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Treasures of Time

Research of the Faculty of Archaeology
of Adam Mickiewicz University in Poznań

Location of the main research areas.
Numbering, compare the table of Contents.

Adam Mickiewicz University Poznań

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Research of the Faculty of Archaeology
of Adam Mickiewicz University in Poznań

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FACULTY OF ARCHAEOLOGY AMU

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Contents

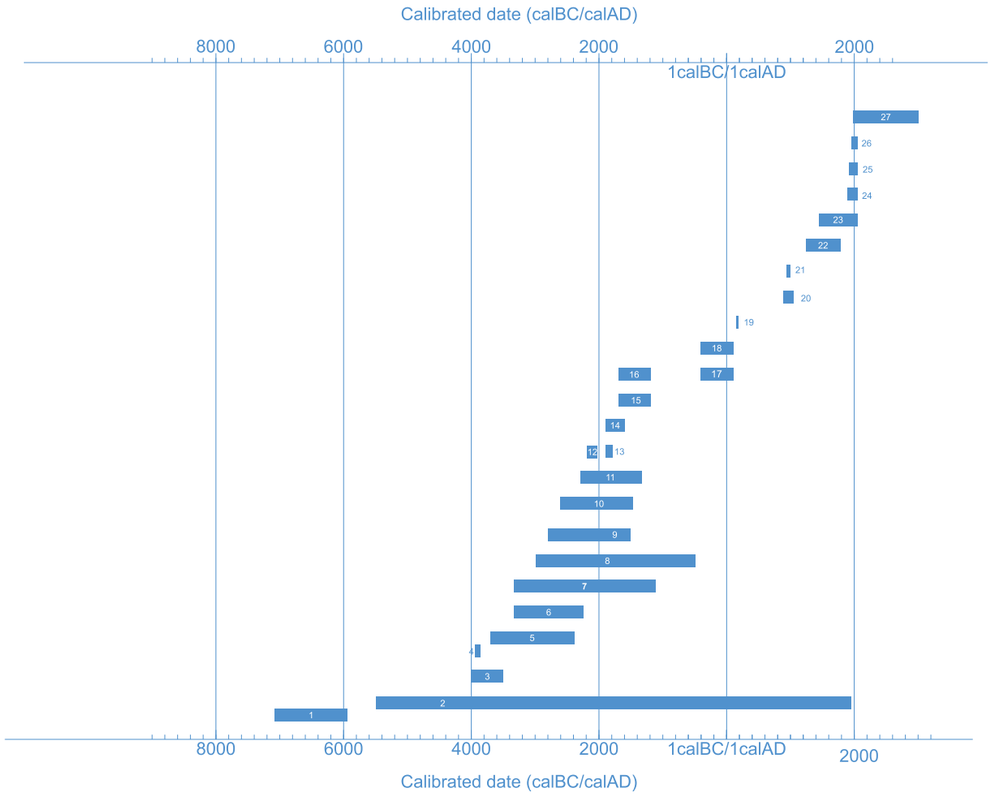
FACULTY OF ARCHAEOLOGY AMU

Treasures of Time: Research of the Faculty of Archaeology of Adam Mickiewicz University in Poznań

Introduction

In 2019, archaeology at the Adam Mickiewicz University in Poznan celebrated its honourable 100th anniversary! The establishment of archaeology at this university was associated with the strong influence of the authority of Prof. Józef Kostrzewski and a succession of eminent scholars, many of whom we today call Masters.

The year 2019 was a real breakthrough. We started the second century of existence within the Alma Mater Posnaniensis with a new structural independence and quality that the academic archaeology of Poznań had not yet known for its one hundred years of existence. This change, the formation of the first Polish Faculty of Archaeology, has opened new chances and possibilities of which we are now taking advantage.



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Prof. Józef Kostrzewski
(1885-1969)

Currently, the Faculty of Archaeology of Adam Mickiewicz University is formed by a number of teams, each with their own leaders. In the majority of cases, these teams are united by interdisciplinarity, which integrates within selected projects the experience of many so-called 'auxiliary' sciences of archaeology. This trend is paralleled by the development of specialised laboratories armed with the latest equipment in the Faculty of Archaeology.

This publication presents the current scientific interests creatively developed by such teams at the Faculty of Archaeology of Adam Mickiewicz University. The research of these teams covers vast areas in time and space, summing up at least the last 9,000 years of prehistory. The following articles, arranged in chronological order, allow us to explore the prehistory of various areas.

The adventure begins around 7100 BC, in the Neolithic settlement of Çatalhöyük located in Turkey. Then, we move on to the loess uplands near Krakow, where the first farmers from the south of Europe had just arrived (5500 BC). A little later (4000-3500 BC), and a little farther north, in the area of Greater Poland, some of the first megalithic constructions in this part of the world were built. Around the same time, about 800 km to the southeast, a settlement

of the Trypillia culture remains in the phase of development (3950 BC). The end of the Stone Age in Poland was described in the history of Late Neolithic communities on a hill in the center of Kujawy region (3700-2400 BC). Farther east, in the forest-steppe area of Ukraine, significant cultural and social changes resulted in the formation of the Yamnaya culture (3350-2250 BC), beginning the Bronze Age.

Intense elements of this era can be traced in the area of southern Europe in the Greek Anthemous Valley (3350-1150 BC), in Attica (3000-500 BC) on the plains of the Hungarian Lowlands (2600-1450 BC) and to the Upper Dniester Valley, where numerous burial mounds were formed (2800-1500 BC). A similar chronological range is presented in the articles devoted to a unique site in Bruszczewo, Greater Poland (2300-1350 BC), which not only accumulates valuable metal artefacts, but is also the subject of interest of an interdisciplinary team focused on reconstructing its environmental context.

The next text take us far to the east, to the area of Iraqi Kurdistan, where we can appreciate the importance of Mesopotamian influences in shaping the picture of the Early Bronze Age (2200-2150 BC).

Subsequent texts describe the discoveries of Poznań scientists in Syria (1906-1787 BC) and in Greater Poland (1900-1600 BC). These two distant points describe various aspects of life in contemporary communities in the Middle and Early Bronze Age.

The characteristic archaeological materials of the later centuries of the Bronze Age (1800-1200 BC) reveal an intensification of military conflicts and migration processes (1700-1200 BC). The turn of the eras is illustrated in this volume by texts on the interpretation of representations on ancient Greek and Roman sculpture (400 BC-100 AD), as well as the cultural situation in the Polish lands (400 BC-100 AD).

We are introduced to the new era by an article on the funerary customs of communities from the Polish lowlands describing discoveries at the site of Mirosław (160-175 AD). Moments of the formation of elements of Polish statehood are referred to in texts describing towns at Grzybowo (919-1050 AD) and Poznań in the early Middle Ages (950-1000 AD).

Later parts of the Middle Ages are described by sacral monuments located also in the area of the contemporary city of Poznań: the Collegiate Church of St Mary Magdalene (1263-1802 AD) and the still extant Church of the Blessed Virgin Mary on Ostrów Tumski, founded around 1431 AD in the immediate vicinity of the previously described early medieval site of the ‘origin’ of the city of Poznań.

The final texts of the volume do not refer directly to a particular period of prehistory, but present the history of Polish archaeological research on the Iberian Peninsula, the contemporary perception of prehistoric art by the inhabitants of present-day Canada and Siberia, and the development of methodological thought among Poznań archaeologists.

The volume closes with a text describing one of the many perspectives currently faced by the staff of the Faculty of Archaeology of Adam Mickiewicz University in Poznań: the new ArchaeoMicroLab.

We look to the future with great hope that the Staff of the Faculty will provide ideas for many more volumes of Treasures of Time. We trust that this set of articles will present archaeology at the Adam Mickiewicz University in Poznań in its new structure as a Faculty and show its potential. We would thus like to encourage you to get acquainted with our Poznań perspective on archaeological studies, and to reflect on ways of exploring the past.

Andrzej Michałowski

Danuta Żurkiewicz

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Lost and found: The Funnel Beaker culture's 'megalithic tombs' in the cultural and natural landscape of Greater Poland

Danuta Żurkiewicz

Abstract

Non-megalithic long barrows were the earliest type of monumental tombs that occurred in Europe. The oldest structures of this type, dating to 4800-4300 BC, are known from north-western France. Then, at the beginning of the 4th millennium BC, unchambered structures occurred in southern and central England, northern and central Germany, Denmark, and Poland. In Poland, tombs representing the Funnel Beaker culture (TRB) are found in several distinct concentrations which do not correspond to the entire range of the settlement oecumene of this community. They are also quite diverse in terms of construction and size. Interestingly, their origin and purpose still remain a mystery. It seems likely, though, that for their creators they had much higher significance than just a place to bury some selected members of the community. Most probably, they were a kind of symbolic marker of a given area, testifying to the unity and power of the communities living in such a region. Some researchers associate their origin with the influence of hunter-gatherer communities on agricultural communities. Other approaches to this topic point to the importance of borrowing the house model of early Neolithic communities, which was symbolically transformed into a 'house for the dead', i.e. a tomb. In most regions of Poland, megaliths were only 'rediscovered' in the 19th century by archaeologists, some of whom were amateurs. Unfortunately, this was not the case in Greater Poland. The megalithic tombs of the TRB remained unrecognized there until the second decade of the 21st century! What largely contributed to their discovery was technological progress, mainly the use of LiDAR (Light Detection and Ranging). Ongoing research aims to locate and verify occurrences of other cemeteries and to 'embed' them in the cultural and natural landscape of this region.

Keywords: Greater Poland, Funnel Beaker culture, TRB, Non-megalithic long barrows, paleoenvironment

Introduction

The area of the Middle Warta Basin is a place of significant accumulation of settlement remnants of the Funnel Beaker culture (TRB), reflecting an approximately 1500-year-long period of development in the region. It also contains the initial markers of significant socio-cultural transformations influencing the whole group of the eastern TRB. Such processes are certainly exemplified by the emergence of the Wiórek and Luboń styles, which illustrate two civilisation 'breakthroughs' within the presented community, and are considered one of the basic components of the TRB 'package'

Another such determinant that binds together the significantly differentiated groups of the TRB is the funeral rite associated with building monumental unchambered tombs. Until recently, the state of knowledge of the Greater Poland region did not allow for its inclusion in considerations on 'Megalithism' in the TRB culture. This created a puzzling picture of a vast settlement *oecumene* in the central Warta basin, located in the zone of crossing influences from neighbouring agglomerations, and testified by at least 3,000 known sites of this community, but almost completely devoid of any funerary sources. Confronting this state of knowledge with the current recognition of megalithic structures in the surrounding regions of Central Germany, Pomerania, Kuyavia, Lower Silesia, and Lesser Poland, makes interpretations of a central area "barren" of megaliths difficult.

The recent discovery of a megalithic cemetery in the village of Sobota, district of Poznań, significantly changes this perspective (Żurkiewicz, Niebieszczański & Bahyrycz, 2020), and the already conducted preliminary research indicates that megalithic phenomena in Greater Poland remain greatly underestimated.

Unchambered tombs in the European and Polish perspectives

The only passage-grave construction related to the TRB discovered in Poland is the tomb from Borków in Western Pomerania (Kleist, 1964; Skrzypek, 2002). The other tombs of this community recorded in Poland can be classified as unchambered structures, which in the English literature are referred to as: unchambered long barrows, earthen long barrows, and non-megalithic (earthen) long barrows (see i.a. Piggott, 1967; Midgley, 1985; Müller, 2011). These unchambered tombs are the oldest form of monumental funerary structures yet recognized in Europe, first occurring c. 4800-4300 BC in NW France in the Paris Basin in the context of the Cerny culture (Midgley, 2005, p. 89; Rzepecki, 2011a, p. 124, 2011b, p. 158). Next, within almost the same time horizon, early in the 4th millennium BC, unchambered structures appeared in southern and central England, northern and central Germany, Denmark, and Poland (Wunderlich, Müller & Hinz, 2019) (Figure 1). Throughout all these areas, apart from Poland and the oldest site in France, they then evolved into younger '*megalithic*' forms, i.e. having a built-in burial chamber, in the form of dolmens or passage-graves (Midgley, 1992, p. 418; cf. Müller, 2011, p. 33). The short time horizon connected with the occurrence of the analysed tombs in vast areas of Europe was initially identified by researchers with the spread of a kind of idea – religion, or even an invasion of builders of the megalithic structures (Childe, 1949).

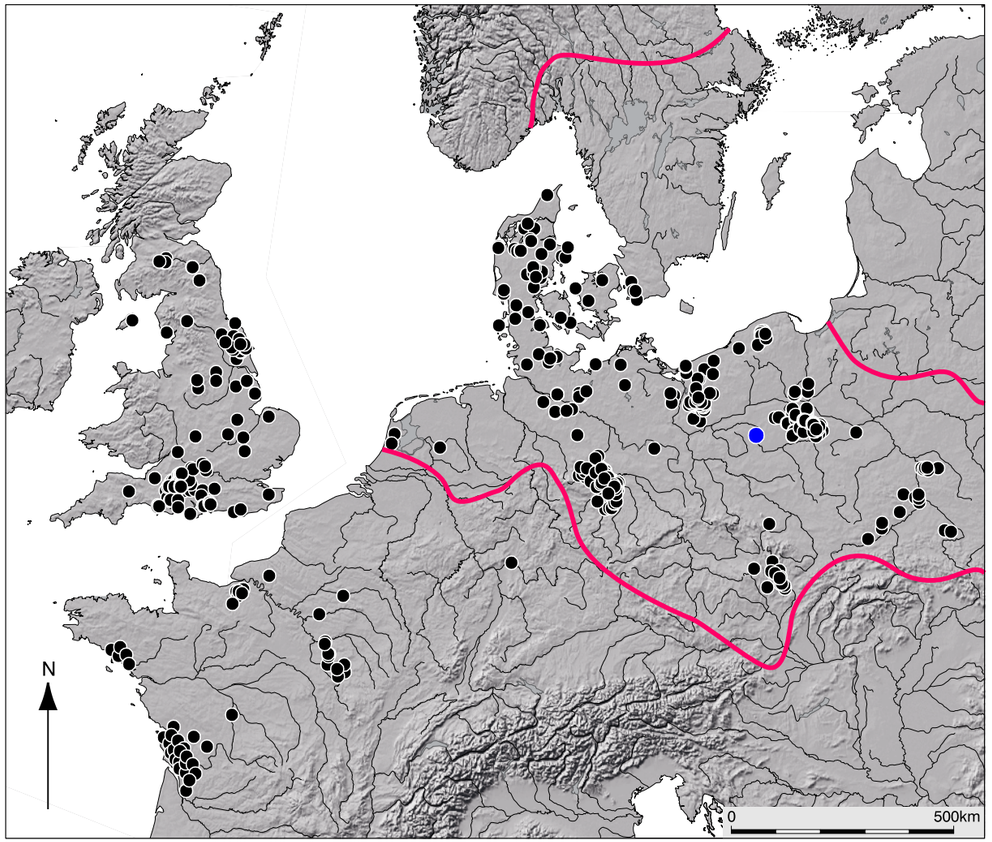


Figure 1. Non-megalithic long mounds in Europe. The blue point indicates the first TRB cemetery in the Greater Poland region, in Sobota locality, site 52, Greater Poland voivodeship. Pink colour indicates the range of the Funnel Beaker culture (after: Müller, Dibbern & Hage, 2014; Nobles, 2019; Rzepecki, 2011a; Żurkiewicz et al., 2020).

Therefore, formally, no TRB tombs built east of the Oder River should be counted as megalithic forms due to the lack of a burial chamber built of stone. However, the research tradition is different on the territory of Poland and many researchers use this 'unauthorised' term (Kruk, 2006, p. 10; Matuszewska & Szydłowski, 2012). This is probably due to the reference to the aforementioned research tradition (Kozłowski, 1921) or represents a clear intention to return to the etymology of the term itself (Greek: *mega* – great, *lithos* – stone). In addition, a more detailed analysis of data from excavations suggests that in the case of some of the tombs east of the Oder River, accessibility to the immediate burial place was provided through a chamber built of wood (e.g. Wietrzychowice tomb 5, Jadczykowa, 1970).

In Poland, the tombs of the TRB occur in several distinct concentrations that do not correspond to the entire range of the settlement *oecumene* of that community. Their main concentrations are in the areas of: Kuyavia, the Chełmno Land and the adjacent areas in the west i.e. western and central Pomerania, and Lesser Poland (Figure 1) (Chmielewski, 1952; Kośko, 2007; Jankowska, 1980; Wierzbicki, 1991; Król, 2015). There are significant concentrations of TRB settlements within this range, e.g. in Silesia or Masovia, with which larger concentrations of tombs cannot be directly linked. It is difficult to state, however, if this lack indicates that those local communities, in terms of their burial rituals, did not build such tombs, or whether their absence is a result of the current state of research. Probably, the latter factor was the case regarding the large settlement cluster from Greater Poland, and the discovery of the cemetery in the village of Sobota, Rokietnica commune provides the opportunity for a new interpretation of the identity of those communities.

Formal differentiation of unchambered tombs from the area of Poland

The unchambered structures discovered throughout the TRB area show a wide range of construction differences, which promptedidentification of new types (Figure 2) (Jankowska, 1981, p. 121; Rzepecki, 2004, p. 124; Kośko, 2006, p. 24, 2007, p. 49; see also: Müller, Dibbern & Hage, 2014; Król, 2015). If the main criterion for their classification is their building material, it is worth noting that the dominant forms in the area of Poland are those with a large stone kerb, built on a trapezoidal plan (type A). They occur in all of the aforementioned regions where tombs have been found in Poland. In the less explored regions and in those for which the prevalence of the megalithic structures was not so obvious (Silesia, Greater Poland), it was the only recorded type.

In the area of Lesser Poland, type A is slightly overtaken by structures whose kerbs were made of wood (type B). These structures, in addition to having trapezoidal outlines, were also built on rectangular, circular or ovular plans. Small-stone structures (type C), identified only in Kuyavia and Lesser Poland, had similar forms. Far less numerous are type D structures with mixed, stone-wooden kerbs, which were built on trapezoidal or rectangular bases. The last structure type (E), which consisted of an earth embankment and did not contain any traces of wooden or stone structures, is specific and characteristic only of Lesser Poland (Kowalewska-Marszałek, Duday & Pyżuk, 2006, pp. 341-360; Tunia & Włodarczak, 2011, pp. 203-219). The occurrence of particular types of tombs in the region is presented in Figure 3.

It should be noted, however, that the most important, common feature of these structures was the external earth embankment, which potentially eliminated internal construction differences from sight (Nowak, 2009, p. 474). Hence, it is difficult to decide whether it seems justified to place so much emphasis on the applied construction solutions.

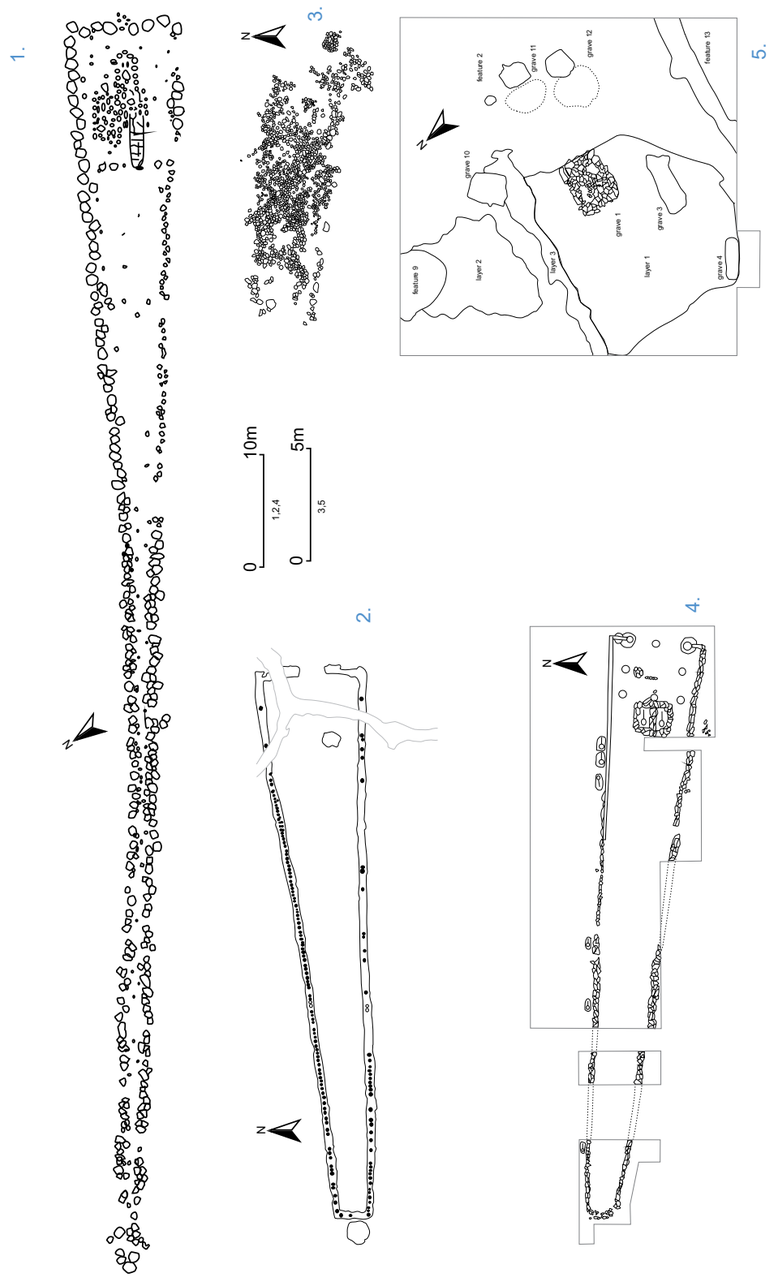


Figure 2. Examples of major tomb types: 1 – Wietrzychowice 1, tomb 3, Włocławek district. Unchambered tomb type A; 2 – Niedźwiedź 1, Kraków district. Unchambered tomb type B; 3 – Klementowice 6, Puławy district. Tomb type C; 4 – Pawłów 3, Sandomierz district. Tomb type D; 5 – Malżyce 30, Kazimierza Wielka district. Unchambered tomb type E (after: Chmielewski, 1952; Burchard, 1973; Uzarowiczowa, 1968; Bargieł & Florek, 2006; Jarosz et al., 2009).

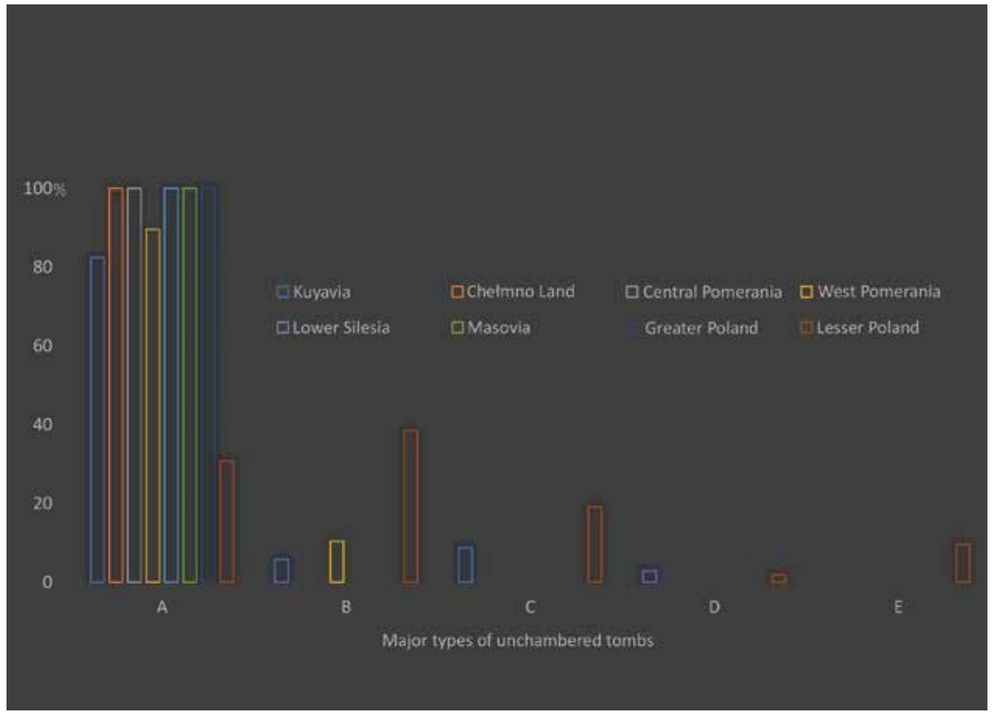


Figure 3. An occurrence of major types of unchambered tombs in particular regions of Poland (after: Król 2015).

Most of the study tombs in Poland date from c. the first half of the 4th millennium BC and are associated with the Sarnowo and Wiórek phases of TRB. Fully megalithic types, i.e. those having a narrow access passage made of large stones or a chamber, are known in Poland only from the Globular Amphora Cultures (GAC) and are dated to the last centuries of the 4th millennium BC at the earliest.

The monumentality of the structures is evidenced by their size. The longest structures, reaching up to 170 m, were discovered in Kuyavia. The average length of the tombs found there, calculated for all types of discoveries, is 74.5 m. Similar estimates can be quoted for the Chełmno Land (the average length of the tombs was 64.3 m; the longest of the discovered ones measured 68 m). The tombs from Western Pomerania come next, with a maximum length of 70 m and an average of 42.3 m. The shortest mean length values were calculated for tombs built in Central Pomerania (maximum 56 m, mean 25.9 m), Lower Silesia (up to 36 m, mean length 27.5 m), and Lesser Poland (length up to 120 m, but the mean value is only 29.2 m) (Figure 4).

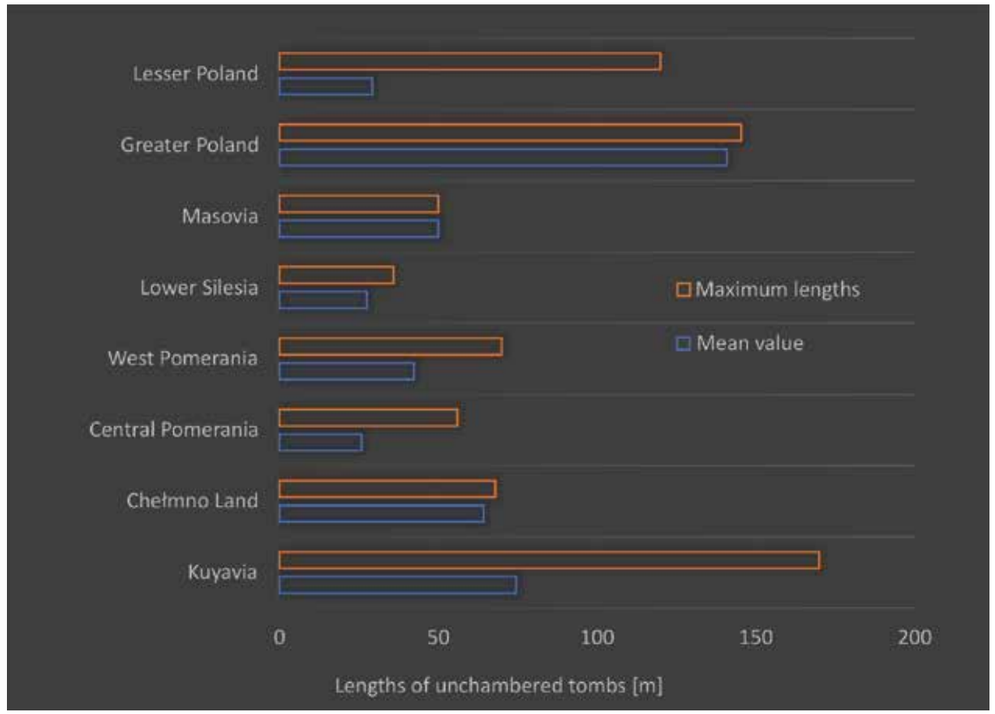
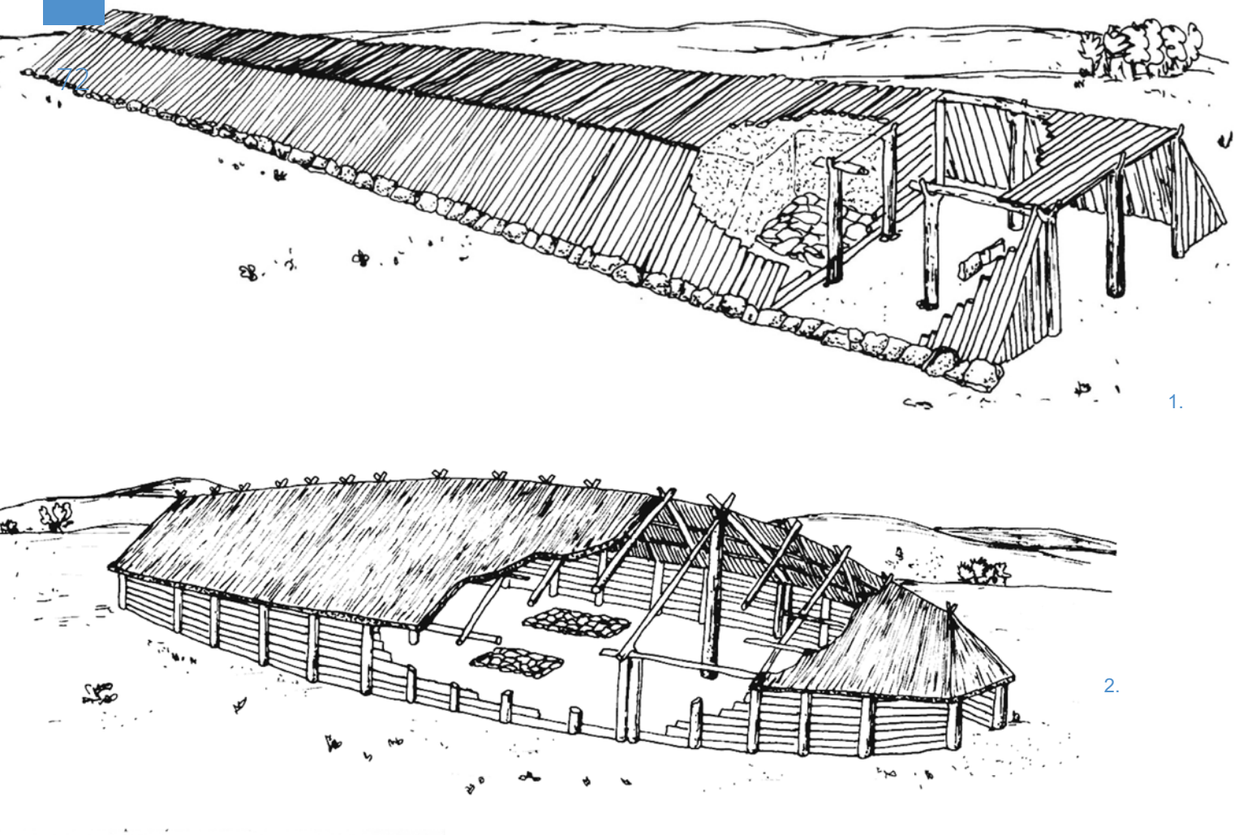


Figure 4. Mean value and maximum lengths of unchambered tombs within the main regions of their occurrence (after: Król, 2015).

Not only graves. The function of monuments

Regardless of the external parameters and the internal structures, it can certainly be assumed that the erection of those tombs was connected with a common ideology, philosophical-religious views, or economy (based on pastoralism) (Chmielewski, 1952, p. 32). Probably these were not only burial places accessible to a selected, small part of the population, but, being permanent elements of the landscape, also opened up the possibility of cultivating ancestor worship. This latter use is manifested by various features houses of the dead, traces of burning fires, layers of peat, or layers of lime dust (Socha, 2015). Their social aspect could also be important – the artificial structures, standing out in the landscape, may have been burial places for people who were highly privileged in a given society (due to prestige, high social

rank, age, or some diseases) (Kruk, 2006). The very act of erecting them is a manifestation of a high level of community organisation, capable of meeting such a challenge (Figure 5). The topic of their active role in the cultural and natural landscape is also present in theories which locate megalithic tombs in the centre of a given region and community, or treat them as points marking the boundaries of such space and conditioning the rights of a given community to the used territory-land (Wierzbicki, 2006, pp. 92-94; Gorczyca, 2005, pp. 120-123).



1.

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3.

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Figure 5. Reconstruction drawings of operational tombs. 1 – Pawłów 3, tomb 1, 2 – Pawłów 3, tomb 2, 3 – Wietrzychowice 1, tomb 5, 4 – Gaj 1, tomb 1 (after: Florek, 2020; Sukniewicz & Myrta, 2008).

The origin of unchambered tombs in the European Lowland

In all descriptions of the functions of the TRB tombs presented so far in this text, durability and stability of the structures are highly emphasised as the features particularly desired by Neolithic communities. In the earlier stages of the Neolithic, settlements, their building type, and the settlement regions were stable and permanent. The TRB was different in this respect as it did not form stable multi-phase settlements and it did not have (as opposed to the earlier Neolithic communities) monumental residential structures such as homesteads or roundels. Instead, it occupied vast territories, far larger than those used by the Danube communities. What is more, the TRB interacted with local 'autochthonous' gatherer-hunter communities who, as a result of these contacts, seemed to appreciate the advantages of the new 'husbandry' and, succumbed to the magic of Neolithisation, becoming *de facto* the core population of the TRB. The role of tombs in this process translates to 'stabilising points', defining the newly emerging community in an era of their material and mental transformation (e.g. Midgley, 2005, pp. 12, 79-81). Thus, the discussion of the functions of TRB tombs develops naturally into a discussion of the origins of the culture.

The concept of the TRB genesis, based on the Neolithisation of hunter-gatherer groups, gains a high degree of probability particularly in connection with the northern TRB group. The northern TRB is where the reach of small groups of migrants from the agricultural south (probably from the Michelsberg culture) (Czerniak, 2018) presumably initiated the process of Neolithisation of the North of Europe (Sørensen, 2014). Ergo, it was where the first stage of spreading the Neolithic achievements took place (Childe, 1949). The areas corresponding to the settlement of the Eastern TRB group, at the time of the formation of the new community, had already 'witnessed' at least 1,300 years of Neolithic transformations. The TRB pattern here was to emerge through an interaction with the North (Jażdżewski, 1936; Wiślański, 1979) and, according to various concepts, the megalithic idea was spread from the west or the north (Rzepecki, 2004, 2011a,b).

Today, we know that in the context of its whole range from the Lower Rhine in the west to the Upper Dniester in the east and from southern Sweden to the middle Danube, it is very difficult to speak of the TRB as a community being aware of, for example, its common origin and speaking the same language. These conclusions are evidenced by the numerous stylistic and technological differences already present in the oldest TRB, or by the flint industries – signs of presence of the local predecessors (Kozłowski & Nowak, 2019). Unfortunately, at present we are still unable to identify a single site with the oldest TRB tombs. It can therefore be assumed that their development, as in the case of the whole history of the TRB, was a result of the influence and transformation of the older local Neolithic communities.

As mentioned before, all previous Central European Neolithic communities realised the need for monumentalism by erecting structures that can be attributed in part to the aforementioned functions related to the megalithic tombs (Czerniak, 2018; Czerniak & Pyzel, 2016). In the case of the earliest farmers representing the Linear Pottery culture (LBK), these structures were clusters of post frame houses that were in turn part of extensive settlements, which enhanced their majesty. Following this thread, for the LBK's direct successors representing the Stroke Ornamented Pottery culture, the idea of monumentalism was

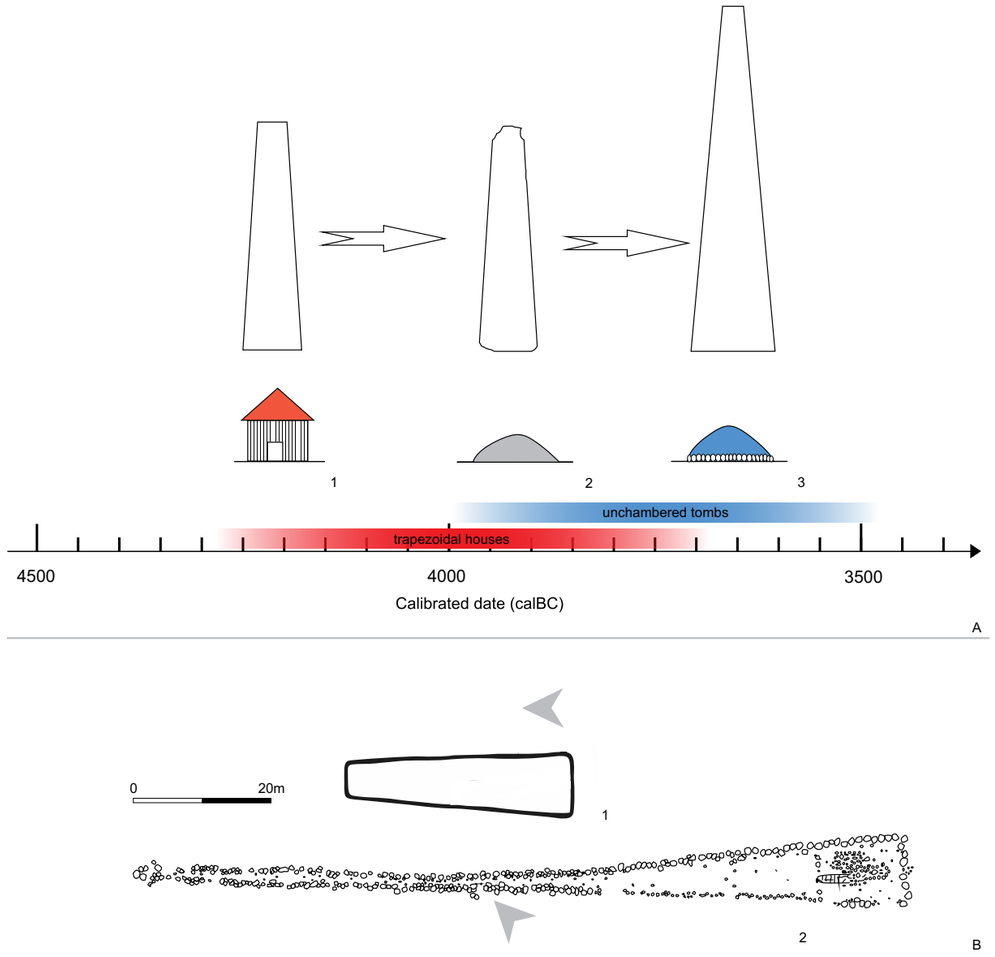

Figure 6. Long trapezoidal houses of the Brześć Kujawski culture (BKC) and unchambered tombs of the Funnel Beaker culture. A – perspective of their "evolution"; B – plans of the long trapezoidal houses and tomb, Osłonki 1, house 5, 2 - Wietrzychowice 1, tomb 3 (after: Grygiel, 2008, Fig. 404; Chmielewski, 1951, p. 94).

implemented by mysterious centres, i.e. wood and earth structures forming roundels. At the stage immediately preceding an emergence of the TRB throughout the vast areas of the European Lowland, communities of the Brześć Kujawski Culture (BKC) constructed trapezoidal houses with walls built of continuous rows of posts placed in foundation trenches (Figure 6). The concept that the TRB tombs derived from those BKC houses is a 'counter-offer' to their possible genesis (Child, 1949, p. 135; Wislański, 1979, p. 258; Hodder, 1990; Midgley, 1985, p. 207). Naturally, there is also much uncertainty among researchers about this thesis (Nowak, 2009, pp. 485-489; Jankowska, 2005, p. 139); thus, it might be worth discussing.

The first question concerns the difference in the primary function of the house and the tomb. It is worth noting here that the BKC communities often located burials within residential structures. Sometimes these burials were already taking place at the stage of house construction. But, probably just as often, burials were located in older, disused, and long-abandoned homesteads. This situation is particularly well documented at the BKC settlement in Racot, Grater Poland. A grave of a female was located here in a homestead which had already been abandoned for c. 200 years old (Czerniak et al., 2016). It can be assumed that this structure was still visible on the surface at the time the burial was placed there; perhaps it was an elongated mound formed from layers of earth and decomposed timber. The theory of such a manifestation of the remains of the BKC settlements to the TRB community was earlier considered in detail (Midgley, 2005, pp. 130-131, Figure 38). Furthermore, the link between the settlement zone and its later funerary use is particularly clear in the case of the earliest TRB tombs. Many of them were built at the Sarnowo phase on the earlier settlement remains of TRB community. This is confirmed by stratigraphic relationships from, for example, Sarnowo, Łąck, Leśniczówka and Zberzynek (Chmielewski, 1952; Rybicka, 2006, p. 67). However, as in the case of the settlement in Redecz, it was not necessarily a trace of an ephemeral and shortly-occupied settlement (Papiernik & Brzejszczak, 2018).

A wide range of arguments in favour of a significant closeness of the Danubian and TRB communities can be presented at this point, regarding not only their material culture but also, in the case of the Lowland, a significant biological similarity visible at the DNA level (Chyleński et al., 2017; Lorkiewicz et al., 2015). Focusing only on the scope limited to the reference to the BKC house by the unchambered tomb, it is also worth tracing that possible proximity not only in space but also in time.

Trapezoidal houses of the BKC in the Lowland were probably beginning built c. 4350-4300 BC and their construction horizon was fairly long (Czerniak et al., 2016). The youngest presently documented homesteads of this community were probably built on the outskirts of the then settling regions, after a deep crisis that affected their centres (Grygiel, 2008). This is indicated, *inter alia*, by the dates obtained for animal bones found in clay pits which were located in the vicinity of the trapezoidal houses: at site 18 in Olszewice, determined within the time range 3760-3640 BC (with a probability of 68 %) (3937-3540 95,%) (Żurkiewicz, 2011). In principle, the given chronological ranges do not raise any major objections in the context of locating them within the beginnings of the TRB in the Polish Lowlands (Nowak, 2017). It was at the border of the black earth *oecumene* of the BKC that the earliest TRB communities most probably emerged in Kuyavia (Czerniak & Kośko, 1993).

The topic of potential derivation of some tomb forms from the BKC longhouses were also open to doubt due to the details of the funerary rituals, being significantly different in the two communities. The strongly flexed position of skeletons laid on their sides and the characteristic elements of easily identifiable BKC burial goods, contrasted with the classical extended skeleton lying on its back and the modest burial goods found in the TRB tombs, create a significant gap in this hypothesis (Jankowska, 2005, p. 140). The extended position of the skeletons of the TRB individuals prompted the search for patterns of such an arrangement in the burials of hunter-gatherers – for which records from the Polish Lowlands were practically unknown, and only some distant, northern references were available (e.g. Larsson, 1989; Nilsson-Strutz, Larsson & Zagorska, 2013). A detailed analysis of the BKC sedimentary sources obtained from open area excavations in the Brześć Kujawski and Osłonki regions, revealed dynamic changes taking place in the late phase of this community development, including the funerary ritual (Grygiel, 2008, pp. 1914-1916). In this phase, extended, supine burials, almost void of any burial goods occurred, commonly located within the settlement of farm buildings, including within the houses themselves (cellars). The noticed traces of manipulation on the corpses, i.e. their fragmentation and displacement, may indicate an introduction of new rituals related to Ancestor worship. The author of this study believes that it illustrates a gradual transformation leading to the emergence of the GAC, however, it should be mentioned that – according to many researchers – the disappearance of the Danube communities was the result of the emergence of the eastern TRB group alongside the GAC (Czerniak, 1980; Czerniak & Kośko, 1993). The supine arrangements of human remains are also known from outside of the Kuyavian region of the Danubian cultures (e.g. Haüsler, 1994).

Nearly no aspect of genesis of the TRB can be assessed on the general, global scale of its range, and only local observations, such as those made in Kuyavia, gain significance. Both northern and western influences, extremely important for the development of that community, most likely reached in Kuyavia via Greater Poland – a region particularly poorly investigated in the time frames the author of this study is interested in.

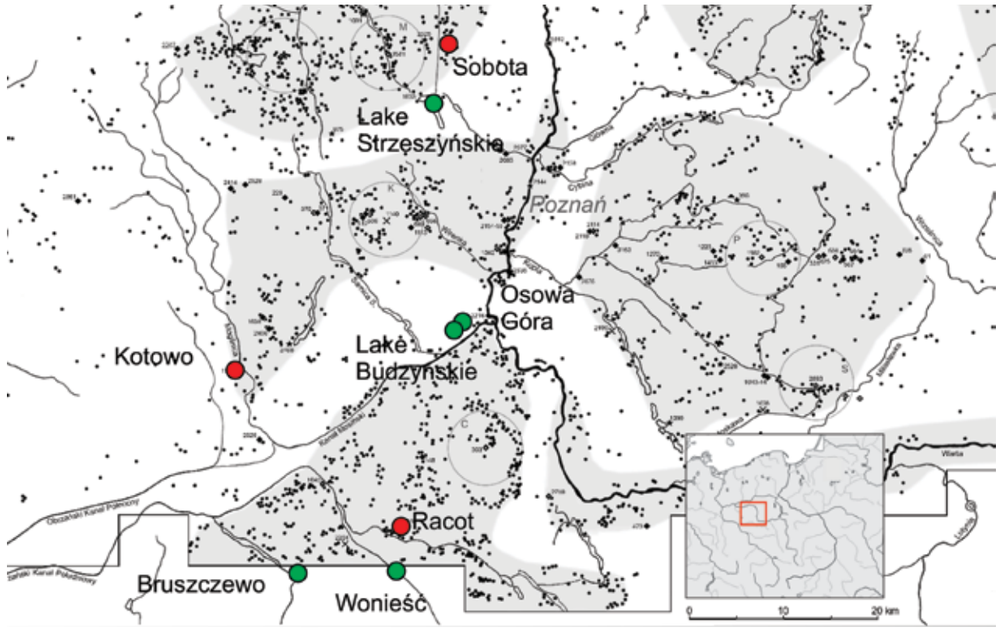

Figure 7. TRB Settlement *oecumene* in the basin of the middle Warta River. Red points indicate the important archaeological sites mentioned in the text; Green points indicate the archival sites where palaeoenvironmental studies were conducted (after: Wierzbicki, 2013, revised).

Figure 8. Visualisation of tombs from Sobota 52, Rokietnica commune, Greater Poland voivodeship (By T. Wiktorzak).

Greater Poland in the first half of the 4th millennium – prospects of new discoveries

The author's attention is here focused on the left-bank catchment area of the middle Warta River, formally assigned to Poznań Lakeland and the Poznań Warta Gorge (Kondracki, 1994, Figure 9).

Probably at the beginning of the 4th millennium, the settlements BKC – quite poorly marked in the middle Warta basin BKC, disappeared. The main materials of these communities in Greater Poland consist of 36 sites clearly concentrated in two clusters over the middle Obra and the lower Barycz rivers (Jankowska, 1999). Among them, a better explored settlement is located in the Barycz valley, in Racot – sites 18 and 25. During the excavation work, the outlines of at least 14 long trapezoidal houses were unearthed there. Within one of them, a woman was buried (as was already mentioned) 200 years after it was abandoned by the inhabitants. Unfortunately most of the archaeological material from this discovery remains unpublished. The available ^{14}C date series under Bayesian chronological modelling indicates that this settlement was abandoned by its inhabitants c. 3965-3915 BC (with a probability of 68%) (Czerniak et al., 2016).

The oldest dated TRB site known in Greater Poland is located within the section of the area of interest of the author of the study i.e. at a relatively short distance of 25 km from the aforementioned settlement in Racot (Figure 7). Materials from Kotowo, for which 3 AMS dates were obtained, indicate an existence of a TRB settlement there within the range of 3915-3715 BC (with a probability of 68%) (Żurkiewicz, 2020). This gives an interesting perspective of the existence of those two communities as being close both spatially and temporally.

As was emphasized in the introduction, until recently, the area of large TRB settlement concentration from central Greater Poland had not been not associated with any particular monumental tombs (Figure 7) (Wierzbicki, 2013). The breakthrough came only with an attempt of archaeological interpretation of the LIDAR images created for the purposes of the IT System for Country Protection against Extreme Hazards (Polish acronym: *ISOK*). Thanks to these sources, it was possible to single out the first cemetery consisting of as many as 5 long barrows. The system of radiating mounds with a length of 132-145 m and with preserved mound heights of up to 1.5 m, was subjected to preliminary archaeological reconnaissance survey (Figure 8). The construction features of these tombs enable the researchers to classify them as classical 'Kuyavian' tombs (see above: type A), and their parameters place this discovery among the longest preserved structures of this type (Figure 4).

There are many indications that further analyses currently being carried out in the middle Warta basin region will make it possible to identify similar structures of this type, which may provide the possibility of creating a new interpretation of the origin of the local TRB communities. So far, the total lack of unchambered tombs in the Greater Poland region had been associated with their (aforementioned) function of constituting rights to use the land (Wierzbicki, 2006, 2013). What is more, their absence was supposed to prove the local origin of the TRB from the hunter-gatherer communities to which this land was always supposed to belong: no additional, symbolic marking of this fact was necessary.

Further research will certainly bring more information about the identity of the investigated community from the first half of the 4th millennium, but some questions will still remain open about the scale and dynamics of cultural transformations taking place at the time in the central Greater Poland region. It would be particularly important to indicate continuity or its lack in the scope of settlement processes in the time of the disappearance of the BKC and the emergence of the earliest TRB communities. An attempt should also be made to estimate the intensity of the ongoing settlement processes related to the Sarnowo and Wiórek TRB phases.

In light of the current state of the research, the whole chronological range of this community in the central Greater Poland is about 1500 years, with which over 3,000 archaeological sites are connected, but only in a small percentage associated with a specific phase of development. In view of the stagnation observed for many decades in the development of archaeological research on the Neolithic of Greater Poland, the lack of detailed regional studies on the subject, or even basic publications of significant source materials covering the region (Wierzbicki, 2008), the possibilities offered by palaeoenvironmental studies must be appreciated.

As far as the Central Greater Poland River Basin is concerned, several attempts to identify the environment in the time period of interest can be indicated (Figure 7). The materials obtained from the pollen analysis of the peat bogs and the lake sediments from the Obra river basin in Osowa Góra and Budzyńskie Lake seem to be of particular significance (Ołtuszewski, 1957; Szafrański, 1968, 1973). The more recent palaeoenvironmental studies conducted mainly for the Early Bronze Age settlement in Bruszczewo remain cognitively valuable (Haas & Wahlmüller, 2010) as well as pollen diagrams obtained from the lacustrine sediments taken from Wonieść Lake (Dörfler, 2011) and Strzeszyńskie Lake (Pleskot, Tjallingii, Makohonienko, Nowaczyk & Szczuciński, 2017). However, the data presented above do not relate directly to the settlement *oecumene* of the central Greater Poland TRB. Hence, obtaining such data correlated with the possibilities of evaluating the level of anthropopressure (with a possibly high temporal resolution) could significantly affect the aforementioned research problems (Figure 9). Additional inspiration is also provided by treating the mounds of the unchambered tombs themselves as an archive of palaeoenvironmental records that can be source of rich information about the world in which the builders of those structures lived.

Figure 9. Exploration of sites for palaeoenvironmental studies (Photo: D. Żurkiewicz).

Conclusions

The emergence of unchambered tombs in large areas of central Europe may indicate the existence of one coherent idea uniting their builders and users. From today's perspective, it is extremely difficult to even think of the right questions that could bring modern people closer to understanding the world of the people of the first half of the 4th millennium. It seems that maintaining a high level of detail in the regional research of this issue, using both the classical methods of archaeology and those offered by the disciplines supporting this science, gives a unique chance to grasp at least some remnants of the past reality of those communities. A description of the cultural as well as natural background of the transformations taking place within the middle Warta river basin would provide the possibility to relate it to broader spatial and temporal contexts of Central Europe. Also, it would allow for a proper assessment of the role of Greater Poland in the transmission of cultural patterns of the time.

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