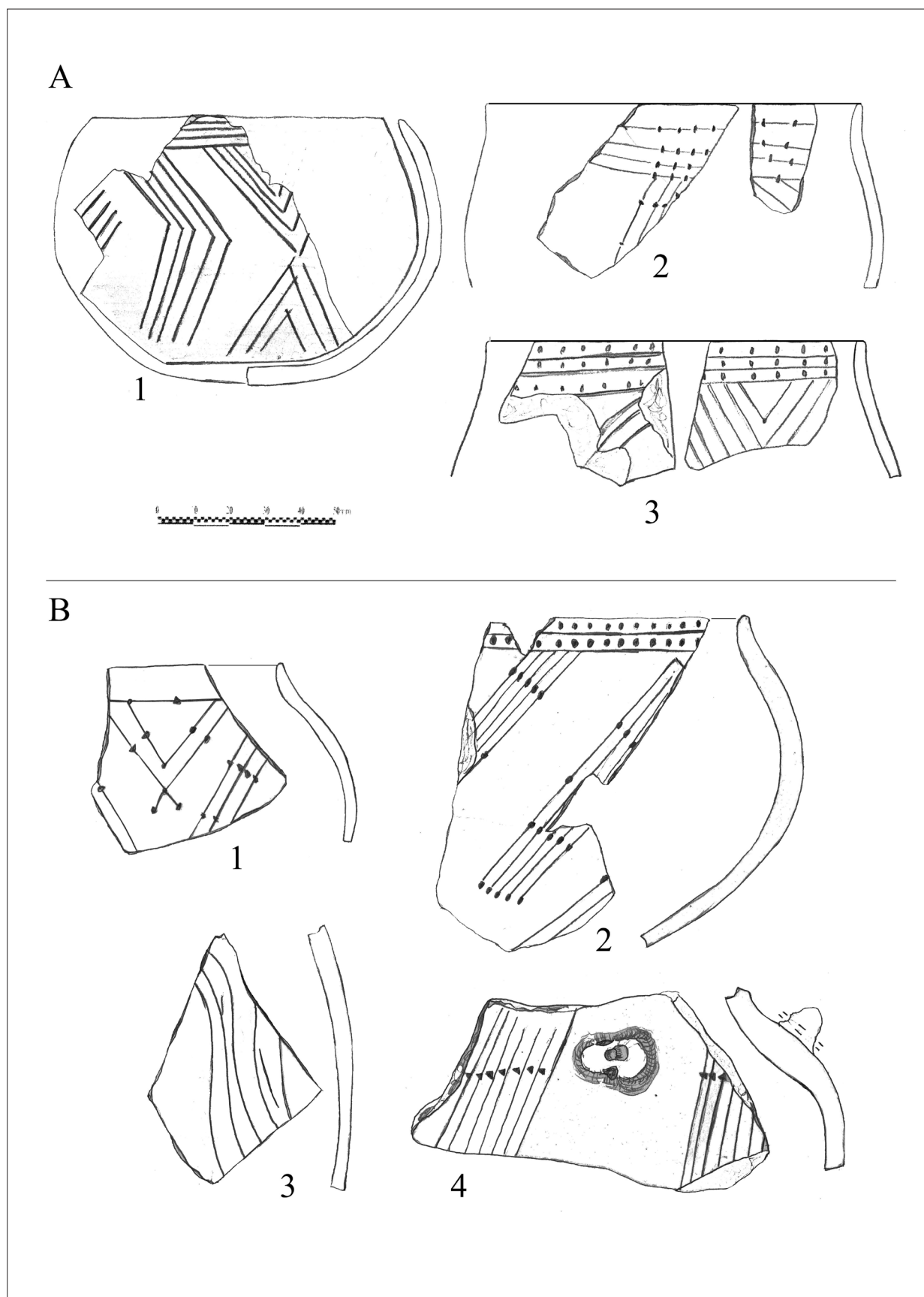


Fig. 6. Selection of classical Szarka Horizon pottery from Stare Czarnowo 63 (A) and late Szarka Horizon pottery from Przecław 45 (B). Elaborated by M. Dziewanowski.

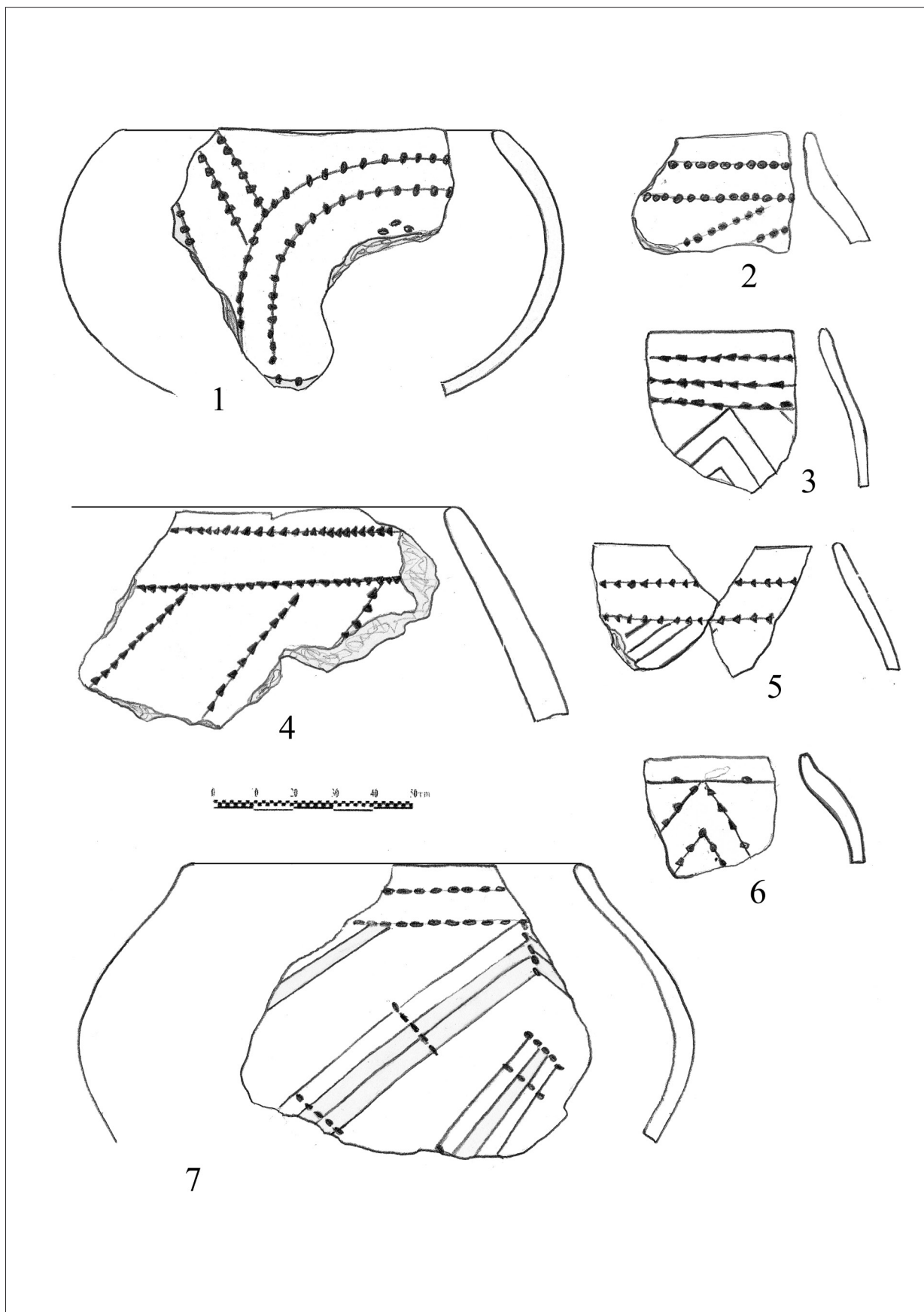


Fig. 7. Mierzyn, site no. 5. Dobra commune. Selection of Skoroszowice horizon pottery: D6WJ1. Elaborated by M. Dziewanowski.

place in a later period and was limited to the formation of a new settlement enclave. The presence of the youngest elements, which did not involve the Linear background, was indicated in connection with the Szarka Phase. It would be difficult to deduce from these data the reasons for the end of the Early Neolithic, and only by assuming the refugial character of the region were scholars able to consider the subject closed.

However, the arrival of larger populations is already recognisable at the end of Phase IIB in the lower Odra region, as evidenced by intensive traces of early Neolithic occupation and the fact that a central settlement of more than 7 hectares in size was established. This may have happened at a time when the region of Kuyavia was in crisis. It is noteworthy that in Kuyavia there is little material of Phase III comparable to what was found in recent years in the lower Odra region.

During the investigations in the central settlement, the author found that the lateral pits associated with homesteads of the second and third periods contained the richest finds, including botanical remains. In contrast, homesteads represented by the ceramic subgroups of periods four through six are relatively poor in finds, at least in quantity. Is it, therefore, reasonable to see this as evidence for the first symptoms of crisis after the considerable expansion of the settlement area in the developed phase of Szarka? Is there a decline in grain (as in the homesteads D3, D6, and D19) coupled with an increase in the importance of, for example, hazelnuts (as in the case of Homestead D4)? Perhaps the area near the settlement was already a barren land at that time, which could also be due to climatic changes. It is quite certain that the LBK existed longer than previously thought in the Lower Odra region, and the question of the later fate of this community takes on a new meaning.

Recapitulation

The results of recent research in the lower Odra region, conducted as microregional studies, provide numerous and valuable assemblages reflecting the overall LBK settlement development in the region. Already in the first phase of work with ceramic materials, the need to create a periodisation system that takes into account

the specifics of the region and the archaeological material became clear. It is also obvious that the division of Phase II (Music-Note) into subphases A and B is not sufficient for an adequate classification of the subgroups. Moreover, abundant evidence and a variety of inventories containing the Szarka type and later elements suggest that it is necessary to distinguish new units within Phase III. Finds of pottery with obvious transitional features between the LBK and the STbK, known in Silesia as the Skoroszowice type, lead us to propose a new period in the development of the LBK in the lower Odra region – Phase IV. At the same time, it must be stated that the idea of classifying the finds in the convention of settlement phases is also insufficient in light of the collected data. In search of a way out of the impasse of classification and information, the author proposes to develop systems based on stylistic and technological groups, taking into account the representative nature of the assemblage and qualitative and quantitative assessment.⁴¹ There is no doubt that when the centre of Neolithisation flourished on the lower Odra River, the LBK society of the adjacent areas already had a general idea of the region and the necessary knowledge about possible directions of expansion.

Both field and conceptual studies are being intensified, so it is expected that in the coming years, a research corpus will emerge that can significantly change our understanding of the LBK in the lower Odra Basin in the context of interregional contacts.

The main objective is undoubtedly to increase the number and quality of data on the earliest and the latest settlements in order to outline the two central epochs. Currently, it is considered very likely that groups of people continued to exist in the Proto-STbK horizon, but they were significantly smaller. Such assemblages found in settlements would indicate that there was no hiatus between the Early Neolithic and the Roundel horizons, i.e. Phase IVa of the STbK, or that settlement was interrupted for a short period corresponding to the phases II–III of the STbK. The extent to which both recent studies and new evidence show a tendency toward intensification of settlement, the questions of origin of the presumed large group that arrived at the end of Phase IIB and the possibility of a large migration from the east, i.e. from the middle Vistula Basin, will probably arise again with increased force.

⁴¹ Lech 1989, 282

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