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BALTIC-PONTIC INTERREGIONAL ROUTES AT THE START OF THE BRONZE AGE

INTRODUCTION

The question of long-distance exchange has seen many publications in recent years related to the function of routes in human migration, goods and raw materials, transfer of knowledge and technology, as well as the circulation of cultural behaviour patterns at the start of the Bronze Age in the temperate zone of Europe [Kristiansen 1998; 2007; Harding 2000; Kristiansen, Larsson 2005]. Further, the eastern region of Europe has had important research in earlier work by M. Gimbutas [Gimbutas 1965], which proposed an outline of the most significant trans-European routes from the Rhine and the Rhone to the Urals and the Caspian Sea, as well as from the Baltic to the Mediterranean (Fig. 1)

Further discussion on the archaeometric identification of routes leading from the Baltic regions towards the Black Sea in the Bronze Age has been initiated by A. Koško's [Koško 2001; 2002] argument on the existence of a 'Crimea-Jutland' route where the spatial distribution of stone heads of fluted (melon-like) maces found in the Baltic watershed was linked to the transmission of so called cultural templates from Pontic regions. The concept of maces in this context therefore, interpreted as prestigious objects (insignias of power) came by way of exchange from the genetic center in the Near East. Pontic societies, mainly the Catacomb



Fig. 1. Spatial range of the Trzciniec cultural circle. According to Makarowicz 2009b.

culture, were to adapt and subsequently pass on to the north-west this Near East model of trade, first organised by specialised family enterprises.

The distribution of maces between the Volga and Elbe rivers in the aforementioned thesis was therefore related to the transmission of community and organisational models of Near East civilisation. In the north Pontic region, trade could have been stimulated by the exploitation of salt reserves from the shallow bays at the base of the Crimea (salt lakes of the Sivash) as well as possibly deposits of copper in what is now known as the Donbas region. The Pontic-Baltic route was established therefore, according to the preceding, by related communities using the route, specialising in long-distance trade. Further dissemination of the Mesopotamian-Pontic model towards the Baltic was possible due to the addition of the local community into this interactive system, one with clear hierarchies and the presence of higher ranks such as metallurgists from the Únetice culture, principals behind far-reaching

exchange on the north-south axis bronze and amber and their trade partners to the north from the Iwno culture.

In the above conception, five variations based on the valleys of the main rivers between the Baltic and the Black Seas of the Pontic-Baltic route are proposed [Koško 2002]. One of these ran from the Baltic shore through the valleys of the Vistula, Bug and Boh rivers towards the Black Sea. On account of the considerable concentration of maces, Kujawy had the main importance as a 'communication stop' region, where according to the above, its societies were the first to adopt the Mesopotamian-Pontic long-distance trade model. The cultural traditions of Kujawy went on to spread to the Odra basin (later Morava and Danube), as well as the middle and upper Vistula, then through the Raba, Poprad and Wisłok rivers in the direction of the Váh and Danube.

The societies of the Trzciniec cultural circle, late Únetice culture as well as Iwno, Mad'arovec, Otomani/Füzesabony and Tumulus cultures, added maces into the existing system of meridional exchange, which linked the communities of the Aegean, Adriatic and Baltic seas. After the disintegration of the Únetice culture, maces were to in fact take on the role of metal products and become symbols of power and high rank in the majority of the kinship-based societies of the above mentioned cultures [Koško 2001; 2002].

H. Taras [Taras 2007] on the other hand, has raised doubts as to the possibility of including the Bug basin in the context of a wider, extra-regional system of disseminating cultural patterns. In respect to inter-communal contacts in the Lublin region (taking in an important part of one of the potential branches of the Baltic-Pontic route) she does not see any clear indications of long-distance trade. In analysing the distribution of various types of prestige objects (among others, fluted maces), it is proposed that this area was not included in long-distance exchange, understood as an organised and regular channel of products between regions (for other markets) where trade, barter and specialised services were on offer.

Further, the author argues that the main communication routes did not bisect the region in question, nor were there many potential so called clients for luxury goods [Taras 2007]. In fact, it is argued that production was based on an internal market though the custom of replication played a part with imitations of some imported objects where local exchange dominated between the respective settlements in the form of a down-the-line, prestige chain. Patterns of culture exogenous to these communities reached as a result of various factors such as familial and community ties (marriage, alliances, wandering craftsmen). Their presence could have been a result of occasional exchange or even robbery. The former can be understood as barter or an exchange of goods for a service. The distribution of luxury goods did not necessarily have to be tied to an organised long-distance exchange for the main form of contact, it may be argued, was local or regional. These qualifications

aside, Taras [Taras 2007] recognises that because of the Lublin region's geography, it is possible to maintain that also in this context we can speak of central European, east European and Pontic cultural models. In addition, objects and patterns from the regions of Carpathia-Transylvania, Silesia and the Pontic at times made their mark here. Not many such (for example a bracelet from Puławy-Włostowice made according to the 'Únetice' stylistic), however, travelled from the Baltic where the Únetice culture and its exchange partners were to be found [Taras 2007]. The diversity of views on the possible identification of inter-regional byways and mechanisms involved in the evolution of defined models and their illustration through relevant materials found between the Baltic and Black seas in the Early Bronze Age, would seem to point to the need for a more integral analysis of the routes under discussion.

In this respect therefore it is necessary to answer the question whether it is possible to verify the unusually interesting research concept of a 'Crimea-Jutland' route. Did one of its long-distance branches, running from the Baltic shore through the valleys of the Vistula, Bug and Boh towards the shores of the Black Sea, function at the dawn of the Bronze Age? Are there indeed other, apart from maces, markers of this route between one and the other sea? If so, which peoples were behind its organisation and control, and how are they to be identified? Last, how did the route come to be and what degree of complexity can we assign to its organisation?

1. ARCHEOMETRY OF THE BALTIC-PONTIC INTERREGIONAL ROUTES (BPIR)

One of the most important means of transfer of goods, ideas, models, knowledge and people in prehistoric societies was inter-group exchange, formulated by M. Mauss as a 'total social fact' [Mauss 2001: 167]. In traditional societies this was never a purely economic transaction for it bore great significance in rituals, in particular for ceremonies and other scenarios [see Sahlins 1972: 149-183; 1992; Levy-Strauss 1992: 107; Kadrow 2001: 163].

As far as so called traditional societies are concerned (pre-industrial, non-literate), the most important were certainly ceremonies of gift-giving exchange, especially in relation to observance of holidays in the ritual calendar. In communities with a more complex social structure, the redistribution of goods also played an important role. Thus exchange was one of the organisational factors in social structure, initiating and maintaining social relations, in particular in systems yet to fully de-

velop community institutions. In respect to the Bronze Age the question arises of long-distance journeys by so called specialists (explorers, craftsmen, mercenaries) and their significance in disseminating new technologies or means of combat. It is thanks to the knowledge and skills gained from these people that particular innovations and behavioural models appeared well beyond the centre of their origin [Kristiansen, Larsson 2005: 39; Kristiansen 2007: 26].

The professional literature presents a number of forms, types and scenarios of exchange [Renfrew 1984: 119-121; Renfrew, Bahn 2002: 335-368], most of which can be classified as 'intellectual speculation' that has no specific application per se. Other sources concern for example the world of the Aegean or the Near East, regions significantly differing in their degree of complexity of socio-political and economic structures from that of Central Eastern Europe. In respect to the above mentioned region of the Old World, only a part of these propositions, it may be argued, is applicable. It would appear therefore that transactions in this context were dominated by the non commercial and individual type, rather than trade as we know it in its traditional form [Sherratt 1993; Hänsel 1995 (Ed.); Kristiansen 1998; Harding 2000; Kadrow 2001; Kristiansen, Larsson 2005]. On account of the fact that exchange in this context also has an economic-business dimension, as well as a social one, it may be viewed not only as a part of the economy but also as an integral factor in the formative processes in most societies.

One of the archaeological measuring sticks of a route's existence is the dispersion of prestige objects (luxury, status-bearing), made out of exotic raw materials that appear well beyond common locations (resources) and centres of production. Their presence in other regions could have been tied to some form of organised distribution of exchange or trade (without delving into their semantics), be it long-distance, local or 'down-the-line'. In terms of these methods a cartographic representation of defined prestige products allows us to outline the relevant potential circulation routes of prehistoric peoples and their attendant cultural bi-products and models. Naturally, the appearance of prestige objects and their associate designs well beyond the geographical centre of production could have been the result of other phenomena (such as armed conflicts), though it would appear that only social contacts that were linked with a greater or lesser form of institutionalised exchange can serve to explain this issue in a systematic manner.

The most important raw materials that played a pivotal role in the establishment of routes between the Baltic and the Black seas could be said to be amber, copper, flint, basalt and salt. These all could be found in the Baltic-Pontic region [Makarowicz 2009b]. The distribution of prestige products recorded in this region has been analysed separately for the start of the Bronze Age (turn of the 2nd millennium BC), when the impact of the Únetice, Mierzanowice and Strzyżów cultures can be seen. Above all, this has significance for the period of Trzciniec cultural circle growth in the remaining part of the second millennium BC.



Fig. 2. Distribution of amber beads in the Early Bronze Age cultures of Central Eastern Europe. Triangle – Bell Beaker sites; star – Únetice culture sites; circle – Mierzanowice culture sites; reversed triangle – Catacomb culture sites. According to Vangorodska 1985; Bukowski 2002.

1.1. THE TURN OF THE 2nd MILLENNIUM BC

First, mention ought to be made of amber products whose distribution towards the south-east in this period is not clearly evident. These amber materials (beads) are in the main recorded in graves and their distribution does not show a clear 'transmission route' (Fig. 2).

In the west of Ukraine there are few records of 'Únetice' style metal products that dominated in the Baltic region [Makarowicz 1998; 2009b; Czebreszuk 2001a]. In the main, they are incidental finds such as a necklace with scrolled ends



Fig. 3. Distribution of willow leafshaped ear-rings in the Early Bronze Age cultures of Central Eastern Europe. According to Kadrow 1995b; 2001.

(*Ösenhalsringe*) from Horodenka, daggers from Sarniki¹, Balice and Wysocko, found in Dniester region barrows of the Corded Ware culture, Cypriot pin from Putiatynce, pins and bracelets found in barrow VII from Balice, axes with turned sides from Chilczyce and Sokół as well as bracelets from the hoard in Lipa [Sulimirski 1968; Ryndina 1980; Makarowicz 2009b]. It should be mentioned, however, some of these artefacts could have also originated from the Carpathian basin in the Otomani/Füzesabony culture [Mozsolics 1967].

The distribution of willow leaf-shaped ear-rings in the east and south-east (Fig. 3) was linked to the presence of the Mierzanowice culture (Grodek-Zdolbitsa

¹ For the purposes of this study, where excavations took place before 1939, Polish spelling has been retained for locations in western Ukraine as in the professional literature [e.g. Sulimirski 1968].

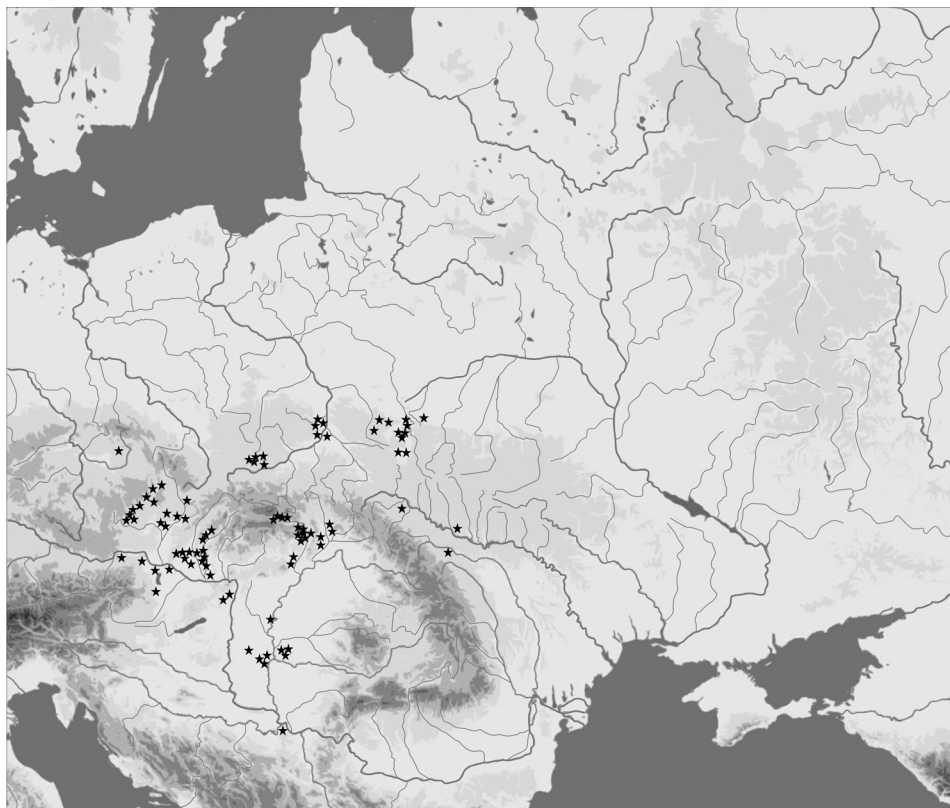


Fig. 4. Distribution of faience beads in the Early Bronze Age cultures of Central Eastern Europe. According to Kadrow 1995b; Bátorá 2006.

and Pochapy groups) [Kadrow, Machnik 1997; Kadrow 2001] and in some part the Strzyżów culture, these made out of Volhynia copper [group I – Ryndina 1980], the main part (mostly the Corded Ware and Strzyżów cultures) made out of Carpathian-Transylvanian copper group IV (metal ‘KT’) according to [Chernykh 1976] and some from Caucasus raw materials (group II). Among the ‘Strzyżów’ materials a selection of objects has been identified that most likely is the result of an alloy from the raw material of groups I and IV, local and Transylvanian copper.

The distribution of faience beads (Fig. 4), elements of necklaces found in the late Mierzanowice and Strzyżów cultures, is concentrated in the upper Vistula region as well as in the interfluvial area of the Wieprz and Bug rivers. Further east there is the odd find along the valleys of the Dniester and Prut. The center of production

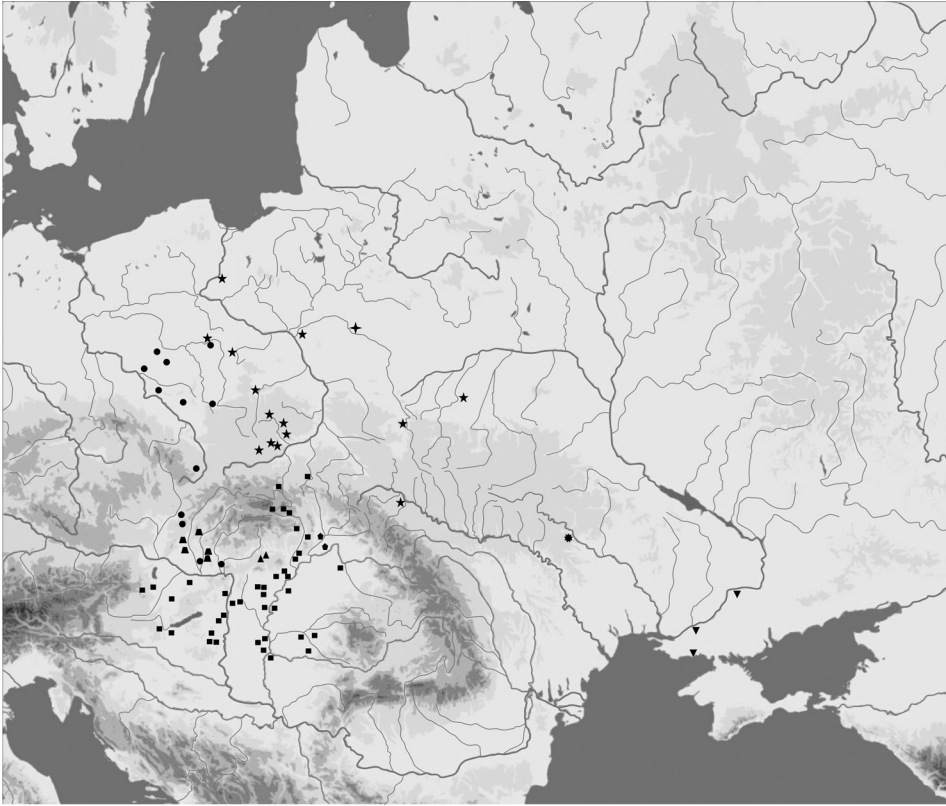


Fig. 5. Distribution of amber beads of the Trzciniec cultural circle in the context of finds of other cultures. Square – Otomani/Füzesabony culture sites; trapeze – Mad'arovec culture sites, star – Trzciniec complex sites (star with straight arms – raw material); pentagon – Suciu de Sus culture sites, triangle – Piliny culture sites; triangle – Bilozerka culture sites; sun – Hordeevka cemetery. According to Makarowicz 2009b.

of these was in the Carpathian Basin and their appearance in Mierzanowice and Strzyżów culture inventories can be said to be linked to the Füzesabony culture [Kadrow 1995b; 2001].

To recapitulate, in this stage of contacts between the peoples of the Baltic and the Black Sea watersheds it is possible to maintain that the dispersion of prestige objects at the turn of the second millennium BC does not provide strong evidence of the presence of routes linking these respective territories. The dissemination of goods under discussion indicates rather, the interaction of peoples in neighbouring settlement regions (cultural settlements) than long-distance contacts of a trade nature.



Fig. 6. Distribution of glass beads of the Trzciniec cultural circle. According to Makarowicz 2009b.

1.2. THE REMAINING PERIOD OF THE SECOND MILLENNIUM BC

The scenario outlined thus far changes with the appearance of traditional societies of the Trzciniec cultural circle phase around 1700-1600 BC. The recording of a greater number of varied types of prestige products may be a sign of the activation of the Baltic-Pontic communication artery during this period.

In this period goods out of amber (Fig. 5) continue to be recorded mainly in the interfluvial area of the Odra and Vistula, as well as in the Carpathian Basin, which ought to be linked with long-distance trans-Carpathian routes organised by the Otomani/Füzesabony culture with their northern partners from the Małopolska enclave of the TCC [Makarowicz 1999; Górski, Makarowicz 2007b]. Nonetheless it can be clearly seen that succinite products, mainly beads, were 'exported' also into



Fig. 7. Distribution of stone heads of fluted (melon-like) maces in Central Eastern Europe. According to Koško 2002; Makarowicz 2009b.

the east and south-east. A similar situation can be said to pertain to glass beads, which were prestige elements of ceremonial necklaces that were ornamented also with other raw materials (Fig. 6)

Small fluted maces (Fig. 7) appear in the populated areas of the Trzciniec complex rather frequently though only some clearly originate from the aforementioned culture circle context [Koško 2002]. It would appear that a particular type of these maces, B1 (with wide grooves without protrusion at the mouth), appeared in the Odra-Vistula interfluvial area in the context of the Tumulus culture and later Trzciniec cultural circle, and thereupon reached out to the east [Makarowicz 2009b].

Axes and axe-hammers made of stone can be found in graves and settlements in the main cultural enclaves, in particular in the upper and middle Dniester basin, as well as dispersed along the interfluvial area of the upper Vistula and Prosna, not



Fig. 8. Distribution of stone axes and axe-hammers of the Trzciniec cultural circle. Axes – star; axe-hammers – circle. According to Makarowicz 2009b.

forgetting the upper reaches of the former (Fig. 8). The recording of such items in the valleys of large rivers or their watersheds, might testify to the distribution of these artefacts and confirm the presence of communication routes.

The distribution therefore of products that can be classified as prestigious, such as axes and daggers (Fig. 9), as well as flint sickles [Taras 1997; Libera 2001; Makarowicz 2009b] can be linked rather clearly to regional appearances of chosen raw materials. Their concentration can be said to be mainly in the populated south uplands of the Trzciniec cultural circle. They are found in enclaves near Volhynia flint deposits, on the Volhynia upland bordering with the Volhynia Polesie, in particular, over the middle Styr and upper Horyn rivers, the upper Dniester basin and the Lublin upland, as well as to a lesser degree in the Małopolska upland.



Fig. 9. Distribution of flint axes and spearheads of the Trzcinić cultural circle. Axes – star, spearheads – circle. According to Makarowicz 2009b.

In the remaining enclaves of the ‘Trzcinić’ area the above are found only occasionally. It is out of this particular raw material that the majority of sickles, axes and daggers are produced and their supposed link to the Trzcinić cultural circle may be considered contentious. The far-reaching dispersion of the above artefacts therefore confirms the existence of a vast network of inter-regional links in the system of the culture framework under discussion.

It is interesting to note the geographical spread of sites where so called horn-like spindles, like maces, were considered to be prestige items (ruling insignias?). These can be found in a geographical band from the interfluvial area of the Wieprz and Bug up to the middle Dnieper region (Fig. 10) in the main settlement concentrations of the Trzcinić complex, though there are no records of these in the western part.

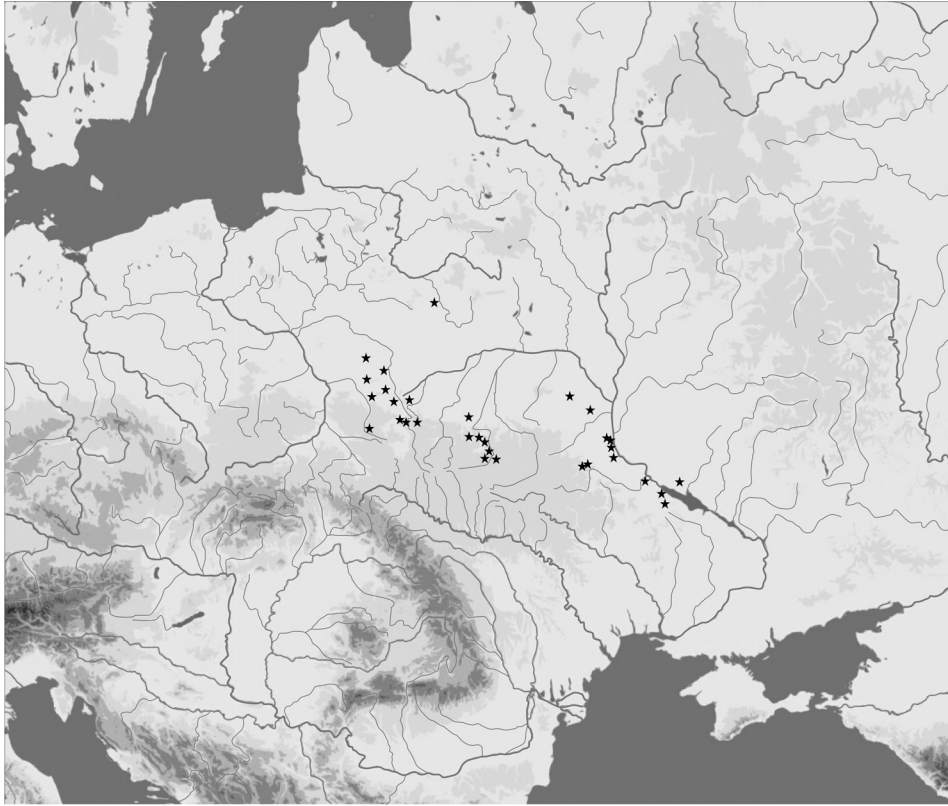


Fig. 10. Distribution of clay horn-like spindles of the Trzciniac cultural circle. According to Taras 2007; Makarowicz 2009b.

There is no proof of Ukrainian copper ores being used by the various enclaves of the Trzciniac cultural circle. A few analyses of the chemical composition of materials from lavishly furnished barrow graves (Ivanje² and Netišyn, Volhynia upland [Sveshnikov 1968; Bereznaskaya et al. 2004]) as well as pins and bracelets from Ditinii and Kołosivka as well as pins from Gulaj Gorod, have shown that this is a metal originating from Carpathian Basin ores [Berezanskaya 1972; Chernykh 1976; Makarowicz 2009b]. Further, the style of many prestige artefacts such as axes from an unidentified Volhynia site and in Ivanje, barrow I, or for that matter the ceremonial hammer-axe from Zabolotov (Fig. 11: 1, 2, 4), point to their origins in the Otomani/Füzesabony culture [David 2002; Klochko 2006; Makarowicz 2008]

² Unpublished spectral analysis of 10 objects by E.N. Chernykh, courtesy of Y. Brovender and L. Orlovska, to whom I am extremely grateful.



Fig. 11. Prestige artefacts of the Trzciniec cultural circle from the Volhynia upland. 1 – Ivanje, barrow I; 2 – unidentified Volhynia site; 3 – Ivanje, barrow II; 4 – Zabolotov. According to Makarowicz 2008; 2009b.

or show their connections with other cultural traditions (e.g. a dagger from Ivanje, barrow II – Fig. 11: 3) [Sveshnikov 1968; Makarowicz 2008]. A similar situation can be said to be the case with bronze materials from the west of the ‘Trzciniec’ area, in the main, FB1 metal group (SAM terminology), from the Carpathian Basin [Dąbrowski, Hensel 2005; Makarowicz 2009a].

The concentration, in the most intensely settled areas, of dispersed daggers (Fig. 12) and spearheads (Fig. 13) out of bronze can be linked to the Trzciniec circle and in the east to the Leboikivka, Krasny Mayak and Kardashinka metallurgical tradition. These appear mainly in graves and hoards though less often in the settlements, and only occasionally can be considered as an effect of patterns transmitted between societies of the Baltic and Black Sea catchments.

Multi-spiral ornaments of arms (bracelets and armlets) linked to the Trzciniec circle were recorded in hoards (mainly in the west) and in graves (usually in the east). The latter for the majority was found in barrow graves or as an element of richly furnished ‘flat’ burials (middle Dnieper region). Some concentration of these items was noted in sepulchral contexts in the upper Horyn region and the middle Dnieper basin, between the Teterev and Ros rivers (Fig. 14) Generally speaking, the goods analysed were found in larger settlement concentrations of the Trzciniec circle in a broad band running from north-west to south-east. Most often, they can be found on the upland part of the Trzciniec cultural circle and in areas somewhat



Fig. 12. Distribution of Trzciniec cultural circle bronze daggers. According to Makarowicz 2009b.

to the north, though there is no record of these materials in the lowland belt that extends north from the middle Vistula up to the Prypec basin.

The ornaments of arms, legs and the neck with shield-like ends originate from similar contexts to multi-spiral ornaments. In the west part of the Trzciniec territory they usually appear in hoards (though not only), while in the east, mainly in graves, particularly in barrow graves. They are mostly concentrated between the upper and middle Vistula and Prosna, less so in the Dnieper upland, upper Sluch, as well as in the interfluvial area of the upper Dniester and Prut. Occasional such finds have been found in the Volhynia and Zhytomyr Polissya, as well as the middle Dnieper (Fig. 15).

Characteristic for the Noua-Sabatinivka complex though incidental for the Wien-tenberg, Monteoru and Coslogeni cultures, are pins with a rhomboid head that have



Fig. 13. Distribution of Trzciniec cultural circle bronze spearheads. According to Makarowicz 2009b.

been recorded in 'Trzciniec' graves in Komarów, barrow 6, Gulaj Gorod and Małopolovetskoe, site 3 in the middle Dnieper region [Sulimirski 1964; Berezanskaya 1972; Biezeńska 1972: 296; Lysenko 2001]. The majority of these appear on the eastern periphery of the Carpathian ranges (Romanian plain, Moldavian upland) and the steppe of southern Ukraine in the Black Sea plain (Fig. 16). The range of differences among such pins can be found in the inventories of Early Bronze Age cultures in Central and Eastern Europe [Kaiser 1997; Sava 2002: 181; Krushelnyska 2006].

Pins with Otomani/Füzesabony culture designs featuring 'nail-like' and 'scroll-like' (pastoral) heads, appear mainly in graves. In the Baltic-Pontic region they can be found rarely and have been recorded in several key 'Trzciniec' settlements in the Wielkopolska-Kujawy plain, Małopolska upland, the upper Dniester basin and



Fig. 14. Distribution of bronze multi-spiral arm ornamentation (bracelets and armlets) of the Trzciniec cultural circle. According to Makarowicz 2009b.

in the Volhynia upland, as well as sporadically in the middle Dnieper and lower Vistula (Fig. 17).

Diadems have been documented mainly in graves, in particular barrows (rarely in hoards). Occasionally these appear in various settlement enclaves of this culture, one of which was found in a barrow in Bahr, upper Boh basin (Fig. 18).

Some materials made out of gold, exclusively ornamental such as gold rings and lunulae being elements of necklaces, appear in various parts of the Trzciniec complex, mainly in barrow graves and in one particular hoard (Fig. 19) Rings made out of wire with a returning spiral (*Noppenringen*), made out of bronze or gold, are usually linked to the traditions of the metallurgical craftsmanship of the Útice culture [Moucha 1963: 36; Zich 1996: 226; Bartelheim 1998: 61; Kadrow 2001: 93].



Fig. 15. Distribution of bronze hand, leg and neck ornaments with small spiral shields (bracelets, armlets and greaves) of the Trzciniec cultural circle. According to Makarowicz 2009b.

These materials also can be found in the Carpathian Basin, amongst others, in the Füzesabony and Gyulavarsánd cultures [Bóna 1975: 134, 159]. It is perhaps possible that as a particular ‘Únetice’ heritage they represent in the majority of cases not rings but ear rings. In the east, goods made of gold were found in barrow cemeteries near the valleys of large rivers, for example the Dniester, Boh, Sluch and Horyn, in the context of larger regional groupings of the Trzciniec circle.

Of particular interest for the reconstruction of BPIR is the distribution of horse harness – cheek pieces from the Bronze Age [Kristiansen, Larsen 2005; Kristiansen 2007]. Apart from their presence in central settlement clusters, they have also been found along the valleys of rivers (Fig. 20). These items testify to the use of horses, not only for horseback riding, but also as a locomotive force for light carts, documented



Fig. 16. Distribution of bronze pins with a rhomboid head (star marking Trzciniec cultural circle site). According to Sava 2002; Makarowicz 2009b.

in the above mentioned period in Early Bronze Age cultures of the Carpathian Basin, as well as in the east of this region. The significant role of the horse in the Trzciniec complex as the main domestic animal has been confirmed by numerous deposits of post-consumption bone remains and graves where ritual burials of this animal took place (Fig. 21).

The general picture outlined thus far would seem to suggest a significant revival of contacts between the peoples inhabiting the regions of the Baltic and Black seas in the second millennium BC. Their increased intensification ought to be linked therefore to the establishment of a new cultural formation bearing structures of a *long duree* – Trzciniec cultural circle [Makarowicz 2009b], over the populated catchment areas extending from the Baltic to the Black sea.



Fig. 17. Distribution of bronze pins with a 'nail-like' and 'scroll-like' heads of Trzciniec cultural circle. Circle – pins with a 'nail-like' head; star – pins with a 'scroll-like' head. According to Makarowicz 2009b.

2. THE ORGANISATION OF BALTIC-PONTIC INTERREGIONAL ROUTES

In accepting the thesis of a system of long-distance communication routes existing, which linked the largest settlement centres of the Trzciniec circle as well as those with the most important European centres of culture, the need arises to define its organisational form. This could be said to include the actual territory over which they functioned, their fundamental beginning and end points, intermediate elements broken down into stages and stopping points, contact zones, principle travellers known as 'people of the route' [Koško 2001; 2002], as well as the mechanisms of circulation of people and artefacts, transmission of cultural patterns, fashion, innovation, knowledge, how-know and cultural concepts.



Fig. 18. Distribution of Trzciniec cultural circle bronze diadems. According to Makarowicz 2009b.

The distribution of prestige objects and some materials (in relation to their traits) of a more common nature (vessels, ornaments) among the population of the Trzciniec circle indicates their concentration in the aforementioned settlement centres. The majority has been found in the context of rituals (graves, hoards, ceremonial objects) or those undefined (occasional finds), whereas only a small part was found in settlements – in dwellings and domestic features. These dominant contexts of finds relating to previously mentioned materials does not, however, mitigate the presence of routes. Prestige items (status, insignias) were rarely left (misaid) on these communication channels. Usually such artefacts not only found their way to the main centres of culture near the major dissecting byways but also at a certain distance from them.

In many cases the appearance of valuable, socially esteemed objects or patterns in larger agglomerations was tied to people specialising in exchanges leaving a stra-



Fig. 19. Distribution of gold artefacts from the Trzciniec cultural circle. According to Makarowicz 2009b.

tegic route (transcontinental) and then using one of lesser importance. As noted by S. Kadrow [Kadrow 2001: 225], the 'influence' of external cultures (technological inventions, models, organisational forms, prestige items etc.) does not have to spread in a particular fashion, each time leaving signs of a particular stage. On the contrary, according to world systems theory, which assumes a hierarchy in each cultural, economic and political dimension, some phenomena (metallurgy of bronze or chieftain-based organisations) appear only where there existed a demand for a particular innovation and the appropriate conditions for its adaptation.

Thus the mechanisms of distributing prestige products, models, innovations or knowledge can vary from long-distance, direct and successive exchanges to forms defined by their immediate environs to local transfer known as 'down the line', or neighbouring 'prestige chain exchange' [Dąbrowski 1972: 193; Renfrew 1984: 119-121; Renfrew, Bahn 2002: 335-368; Harding 2000: 187-196].

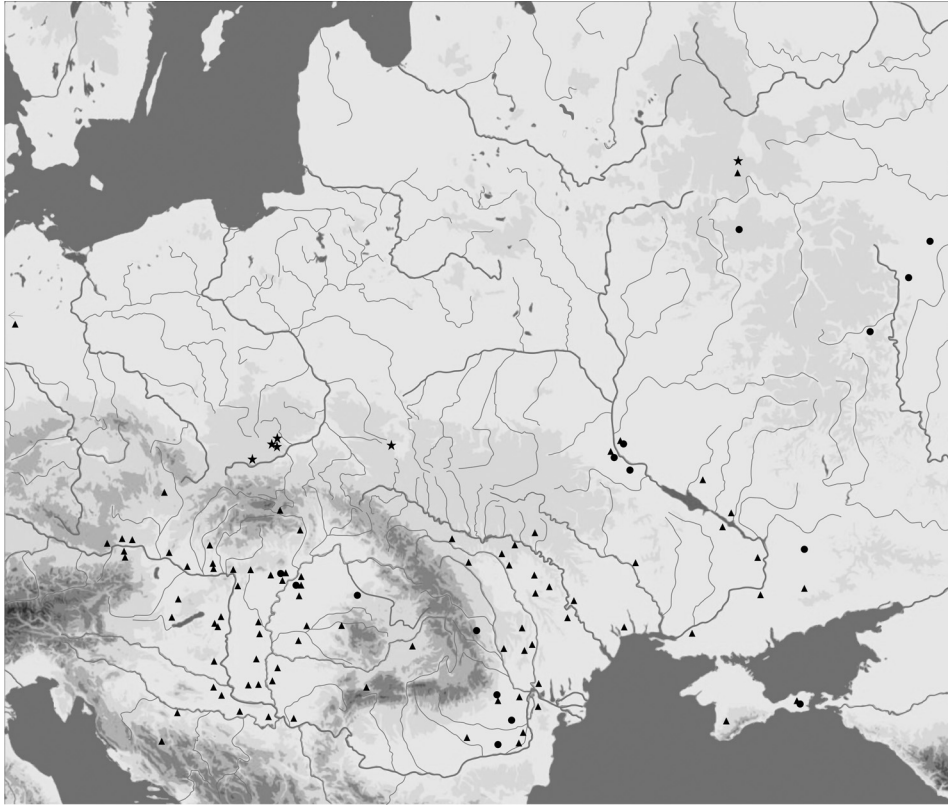


Fig. 20. Distribution of horse cheek pieces. Star – Trzciniec cultural circle sites. Star and triangle – Central European cheek pieces; circle – East-European cheek pieces. According to Boroffka 1998; Kristiansen, Larsson 2005; Kristiansen 2007; Makarowicz 2009b.

The appearance of particular materials under discussion near river valleys or in the watersheds of main rivers running across the Trzciniec area as well as beyond towards important centres of civilisation could have signalled the presence of permanent or period-specific communication routes functioning. Examples of long-term, stable routes in this period (though sometimes ones changing course) are the long-distance links with the north (Baltic region) to southern Europe in the direction of the Carpathian Basin and further to the Aegean and its environs. At the end of the first half of the second millennium BC, of key importance in this regard was the interaction of the Małopolska enclave of the Trzciniec complex with the nearby groups (northern peoples) of the Otomani/Füzesabony culture.

Thanks to the northern routes running through the 'Trzciniec' agglomerations in the Małopolska upland and beyond through the Carpathian pass along the La-



Fig. 21. Distribution of horse graves and post-consumption deposits of horse bones in the [bez] funeral and settlement contexts. Star – horse graves; triangle – post-consumption remains of horse. According to Makarowicz 2009.

borec, Ondava, Topel and Torysa rivers to various cultures in the Carpathian Basin, amber was found [Markova 1993; Gashaj 2002; Batora 2006: 203-208]. Similarly, in Otomani/Füzesabony culture settlements located on the northern side of the Carpathian arch, 'Trzciniec' pottery was also found, perhaps an effect of exogamy.

No doubt, for the societies of Volhynia and Dnieper 'Trzciniec' enclave regions, as in the case of peoples from the Małopolska upland and Kujawy-Wielkopolska plain, contact with the cultures of the Carpathian Basin was highly important, in particular with Transylvania and Moldavia, especially with the Otomani/Füzesabony culture, then that of Noua. The significant accumulation of objects from the trans-Carpathian region in the upper Vistula and Dnieper spread further also into the northern part of the Baltic-Pontic area, which testifies to the possible activity of the

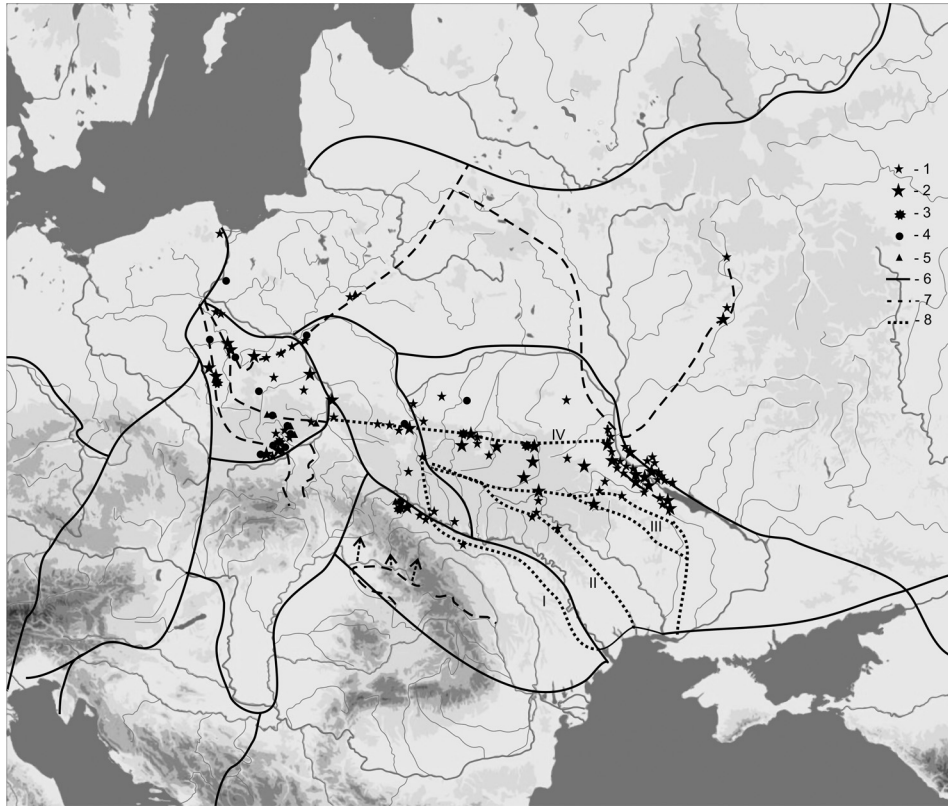


Fig. 22. Distribution of prestige goods and the potential water and overland long-distance and local routes in the Baltic-Pontic region and its surrounding territories in the second millennium BC. 1, 2 – bronze goods (1 – one item; 2 – more than one item); 3 – gold goods; 4 – amber beads; 5 – glass beads; 6 – routes proposed by M. Gimbutas [Gimbutas 1965] and A. Koško [Koško 2002]; 7, 8 – routes proposed in this paper. I – Wolosky route; II – Kuchmansky route; III – Black route; IV – Volhynian route. According to Gimbutas 1965; Koško 2002; Makarowicz 2009b.

‘Otomani/Füzesabony’ peoples in the organisation of communication links not only from the Baltic region to the Carpathian Basin [Górski, Makarowicz 2007a; 2007b], but also from this region in the direction of the Black Sea [Makarowicz 2008, 2009b].

The BPIR were no doubt less important in regard to economic and socio-political factors than long-distance Baltic-Carpathian links. These though, were significant for the dissemination and circulation of particular patterns, materials and ideas, as well as the translocation of people. Their range and intensity, in respect to initial research on this issue, is only beginning to become clear (see other studies in this publication).

The potential use of natural water byways, in particular in the lower reaches of rivers, is exemplified by the boat found in Pińczów, South-eastern Poland, radiocarbon dated to 1500-1300 BC [Dąbrowski 2004: 41], and land routes leading along the watersheds of large rivers. No doubt the lion's share of the route was done by foot. The most important 'water' communication branches linked to river valleys, running basically in a meridional direction, ran along the valleys of the Vistula, Warta, and Prosna towards the 'Trzciniec' enclave in Małopolska, running up the Wisłoka, Wisłok, Danube and smaller rivers towards the Carpathian pass, further to the Ondava, Laborec, Topel and smaller rivers in the direction of the Carpathian Basin (Fig. 22).

An important role in the transmission of cultural models and products in the above mentioned territories was no doubt played by the route running down river of the Sotesh to the Tisa and further up its reaches. Potential routes along river valleys of the tributaries of the Tisa right bank leading through the Carpathian pass were also significant (see Otroshchenko in this volume), ones that lead to the tributaries of the right bank of the Dniester and further north and east through the valleys of the Styr, Horyn and Sluch to settlements in Volhynia, Polesie and the Dniester upland, then on to tributaries of the right bank Dnieper, over the middle Dnieper region and further east up the Dnieper, Desna and Sejm. The most important long-distance communication routes of the 'Trzciniec' peoples ran, no doubt, along the valleys of the Vistula, San – Dniester, Vistula – Wieprz – Dniester, Vistula – Bug – Boh, Vistula – Bug – Prypets, Vistula – Narew – Nemen, as well as Vistula – Bug – to the right bank tributaries of the Prypets (Styr, Sluch and Horyn) (Fig. 22).

It is a great deal more difficult to reconstruct the communicative routes of the Trzciniec circle area, extending over the north, north-west, east and north-east from the Dnieper. The dissemination of cultural models, translocation of people and their goods, transfer of knowledge and technology no doubt occurred with the central Dnieper settlement nucleus along the Desna and its tributaries, as well as the upper reaches of the Dnieper and the Prypets (Fig. 22) (see Lysenko, Lysenko in this volume).

Overland communication routes away from river valleys, running through river watersheds can be said to be the second category of 'road' under discussion (Fig. 22). A valuable insight into the means of travel, movement of goods (including luxury ones), innovations, cultural models in the past, also in the Bronze Age, is given by the analysis of the course of well documented long-distance overland routes used by Tatar forces [Gloger 1978: 329]. From the BPSR we are familiar with several of these routes such as the Kuchmansky – running along the watershed of the Dniester and Boh, the Black (with branches) running between the Dnieper and the Boh, the Złoty – between the Dnieper and the Don, the Wolosky running southwards from the Dniester [Gloger 1978: 329]. Moreover, of significance proved to be the more

'trade-like' Volhynian route that ran from the upper Vistula (near Zamość) to Kiev, intersecting latitudinally (the ford) of the middle Styr, Horyn, Sluch and Teterev rivers. The more regional Chumackyy route (at times unmade), ran through the vast 'Trzciniac' cemetery complex in Malopolovetskoe, site 3 [Lysenko 2001; 2004: 85].

The land routes (watersheds) did not in fact have the features of a 'road' but rather, were wide arteries measuring several hundred metres or even several kilometres of terrain, used for the movement of people, animals and perhaps even carts. These were characterised by the presence of (in some parts) barrows marking sometimes the general direction of the 'road' [Gloger 1978: 329; Makarowicz 2009a; 2009b]. The custom of raising barrows in the line arrangements, especially in the southern part of the 'Trzciniac' area, in the deforested parts of watershed ridges, could be an indication that such communication arteries were present. Among many other functions, the role of the barrows as a compass point is emphasised often in the professional literature, as mentioned previously in this study in respect to 'Trzciniac' burial rituals [see Makarowicz 2009b]. There is no irrefutable proof, however, of using the above mentioned channels over time during the Bronze Age. The finds of many prestige objects from this period, however, in their respective geo-cultural contexts, can be said to convey a fulsome store of information prompting a thesis that would acknowledge the early functioning of these communication links.

The discovery of horse harness, in particular cheek pieces as well as horse graves and numerous deposits of bones of this animal, could testify to the use of horses for horseback riding, as a pack animal and one for pulling carts or other forms of transport. Proof for this not only comes from a region of a highly developed metropolitan civilisation of the Near East and Anatolia [Burmeister 2004; Bernbeck 2004; Crouwel 2004b; Hofmann 2004; Kristiansen 2007]. From the Catacomb culture and Sintashta complex there has also been found wooden carts, horse graves and elements of horse harness [Gening, Zdanovich, Gening 1992, Fig. 94 and 106; Jones-Bley 2000; Epimachov, Korjakova 2004; Otroshchenko in this volume]. In the Carpathian Basin and in regions to the north of the Carpathian arch, clay cart models or their parts, as well as bone cheek pieces [Boroffka 1998; 2004] have been found, while from the Aegean region, terracotta models of carts and their iconographic representations are known [Drews 1993: 104-134; Crouwel 2004a]. It can be seen thus that the closeness of the Otomani/Füzesabony culture lent itself to disseminating these innovations northwards where the Trzciniac circle was placed.

Journeys by horse and cart were not possible through river valleys, they would have had to be made a certain distance away, no doubt using watershed routes. Using cattle as pack animals or as a locomotive may have been common practice, though there is no direct evidence for this. Indirectly, zoomorphological artwork, numerous small figures of these and other animals from Early Bronze Age cultures of the Carpathian Basin and its environs [Gancarski 1988; Csányi, Tárnoki 1992: 205, No. 403-413, 417-419; Olexa 2002, photo. 111].

The creation of long-distance communication network branches numbering several hundred and even over a thousand kilometres in all, required considerable organisational abilities and no doubt cooperation with the peoples of the region concerned through which they ran [see Makarowicz 1998: 253] The presence of civilisational templates from the Carpathian Basin, in particular the Otomani/Füzesabony culture, on the north of the Carpathian arch can point to these peoples as ones of ingenuity, organisation and enterprise (network of 'trade agencies' or representatives among local community).

In the latter part of the first half of the second millennium BC in East-Central Europe only the above mentioned elites of cultural centres had the necessary technological means and ruling cast that allowed for the creation of a northern branch network of widespread contacts (see [Kadrow 2001: 230] regarding this as the most developed economy in this part of Europe). The Otomani/Füzesabony culture was characterised by a hitherto unknown complexity of socio-political structures that created proto-state organisations such as fortified settlements, great communal cemetery complexes, spectacular riches, advanced metallurgy and means of transport, specialisations, beginnings of warrior aristocracy [Kadrow 2001: 83, 125; Gancarski (Ed.) 2002; Kristiansen 1998: 370; Kristiansen, Larsson 2005; Kristiansen 2007]. The presence of amber in barrow 33 in the Komarów cemetery, together with vessels bearing the Noua culture style [Sulimirski 1968] could suggest the participation of other cultures in the Carpathian Basin (beside the Noua culture as well as Costia culture in long-distance exchanges, perhaps in this case successors of 'Otomani/Füzesabony' representatives).

The main impetus for community elites was the need for northern raw materials, foremost ones such as amber deposits perhaps not only Baltic but also Ukrainian (Fig. 23), as well as salt deposits from the Baltic and Black Sea [Koško 2001; 2002], those inland from the Carpathian mountains in Ukraine [Krushelnytska 2002], in Moldavia and north Romania [Dumitroaia 2000] as well as Kujawy and the interfluvial region of the middle Warta and Vistula (see briquetage vessels from Polesie), site 1 in the context of Trzcinec pottery featuring 'Otomani/Füzesabony' style [Górski, Makarowicz, Wawrusiewicz 2010]. Copper, potentially, in this regard was also sought in the Carpathian foothills, upper Dniester region and Volhynia Polesie in Ukraine (Fig. 24) as well as basalt and Volhynia flint [Chachlikowski 2010; Makarowicz 2009a]. Probably the north could have also been the source of supplying farm products, animal furs, honey as well as potential nuptial partners, in particular women. On the other hand, the more advanced south offered knowledge in the technology of making products from bronze, ready-made prestige products out of metal [copper, bronze, gold as well as the raw material for their production], amber, glass and animal horns. These products were stored by 'Trzcinec' elites and used as an imprimatur of the ruling class that was arising as a political substratum. Such goods were also used in an advanced system of rites in these communities,



Fig. 23. The main sources of amber in the Baltic-Pontic region, 1 – succinite; 2 – other species of amber. According to Makarowicz 2009b.

which had the aim of confirming the unity and identity of the group [Makarowicz 2003; 2005; 2009b]. The demand for goods beyond the Carpathian region was linked to the need for ready-made luxury items of an iconic nature confirming status, ones foremost processed, not raw. Such forms of exchange, in the context of world system theory, is characteristic for relations between cultural centres and their peripheries [Frank 1993; Sherratt 1993; Kardulias (Ed.) 1999; see for the Trzciniec complex – Makarowicz 1998: 292-298; Górski, Makarowicz 2007b].

It can be assumed therefore that particular parts of valley routes mentioned above, river and inland, were controlled by the local 'Trzciniec' elites who took certain profits from controlling exchange or maintaining the availability of certain key junctions (being concerned with avoiding conflicts and their subsequent destabilisation, loss of exchange continuity and protection over contact and stopping points).



Fig. 24. The main copper ores in the Baltic-Pontic region. According to Chernykh 1976; Makarowicz 2009b.

These elites interred their dead under kurgans with at times splendidly furnished graves (e.g. barrow I and II in Ivanje – Fig. 25, barrow VIII in Netishyn – Fig. 26, barrow IX and XII in Kolosivka in the Volhynia upland as well as barrows 6, 8 and 33 in Komarów – Fig. 27 in the upper Dniester – Lagodovska 1948; Sveshnikov 1968; Bereznaskaya et al. 2004; Sulimirski 1964; 1968].

The rich ornamentation in prestige items out of Bronze has been documented in kurgan graves found near potential routes such as Komarów, Bukówna, upper Dniester basin, Bar near the Boh, Ditinitshi near the upper Horyn as well as numerous mass graves in the Małopolska upland such as in Żerniki Górne, site 1, Małopolska upland, where artefacts of necklaces out of amber, glass and bronze were recorded [Kempisty 1978], in Dacharzów, site 1 in the Sandomierz upland where bronze products have been documented in monumental graves of a stone-wood construction [Florek, Tăras 2003], as well as in elite graves in the Malopolovetskoe

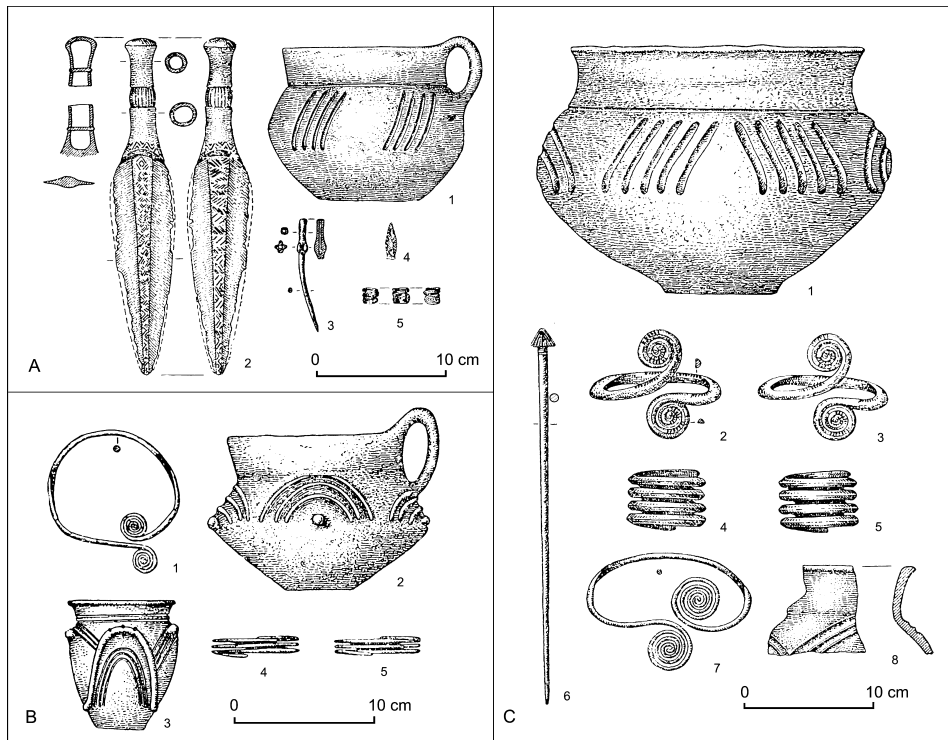


Fig. 25. Richly furnished graves of the Trzciniac cultural circle from Ivanje, barrow II, Volhynia upland. A, B – grave 2; C – grave 1. A – 1 – clay, 2, 3 – bronze; 4 – gold; 5 – flint. B – 1, 4, 5 – bronze; 2, 3 – clay. C – 1, 8 – clay; 2-7 – bronze. According to Sveshnikov 1968; Makarowicz 2008.

cemetery complex, site 3 in the middle Dnieper region, which were furnished with bronze products (Fig. 28) [Lysenko 1998; 2001].

Naturally, it ought not be assumed that the elites directly oversaw the proper functioning of the routes, though they did keep watch and provided for the community that was dependent upon them. It is difficult to define the status of the ‘peoples of the route’ themselves, those travelling together with goods and at the same time, bearers of cultural models. Clearly, they were communities involved in exchange (artisans, merchants) and trade, thus specialising in such activities tied to travel across regions known and unknown [see Kristiansen, Larsson 2005; Kristiansen 2007].

The exchange of raw materials and ready-made products out of bronze and amber was often tied to the institution of ‘itinerant blacksmiths’ or ‘chief blacksmiths’ who were specialist metallurgists distributing bronze products far afield from their workshops [Sangmeister 1972; Koško 1979: 172; Butler 1990; Sherratt 1994: 259;

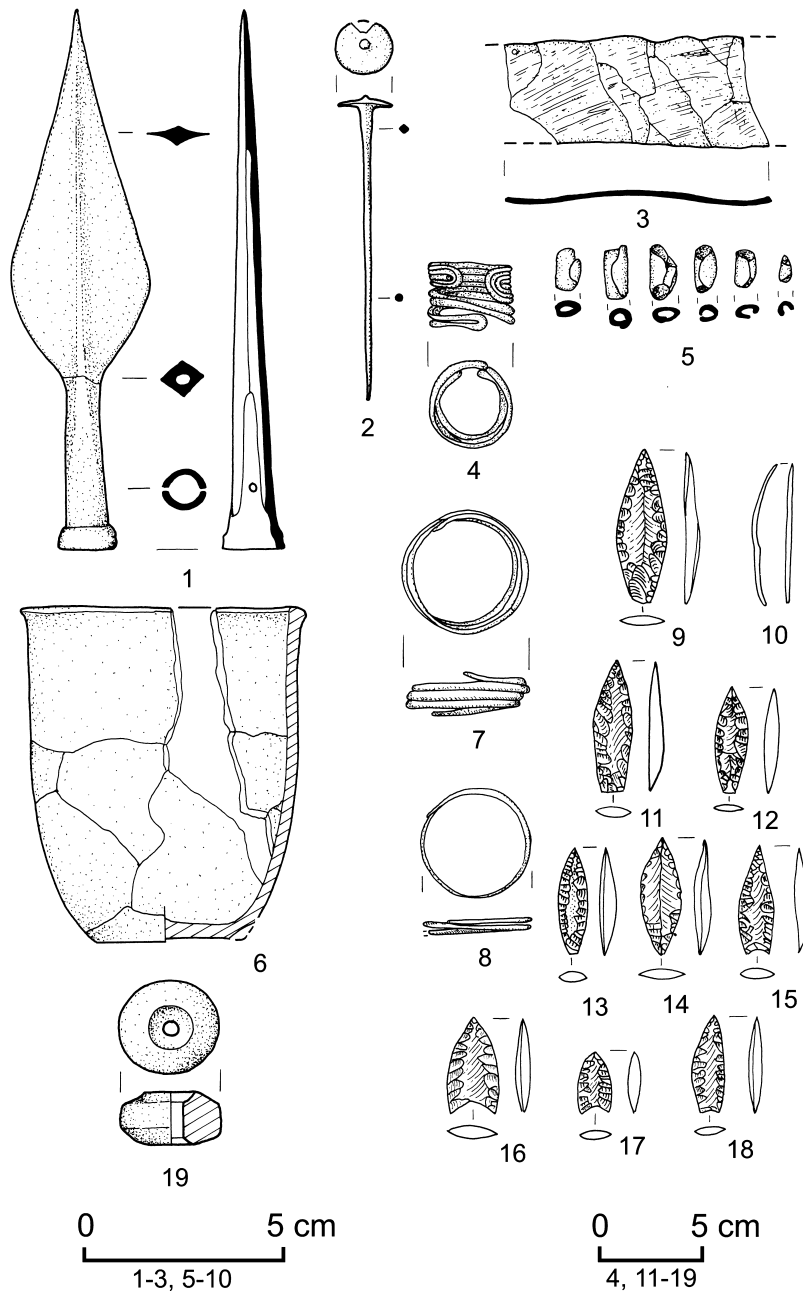


Fig. 26. Richly furnished graves from Netishin, barrow VIII, Volhynian upland. 1-3, 6, 9, 11-18? – grave 1 (western); 4, 5, 7, 8, 10 – grave 2 (eastern), 19 – from the mound. 1-3, 5, 7, 8 – bronze; 6, 19 – clay; 4 – gold. According to Berezhanskaya et al. 2004.

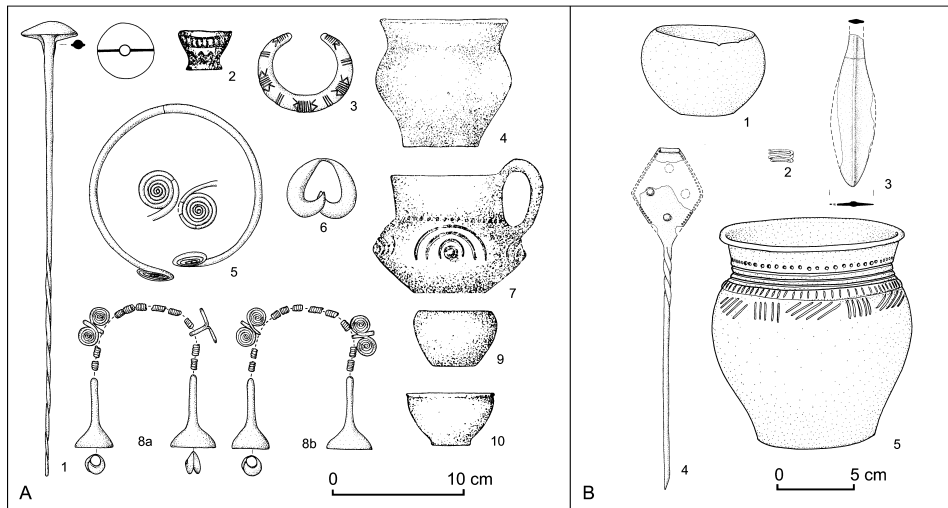


Fig. 27. Richly furnished graves from Komarów, upper Dniester basin. (?). A – grave from the barrow 8: 1, 3, 5 – bronze; 2, 4, 7, 9, 10 – clay; 6 – gold; 8a i 8b – bronze and gold. According to Sulimirski 1964; 1968. B – grave from the barrow 6: 1-5 – clay; 2 – gold, 3, 4 – bronze. According to Sulimirski 1964.

Vandkilde 1996: 265; Makarowicz 1998: 260; 2000; 2003; 2005; Harding 2000: 236] and also see for warrior chiefs/bronzesmiths – Kristiansen 1998: 379]. Evidence of an indigenous metallurgical production such as casting forms and spoons, toys for blacksmith bellows as well as numerous products out of bronze have been also found in the west [Blajer 1998; Dąbrowski 2004; Makarowicz 1998: 250], as in the east part of the Trzciniec cultural circle [Berezanskaja 1972: 76-92; Bierezańska 1972: 275-280; Dąbrowski 1972; Dergachev 1986: 151; Klochko 1994a: 115-118; Klochko 1998; 2001a; 2006].

It would appear, however, the movement of people and goods along communication routes took place rather in larger groups and for various reasons, these were not journeys made by individuals as such (see criticism of the 'itinerant blacksmith' concept in [Vandkilde 1996: 263; Makarowicz 1998: 251]. There is good reason to believe that the transmission of so called cultural templates and products from a foreign territory into the heart of the Trzciniec complex took place thanks to the function of communicative routes linking the northern, sea bound part of the aforementioned circle with communities inland and enclaves of the uplands.

It ought to be remembered that the majority of Early Bronze Age cultural agglomerations from Central Eastern Europe were kinship-based communities made up of families composing larger social units (lineages or clans). Communities such

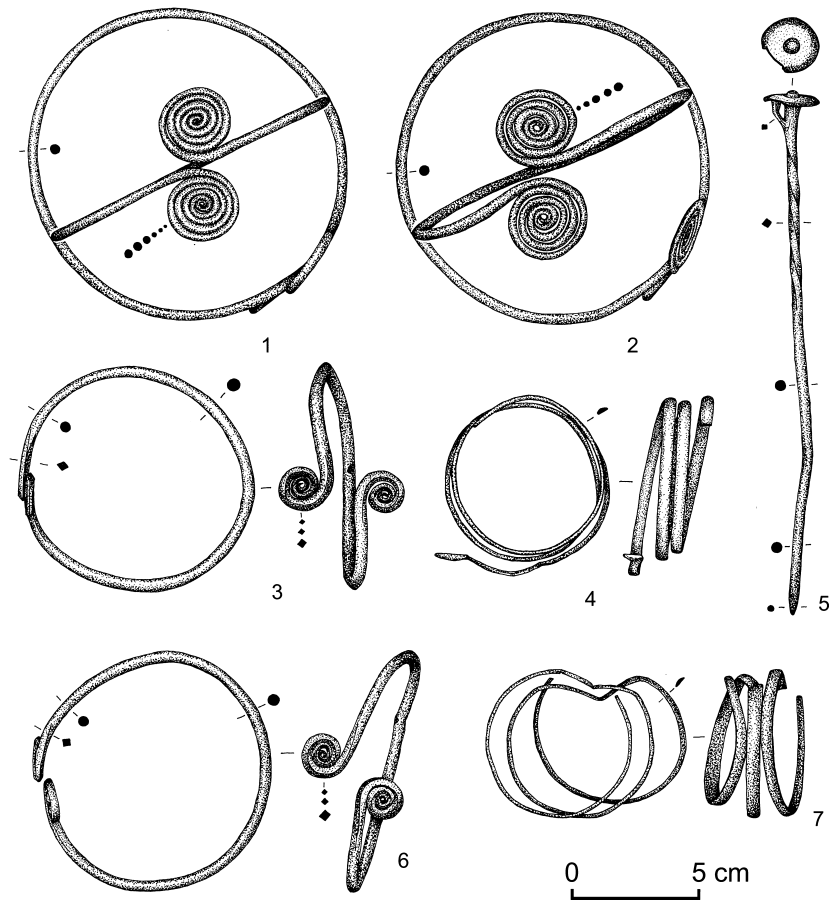


Fig. 28. Richly furnished grave from Malopolovetskoe, site 3, grave 1-93, middle Dnieper area. 1-7 – bronze. According to Lysenko 1998.

as these, are a matter of fact, a great deal more active in *ad hoc* organisation of various local forms of enterprise, though it would appear that stability, the long-term and permanent function and maintenance of routes (as socio-economic and political ‘institutions’) would have had to have meant either breaking the ‘kinship code’ and establishment of proto-state societies (as in the case of the Otomani/Füzesabony culture) or the evolution of kin-related and descent groups that usually created relatively simple segmentary organisms (tribal) developing towards chiefdoms.

In the period under discussion, the Baltic-Pontic region is witness to the establishment of chiefdoms, cultural organisms that were limited in their physical geography, with the rise of an warrior aristocracy substratum, for example: western

Małopolska, upper Dniester basin, basins of the upper Styr, Horyn and Słuch in Volhynia, as well as some regions of the middle Dnieper region, the environs of the Malopolovetskoe cemetery complex, site 3. In this respect, the case of post-Trzciniec Hordeevka and similar sepulchral objects in the Boh basin should be noted, reflecting substantial social changes in the latter half of the second millennium BC in this region (see Ślusarska in this volume). It would appear therefore that the long-distance routes across the Trzciniec circle did not function in a continuous fashion but had their rise and fall. Arguably its culmination could be said to be the period of growth in the culture circle under discussion.

3. CONCLUSION

In the above study the distribution of prestige products at the beginning of the Bronze Age in the territories of the Baltic-Pontic region has been linked to the presence of long-distance and local communication routes. At the end of the third millennium BC signs of their function were not clearly visible. The significant rise of exchange in this region came about in the first half of the second millennium BC. The main initiators and reapers of profits of communication links on the north-west – south-east axis were arguably the communities of the Otomani/Füzesabony culture. Their northern partners in this respect were the ‘Trzciniec circle’ groups whose elites took active part in the organisation and maintenance of the key junctions of routes.

The above interpretation is given credence by finds of metal products, bone cheek pieces of horse harness and vessels with a trans-Carpathian style in the regions extending into the heart of the Trzciniec circle as well as the presence of Baltic amber materials in the graves and fortified settlements in the Carpathian region and its environs. The scale of exchange, measured by the dispersion of prestige artefacts, suggests that the transmission of cultural models, ready-made products and know-how in the Baltic-Pontic region could have been to a large extent formalised. In the second millennium BC communication routes in these territories became one of the main so called cultural institutions stimulating overall progress in civilisation.

Translated by