



Ewelina Kolebuk 

Settlement patterns of the Prehistoric and Early Historic communities in the Kańczuga Upland

ABSTRACT

The aim of this paper is to reconstruct settlement preferences and the dynamics of cultural changes that occurred in the sheet of Polish Archaeological Record (Archeologiczne Zdjęcie Polski = AZP) no. 105–80, located on the Kańczuga Upland. The materials for analysis were collected over several seasons of surface surveys in which 210 archaeological sites were identified. The obtained results show that this region was very attractive for both hunter-gatherers and settled communities..

KEYWORDS

settlement patterns, surface survey, Kańczuga Upland



I. INTRODUCTION

The Subcarpathian loess plateau is undoubtedly one of the most fertile and therefore most attractive zones for settlement in Poland. This is evidenced by traces of human presence recorded from the Palaeolithic to the present day. Some factors that encouraged people to explore this region include its ecological features – well-hydrated fertile soils and relative easy access to raw material outcrops, and so the presence of routes enabling local as well as supra-regional exchange. All these made the Kańczuga Upland an ideal place for both hunter-gatherers and settled communities.

This analysis is the result of a study on archaeological materials collected during surface surveys carried out on the AZP sheet no. 105–80 (Fig. 1: B) by the scientific staff and students from the Institute of Archaeology, Jagiellonian University led by W. Blajer between the years 2002–2005. During this research, numerous archaeological artefacts were collected (mainly shards and flint finds) which helped track changes in the activity of human groups from the late Palaeolithic to the Early Historic Periods.

Due to the character of the database which contains only surface material (so far, no excavation was conducted in the area) in many cases, it was impossible to establish a precise chronology for the collected artefacts. Therefore, this paper should be understood as an attempt to grasp the settlement preferences and preliminary recognition of the cultural landscape, both of which changed over the millennia. It may also serve as an introduction to further studies.

II. CHARACTERISTICS OF NATURAL ENVIRONMENT

The area which is the subject of this paper is part of the mesoregion called Kańczuga Upland¹ – the southernmost part of the Sandomierz Basin. It is a plateau almost entirely covered with loess and loess-like formations, on which brown, lessive, degraded forest-steppe chernozem soils and fluvial muds developed (Starkel 1972; Kondracki 1994; Wład 1996).

Characteristic of the relief of the Kańczuga Upland are folded loess upheavals, cut with a grid of river valleys as well as dry denudation valleys with

1 This region is also known as the Rzeszów Foothills – for a fuller discussion see: Przybyła, Blajer 2008.

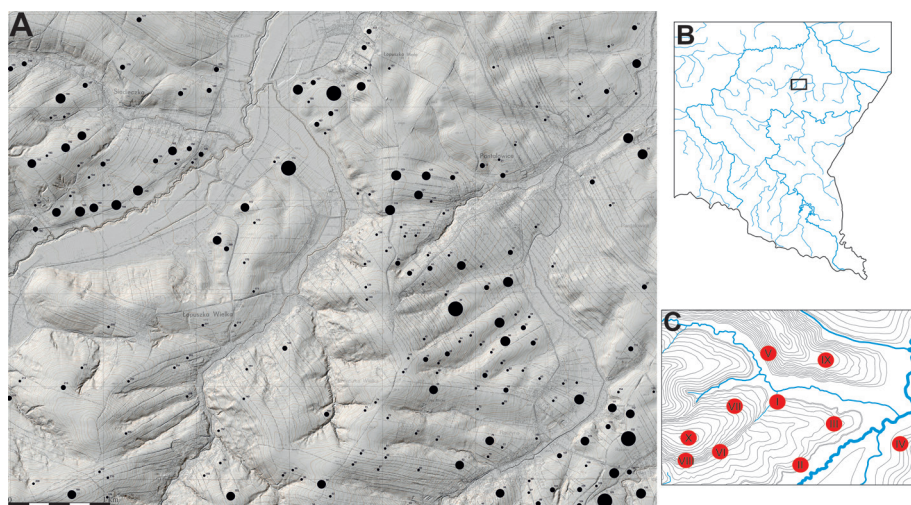


FIG. 1. A – All sites on the area AZP no. 105-80; B – Location of the analysed area; C – Examples of adapted terrain forms

flat-bottomed or hollow-shaped cross-sections. Also specific for this region are steep western and gentle east slopes (Łanczont *et al.* 2001).

The undeniable wealth of the region, apart from the fertile soil, was also natural resources enabling the production of tools, and trade. Between Rzeszów and Przemyśl occur singular gypsum inclusions, forming larger clusters in some regions – e.g., gypsum-alabaster deposits in Łopuszka Wielka. The deposits of siliceous marls stretching through Łopuszka Wielka, Pruchnik, Węgierka, Krasiczyn to Makowa (Gucik 1998) as well as menilite slate, cherts, and brown flint concretions (Łanczont *et al.* 2001) were useful especially for the Neolithic communities. The region is also close to the east Polish Carpathians' outcrops of siliceous raw materials (Pelisiak 2020).

Certainly, one of the most valuable resources were the brine springs, located mainly south of the Carpathian threshold (Jodłowski 1971; Pelisiak 2008; Pelisiak, Dębiec 2014; Bochnak 2019). There were also layers of ochre which was a very valuable pigment in prehistory (Łanczont *et al.* 2001).

The analysed area of AZP is located in the central part of the Kańczuga Upland, well irrigated by two main rivers: the Mleczka Zachodnia and its right tributary – the Rączyna (Pantalówka), as well as numerous smaller watercourses forming the rivers' catchment basins. The relief is the same as mentioned above. The soil cover is made of podzols formed on loess and loess

formations, brown and podzolic silty soils, brown podzolic complexes as well as fluvial muds (Musierowicz 1961).²

The description of potential natural vegetation might also be treated as an approximation – i.e., as if it developed spontaneously under given environmental conditions, without the human factor (Kruk, Przywara 1983). Characteristic formations for loess uplands are oak-hornbeam forests (*Tilio-Carpinetum typicum*), luminous oak forests (*Potentillo albae-Quercetum*) and clusters of xerothermic vegetation (*Peucedano cervariae-Coryletum*) (Kruk, Przywara 1983; Czopek, Podgórska-Czopek 1995).

Data offering an insight into the transformations of the natural environment from the end of the pre-Boreal period to the Middle Ages were provided by palynological studies in the valley of the nameless tributary of the Mleczka Wschodnia (region of Cieszacin Wielki) (Zernickaya *et al.* 2003). On their basis, six stages of anthropogenic impact were distinguished. The first falls in the middle of the Atlantic period (6700–6000 BP), which is manifested in the pollen profile by a decrease in the proportion of elm, with a simultaneous increase in pioneering species of trees and shrubs as well as herbaceous and ruderal vegetation (*Cyperaceae*, *Poaceae*, *Artemisia*, *Brassicaceae*, *Ranunculus*, *Plantago major*). Such a composition of species may indicate the activity of hunter-gatherers or the first farmers trying to adapt the occupied area to the needs of the agricultural economy (*ibidem*).

The second trace of anthropogenic impact occurs at the end of the Atlantic period, a time when the climate became significantly drier and more grass-sedge formations and oak-pine-spruce can be observed (Zernickaya *et al.* 2003). Human activity at that time is manifested by layers of coal dust – evidence of slash and burn agriculture – and increased sedimentation of mineral deposits on the valley bottom, caused by accelerated erosion of deforested areas. Both the radiocarbon dates and the nature of changes link this stage with the economy of the population of the Lengyel-Polgár circle and Funnel Beaker culture (TRB) (Łanczont *et al.* 2003).

The next clear stage of human impact falls in the interval of 3490–3230 BP and is associated with communities of the Mierzanowice (MC) or Trzciniec (TC) cultures. Then there is a decline in the share of mixed forests and the development of pioneering and meadow vegetation (Zernickaya *et al.* 2003).

2 However, it should be taken into account that the soil, like the climate, underwent numerous transformations, so the currently observed characteristics do not necessarily reflect the situation from the past (e.g., Jankuhn 2004).

The fourth stage of anthropogenic impact is the second half of the sub-Atlantic period. This is the time of spreading of the Tarnobrzeg group of the Lusatian culture (TG), which in the pollen diagrams is manifested by an increase in field weeds and fir-pine forests.

The years 1670–1520 BP were a time when the Przeworsk culture (PC) expanded and grain crops (*Cerealia*) became more prevalent. The last distinguished stage of human activity is related to the gradual disappearance of hornbeam, beech, and oak, with an increase in the amount of birch, alder, aspen as well as meadow and xerothermic taxa. There are also new species of synanthropic vegetation and weeds (*ibidem*).

III. METHODS

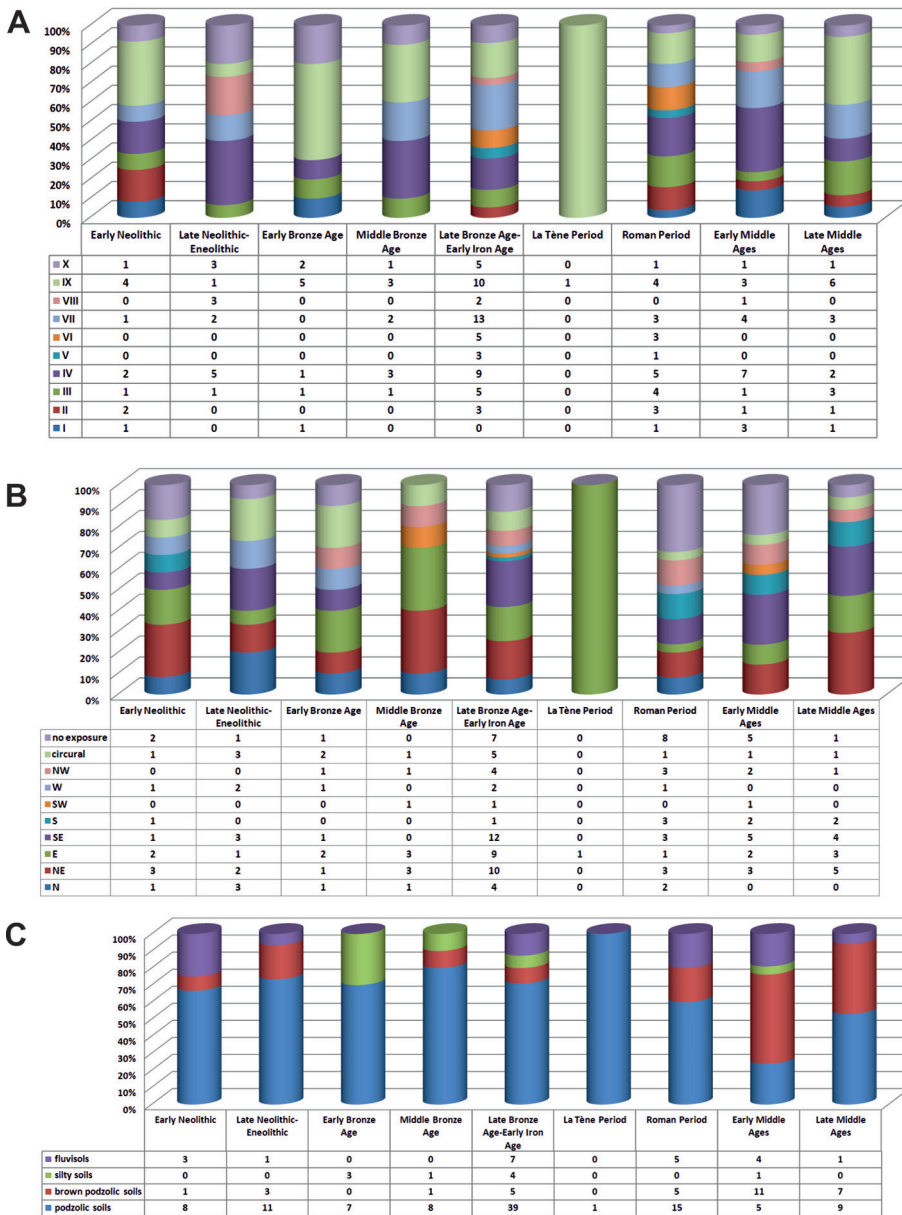
The entire basis for this study was provided by material obtained during the surface surveys. The area was examined in three penetrations conducted in the years 2002–2005. Currently, the area is almost completely deforested and mostly covered with cultivated fields, so it is accessible for research. The only obstacle is modern housing, farm buildings and surrounding orchards.

Despite the fact the entire area was carefully examined (in some zones the survey was repeated every year), it should not be assumed that a full picture was obtained. Certainly, future penetrations would modify and supplement the results (e.g., Bienia, Żółkowski 1996; Czerniak 1996; Jankuhn 2004). Sites are detected not only through the personal involvement of researchers, but above all according to field conditions arising from soil-plant-usage relations (Mazurowski 1980; Kiarszys 2005), and the degree of degradation of archaeological structures (Mazurowski 1974). Moreover, in many cases, the chronology and function of the site discovered during surface surveys changed completely after the excavations (Pelisiak 2018). (Pelisiak 2018).

Nevertheless, the conducted research turned out to be very fruitful. As a result, 210 sites were registered (Fig. 1: A), from which 1966 pottery fragments and 767 artefacts made of flint and other raw material were obtained.³

In order to recognise the changes in settlement structures and preferences over the centuries, many steps were taken. Firstly, the collected materials

3 For the catalogue of sites and detailed analysis of material see Kolebuk 2016.



GRAPH 1. A – Location of sites in relation to distinguished terrain form; B – Location of sites in relation to exposure direction; C – Location of sites in relation to types of soils

were analysed to establish their dating.⁴ Due to fact that many of the artefacts were poorly preserved, a broad chronological framework was deemed to be the best approach. However, this largely reflects the dynamics of past changes. Then, all points apart from sites generally dated to prehistory were marked on appropriate maps and their distribution was examined in terms of the location in relation to landscape elements (Graph 1: A), the direction of the occupied place's exposure (Graph 1: B) and the types of soil (Graph 1: C).

Due to fact that the types of locations specified in the Archaeological Site Record Card (KESA) seem to only appropriate for the Polish Lowlands (Kruk 1995; Matoga 1996), some original categories that better reflect the local geographical conditions were proposed. These are: I) edge of a small valley, II) edge of a large valley, III) promontory within a valley, IV) gentle valley slope, V) steep valley slope, VI) hillside base, VII) gentle hillside, VIII) steep hillside, IX) flattening of a promontory, X) circular exposure promontory/culmination of a hill (Fig. 1: C).

The last stage of the analysis was to check whether the settlement was dispersed or if it was possible to identify any zones of concentration. Finally, the information obtained was confronted with data related to neighbouring regions.

IV. MATERIALS

The oldest traces of human presence in the considered area are represented by a very small collection of flint artefacts, based on which it was possible to identify one Final Palaeolithic and four Mesolithic sites (Fig. 2).

Only three double platform cores⁵ can be associated with the Final Palaeolithic (Fig. 3: 1), and seven flint artefacts with the Mesolithic. The most interesting object in the collection is an inset made of chocolate flint (Fig. 3: 2), which can most probably be dated to the younger phase of the Janisławice culture (Kozłowski, Kozłowski 1977).

4 At this point, I would like to thank the employees of the Institute of Archeology of the Jagiellonian University: Prof. M.S. Przybyła, Prof. W. Blajer, MA A. Kraszewska, Prof. P. Valde-Nowak, Prof. R. Madyda-Legutko, Prof. J. Rodzińska-Nowak, Prof. M. Nowak and Dr. D. Niemiec for their help and kindness.

5 Two of them were reused by younger communities as hammerstones and thus lost their original context of deposition. For this reason, they were not included on the map showing the oldest human traces in the examined area.

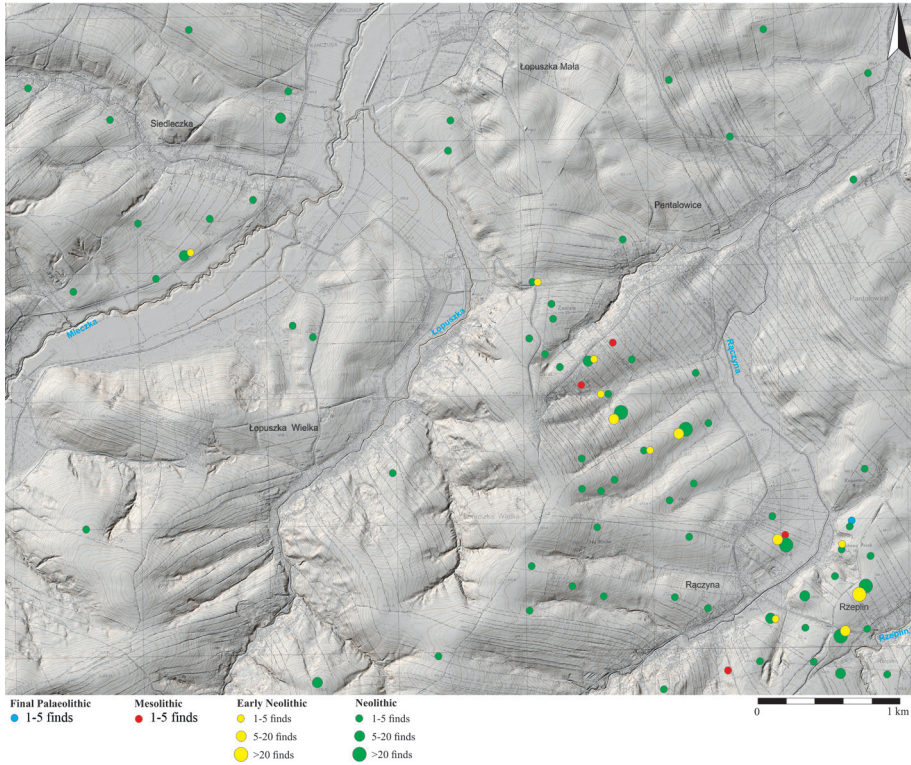


FIG. 2. Location of the sites dated to Final Palaeolithic, Mesolithic and Early Neolithic

Early Neolithic materials, possibly linked to the oldest Danube groups (mainly Linear Pottery culture), are best represented. 12 sites were qualified for this period (Fig. 2), from which a total of 62 shards and 39 artefacts made of flint and obsidian (Fig. 3: 5–6) were obtained. The diagnostic pottery fragments feature a relative lack of diversity. Among characteristic forms of vessels, thin-walled semi-spherical bowls prevail (Fig. 3: 7–8). Organic and fine chamotte were the most common admixture, while crushed stones were less frequently used.⁶

The next time horizon (Late Neolithic and Eneolithic) is marked by a new ceramic tradition associated with the arrival of allochthons representing

6 On the basis of the ornamented shards, it was possible to distinguish two phases: Note and Železovce. However, this distinction was not taken into account on the maps so as not to distort the general picture.

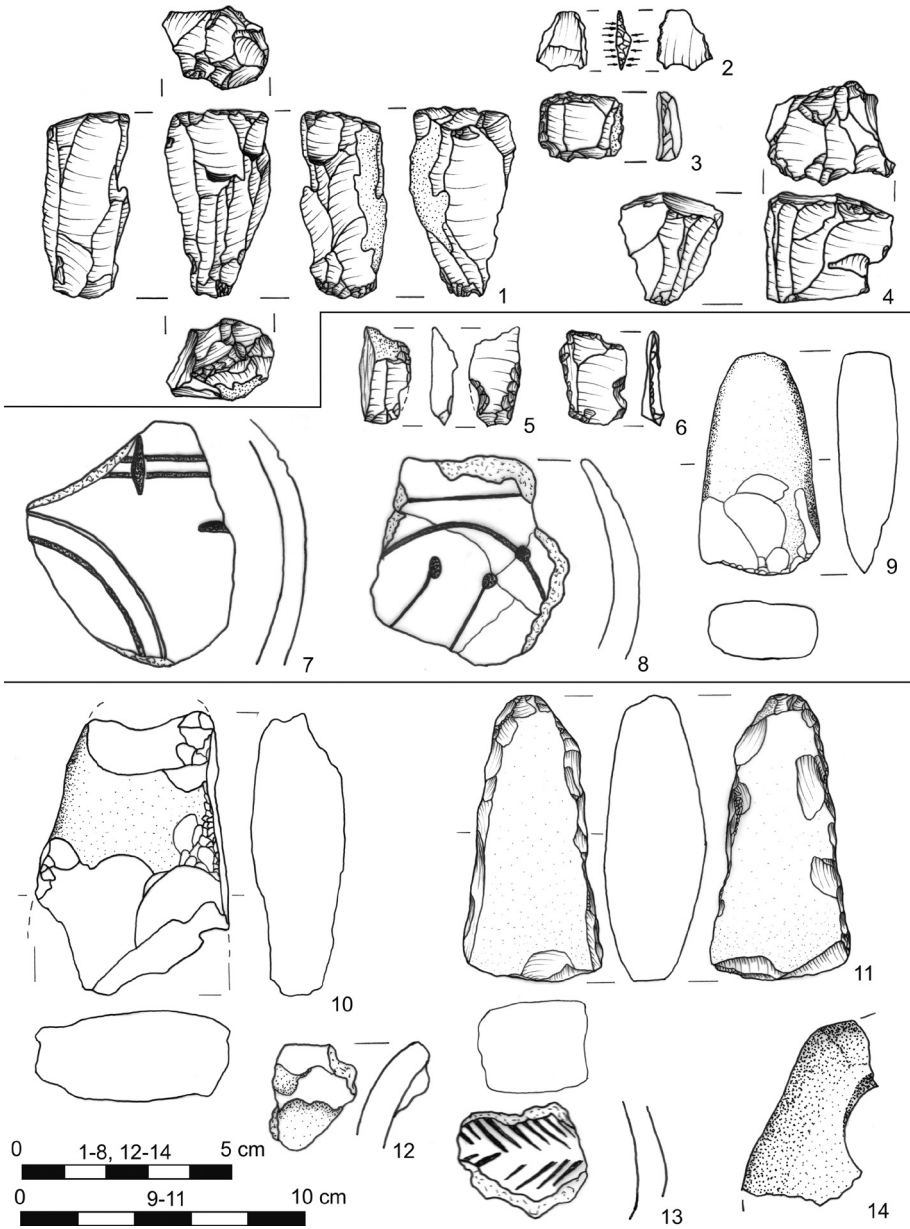


FIG. 3. Selection of artefacts dated to Final Palaeolithic (1), Mesolithic (2-4), Early Neolithic (5-9), Late Neolithic (10-12) and Eneolithic (13-14)

a different way of farming (Czopek 1999) – a population of the TRB and a younger unit – the Corded Ware culture (CWC) (Fig. 4). There are only four pottery fragments attributed to this period. One of them – a fragment of a rim with a plastic band (Fig. 3: 12), tempered with finely crushed stones can with a high probability be linked to TRB. The three other shards, with an admixture of chamotte, were attributed to the Eneolithic period. Among them, there is one worth paying attention to – an item with a carved herringbone ornament (Fig. 3: 13), characteristic for CWC.

Flint and stone artefacts represent a much larger collection (46 – including 36 tools). In the TRB inventory, there are, for instance, some damaged fragments of a square axe made of Dynów marl (Fig. 3: 10), and an axe made of Świeciechów flint (type A according to Balcer 1975) (Fig. 3: 11). On the other hand, there is only one stone item of the CWC. It is a severely damaged (cross-section impossible to capture) rhomboidal axe made of fine-grained andesite (Fig. 3: 14).

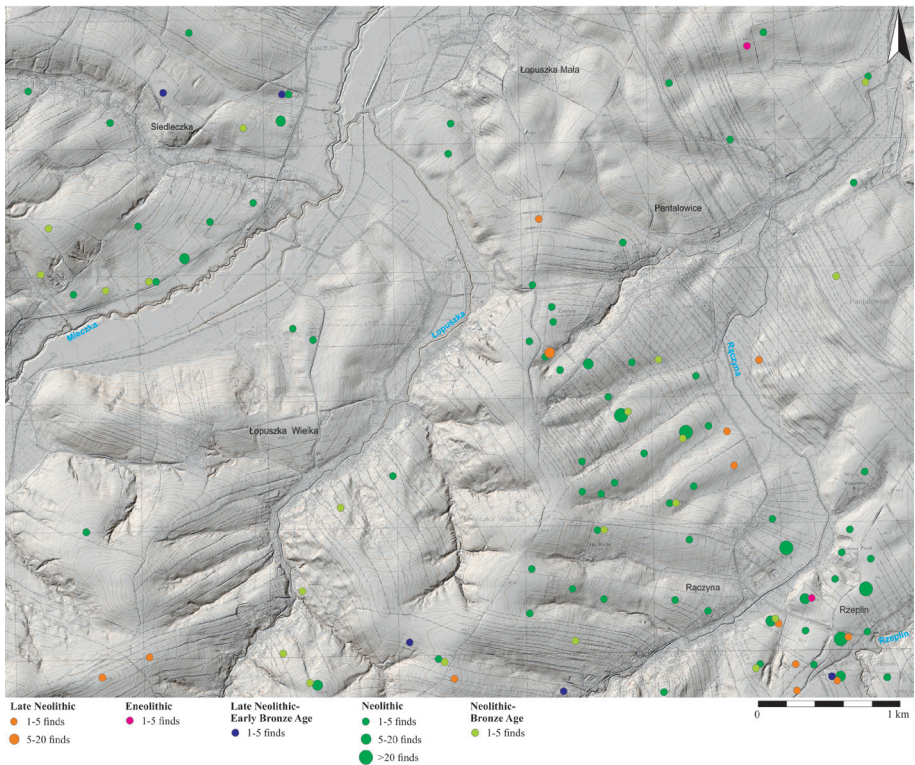


FIG. 4. Location of the sites dated to Late Neolithic and Eneolithic

The next stages fall in the Early and Middle Bronze Age, i.e., the time of development of the MC and TC⁷. Relics of each of them were identified at 10 sites (Fig. 5).

Among the Early Bronze Age characteristic pottery forms, it is worth noting the highly damaged fragment of a rim with a knob below it (Fig. 6: 4), which can be dated to the early or classic phase of the MC (Kadrow, Machnik 1997). Flint artefacts are much more numerous. Among them, the most interesting are an arrowhead made of Volhynian flint (Fig. 6: 3), a piece of sickle/point made of chocolate flint (Fig. 6: 2), a bifacial axe made of striped flint (Fig. 6: 1).

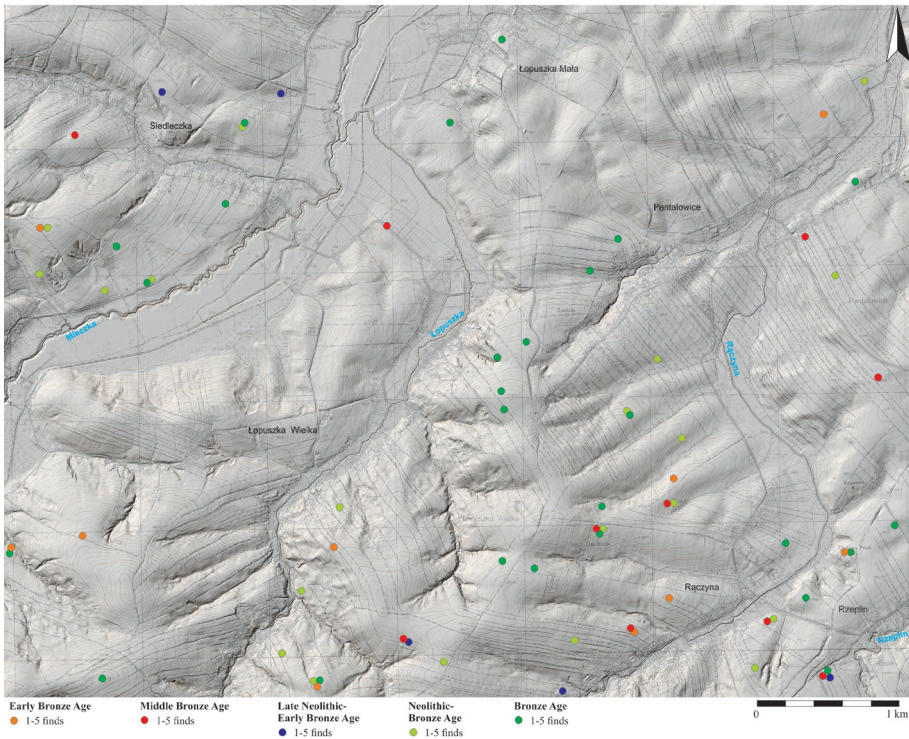


FIG. 5. Location of the sites dated to Early and Middle Bronze Age

- 7 Materials dated to the Bronze Age, Early Iron Age and the La Tène Period have already been published but in a slightly different context (Przybyła 2004; Przybyła, Blajer 2008).

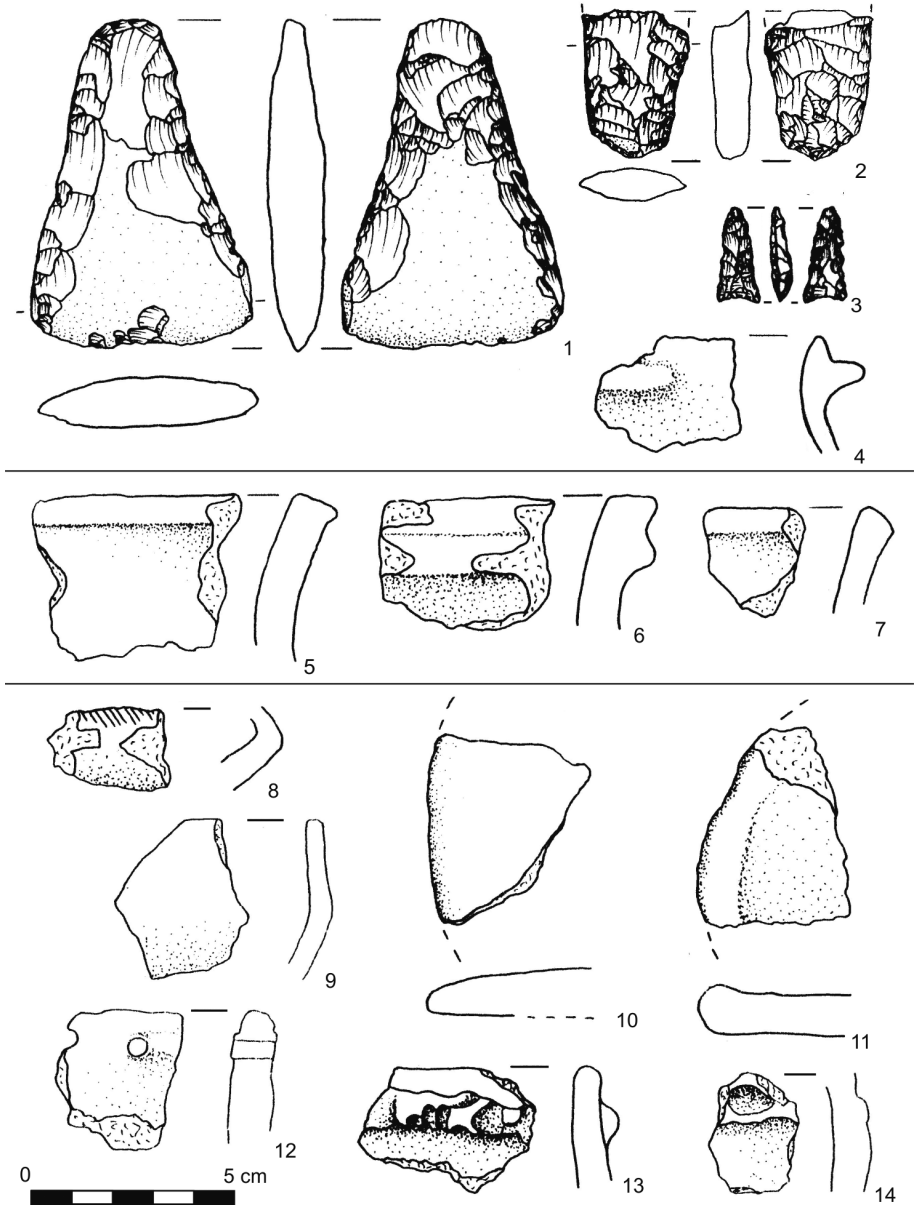


FIG. 6. Selection of artefacts dated to Early Bronze Age (1–4), Middle Bronze Age (5–7), Late Bronze Age and Early Iron Age (8–14)

The TC was identified mainly based on the presence of thickened, oblique-cut edges and roof-shaped bands (Fig. 6: 5–7). In this case, the production technology analysis was also helpful, especially the large share of crushed stone in the ceramic mass, which resulted in a characteristic grid of cracks on the vessels' surface. However, it was not possible to unquestionably link any flint artefact with this unit.

The end of the Bronze Age and the Early Iron Age, is represented in the analysed territory by the TG (Fig. 7). For this cultural unit, it was possible to observe two development phases: the older (Late Bronze Age) and the younger (Early Iron Age), based on the technology and ornamentation of the vessels.

Particularly characteristic for older inventories are shards with an admixture of fine and coarse crushed stone with matte or much less polished surfaces. In the Early Iron Age an admixture of chamotte begins to dominate the pottery mass, while the share of fine crushed stone is much less pronounced.

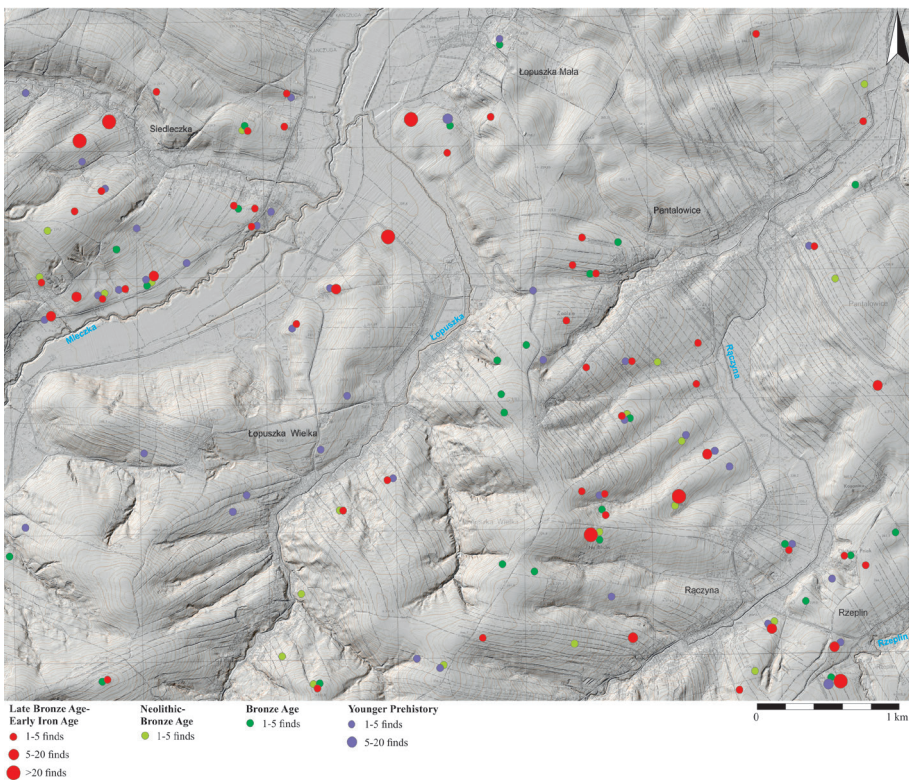


FIG. 7. Location of the sites dated to Late Bronze Age and Early Iron Age

The surfaces are characterised by greater abrasion – most of them are not preserved (the undamaged ones are usually matte and light-coloured). The diagnostic finds of the TG are, for instance, shards decorated with an oblique incision (Fig. 6: 8), two fragments of plates (Fig. 6: 10–11), a rim with a hole below it (Fig. 6: 12), and fragments decorated with bands (Fig. 6: 13–14).

There were two non-characteristic fragments of graphite pottery in the area in question, which should be dated to Lt B2–D1 (Poleska, Toboła 1988; Przybyła 2004). They are valuable because along with the other finds from the Kańczuga Upland and the lower course of the Wisłok river, they constitute one of the northernmost traces of Celtic influences in south-eastern Poland (Przybyła 2004; Bochnak 2019).

Another clear chronological stage is related to the expansion of the PC to south-eastern Poland (Fig. 8), which began at the end of phase B1 or the beginning of B2 of the Roman Period (Godłowski 1985).

For this horizon, it is possible to distinguish two pottery production technologies: freehand forming and wheel throwing (in the younger Roman Period).

In the case of hand-made vessels, the most common admixtures are fine and coarse chamotte. Roughened and matte surfaces in light colours prevail. The presence of a storage vessel fragment in the *Krausengefässe* type is also noteworthy (Fig. 9: 1).

The clay for the production of wheel-thrown pottery was tempered with fine chamotte or sand. Crushed stone admixture was used far less often. Almost half of the shards have abraded surfaces, and the better-preserved ones are generally dark-matte or polished. The collection also includes one fragment of the so-called grey pottery (Fig. 9: 4).

No early Slavic materials were found in the sample, although they are known from the vicinity (e.g., the settlements in Maćkówka and Rozbórz – Parczewski 1988; Szyber 2014; surface finds in Żuklin, Sietesz, Markowa – Parczewski 2005). For the AZP sheet no. 105-80, the oldest Early Medieval find is a fragment of pottery rim (Fig. 9: 7), the chronology of which was dated by M. Parczewski to the 9th–10th century.⁸

In general, the collection of Early Medieval pottery (21 sites, 59 shards) (Fig. 10) consisted of fragments with rough or matte surfaces, usually light outside, dark inside. The sand was used as the main admixture as well as fine crushed stone, albeit less frequently.

8 Kind information from Prof. W. Blajer, who consulted this fragment after its discovery, for which I am grateful.

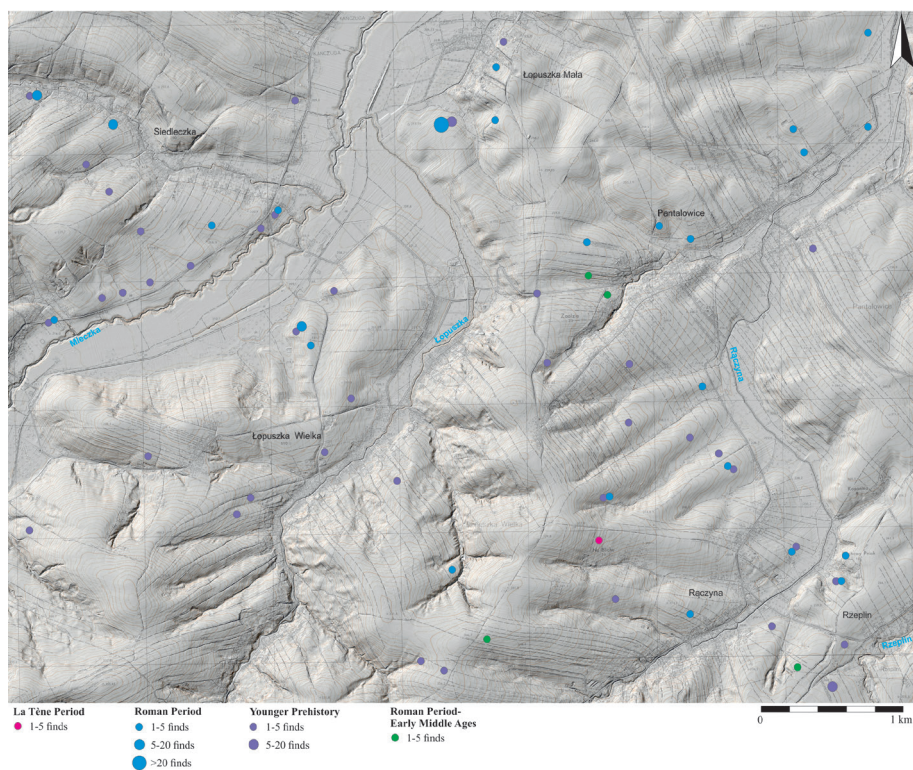


FIG. 8. Location of the sites dated to La Tène and Roman Period

A characteristic feature of the Early Medieval vessels is also the carved ornament of a wavy line placed in the upper part of the belly (Fig. 9: 10–11), sometimes supplemented with horizontal lines (Fig. 9: 8). Interesting finds are two shards with an embossed decoration (Fig. 9: 12–13). The collection also includes a fragment of the bottom with a potter's mark with the popular motif of a wheel with spokes (Fig. 9: 9).

The Late Medieval period is a time of political unrest – the Polish-Ruthenian conflicts – as well as stabilisation of settlement network, whilst the location of some villages based on German Law. All villages in the study area were called “forest villages” (Ger. *Waldhufendorf*) and therefore were founded in forest clearings. Historical records indicate that area in question was completely deforested by the mid-14th century (Motylewicz 1984).

The pottery of this period is characterised by light-coloured surfaces, most often decorated with horizontal grooves (Fig. 9: 14–15). Another distinctive

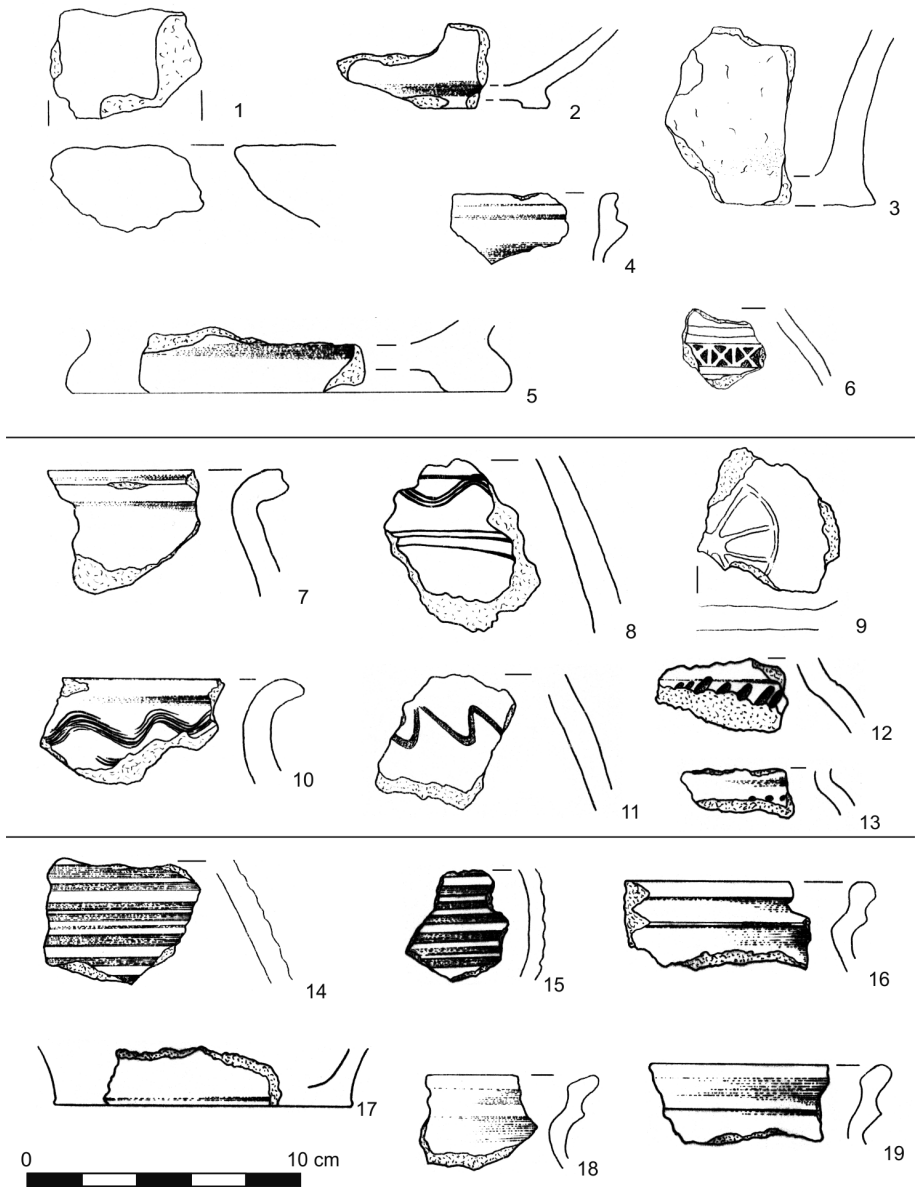


FIG. 9. Selection of artefacts dated to Roman Period (1–6), Early Middle Ages (7–13) and Late Middle Ages (14–19)

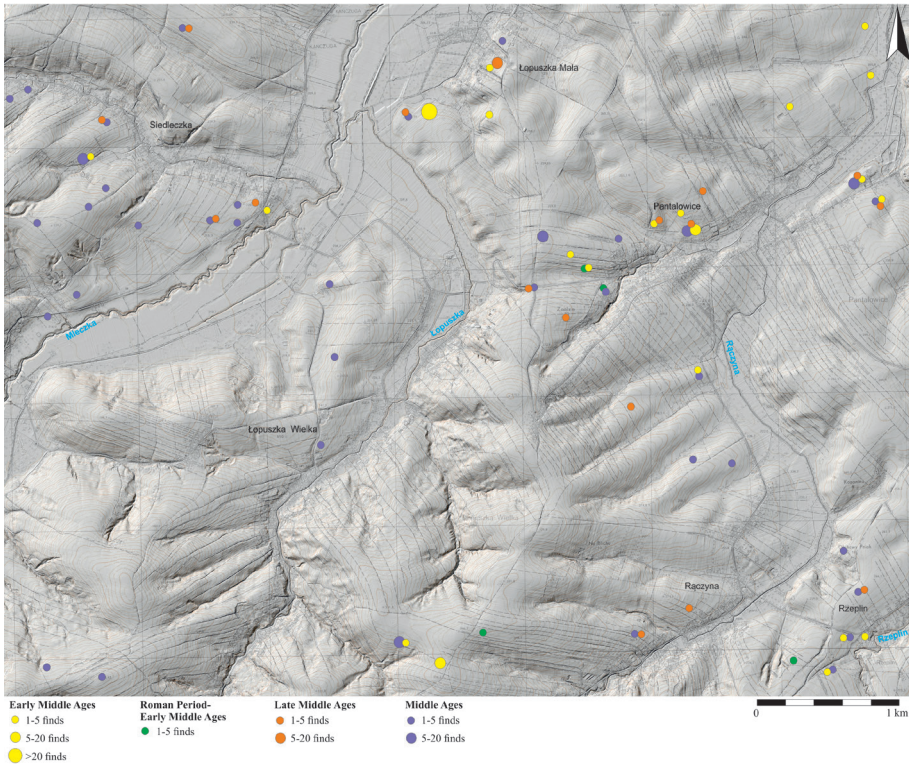


FIG. 10. Location of the sites dated to Early and Late Middle Ages

feature is the presence of strongly profiled rims (Fig. 9: 16, 18–19). The entire collection is dominated by an admixture of sand, sometimes supplemented with crushed stone.

V. SETTLEMENT PREFERENCES

A small amount of material dated to the Old and Middle Stone Age (only five sites) suggests that the area was only sporadically penetrated by groups of hunter-gatherers. This observation does not differ much from the situation in the neighbouring areas (e.g., Czopek, Podgórska-Czopek 1995; Bobak, Połtowicz-Bobak 2011). However, even with such a sparse collection, a certain pattern is visible: the identified sites occur within the river valleys or 200 m

from them. The decisive factor, therefore, had to be easy access to water, which attracted both hunters and game (Fig. 2).

Early Neolithic settlement is represented by 12 sites (Fig. 2). The analysis of the location types shows a tendency to occupy flattened promontories and, less frequent, the edges and gentle slopes of river valleys (Graph 1: A). A certain dominance of the eastern, north-eastern, and non-exposed areas is visible (Graph 1: B). Altitudes range from 215–280 m a.s.l. The preferred soils for settlement were podzols developed on loess and loess-like formations, and fertile fluvial muds within the river valleys (Graph 1: C).

As in other areas occupied by “Danubian” communities, the settlement is characterised by “island-like” clusters (Kruk 1973; Czopek, Podgórska-Czopek 1995). In this case, two enclaves can be distinguished: on the hump between the Rzeplin and Rączyna rivers (SE part of the area) and in the vicinity of sites 37 and 39 in Pantalowice (Saile *et al.* 2008), situated on relatively high promontories, surrounded on three sides by riverbeds Rączyna and its nameless tributaries. These two zones can be also treated as one larger cluster of linear arrangement (Fig. 2). From a broader perspective, the discussed materials fit into the occurrence region of the Linear Pottery culture sites discovered in the Rzeszów-Przemyśl loess area – a belt stretching from Ropczyce, through Łañcut, Przeworsk, Jarosław to Przemyśl and Fredropol (Czekaj-Zastawny 2008; Pelisiak 2018).

The issue of the coexistence of Mesolithic hunter-gatherers with the first farmers is not clear due to the differences in economic models and, therefore, operation in different territories. Contrary to the findings obtained in the lower Wiślak valley, where the boundary between the zones of occurrence of artefacts characteristic for both these groups is clearly drawn (Czopek, Podgórska-Czopek 1995), mapping the sites of the AZP 105-80 area shows the mutual interpenetration of these zones. In the light of the collected materials, it seems that there was no coexistence here and that the discovered artefacts are traces of subsequent human groups.

In the first half of the 4th millennium BC, the settlement structure underwent a significant change caused by the appearance of allochthonous people with a different economical model. This process, called *the second stage of neolithisation* (Wiślański 1979; Nowak 2009), is also clearly visible in the analysed area (Fig. 4). However, due to the thinness of the source base, it was decided not to separate the individual stages of development, and to treat the entire younger phases of the Neolithic together with the Eneolithic collectively. This approach could be justified because both the communities of TRB and CWC

show similar preferences in the selection of the occupied areas (Machnik 1998; Machnik *et al.* 2019).

It should be highlighted that the location of the sites is different than in the case of early neolithic settlements. First, it should be emphasised that in this period the higher parts of the landscape were preferred. Most of the settlement points are located at an altitude of 250 to even 355 m a.s.l. These are mainly gentle hillsides and slopes of valleys and the top parts of elevations (Graph 1: A). The dominant type of exploited soil is the fertile podzols in loess (Graph 1: C). However, there are no clear regularities in the selection of habitats in relation to the points of the compass. N, SE and circular exposure prevails (Graph 1: B).

There is only one distinct concentration of sites in the entire area (Rzeplin region). Apart from it, no tendency to create settlement clusters was observed. An interesting observation is also the fact that there are no late Neolithic materials in the vicinity of the Mleczka river, but there was a clear preference for smaller watercourses (Fig. 4). This situation fits well in the picture of TRB settlement in the losses regions of Subcarpathia (Król 2017; 2018) and Lesser Poland (Kruk 1973; 1980). The occupation of high-lying zones with relatively low irrigation is explained by the economic model – i.e., extensive agriculture based on slash and burn cultivation. Interestingly, in the analysed area, unlike in the rest of Kańczuga Upland (Król 2017; 2018), most of the settlements are located more than 300 m from the nearest watercourse.

It is also worth noting that the CWC materials were discovered near the peaks of the elevations (at altitudes 334 and 242 m a.s.l., and so they correspond to the occurrence zones of similar finds on the rest of the Upland (Machnik 2001; Pelisiak 2018). This may suggest the existence of erased barrows in this place, known from neighbouring territories (Łanczont *et al.* 2004; Hozer *et al.* 2017; Machnik *et al.* 2019).

Only 10 sites dating back to the Early Bronze Age have been identified in the area in question. However, even such a small sample allows one to draw some general conclusions. Most of the material was found in higher parts of the landscape, with a certain tendency to avoid settlement in river valleys (Fig. 5).

The preferred places for settlement were flattened, east-facing promontories and the top parts of elevations with circular exposure (Graph 1: A–B). There is also a visible preference for the occupation of podzolic soils, with less popular silty soils (Graph 1: C). These results differ slightly from those obtained for the entire upland area. On a larger scale, a tendency to occupy lower habitats near small watercourses was observed (Przybyła, Blajer 2008).

Perhaps such a situation results from the differences in the types of used locations, or the observed differences are local in nature.

Mapping the sites did not reveal a tendency towards concentration. Perhaps one of the points could have served as a central settlement, but so far there is no convincing evidence towards this. More likely is the hypothesis that the entire studied area was a zone exploited by the inhabitants of a large microregion stretching from Lipnik through Sietesz to Kańczuga, for which multiphase permanent settlements are confirmed (Przybyła, Blajer 2008 – further literature there).

Finally, it is worth referring to A. Pelisiak's observation that sites of MC are very often located in zones previously inhabited by the population of TRB and CWC, and sometimes even use the same place (Pelisiak 2018). This hypothesis was not confirmed in the studied area.

The Middle Bronze Age is represented by 10 sites (Fig. 5). Also, in this case, there is no preference to the specific heights at which the settlements were located (the values are within a wide range of 217–320 m a.s.l.). E and NE exposures are dominant (Graph 1: B). Almost all sites are located on podzolic soils on loess (Graph 1: C). The analysis of the location types shows a tendency to occupy flattened promontories and gentle hillsides in proximity to watercourses (up to 200 m from river beds) (Graph 1: A). This is a general trend confirmed for the entire loess upland (Przybyła, Blajer 2008). For the area in question, the settlement microregion of TC in Rączyna and Rzeplin has already been separated (*ibidem*).

During the development of the TG, similarly to the areas surrounding the analysed region (Czopek, Podgórska-Czopek 1995; Przybyła, Blajer 2008), a clear intensification of settlement was recorded (55 sites) (Fig. 7). Due to fact that the attempt to divide this taxonomic unit into the older and younger phase did not bring significant differences⁹, it was limited to identifying general settlement trends.

Traces of activity of these communities have been recorded at all altitudes (from 215 to 355 m a.s.l.). On the other hand, there is a clear tendency to locate settlements on gentle hillsides and slopes of valleys and on flattening promontories (Graph 1: A). The places with SE, NE and E exposures or located on fertile podzolic soils were preferred (Graph 1: B–C). There is also noticeable

9 Moreover, these issues have already been discussed in detail in a wider context by M.S. Przybyła and W. Blajer (2008).

interest in habitats that have not been occupied so far. It might be explained by the rapid increase of population density, which forced the expansion to the ecumene that had not been used before (Przybyła, Blajer 2008). In the case of the TG, the entire presented area should be considered as one large settlement cluster, included in a larger microregion stretching from the Markówka river to the Eastern Mlecza (*ibidem*).

Due to fact that there are only two graphite shards in the area, it is impossible to draw any conclusions about the settlement preferences in the La Tène Period. On the other hand, it is appropriate to recall the results of the analysis carried out for the Subcarpathian loess region, which show that although the few La Tène materials are concentrated close to the border of the Carpathian threshold, they are also related to sites where the remains of the TG were identified. Such a situation is also confirmed for the area 105-80 (Przybyła, Blajer 2008). This is probably evidence for the use of the old communication routes by the Celtic people, possibly related to the salt distribution from the Upper San river (Bochnak 2019).

Also, for the Roman Period, the analysed material did not indicate more precisely dated stages of settlement development. Therefore, both finds from the Younger Period of Roman Influence, and those dated generally to the Roman Period were treated as one collection. In total, 25 settlement points were identified (Fig. 8).

The statistical approach to the types of site locations shows that the PC population most often occupied the gentle slopes of the river valleys, as well as promontories – both low and high (Graph 1: A). The average altitude at which the Przeworsk materials were found is 239,5 m a.s.l. which indicates a preference for inhabiting lower parts of the landscape. Non-exposed places are more common (Graph 1: B). The most frequently exploited soils were podzols and, to a lesser extent, podzolic-brown soils (Graph 1: C). These observations are in line with the general tendency of PC communities to locate settlements low, along rivers and streams (Kobyliński 1988; Czopek, Podgórska-Czopek 1995; Poradyło 2009). There are several small settlement clusters in the area, most often occurring on neighbouring promontories over watercourses. Such a picture corresponds well with the model observed in the entire Subcarpathian loess region (Poradyło 2009).

The Early Middle Ages in the analysed area are represented by 21 sites (Fig. 10). The average altitude at which the so dated traces were recorded reached about 253,5 m a.s.l. The tendency not to progress to higher parts of the landscape and to establish settlements just above the watercourses and

mainly on the gentle slopes of the valleys instead is quite clear (Graph 1: A). Besides, it is typical for the entire Early Medieval Lesser Poland (Parczewski 1991; Madyda-Legutko *et al.* 2005). The most frequently were chosen places on podzolic-brown soils with SE exposure or not exposed (Graph 1: A–B). Most of the sites appear to create small clusters of 2–3 settlements. The only larger concentration of materials was registered in Łopuszka Mała, site no. 6.¹⁰ Probably this was to some extent connected with two nearby sites in the same village.

In the case of Late Medieval materials collected during the surface surveys, it should be considered in terms of places selected for cultivation rather than settlement preferences because the discovered shards ended up in the fields during their fertilisation (Blajer 2005). Most of them were found in the lower parts of the landscape (Fig. 10). Probably such placement of arable fields should be associated with the transformations of the local environment, resulting from rapid deforestation until the mid-14th century. This led to a lowering of the groundwater level, as a result of which farming in the higher parts of the landscape became pointless. On the other hand, it was justified to exploit the former low-lying marshy areas, which, after drying, were perfect for cultivation (Motylewicz 1984).

VI. SUMMARY

The above analysis is the best proof of how attractive the habitat zone was in prehistory and the Middle Ages. The area's almost permanent settlement from the Early Neolithic to the present day confirms that it has always presented a great economic potential despite the environmental changes.

Even though this study adopted its own location categories more appropriate for micro-regional analysis, the obtained results mostly correspond well to the settlement trends observed on a macro scale. The most frequently observed tendency in various periods is a clear preference for locating settlements on gentle slopes of valleys and flattening promontories in a short distance from watercourses. On the one hand, such selection of habitats ensured easy access to freshwater, and on the other hand, it favoured communication and intergroup exchange.

10 21 pottery fragments on the area of 0.1–0.5 ha.

However, it should be highlighted that the conclusions obtained from the analysis of surface material are general in nature. “Chronological flattenings”, which in such a case cannot be avoided, make the dynamics of the changes not fully clear, while the state of preservation of the artefacts very often limits their proper interpretation. Therefore, it should be taken into account that during the study of the material, it was not possible to include many important details, and a full reconstruction of the past may only be achieved by systematic excavations.

REFERENCES

- Balcer B. 1975. *Krzemień świeciechowski w kulturze pucharów lejkowatych. Eksploatacja, obróbka i rozprzestrzenienie*, Wrocław.
- Bienia M., Żółkowski S. 1996. *Weryfikacja wiarygodności wyników badań AZP w województwie białkopodlaskim*, [in:] *Archeologiczne Zdjęcie Polski – metoda i doświadczenia. Próba oceny*, D. Jaskanis (ed.), Warszawa, 151–159.
- Blajer W. 2005. *Osadnictwo prehistoryczne, wczesnośredniowieczne i średniowieczne na obszarze dzisiejszej Markowej w świetle znalezisk archeologicznych*, [in:] *Markowa – sześć wieków tradycji. Z dziejów społeczeństwa i kultury*, W. Blajer, J. Tejchma (eds.), Markowa, 11–24.
- Bobak D., Połtowicz-Bobak M. 2011. *Osadnictwo starszej i środkowej epoki kamienia na terenach Podkarpacia w świetle badań na trasie autostrady A4 w latach 2005–2011*, [in:] *Autostradą w przeszłość. Katalog wystawy*, S. Czopek (ed.), Rzeszów, 25–43.
- Bochnak T. 2019. *Movement or stabilization? The Upper San River basin in the second half of the 1st millennium BC*, *Acta Archaeologica Carpathica* 54, 25–56.
- Czekaj-Zastawny A. 2008. *Osadnictwo społeczności kultury ceramiki wstęgowej rytej w dorzeczu górnej Wisły*, Kraków.
- Czerniak L. 1996. *Archeologiczne Zdjęcie Polski – co dalej?*, [in:] *Archeologiczne Zdjęcie Polski – metoda i doświadczenia. Próba oceny*, D. Jaskanis (ed.), Warszawa, 39–46.
- Czopek S. 1999. *Pradzieje Polski południowo-wschodniej*, Rzeszów.
- Czopek S., Podgórska-Czopek J. 1995. *Osadnictwo pradziejowe w dolinie dolnego Wisłoka*, [in:] *Wisłok. Rola rzeki w krajobrazie naturalnym i kulturowym regionu*, K. Ruszel (ed.), Rzeszów, 27–54.
- Godłowski K. 1985. *Przemiany kulturowe i osadnicze w południowej i środkowej Polsce w młodszym okresie przedrzymskim i okresie rzymskim*, *Prace Komisji Archeologicznej*, vol. 23, Wrocław.
- Gucik S. 1988. *Surowce użyteczne Karpat Przemyskich i przedgórze*, [in:] *Karpaty przemyskie: przewodnik LIX Zjazdu Polskiego Towarzystwa Geologicznego. 16–18 września 1988*, J. Kotlarczyk (ed.), Kraków, 119–141.
- Hozier M., Machnik J., Bajda-Wesołowska A. 2017. *Groby kultury ceramiki sznurowej i domniemane kultury mierzanowickiej w Szczytnej, pow. Jarosław – źródła, analiza*,

- wnioski, [in:] *Nekropolie ludności kultury ceramiki sznurowej z III tysiąclecia przed Chr. w Szczytnej na Wysoczyźnie Kańczuckiej*, P. Jarosz, J. Machnik (eds.), *Via Archaeologica Ressoviensia*, vol. 12, Rzeszów, 5–130.
- Jankuhn H. 2004. *Wprowadzenie do archeologii osadnictwa*, Poznań.
- Jodłowski A. 1971. *Eksploatacja soli na terenie Małopolski w pradziejach i we wczesnym średniowieczu*, *Studia i Materiały do Dziejów Żup Solnych w Polsce*, vol. 4, Wieliczka.
- Kadrow S., Machnik J. 1997. *Kultura mierzanowicka. Chronologia, taksonomia i rozwój przestrzenny*, *Prace Komisji Archeologicznej*, vol. 29, Kraków.
- Kiarszys G. 2005. *Osadnictwo czy krajobraz kulturowy: konsekwencje poznawcze korelacji wyników badań powierzchniowych i rozpoznania lotniczego*, [in:] *Biskupin... i co dalej? Zdjęcia lotnicze w polskiej archeologii*, J. Nowakowski, A. Prinke, W. Rączkowski (eds.), Poznań, 389–395.
- Kobyliński Z. 1988. *Struktury osadnicze na ziemiach polskich u schyłku starożytności i w początkach wczesnego średniowiecza*, Wrocław.
- Kolebuk E. 2016. *Rekonstrukcja osadnictwa pradziejowego i wczesnohistorycznego na obszarze AZP 105-80 (Wysoczyzna Kańczucka)*, *Archive of the Institute of Archaeology, Jagiellonian University* (unpublished bachelor's thesis).
- Kondracki J. 1994. *Geografia regionalna Polski*, Warszawa.
- Kozłowski J.K., Kozłowski S.K. 1977. *Epoka kamienia na ziemiach polskich*, Warszawa.
- Kruk J. 1973. *Studia osadnicze nad neolitem wyżyn lessowych*, Wrocław.
- Kruk J. 1980. *Gospodarka w Polsce południowo-wschodniej w V–III tysiącleciu p.n.e.*, Wrocław.
- Kruk J. 1995. *Poszukiwania powierzchniowe w badaniach nad geografią osadnictwa pra- i wczesnodziejowego: po dwudziestu latach doświadczeń*, *Sprawozdania Archeologiczne* 47, 265–269.
- Kruk J., Przywara L. 1983. *Roślinność potencjalna jako metoda rekonstrukcji naturalnych warunków rozwoju społeczności pradziejowych*, *Archeologia Polski* 28:1, 19–50.
- Król D. 2017. *Spoločności kultury pucharów lejkowatych na pograniczu Podgórze Rzeszowskiego i Doliny Dolnego Sanu. Studium geograficzno-osadnicze*, [in:] *Wielokulturowe cmentarzysko w Skołoszowie, stan. 7, pow. jarosławski w kontekście osadnictwa z neolitu i wczesnej epoki brązu we wschodniej części Podgórze Rzeszowskiego*, M. Rybicka (ed.), Rzeszów, 5–24.
- Król D. 2018. *Studia nad osadnictwem kultury pucharów lejkowatych na lessach Podgórze Rzeszowskiego i Doliny Dolnego Sanu*, *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 39, 39–55.
- Łanczont M., Klimek K., Nogaj-Chachaj J. 2001. *Potencjał środowiska naturalnego przykarpacciej wysoczyzny lessowej dla osadnictwa neolitycznego*, [in:] *Neolit i początki epoki brązu w Karpatach polskich*, J. Gancarski (ed.), Krosno, 173–199.
- Łanczont M., Klimek K., Nogaj-Chachaj J. 2003. *Holocenne przemiany środowiska przyrodniczego Wysoczyzny Kańczuckiej – zarys badań interdyscyplinarnych*, [in:] *FNP dla archeologii. Podsumowanie programów TRAKT i ARCHEO*, M. Łanczont, J. Nogaj-Chachaj (eds.), Lublin, 111–116.
- Łanczont M., Klimek K., Nogaj-Chachaj J. 2004. *Wybrane problemy starożytnych kurhanów z okolic Jarosławia (Wysoczyzna Kańczucka)*, *Rocznik Przemyski* 40:2, *Archeologia*, 7–16.

- Machnik J. 1998. *Uwagi o najstarszym osadnictwie pasterskiej kultury ceramiki sznurowej (III tysiąclecie przed Chr.) w strefie karpackiej*, [in:] *Dzieje Podkarpacia*, vol. 2, J. Gancarski (ed.), Krosno, 92–120.
- Machnik J. 2001. *Kultura ceramiki sznurowej w strefie karpackiej (stan i perspektywy badawcze)*, [in:] *Neolit i początki epoki brązu w Karpatach polskich*, J. Gancarski (ed.), Krosno, 115–138.
- Machnik J., Jarosz P., Mazurek M. 2019. *Groby ludności kultury ceramiki sznurowej w Mirocinie, pow. Przeworsk*, [in:] *Nekropola ludności kultury ceramiki sznurowej w Mirocinie na Wysoczyźnie Kańczuckiej*, P. Jarosz, J. Machnik, A. Szczepanek (eds.), *Via Archaeologica Ressoviensia*, vol. 15, Rzeszów, 7–139.
- Madyda-Legutko R., Poleski J., Krapiec M. 2005. *Studia nad geografią osadnictwa w górnym dorzeczu Wisły u schyłku starożytności i na początku średniowiecza*, [in:] *Archeologia o początkach Słowian*, P. Kaczanowski, M. Parczewski (eds.), Kraków, 307–352.
- Matoga A. 1996. *Archeologiczne Zdjęcie Polski – połowa drogi*, [in:] *Archeologiczne Zdjęcie Polski – metoda i doświadczenia. Próba oceny*, D. Jaskanis (ed.), Warszawa, 47–61.
- Mazurowski R. 1974. *Możliwości poznawcze badań powierzchniowych*, *Wiadomości Archeologiczne* 39:1, 32–39.
- Mazurowski R. 1980. *Metodyka archeologicznych badań powierzchniowych*, Warszawa–Poznań.
- Motylewicz J. 1984. *Dzieje Kańczugi*, Przemyśl.
- Musierowicz A. (ed.) 1961. *Mapa gleb Polski w skali 1:300 000*, Warszawa.
- Nowak M. 2009. *Drugi etap neolityzacji ziem polskich*, Kraków.
- Parczewski M. 1988. *Początki kultury wczesnosłowiańskiej w Polsce. Krytyka i datowanie źródeł archeologicznych*, *Prace Komisji Archeologicznej*, vol. 27, Wrocław.
- Parczewski M. 1991. *Początki kształtowania się polsko-ruskiej rubieży etnicznej w Karpatach. U źródeł rozpadu Słowiańszczyzny na odłam wschodni i zachodni*, Kraków.
- Parczewski M. 2005. *Okolice Markowej we wczesnym średniowieczu (VI–poł. XIII w.)*, [in:] *Markowa – sześć wieków tradycji. Z dziejów społeczeństwa i kultury*, W. Blajer, J. Tejchma (eds.), Markowa, 25–34.
- Pelisiak A. 2008. *Late Neolithic settlement and the salt in the Carpathians*, [in:] *Man and mountains: palaeogeographical and archaeological perspectives*, T. Kalicki, B.S. Szmoniewski (eds.), Kielce, 51–63.
- Pelisiak A. 2018. *Centrum i peryferia osadnictwa w neolicie i wczesnej epoce brązu na wschodnim Podkarpaciu i we wschodniej części polskich Karpat*, *Collectio Archaeologica Ressoviensis*, vol. 38, Rzeszów.
- Pelisiak A. 2020. *Surowce krzemionkowe ze wschodniej części polskich Karpat. Rezultaty ostatnich badań*, [in:] *Epoka kamienia w Karpatach*, J. Gancarski (ed.), Krosno, 259–284.
- Pelisiak A., Dębiec M. 2014. *Salt water springs and the exploitation of the Eastern Polish Carpathians in the Late Neolithic Period*, [in:] *Szkice neolityczne. Księga poświęcona pamięci Profesor Anny Kulczyckiej-Laciejewiczowej*, K. Czarniak, J. Kolenda, M. Markiewicz (eds.), Wrocław, 285–300.

- Poleska P., Toboła G. 1988. *Osada grupy tyńskiej kultury lateńskiej na stan. 41 w Nowej Hucie-Krzyszawicach. Część II. Analiza materiałów*, Materiały Archeologiczne Nowej Huty 12, 89–130.
- Poradyło W. 2009. *Kultura przeworska na lessowym przedpolu Karpat pomiędzy Przeworskiem a Przemyślem*, Rocznik Przemyski 45:2, Archeologia, 57–83.
- Przybyła M.S., Blajer W. 2008. *Struktury osadnicze w epoce brązu i wczesnej epoce żelaza na obszarze podkarpackiej wysoczyzny lessowej między Wisłokiem i Sanem*, Kraków.
- Przybyła M.J. 2004. *Nowe znaleziska kultury lateńskiej z obszaru Podgórze Rzeszowskiego*, [in:] *Okres lateński i rzymski w Karpatach polskich*, J. Gancarski (ed.), Krosno, 218–235.
- Saile T., Posselt M., Blajer W. 2008. *Zur Siedlungsarchäologie der Bandkeramik im Einzugsgebiet des San*, Neue Ausgrabungen und Forschungen in Niedersachsen 27, 9–23.
- Starkel L. 1972. *Kotlina Sandomierska*, [in:] *Geomorfologia Polski. Tom 1: Polska południowa – góry i wyżyny*, M. Klimaszewski (ed.), Warszawa, 138–166.
- Szyber A. 2014. *Okres wczesnego średniowiecza*, [in:] *Rozbór, stanowisko 27. Materiały źródłowe*, M. Karwowski, D. Kulikowska (eds.), Via Archaeologica Ressoiviensia, vol. 5, Rzeszów, 55–60.
- Wiślański T. 1979. *Kształtowanie się miejscowych kultur rolniczo-hodowlanych. Plemiona kultury pucharów lejkowatych*, [in:] *Prahistoria ziem polskich, t. II: Neolit*, W. Hensel, T. Wiślański (eds.), Wrocław, 165–260.
- Wład P. 1996. *Województwo przemyskie. Zarys geograficzny*, Przemyśl.
- Zernickaya V., Klimek K., Łanczont M., Nogaj-Chachaj J. 2003. *Holocenińska historia roślinności i ślady działalności człowieka w rejonie Cieszacina Wielkiego*, [in:] *FNPN dla archeologii. Podsumowanie programów TRAKT i ARCHEO*, M. Łanczont, J. Nogaj-Chachaj (eds.), Lublin, 121–123.

ADDRESS OF THE AUTHOR

Ewelina Kolebuk

Cracow Saltworks Museum in Wieliczka

Zamkowa 8, 32-020 Wieliczka, Poland

e.kolebuk@smdz.pl

ORCID 0000-0003-0557-0312