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# Landscapes and Human Development: The Contribution of European Archaeology

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# Does a Periphery Look Like That? The Cultural Landscape of the Unetice Culture's Kościan Group

By Mateusz Jaeger and Janusz Czebreszuk

## Introduction

The Kościan Group (later KG UC) was situated in the northeastern part of the Unetice Culture (UC) ecumene. Within the model paradigms of worldview in the Bronze Age the geographical location of KG determined its definition as a periphery. The main premise of the core-periphery model is the belief that human communities remained in a state of interaction that fed its progress. In the historical situation discussed, a centre was identified with developed proto-state structures, the urbanized areas of the Aegean-Anatolian civilization zone. They were characterized by an advanced division of labour, craft specialization, developed technologies and systems of exchange and transport of processed goods. The territories exploited by the centre were regions with less advanced social structures and less complex economic mechanisms. While for the centre the strategic resources such as metal were a commodity, namely, an element of market economy with a defined exchange value, in the case of core-peripheries the supremacy of the symbolic value of the new materials is postulated; for the local elites they would first of all represent the means for legitimisation of power and a distinct social status. A major feature was the hierarchical line-up. Those were the elites of the centre that decided about the directions and nature of relations with the peripheral communities (MAKAROWICZ 1998, 291–294; see there for more literature). As part of the development of the core-periphery model, local variants of its functioning in relation to the area of Central Europe were posited (KRISTIANSEN 1987; SHENNAN 1993). According to those suggestions, central areas were supposed to be located in the Alpine-Danubian territories and

the region of Central Germany (SHENNAN 1993, 61; VANDKILDE 1996, 261, 299). The advantage of such an approach is the possibility of passing from the macro-scale, characteristic of the classical concept of the core-periphery, to the micro-scale level on which relatively smaller areas along with their specific tempo and character of their evolution can be analysed (MAKAROWICZ 1998, 294).

The key feature for our reflections on KG UC in the core-periphery context is the possibility of creating secondary centres with their own exploitation areas (MAKAROWICZ 1998, 294). In the synthesising presentation penned by B. Zich, KG is considered to be model example of a peripheral group situated in the buffer zone and gaining in significance only for a brief period. The author believes that KG did not reflect the full sweep of changes characteristic of the Central Germany UC centre, which was a proof of its peripheral nature (ZICH 1996, cit. in MAKAROWICZ 1998, 295).

In the present paper we would like to discuss anew the question of the nature of the cultural process connected with the emergence and functioning of KG UC. The reason is that, in our opinion, the wealth and degree of complexity of the sources related to the Wielkopolska enclave of UC indicate the existence of a local centre in southwestern Wielkopolska, its distinctive features being a developed economy, exchange and craft production - with metallurgy in the leading position - documented in the Bruszczewo settlement, and the stability of structures of power unique in comparison to the whole Unetice ecumene as displayed by the complex of “princely graves” in Łęki Małe.

## The Fortified Settlement in Bruszczewo

Bruszczewo is located in the southwestern part of Wielkopolska. Excavations of the place were conducted in two stages: in the 60s of the past century

and over the last ten years by a Polish-German team from the universities of Poznań and Kiel (formerly Bamberg) (CZEBRESZUK / MÜLLER / SILSKA 2004).

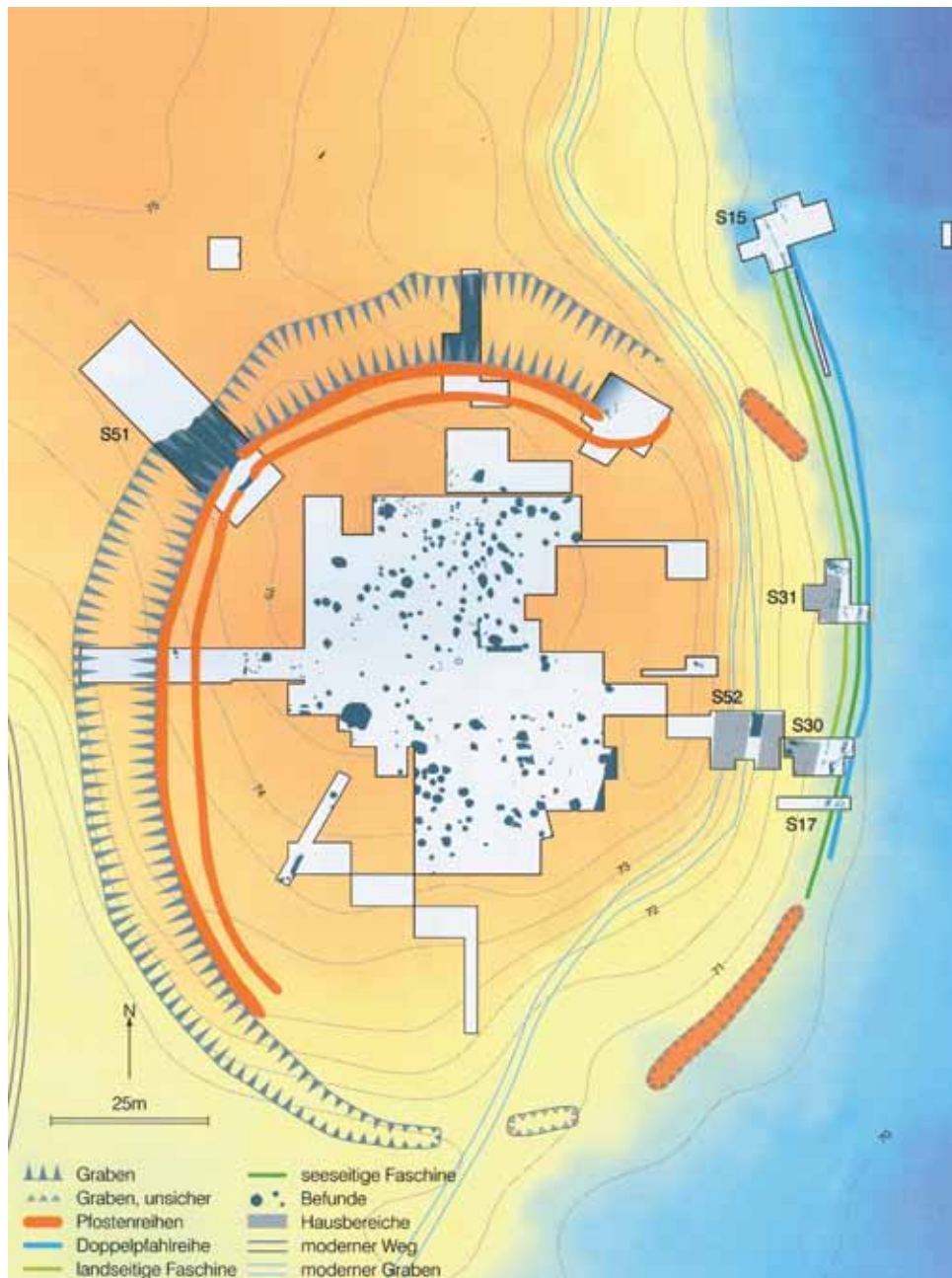


Fig. 1. General plan of the settlement showing trenches and the reconstructed course of fortifications (after KNEISEL et al. 2008).

### Fortifications

Years of excavations and a geomagnetic prospection of the settlement allowed to recreate the structure of its fortifications (DUCKE/MÜLLER 2004, 64–66, 67, Abb. 25). The main elements were a ditch, 4 metres deep in places, and a double row of palisades of big oak trunks (Fig. 1). Additional elements captured in the shore zone of the original lake encircling the headland are two lines of fascine constructions and an outer massive wall built of halved trunks jostled between double posts (Fig. 2). All the

elements of the fortifications are considerable in size and display qualities that allow the definition of their military, defensive function.

The width of the ditch in particular sections oscillated between 10 and 22 metres. In all examined sections its depth exceeded 1 metre, reaching 4 metres in the deepest ones. A further obstacle to crossing the ditch was the palisade. The excavations failed to provide evidence of an embankment which was usually raised with the earth dug out during the ditch con-

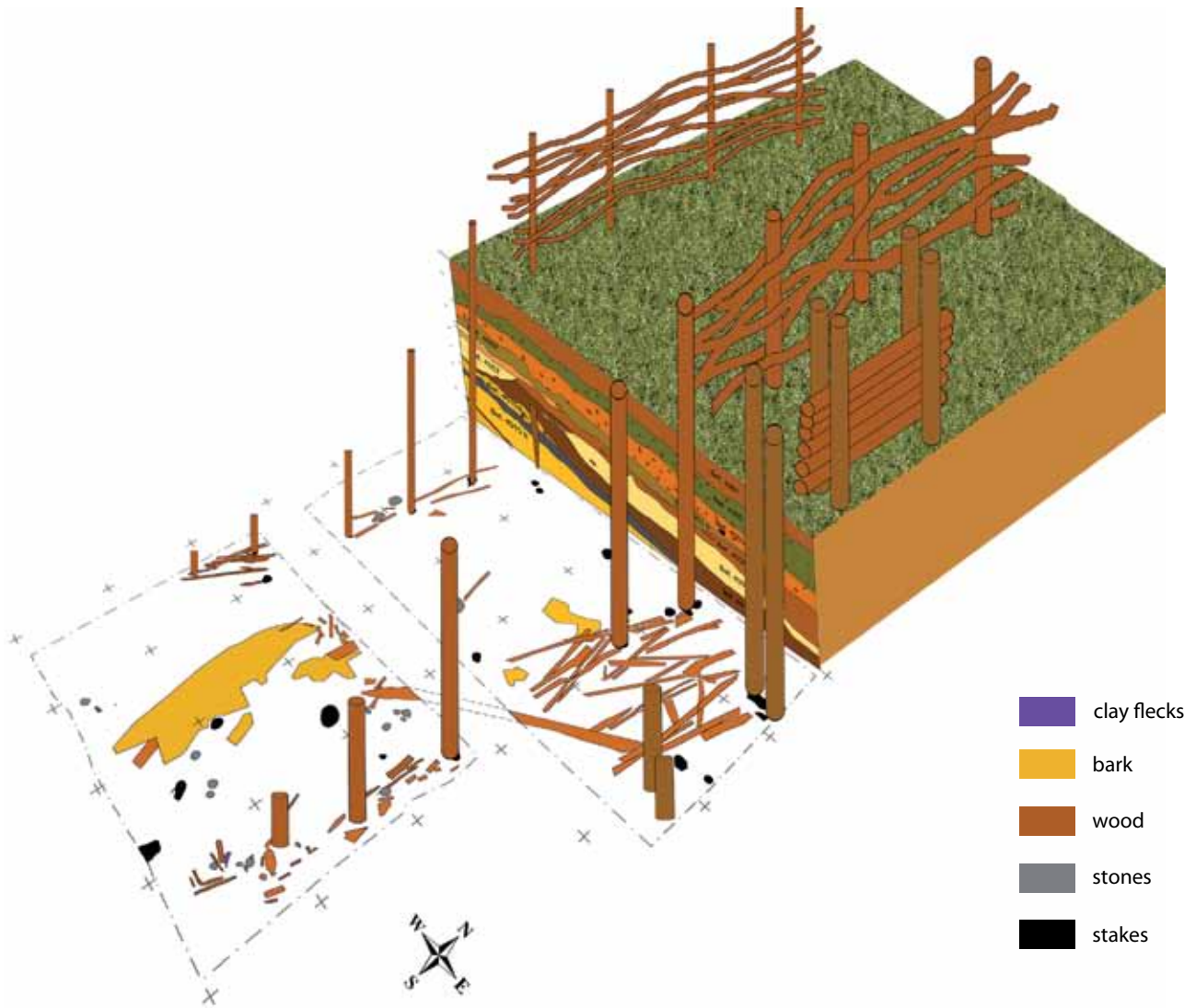


Fig. 2. Bruszczevo – reconstruction of three lines of fortifications in the peat zone of the site, trench 30 (after KNEISEL et al. 2008).

struction. Probably in the Bruszczevo case a similar function was performed by the palisades. Today it is very difficult to estimate their original height. The diameter of posts dragged from the bottom of the ditch (ca. 40 cm) and the depth at which they had been fixed in the ditch bed (ca. 60–70 cm) give reason to believe they might have even stood 3 metres tall (cf. IVANOVA 2008, 136).

At the time of their discovery the constructions erected on the edge of the headland were less than a metre high. As in the case of the palisades' remains, it is hard to assess their original dimensions. However, basing on single finds of horizontal fallen

beams (up to 5 metres long) it can be assumed that here again the constructions reached up several metres. The investigations in the seasons 2005–2007 allowed to partially identify the entrance zone of the settlement. A geomagnetic breach in the fortifications recorded during the research corresponded to the gap discovered in the line of the palisade (DUCKE/MÜLLER 2004, 63, Abb. 23). Its width (ca. 2 metres) can be also considered in strategic terms. A gate of that size could be effectively defended and at the same time remained functional, namely, it allowed a free movement both of people and animals as well as carts<sup>1</sup>.

<sup>1</sup> During the 2004 season a fragment of a wheel hub was discovered (KNEISEL/KROLL, forthcoming).

There is no definite evidence that further constructions existed that might be connected with the protection of the entrance. Numerous findings of daub with impressions of wooden elements (up to 5 cm in diameter) show that the wooden construction was reinforced with clay.

Dendrological research has revealed a preferen-

tial and selective use of tree species employed for the building of the palisade. The use of oak could be seen as a deliberate practice to make the demolition of the construction more difficult. Since at a certain age (60–70 years) this species is relatively fire-resistant (ROMANOWSKA-GRABOWSKA 1991, 221), it was probably often used as part of the defensive tactics.

### The Function of the Fortified Settlement in Bruszczewo

The formal features of the settlement described above explicitly manifest its military potential. All the elements mentioned could provide an effective protection of its inhabitants and their possessions. However, in reference to different regions of the world and to different prehistoric periods another, symbolic meaning of fortified settlements is very often emphasised (ARKUSH/STANISH 2005, 6; ALUSIK 2008, 147–148). As aptly noted by Mariya Ivanova in the current debate, a symbolic meaning can be only of secondary character that ensues from the particular object - in our case, a fortified settlement - performing its proper function which is protecting the inhabitants from physical threat. The author does not, however, address in greater detail the issue of additional roles that might have been performed by fortified settlements. We believe that the case of Bruszczewo can demonstrate that in some situations secondary functions could have become primary ones, and that a heavily and consistently fortified settlement need not have meant a permanent threat to the lives of its inhabitants. On the contrary, it may mean a thriving society, enjoying power and prosperity totally unrelated to military might.

First of all, the often quoted argument that links the construction of fortifications with some kind of leadership and labour organisation cannot be ignored. This follows plainly from the logistical complexity of such an enterprise which involved an accumulation of the adequate amount of building material, its processing and organisation of work, to mention just a few arguments (for a contrary view, see MIERZWIŃSKI 1989, 192–193). The scale of the enterprise is very difficult to estimate, since we do not know the number of people who worked on the construction of the fortifications. The results of anthropological studies of the only grave discovered in Bruszczewo offer some idea as to the extent of effort undertaken by at least a part of its population (Fig. 3). They give grounds to state that the man, about

25 years old at the time of death, had performed a very hard and monotonous job of lifting or hauling heavy loads for years. The work led to pathological changes in his skeleton, particularly conspicuous on one side of the body (IWANEK/PIONTEK/NOWAK, forthcoming). It can be hypothetically assumed that the man's work consisted of dragging trunks used for building and repairing the palisades, or else carrying containers/baskets with the earth dug up during the construction of the ditch<sup>2</sup>. At the time of his death the man was well nourished but the job he had been doing in life caused permanent damage to his health and he obviously had problems in moving (IWANEK/PIONTEK/NOWAK, forthcoming). There are no sources that would directly define the social status of the person we have hypothetically considered to be one of the builders of the fortifications in Bruszczewo<sup>3</sup>. The arduous and health-damaging toil over such a long time does not, however, agree with the image of a local elite member.

Next to the allotment of roles in work related to the construction and repairs of the fortifications another relevant aspect was the employment of a particular technology. Research in the peat zone of the site produced a number of traces linked with woodworking. There was wood waste of hewing and above all a large amount of halved stakes and posts with hewn pointed ends. The analysis of the traces of working visible on the wood found in Bruszczewo allows to state definitely that metal axes were used in carpentry (KNEISEL/KROLL, forthcoming). This is a conclusion of considerable relevance. It means that the inhabitants had at their disposal either a sufficient amount of raw material or ready bronze artefacts. It should be also noted that bronze axes, found in very numerous deposits throughout the Bronze Age, probably functioned as ingots of sorts, products that after being used as hewing tools ended up their lifecycle (*sensu* KOPYTOFF 1986) in a metallurgist's crucible. In this sense the Bruszczewo fortifications provide an indirect proof of

<sup>2</sup> In Bruszczewo there is no trace of an Early Bronze embankment made of earth from the digging of the ditch. The material must have been transferred to some other place. Considering the size of the ditch, it must have been quite an amount of earth.

<sup>3</sup> The furnishings of the grave did not reveal artefacts classified as prestigious. The dead man was placed on a wicker mat. At his head there was a roughly worked pottery sherd, and near the hands two stone hammers (Kneisel, forthcoming).

the form in which bronze could have reached the settlement. The “metallurgist’s hoard” described below also contained small bronze axes and a much worn out dagger blade (Fig. 4). They were probably a set of objects intended for recycling.

It can be said, with some exaggeration, that such effective tools like bronze axes (MATHIEU/MEYER 1997) played a major part in the success that included not just the erection of massive fortifications but the subordination of a considerable forested area, originally enclosing the settlement, as well. Palinological research conducted as part of the Bruszczevo project revealed a very high degree of anthropopressure around the headland. Intensive farming and animal husbandry economy exposed in pollen profiles inevitably meant deforestation. We believe that the impression of monumentality made by the fortifications of the headland was intensified by the extent to which the immediate environment had been transformed. Pollen profiles from Lake Wonieść, several kilometres away from Bruszczevo, show a small degree of anthropopressure. A fortified settlement in the middle of a tamed farming landscape, with fields and pastures, must have been a central point ever present in the consciousness of the local communities. The surface survey of Bruszczevo’s microregion shows clearly the absence of sites of comparable rank. Hypothetically it can be assumed that for many people the heavily fortified settlement was the most monumental object they had ever seen (NEUSTUPNÝ 1995). Such an image of the settlement conveys an unmistakable message about the features and potential of its inhabitants. Every single stake of the 3-metre high palisade was a proof of the technology, bronze material and the suitable power and group organization at their disposal. The fortifications did not just display the readiness of the inhabitants to defend themselves but also gave them the possibility of controlling a defined space, people and events within the fortifications.

Unequivocal evidence of warfare and violence is practically unknown from the KG area. It is for the most part marginally legible in that period of the Bronze Age (WEINBERGER 2008). Although lack of proof is not a proof of lack, it is difficult to show potential sources of physical threat in the archaeological material. The only artefacts that could be connected with warfare are small flint arrowheads discovered in the settlement. Their definite estimate that would exclude their use for hunting is impossible, if only because of the presence of wild species bones found in the osteological material.

### The KG Metallurgy

Research carried out so far has revealed a considerable amount of sources that confirm local metallurgi-



Fig. 3. Grave from Bruszczevo, trench 30 (Photo: J. Kneisel).

On the assumption that immediate physical danger was not the cause for constructing the fortifications in Bruszczevo, alternative models accounting for the phenomenon must be proposed. In view of the mentioned precedence of the military function over the purely symbolic one it can be supposed that the fortifications served as a “passive” form of defence, namely, they constituted a preventive protection of the settlement from possible danger. On this assumption one has to consider what exactly distinguished the Bruszczevo settlement from other, “open” settlements that might have exposed its inhabitants to aggression. We believe that the arguments presented below and which relate to Bruszczevo’s role in metallurgical production and long-distance exchange of amber within the KG area answer this question.

cal production. Apart from the “metallurgist’s hoard” (cf. remarks below) consisting of two axes and a dagger

blade, the settlement also yielded metallurgical tools: a stone casting mould, a casting spoon and two tuyeres as well as finished objects: an axe, a dagger blade and a number of small items including a pin and objects described as awls (CZEBRESZUK/MÜLLER/SILSKA 2004:18). Numerous small unfinished objects and metal droplets along with the range of the tools show explicitly that bronze was smelted in the settlement. It cannot be decidedly stated whether the finished artefacts were produced by melting old damaged ones, or

by combining metallic fragments of tin and copper in a crucible (cf. KUIJPERS 2008, 19–20).

The analysis of the components of the material used for objects found in Bruszczewo allows one to ascribe them to two types of copper: Bennewitz and Bresinchen. Following the classification developed by K. Rassmann the artefacts are overwhelmingly grouped within horizons III (2000–1850 BC) and IV (1850–1650 BC). Only one single analysis can be linked with horizon II (2100–2000 BC) (RASSMANN

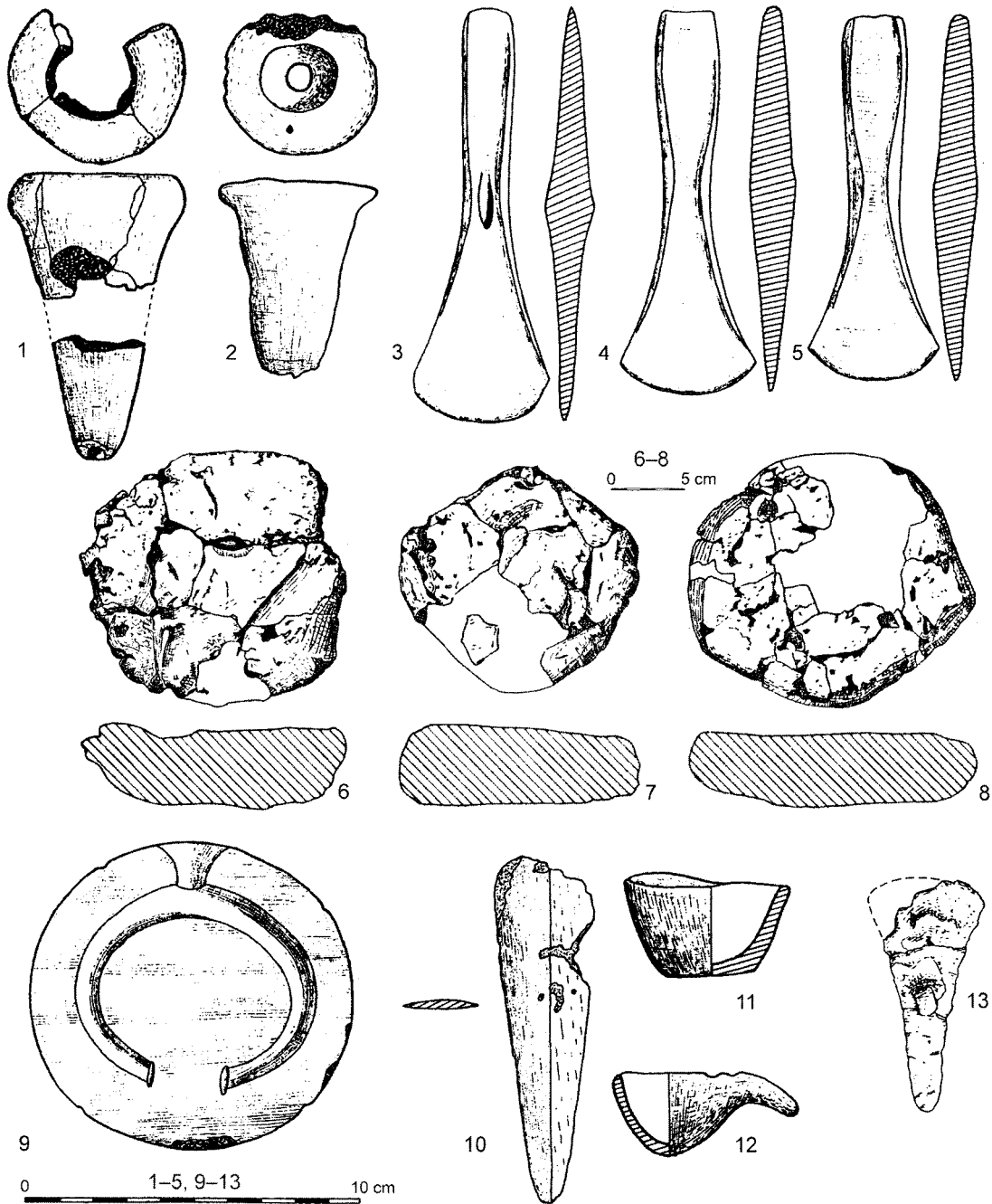


Fig. 4. Bruszczewo. Finds related to local metalworking (after CZEBRESZUK/MÜLLER/SILSKA 2004)

2005, 470, Abb. 4). Irrespective of the results of archaeometallurgical analyses to come, at the present stage it can be stated that metal working shows a fairly early chronology and, what's equally important, protracted duration that probably lasted throughout the existence of the settlement.

Contrary to the label "the metallurgist's hoard" given to the group of finds excavated during the first stage of research (PIECZYŃSKI 1985, 166, 168, fig.1), they do not constitute a homogenous assemblage but come from two different zones of the settlement,

devoid of any traces of intensive economic or dwelling activity (CZEBRESZUK/DUCKE/MÜLLER/SILSKA 2004, 75).

Apart from the briefly described sources gained from the Bruszczewo settlement itself, the numerous hoards found within the KG region are worth attention. The most abundant are the open-type solid bracelets (35 specimens), necklaces (17 specimens), daggers (14 specimens), axes (13 specimens) and earrings (10 specimens, including 6 golden ones) (SZYDŁOWSKI 2004, 37).

### Metallurgy in the Economic<sup>4</sup> Sphere

One of the elements in the artefact collection in question is a casting mould for solid bracelets (Fig. 4:9) (CZEBRESZUK/MÜLLER/SILSKA 2004, 19, Abb. 4). The objects are typical of the territories in western Poland and the mid-drainage basin of the Elbe (BLAJER 1990, 46–47). Along with the necklaces with loop endings and Salez type axes, they constitute a group of standardised objects circulated in various regions, possibly used as commodity money (LENERZ DE WILDE 1995; KRAUSE/PERNICKA 1998; MÜLLER 2002, 272, Abb. 6; PARE 2000, 27–29). They would have a specified weight, modified if necessary (SHENNAN 1995, 305; cf. contrary view: MOUCHA 2005, 29, 31). Along with their standardised form

solid bracelets were also made of a precisely specified type of copper. Both features - the form and the material - allowed one to define the quality and weight and, by the same token, the potential value of the objects (PARE 2000, 27–28; KRAUSE 2003, 188–189). The presence of this particular bracelet form in many hoards of the KG region (e.g. Poniec, Kokorzyn) and its local production in the Bruszczewo settlement indicate that KG communities functioned within a precisely defined network of the circulation of cultural patterns. It can be hypothetically assumed that the settlement was a centre that radiated the knowledge of the weights and measures system which was developing in the Bronze Age (PARE 1999).

### Metallurgy in the Socio-Cultural Sphere

In Polish archaeology the issue of metallurgy in the socio-cultural sphere was first raised in 2001 by J. Czebreszuk (CZEBRESZUK 2001, 24–25). His notion of "*embedding the era in the sphere of the sacrum*", though only briefly mentioned, expresses the problem that faces every archaeologist who studies the life of prehistoric communities. Without going into details of the current debate on the subject, admirably presented by J. BRÜCK (1999), let us confine ourselves to a pertinent conclusion that follows from her argument: a ritual, in the perspective of modern archaeology, is a particular outcome of the post-Enlightenment rationalism and the colonial era, a juxtaposition of the wild with the civilised. In effect - in archaeology a ritual appears when our own judgment, both modern and that drawn from centuries-old accumulation of experience and advancement of natural sciences, fails.

Assuming the inseparability of the everyday, seemingly common aspects of the life of prehistoric

communities and their beliefs (BRADLEY 2005), a presentation of model attempts to account for many phenomena, metallurgy included, could be attempted. As far as the research into early Bronze Age metallurgy was concerned, the postulate aroused no interest on the part of Polish archaeologists, mainly focused on typo-chronological studies (GEDL 1980, 1983; BLAJER 1990). The problem also applies to the sources from the Bruszczewo settlement and the many finds known from the KG area (BLAJER 1990, 84–85, fig. 2). The principal hypothesis we would like to test at the present juncture is the idea of the increased possibility of monopolizing metallurgy by the elites in the territories situated at a considerable distance from the ore deposits (KG) that went along with the markedly growing demand for prestigious objects, apparent in the northern zone of the UC in fluence. A brief survey of the existing maps showing the distribution of objects traditionally perceived as prestigious - solid

<sup>4</sup> The term *economy* has been drawn from the world of modern concepts and used here to bring order to the narrative connected with the potential exchange value of bronze and

bronze objects. The inseparability of the economic sphere (and not only that!) and ritual in the communities considered will be discussed below.

handle daggers and halberds - reveals a tendency towards their accumulation in the area discussed<sup>5</sup> (KRAUSE 2003, 187, Abb. 167; SCHWENZER 2004, 195, Abb. 2). Seen in these terms, metallurgy would not have been the economic basis of the group's subsistence but a deliberately employed tool in the hands of the organizers of the exchange, used for winning and maintaining their privileged status in the community.

A number of deposits containing metal artefacts, sometimes with one standardized type of items - known as *Barrenhorter* - were discovered in the circle of the UC influence, including the Kościan Group (e.g. BENNEWITZ/Radostice/Havalda/PONIEC; KRAUSE 1998, 171, Abb. 7; 2002, 47, Abb. 1; MOUCHA 2005, 106, 146; BLAJER 1990, 109–110). Their definite interpretation is complicated. On the one hand, the evident grouping of particular products into collections of a defined size (e.g. the Ragelsdorf hoard, cf. MÜLLER 2002, 273, Abb. 7) and their standardization that can be sometimes

observed give grounds to believe that we are dealing with objects functioning as commodity money (LENERZ DE WILDE 1995). On the other hand, however, the conditions in which many hoards had been hidden indicate that there was no intention of recovering the deposited artefacts. The latter circumstance leads us to believe that because of their value in some cases the hoards constituted, as it were, a “*gift to the gods*” (JUNK/KRAUSE/PERNICKA 2001). Apparently, a separate group of the stored objects, mainly because of their symbolic value, were daggers and halberds (Fig. 5) (HANSEN 2002, 156–160). They also came up in territories free of the specific forms of barrow burials (the “*princely graves*”), thus possibly performing a similar function as a symbol of prestige and of access to bronze metallurgy.

Potentially, then, the control over the metallurgist production in Bruszczewo was not just a monopoly hungry for economic profit but might be connected with an important role of the settlement in the ritual



Fig. 5. Hoard from Granowo (after CZERNIAK 2008).

<sup>5</sup> The interest of the peripheries (in our opinion, peripheral to KG as well) in the new material in the form of prestigious objects was most vividly demonstrated in the flint imitations of bronze artefacts (RASSMANN 2000; CZEBRESZUK/KOZŁOWSKA 2008). It is worth noticing that linguistic studies point at the possibility of an erroneous judgement

of the archaeologists concerning the interpretation of flint forms whose shape referred to bronze products. Following linguistic findings about the nomenclature connected with metallurgy, in the early stages of the dispersion of the new material an identical approach to stone, amber and metal can be assumed (KOWALSKI 2000, 205-208).

life of the region. In this perspective, the economy of the site might be defined in the terms of a *prestige economy*, i.e. a system based more on symbolism and manipulating with social relations, and in which activities in the ritual sphere and broadly understood *sacrum* are an inherent element of economy (KIM 2001, 462–463). The fundamental paradox of the popularity of bronze lies in the nature of the copper and tin alloy - their ores are very rarely found together in bigger amounts (PERNICKA 1998, 135). Because of this, the advent of bronze forced those wishing to come into its possession to intensify contacts and exchange. Along with the expanding acquaintance with the metal went the knowledge of its properties, methods of working, and also a package of cultural associations which in a short period led to similar cultural behaviours over the extensive area of Central Europe (cf. below, remarks on the cemetery in Łęki Małe). Metallurgy connected with the Unetice Culture circle probably was not just a technological innovation. The expansion of the new material was in all likelihood accompanied by a whole range of cultural behaviours related to the production and employment of the metal<sup>6</sup>.

The metallurgy of the Unetice circle was of specific stylistic and formal character. Despite regional differences the most important elements, such as the production of halberds, daggers and a number of specific ornaments, remained unchanged. A major feature that confirms the unity of the Unetice metallurgy was also a similar technology, visible e.g. in the use of a stable instrumentation of metallurgical tools. An artefact discovered in 2007 in the Bruszczewo settlement is particularly telling in this context. It is a small object pointed at one end and spatula-shaped at another, with a thickening in the

middle (Fig. 6) (MOUCHA 2005, 473, Table 179). The object has not been ascribed any functional definition, a fact reflected in various terms used to name it. Beside “an awl” (German *Pfriem*) (MOUCHA 2005, 128, 164) the tool was also dubbed “a punch” (SARNOWSKA 1969, 139). The terms suggest some connection with hide or metal working. A scrutiny of the context of analogous findings permits a claim maintaining that the second interpretation is highly likely. The deposit from Skarbienice contained a tool of such type with bronze ornamentation, a chisel with parallel ends, an axe, a spoon-shaped axe and a bronze rod (Fig. 7). The circumstances of discovering the deposit indicate that it was furnishings of a grave rather than a hoard (SARNOWSKA 1969, 139–140)<sup>7</sup>. W. Sarnowska took the metal rod to be a “straightened bronze bracelet” (Fig. 7a); in view of the present findings it should be seen as a half-finished product of a necklace with loop endings or a specimen of the so-called *Ösenringbarren*. The last of the objects was long accepted to be a half-finished product for making other artefacts. Metallographic studies, however, revealed that an astonishingly large number of such objects were preserved in the archaeological material. It was also observed that the majority of those objects were deposited in, at times, very big collections. This gave rise to two hypotheses. The first one points at the possibility of producing a concrete type of object, with defined material properties and so with value as well, specifically with the aim of ritual depositing.

The second one suggests that these products should be perceived as commodity money (KRAUSE/PERNICKA 1998). The relative wealth of the furnishings in the apparent burial from Skarbienice, manifested by a spoon-shaped axe interpreted as one of the sta-



Fig. 6. Punch from Bruszczewo, trench 51 (Foto: S. Jagiolla).

<sup>6</sup> We believe that one of the arguments supporting this opinion is the lack of metal products in the area of the Mierzanowice culture at the time. As observed by S. Kadrow, the communities seem to have been deliberately excluded from the UC circulation of cultural patterns (KADROW 1998, 407). Of course, it cannot be determined now which side decided the state of affairs. Yet it is worth reflecting whether the reasons, apart from the absence of individuals/groups that might

have initiated a far-reaching exchange, were not ideological and cultural which the communities in question could have been aware of. Hypothetically, it can be assumed that in some cases they could have brought about conflicts (cf. remarks: JOCKENHÖVEL 2006, 105, 108).

<sup>7</sup> The monograph on the hoards from the Early Bronze Age by W. BLAJER (1990) does not include the find among the group of deposits either.

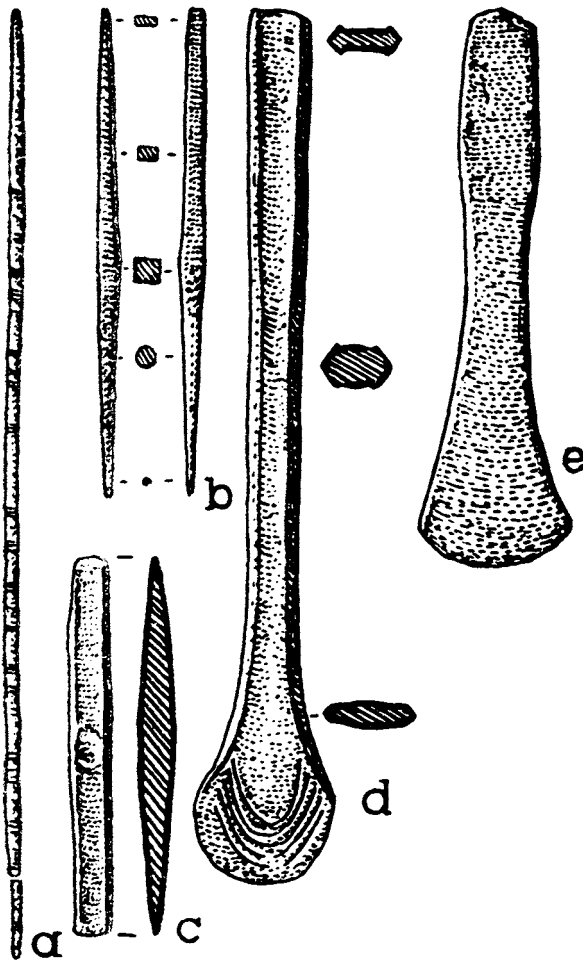


Fig. 7. Hoard from Skarbieniec (after SARNOWSKA 1969).

tus symbols in the Early Bronze Age (HAFNER 1995), imply the exceptional status of the interred individual. The discovered objects (a punch and a half-finished product of a bronze ornament) could be indicative of its links with metallurgy. The presence of a chisel does not necessarily weaken this hypothesis. The analyses of sources on pottery making, carpentry and metallurgy made for the Vaty culture settlement in Százhalombatta, revealed a close relationship of the crafts mentioned and did not contradict their fundamental separatedness<sup>8</sup> (SOFAER 2006).

Highly significant is that the objects/punches mentioned above in all cases, irrespective of the place of

their discovery, reveal a considerable level of standardisation. If we assume that they were employed as chiselling tools, mainly used for putting decoration on metal products, we should reflect on the cause of their formal similarity. The functionality of the tool does not seem to have been a decisive factor. We believe that the most important reason was the existence of something that might be called the principles of the art of metallurgy. The making and employment of a suitable tool could decide about the success of the decoration stage. Despite the long sequence of development and the existence of local traditions, ornamentation of the “Unetice” objects (similar to the forms range) always carried a specific feature. The ornamentation need not have been a fashion and similarly to the stylistics of pottery, it conveyed a wealth of symbolic meanings, exalting their role to the rank of socio-cultural auto-identifiers (HODDER 1982). Possession of knowledge of the rules for making particular objects and their decorating was probably an important element which in the conditions of limited accessibility could have become a source of power and strength. In this case the key term, in our opinion, would be meaning, that is a feature that bestows the proper value on the object. The conception refers to the two-way course of metallurgical production in the Bronze Age, postulated in literature (ROWLANDS 1971; LEVY 1991; KUIJPERS 2008). T. Kienlin’s metallographic analyses showed that the younger section of the Early Bronze Age (BrA2) witnessed standardisation and dissemination of metallurgical knowledge connected with the production of concrete axes (Langquaid). In our opinion this was the effect of the transmission of knowledge within simple social structures, with no observable monopolisation on the part of the elites whose existence can be surmised in some of the fortified settlements communities (KIENLIN 2007). In the area of the Polish Lowland there was a known case of finds connected with metallurgy from a small open settlement (RYBINY, see below). In our opinion, once the two-way course of metallurgical production is assumed, easy access to axe making does not contradict the possibility of monopolising some areas of metallurgy connected with particular stages of the production process (decorating), or making objects of specified character (halberds). As the technology spread and an increased amount of raw material was

<sup>8</sup> It can be assumed that wood working was one of the crafts with rich cultural associations. Metal axes helped to effectively tame the new land for cultivation. In the case of chisels, sources from other regions offer some insight into the meaning of their skillful use. From the Nordic zone we know specimens of specific campstools and wooden cups decorated with tin nails traditionally ascribed to the higher social class

(KRISTIANSEN/LARSSON 2005, 57–58) as well as objects confirmed in rock art, such as boats and chariots whose production undoubtedly involved a high level of skill (LARSSON 2004; KRISTIANSEN 2004). There is no such legible source base for the Unetice culture, but the fact of depositing chisels in specific rich contexts such as the princely grave from Leubingen (HANSEN 2002, 152, Abb. 1) justifies the analogy.

around, the importance of manipulating with the added value - meaning - might have grown, if only by elaborating rituals. The modern world has not gotten rid of this characteristic, either. DAVID FON-TIJN cites in his work (2002) an interesting analogy with today's wedding rings which acquire the appropriate symbolic meaning solely in the course of the wedding ritual. In this sense, they have no meaning as such except for that involving their physical intrinsic features.

In the KG region, situated away from ore deposits, getting the material and knowledge of its working must have involved starting and maintaining an exchange network. As opposed to the modern world, all object transfers presented on the distribution maps beloved by archaeologists meant a physical relocation of people (cf. JOCKENHÖVEL 1991). In prehistoric communities the value of experience and knowledge related to traversing space was immense and often underwent mythologisation and sacralisation (KRISTIANSEN 2004, 445–447). Distance was always connected with the social, political and, above all, ideological significance (HELMS 1988; KRISTIANSEN/LARSSON 2005, 32–61). Each journey meant crossing the boundaries of a symbolic, cosmological, and sometimes probably also ethnic kind. Today it is not possible to exactly capture those boundaries. Archaeological sources, like the so-called *Passfunde* to give an example, reveal how natural barriers such as mountain ranges or rivers were of little importance (MAYER 1978; BADER 2001).

Although cited above, Kristiansen's and Larsson's work dealt mainly with the interaction between the Aegean zone (in two stages: the Minoan and Mycenaean), the Carpathian Basin and Scandinavia. There is considerable evidence that the territories of the Unetice ecumene stayed within the orbit of southern influences as well (GERLOFF 1993; SHERRATT 1993). R. Krause pointed at the potential role of Balkan-Aegean impulses in the development of the technology of tin bronze metallurgy in Central Europe. In his opinion the material manifestation of the impulses coming from those regions were the foreign forms of metal artefacts known from the hoards in Kyhna and Melz II. The objects found in these collections (a spearhead and a unique form of halberd) had foreign stylistics but were made of local material (KRAUSE 2003, 247–249). Some of the products typical of Unetice stylistics were very widely distributed. The distribution of Cypriot pins - ornaments, in other words personal items - to some extent connected perhaps with relocation of particular individuals, suggests a wide area of interaction as early as the young stage of the Early Bronze Age (SHERRATT 1993, 22). The links of the Unetice zone with the Early Bronze Age civilisation in the territories of Brittany and the Wessex culture were prob-

ably of no lesser significance. The "princely graves" known from Helmsdorf, Leubingen and Łęki Małe shared many features with the rich burials in those regions (see below).

The prestige economy model assumes the existence of a leading group - the elites. In the Bronze Age case there is a fairly widespread opinion that such a group evolved in many regions of Europe (cf. *Eliten in der Bronzezeit*). Many of the models accounting for their existence and emergence were subjected to criticism for drawing on the Marxist idea of perceiving communities as remaining in a permanent state of inner tensions between particular interest groups or individuals (cf. CZEBRESZUK 2001, 37–38). The objections could be justified only if we assume that the said tensions led in effect to an asymmetrical growth in the wealth of one group at the cost of another. Such an approach to the inner divisions of the human community arises from the mistake of projecting the pattern of relations known, say, from the early feudal historical Europe onto all instances of managing production processes.

In order to get the necessary material on an exchange basis it was essential to possess an equivalent. Apart from amber known from Bruszczewo, it could have included part of the goods produced by the group (not necessarily a surplus!) defined by the group's leader. One of the models which explains the functioning of a primitive society is redistribution. The model assumes there existed the institution of a chieftain, or leader. It was he who defined the size and character of the group's production and accumulated its effects. His duty, however, was also the distribution of goods and their use for the benefit of the whole community. The last of these functions could be realised on different planes: from organisation of the exchange to supporting crafts or war and the organisation of religious ceremonies (SAHLINS 1992, 135–136). It seems that hypothetically the functioning of a similar model in the Bruszczewo settlement can be accepted. An effective economic system could constitute a commodity basis for the redistribution process controlled by an individual who led the community thanks to his personal traits, charisma and prestige (KADROW 2001, 160–161). A certain part of the group's produce would in such a case form an element subject to the actions of the chieftain (KIM 2001) who, the possibility of activating the exchange in their hands, would obtain goods (in this case bronze objects or material for their production) later consumed during religious ceremonies (here, hoards deposited, for example, in the form of the potlatch ritual). Redistribution unites the group by sustaining its collective effort and at the same time consolidates the ruling system of subordination to the existing centre (SAHLINS 1992, 136). Although the presented model is "an old chestnut"



Fig. 8. Grave finds from barrow no. 1 in Łęki Małe (after CZERNIAK 2008).

and was many times criticized, we believe that with adding some elements of J. Kim's proposals to it, it could be applied to the reality under consideration. Controlling prestige economy involves a number of practices in the sphere of symbolism and manipulating symbols and prestige goods. This is a system that not always follows economic principles. In effect, prestige economy turns economic capital (e.g. surplus or part of production) into political capital. Within this system accumulation of prestige is not achieved by raising productivity (e.g. by increasing the quantity of luxury goods) but raising their quality and value by limiting their accessibility. The profit derived from prestige economy is not directly proportional to surplus growth or part of the exchanged produce; it depends on the successful moves in the field of manipulation with meaning and creation of the added value of prestigious goods along with searching for new sources of prestige capital. The last of the intended targets could be reached by introducing new objects of prestige as well as new information concerning them and a new ideology - a point of utmost significance (KIM 2001, 463 - 464). Thus, the strength of the elites in the economy type discussed does not solely derive from the production of prestigious goods but overwhelmingly from having the ability to confer on it the value added - meaning. The main notion in this case is the assumption that the process of production and use of a particular object as well as observing and experiencing it results in bestowing upon it a set of associations, emotions and feelings (FONTIJN 2002, 23). The metal that might have reached the Bruszczewo settlement in the standardised form of axes - ingots, for example, was only a thing, a commodity; it became a value only as a result of appropriate procedures, rituals included during the working process; by marking it

in the right way (vide: the punch from Bruszczewo) with the ornament and giving it form, e.g. of a dagger or halberd (FONTIJN 2002, 25 - 26). Obviously, to be able to employ model explanations similar to the above for the case in question - the settlement in Bruszczewo - it is necessary to consider the casus of Rybiny mentioned earlier. In this small, open Early Bronze settlement fragments of at least two tuyeres were found (MAKAROWICZ 2000, 90). The author of the research made an attempt at explaining the modest inventory related to metal working. He drew upon the conception of J. LEVY (1991), which postulated the possibility of distinguishing two groups of metallurgists differentiated by the degree they had mastered the technology. Similar reflections accompanied the interpretations of the visible differences in the quality of grave furnishings from Nižna Myšl'a (OLEXA 1987) which can be related to the hypothetically assumed two-way character of metallurgical production (cf. above). Following deliberations of J. Levy, it has to be accepted that the division of competences in the groups of metallurgists should be reflected in the range of the discovered products. In the case of Unetice metallurgy the objects that probably were not made in workshops of a household type (vide: RYBINY) were e.g. halberds, but they could have been axes (KIENLIN 2007). The prestige economy model offers a possible answer to the question of why throughout the Bronze Age metal found no application in the production of artefacts connected exclusively with a subsistence economy (KIM 2001), of objects that had solely utilitarian and functional meaning, the way we can observe on the example of iron which, after a brief period of operating on the symbolic and aesthetic plane (PLEINER 2000, 7 - 8), was relatively quickly reduced to the position of a common material.

### The Cemetery of "Princely Graves" in Łęki Małe

The burial forms known as "princely graves" are the most spectacular group of finds related to UC. Only single cases of that type of barrow graves have been found in all its territory (HÖFER 1906; GRÖSSLER 1907, SCHMIDT/NITZSCHKE 1980; SARNOWSKA 1969, 292 - 315; SCHWENZER 2004). In each case they are characterised by a complicated form and rich furnishings, including metal objects (bronze and gold) (Fig. 8). It is commonly agreed that they are burials of the privileged stratum of the contemporaneous society.

Control over the (re-)distribution of raw materials and completed bronze artefacts is often considered to be the basis for their special position (HANSEN 2002). Even though there are contrary views (BARTELHEIM 2002)<sup>9</sup> which would point to the role of land cultivation and animal husbandry as the cause of prosperity and prestige of the communities under discussion, it is worth mentioning that in fact the most relevant novum of the barrow burials of the Unetice Culture in relation to the forms known, for example from the

<sup>9</sup> The trend for diminishing the role of bronze in that period of prehistory, recently popular in European prehistoriography (of which M. Bartelheim's text is a brilliant example), though intellectually provocative, seems to ignore a relatively large

collection of existing archaeological sources and bases on those elements of material culture whose significance to a large extent still remains speculative (salt, slavery, furs).

Corded Ware Culture, was precisely the employment of metal objects, often of a specific symbolic shape such as halberds in the burial ritual. On the basis of absolute datings it was usually accepted that the period in which the „princely graves” appeared was relatively short, with emphasis on the discontinuity of the phenomenon (MAKAROWICZ 1998, 295–296). Considering the issue in terms of the Łęki Małe cemetery, it is difficult to agree with such an approach. The distinctive feature is the fact that we are dealing with a funerary complex of several barrows located linearly (archival data reveal the existence of at least 14 barrows; KOWIAŃSKA-PIASZCZYKOWA/KURNATOWSKI 1954; CZEBRESZUK 2001, 87). Four of them were excavated. They yielded an abundant pottery inventory and many objects of bronze, gold and amber (Fig. 8). The age of the burials was defined by 10 carbon datings which situated the site in the period from 2200–1800 BC (CZEBRESZUK 2001, 84–88). The results tally with carbon dating of burials from Leubingen and Helmsdorf (BECKER/KRAUSE/KROMER 1989, 427). The archival finding from Przysieka Polska can be directly linked with the Bruszczevo settlement. It yield-

ed a rich collection of bronze objects and a perforated amber disk. The conditions in which the discoveries were made (a stone mound of a specific shape) allow to interpret the mound as a barrow comparable with the graves from Łęki Małe (SCHWENZER 2004).

The idea of constructing monumental, richly equipped barrows, exemplified by the discoveries in Łęki Małe and Przysieka Polska seems to have wider cultural connotations that extended from the regions of northern France and southern England. Apart from the similar form and a richly furnished burial there are such coincident small details like the specific „cross-shaped” placement of daggers evident in the tombs from Leubingen and Plouvorn (HANSEN 2002, 153–154, 152, Abb. 1, 156, Abb. 6). The chronological rank of the northern France and southern England tombs suggests their partial synchronisation with the tombs from Central Germany (BECKER/KRAUSE/KROMER 1989, 427; GASCÓ 1996 1996, 231, 246). It can be hypothetically assumed that the idea of barrow construction reached the Unetice cultural circle as one of many that accompanied the technology of tin bronze production.

#### Amber and the First Amber Route

One of the most cognitively spectacular finds in Bruszczevo was the discovery of a well preserved amber bead in the peat cultural layers connected with Early Bronze human settlement (Fig. 9) (CZEBRESZUK/KNEISEL/MÜLLER, forthcoming). This is important to the extent that settlement finds of this material are truly rare and they can be seen as a signal of a bigger number of amber artefacts present on a site. In KG this is not an isolated find; the best examples are the disk from Przysieka Polska and the artefacts found in Łęki Małe. The problem of the growing importance of amber needs more elucidation. The material had been gaining over-regional significance already in the 3<sup>rd</sup> millennium BC and amber artefacts in the stylistic version of Globular Amphorae and Bell Beaker Cultures (CZEBRESZUK 2003, 2007) were found far beyond the areas where its main deposits were situated, on the Baltic and the North Sea. Also at that period the material’s solar symbolism developed (CZEBRESZUK 2002), which then travelled along with amber from one community to another. At the turn of the 3<sup>rd</sup> and 2<sup>nd</sup> millennia BC there appeared the first signs of stabilisation of the far-reaching network of connections by which amber reached the Mediterranean zone (DU GARDIN 2003; CZEBRESZUK 2007). The turning point in its cultural expansion was the emergence of the Mycenaean culture on the Greek mainland - a great consumer of amber and its products (HARDING/HUGHES-BROCK 1974). One could say that at that moment the first amber route appeared (CZEBRESZUK 2009).

There is quite a lot of information that helps tackle the issue of the route’s course, particularly in relation to the territories of the Odra and the Vistula drainage basins (CZEBRESZUK 2009). In this matter the mapping of amber finds from the Early Bronze Age in the areas north of the Carpathians and the Sudeten is of great assistance (Fig. 10). Actually, we only know the finds from the western area. They are arranged in two bands ca. 100 km wide. The first stretched from the Moravian Gate through lower Silesia and eastern Wielkopolska to the mouth of the Vistula. The second ran along the Baltic coast. Contextual analysis is relevant at this juncture. It demonstrated frequent co-occurrence of amber with other special finds (such as bronze or gold) and in spectacular contexts (rich graves, barrows included; rich hoards and - like in Bruszczevo’s case - fortified settlements with bronze metallurgy). Extension of the amber dispersion map with golden finds, bronze imports (objects made in stylistics other than the Unetice style) and “princely graves” emphasises all the more the structure composed of two linear arrangements. It is not hard to guess that they are sections of longer routes. The first ran through the territories of Moravia and southwestern Slovakia to the mid-Danube and on to Caput Adria and further along the Adriatic to Aegea. The second went farther west to Jutland, the lower Rhine up to the British Isles and there probably continued along the Atlantic coast. It is characteristic that the investigated sections of both routes made broad



Fig. 9. Amber bead from Bruszczewo, trench 30 (Photo: S. Jagiolla).

bands up to 100 km wide. It was, apparently, an arrangement of many alternative possibilities of traveling along the route. The main advantage of a concrete point on the route was its stability, a guarantee that there would always be a settlement with inhabitants open to cooperation. This was undoubtedly one of the stabilisers of the Bruszczewo micro-region Early Bronze human settlement.

### Conclusions

The briefly presented set of archaeological features reveals a particular compilation of indications that in KG UC there existed relatively stable, complex social structures. Their specificity was manifested at all levels, starting with the man-environment relation. The areas directly surrounding Bruszczewo were an isle of cultural landscape enclosed by an endless for-

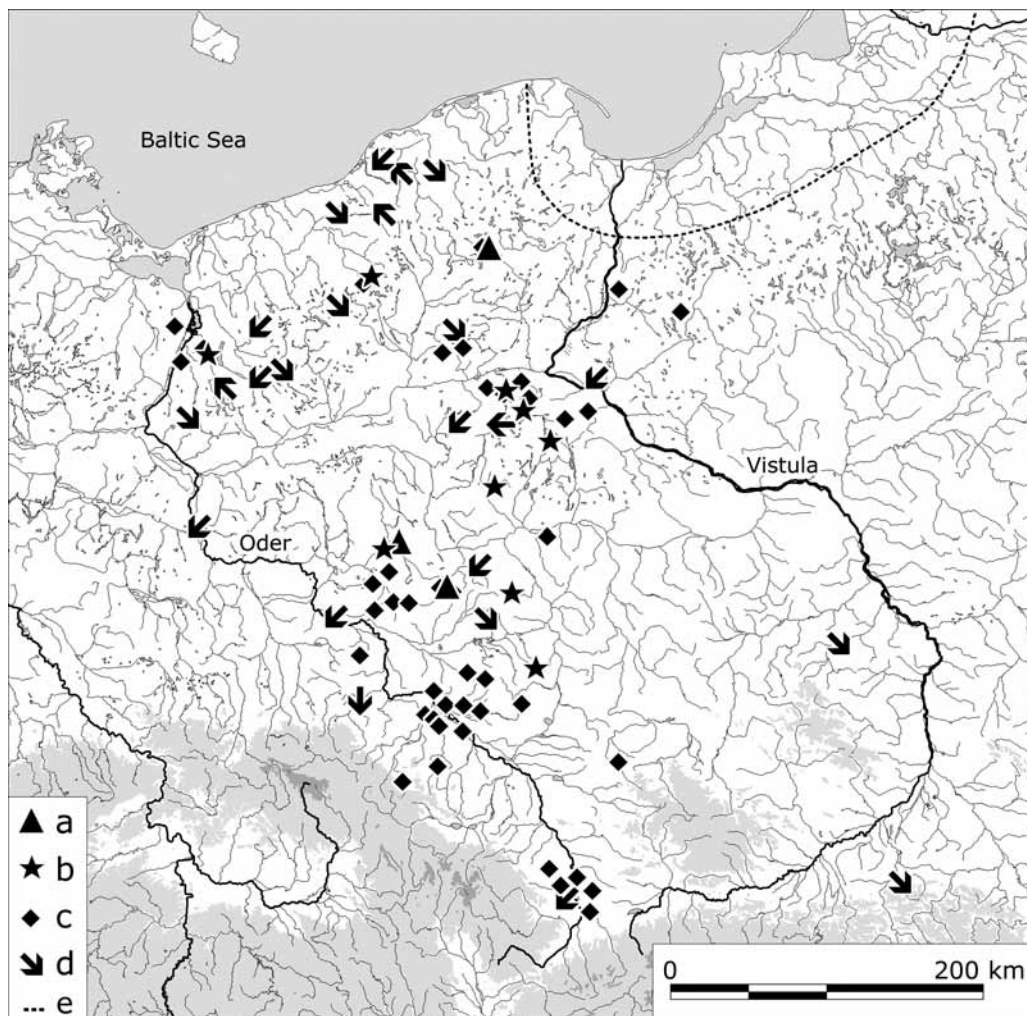


Fig. 10. The first amber route; a- "princely graves", b- gold, c- amber, d- imports (arrows indicate the direction of the import), e- Baltic amber.

est. The fortified settlement was the central point of the area. Its construction and subsequent year-long conservation provides evidence for the stable presence of structures of power which organised this collective effort. Certainly, part of the community was initiated in the mystery of metallurgy - another determinant of KG UC civilisational development. The features of metallurgy in Bruszczewo demonstrate its more profound role: the local elites not only produced bronze objects but also controlled their meaning, which was doubtlessly a factor stabilising their leading position within the community and confirmed their standing as partners in the long-distance exchange network. Such a diagnosis is further supported by the presence of "princely graves" in KG UC, particularly in the form of the barrow cemetery in Łęki Małe that has no analogy whatsoever in the UC ecumene. The analysis of the cultural significance of amber and its presence in KG UC offers a deeper understanding of reasons for that state of affairs. It was the growing demand for amber among the communities of southern Europe that gave the communities living "on the way" (along the route) a great civilisational opportunity. The KG UC example shows that they made the most of it.

The presented data indicate the existence of a far-reaching network of connections and transmission of cultural patterns. This, however, was not the phenomenon of single artefacts travelling along (so-called imports), but a proof of dissemination of a whole cultural and social "package", probably closely connected with the introduction of tin bronze. Such perception of the phenomenon corresponds with the postulates of K. Kristiansen and T. Larsson, who pointed to the importance of following the transmission of all sets of values materialised

in collections of analogous sources (KADROW 2008, 197). The "princely graves" were not merely a visible symbol of the power and uniqueness of the persons there interred. Building such structures required involvement of a larger group of people. Their work and the accompanying rituals, whose existence can be guessed from the arrangement of the dead, the furnishings and also the elaborate construction of graves and mounds appear to have had a communal significance. Next to the fortifications on the Bruszczewo headland and numerous deposits of metal objects, the "princely graves" were yet another confirmation of the power and consolidation of the communities today described as KG UC.

In the context presented above the human settlement geography of the period was more of a linear (route) character rather than territorial. Particular regions were situated along the route, or they were route junctions, or else existed totally out and beyond. The "route" communities participated in the long-distance exchange in a multidimensional way; they also profited socially from the development in their midst of most complex structures with a stable higher class at the head. Their representatives travelled along the route and created a network of people that stayed in contact; at the same time they organised the life in local communities and managed the particular "links" in the "chain". One could say more: along the chains there were special links, such as the Bruszczewo fortified settlement situated on the border of the KG UC ecumene. They were like a gate which - drawing on conceptions about the nature of exchange with the Mediterranean zone during the Bronze Age - might be described as an "inland port of trade".

#### REFERENCES

- Alusik 2008: T. Alusik, *Defensive Architecture of Prehistoric Crete* (Oxford 2008).
- Arkush/Stanish 2005: E. Arkush/Ch. Stanish, *Interpreting Conflict in the Ancient Andes. Implications for the Archaeology of Warfare*. *Current Anthr.* 46 (1), 2005, 3–28.
- Bader 2001: T. Bader, *Passfunde aus der Bronzezeit in den Karpaten*. *Commun. Arch. Hungariae*, 2001, 15–39.
- Bartelheim 2002: M. Bartelheim, *Metallurgie und Gesellschaft in der Frühbronzezeit Mitteleuropas*. In: J. Müller (ed.), *Vom Endneolithikum zur Frühbronzezeit: Muster sozialen Wandels?* (Tagung Bamberg 14.–16. Juni 2001) (Bonn 2002), 29–44.
- Becker/Krause/Kromer 1989: B. Becker/R. Krause/B. Kromer, *Zur absoluten Chronologie der Frühen Bronzezeit*. *Germania* 67(2), 1989, 421–442.
- Blajer 1990: W. Blajer, *Skarby z wczesnej epoki brązu na ziemiach polskich* (Wrocław 1990).
- Bradley 2005: R. Bradley, *Ritual and Domestic Life in Prehistoric Europe* (London 2005).
- Brück 1999: J. Brück, *Ritual and rationality: some problems of interpretation in European archaeology*, *Journ. European Arch.* 2(3), 1999, 313–344.
- Czebreszuk 2001: J. Czebreszuk, *Schyłek neolitu i początki epoki brązu w strefie południowo-zachodniobałtyckiej (III i początki II tys. przed Chr.)*. *Alternatywny model kultury* (Poznań 2001).
- Czebreszuk 2002: J. Czebreszuk, *Neolityczna ikona słońca*. In: *Sztuka pradziejowa ziem polskich* (Gniezno 2002) 68-71.

- Czebreszuk 2003: J. Czebreszuk, Amber on the Threshold of a World Career. In: C. W. Beck/I. Loze/J. M. Todd (eds.), Amber in the Archaeology (Riga 2003) 164-179.
- Czebreszuk 2007: J. Czebreszuk, Amber between the Baltic and the Aegean in the 3<sup>rd</sup> and 2<sup>nd</sup> Millennia BC (An Outline of Major Issues). In: I. Galanaki/H. Tomas/R. Laffineur (eds.) Between the Aegean and Baltic Seas. Prehistory across Borders. *Aegaeum* 27 (Liège 2007) 363–370.
- Czebreszuk: J. Czebreszuk, The Northern Section of the First Amber Trail. An Outline of Significance for Civilization Development. In: A. Palavestra/C. W. Beck/J. M. Todd (eds.), Amber in Archaeology. Proceedings of the Fifth International Conference on Amber in Archaeology Belgrad 2006 (Belgrad 2009) 100–109, 284–285.
- Czebreszuk/Ducke/Müller/Silka 2004: J. Czebreszuk/B. Ducke/J. Müller/P. Silka, Siedlungsstrukturen und Siedlungstopographie/Struktura i topografia osady. In: J. Czebreszuk/J. Müller (eds.), *Bruszczewo. Ausgrabungen und Forschungen in einer prähistorischen Siedlungskammer Grosspolens/Badania mikroregionu z terenu Wielkopolski. Band/Tom I. Forschungsstand - Erste Ergebnisse - Das östliche Feuchtbodenareal/Stan badań - Pierwsze wyniki - Wschodnia, torfowa część stanowiska* (Poznań/Kiel/Rahden Westf. 2004) 71–77.
- Czebreszuk/Müller/Silka 2004: J. Czebreszuk/J. Müller/P. Silka, Forschungsgeschichte und Grabungsverlauf/Historia badań stanowiska. In: J. Czebreszuk/J. Müller (eds.), *Bruszczewo. Ausgrabungen und Forschungen in einer prähistorischen Siedlungskammer Grosspolens/Badania mikroregionu z terenu Wielkopolski. Band/Tom I. Forschungsstand - Erste Ergebnisse - Das östliche Feuchtbodenareal/Stan badań - Pierwsze wyniki - Wschodnia, torfowa część stanowiska* (Poznań/Kiel/Rahden Westf. 2004) 13–35.
- Czebreszuk/Kozłowska 2008: J. Czebreszuk/D. Kozłowska, *Sztylety krzemienne na Pomorzu Zachodnim* (Szczecin/Poznań 2008).
- Czebreszuk et al. forthcoming: J. Czebreszuk/J. Kneisel/J. Müller, Paciorek bursztynowy z Bruszczewa/Ein Bernsteinperle aus Bruszczewo. In: J. Müller/J. Czebreszuk/J. Kneisel (eds.), *Wykopalska w Bruszczewie, t. II/ Ausgrabungen in Bruszczewo B. II* (Bonn, forthcoming).
- Czerniak 2008: L. Czerniak, Najstarsze społeczności rolnicze. Nowa epoka. In: M. Kobusiewicz (ed.), *Pradzieje Wielkopolski. Od epoki kamienia do średniowiecza* (Poznań 2008) 147–201.
- Ducke/Müller 2004: B. Ducke/J. Müller, Die Geomagnetische Prospektion/Prospekcja geomagnetyczna. In: J. Czebreszuk/J. Müller (eds.), *Bruszczewo. Ausgrabungen und Forschungen in einer prähistorischen Siedlungskammer Grosspolens/Badania mikroregionu z terenu Wielkopolski. Band/Tom I. Forschungsstand - Erste Ergebnisse - Das östliche Feuchtbodenareal/Stan badań - Pierwsze wyniki - Wschodnia, torfowa część stanowiska* (Poznań/Kiel/Rahden Westf. 2004) 61–70.
- du Gardin 2003: C. du Gardin, Amber Spacer Beads in the Neolithic and Bronze Age in Europe. In: C. W. Beck/I. B. Loze/J. M. Todd (eds.), Amber in Archaeology, Proceedings of the Fourth International Conference on Amber in Archaeology, Talsi, 2001 (Riga 2003) 180–198.
- Eliten in der Bronzezeit: Eliten in der Bronzezeit. Ergebnisse zweier Kolloquien in Mainz und Athen (Mainz 1999).
- Fontijn 2002: D. Fontijn, Sacrificial Landscapes: Cultural Biographies of Things, Objects and 'Natural Places' in the Bronze Age of the Southern Netherlands, C. 2300 - 600 BC (Leiden 2002).
- Gascó 1996: J. Gascó, Chronologie de l'âge du bronze et du premier âge du fer de la France continentale, *Acta Arch.* 67, 1996, 227–250.
- Gedl 1980: M. Gedl, Die Dolche und Stabdolche in Polen, *Prähistorische Bronzefunde* 4 (München 1980).
- Gedl 1983: M. Gedl, Die Nadeln in Polen I, *Prähistorische Bronzefunde* 7 (München 1983).
- Gerloff 1993: S. Gerloff, Zu fragen mittelmeerländischer Kontakte und absoluter Chronologie der Frühbronzezeit in Mittel- und Westeuropa, *Prähist. Zeitschr.* 68(1), 1993, 58–102.
- Grössler 1907: H. Grössler, Das Fürstengrab im großen Galgenhügel am Paulsschachte bei Helmsdorf (im Mansfelder Seekreise), *Jahresschrift Halle* 6, 1907, 1–87.
- Hafner 1995: A. Hafner, 'Volgriffdolch und Löffelbeil', Statussymbole der Frühbronzezeit, *Arch. Schweiz* 18(4), 1995, 134–141.
- Hansen 2002: S. Hansen, „Überausstattungen“ in Gräbern und Horten der Frühbronzezeit. In: J. Müller (Ed.), *Vom Endneolithikum zur Frühbronzezeit: Muster sozialen Wandels?* (Tagung Bamberg 14.-16. Juni 2001) (Bonn 2002) 151–174.
- Harding/Brock-Hughes 1974: A. Harding/H. Brock-Hughes, Amber in Mycenaean world, *Annu. British School Arch. Athens* 69, 148–172.
- Helms 1988: M. Helms, *Ulysses Sail: An Ethnographic Odyssey of Power, Knowledge and Geographical Distance* (Princeton 1988).
- Hodder 1982: I. Hodder, *Symbols in action* (Cambridge 1982).
- Höfer 1906: P. Höfer, Der Leubinger Grabhügel, *Jahresschr. Vorgeschich. Sächs.-Thüring. Länder* 5, 1906, 1–59.
- Ivanova 2008: M. Ivanova, Befestigte Siedlungen auf dem Balkan, in der Ägäis und in Westanatolien, ca. 5.000-2.000 v. Chr. (Münster/New York/München/Berlin 2008).
- Iwanek/Piontek/Nowak, forthcoming: B. Iwanek/J. Piontek/O. Nowak, Analiza antropologiczna szkieletu z Bruszczewa/ Anthropologische Analyse des Skelettes aus Bruszczewo. In: J. Müller/J. Czebreszuk/J. Kneisel (eds.), *Wykopalska w Bruszczewie, t. II/ Ausgrabungen in Bruszczewo B. II* (Bonn, forthcoming).
- Jockenhövel 1991: A. Jockenhövel, Räumliche mobilität von personen in der mittleren Bronzezeit des westlichen Mitteleuropa. *Germania* 69, 1991, 49–62.
- Jockenhövel 2006: A. Jockenhövel, Zur Archäologie der Gewalt: Bemerkungen zu Aggression und Krieg in der Bronzezeit Alteuropas. Proceedings of the International Symposium „Arms and Armour through the Ages (From the Bronze Age to the Late Antiquity)“ Modra-Harmónia 19.-22. November 2005, Anodos 4–5, 2004–2005 (2006) 101–132.
- Junk/Krause/Pernicka 2001: M. Junk/R. Krause/E. Pernicka, Ösenringbarren and the Classical Ösenring Copper. In: W. H. Metz/B. L. van Beek/H. Steegstra (eds.), *Patina. Essays presented to Jay Jordan Butler on the occasion of his 80<sup>th</sup> birthday* (Groningen/Amsterdam 2001).
- Kadrow 1998: S. Kadrow, Warum haben wir so wenige Metallobjekte in Kleinpolen? Ein Versuch der Antwort aus der frühbronzezeitlichen Perspektive. In: W. Blajer (ed.), *Beiträge zur Deutung der bronzezeitlichen Hort- und Grabfunde in Mitteleuropa* (Kraków 1998) 55–63.

- Kadrow 2001: S. Kadrow, U progu nowej epoki. Gospodarka i społeczeństwo wczesnego okresu epoki brązu w Europie Środkowej (Kraków 2001).
- Kadrow 2008: S. Kadrow, Uwagi na temat możliwości archeologicznej identyfikacji władzy i panowania w świetle wybranych teorii ewolucji społecznej. In: J. Bednarczyk/J. Czebreszuk/P. Makarowicz/M. Szmyt (eds.), Na pograniczu światów. Studia z pradziejów międzymorza bałtycko – pontyjskiego ofiarowane Profesorowi Aleksandrowi Koško w 60. rocznicę urodzin (Poznań 2008) 191 – 202.
- Kienlin 2007: T. Kienlin, Von den Schmieden der Beile: Zu Verbreitung und Angleichung metallurgischen Wissens im Verlauf der Frühbronzezeit, *Prähist. Zeitschr.* 82(1), 2007, 1–22.
- Kim 2001: J. Kim, Elite Strategies and the Spread of Technological Innovation: The Spread of Iron in the Bronze Age Societies of Denmark and Southern Korea, *Journ. Anthro. Arch.* 20, 442–478.
- Kneisel, forthcoming: J. Kneisel, Pochówek na osadzie z wczesnej epoki brązu. In: J. Müller/J. Czebreszuk/J. Kneisel (eds.), *Wykopalka w Bruszczewie, t. II/ Ausgrabungen in Bruszczewo B. II* (Bonn, forthcoming).
- Kneisel et al. 2008: J. Kneisel/H. R. Bork/J. Czebreszuk/W. Dörfler/P. Grootes/J. N. Haas/K. U. Heußner/I. Hildebrandt-Radke/H. Kroll/J. Müller/N. Wahlmüller/T. Ważny, Bruszczewo – Early Bronze Defensive Settlement in Wielkopolska. Metallurgy, peat zone finds and change in the environment. In: J. Czebreszuk/S. Kadrow/J. Müller (eds.), *Defensive Structures from Central Europe to the Aegean in the 3<sup>rd</sup> and 2<sup>nd</sup> millennium BC* (Poznań/Bonn 2008) 155 – 170.
- Kneisel/Kroll, forthcoming: J. Kneisel/H. Kroll, Die Holzanalysen aus dem östlichen Feuchtbodenareal/Analyse drewna z części torfowej stanowiska. In: J. Müller/J. Czebreszuk/J. Kneisel (eds.), *Wykopalka w Bruszczewie, t. II/ Ausgrabungen in Bruszczewo B. II* (Bonn, forthcoming).
- Kopytoff 1986: I. Kopytoff, The cultural biography of things: commoditization as process. In: A. Appadurai (ed.), *The social life of things. Commodities in cultural perspective* (Cambridge 1986) 64 – 91.
- Kowalski 2000: A. P. Kowalski, Genealogia sztuk III. Najstarsza metalurgia. Od sensów magicznych do wartości estetycznych. In: H. van den Boom/A. P. Kowalski/M. Kwapiński (eds.), *Eidolon. Kultura archaiczna w zwierciadle wyobrażeń, słów i rzeczy* (Gdańsk 2000) 195 – 215.
- Kowiańska – Piaszykowska/Kurnatowski 1954: M. Kowiańska – Piaszykowska/S. Kurnatowski, Kurhan kultury unietyckiej w Łękach Małych, pow. Kościan, *Fontes Arch. Posnaniensis* 4, 1954, 43 – 76.
- Krause 1998: R. Krause, Zur Entwicklung der frühbronzezeitlichen Metallurgie nördlich der Alpen. In: B. Hänsel (ed.), *Mensch und Umwelt in der Bronzezeit Europas. Abschlußtagung der Kampagne des Europarates: Die Bronzezeit. Das erste goldene Zeitalter Europas, an der Freien Universität Berlin, 17.–19. März 1997* (Kiel 1998) 163 – 192.
- Krause 2003: R. Krause, Studien zur kupfer- und frühbronzezeitlichen Metallurgie zwischen Karpatenbecken und Ostsee (Rahden/Westfalen 2003).
- Krause/Pernicka 1998: R. Krause/E. Pernicka, The Function of Ingot Torques and their Relation with Early Bronze Age Copper Trade. In: C. Mordant/M. Pernot/V. Rychner (eds.), *L'Atelier du bronzier en Europe du XXe au VIIIe siècle avant notre ère. Volume 2. Du minerai au métal, du métal à l'objet*. Actes du colloque international ›Bronze '96‹, Neuchâtel et Dijon (Paris 1998) 219 – 226.
- Kristiansen 1987: K. Kristiansen, Centre and periphery in Bronze Age Scandinavia. In: M. Rowlands/L. Mogens/K. Kristiansen (eds.), *Centre and Periphery in the Ancient World* (Cambridge 1987) 74 – 86.
- Kristiansen 2004: K. Kristiansen, Kontakte und Reisen im 2. Jahrtausend v. Chr. In: M. Fansa/S. Burmeister (eds.), *Rad und Wagen. Der Ursprung einer Innovation Wagen im Vorderen Orient und Europa* (Mainz am Rhein 2004) 443 – 454.
- Kristiansen/Larsson 2005: K. Kristiansen/T. B. Larsson, *The Rise of Bronze Age Society. Travels, Transmissions and Transformations* (Cambridge 2005).
- Kuijpers 2008: M. Kuijpers 2008, *Bronze Age Metalworking in the Netherlands (c.2000-800BC). A research into the preservation of metallurgy related artefacts and the social position of the smith* (Leiden 2008).
- Larsson 2004: T. B. Larsson, Streitwagen, Karren und Wagen in der bronzezeitlichen Felskunst Skandinaviens. In: M. Fansa/S. Burmeister (eds.), *Rad und Wagen. Der Ursprung einer Innovation Wagen im Vorderen Orient und Europa* (Mainz am Rhein 2004) 381 – 398.
- Lenerz-de Wilde 1995: M. Lenerz-de Wilde, Prämonetäre Zahlungsmittel in der Kupfer- und Bronzezeit Mittel-Europas, *Fundber. Baden-Württemberg* 20, 1995, 229 – 327.
- Levy 1991: J. Levy, Metalworking technology and craft specialization in Bronze. Age Denmark, *Archeomaterials* 5, 1991, 55 – 74.
- Makarowicz 1998: P. Makarowicz, Rola społeczności kultury iwieńskiej w genezie trzcinieckiego kręgu kulturowego (2000-1600 BC) (Poznań 1998).
- Makarowicz 2000: P. Makarowicz, Osadnictwo społeczności z wczesnej epoki brązu w Rybinach, woj. kujawsko-pomorskie, stanowisko 17 (Poznań 2000).
- Mathieu/Meyer 1997: J. R. Mathieu/D. A. Meyer, Comparing axe heads of stone, bronze, and steel: Studies in experimental archaeology, *Journal Field Arch.* 24(33), 1997, 333 – 351.
- Mayer 1978: E. F. Mayer, Bronzezeitliche Paßfunde im Alpenraum, *Jahresber. Inst. Vorgesch. Frankfurt a. M.* 1978–1979, 1978, 179 – 187.
- Mierzwiński 1989: A. Mierzwiński, Funkcja grodów ludności kultury łużyckiej w świetle badań tych obiektów na Śląsku. In: B. Gediga (ed.), *Studia nad grodami epoki brązu i wczesnej epoce żelaza w Europie Środkowej* (Wrocław/Warszawa/Kraków/Gdańsk/Łódź) 185 – 207.
- Moucha 2005: V. Moucha, Hortfunde der frühen Bronzezeit in Böhmen (Praha 2005).
- Müller 2002: J. Müller, Modelle zur Einführung der Zinnbronzezeit und zur sozialen Differenzierung der mitteleuropäischen Frühbronzezeit. In: J. Müller (ed.), *Vom Endneolithikum zur Frühbronzezeit: Muster sozialen Wandels?* (Tagung Bamberg 14.–16. Juni 2001) (Bonn 2002) 267 – 289.
- Neustupný 1995: E. Neustupný, The significance of facts, *Journal of European Arch.* 3(1), 1995, 189 – 212.
- Olexa 1987: L. Olexa, Gräber von metallgiessern in Nižna Myšla. *Archeologicke Rozhledy*, 39(3), 1987, 255 – 257.
- Pare 1999: C. F. E. Pare, Weights and Weighing in the Bronze Age of Central Europe. In: C. Clausen/M. Egg (eds.), *Eliten in der Bronzezeit. Ergebnisse zweier Kolloquien in*

- Mainz und Athen. Monographien des Römisch-Germanischen Zentralmuseums 43 (Mainz 1999) 245–276.
- Pare 2000: C. F. E. Pare, The Bronze and the Bronze Age. In: C. F. E. Pare (ed.), *Metals Make The World Go Round: The Supply and Circulation of Metals in Bronze Age Europe*. Proceedings of a Conference held at the University of Birmingham in June 1997 (Oxford 2000) 1–38.
- Pernicka 1998: E. Pernicka, Die Ausbreitung der Zinnbronze im 3. Jahrtausend. In: B. Hänsel (ed.), *Mensch und Umwelt in der Bronzezeit Europas. Abschlußtagung der Kampagne des Europarates: Die Bronzezeit. Das erste goldene Zeitalter Europas, an der Freien Universität Berlin, 17.–19. März 1997* (Kiel 1998) 135–147.
- Pieczynski 1985: Z. Pieczyński, Umocnienia obronne osady z wczesnej epoki brązu w Bruszczewie, woj. leszczyńskie stan. 5. In: M. Gedl (ed.), *Frühbronzezeitliche befestigte Siedlungen in Mitteleuropa*. *Archaeologia Interregionalis* 6 (Warszawa 1985) 167–177.
- Pleiner 2000: R. Pleiner, Iron in Archaeology: The European Bloomery Smelters (Praha 2000).
- Rassmann 2000: K. Rassmann, Die Nutzung baltischen Feuersteins an der Schwelle zur Bronzezeit - Krise oder Konjunktur der Feuersteinverarbeitung?, *Ber. RGK* 81, 2000, 5–36.
- Rassmann 2005: K. Rassmann, Zur Chronologie der Hortfunde der Klassischen Aunjetitzer Kultur. Eine Auswertung von Metallanalysen aus dem Forschungsvorhaben 'Frühe Metallurgie im zentralen Mitteleuropa'. In: B. Horejs/R. Jung/E. Kaiser/B. Terzan (eds.), *Interpretationsraum Bronzezeit. Bernhard Hänsel von seinen Schülern gewidmet* (Bonn 2005) 463–80.
- Romanowska-Grabowska 1991: O. Romanowska-Grabowska, Gród halsztacki w Izdebnie gm. Rogowo (woj. bydgoskie). In: J. Jaskanis (ed.), *Prahistoryczny gród w Biskupinie. Problematyka osiedli obronnych na początku epoki żelaza* (Warszawa 1991) 217–223.
- Rowlands 1971: M. Rowlands, The archaeological interpretation of prehistoric metalworking, *World Arch.* 3(2), 1971, 210–224.
- Sahlins 1992: M. D. Sahlins., Socjologia wymiany w społeczeństwach pierwotnych. In: M. Kempny/J. Szmata (eds.), *Współczesne teorie wymiany społecznej. Zbiór tekstów* (Warszawa 1992) 131–172.
- Sarnowska 1969: W. Sarnowska, *Kultura unietycka w Polsce* (Wrocław 1969).
- Schmidt/Nitzschke 1980: B. Schmidt/W. Nitzschke, Ein frühbronzezeitlicher 'Fürstenhügel' bei Dieskau im Saalkreis, *Vorbericht. Ausgrabungen und Funde* 25, 1980, 179–183.
- Schwenzer 2004: S. Schwenzer, Przysieka Polska – Ein Grabfund in der Umgebung der frühbronzezeitlichen Siedlung von Bruszczewo/Przysieka Polska – znalezisko grobowe w sąsiedztwie osady w Bruszczewie. In: J. Czebreszuk/J. Müller (eds.), *Bruszczewo. Ausgrabungen und Forschungen in einer prähistorischen Siedlungskammer Grosspolsen/Badania mikroregionu z terenu Wielkopolski*. Band/Tom I. Forschungsstand - Erste Ergebnisse - Das östliche Feuchtbodenareal/Stan badań - Pierwsze wyniki - Wschodnia, torfowa część stanowiska (Poznań/Kiel/Rahden Westf. 2004) 317–324.
- Shennan 1993: S. Shennan, Commodities, transactions and growth in the central European Early Bronze Age. *Journal of European Arch.* 1(2), 1993, 59–72.
- Shennan 1995: S. Shennan, Bronze Age Copper Producers of the Eastern Alps: Excavations at St. Veit-Klinglberg (Bonn 1995).
- Sherratt 1993: A. Sherratt 1993, What would a Bronze Age World System look like? Relations between temperate Europe and the Mediterranean in Later Prehistory, *Journ. European Arch.* 1(2), 1993, 1–57.
- Sofaer 2006: J. Sofaer, Pots, Houses and Metal. Technological Relations at the Bronze Age tell at Százhalombatta, Hungary, *Oxford Journal Arch.* 25(2), 2006, 127–147.
- Szydłowski 2004: M. Szydłowski, Bruszczewo. Starożytne centrum cywilizacji w okolicach Śmigła (Śmigiel 2004).
- Vandkilde 1996: H. Vandkilde, From Stone to Bronze. The Metalwork of the Late Neolithic and Earliest Bronze Age in Denmark (Aarhus 1996).
- Weinberger 2008: S. Weinberger, Warfare in the Austrian Weinviertel during the Early Bronze Age (Wien 2008).
- Zich 1996: B. Zich, Studien zur regionalen und chronologischen Gliederung der nördlichen Aunjetitzer Kultur (Berlin 1996).

*Mateusz Jaeger  
Institute of Prehistory  
Adam Mickiewicz University  
Collegium Historicum, ul. Św. Marcin 78  
61-809 Poznań  
Poland*

*Prof. Dr. Janusz Czebreszuk  
Institute of Prehistory  
Adam Mickiewicz University  
Collegium Historicum, ul. Św. Marcin 78  
61-809 Poznań  
Poland*