SPRAWOZDANIA ARCHEOLOGICZNE 73/1, 2021
PL ISSN 0081-3834
DOI: 10.23858/SA/73.2021.1.2590

Marcin Szeliga[1]

THE LINEAR POTTERY CULTURE SETTLEMENT IN THE UPLAND ZONE BETWEEN THE VISTULA AND BUG RIVERS – CURRENT STATE AND PERSPECTIVES OF RESEARCH

ABSTRACT

Szeliga M. 2021. The Linear Pottery culture settlement in the upland zone between the Vistula and Bug Rivers – current state and perspectives of research. *Sprawozdania Archeologiczne* 73/1, 57-100.

There are 171 sites known from the interfluvial of the Vistula and Bug Rivers that attest to settling it between the Gniechowice and early Želiezovce phases of the Linear Pottery culture (LBK). The earliest finds concentrate only in the south-eastern part of this area, mainly in the Hrubieszów Basin. The intensification of settlement occurred in the music-note phase, along with the colonisation of the whole Lublin region and the emergence of the settlement oecumene proper. It mainly encompassed the loess zones and was a network of clusters located along small and medium rivers. Their development is corroborated, *e.g.*, by traces of far-reaching, multidirectional contacts. The current state of research limits the scope of interpretations concerning the development of individual settlement clusters (especially the chronology and scope of the development of the LBK and the character and scale of colonisation and economic activity). Field research needs to be intensified to obtain new archaeological and environmental data on particular microregions.

Keywords: Early Neolithic, LBK, Lublin Region, interfluvial zone of the Vistula and Bug Rivers, upland areas, settlement

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

INTRODUCTION

Although the first pieces of information on the LBK finds from the Lublin region were published over sixty years ago (Podkowińska 1959, 38; 1960, 75), the question of LBK settlement across the upland interfluvial zone of the Vistula and Bug Rivers unfortunately remains problematic and unresolved. On one hand, this state of affairs results from the fact that only a small percentage of the sources have been published (this notably concerns the most numerous inventories yielded by excavation works). On the other, it has been effected by the slow pace of obtaining new sources (with a clear quantitative disproportion between the materials gained through surface survey and those that come from archaeological digs, where the former are clearly more numerous). These obstacles are important reasons why only one comprehensive study on the LBK finds from the entire Lublin region has been published so far, which was issued in the second half of the 1980s (Brzozowski 1988). That publication remains the only source that presents the territorial dispersion of LBK finds over the entirety of the upland areas spreading between the Vistula and Bug Rivers. All subsequent publications have focused exclusively on the south-eastern (Zakościelna 2007b, fig. 1) or southern (Czekaj-Zastawny 2008, 231-235, map 4) parts of this vast territory.

The intensification of excavation works conducted during the last ten years and more, and the considerable number of new sources obtained as a result, necessitate an update and a summary of the current state of research on LBK settlement across the Lublin region. It appears that despite the still unsatisfactory degree to which the source material has been presented in publications, the above-mentioned conditions provide new perspectives for investigating the character and intensity of LBK settlement, as well as the stylistic development of this culture in the discussed territory. At the same time, this leads us to reflect on the potential of the available corpus of sources and its utility in future research. The above-mentioned issues, together with the presentation of the updated corpus of sources, are the main subjects of this paper.

AREA OF STUDY

The analysed territory is located within the historic Lublin region and encompasses the boundary between the belt of uplands and lowlands, which spreads from the middle Vistula Valley in the west to the Bug Valley in the east, and from the Sandomierz Basin in the south to the valleys of the lower Wieprz, Tyśmienica and Włodawka Rivers in the north (Fig. 1: 1-2). The southern and central parts of this vast zone are composed of geographically dominant loess areas, which have a strictly upland character, and which belong to the north-eastern territory of the belt of Polish Uplands. Their characteristic features are considerable morphogenetic and hypsometric diversity, as well as the presence of a fertile soil cover

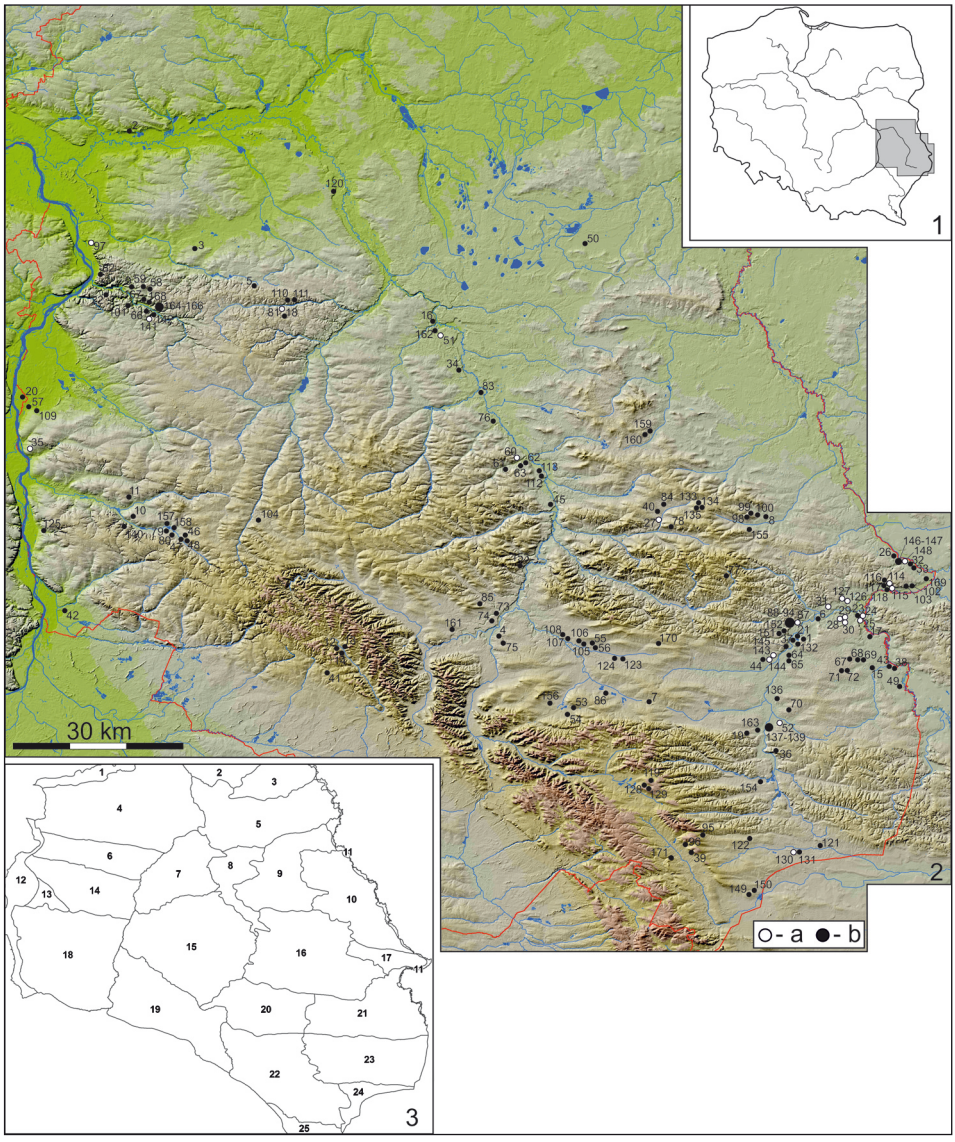

Fig. 1. Arrangement of LBK settlements across the Lublin region: 1 – location of the discussed territory; 2 – dispersion of the excavated sites (a) and of those discovered during surface survey (b) (map based on Gawrysiak 2004, dispersion of the sites after Brzozowski 1988, fig. 1; Zakościelna 2007, fig. 1; Czekaj-Zastawny 2008, map 4, with additions); 3 – physical-geographical regionalisation of the Lublin region: 1 – Wieprz Ice-Marginal Valley; 2 – Sosnowica Depression; 3 – Włodawa Heights; 4 – Lubartów Heights; 5 – Łęczna-Włodawa Lakeland; 6 – Nałęczów Plateau; 7 – Świdnik Plateau; 8 – Dorohucza Depression; 9 – Chełm Hills; 10 – Dubienka Depression; 11 – Middle Bug River Valley; 12 – Małopolska Gap of the Vistula River; 13 – Chodel Depression; 14 – Bełżyce Plateau; 15 – Giełczew Hills; 16 – Grabowiec Interfluve; 17 – Horodło Ridge; 18 – Urzędów Heights; 19 – Western Roztocze; 20 – Zamość Basin; 21 – Hrubieszów Basin; 22 – Middle Roztocze; 23 – Sokal Ridge; 24 – Bełz Plain; 25 – Eastern Roztocze (after Solon *et al*. 2018)

developed on the loess substratum. The northern foreland of the upland area is of a transitional upland-lowland character, with a gentle, rolling or hilly landform. These areas are characterised by slight differences in elevation and a more complex hydrographic network with a much less fertile soil cover, developed mainly on the sandy-clay glacigenic substratum (*e.g.*, Michalczyk and Wilgat 2008, fig. 1; Turski *et al.* 2008, 259-264).

The geomorphological diversity of the territories encompassed by the discussed zone is reflected by their classification in several macro-regional units. They are, above all, the entire Lublin Upland with the Roztocze, as well as the western parts of the Volhynian Upland and of the Pobuże Basin and, to a much lesser degree, the southern areas of Volhynian Polesia, Western Polesia, and the Southern Podlasie Lowland (Kondracki 2002; Solon *et al.* 2018, fig. 2). Together, they make an extremely diverse landscape mosaic composed of numerous depressions, elevations and plains that are considerably elevated and have a rich ecosystem diversity. This variety, which is, on one hand, combined with high soil quality (this especially applies to the upland loess area) and with preferable hydrographic conditions, and, on the other, with the presence of numerous and various groups of flora and fauna, undoubtedly contributed to the considerable value of the discussed zone in the eyes of the prehistoric settlers, even in the earliest phase of the Neolithic.

SHORT HISTORY OF PREVIOUS RESEARCH

In the middle of the 1960s, only 12 LBK sites from the Lublin region were known. They are located in its eastern part, that is, between the Wieprz and Bug Rivers (Gurba 1961, fig. 4). Seven of them were identified during excavation works, which, in most cases, led to discovering a somewhat small number of settlement features (Gródek 6, Werbkowice-Kotorów I; *cf.* Liana and Piętka-Dąbrowska 1962, 147-155; Dąbrowska and Liana 1963, 45-47; Uzarowiczowa 1964, 436-439), or to finding more or less numerous diagnostic sets of artefacts found on the secondary deposit (Strzyżów 1 and 2; Werbkowice-Kotorów II; *cf.* Podkowińka 1960, 46, 71, tabl. I: 1; Dąbrowska, Liana 1963, 55; Głosik and Gurba 1963, 361). At the same time, the stylistic diversity of the pottery attested to its association with both the pre-music-note and music-note phases of the LBK (Uzarowiczowa 1964, fig. 3, 8; Liana and Piętka-Dąbrowska 1962, tabl. XXXIII: 3, 5, 12, 13). Furthermore, the cremation grave, as well as a small set of pottery discovered at site 2 in Gródek were associated with the earliest (Gniechowice) phase of the discussed archaeological culture (Kempisty 1962, fig. 1-2). The richest inventory discovered at that time was obtained during rescue research at the settlement of Tarnoszyn, site 1, which is dated to the music-note phase (Gurba 1961, 212, fig. 1; 1970, 177, fig. 2). This collection, despite being comprehensively analysed (Chorostowska 1966), has never been fully published. The only exceptions are flint materials, whose analysis (Zakościelna 1981, 4-9) remains the most important point of reference for studies on LBK flint-knapping in the Lublin region.

The corpus of sources was significantly enriched in the 1970s and 1980s as a result of an intense surface survey conducted within the framework of the Polish Archaeological Record (Polish: AZP). Excavation works carried out in the western (*e.g.*, Kaliszany 2, Puławy-Włostowice 3, Wąwolnica 1) and eastern (*e.g.*, Hrubieszów-Podgórze 1A, Lipowiec, Podhorce 2, Świerszczów 28, Wieniawka 6) parts of the Lublin region, also yielded new discoveries. The obtained materials are linked with the classical and late LBK phases (*cf.* Kącki 1982, 4, fig. 1; Kokowski 1985, fig. 1: b; Zakościelna 1988a, 9; 1988b, 27, 28). As to the results of the surface survey, a small set of pottery from Sumin, associated with the Zofipole phase, is particularly noteworthy (Brzozowski 1986, 72, tabl. 23: a-d). In total, 76 LBK sites were known at the end of the 1980s. These were the basis of a separate study (Brzozowski 1986), published in a compressed and substantially abridged form (Brzozowski 1988). The great majority of the mentioned finds have not been examined, and are still in need of a thorough analysis, followed by publication.

The last decade of the 20th century was, above all, a time of new surface discoveries, made especially in the eastern part of the Lublin region (Tab. 1). At that time, only two sites were discovered during excavation research, and data on the LBK finds yielded by them is limited to general pieces of information presented in brief field reports. Four archaeological features and an unspecified collection of artefacts, which were associated with the Zofipole phase, come from the site of Hrubieszów-Podgórze 5 (Niedźwiedź and Panasiewicz 1994, 52, fig. 2). Research at the multicultural site of Łopiennik Dolny 3 resulted in the discovery (in the secondary deposit) of flint and stone artefacts, as well as pottery that comes from the music-note phase of the LBK (Zakościelna and Gurba 1991; 1992). A serendipitous discovery of an incomplete vessel (linked with the pre-music-note phase of the LBK) in the escarpment of site 1B from Gródek supplemented the above-mentioned discoveries (Buszewicz 1990, 9, fig. 3: 4). Unfortunately, the subsequent excavation carried out at this site did not yield new Early Neolithic materials (Niedźwiedź 1994). The publication of the results of the zooarchaeological analysis performed on the materials from one of the pits explored at the site of Świerszczów 28 was of great importance for the study of the LBK in the interfluve between the Vistula and Bug Rivers (Nadachowski and Wolsan 1999). So far, this is the only such data concerning the Lublin region.

Particularly important and numerous source materials have been obtained during the last twenty years, especially as a result of rescue excavation research carried out prior to construction works. Without question, the most abundant relics of LBK settlement were discovered at Bogucin 6 site and are represented by 51 features, as well as by several hundreds of pottery fragments and flint artefacts (Tab. 1). The arrangement and character of the discovered features indicate that the settlement included at least four longhouses, whereas the pottery represents the styles of the classical and late music-note phases, as well as of the early Želiezovce phase (Gawryjołek-Szeliga and Szeliga 2012, 71-73). Other, much less numerous sets were also found at Hrubieszów-Podgórze 5 and Świerszczów 3 during research conducted prior to the construction of the bypass going around Hrubieszów.

Both sites yielded only sparse LBK features (associated with the construction and use of single residential structures of the longhouse type) and inventories of flint and ceramic artefacts. In the former case, they are associated with the classical and late music-note phases (Gawryjołek-Szeliga *et al.* 2013, 48-49), whereas those from the latter one come from phase Ia of the LBK (Szeliga and Gawryjołek-Szeliga 2021). Single features containing numerous artefacts from the music-note phase were analysed during archaeologically supervised works at the sites of Hrubieszów-Kolonia Sławęcin 12 (Szeliga *et al.* 2017, 8) and Leopoldów 5 (Jączek and Kubera 2018, 7). A considerable collection of pottery linked with the music-note phase of the LBK was also discovered during excavation works conducted at the multicultural site of Horodysko 3. Unfortunately, all the mentioned finds were discovered in the secondary deposit (Bronicki 2016, 33-35). Independently of this accumulation of new discoveries, attempts to analyse earlier finds of the LBK from the Lublin region have been also initiated during the last 20 years. So far, the materials from Świerszczów 28 (Gawryjołek-Szeliga 2009) and Puławy-Włostowice 3 (Szeliga 2018) have been researched. The analyses of the rest are at an advanced stage of realisation.

CURRENT SOURCE DATABASE

According to the current state of research, there are at least 171 known sites linked with the LBK. The totality of the finds, presented in Fig. 1 and Tab. 1, were associated with this chronological and cultural horizon based on data published in earlier archaeological literature, as well as in the AZP documentation. Unfortunately, limitations caused by the Covid-19 pandemic made it impossible to complete the AZP surface survey at the time of preparation of this publication, thus the presented list certainly should be considered incomplete, and therefore only provisional.

The known sites are very diverse in terms of the numbers and characters of archaeological sources. The most abundant group are surface finds (147 sites, 85.96%), primarily represented by scarce or even single pottery sherds and only occasionally by larger groups of even more than 40 specimens (Tab. 1). The chronological and cultural identification of the pottery was based on its technological and stylistic features (presence of incised ornaments), but employing these criteria only occasionally made it possible to precisely classify the finds according to the internal LBK periodisation. Sporadically, non-pottery finds, usually diagnostic stone or obsidian artefacts, were associated with this horizon, whereas flint products were linked with it even less frequently (Tab. 1).

The excavated sites constitute only 14.04% of the entire corpus of sources (24 sites; Tab. 1). They are also very diverse in regard to the numbers and types of finds, encompassing inventories ranging froma few to several hundred specimens, mainly pottery sherds. Unfortunately, the small degree to which particular sites were researched and to which the obtained data was published often makes it impossible to precisely determine the quanti-

tative and qualitative structures of these discoveries. Nearly all the excavated sites represent the remains of settlement and economic activities conducted by the LBK people, and sometimes include the remnants of residential structures of the longhouse type (at least at four sites; Bogucin 6, Hrubieszów-Podgórze 5, Puławy-Włostowice 3 and Świerszczów 3). It should be stressed that features were discovered at only 11 explored sites (Tab. 1). The rest of them only yielded different numbers of materials found either in the secondary deposit, within the non-feature layers and/or in the fills of younger features. This makes it difficult to correctly assess the scale and scope of human activity at particular sites and, as a result, to properly classify them. So far, we know only one funerary feature (cremation grave) located at the site of Gródek 2 (Kempisty 1962), but its cultural and functional identification has occasionally been questioned (Czekaj-Zastawny 2009, 36, fig. 8). Most probably, the damaged skeletal grave discovered at the site of Werbkowice-Kotorów I should be also linked with the LBK, which is indicated by the fact that it yielded a pendant made of a *Spondylus* shell (Kurzawska and Sobkowiak-Tabaka 2020, 66, fig. 4B).

TERRITORIAL DISTRIBUTION OF THE SITES

The territorial distribution of the finds indicates that there were at least several clusters of LBK settlements in the Lublin region (mainly located across the loess uplands), which were closely related to the regional hydrographic network. The vast majority of these sites are located in the south-eastern area of the discussed region, which is part of the western Volhynian Upland. They concentrate in the zone of black and brown soils that spread along the middle and lower Huczwa River and the adjacent left-bank section of the Bug, from the valley of the Bukowa River in the south to Horodło in the north (Fig. 1: 2). There are 63 sites located across these territories (constituting *ca*. 37% of the total number of LBK sites from the upland area of the interfluve between the Vistula and Bug Rivers), which are primarily parts of the Hrubieszów Basin, the Horodło Ridge and, to a much lesser extent, the Sokal Ridge (Fig. 1: 3). They are also the areas with the greatest number of excavated sites. The south-easternmost group of ten sites, located along the valleys of the Szyszła and Solokiya Rivers, and within the Bełz Plain (which is the western part of the Pobuże Basin) (Fig. 1: 2), is an addition to the settlement cluster of the Western Volhynian Upland.

The LBK sites from other areas of the interfluve spreading between Vistula and Bug Rivers are much more scattered. Their great majority are grouped in more than ten clusters of various sizes that are separated by vast zones yielding no materials (settlement voids?). The locations of these potential settlement microregions were strictly linked with the layouts and orientations of the local watercourses (Fig. 1: 2). The largest of them, containing from six to over ten settlements, are located on the Nałęczów Plateau (by the lower and middle Bystra river), in the Urzędów Heights (upper Wyżnianka), the Dorohucza Depression (middle and lower section of the Wieprz valley, near the mouth of the Łopa),

near the Graboviec Interfluve (upper part of the Wełnianka and the Wojsławka with the Horodyszcze stream) and in the Zamość Depression (lower and middle section of the Czarny Potok stream valley near the mouth of the Łabuńka river and the upper part of the Wieprz near the mouth of the Stara Gorajka) (Fig. 1: 2-3). Slightly smaller clusters, encompassing from three to five sites, are located in the Middle (upper Wieprz) and Western Roztocze (valley of the Biała Łada River), as well as in the Chodel Basin, the eastern part of the Nałęczów Plateau (valley of the Ciemięga river) and on the Świdnik Plateau (mouth of the Giełczewka to the Wieprz). The rest of the LBK sites from the discussed region are widely dispersed, usually occurring individually and at considerable distances from each other and from the aforementioned settlement clusters. They are probably the remains of occasional economic expeditions to the territories located outside the main LBK settlement oecumene, within the loess uplands and sandy-clay zones of their northern foreland (Fig. 1: 2).

Despite the previously mentioned incompleteness of the corpus of sources, the territorial distribution of the sites across the upland part of the interfluve between the Vistula and Bug Rivers precisely corresponds to the previous findings on the general settlement preferences of the LBK societies in other, much better researched upland areas. This phenomenon is indicated by the fact that the vast majority of the analysed sites occupy territories with good quality soils formed on the loess substratum, and by the occurrences of settlement clusters on hillsides and high valley terraces of small and medium watercourses that flow to the Vistula, Wieprz, and Bug (Fig. 1: 2). Undoubtedly, such tendencies were among the most important factors influencing the organisation and structure of the LBK settlement network in the Lublin region (Brzozowski 1988, 6-7). They have close analogies in the territory of the upper Vistula drainage basin (Kruk 1973, 46-48, 72-74; Kruk *et al.* 1996, 41-48; Czekaj-Zastawny 2008, 98-104, 111-112) and across other European territories (*e.g.*, Modderman 1959, 3-6; Sielmann 1971, 80-124; Končelová 2012, 191-196).

STYLISTIC DIVERSITY OF THE POTTERY AND THE LOCAL PERIODISATION OF THE LBK

Generally, the diversity of the pottery from the upland interfluve spreading between the Vistula and Bug Rivers reflects the full scope of the stylistic development of the LBK recorded in south-eastern Poland, from the pre-music-note phase to the latest stage linked with the spread of the Želiezovce decoration style (*e.g.* Kulczycka-Leciejewiczowa 1979, 51-65; Czekaj-Zastawny 2008, 16-18). The least numerous, and at the same time the most enigmatic materials are linked with the early phase of the LBK (Fig. 2). So far, only six sites have yielded them. They are located exclusively in the eastern part of the Lublin region, especially in the Hrubieszów Basin (Szeliga and Gawryjołek-Szeliga 2021, fig. 11). These finds are a diverse group, found in only a few features having either a settlement character (Gródek 6, Hrubieszów-Podgórze 5, Świerszczów 3; *cf.* Uzarowiczowa 1964, 450-452, fig. 3;

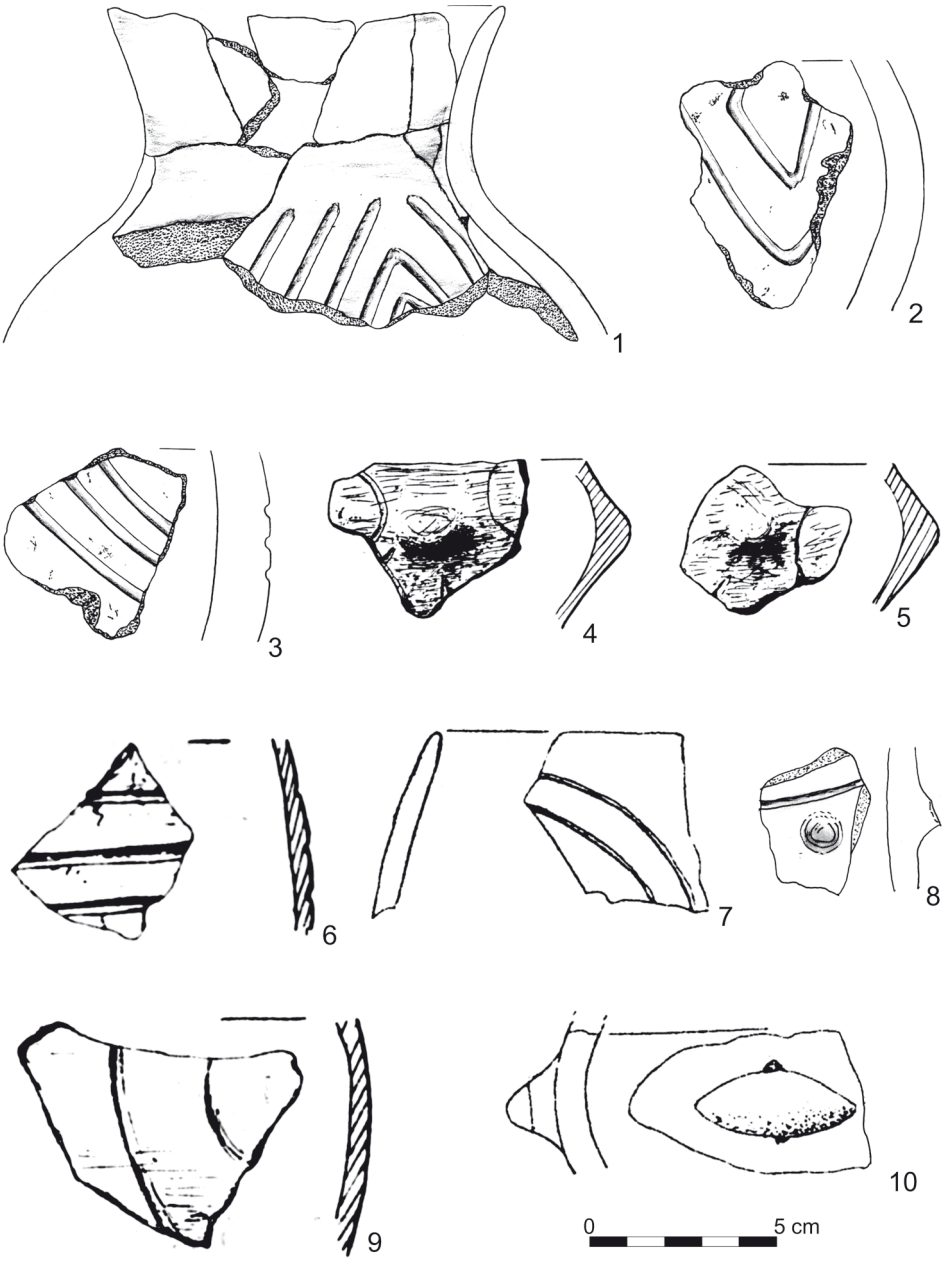

Fig. 2. Selection of LBK pottery from the Lublin region ornamented in the Gniechowice (1-5) and Zofipole (6-10) styles: 1-3 – Świerszów, site 3 (after Szeliga and Gawryjołek-Szeliga 2021, fig. 3: 1a, 3, 10); 4-5 –Gródek, site 2 (after Kempisty 1962, fig. 2: b-c); 6, 9 – Gródek, site 6 (1D) (after Uzarowiczowa 1964, fig. 3: n; 8: z); 7, 10 – Hrubieszów-Podgórze, site 5 (after Niedźwiedź and Panasiewicz 1994, fig. 2: 2, 4); 8 – Sumin, site 1 (after Brzozowski 1986, tabl. 23: d)

Niedźwiedź and Panasiewicz 1994, 52, fig. 2; Szeliga and Gawryjołek-Szeliga 2021) or a sepulchral character (Gródek 2; Kempisty 1962, fig. 1-2). However, this group of finds also includes quantitatively diversified pottery inventories (Sumin 1; Szeliga and Gawryjołek-Szeliga 2021, fig. 12: 16-19) or even single vessels (Gródek 1B; Buszewicz 1990, fig. 3: 4) that were not found in features, and thus have no archaeological contexts. The scope of the formal and stylistic diversity of the mentioned materials corroborates their association with the Gniechowice (Ia) and especially with the Zofipole (Ib) phases of the LBK across the territories located north of the Carpathians (*cf.* Kulczycka-Leciejewiczowa 1968, 61-67; 1979, 48-51; 1983). This fact allows us to associate the beginning of the LBK colonisation of the Lublin region with the culture's earliest phase, which indicates a certain intensification of the settlement process with the younger stage of the pre-music-note phase. At the same time, the territorial dispersion of thus classified finds allows us to narrow down the area of the earliest agricultural colonisation exclusively to the eastern part of the discussed region (more precisely to the Hrubieszów Basin and in the Middle Roztocze). This entails a discussion on the potential migration routes of the LBK settlers to these territories, as well as on the territories from which they migrated, taking into account the possibility that these societies arrived directly from Volhynia (*cf.* Szeliga and Gawryjołek-Szeliga 2021).

The main colonisation of the interfluve between the Vistula and Bug rivers occurred during the music-note phase of the LBK, with which the absolute greatest number of finds (including those obtained through excavation) is associated (Tab. 1). The territorial range of thus classified materials encompasses the entire territory to which this paper is devoted, and the presence of diagnostic pottery materials was confirmed in nearly all of the regional settlement clusters. Undoubtedly, the greatest numbers of finds come from excavation works conducted in the western (Puławy-Włostowice 3, Bogucin 6), central (Leopoldów 5, Łopiennik Dolny 3) and eastern (*e.g.*, Horodysko 13, Świerszczów 28, Hrubieszów 5, Hrubieszów-Kolonia Sławęcin 12, Tarnoszyn 1) parts of the analysed region (Tab. 1). The styles of the numerous pottery inventories discovered at the above-mentioned sites are generally not extremely diverse, and are limited to decorative motifs, especially characteristic of the classical (NII) and late (NIII) stages of the music-note phase (Fig. 3). Particular inventories contain various proportions and quantities of such materials, attesting to the existence of certain territorial arrangements. The clear predominance of the late music-note motifs, including characteristic oblong or tear-shaped grooves (*cf.* Pavúk 1969, 271-273; Kadrow 1990, 62) has been recorded so far mainly at the sites located in the western part of the Lublin region (Bogucin 6, Puławy-Włostowiece 3; see Gawryjołek-Szeliga and Szeliga 2012, 73; Szeliga 2018, 189). In the inventories from the eastern zone of this territory, they were only an insignificant addition to the much more numerous classical music-note materials (see Zakościelna 2007b, 40; Gawryjołek-Szeliga 2009, 62; Gawryjołek-Szeliga *et al.* 2013, 48-49; Bronicki 2016, 42). It appears that these differences are important when considering the chronology, character and dynamics of the LBK stylistic development in the discussed area.

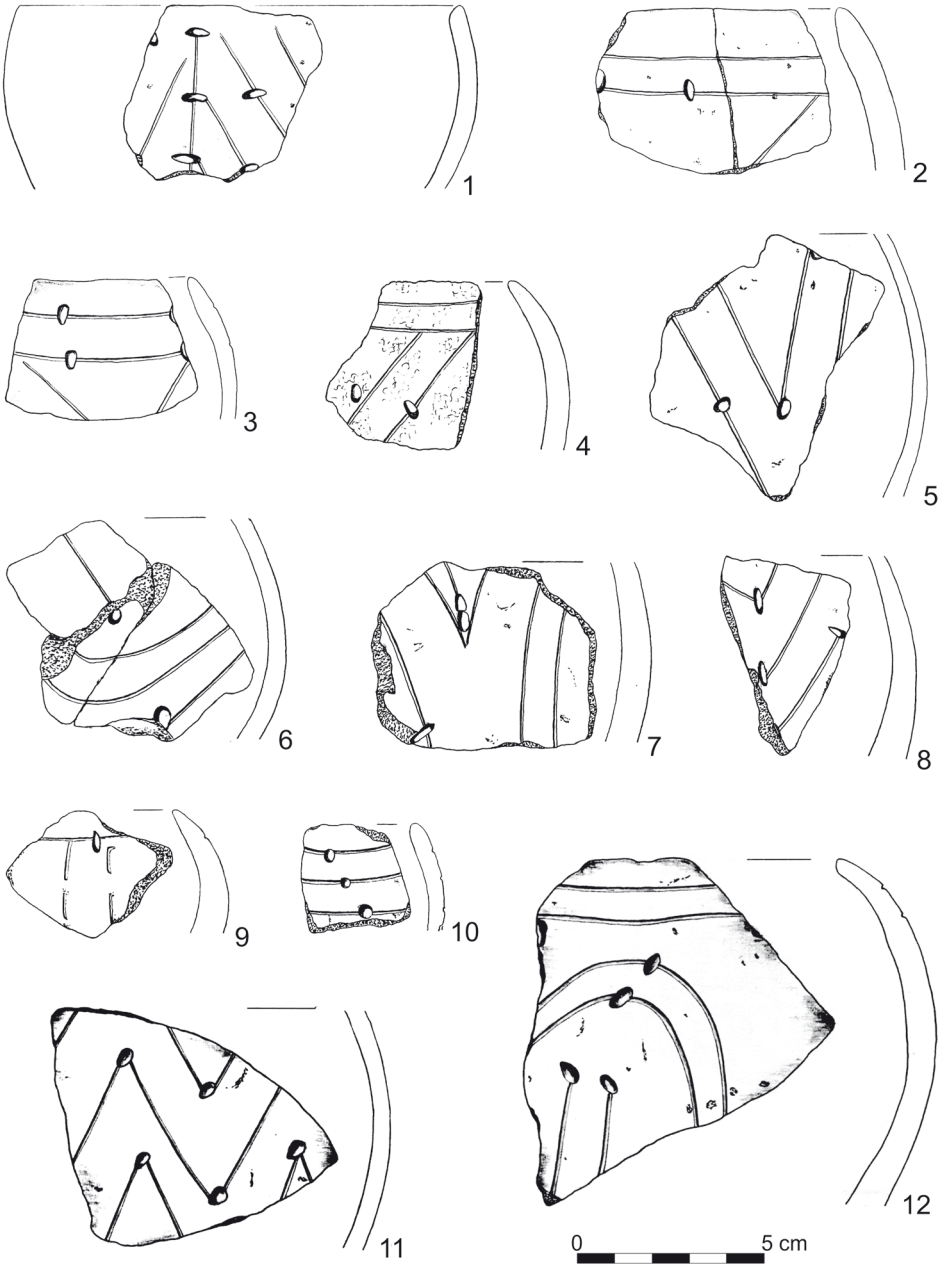

Fig. 3. Selection of LBK pottery from the Lublin region ornamented in the music-note style: 1-3, 5, 8 – Hrubieszów-Podgórze, site 5 (after Gawryjołek-Szeliga *et al.* 2013, tabl. I: 2; III: 6-7; IV: 1; XI: 6); 4, 6-7, 9-10 – Bogucin, site 6 (after Gawryjołek-Szeliga and Szeliga 2012, tabl. III: 2; VII: 3; XVII: 4; XXIV: 5; XXVI: 3); 11-12 – Puławy-Włostowice, site 3 (after Szeliga 2018, tabl. II: 9; XI: 1)

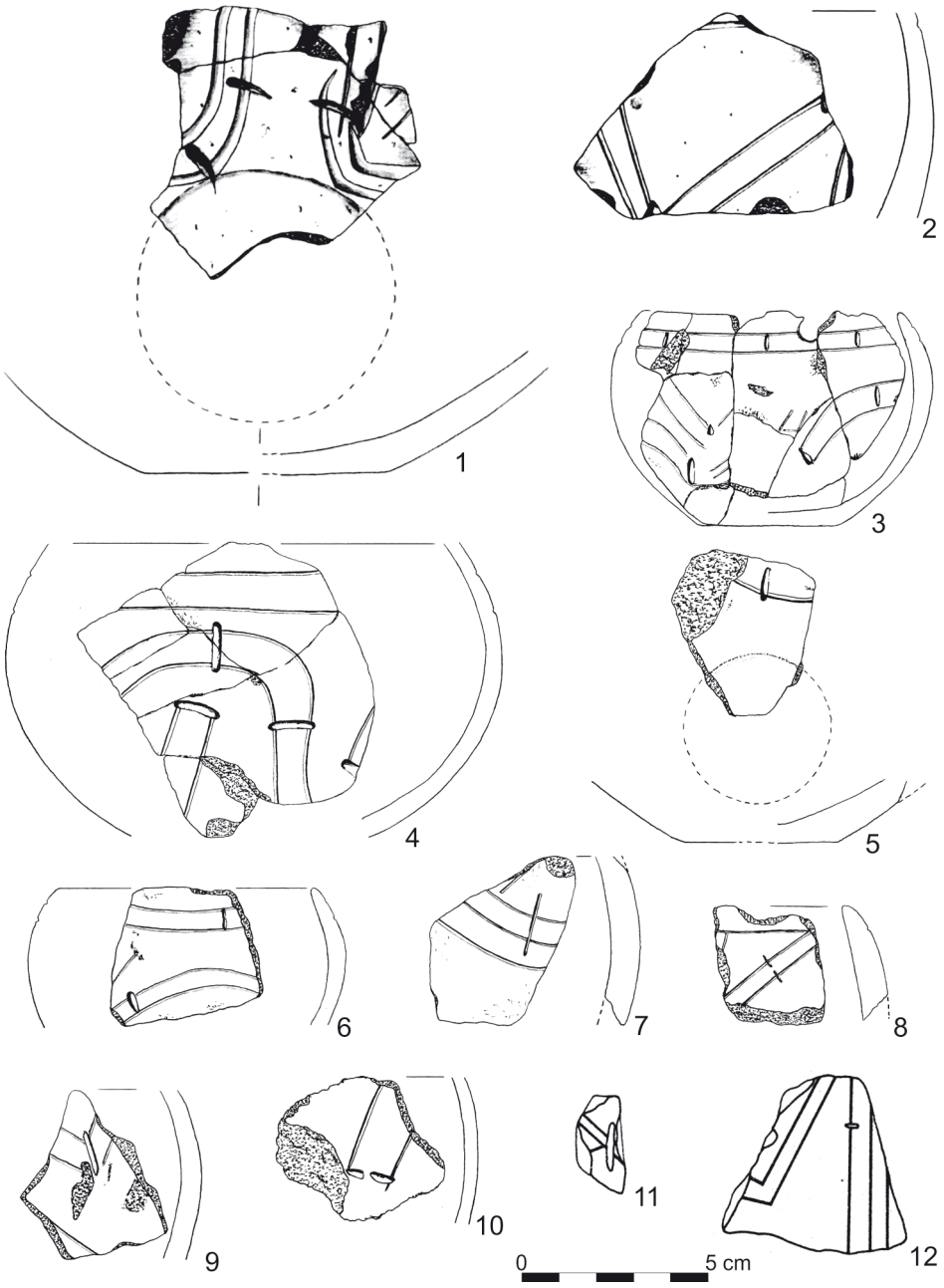

Fig. 4. Selection of LBK pottery from the Lublin region ornamented in the early-*Želiezovce style*: 1-2 – Puławy-Włostowice, site 3 (after Szeliga 2018, tabl. IX: 1-2); 3-10 – Bogucin, site 6 (after Gawryjołek-Szeliga and Szeliga 2012, tabl. VII: 4; IX: 4; XI: 4; XV: 5; XVII: 2; XVIII: 2; XXVIII: 1, 3); 11-12 – Podhorce, site 42 (after Kącki 1982, fig. 1)

The youngest and a somewhat small group of finds is comprised of materials made in the Želiezovce style. Until recently, they were only known from the site of Podhorce 2 and were represented by a modest collection of pottery sherds decorated with patterns that refer to the style of the early Želiezovce phase (Fig. 4: 11, 12). This set was discovered, along with pottery from the music-note phase, during the exploration of non-feature layers (Kącki 1982, 4, fig. 1). A much more numerous group of pottery materials was yielded by the recent rescue research at the site of Bogucin 6, located in the eastern part of the Nałęczów Plateau (Fig. 1: 2). Among the LBK pottery discovered at the mentioned site, the most numerous group was ornamented in the early-Želiezovce style (Gawryjołek-Szeliga and Szeliga 2012, 71). This identification was particularly based on the presence of pseudo-notches impressed on one of more incised lines (Fig. 4: 5, 7, 8, 10) or located between two parallel lines, forming straight, angular or s-shaped ornamental patterns (Fig. 4: 3, 4, 6, 9). Analogous pseudo-notches were also recorded on single vessel sherds from Puławy-Włostowice 3 (Fig. 4: 1, 2). Their presence, as well as their co-occurrences with tear-shaped music-note grooves in both mentioned inventories (sometimes on the same vessel; see Fig. 4: 3) is very characteristic of the early-Želiezovce decorative style (Pavúk 1969, Abb. 13-16; Kadrow 1990, 62, fig. 8; Dębiec 2015, 41-47).

The small number of the early Želiezovce sets and the fact that they always contain pottery ornamented in the late music-note style makes it impossible to distinguish the Želiezovce phase as a completely separate (in respect of its style and chronology) stage of LBK development in the Lublin region. It seems that what is observed in the youngest inventories only reflects the geographically limited adaptation of the early-Želiezovce decorative patterns in the environment of the LBK late-music-note ornamental traditions. This adaptation, discernible especially in the western part of the Lublin region (Puławy-Włostowice 3, Bogucin 6), is a reflection of more general cultural changes initiated in the northern and north-eastern foreland of the Carpathians during the classical phase of the LBK. These changes were a result of the gradual weakening and, as a consequence, complete reduction of the influence exercised by the previously influential centre located in south-western Slovakia. In the discussed territories, this phenomenon was manifest by the termination of the stylistic and typological development of the pottery (Kozłowski 1985, 69). In general terms, these processes, as often mentioned in archaeological literature, generally occurred in stages, first in the drainage basin of the Dniester River and in Volhynia, and somewhat later in the upper Vistula basin (Kadrow and Zakościelna 2000, 190-191, fig. 2, 3; Zakościelna 2007a, 290). The above-mentioned phenomena are reflected by clear differences between the stylistic diversities of inventories from the eastern and western parts of the Lublin region, which attests to the stagnation of two distinct ornamental traditions (the Želiezovce style in the west and the music-note style in the east), lasting until the end of the development of the LBK. The verification of this concept undoubtedly requires further research, which includes obtaining new inventories from various parts of the discussed region.

CHRONOLOGICAL FRAMES OF LBK SETTLEMENT

At present, there are no valid radiocarbon dates of the LBK features from the vast upland territory of the interfluve spreading between the Vistula and Bug Rivers. So far, sporadic attempts to obtain such dates yielded results exceeding the time frame of the discussed culture (Szeliga and Gawryjołek-Szeliga 2021). The only exception is the ^{14}C date of charcoal most probably from the secondary deposit in the feature of the Lublin-Volhynian culture at Bogucin 6. The date indicates a range of 5170-5075 BC (68.2%) and undoubtedly refers to the time when the site was settled by the LBK communities (Gawryjołek-Szeliga and Szeliga 2012, 72).

The lack of radiocarbon dates makes it currently impossible to precisely establish the time frame of the LBK development in the Lublin region. Nevertheless, the temporal ranges obtained at sites from the drainage basin of the upper Vistula and from Volhynia (*cf.* Dębiec and Dzbyński 2007, 56-58; Kotova *et al.* 2007, 415, tab. 2; Kulczycka-Leciejewiczowa 2008, fig. 55; Czekaj-Zastawny 2008, 116, tab. I; Ohrimenko 2009, 82; Szeliga 2017, tab. 1, fig. 6) allow us to infer that the first LBK societies appeared as early as between 5400 and 5300 BC (*cf.* Jakucs *et al.* 2016, fig. 24), whereas the decline of the culture occurred *c.* 4900-4800 BC at the latest. The necessity to verify and specify this general and conventional time frame is without a doubt one of the most important objectives of future research.

RAW MATERIAL MANAGEMENT AND FLINT PROCESSING

Although the available corpus of sources has increased in size during the last dozen years or so, the general findings concerning raw material management among the earliest agricultural societies from the Lublin region made in the 1980s (Zakościelna 1981, 3-9; Balcer 1983, 56-58; Caspar *et al.* 1989, 171, 172) are generally still valid. The available data indicates the clear zonality of the supply of raw materials to the LBK communities inhabiting the interfluve between the Vistula and Bug Rivers, in which its western part was provisioned with raw materials from the Świętokrzyskie Mountains (Holy Cross Mountains) and the east was associated with Volhynia and Podolia.

As to the settlement clusters located by the Huczwa, Solokiya and Bug Rivers, the Cretaceous Volhynian flints yielded by rich outcrops located in the midwestern part of the Volhynian-Podolian Plate were of the greatest economic importance throughout the history of the LBK. Their predominance is indicated by the modest inventory from Świerszczów 3, linked with the pre-music-note phase (Szeliga and Gawryjołek-Szeliga 2021), and by much more numerous sets, associated with the music-note phase, from Tarnoszyn (Zakościelna 1981, tab. 1), Hrubieszów 5 (Gawryjołek *et al.* 2013, 46) and Świerszczów 28 (Gawryjołek-Szeliga 2009, 63, 64). The share of Volhynian flint in the aforementioned

inventories exceeded 80% in each case, often representing the totality of the LBK finds (Gawryjołek *et al.* 2013, 46; Szeliga and Gawryjołek-Szeliga 2021). The minimal percentages of other raw materials, including erratic flint, as well as Świeciechów and Chocolate flint (Zakościelna 1981, tab. 1; Gawryjołek-Szeliga 2009, 63, 64) attest to their negligible role in local raw material processing.

Contrary to the inventories from the eastern part of the Lublin region, those from the west (Puławy-Włostowice 3, Bogucin 6) are composed of considerably more diverse raw materials and demonstrate a greater variation in their share within particular sets. Their compositions clearly corroborate the predominance of flint from the north-eastern edge of the Świętokrzyskie Mountains (Świeciechów and Chocolate flint) and the smaller, or even minimal, economic importance of other siliceous raw materials (Zakościelna 1981, tab. 1; 2002, fig. 1; Gawryjołek-Szeliga and Szeliga 2012, 61, 62). The fact that most of the flint materials from Puławy-Włostowice were found outside archaeological features makes it impossible to distinguish all artefacts associated with the early Neolithic settlement horizon (see Szeliga 2018, 189). This, in turn, raises doubts as to the frequencies of certain raw materials, especially the considerable, and at the same different, shares of Chocolate and Volhynian flint (see Zakościelna 1981, tab. 1; 2002, fig. 1; Balcer 1983, tab. 4). Nevertheless, these reservations do not influence the assessment of the general raw material preferences observed among the local LBK communities, which usually processed flint from the Świętokrzyskie Mountains and probably played a considerable role in the redistribution of this material to remote territories (Szeliga 2014, fig. 2, 8; 2018, 191, 192). The rest of the raw materials included in the inventories from Puławy-Włostowice and Bogucin were of much lesser (minimal or even negligible) importance. This mainly applies to materials from the most distant areas (*i.e.* Volhynian and Cracow-Jurassic flint), represented by only a few or even single products. Their occurrences in the western part of the Lublin region and the sporadic discoveries of products made of flint from the Świętokrzyskie mountains in its eastern area (*e.g.* Świerszczów 28; *cf.* Gawryjołek-Szeliga 2009, 64) reflect, above all, intense contacts (of a certainly non-economic character) between particular LBK settlement clusters. They also attest to the active role of the local communities in the general system of long-range distribution and raw material exchange, functioning since the music-note phase across vast areas on both sides of the Carpathians (*e.g.* Kaczanowska 1985, Karte 3; Lech 1979, 130, 131, fig. 1; 2003, fig. 1; Mateiciucová 2008, 142-144).

The situation in the central zone of the analysed area, including the settlement clusters concentrated along the middle Wieprz and its tributaries, is the most unclear. The small number of materials obtained during excavation research and especially the lack of inventories from archaeological features (Łopiennik, Horodysko; *cf.* Zakościelna and Gurba 1991, 13; 1992, 3; Bronicki 2016, 35), or their modest character (Leopoldów; see Jączek and Kubera 2018, 7), seriously hinder the accurate identification of the actual raw material preferences displayed by the local LBK societies. The locations of these territories and data obtained from other zones of the Lublin region allow us only to assume that the raw

material structures of the local inventories were heterogeneous and that the share of flint from the Świętokrzyskie Mountains (especially Świeciechów flint) and Volhynia was considerable. The actual importance and scope of local erratic flint processing (which includes the so-called Rejowiec flint, having a considerably good quality and whose numerous and rich outcrops occur across the great part of the Chełm Hills) remains an open question (Libera *et al*. 2014, fig. 1). The current state of research allows us to infer that this raw material was intensively used in the nearest vicinity of the aforementioned outcrops, especially in the settlement clusters of the LBK from the northern part of the Grabowiec Interfluve (Fig. 1: 2). It appears that the results of an analysis performed on flint materials from the site of Horodysko 13 indirectly corroborate this assumption (Libera 2016, 78-94). Unfortunately, the complete absence of LBK materials yielded by features at that site makes it impossible to accurately assess the economic importance of this raw material during the early stage of the Neolithic, but it must have been considerable.

The small number of materials from features (Tab. 1), and the insufficient degree to which they were researched, allows us only to tentatively and generally discuss LBK flint knapping in the Lublin region. The discussion includes only basic information on core exploitation and the production of half-products and tools, which was provided by the available inventories. At the current state of research, this data does not demonstrate any substantial regional differences and corresponds to production trends observed across other territories of LBK settlement. The adequate assessment of these observations will be made possible by comprehensive analyses performed on inventories obtained during earlier research and especially by obtaining new, homogenous sets representative of particular settlement clusters.

In light of the available corpus of sources, we can state that the general trend of flint processing was oriented towards the production of regular blades that usually were not longer than 10 cm. At the same time, the prevailing share of blade segments recorded in particular sets, with a small number of whole specimens (Zakościelna 1981, 8; Gawryjołek-Szeliga 2009, 65; Gawryjołek-Szeliga and Szeliga 2012, 64), indicates that the intentional breaking of blades – in order to make them more slender and to reduce their curvature – was a common phenomenon (*e.g*. Kaczanowska 1971, 11; Dzieduszycka-Machnikowa and Lech 1976, 88, 89; 1979, 128; 1983, 12). Flint half-products were obtained from single-platform cores that, in the initial stage of their exploitation, had narrow striking surfaces (located on the thin side of the nodule and oriented at an acute angle to the striking platform). This characteristic precisely corresponds to the morphological features of the Świeciechów flint pre-core forms discovered in Puławy-Włostowice (Zakościelna 2002, 112-116, fig. 3, 4; Szeliga 2018, 190, 191, fig. 10, tabl. XIII-XVII). Core processing was focused on obtaining blades, which is attested by various repair marks (especially those made to correct the core angle and to change the core orientation) recorded in particular inventories (Gawryjołek-Szeliga 2009, 65; Gawryjołek-Szeliga and Szeliga 2012, 65). In the final stage of exploitation, blade cores were most often transformed into forms used to

obtain flakes or were used as hammerstones (*cf*. Szeliga 2018, tabl. XVIII: 1). Blades and flakes were transformed into tools according to general tendencies of LBK tool production. This fact is indicated by the scope of the technological diversity of tool forms and by the frequencies of particular tool types within given inventories, which do not considerably differ from what can be said about inventories discovered across other territories settled by LBK communities. The decidedly most numerous find categories are end-scrapers, retouched blades and flakes (with much lower, often minimal numbers of other tools such as truncations, borers, burins and blades with retouched edges) (*cf*. Zakościelna 1981, 9; Gawryjołek-Szeliga 2009, 66; Gawryjołek-Szeliga and Szeliga 2012, fig. 18; Gawryjołek-Szeliga *et al*. 2013, 46; Szeliga and Gawryjołek-Szeliga 2021).

ECONOMIC BASES

The character and scope of economic activity are among the most poorly understood aspects of LBK colonisation of the Lublin region. This is a result of the insufficient degree to which the source materials were researched and especially from the small number of publications presenting previous specialist examinations, which were limited to zooarchaeological analyses. In light of the current state of research, animal osteological materials were obtained from six sites linked with the earliest (Hrubieszów-Podgórze 5, Świerszczów 3) and the younger phases (Hrubieszów-Kolonia Sławęcin 12, Hrubieszów-Podgórze 5, Świerszczów 28, Tarnoszyn 1, Werbkowice-Kotorów I) of the LBK. They are mainly modest sets of finds encompassing from a few to several dozen specimens (in some cases they are even more numerous) (Tab. 1). The only published results of the previous zooarchaeological analyses concern the vast set of post-consumption remains discovered in pit 6 at the site of Świerszczów 28. Their taxonomic diversity indicates the presence of domesticated (cattle, goat, sheep/goat, pig) and wild animals (roe deer, deer, horse, black grouse, catfish, terrapin, mussels), which attests to the importance of hunting, next to animal husbandry, in the economy of LBK society and, as a result, to the exploitation of diverse ecosystems. Some of the bones bear traces of processing in the form of incisions and burning (Nadachowski and Wolsan 1999, 238). The data obtained in Świerszczów was also supplemented with minimal information on the occurrences of sheep/goat, pig and cattle remains in a small set from Tarnoszyn (Chorostowska 1966, 38; Brzozowski 1986, 146). The majority of the remaining osteological collections have not been analysed, or were examined to a degree that requires verification and complementary research. As to the archaeobotanical data, which has never been subjected to separate analyses in the context of studying LBK settlement in the Lublin region, the situation is even more difficult. In addition to the analysis of recently obtained zooarchaeological materials and the reanalysis of earlier such data, the augmentation of the archaeobotanical data set is a necessary condition to comprehensively characterise the LBK economy in the discussed area.

INTERREGIONAL CONTACTS

This question can be discussed only in a general way due to the still modest number of excavated sites, as well as the fact that only a few homogeneous and abundant sets of artefacts have been yielded by archaeological features, and analysis of these has been minimal. In this context, the disproportionate representation of particular regions and settlement clusters, (which is reflected by the fact that the vast majority of the excavated sites are concentrated in the Hrubieszów Basin and the Horodło Ridge, and sporadically occur across the other zones of the Lublin region) is a serious impediment (Fig. 1: 2). Despite this fact, the general raw material structures of particular inventories clearly attest to the existence of active contacts between the LBK communities inhabiting the south-eastern part of the discussed region and those from its north-western area. This fact is attested by the apparent distribution of Świeciechów and Chocolate flint artefacts to settlement clusters located in the Western Volhynian Upland and by the inflow of Volhynian flint products to settlements occupying the western part of the Lublin region. The communities inhabiting the latter probably also played the leading role in the redistribution of Świeciechów and Volhynian flints to territories located north – that is, to settlement clusters across Kuyavia or even Chełmno Land, where sparse artefacts made of these raw materials occurred at sites representing the classical and late phases of the LBK (*e.g.* Domańska 1988, 83; 2002: 147, 148; Grygiel 2004, tab. XI; Kabaciński 2010, 106, 107, tab. 3, 12; Małecka-Kukawka 2008, tab. 1). This assumption is especially supported by the data yielded by the site of Puławy-Włostowice, including the character of the finds (the deposit of Świeciechów flint pre-core forms), the location of this site (Fig. 1: 2) and the potential role of the Vistula as a communication artery (*cf.* Szeliga 2018, 192). This fact is probably also connected with the inflow of obsidian products to the Polish Lowland, which, besides the geographical premises, may be indirectly indicated by the sporadic occurrences of such artefacts across the Lublin region (Tab. 1). An atypical, ladder-shaped ornament (composed of small arched dashes densely arranged on a single incised vertical line) recorded on a thin-walled vessel fragment from Horodysko 13 might be evidence of these mutual contacts and intercultural influences between the LBK societies inhabiting the Lublin region and Kuyavia (Bronicki 2016, fig. 5: 8). This pattern is decidedly different from the local motifs present on LBK vessels and bears a close similarity to the Šárka style (Bronicki 2016, 49) – especially to the methods of adapting it that are known from the Kuyavian sites (*cf. e.g.*, Grygiel 2004, fig. 136: 4; 156: 16, 18; Pyzel 2010, fig. 69: 1-5, 9). It is thus possible that the discussed ornament is one of the manifestations of the previously unknown reception of Kuyavian stylistic patterns in the local LBK zone. The discovery of the Šárka pottery set in Rovantsi (Volhynia) may attest to the much greater scale of this phenomenon (Saile *et al.* 2018, Abb. 5). The discussed question undoubtedly requires further source studies, but the presence of Kuyavian stylistic influences (including the transmission of the Šárka orna-

mental traditions) in the ornamentation of the LBK pottery from the Lublin region and Volhynia appears to be highly probable.

Another (unfortunately very modest) group of finds includes pottery that demonstrates close analogies to the style of decoration used in the Transcarpatian Eastern Linear cultural circle. They are known from only two sites associated with the younger phase of the LBK and are represented by three bases of thin-walled bowls from Puławy-Włostowice (Szeliga 2018, tabl. I: 8; IX: 4, 5), as well as by an almost complete vessel discovered at Świerszczów 28 (Zakościelna 1988a, fig. 2: b; Gawryjołek-Szeliga 2009, tabl. X). Their ornaments find numerous and close analogies in the inventories of groups inhabiting the northern part of the Carpathian Basin, including the Kapušany-Tiszadob and Szarvas-Érpart groups and the Bükk culture (*cf.* Zakościelna 1988a, 9; Gawryjołek-Szeliga 2009, 62; Szeliga 2018, 189). The character of these finds makes it impossible to conclusively determine if they were imports or only local imitations of the Transcarpathian style. Nevertheless, the presence of a music-note ornament on one of the fragments from Puławy-Włostowice (Szeliga 2018, tabl. IX: 5) indicates that at least some of such vessels were locally made. This assumption is corroborated by finds from other highland areas, which include the northern foreland of the Sandomierz Upland (Szeliga and Zakościelna 2019, fig. 4: 2, 4). Irrespective of this fact, the aforementioned pottery materials from the Lublin region, along with the scarce finds of obsidian products (Tab. 1), suggest the existence of intense influences exercised by the Eastern Linear cultural centre on the vast areas of the upper Vistula and Oder drainage basins (especially in the territories of Podkarpacie and Lesser Poland) during the younger phase of the LBK (*cf. e.g.* Godłowska 1982; Kaczanowska and Godłowska 2009; Kozłowski *et al.* 2014; Kabaciński *et al.* 2015; Szeliga and Zakościelna 2019). Their presence at sites located in the interfluve of the Vistula and Bug, just as the sporadic occurrences of Jurassic-Cracow flint artefacts (Puławy-Włostowice; *cf.* Zakościelna 2002, fig. 1; Szeliga 2018, 192) should be especially linked with the contacts between the local societies and groups inhabiting the above mentioned regions, particularly the LBK clusters from the Rzeszów and Sandomierz regions (*cf.* Szeliga 2014, fig. 8).

SUMMARY

The range of the available sources clearly confirms the constant and intense colonisation of the upland areas located in the interfluvial zone of the Vistula and Bug Rivers by the LBK communities between the Gniechowice phase and the early stage of the Želiezovce phase. The number and dispersion of the diagnostic finds attest to the ephemeral character and limited range (Hrubieszów Basin, Middle Roztocze) of the discussed settlement during the earliest period (Szeliga and Gawryjołek-Szeliga 2021), as well as to its greatest intensification during the music-note phase, which witnessed the colonisation of the whole

analysed region. Unfortunately, the lack of radiocarbon dates makes it impossible, at the moment, to narrow down the chronological framework of the settlement processes and to determine the total time frame of the local LBK development. This problem is essential in the context of the temporal retardation of the classical music-note and late music-note decorative traditions (observed in the materials from the Lublin region), which was, in part, parallel to the geographically limited reception of the early-Želiezovce style.

Similarly to other upland areas, the arrangement of LBK sites across the Lublin region demonstrates the extremely strong connection of the discussed colonisation with the loess zone (*cf. e.g.* Modderman 1959, 3-6; Sielmann 1972, Abb. 1, 3, 11; Kruk 1973, 72-74; Kruk *et al.* 1996, 41-48; Lenneis 1982, Karte 4; Czekaj-Zastawny 2008, 96-108). At the same time, the tendency to agglomerate settlements within geographically isolated microregions that usually occupy the high and middle parts of river valleys (especially of small and medium watercourses) is clearly visible. This phenomenon is especially discernable in the central and north-western parts of the Lublin region (Fig. 1: 2) and, to a much smaller extent, in its south-eastern area, which is characterised by a much greater density of settlements (especially along the valley of the Huczwa River). This microregional structure has close analogies in the organisation and character of the settlement network of the LBK in other territories of the upper Vistula drainage basin (*cf.* Kruk 1973, 45-48; Czekaj-Zastawny 2008, 111, 112). The scattered character of the sites located outside the loess zone (Fig. 1: 2) indicates the limited significance of these territories for the settlement of early agricultural societies – they were rather occasionally penetrated for economic reasons. On the other hand, the results of the recent research conducted in the northern foreland of the Sandomierz Upland (*cf.* Szeliga *et al.* 2019, fig. 2; 2020) does not allow us to rule out the possibility that permanent forms of LBK colonisation also existed outside the compact loess cover of the Lublin and Western Volhynian Uplands. This can be indirectly attested by the very location of the Puławy-Włostowice site. This question is one of the most essential issues to be solved during future research.

The development of particular settlement clusters was probably dynamic and based, *e.g.*, on intense contacts between the communities that inhabited them. These contacts are mainly manifested by the distribution of various siliceous raw materials via intermediate exchange (both in the upland interfluve between the Vistula and Bug and across much vaster territories). It appears that a special role in this system was played by the societies inhabiting the north-western part of the Lublin region. They were important consumers of southern materials (Chocolate and Jurassic-Cracow flint, obsidian) imported from the LBK settlement clusters occupying the Sandomierz Upland and Podkarpacie. At the same time, they played the key role in redistributing Świeciechów and Volhynian flint artefacts, as well as obsidian products, to the LBK settlement clusters in Kuyavia. The character of the interregional contacts maintained by the communities inhabiting the Lublin region was undoubtedly not limited to the distribution and exchange of raw material. This is in-

dicated by the presence of potential references to the Kuyavian style among the local pottery ornaments. The sporadic occurrences of imports from the Transcarpatian Eastern Linear cultural circle and/or of their imitations also confirm the aforementioned conjecture. Unfortunately, the modest number of diagnostic finds makes it impossible to precisely assess the actual scale and range of these contacts, but their multidirectional and far-reaching character is unquestioned.

The nature and scope of the settlement and economic activities performed by the LBK societies inhabiting particular clusters remain little known. The first reason for this state of affairs is the complete lack of available data, or, where data are available, its small amount and poor representativeness. The second reason is the unsatisfactory degree to which inventories yielded by previous excavation works were researched. As in other territories of the Vistula drainage basin, the settlements consisted of household groups (composed of overground buildings accompanied by construction pits that were secondarily used for economic purposes) (*cf. e.g.* Czekaj-Zastawny 2008, 38, 39; Pyzel 2010, 201, 202; Dębiec 2014, 67-71). Potential remains of such structures were discovered at only a fewl sites from the Lublin region (Bogucin 6, Hrubieszów-Podgórze 5, Puławy-Włostowice 3, Świerszczów 3; *cf.* Gawryjołek-Szeliga and Szeliga 2012, 72, 73; Gawryjołek-Szeliga *et al.* 2013; 50; Szeliga and Gawryjołek-Szeliga 2021, fig. 1: 3; Szeliga 2018, 182). So far, both the degree to which they were researched and the state of their preservation make it impossible to reconstruct particular houses and to assess their numbers or spatial arrangement at particular sites. Information concerning the economic activity of the LBK communities, especially agricultural activities and animal husbandry, is very modest and limited. The fact that only a small portion of the zooarchaeological data was published, as well as the complete lack of archaeobotanical analyses, render it impossible to make any interpretations or perform comparative examinations in this field.

Despite the undoubtedly informative potential of the present corpus of sources, many deficiencies and shortcomings significantly limit interpretative possibilities regarding many vital questions on the presence and development of the LBK society in the upland interfluve between the Vistula and Bug Rivers. In the context of future research, it should be stressed that there is a necessity to thoroughly research and publish the present source materials, as well as to conduct new, interdisciplinary excavation works oriented towards augmenting the archaeological and environmental data that would be representative of particular settlement clusters. It appears that this would help us in complementing and verifying the previous observations and in solving numerous problems concerning the chronological and stylistic range of LBK development, as well as the character and scale of the settlement and the economic activity of this population. Thereby, it would be possible to assess the actual role and importance of the Lublin region, and that of the communities inhabiting it, in the general development of the LBK in the drainage basin of the Vistula.

Table 1. List of LBK sites from the upland interfluvial zone of the Vistula and Bug Rivers. Abbreviation explanations: A – accidental find; S – surface survey; E – excavations; Ft – features; G – graves; P – pottery; F – flint; S – stone; O – obsidian; Ab – animal bones. The numeration of the sites is compatible with fig. 1:2

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
1.	**Alojzów** (Werbkowice/ Hrubieszów)	3	87-93/10		+				11	7				?	W. Koman 1991	Czekaj-Zastawny 2008
2.	**Białki Dolne** (Ułęż/ Ryki)	7	70-76/8		+				2					?	A. Kokowski 1998	-
3.	**Bobowiska** (Markuszów/ Puławy)	2	74-78/48		+						1			?	A. Zakościelna 1981	Brzozowski 1985
4.	**Bodaczów** (Szczebrzeszyn/ Zamość)	34	89-86/35		+				1					?	U. Kurzątkowska, W. Koman 1990	Czekaj-Zastawny 2008
5.	**Bogucin** (Garbów/ Puławy)	6	75-79/6			+	51		504	117	4			II-III	M. Matyaszewski 2011	Gawryjołek-Szeliga and Szeliga 2012
6.	**Brodzica** (Hrubieszów/ Hrubieszów)	23	87-93/38		+				5					?	W. Koman 1991	Czekaj-Zastawny 2008
7.	**Bródek** (Łabunie/ Zamość)	2	89-89/3		+						1			?	J. Kuśnierz 1999	Czekaj-Zastawny 2008
8.	**Busieniec** (Białopole/ Chełm)	7	83-92/26		+				1					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
9.	**Celejów** (Wąwolnica/ Pulawy)	10	75-77/57		+				2		1			?	S. Jastrzębski 1981	-
10.	**Chruślanki Małe** (Józefów by the Vistula river / Opole Lubelskie)	6	82-75/16		+				3	+				?	S. Jastrzębski 1979	Zakościelna 1981; Brzozowski 1986; 1988
11.	**Chruślina Kolonia** (Józefów by the Vistula river / Opole Lubelskie)	5	82-76/36		+				3	7				?	S. Jastrzębski 1979	Brzozowski 1986; 1988; Zakościelna 2002

12.	**Chrzanów Kolonia** (Chrzanów/ Janów Lubelski)	1	88-82/29		+				6					?	Z. Wichrowski 2003	-
13.	**Chrzanów Kolonia** (Chrzanów/ Janów Lubelski)	4	88-82/36		+				9					?	Z. Wichrowski 2003	-
14.	**Chrzanów Kolonia** (Chrzanów/ Janów Lubelski)	7	88-82/48		+				47	+		1		II	Z. Wichrowski 2003	-
15.	**Cichobórz** (Hrubieszów/ Hrubieszów)	32	89-95/79		+				2					?	J. Niedźwiedź 1993	Czekaj-Zastawny 2008 (incorrect name od site: „Lichobórz")
16.	**Ciechanki Krzesimowskie** (Łęczna/ Łęczna)	5	77-84/36		+				+					?	H. Wróbel 1986	Bargieł and Zakościelna 1995a
17.	**Czumów** (Hrubieszów/ Hrubieszów)	?	?		+				2					II	J. Kowalczyk, P. Komorowski, J. Głosik 1956	Głosik 1959-1960 Unknown location of site
18	**Dąbrowica** (Jastków/ Lublin)	12	77-80/37		+				1					?	B. Bargieł 1982	Bargieł and Zakościelna 1995a
19.	**Gliniska** (Tyszowce/ Tomaszów Lubelski)	2	91-92/16		+				1					?	S. Czopek 1979	Brzozowski 1986; 1988
20.	**Głodno Nowe** (Łaziska/ Opole Lubelskie)	4	79-74/18		+				4					?	S. Jastrzębski 1980	-
21.	**Gozdów** (Werbkowice/ Hrubieszów)	?	?	+						1				?	-	Bargieł *et al.* 1994 Unknown location of site
22.	**Góry Rzeczyckie** (Kazimierz Dolny/ Puławy)	1	76-76/36		+				7	+		1		?	A. Kokowski 1980	Bargieł and Zakościelna 1995b; Zakościelna 2002
23.	**Gródek** (Hrubieszów/ Hrubieszów)	1B	87-94/70	+					1					I	-	Buszewicz 1990
24.	**Gródek** (Hrubieszów/ Hrubieszów)	2	86-95/12			+	-	1	+					I	J. Kowalczyk 1953	Kempisty 1962; see also Dzieńkowski 2018, tab. 2
25.	**Gródek** (Hrubieszów/ Hrubieszów)	6 (1D)	87-94/2			+	3		+	+				I-II	T. Dąbrowska, T. Liana, A. Uzarowiczowa 1961-1962	Uzarowiczowa 1964; see also Dzieńkowski 2018, tab. 2

Table 1.

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
26.	**Horodło** (Horodło/ Hrubieszów)	5	85-95/5		+				1					II	?	Gurba 1961
27.	**Horodysko** (Leśniowice/ Chełm)	13	83-90/71			+	-		206	+	+			II	T. Dzieńkowski, S. Gołub 2004-2005	Bronicki 2016; Libera 2016
28.	**Hrubieszów-Podgórze** (Hrubieszów/ Hrubieszów)	1A	86-94/158			+	-		+	+				II?	E. Banasiewicz, A. Kokowski 1983-1985	Banasiewicz and Kokowski 1983, 17; Banasiewicz 1986
29.	**Hrubieszów-Podgórze** (Hrubieszów/ Hrubieszów)	5	86-94/211			+	4		+	+				I	J. Niedźwiedź, W. Panasiewicz 1993	Niedźwiedź and Panasiewicz 1994
30.	**Hrubieszów-Podgórze** (Hrubieszów/ Hrubieszów)	5	87-94/32			+	6		218	16	1		164	II	M. Matyaszewski 2011-2012	Gawryjołek-Szeliga *et al.* 2013
31.	**Hrubieszów – Kolonia Sławęcin** (Hrubieszów/ Hrubieszów)	12	86-93/29			+	2		648	62	+		+	II	A. Hyrchała 2013	Szeliga *et al.* 2017
32.	**Janki Dolne** (Horodło/ Hrubieszów)	7	85-96/54		+				5					?	A. Kokowski 1984	Brzozowski 1986; 1988
33.	**Janki Dolne** (Horodło/ Hrubieszów)	11	85-96/58		+				2					II	A. Kokowski 1984	Brzozowski 1986; 1988
34	**Jaszczów** (Milejów/ Łęczna)	IV	78-85/9		+				+					?	J. Waszkiewicz 1977-1978	Bargieł and Zakościelna 1995a
35.	**Kaliszany** (Józefów by the Vistula river / Opole Lubelskie)	2	81-74/20			+	-		+					?	M. Sułowska 1972	Sułowska 1972
36.	**Kolonia Dobużek** (Łaszczów/ Tomaszów Lubelski)	1	92-92/20		+				1	3				?	J. Maciejczuk 1984	Czekaj-Zastawny 2008
37.	**Kolonia Gozdów** (Werbkowice/ Hrubieszów)	1	87-93/130		+				12					?	W. Koman 1991	Czekaj-Zastawny 2008

38.	**Kolonia Kosmów** (Hrubieszów/ Hrubieszów)	16	88-95/4		+				6	+				?	A. Kokowski 1981	Brzozowski 1986; 1988
39.	**Kolonia Przeorsk** (Tomaszów Lubelski/ Tomaszów Lubelski)	2	94-90/61		+				13	8				?	E. Banasiewicz 1984	Brzozowski 1986; 1988; Czekaj-Zastawny 2008
40.	**Kolonia Rakołupy Duże** (Leśniowce/ Chełm)	13	83-89/18		+							1		?	A. Bronicki 1988	-
41.	**Konstantów** (Dzwola/ Janów Lubelski)	1	89-81/16		+				1					?	J. Libera 1985	-
42.	**Kosin** (Annopol/ Kraśnik)	32	87-75/15		+				1	1				?	B. Bargieł 1985	Czekaj-Zastawny 2008
43.	**Kosmów** (Hrubieszów/ Hrubieszów)	6	88-95/17		+				4					II	A. Kokowski 1978	Brzozowski 1986; 1988
44.	**Kotorów** (Werbkowice/ Hrubieszów)	14	88-92/100		+				1					?	J. Buszewicz 1982	Czekaj-Zastawny 2008
45.	**Krasnystaw** (Krasnystaw/ Krasnystaw)	VI	83-87/6	+					2					II-III	Accidental find	Gurba 1961
46.	**Kraśnik** (Kraśnik/ Kraśnik)	10	83-77/14		+				1					?	Z. Wichrowski 1984	Brzozowski 1986; 1988
47.	**Kraśnik** (Kraśnik/ Kraśnik)	25	84-78/33		+				1					?	Z. Wichrowski 1983	Brzozowski 1986; 1988
48.	**Kraśnik** (Kraśnik/ Kraśnik)	35	84-77/27		+				2					?	Z. Wichrowski 1984	-
49.	**Kryłów** (Mircze/ Hrubieszów)	13	89-95/63		+				11					?	J. Niedźwiedź 1993	Czekaj-Zastawny 2008
50.	**Kulczyn Kolonia** (Hańsk/ Włodawa)	41	74-89/110		+				1					?	T. i W. Mazurkowie 2004	-
51.	**Leopoldów** (Łęczna/ Łęczna)	5	77-84/86			+	2	-	> 350	+	+			II	A. Jączek, M. Kubera 2017	Jączek and Kubera 2018
52.	**Lipowiec** (Tyszowce/ Tomaszów Lubelski)	?	?			+	-	-	?	?	?	?	?	?	J. Gurba 1984	Gurba 1976; Gurba *et al.* 1976 Unknown location of site

Table 1.

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
53.	**Lipsko-Kosobudy** (Zamość/ Zamość)	12	90-88/30		+						1			?	J. Kuśnierz 1997	Czekaj-Zastawny 2008
54.	**Lipsko Polesie** (Zamość/ Zamość)	11	90-87/42		+				2	2				?	A. Urbański 1990	Czekaj-Zastawny 2008
55.	**Łapiguz** (Zamość/ Zamość)	1	88-88/31		+				5					?	A. Urbański 1983	Brzozowski 1986; 1988
56.	**Łapiguz** (Zamość/ Zamość)	5	88-88/33		+				1					?	A. Urbański 1983	Brzozowski 1986; 1988
57.	**Łaziska** (Łaziska/ Opole Lubelskie)	2	79-75/62		+				1	+				?	J. Libera 1980	Brzozowski 1986; 1988
58.	**Łopatki** (Wąwolnica/ Puławy)	3	76-77/180		+				2					?	A. Zakościelna 1980	Bargieł and Zakościelna 1995b
59.	**Łopatki Kolonia** (Wąwolnica/ Puławy)	1	76-77/89		+				2	1				?	A. Zakościelna 1980	Bargieł and Zakościelna 1995b
60.	**Łopiennik Dolny** (Łopiennik Górny/ Krasnystaw)	3	81-86/15			+			+	+				II	A. Zakościelna, J. Gurba 1991	Zakościelna and Gurba 1991; 1993
61.	**Łopiennik Nadrzeczny** (Łopiennik Górny/ Krasnystaw)	1	81-86/57		+				2					?	E. Wołoszyn, W. Mazurek 1988	-
62.	**Łopiennik Podleśny** (Łopiennik Górny/ Krasnystaw)	9	81-86/41		+				2					?	E. Wołoszyn, W. Mazurek 1988	-
63.	**Łopiennik Podleśny** (Łopiennik Górny/ Krasnystaw)	11	81-86/51		+				3					?	E. Wołoszyn, W. Mazurek 1988	-
64.	**Łysa Góra** (Werbkowice/ Hrubieszów)	1	88-93/18		+				7					?	A. Kokowski 1978-1981	-
65.	**Łysa Góra** (Werbkowice/ Hrubieszów)	3	88-93/20		+				1					?	A. Kokowski 1978-1981	Brzozowski 1986; 1988

66.	**Mareczki** (Wąwolnica/ Puławy)	12	76-77/149		+				2					?	A. Zakościelna 1980	Brzozowski 1986; 1988
67.	**Masłomęcz** (Hrubieszów/ Hrubieszów)	14	88-94/79		+				2					?	S. Jastrzębski, A. Kokowski 1984	Brzozowski 1986; 1988
68.	**Mieniany** (Hrubieszów/ Hrubieszów)	7	88-94/65		+				5					?	S. Jastrzębski, A. Kokowski 1984	Czekaj-Zastawny 2008
69.	**Mieniany** (Hrubieszów/ Hrubieszów)	13	88-95/78		+				2					?	A. Kokowski 1978	Brzozowski 1986; 1988
70.	**Miętkie Kolonia** (Mircze/ Hrubieszów)	17	90-93/60		+				6					?	W. Koman 1995	Czekaj-Zastawny 2008
71.	**Modryniec** (Mircze/ Hrubieszów)	2	89-94/44		+				2					?	A. Kokowski 1978	Czekaj-Zastawny 2008
72.	**Modryniec** (Mircze/ Hrubieszów)	5	89-94/14		+				1					?	A. Kokowski 1978	-
73.	**Nawóz** (Nielisz/ Zamość)	XIV	?		+				5					?	E. Mtrus 1976-1977	Brzozowski 1986; 1988 Unknown location of site
74.	**Nawóz** (Nielisz/ Zamość)	XVI	?		+				3					?	E. Mtrus 1976-1977	Brzozowski 1986; 1988 Unknown location of site
75.	**Niedzieliska** (Szczebrzeszyn/ Zamość)	13	89-86/68		+				1					?	U. Kurzątkowska, W. Koman 1990	Czekaj-Zastawny 2008
76.	**Oleśniki** (Trawniki/ Świdnik)	19	80-86/14		+				1					?	H. Taras 2004	-
77.	**Ornatowice** (Grabowiec/ Zamość)	1	86-91/5	+					1					II	1958	Gurba 1961; Gurba and Jasiński 1963
78.	**Ostrów Kolonia** (Wojsławice/ Chełm)	18	84-90/40		+				4					?	S. Gołub 1984	Brzozowski 1986; 1988
79.	**Ośrodek Wyżnica** (Kraśnik/ Kraśnik)	4	84-78/20		+				45	+	+			?	Z. Wichrowski 1983; Z. Wichrowski, Z. Winkler 1994, 1996	Brzozowski 1986; 1988
80.	**Ośrodek Wyżnica** (Kraśnik/ Kraśnik)	5	AZP 84-78/21		+				2	+				?	Z. Wichrowski 1983, 1994	Brzozowski 1986; 1988

Table 1.

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
81.	**Panieńszczyzna** (Jastków/ Lublin)	1	76-80/64			+			2					?	S. Sadowski 2006	Sadowski 2006
82.	**Parchatka** (Kazimierz Dolny/ Puławy)	26	75-76/185		+				1					?	J. Nogaj 1987	Bargieł and Zakościelna 1995b
83.	**Pełczyn** (Trawniki/ Świdnik)	I	79-85/5		+				+					?	J. Waszkiewicz 1978-1979	Bargieł and Zakościelna 1995b
84.	**Plisków** (Leśniowce/ Chełm)	4	83-90/62		+				2					?	S. Gołub 1984	Brzozowski 1986; 1988
85.	**Płonka** (Rudnik/ Krasnystaw)	I	?		+				1					II	E. Mitrus 1976	Brzozowski 1986; 1988 Unknown location of site
86.	**Pniówek** (Zamość/ Zamość)	1	89-88/38		+				21					?	J. Buszewicz 1991	Czekaj-Zastawny 2008
87.	**Podhorce** (Werbkowice/ Hrubieszów)	2	87-93/5		+	+	-		>20	+		1		II-III	J. Kącki 1982; W. Koman 1991	Kącki 1982; Czekaj-Zastawny 2008
88.	**Podhorce** (Werbkowice/ Hrubieszów)	11	87-93/83		+				2					?	W. Koman 1991	Czekaj-Zastawny 2008
89.	**Podhorce** (Werbkowice/ Hrubieszów)	33	87-93/105		+				3					?	W. Koman 1991	Czekaj-Zastawny 2008
90.	**Podhorce** (Werbkowice/ Hrubieszów)	36	87-93/108		+				1					?	A. Kokowski 1978-1981 W. Koman 1991	Brzozowski 1986; 1988
91.	**Podhorce** (Werbkowice/ Hrubieszów)	37	87-93/109		+				8					?	A. Kokowski 1978-1981 W. Koman 1991	Czekaj-Zastawny 2008
92.	**Podhorce** (Werbkowice/ Hrubieszów)	38	87-93/110		+				7					?	A. Kokowski 1978-1981 W. Koman 1991	Brzozowski 1986; 1988; Czekaj-Zastawny 2008

93.	**Podhorce** (Werbkowice/ Hrubieszów)	52	87-93/124		+				12					?	A. Kokowski 1978-1981 W. Koman 1991	Czekaj-Zastawny 2008
94.	**Podhorce** (Werbkowice/ Hrubieszów)	53	87-93/125		+				8					?	A. Kokowski 1978-1981 W. Koman 1991	Czekaj-Zastawny 2008
95.	**Polesie** (Tomaszów Lubelski/ Tomaszów Lubelski)	2	94-90/65		+				7	4				?	E. Banasiewicz 1984	Brzozowski 1986; 1988; Czekaj-Zastawny 2008
96.	**Przeorsk** (Tomaszów Lubelski/ Tomaszów Lubelski)		95-90/13		+				3	3				?	E. Banasiewicz 1984	Czekaj-Zastawny 2008
97.	**Puławy-Włostowice** (Puławy/ Puławy)	3	74-76/45			+	4		418	+				II-III	J. Gurba, A. Kutyłowski 1973; J. Gurba, L. Gajewski, I. Kutyłowska 1974; M. Matyaszewski, G. Miliszkiewicz 1977; P. Lis 1988, 1996	Gurba and Kutyłowski 1974; Gajewski *et al.* 1975; Matyaszewski and Miliszkiewicz 1978; Lis 1992; 1997; Zakościelna 1981; 2002; Szeliga 2018
98.	**Putnowice Kolonia** (Wojsławice/ Chełm)	16	83-92/62		+				1					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
99.	**Putnowice Kolonia** (Wojsławice/ Chełm)	23	83-92/77		+				1					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
100.	**Putnowice Kolonia** (Wojsławice/ Chełm)	7	83-92/43		+				2	4				?	S. Jastrzębski 1983	Brzozowski 1986; 1988
101.	**Rąblów Kolonia** (Wąwolnica/ Puławy)	10	76-77/96		+							1		?	A. Kokowski 1980	Brzozowski 1986; 1988
102.	**Rogalin** (Hrubieszów/ Hrubieszów)	8	86-96/6		+				1					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
103.	**Rogalin** (Hrubieszów/ Hrubieszów)	9	86-96/7		+				8					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
104.	**Rudnik Drugi** (Zakrzówek/ Kraśnik)	18	84-80/53		+				2					?	Z. Wichrowski 1999	-
105.	**Sitaniec-Błonie** (Zamość/ Zamość)	5	88-88/11		+				3					?	A. Kutyłowski, A. Urbański 1983	Brzozowski 1986; 1988
106.	**Sitaniec-Błonie** (Zamość/ Zamość)	6	88-88/10		+				1					?	A. Kutyłowski, A. Urbański 1983	Brzozowski 1986; 1988

Table 1.

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
107.	**Sitaniec-Wolica** (Zamość/ Zamość)	1	88-88/12		+				7	+				?	A. Kutyłowski, A. Urbański 1983	Brzozowski 1986; 1988
108.	**Sitaniec-Wolica** (Zamość/ Zamość)	2	88-88/13		+				1					?	A. Kutyłowski, A. Urbański 1983	Brzozowski 1986; 1988
109.	**Skoków** (Opole Lubelskie/ Opole Lubelskie)	2	80-76/20		+				+					?	H. Wróbel 1979	Bargieł and Zakościelna 1995c
110.	**Snopków** (Jastków/ Lublin)	5	76-80/6		+				1					?	W. Zieliński 1982	Brzozowski 1986; 1988
111.	**Snopków** (Jastków/ Lublin)	12	76-80/13		+				1					?	W. Zieliński 1982	Brzozowski 1986; 1988
112.	**Stężyca Łęczyńska** (Krasnystaw/ Krasnystaw)	2	81-86/22		+				1					?	E. Wołoszyn, W. Mazurek 1988	-
113.	**Stężyca Łęczyńska** (Krasnystaw/ Krasnystaw)	9	81-86/48		+				2					?	E. Wołoszyn, W. Mazurek 1988	-
114.	**Strzyżów** (Horodło/ Hrubieszów)	1	86-95/1			+	+		+					II	Z. Podkowińska 1935-37, 1939; J. Głosik, J. Gurba 1961	Podkowińska 1959; 1960; Głosik and Gurba 1963; Brzozowski 1986, 1988
115.	**Strzyżów** (Horodło/ Hrubieszów)	2	86-95/2			+			+					?	Z. Podkowińska 1935-37, 1939; J. Gurba 1961	Podkowińska 1960; Brzozowski 1986, 1988 Bargieł and Zakościelna 1995a
116.	**Strzyżów** (Horodło/ Hrubieszów)	7	86-95/7		+				2					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
117.	**Strzyżów** (Horodło/ Hrubieszów)	10	86-95/10		+				2					?	S. Jastrzębski 1983	Brzozowski 1986; 1988
118.	**Strzyżów** (Horodło/ Hrubieszów)	18	86-95/21		+				1					?	S. Jastrzębski 1983	Brzozowski 1986; 1988

119.	**Sumin** (Tarnawatka/ Tomaszów Lubelski)	1	92-89/19		+				8					I	A. Zakościelna 1984	Brzozowski 1986; 1988; Szeliga and Gawryjołek-Szeliga 2021
120.	**Szczekarków** (Lubartów/ Lubartów)	12	72-82/21		+				+	+				?	M. Florek 1996	-
121.	**Szczepiatyn** (Ulhówek/ Tomaszów Lubelski)	27	95-93/24		+				5					?	A. Urbański 1987	Czekaj-Zastawny 2008
122.	**Szlatyn** (Jarczów/ Tomaszów Lubelski)	10	94-92/184		+				3					?	J. Buszewicz, U. Kurzątkowska, W. Mazurek 1987	Czekaj-Zastawny 2008
123.	**Szopinek Stara Wieś** (Zamość/ Zamość)	5	88-88/43		+				3					?	A. Urbański 1983	Brzozowski 1986; 1988
124.	**Szopinek Stara Wieś** (Zamość/ Zamość)	6	88-88/44		+				4	1				?	A. Urbański 1983	Brzozowski 1986; 1988
125.	**Świeciechów Poduchowny** (Annopol/ Kraśnik)	1	84-75/1		+							1		?	Accidental find	Kind information by J. Libera
126.	**Świerszczów** (Hrubieszów/ Hrubieszów)	3	86-94/90			+	4		229	8			11	I	J. Jóźwiak 2011-2012	Szeliga and Gawryjołek-Szeliga 2021
127.	**Świerszczów /Kolonia/** (Hrubieszów/ Hrubieszów) *	28*	86-94/6*			+	3		1139	60	>15		105	II	A. Zakościelna 1988, 1990	Zakościelna 1988a; 1988b; 1990 Nadachowski and Wolsan 1999; Gawryjołek-Szeliga 2009; Dzieńkowski 2018 The site is known in the archaeological literature under the name Świerszczów Kolonia (no. 28), but it is incorrect. The correct one, compatible with the AZP list, is Świerszczów, site 3A (86-94/6)

Table 1.

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
128.	**Tarnawatka** (Tarnawatka/ Tomaszów Lubelski)	6	92-89/23		+				11	1				II	H. Wróbel 1984	Brzozowski 1986; 1988
129.	**Tarnawatka** (Tarnawatka/ Tomaszów Lubelski)	9	92-89/19		+				18						A. Zakościelna 1984	Czekaj-Zastawny 2008
130.	**Tarnoszyn** (Ulhówek/ Tomaszów Lubelski)	1	95-93/1			+	+		741	136	+		32	II	J. Gurba 1959	Gurba 1961; 1970; Chorostowska 1966; Zakościelna 1981
131.	**Tarnoszyn** (Ulhówek/ Tomaszów Lubelski)	33	95-93/42		+				1	1				?	A. Urbański 1987	Czekaj-Zastawny 2008
132.	**Terebiniec** (Werbkowice/ Hrubieszów)	1	Brak danych		+				+					?	J. Gurba 1977	Bargieł and Zakościelna 1995c
133.	**Teresin** (Białopole/ Chełm)	7	83-92/191		+				1					?	A. Kokowski 1983	Brzozowski 1986; 1988
134.	**Teresin** (Białopole/ Chełm)	19	83-92/203		+				1					?	A. Kokowski 1983	Brzozowski 1986; 1988
135.	**Teresin** (Białopole/ Chełm)	24	83-92/17		+				2					?	A. Kokowski 1983	-
136.	**Turkowice Kolonia** (Werbkowice/ Hrubieszów)	7	90-93/16		+				1					?	W. Koman 1995	Czekaj-Zastawny 2008
137.	**Tyszowce** (Tyszowce/ Tomaszów Lubelski)	4	90-92/21		+				3					?	S. Jastrzębski 1984	Czekaj-Zastawny 2008
138.	**Tyszowce** (Tyszowce/ Tomaszów Lubelski)	6	90-92/23								4			?	S. Jastrzębski 1984	Czekaj-Zastawny 2008
139.	**Tyszowce** (Tyszowce/ Tomaszów Lubelski)	25B	90-92/52			+						1		?	J. Buszewicz 1985	Buszewicz 1986
140.	**Ugory** (Dzierzkowice/ Kraśnik)	9	85-73/5		+						1				A. Kokowski 1979	Brzozowski 1985

141.	**Wąwolnica** (Wąwolnica/ Puławy)	1	76-77/3			+			+	+				?	B. Bargieł, J. Kącki 1980	Bargieł and Kącki 1980; 1981
142.	**Wąwolnica** (Wąwolnica/ Puławy)	7	76-77/24		+				3					?	A. Zakościelna 1980	-
143.	**Werbkowice-Kotorów** (Werbkowice/ Hrubieszów)	1 (I*)	88-92/1			+	5	?	+	+			+	II	T. Liana, T. Dąbrowska 1959- 1960	Liana and Piętka-Dąbrowska 1962; Dąbrowska and Liana 1963; Kurzawska and Sobkowiak-Tabaka 2020 In the light of data provided by the AZP survey, sites I and II appearing in archaeological literature are actually one and the same site marked as no. 1
144.	**Werbkowice-Kotorów** (Werbkowice/ Hrubieszów)	1 (II*)				+								?		
145.	**Werbkowice** (Werbkowice/ Hrubieszów)	4	88-93/3		+				1					?	W. Koman 1991	Czekaj-Zastawny 2008
146.	**Wieniawka** (Horodło/ Hrubieszów)	4	85-96/17		+				2					?	A. Kokowski 1984	Brzozowski 1986; 1988
147.	**Wieniawka** (Horodło/ Hrubieszów)	5	85-96/18		+				1					?	A. Kokowski 1984	Brzozowski 1986; 1988
148.	**Wieniawka** (Horodło/ Hrubieszów)	6	85-96/40			+			+					II	A. Kokowski 1985	Kokowski 1985
149.	**Wierzbica** (Lubycza Królewska/ Tomaszów Lubelski)	7	96-92/7		+				1					?	U. Kurzątkowska, W. Koman 1987	Czekaj-Zastawny 2008
150.	**Wierzbica** (Lubycza Królewska/ Tomaszów Lubelski)	9	96-92/9		+				4					?	U. Kurzątkowska, W. Koman 1987	Czekaj-Zastawny 2008
151.	**Wilków** (Werbkowice/ Hrubieszów)	13	87-93/141		+				2					?	A. Kokowski 1978-1981 W. Koman 1991	Brzozowski 1986; 1988; Czekaj-Zastawny 2008
152.	**Wilków** (Werbkowice/ Hrubieszów)	22	87-93/150		+				1					?	W. Koman 1991	Czekaj-Zastawny 2008

Table 1.

Lp.	Site		AZP number	The way the finds were obtained			Materials							LBK phase	Director and year of research	Literature (and remarks)
	Locality (community/ district)	No.		A	S	E	Ft	G	P	F	S	O	Ab			
153.	**Wirkowice** (Izbica/ Krasnystaw)	17	85-86/33		+				1					?	A. Zakościelna 1980	Brzozowski 1986; 1988
154.	**Wólka Pukarzowska** (Łaszczów/ Tomaszów Lubelski)	1	92-92/15		+				4					?	J. Maciejczuk 1984	Czekaj-Zastawny 2008
155.	**Wólka Putnowicka** (Wojsławice/ Chełm)	3	83-92/96		+						1			?	S. Jastrzębski 1983	-
156.	**Wychody** (Zamość/ Zamość)	5	90-87/61		+				1					?	A. Urbański 1990	Czekaj-Zastawny 2008
157.	**Wyżnianka Kolonia** (Dzierzkowice/ Kraśnik)	1	84-77/19		+				5	+				?	Z. Wichrowski 1984	Brzozowski 1986; 1988
158.	**Wyżnianka Kolonia** (Dzierzkowice/ Kraśnik)	2	84-77/20		+				15	13				II	Z. Wichrowski 1984	Brzozowski 1986; 1988
159.	**Zagroda** (Chełm/ Chełm)	5	81-89/28		+					11				?	A. Bronicki 1984	-
160.	**Zagroda** (Chełm/ Chełm)	9	81-89/46		+				2					?	A. Bronicki 1984	Brzozowski 1986; 1988
161.	**Zakłodzie** (gm. Radecznica/ Zamość)	4	88-84/88		+				1					?	A. Urbański, J. Buszewicz, J. Kuśnierz 1989	Czekaj-Zastawny 2008
162.	**Zakrzów** (Łęczna/ Łęczna)	6	77-84/43		+				+	25				?	H. Wróbel 1986	Bargieł and Zakościelna 1995c
163.	**Zamłynie** (Tyszowce/ Tomaszów Lubelski)	3	90-92/40		+				4					?	S. Jastrzębski 1984	Brzozowski 1986; 1988

164.	**Zarzeka** (Wąwolnica/ Puławy)	6	76-77/13		+				1	1				?	A. Zakościelna 1980	Bargieł and Zakościelna 1995c
165.	**Zarzeka** (Wąwolnica/ Puławy)	8	76-77/45		+				13					?	A. Zakościelna 1980	Bargieł and Zakościelna 1995c
166.	**Zarzeka** (Wąwolnica/ Puławy)	17	76-77/54		+				2	5				?	A. Zakościelna 1980	-
167.	**Zgórzyńskie** (Wąwolnica/ Puławy)	5	76-77/55		+				3					?	A. Zakościelna 1980	Bargieł and Zakościelna 1995c
168.	**Zgórzyńskie** (Wąwolnica/ Puławy)	8	76-77/58		+				1					?	A. Zakościelna 1980	Brzozowski 1986; 1988
169.	**Zosin** (Horodło/ Hrubieszów)	15	85-96/83		+				15					II	A. Kokowski 1984	Brzozowski 1986; 1988
170.	**Żuków** (Miączyn/ Zamość)	1	87-91/1			+			1					II	J. Gurba 1960	Gurba 1961
171.	**Żyłka** (Lubycza Królewska/ Tomaszów Lubelski)	1	95-90/2		+						1			?	E. Banasiewicz 1984	Czekaj-Zastawny 2008

Acknowledgements

The author of this paper would like to thank Edmund Mitrus for his consent to share LBK pottery materials from the sites of Bogucin and Hrubieszów-Podgórze and to Katarzyna Gawryjołek-Szeliga for illustrating them. I would also like to express my gratitude to Wiesław Koman, Grzegorz Mączka and Marek Florek for their invaluable help in organising and verifying data on the lists of particular sites within the framework of the Polish Archaeological Record (Archeologiczne Zdjęcie Polski). My thanks are also to Piotr Moskała for translating the text into English.

References

Balcer B. 1983. *Wytwórczość narzędzi krzemiennych w neolicie ziem Polski*. Wrocław, Warszawa, Kraków, Gdańsk, Łódź: Zakład Narodowy im. Ossolińskich.

Banasiewicz E. 1986. Badania na stanowisku w Hrubieszowie-Podgórzu 1 A woj. zamojskie (Uzupełnione wynikami z poprzednich sezonów). In *Sprawozdania z badań terenowych w województwie zamojskim w 1986 roku*. Zamość: Wojewódzki Ośrodek Archeologiczno-Konserwatorski w Zamościu, 8-12.

Banasiewicz E. and Kokowski A. 1983. Hrubieszów-Podgórze stan. 1 A, gm. Hrubieszów, woj. zamojskie. In. J. Gurba (ed.), *Sprawozdanie z badań terenowych Zakładu Archeologii UMCS i Archeologicznego Ośrodka Badawczo-Konserwatorskiego w Lublinie w 1983 roku*. Lublin: Katedra Archeologii Uniwersytetu Marii Curie-Skłodowskiej, 17.

Bargieł B. and Kącki J. 1980. Wąwolnica, gm. loco, woj. lubelskie. In *Sprawozdanie z badań terenowych Zakładu Archeologii UMCS w 1980 roku*. Lublin: Zakład Archeologii – Instytut Historii UMCS w Lublinie, 14-15.

Bargieł B. and Kącki J. 1981. Wąwolnica, woj. lubelskie. Stanowisko 1. *Informator Archeologiczny. Badania rok 1980*, 224.

Bargieł B., Kokowski A. and Libera J. 1994. Drobne materiały do prahistorii Kotliny Hrubieszowskiej. In A. Urbański (ed.), *Sprawozdania z badań archeologicznych w województwie zamojskim w 1993 roku*. Zamość: Muzeum Okręgowe w Zamościu, 68-75.

Bargieł B. and Zakościelna A. 1995a. *Katalog archeologicznych zbiorów pozamuzealnych*, Zeszyt 3. *Kolekcja Katedry Archeologii Uniwersytetu Marii Skłodowskiej-Curie w Lublinie*, cz. 1. Warszawa: Ośrodek Dokumentacji Zabytków.

Bargieł B. and Zakościelna A. 1995b. *Katalog archeologicznych zbiorów pozamuzealnych*, Zeszyt 3. *Kolekcja Katedry Archeologii Uniwersytetu Marii Skłodowskiej-Curie w Lublinie*, cz. 2. Warszawa: Ośrodek Dokumentacji Zabytków.

Bargieł B. and Zakościelna A. 1995c. *Katalog archeologicznych zbiorów pozamuzealnych*, Zeszyt 3. *Kolekcja Katedry Archeologii Uniwersytetu Marii Skłodowskiej-Curie w Lublinie*, cz. 3. Warszawa: Ośrodek Dokumentacji Zabytków.

Bronicki A. 2016. Neolit: Obiekty nieruchome i zabytki ceramiczne. In T. Dzieńkowski (ed.), *Horodysko. Od epoki kamienia do wczesnego średniowiecza. Badania 2004-2005*. Lublin: Instytut Archeologii UMCS, 33-77.

Brzozowski J. 1985. Narzędzia kamienne kultur kręgu południowego na Lubelszczyźnie. In J. Gurba (ed.), *Lubelskie Materiały Archeologiczne*. Lublin: Koło Naukowe Archeologów, Katedra Archeologii UMCS w Lublinie, 51-57.

Brzozowski J. 1986. Kultura ceramiki wstęgowej rytej na Lubelszczyźnie. Lublin (typescript of M.A. thesis stored in Institute of Archaeology of MCSU in Lublin).

Brzozowski J. 1988. Kultura ceramiki wstęgowej rytej na Lubelszczyźnie. In J. Gurba (ed.), *Archeologiczne Listy* 3. Lublin: Katera Archeologii UMCS, 1-7.

Buszewicz J. 1986. Sprawozdanie z badań wykopaliskowych wielokulturowej osady w Tyszowcach stan. 25B. In *Sprawozdania z badań terenowych w województwie zamojskim w 1986 roku*. Zamość: Wojewódzki Ośrodek Archeologiczno-Konserwatorski w Zamościu, 17-20.

Buszewicz J. 1990. Naczynie kultury ceramiki wstęgowej rytej z Gródka Nadbużnego. In Zespół WOAK (eds), *Sprawozdania z badań terenowych w województwie zamojskim w 1990 roku*. Zamość: Wojewódzki Ośrodek Archeologiczno-Konserwatorski w Zamościu, 9-10.

Caspar J. P., Kaczanowska M. and Kozłowski J. K. 1989. Chipped Stone Industries of the Linear Band Pottery culture (LBP): Techniques, Morphology and Function of the Implements in Belgian and Polish Assemblages. *Hellinium* 29, 157-205.

Chorostowska I. 1966. Osada kultury ceramiki wstęgowej rytej w Tarnoszynie, powiat Tomaszów Lubelski. Lublin (typescript of M.A. thesis stored in Institute of Archaeology of MCSU in Lublin).

Czekaj-Zastawny A. 2008. *Osadnictwo społeczności kultury ceramiki wstęgowej rytej w dorzeczu górnej Wisły*. Kraków: Instytut Archeologii i Etnologii PAN.

Czekaj-Zastawny A. 2009. Obrządek pogrzebowy kultury ceramiki wstęgowej rytej. In A. Czekaj-Zastawny (ed.), *Obrządek pogrzebowy kultur pochodzenia naddunajskiego w neolicie Polski południowo-wschodniej (5600/5500-2900 BC)*. Kraków: Instytut Archeologii i Etnologii PAN, 25-51.

Dąbrowska T. and Liana T. 1963. Sprawozdanie z prac wykopaliskowych w Werbkowicach-Kotorowie, pow. Hrubieszów w 1960 r. *Wiadomości Archeologiczne* 29/1, 44-59.

Dębiec M. 2014. *Zwięczyca 3. Eine bandkeramische Siedlung am Wisłok*. Rzeszów: Oficyna Wydawnicza ZIMOWIT.

Dębiec M. 2015. Zur relativen Chronologie der Linienbandkeramik in Südostpolen. *Sprawozdania Archeologiczne* 67, 31-56.

Dębiec M. and Dzbyński A. 2007. Die ersten Radiokarbondatierungen aus der Siedlung der Linienbandkeramischen Kultur in Zwięczyca, gm. Boguchwała. *Sprawozdania Archeologiczne* 59, 53-59.

Domańska L. 1988. Recepcja małopolskich surowców krzemiennych wśród społeczeństw cyklu wstęgowego. In A. Cofta-Broniewska (ed.), *Kontakty pradziejowych społeczeństw Kujaw z innymi ludami Europy*. Inowrocław: Urząd Miejski w Inowrocławiu, 81-90.

Domańska L. 2002. Rola krzemienia świeciechowskiego w gospodarce surowcowej neolitycznych społeczności Kujaw. In B. Matraszek and S. Sałaciński (eds), *Krzemień świeciechowski w pra-*

dziejach (= *Studia nad gospodarką surowcami krzemiennymi w pradziejach* 4). Warszawa: Państwowe Muzeum Archeologiczne w Warszawie, Stowarzyszenie Naukowe Archeologów Polskich, Instytut Archeologii i Etnologii PAN, 147-154.

Dzieduszycka-Machnikowa A. and Lech J. 1976. *Neolityczne zespoły pracowniane z kopalni krzemienia w Sąspowie*. Wrocław, Warszawa, Kraków, Gdańsk: Zakład Narodowy im. Ossolińskich.

Dzieńkowski T. 2018. Early Medieval settlement in the area of the mouth of the Huczwa river to the Bug river in the light of surface surveys and research excavations, as well as stray finds. In M. Wołoszyn (ed.), *The early medieval settlement complex at Gródek upon the Bug River in the light of results from past research (1952-1955). Material evidence / Wczesnośredniowieczny zespół osadniczy w Gródku nad Bugiem w świetle wyników badań dawnych (1952-1955). Podstawy źródłowe* (= *U źródeł Europy Środkowo-Wschodniej / Frühzeit Ostmitteleuropas* 4). Kraków, Leipzig, Rzeszów, Warszawa: Instytut Archeologii i Etnologii PAN, Leibniz-Institut fur Geschichte und Kultur des ostlichen Europa, Instytut Archeologii Uniwersytetu Rzeszowskiego, 75-138.

Gawryjołek-Szeliga K. 2009. Materiały kultur naddunajskich ze stanowiska 28 w Świerszczowie, pow. Hrubieszów. Lublin (typescript of M.A. thesis stored in Institute of Archaeology of MCSU in Lublin).

Gawryjołek-Szeliga K. and Szeliga M. 2012. Kultura ceramiki wstęgowej rytej. In K. Gawryjołek-Szeliga, Ł. Pawłowski and M. Szeliga (eds), Dokumentacja końcowa z ratowniczych badań archeologicznych stanowiska nr 6 w Bogucinie, gm. Garbów, powiat Lublin, województwo lubelskie wykonywanych w związku z realizacją drogi ekspresowej S17 na odcinku Kurów – Lublin – Piaski – od węzła „Sielce" do węzła „Bogucin". 1. Okres pradziejowy. Lublin, 33-73 (typescript stored in Provincial Heritage Monuments Protection Office in Lublin).

Gawryjołek-Szeliga K., Szeliga M. and Matyaszewski M. 2013. Dokumentacja końcowa z ratowniczych badań archeologicznych stanowiska nr 5 w Hrubieszowie na obszarze 87-94, gm. Hrubieszów, pow. hrubieszowski wykonywanych w związku z realizacją obwodnicy miasta Hrubieszów w ciągu drogi krajowej nr 74 – Janów Lubelski – granica państwa. Lublin (typescript stored in Provincial Heritage Monuments Protection Office in Zamość).

Gawrysiak L. 2004. *Mapa. Województwo lubelskie*. Lublin: Polskie Towarzystwo Geograficzne.

Gajewski L., Gurba J. and Kutyłowska I. 1975. Puławy-Włostowice. Stanowisko 1. *Informator Archeologiczny. Badania rok 1974*, 142-143.

Głosik J. 1959-1960. Archeologiczne badania powierzchniowe przeprowadzone w roku 1956 nad Bugiem w okolicy Hrubieszowa. *Wiadomości Archeologiczne* 26/3-4, 320-322.

Głosik J. and Gurba J. 1963. Ogólne wyniki prac archeologicznych w Strzyżowie, pow. Hrubieszów, w 1961 roku. *Sprawozdania Archeologiczne* 15, 358-365.

Godłowska M. 1982. Nowohucki zespół osadniczy na tle wpływów południowych we wczesnym i środkowym neolicie Małopolski. *Wiadomości Archeologiczne* 47, 143-159.

Grygiel R. 2004. *Neolit i początki epoki brązu w rejonie Brześcia Kujawskiego i Osłonek* 1. *Wczesny neolit. Kultura ceramiki wstęgowej rytej*. Łódź: Fundacja Badań Archeologicznych Imienia Profesora Konrada Jażdżewskiego, Muzeum Archeologiczne i Etnograficzne w Łodzi.

Gurba J. 1961. Neolithic Settlements on the Lublin Loess Upland. *Annales UMCS, sectio B – Geographia, Geologia Mineralogia et Petrographia* 15, 211-233.

Gurba J. 1970. Najnowsze badania nad neolitem Lubelszczyzny (przegląd badań). *Rocznik Lubelski* 13, 173-186.

Gurba J. 1976. Lipowiec, gm. Tyszowce, woj. zamojskie. *Informator Archeologiczny. Badania rok 1975*, 37.

Gurba J., Gajewski L., Hoczyk-Siwkowa S. and Kutyłowscy I. and A. 1976. Badania Zakładu Archeologii UMCS i Archeologicznego Ośrodka Badawczo-Konserwatorskiego w Lublinie w roku 1975. *Rocznik Lubelski* 19, 195-202.

Gurba J. and Jasiński A. 1963. Zniszczone cmentarzysko tzw. kultury ceramiki wstęgowej malowanej w Ornatowicach, pow. Hrubieszów. *Wiadomości Archeologiczne* 29/4, 361-362.

Gurba J. and Kutyłowski A. 1974. Puławy-Włostowice. *Informator Archeologiczny. Badania rok 1973*, 153-154.

Jakucs J., Bánffy E., Oross K., Voicsek V., Bronk Ramsey Ch., Dunbar E., Kromer B., Bayliss A., Hofmann D., Marshall P. and Whittle A. 2016. Between the Vinča and Linearbandkeramik Worlds: The Diversity of Practices and Identities in the 54th-53r^{d} Centuries cal BC in Southwest Hungary and Beyond. *Journal of World Prehistory* 29, 267-336.

Jączek A. and Kubera M. 2018. Wyniki ratowniczych badań wykopaliskowych przeprowadzonych na stanowisku Leopoldów AZP 77-84/86-5, gm. Łęczna. In A. Zakościelna (ed.), *Badania archeologiczne w Polsce środkowowschodniej, zachodniej Białorusi i Ukrainie w roku 2017. Streszczenia referatów XXXIV konferencji*. Lublin: Instytut Archeologii UMCS, Muzeum Lubelskie w Lublinie 7.

Kabaciński J. 2010. *Przemiany wytwórczości krzemieniarskiej społeczności kultur wstęgowych strefy wielkodolinnej Niżu Polskiego*. Poznań: Instytut Archeologii i Etnologii PAN O/Poznań.

Kabaciński J., Sobkowiak-Tabaka I., Kasztovszky Zs., Pietrzak S., Langer J. J., Biró K. T. and Maróti B. 2015. Transcarpathian influences in the Early Neolithic of Poland. A case study of Kowalewko and Rudna Wielka sites. *Acta Archaeologica Carpathica* 50, 5-32.

Kaczanowska M. 1971. Krzemienne materiały kultur neolitycznych pochodzenia południowego z terenu Nowej Huty. In J. K. Kozłowski (ed.), *Z badań nad krzemieniarstwem neolitycznym i neolitycznym*. Kraków: Polskie Towarzystwo Archeologiczne i Muzeum Archeologiczne w Krakowie, 10-24.

Kaczanowska M. 1985. *Rohstoffe, Technik und Typologie der Neolithischen Feuersteinindustrien im Nordteil des Flussgebietes der Mitteldonau*. Warszawa: Państwowe Wydawnictwo Naukowe.

Kaczanowska M. and Godłowska M. 2009. Contacts between the Eastern and Western Linear Cultures in South-Eastern Poland. In J. K. Kozłowski (ed.), *Interactions between different Models of Neolithization north of the Central European agro-ecological Barrier* (= *Prace Komisji Prehistorii Karpat* 5). Kraków: Polska Akademia Umiejętności, 137-149.

Kadrow S. 1990. Osada neolityczna na stan. nr 16 w Rzeszowie na Osiedlu Piastów. *Sprawozdania Archeologiczne* 41, 9-76.

Kadrow S. and Zakościelna A. 2000. An Outline of the Evolution of Danubian cultures in Małopolska and western Ukraine (= *Baltic-Pontic Studies* 9), 187-255.

Kącki J. 1982. Podhorce, stan. 1, gm. Werbkowice, woj. zamojskie. In J. Gurba (ed.), *Sprawozdanie z badań terenowych Zakładu Archeologii UMCS i Archeologicznego Ośrodka Badawczo-Konserwatorskiego w Lublinie w 1982 roku*. Lublin: Zakład Archeologii – Instytut Historii UMCS w Lublinie, 4.

Kempisty E. 1962. Pierwszy grób kultury wstęgowej ceramiki rytej n Lubelszczyźnie w Gródku Nadbużnym, pow. Hrubieszów. *Wiadomości Archeologiczne* 28/3, 284-285.

Kokowski A. 1985. Wieniawka, stan. 6, gm. Horodło, woj. zamojskie. In J. Gurba (ed.), *Sprawozdanie z badań terenowych Katedry Archeologii UMCS i Archeologicznego Ośrodka Badawczo-Konserwatorskiego w Lublinie w 1985 roku*. Lublin: Katedra Archeologii Uniwersytetu Marii Curie-Skłodowskiej, 25-28.

Končelová M. 2012. The settlement structure of the Linear Pottery culture in East Bohemia – geographical patterns and cultural continuity. In R. Smolnik (ed.), *Siedlungsstruktur und Kulturwandel in der Bandkeramik: Beiträge der internationalen Tagung „Neue Fragen zur Bandkeramik oder alles beim Alten?!"* (= *Arbeits- und Forschungberichte zur sächsischen Bodendenkmalpflege* 25). Dresden: Landesamt für Archäologie, 190-197.

Kondracki J. 2002. *Geografia regionalna Polski*. Warszawa: Wydawnictwo Naukowe PWN.

Kotova N. S, Kovalukh M., Manko V. and Okhrimenko G. V. 2007. Pro datuvannia volinsko-poliskikh neolitichnikh pamiatok ta kulturi liniyno-strichkovoy keramiki. In G. V. Ohrimenko, N. Sklarenko, O. Kalishuk, V. Tkach and O. Romanchuk (eds), *Oleksandr Tsinkalovskiy praistoria Volini*. Lutsk: Volinska oblasna drukarnia, 409-424.

Kozłowski J. K. 1985. The Eastern Areas of the Linear Band Pottery culture. In A. Kokowski (ed.), *Memoires Archeologiques*. Lublin: Katedra Archeologii UMCS, 51-70.

Kozłowski J. K., Kaczanowska M., Czekaj-Zastawny A., Rauba-Bukowska A. and Bukowski K. 2014. Early/Middle Neolithic Western (LBK) vs. Eastern (ALPC) Linear Pottery Cultures: Ceramics and Lithic Raw Materials Circulation. *Acta Archaeologica Carpathica* 49, 37-76.

Kruk J. 1973. *Studia osadnicze nad neolitem wyżyn lessowych*. Wrocław, Warszawa, Kraków, Gdańsk: Zakład Narodowy im. Ossolińskich.

Kruk J., Milisauskas, S., Alexandrowicz, S. W. and Śnieszko, Z. 1996. *Osadnictwo i zmiany środowiska naturalnego wyżyn lessowych. Studium archeologiczne i paleogeograficzne nad neolitem w dorzeczu Nidzicy*. Kraków: Instytut Archeologii i Etnologii PAN.

Kulczycka-Leciejewiczowa A. 1968. Ze studiów nad kulturą ceramiki wstęgowej rytej w Polsce. *Archeologia Polski* 13, 56-124.

Kulczycka-Leciejewiczowa A. 1979. Pierwsze społeczeństwa rolnicze na ziemiach polskich. Kultury kręgu naddunajskiego. In W. Hensel and T. Wiślański (eds), *Prahistoria ziem polskich* 2. *Neolit*. Wrocław, Warszawa, Kraków, Gdańsk: Zakład Narodowy im. Ossolińskich, 19-164.

Kulczycka-Leciejewiczowa A. 1983. O zofipolskim stylu ceramiki wstęgowej rytej w Polsce. *Archeologia Polski* 28, 67-97.

Kulczycka-Leciejewiczowa A. 2008. *Samborzec. Studium przemian kultury ceramiki wstęgowej rytej*. Wrocław: Instytut Archeologii i Etnologii PAN.

Kurzawska, A. and Sobkowiak-Tabaka, I. 2020. *Spondylus* shells at prehistoric sites in Poland. *Sprawozdania Archeologiczne* 72/2, 41-66.

Lech J. 1979. Krzemieniarstwo w kulturze społeczności ceramiki wstęgowej rytej w Polsce. Próba zarysu. In W. Wojciechowski, B. Gediga and L. Leciejewicz (eds), *Początki neolityzacji Polski południowo-zachodniej*. Wrocław: Komisja Nauk Humanistycznych, Sekcja Archeologiczna PAN O/Wrocław, 121-136.

Lech J. 1983. Flint work of the Early Farmers. Production Trends in Central European Chipping Industries from 4500-1200 B.C. An Outline. *Acta Archaeologica Carpathica* 22, 5-63.

Lech J. 2003. Mining and siliceous rock supply tot he danubian early farming communities (LBK) in eastern central Europe: a second approach. In L. Burnez-Lanotte (ed.), *Production and Management of Lithic Materials in the European Linearbandkeramik* (= *British Archaeological Reports. International Series* 1200). Oxford: Archaeopress, 19-30.

Lenneis E. 1982. Die Siedlungsverteilung der Linearbandkeramik im Österreich. *Archaeologia Austriaca* 66, 1-19.

Liana T. and Piętka-Dąbrowska T. 1962. Sprawozdanie z badań ratowniczych przeprowadzonych w 1959 r. na stanowisku I w Werbkowicach-Kotorowie, pow. Hrubieszów. *Wiadomości Archeologiczne* 28/2, 142-173.

Libera J. 2016. Materiały z surowców krzemiennych i niekrzemiennych z warstwy kulturowej i obiektów. In T. Dzieńkowski (ed.), *Horodysko. Od epoki kamienia do wczesnego średniowiecza. Badania 2004-2005*. Lublin: Instytut Archeologii UMCS, 78-103.

Libera J., Dobrowolski R., Szeliga M. and Wiśniewski T. 2014. Flints in glacigenic sediments of the Chełm Hills, Eastern Poland. Prehistory and geology. *Sprawozdania Archeologiczne* 66, 57-82.

Lis P. 1992. *Archeologiczne badania ratownicze na wielokulturowym stanowisku Puławy-Włostowice 4*. Puławy: Polskie Towarzystwo Turystyczno-Krajoznawcze, Muzeum Regionalne w Puławach.

Lis P. 1997. Sprawozdanie z badań wykopaliskowych na wielokulturowym stanowisku 3 w Puławach-Włostowicach w 1996 roku. *Archeologia Polski Środkowowschodniej* 2, 127-135.

Małecka-Kukawka J. 2008. O mezolicie, neolicie i krzemieniu czekoladowym. In W. Borkowski, J. Libera, B. Sałacińska and S. Sałaciński (eds), *Krzemień czekoladowy w pradziejach* (= *Studia nad gospodarką surowcami krzemiennymi w pradziejach* 7). Warszawa, Lublin: Państwowe Muzeum Archeologiczne w Warszawie, Stowarzyszenie Naukowe Archeologów Polskich, Instytut Archeologii UMCS, 185-202.

Mateiciucová I. 2008. *Talking Stones: The Chipped Stone Industry In Lower Austria and Moravia and the Beginnings of the Neolithic in Central Europe (LBK), 5700-4900 BC*. Brno: Masaryk University.

Matyaszewski M. and Miliszkiewicz G. 1978. Puławy-Włostowice stan. 2. *Informator Archeologiczny. Badania rok 1977*, 139.

Michalczyk Z. and Wilgat T. 2008. Wody. In R. Turski, S. Uziak and S. Zawadzki (eds), *Środowisko Przyrodnicze Lubelszczyzny*. Lublin: Lubelskie Towarzystwo Naukowe, 113-209.

Modderman, P. J. R. 1959. Die geographische Lage der bandkeramischen Siedlungen in den Niederlanden. *Palaeohistoria* 6-7, 1-6.

Nadachowski A. and Wolsan N. 1999. Szczątki zwierzęce z jamy kultury ceramiki wstęgowej rytej w Świerszczowie Kolonii, stan. 28, pow. Hrubieszów. *Archeologia Polski Środkowowschodniej* 4, 238-239.

Niedźwiedź J. 1994. Badania ratownicze na cmentarzysku kultury łużyckiej w Gródku nad Bugiem stan. 1B, gm. Hrubieszów. In A. Urbański (ed.), *Sprawozdania z badań archeologicznych w województwie zamojskim w 1993 roku*. Zamość: Muzeum Okręgowe w Zamościu, 27-28.

Niedźwiedź J. and Panasiewicz W. 1994. Wyniki nadzorów archeologicznych na osadzie wielokulturowej w Hrubieszowie-Podgórzu stan. 5. In A. Urbański (ed.), *Sprawozdania z badań archeologicznych w województwie zamojskim w 1993 roku*. Zamość: Muzeum Okręgowe w Zamościu, 52-58.

Ohrimenko G. V. 2009. *Kamiana doba na teritorii pivnichno-zakhidnoi Ukrayini (XIII-III tys. do n.e.)*. Lutsk: Volinska oblasna drukarnia.

Pavúk J. 1969. Chronologie der Želiezovce-Gruppe. *Slovenská Archeológia* 17/2, 269-367.

Podkowińska Z. 1959. Osada neolityczna starszej ceramiki wstęgowej rytej w Jurkowicach, pow. opatowski. *Archeologia Polski* 3, 7-50.

Podkowińska Z. 1960. Badania w Strzyżowie, pow. Hrubieszów, woj. Lublin, w latach 1935-1937 oraz 1939. *Sprawozdania Archeologiczne* 5, 39-80.

Pyzel J. 2010. *Historia osadnictwa społeczności kultury ceramiki wstęgowej rytej na Kujawach*. Gdańsk: Instytut Archeologii Uniwersytetu Gdańskiego.

Sadowski S. 2006. Opracowanie wyników archeologicznych badań powierzchniowych i sondażowych przeprowadzonych na trasie budowy drogi ekspresowej S12/S17 na odcinku węzeł „Bogucin" – węzeł „Dąbrowica". Lublin (typescript stored in Provincial Heritage Monuments Protection Office in Lublin).

Saile T., Sedlmaier H. and Dębiec M. 2018. Šárka in Volhynia and Bavaria. On the triangular intarsia of the later bandkeramik. *Archaologisches Korrespondenzblatt* 48/1, 27-38.

Sielmann B. 1971. Der Einfluss der Umwelt auf die neolithische Besiedlung Südwestdeutschlands unter besonderer Berücksichtigung der Verhältnisse am nordlichen Oberrhein. *Acta Praehistorica et Archaeologica* 2, 65-197.

Sielmann B. 1972. Die frühneolitische Besiedlung Mitteleuropas. In H. Schwabedissen (ed.), *Die Anfänge des Neolithikums vom Orient bis Nordeuropa*. Köln, Wien: Böhlau Verlag, 1-65.

Solon J., Borzyszkowski J., Bidłasik M., Richling A., Badora K., Balon J., Brzezińska-Wójcik T., Chabudziński Ł., Dobrowolski R., Grzegorczyk I., Jodłowski M., Kistowski M., Kot R., Krąż P., Lechnio J., Macias A., Majchrowska A., Malinowska E., Migoń P., Myga-Piątek U., Nita J., Papińska E., Rodzik J., Strzyż M., Terpiłowski S. and Ziaja W. 2018. Physico-geographical mesoregions of Poland: Verification and adjustment of boundaries on the basis of contemporary spatial data. *Geographia Polonica* 91, 143-170.

Sułowska M. 1972. Kaliszany, pow. Opole Lubelskie. Stanowisko 2. *Informator Archeologiczny. Badania rok 1971*, 176-177.

Szeliga M. 2014. The distribution and importance of Turonian flints from the north-eastern margin of the Holy Cross Mountains in the flint raw material economy of the earliest Danubian communities. *Acta Archaeologica Carpathica* 49, 77-112.

Szeliga M. 2017. The First Chronometric Markings of the Late Stage of the LPC in the Northern Foreland of the Sandomierz Upland. *Analecta Archaeologica Ressoviensia* 12, 431-447. DOI: 10.15584/anarres.2017.12.25.

Szeliga M. 2018. Osadnictwo kultury ceramiki wstęgowej rytej. In B. Niezabitowska-Wiśniewska (ed.), *Puławy-Włostowice. Wielokulturowe stanowisko z zachodniej Lubelszczyzny*. Lublin: Instytut Archeologii UMCS w Lublinie, 176-221.

Szeliga M., Dobrowolski R., Mroczek P., Chodorowski J., Pidek I. A., Makowiecki D. and Lityńska-Zając M. 2019. Environmental Conditions of Settlement of the Danubian Communities in the Northern Foreland of the Sandomierz Upland. *Archaeologia Polona* 57, 213-231.

Szeliga M., Dobrowolski R., Mroczek P., Chodorowski J., Furmanek M., Pidek I. A., Lityńska-Zając M., Makowiecki D., Gawryjołek-Szeliga K., Bartmiński P., Siłuch M. and Demczuk P. 2020. Early agricultural colonisation of peripheral areas of loess uplands: new data from Sandomierz Upland, Poland. *Antiquity* 94(377): e28, 1-8. DOI: 10.15184/aqy.2020.134.

Szeliga M. and 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.

Szeliga M., Hyrchała A. and Piątkowska-Małecka J. 2017. Relikty osadnictwa wczesnoneolitycznego na stanowisku nr 12 w Hrubieszowie (Sławęcin Kolonia). In A. Zakościelna (ed.), *Badania archeologiczne w Polsce środkowowschodniej, zachodniej Białorusi i Ukrainie w roku 2016* (= *Streszczenia referatów XXXIII konferencji*). Lublin: Instytut Archeologii UMCS, Muzeum Lubelskie w Lublinie, 8-9.

Szeliga M. and Zakościelna A. 2019. Transcarpathian intercultural relationships of the LBK communities from the Sandomierz settlement cluster in the light of new findings. *Sprawozdania Archeologiczne* 71, 167-195.

Turski R., Uziak S. and Zawadzki S., 2008. Gleby. In R. Turski, S. Uziak and S. Zawadzki (eds), *Środowisko przyrodnicze Lubelszczyzny*. Lublin: Lubelskie Towarzystwo Naukowe, 211-315.

Uzarowiczowa A. 1964. Wyniki badań we wsi Gródek Nadbużny, pow. Hrubieszów, w 1961 roku. *Wiadomości Archeologiczne* 30/3-4, 429-460.

Zakościelna A. 1981. Materiały krzemienne tzw. kultur południowych z Lubelszczyzny. *Annales UMCS. Sectio F* 35/36, 1-23.

Zakościelna A. 1988a. Wielokulturowe stanowisko 28 w Świerszczowie Kolonii, gm. Hrubieszów. In J. Gurba (ed.), *Sprawozdania z badań terenowych Katedry Archeologii UMCS w 1988 roku*. Lublin: Katedra Archeologii Uniwersytetu Marii Curie-Skłodowskiej, 6-11.

Zakościelna A. 1988b. Wielokulturowe stanowisko nr 28 w Świerszczowie Kolonii w świetle pierwszego sezonu badań. In *Sprawozdania z badań terenowych w województwie zamojskim w 1988 roku*. Zamość: Wojewódzki Ośrodek Archeologiczno-Konserwatorski w Zamościu, 27-31.

Zakościelna A. 1990. Badania ratownicze na stan. 28 w Świerszczowie Kolonii. In J. Gurba (ed.), *Sprawozdania z badań terenowych Katedry Archeologii UMCS w 1990 roku*. Lublin: Katedra Archeologii Uniwersytetu Marii Curie-Skłodowskiej, 8-10.

Zakościelna A. 2002. Wykorzystanie krzemienia świeciechowskiego przez społeczności kultur naddunajskich na Wyżynie Lubelskiej. In B. Matraszek and S. Sałaciński (eds), *Krzemień świeciechowski w pradziejach* (= *Studia nad gospodarką surowcami krzemiennymi w pradziejach* 4). Warszawa: Państwowe Muzeum Archeologiczne w Warszawie, Stowarzyszenie Naukowe Archeologów Polskich, Instytut Archeologii i Etnologii PAN, 111-122.

Zakościelna A. 2007a. Główne nurty rozwoju młodszych kultur naddunajskich na terenie Małopolski i zachodniej Ukrainy. In L. Bakalarska (ed.), *Wspólnota dziedzictwa archeologicznego ziem Ukrainy i Polski, Materiały z konferencji zorganizowanej przez Ośrodek Ochrony Dziedzictwa Archeologicznego, Łańcut, 26-28 X 2005 r.* Warszawa: Krajowy Ośrodek Badań i Dokumentacji Zabytków, 289-314.

Zakościelna A. 2007b. Południowo-wschodnia Lubelszczyzna w epoce neolitu. In E. Banasiewicz-Szykuła (ed.), *Pradzieje południowo-wschodniej Lubelszczyzny*. Lublin: Lubelski Wojewódzki Konserwator Zabytków w Lublinie, 37-60.

Zakościelna A. and Gurba J. 1991. Badania ratownicze na terenie gminy Łopiennik Górny w województwie chełmskim. In J. Gurba (ed.), *Sprawozdania z badań terenowych Katedry Archeologii UMCS w 1991*. Lublin: Katedra Archeologii Uniwersytetu Marii Curie-Skłodowskiej, 3-17.

Zakościelna A. and Gurba J. 1993. Badania wykopaliskowe w Łopienniku Dolnym na stan. 3, woj. chełmskie. In J. Gurba (ed.), *Sprawozdania z badań terenowych Katedry Archeologii UMCS w 1992 r.* Lublin: Katedra Archeologii Uniwersytetu Marii Curie-Skłodowskiej, 3-8.