THE INGUL-DONETS EARLY BRONZE CIVILIZATION AS SPRINGBOARD FOR TRANSMISSION OF PONTIC CULTURAL PATTERNS TO THE BALTIC DRAINAGE BASIN 3200 – 1750 BC

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Editor's Foreword

In 2009, the 14th volume of Baltic-Pontic Studies (*BPS*) ran a series of papers summing up the state of research at that time into the routes between the Baltic and Black seas between the 4th and 1st mill. BC. They are an expression of an early reflection prompted by the need to look more closely at the impact Pontic cultural environments – where composite metallurgy was practised, designated as Early Bronze in this volume – had on the Decline Neolithic and Proto-Bronze settlement centres in the Baltic drainage basin. It is to this question that successive volumes of the *BPS* shall be devoted.

Specifically, according to the research programme aims mentioned above (initial fruits being the papers included in *BPS*, vol. 18) the environments of Northern Pontic cultures – Yamnaya, Catacomb and Babyno – and the Trzciniec cultural circle were identified as generators of the Ingul-Donets Early Bronze Civilization or their immediate neighbours. In proposing this modification of the gamut of phenomena making up the prologue to the European Bronze Age, we intend to suggest the need for a more integrated ('extra-taxonomic') and at the same time, territorially wide-ranging reading of Northern Pontic civilization environments and its cultural interaction in the period from the 3rd to the first half of the 2nd mill. BC.

More arguments in favour of the above opinion can be found in the introductory paper: *The Baltic Drainage Basin in the Reconstruction of the Mental Map of Central Europe Held in Common by Northern-Pontic Early-Bronze Civilization Communities; 3200 – 1600 BC, An outline of research programme.* Editorial comment

- 1. All dates in the B-PS are calibrated [BC; see: Radiocarbon vol. 28, 1986, and the next volumes]. Deviations from this rule will be point out in notes [bc].
- 2. The names of the archaelogical cultures and sites are standarized to the English literature on the subject (e.g. M. Gimbutas, J.P. Mallory). In the case of a new term, the author's original name has been retained.
- The spelling of names of localities having the rank of administrative centres follows official, state, English language cartographic publications (e.g. *Ukraine, scale 1 : 2 000 000*, Kyiv: Mapa LTD, edition of 1996; *Rèspublika BELARUS', REVIEW-TOPOGRAPHIC MAP*, scale 1:1 000 000, Minsk: *BYELORUSSIAN CARTOGRAPHIC AN GEODETIC ENTERPISE*, edition 1993).

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Viktor I. Klochko, Aleksander Kośko

THE BALTIC DRAINAGE BASIN IN THE RECONSTRUCTION OF THE MENTAL MAP OF CENTRAL EUROPE HELD IN COMMON BY NORTHERN-PONTIC EARLY-BRONZE CIVILIZATION COMMUNITIES: 3200-1600 BC. AN OUTLINE OF THE RESEARCH PROGRAMME

Since the late 4th and early 3rd mill. BC, the cultural communities occupying the borderland between the east and west of Europe possessed the systems of *men-tal maps (mental chorographies)*, a general exploration of which (both in terms of identification methods and attempts at field recording) was already discussed by researchers working on the projects of 'Intermarine Archaeology' [*see* Ignaczak, Kośko, Szmyt (Eds) 2011].

A key conclusion of this discussion is a revision of assessments concerning the positions occupied by Baltic drainage basin communities in the system of neighbour ('frontier') policies shared by so-called *Early Bronze civilizations*¹ – the most active in this part of the continent – specifically, the Danube-Carpathian and Northern Pontic.

The research has focused so far on the 'Baltic-Danube' relations, which reflected their special position in the cultural changes in east-central Europe in the 3rd and 2nd mill. BC [Machnik 1967; 1977; 1978; 1982; 1987; *see also* a discussion of the research in Ukrainian by Buniatian 2010]. The research covered the prehistory of communities living in the drainage basins of the Odra, Vistula and Neman rivers [*see* Lakiza 2008:155].

What should be stressed in this context is the absence of a parallel attempt to systemically assess Baltic-Pontic relations. This is caused above all by the delays in the dissemination of knowledge on the state of research into the Bronze Age

¹ To use the categories developed by Jan Machnik [1978:9]; another term is: *provinces of Early Bronze metallurgies* meaning 'composite metallurgies'.



Fig. 1a 'Classic approaches' to European metallurgic centres in the 4th/3rd-2nd mill. BC by Maria Gimbutas [1965] showing the Ingul-Donets centre (in black) mentioned in the text. Legend: 1 – metallurgic centres (I: (a) Carpathian, (b) Bohemian-South-German, II: Caucasian, III: South-Ural); 2 – routes of metallurgic inspirations; 3 – Ingul-Donets Early Bronze Civilization

in the Northern Pontic Area. The knowledge was gathered when the excavation results of 'many thousands of kurgans' were revisited some years after they were obtained in the wake of a 'steppe farming' project carried out in pursuance of one of Leonid Brezhnev's policies from the late 1960s to the early 1990s. The kurgan excavation results create a new situation with respect to the exploration of many cultural aspects of metal ages. One research thread is the study of the Ingul-Donets centre of Early Bronze Age cultures (Yamnaya, Catacomb, Babyno), hereinafter referred to as the *Ingul-Donets Early Bronze Civilization* (I-DEBC) [*see* Batora 2006; Klochko, Kośko 2009].

Another deficiency of the current state of research is the failure to assess the topogenesis of the 'extra-Carpathian' markers of Early-Bronze cultures in the Bal-



Fig. 1b 'Classic approaches' to European metallurgic centres in the 4th/3rd-2nd mill. BC by Jan Machnik [1978], showing the Ingul-Donets centre (in black) mentioned in the text. Legend: 1 – metallurgic centres; 2 – routes of metallurgic inspirations; 3 – Ingul-Donets Early Bronze Civilization

tic drainage basin. An exception here is the study of an area between the Wieprz and Horyn rivers. This is especially true for the investigations by Jerzy Libera of the Strzyżów manufacture trend of bifacial points [Libera 2001].

This paper shall attempt to review the major research tasks within the above-outlined scope.



Fig. 2 A current revision of the map of metallurgic centres in the Northern Pontic Area after V.I. Klochko [1994; 2004] and Y.M. Brovender [2009: map 1]. Legend: Metallurgic centres: 1 – Carpathian; 2 – Kuban ('Maikop'); 3 – Volhynian; 4 – Kryvyi Rih; 5 – Donets

1. THE BALTIC DRAINAGE BASIN AS THE AREA OF FRONTIER EMANATIONS OF EARLY BRONZE CIVILIZATIONS

The network of settlement-cultural centres referred to as *Early Bronze Civilizations* provides evidence for the conception of a process which led to the rise of the oldest centres (or provinces) of composite metallurgy in Europe. By composite metallurgy is meant here the metallurgy of alloys or possibly hypothetical alloys (of copper, chiefly with arsenic and tin). The most common map shows 3-4 such centres in the late 4th and in the 3rd mill. BC usually identified as Central European (divided further into Carpathian and Bohemian-South-German ones), Caucasian and South-Ural ones [Gimbutas 1965, Fig. 1; Machnik 1978, Fig. 7].

Until the 1960s/1970s, little was known about autonomous metallurgic centres between the Carpathians and Caucasus (Fig. 1a, 1b).

In efforts to make the 'classic' record of *Early Bronze Civilizations* more specific, attempts were made to justify the distinction of their less marked forms that arose in the 3rd-3rd/2nd mill. BC. The attempts relied on microspatial observa-



Fig. 3 Map of features identified as *metallurgists' graves* as charted by L.C. Ilyukov [1985], A.I. Kubyshev and A.L. Nechytailo [1991: Fig. 1] and J. Batora [2006: Fig. 37]. A concentration of such features within the Ingul-Donets Early Bronze Civilization is shown in the box. Right upper corner: illustration of a YC metallurgist's grave, Gromovka, Kherson Region

tions of coincidences between local shallow copper deposits, which hypothetically were accessible in prehistoric times, and local taxonomic units, exhibiting certain ties (in terms of pottery styles) to the circle of *Early Bronze* cultures. Moreover, funerary features identified as *metallurgists' graves* were cited in support as well [Kubyshev, Nechytailo 1991; Batora 2006: Fig. 37]. An entirely new research thread, represented in this volume by Lubov and Viktor Klochko, is started by an

attempt to separate a broad complex of metal artefacts, associated mainly with the Corded Ware culture (CWC) and coming from the area stretching between the Vistula and Dnieper rivers, by performing an integrated analysis of hoards, grave inventories and – newly obtained – many 'chance discoveries' (i.e. made without a direct supervision by an archaeologist). The analysis shows a promising composition and typochronology of the complex of sources, offering a fair chance for a major revision of the known approaches to the prologue of the Bronze Age in the area affected by the impact of the 'Carpathian-Volhynian metallurgic centre'.

Viewed from the Northern Pontic Area, the outcome of attempts made so far to review (or make more specific) maps of metallurgic centres justifies distinguishing three new ones: *Volhynian* (or more broadly speaking: *Carpathian-Volhynian*), *Kryvyi Rih* and *Donets* ones. Of which the second and third can be interpreted to have jointly brought about the rise of a broader province: an Ingul-Donets one (in this approach the Ingul-Donets Early Bronze Civilization, in another: Ingul-Donets Cultural/Civilization Centre – *see* the paper by Vitaliy V. Ortoshchenko in this volume) [Klochko 1994; 2004; Klochko *et al* 2000; 2003; Klochko, Kośko 2009; Brovender 2009]. Clear evidence for the existence of this province comes from the Ingul-Donets concentration of *metallurgists' graves*, belonging to the Yamnaya and Catacomb cultures and being one of the two largest concentrations of this type in the Europe of the 3rd and 3rd/2nd mill. BC [Chapter 2; Kubyshev, Nechytailo 1991; Batora 2006] (Fig. 3).

While studying the cultural phenomena taking place in the Baltic drainage basin in the 3rd and the first half of the 2nd mill. BC, we encounter the question of the strength and nature of their ties with the Early Bronze Civilizations mentioned earlier. Generally speaking, their 'frontier emanations' have been identified in various manners: mainly in taxonomic attributions and far less often in broader programme or interdisciplinary studies such as the following research projects in Wielkopolska: Janusz Czebreszuk in Bruszczewo and Przemysław Makarowicz in Szczepidło [Müller, Czebreszuk, Kneisel 2010; Makarowicz, Gorbacz-Klempka 2014].

In the case of Danube-Carpathian civilization centres, the reception mechanisms of their patterns on the Baltic varied. They included inter-regional 'segmental' adaptation owing to permanent contacts (chiefly mediated by the 'northern' communities of the Globular Amphora culture – GAC, CWC and Bell Beakers culture). Other such mechanisms were intrusion (proto-Únětice culture followed by Otomani-Fűzesabony culture), colonization (Únětice culture) and, in the broadest version, the formation of frontier affinity-based communities (examples include the Carpathians Foothill Cultural Circle and later the Trzciniec culture).

In the areas occupied by the above-named taxa, I-DEBC traits are recorded as well or rather – in widely held opinions – those of Black Sea *Early Bronze cultures*. As mentioned earlier, the presence of these traits there has been discussed so far mainly in relation to flint working [Libera 2001; Libera, Zakościelna 2011:97] and the Strzyżów culture [Głosik 1968; Machnik 1978:79; Klochko, Kośko 2009:283].



Fig. 4 Map of Early Bronze civilizations in the drainage basins of the Baltic and Black seas with frontier cultures marked. Legend: 1 – metallurgic centres (1 – Bohemian-South-German, 2 – Carpathian, 3 – Kuban); 2 – Ingul-Donets Early Bronze Civilization I-DEBC; 3 – Yamnaya culture circle = YC; 4 – Corded Ware cultures = CWC (SG = CWC Sokal group, SC = Strzyżów culture, MDC = Middle Dnieper culture); 5 – diagnostic micro-regions for the purpose of assessing 'route cohabitations'

New opportunities to learn more are offered by – commenced around the year 2000 – investigations headed by Jan Machnik, focusing on a very clear strengthening of ties between the Małopolska CWC, specifically from the region of Roztocze [CWC Sokal group, Machnik, Bagińska, Koman 2009] around 2500 BC with 'apparently distant' – according to known approaches – cultural environments on the Dnieper such as the Middle Dnieper culture [Buniatian, Samoliuk 2009]. What we see in this case is a sequence of chronometrically well-documented (¹⁴C) instances of inter-regional cohabitations in the area between the Vistula and Dnieper rivers [Machnik 2009] (Fig. 4).

The year 2010 witnessed the inauguration of the Polish-Ukrainian programme of field investigations in the vicinity of Yampil on the middle Dniester aimed at documenting a hypothetical cohabitation zone of the Małopolska CWC and Pontic *Early Bronze cultures* [Kośko 2011]. At present, volume 1 of 'Yampil studies' is in print [Kloczko, Kośko, Razumow, Włodarczak (Eds) 2014].

2. INGUL-DONETS EARLY BRONZE CIVILIZATION: PROBLEMS WITH THE IDENTIFICATION OF PONTIC COMPOSITE-METALLURGY CENTRES

Arguments in favour of distinguishing I-DEBC were supplied by the study of two key centres of the Catacomb culture (CC): Ingul and Donets (Ingul CC and Donets CC), respectively [Popova 1955; Bratchenko, Shaposhnikova 1985; Bratchenko 1976; 2001; 2012; Siniuk, Matveev 2007]. A special role in assessing the culture-making creativity of both centres is played by two threads of research. The first focuses on the 'Ingul-Donets' concentration of metallurgist burials (of the YC and CC – as already stressed – one of the largest on the map of the then Europe), while the other is preoccupied with the ties connecting individual concentrations to local metal deposits: Kryvyi Rih and Donets ones [Kubyshev, Nechytailo 1991; Batora 2006; Brovender 2009].

At this juncture it is appropriate to sketch the foundations of a synthesis encompassing the genetic background for the Northern Pontic metallurgic centre.

The discussions of the autogenesis of the I-DEBC (in another approach: Yamnaya-Catacomb stage in the development of Pontic Early Bronze cultures) can be summed up as a sequence of the following conclusions:

- In parallel to the disintegration of Late Tripolye cultures, a 'Caucasian reorientation' takes place, shifting neighbour contacts of steppe settling communities towards Maikop culture → Kura-Araxes culture centres.
- The first taxonomic record of the reorientation is the Zhivotilovka-Volchansk group/type (horizon?). On the Northern Pontic steppe, Caucasian metal goods appear then.
- Simultaneously, another identifiable direction in the set of 'new ties' of steppe populations points to the Middle East civilizations: those of Anatolia and the eastern Mediterranean.
- In the development of Northern Pontic steppe communities, the I-DEBC should be identified with the time of demographic and economic growth, and the reception of exogenous ideologies and rites. This is illustrated by complex forms of space organization: central settlements (of the Mikhailovka or Leventsovka type) situated in the nodes of the trade route network and monumental in comparison to the practices followed until that time ritual centres [Pustovalov 1994; 1995; 1997; 2005; Rassamakin 1994; 1999; Klochko 2008].
- Keeping in mind the above comments, one must notice the developmental autonomy of the 'Ingul-Donets' Early Bronze civilization centre (Fig. 1a, 1b, 2, 3). This is especially true for the 'classic' discussion of its development relations with the Caucasian civilization centre.

• The I-DEBC is part of the Circum-Pontic metallurgic province covering, according to Evgenij N. Chernykh (Chernykh *et al.* 2000), vast expanses of land with varied composite metallurgy centres in the Caucasus, Anatolia, parts of Mesopotamia, the Balkans, Carpathian Basin and Northern Pontic Area, including the Carpathian-Volhynian zone [*see* Klochko, Klochko ..., in this volume].

3. INGUL-DONETS EARLY BRONZE CIVILIZATION: A WESTERN NEIGHBOUR PERSPECTIVE

The question of the I-DEBC's western neighbours has been most extensively dealt with by Gennadiy N. Toschev [1991; 1998]. However, his work primarily concentrated on the steppe route, leading towards lands stretching between the Dniester and Prut rivers, and the Danube, hence generally extending southwest.

The question of 'northwest' routes, crossing steppes and continuing across forest-steppes towards the Baltic drainage basin, however, has not been directly raised. This is true for both the cited approaches and the works by other authors, taking up the question of the external impact by the 'catacomb cultural-historic community'. As an important finding concerning the 'preliminary exploration' of the impact direction under discussion must be considered the recording of a CC grave on the middle Dniester, in a kurgan in Ocniţa (Moldova). The grave is dated to the early phase of the CC, exhibiting 'Ciscaucasian-Manych' topogenetic references [E.O. Kloczko 1990].

It must be said, too, that the analyses of the topogenesis of catacomb graves ('niche' ones) recorded in the Vistula drainage basin – in the cemeteries of the Małopolska CWC and the Złota culture – have not brought any hard evidence for their allegedly Pontic sources of inspiration [Kłoczko, Kośko, Razumow, Włodarczak 2014].

4. THE QUESTION OF BALTIC-PONTIC ROUTES OF CULTURAL CONTACTS AS THE FIRST STEP IN THE STUDY OF THE COHABITATION OF THE INGUL-DONETS EARLY BRONZE CIVILIZATION AND THE CULTURES OF THE NORTHERN FRONTIER OF THE DANUBE EARLY BRONZE CIVILIZATION

The study of the development of a route network between the Baltic and Black seas shows the late 4th and early 3rd mill. BC to have been the time when the



Fig. 5 Routes between the seas in the 3rd and the first half of the 2nd mill. BC. Legend: 1 - routes as charted by Maria Gimbutas [1965]; 2 - routes charted after taking into account the distribution of fluted maces [Kośko 2002; Klochko, Kosko 2009: Fig. 17]; 3 - a revision taking into account the studies of the Volhynian GAC route [Lysenko, Szmyt 2011]; 4 - finds of fluted maces; 5 - diagnostic features for the assessment of 'societies of the route'

network stabilized the (dividing line of wagon use, [Kośko, Klochko 2009; Kośko 2011]). Hence, it may be assumed that the study of various forms of the movement of people, objects and ideas from the I-DEBC zone towards the communities of the Baltic drainage basin, as well as in the opposite direction, ought to take into account the 'network system'.

Accepting the above assumption, we should try to trace, within the currently identified 'network', *potential routes of two-way inspirations* and, along them, localize *diagnostic features* as well. Specifically, this ought to be done by studying already available materials and searching for new sources by holding excavations of features known as clusters of 'Early Bronze kurgans' whose locations suggest their connection to routes leading to the Małopolska and Circum-Baltic CWC oecumenes.

The procedure outlined above justifies accepting as a *diagnostic feature* the Yampil Kurgan Complex (*see* earlier comments). It is held to be a frontier complex on the Dniester route [*see* a broader approach: a cluster of Yampil-Kamenka complexes; Manzura, Klochko, Savva 1992; Kośko, Potupczyk, Razumow 2014; Klochko E.O. 1990 – data on an 'early Catacomb' feature].

What we know now of the north-western frontier of Pontic 'Early Bronze kurgans' is enough to identify – for the purpose of inspiration – at least two more diagnostic features in which we can expect to find interesting source assemblages.

a. YC kurgans from the drainage basin of the upper Roś, Plaskiv (Pogralishchenskiy District). In 1985, in one of such features a collective grave was unearthed holding five individuals and having affinities with central European funerary traditions (GAC or CWC –information courtesy of Mykhailo Potupchik). An important background for the interpretation of this find is provided by the observations that the Ros' River played a special role in the construction of the Volhynia routes along which GAC communities reached the Middle Dniester Area [Szmyt 1999; Lysenko, Szmyt 2011].

b. 'Early Bronze' kurgans in the upper Boh drainage basin, on the Rov River, close to the town of Severinivka (information courtesy of Dr. Yuriy Boltrik). The interpretation background in this case is provided by the studies of the Boh-Bug route as one of the major thoroughfares of the Baltic-Pontic intermarine area [Kośko 2002; Klochko 2008; Kośko, Klochko 2009] (Fig. 5).

5. PROBLEMS WITH SOURCE IDENTIFICATION: CIRCUM-BALTIC RECEPTION INDICATORS OF INGUL-DONETS EARLY BRONZE CIVILIZATION TRADITIONS

The research programme under discussion suffers from territorial-archaeometric discrepancies in the source evidence. In the South – in the Pontic steppe and forest-steppe zones and on loess uplands in the upper Vistula drainage basin – we are faced with a clear domination of funerary sources, whereas in the North (in the forest zone – modern-day Belarus – or on the Polish Lowland) settlement sources dominate. An exception in this context, the Kujawy enclave supplies material evidence indicating connections largely to the South.

The discrepancy of sources manifests itself in research: we will differ in the language of source analysis we use and the system of conceptual references we make.

The culture of the age of rising nomadism – the 3rd-3rd/2nd mill. BC – can be portrayed better, relying on a series of funerary sources. Settlement sources from

this period – originating with the Lowland of the 'interstage' between the Neolithic and Bronze Age' – because of their ephemeral nature (dispersion and differences between micro-regions) – cannot be taxonomically categorized in the same way as synchronous materials from the South are. Neither do they supply, as a rule, any 'non-object' materials, which are helpful in specialist analyses.

The recent years, at least as far as Polish experience with rescue archaeology is concerned, namely large-scale excavations carried out along the routes of linear construction projects on the Lowland, have revealed – for the most part – very limited usefulness of such excavations for obtaining sources from the 'age of rising nomadism'. Specifically, we mean here excavations, dominating in this procedure, with the excessive use of mechanical equipment. This has greatly reduced the recovery of evidence for the existence of *ephemeral settlements*.

Can, therefore, the Baltic drainage basin be the area of a balanced analysis of the Pontic 'mental map' from the period of 3200-1600 BC?

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Vitaliy V. Otroshchenko

THE CATACOMB CULTURES PHENOMENON

The Catacomb community (2800 - 2000 BC) was common throughout the steppe and forest-steppe area from the Urals and the Northern Caucasus to the Lower Danube and represented by numerous burial sites, settlements and occasional hoards of bronze items. The community emerged with the help of an intensive cultural impulse from the Northern Caucasus, which occurred in the period of the close and mid-3rd mill. BC. According to Stanislav Bratchenko, the Catacomb rite proliferated from the Northern and Eastern banks of the Azov Sea [Bratchenko 2001: 194, Fig. 120]. The core of the Catacomb area was located in the steppes between the Don and Dnieper Rivers and in the Caspian - Black Sea steppes, where multiple monuments of the Early Catacomb culture can be observed. At the second stage of development, a number of cultures and local variations occur, united within the community by the predominant burial rite (burial in a catacomb). As far as other aspects of material and spiritual culture are concerned, those formations differed significantly from each other, including by anthropological characteristics of the population. The author relies on this perspective of the Catacomb community and its individual cultures in the further narrative.

There are alternative views on the genesis and periods of ancient catacombs. For instance, Katarzyna Ślusarska identifies two genetic centres (provinces) of the Catacomb community: the Western (Ingul-Dnieper) and Eastern (Donets) [Ślusarska 2006: 154-156, Fig. 35]. Serhiy Pustovalov has an original vision on the issue: he synchronizes all Catacomb cultures and the Yamnaya communities into a Yamnaya-Catacomb society [Pustovalov 1998: 63-64]. Serhiy Sanzharov argues that the Decline Catacomb culture (monuments) should be identified as separate due to the early complexes of the Dnieper – Don Babyno culture [Sanzharov 2010: 383-406]. It is worthy of note that the population of the so-called Decline Catacomb culture no longer practiced the catacomb burial rite, the basic distinguishing feature of the Catacomb cultures.

Gorodtsov identified the Catacomb culture in early 1900s in the middle part of the Siversky Donets [Gorodtsov 1905]. Further on, the study of the ancient Cata-

comb monuments was shaped by Russian scholars such as Latynin, Popova, Klein, Fesenko, Safronov, Nikolayeva, Kiyashko, and Kiyashko, Yuri Matveyev, Smirnov and others. The Ukrainian school of Catacomb experts was formed only after World War II. Its representatives included Shaposhnikov, Bratchenko, Kovalyova, Pustovalov, Sanzharov, Toschev, Chernykh, Berestnev, Feshchenko and others. The Catacomb issue area received significant attention of German archaeologists Alexander Heusler and Elke Kaiser, and Polish researcher Katarzyna Ślusarska. The process of identification of Catacomb cultures proved to take a long time. It was launched in the 1930s by Latynin with the identification of local variations of the Catacomb culture. Unfortunately, the scholar was repressed (by the Stalin regime – tr.). His ideas were further developed by Tatyana Popova in her monograph "Plemena katakombnoy kultury" ("Tribes of the Catacomb culture") [Popova 1955: 67-92]. In the 1960s, Leo Klein proposed a concept of the Catacomb cultures, having identified the Donets Catacomb culture as an etalon [Klein 1962]. Since then Catacomb cultures have been regarded within a system of the Catacomb cultural – historical community (region).

Further on, Klein spoke about "a Catacomb cultures circle", within which he indentified a "Ukrainian Catacomb province (or culture?) that comprised the Donets, Pryazovie and Nikopol Catacomb cultures [Klein 1970: 178]. It is worthy of note that only Russian researchers could afford using the component "Ukrainian" in archaeological taxonomy. As an example, the taxon "Ukrainian local version of the Srubnaya culture" was used to denote monuments that contained multi-cordoned ware, proposed by the re-habilitated Boris Latynin [Latynin 1964: 70]. In the 1970s, Ukrainian researchers could face serious problems and "conversations" with KGB agents for such "subversive" ideas.

The most recent innovation in the field of taxonomy introduced the notion of the "Catacomb culture circle", used by Melnyk at the round table discussion on "The Catacomb Cultural – Historic Community/Region: Structure, Nomenclature and Dynamics of Genesis" Moscow, April 2007. The title of his presentation was "The Issue of Levels of the Catacomb culture Circle Community" [Melnyk 2012: 10-15]. Yet, the "culture circle" is missing among the key words of the paper and the "cultural – historical community" continues to be used instead. As this author noted before, the use of the notion of "historical" is irrelevant for the pre-historic age [Otroshchenko 2011: 160]. Therefore, this author prefers to refer to a "Catacomb community", while keeping in mind that the "culture circle" taxon is becoming increasingly widely used in the Ukrainian archaeological literature: "the Babyno culture circle", according to Roman Litvinenko [2008: 342-348], the "Trziniec culture circle", according to Serhiy Lysenko [Lysenko 2007: 341].

In the humble opinion of this author, it is incorrect to apply the term "civilization" to the Catacomb community (circle) or its individual cultures, for civilizations open the history of the mankind, while the present-day "fashion" to refer to so-called prehistoric "civilizations" dilutes that boundary factor. Hence, it is argued that the phrase "civilizations of prehistory" is meaningless. Ukrainian researchers have debated for almost 20 years about the so-called "Tripolye civilization", largely because of the increasingly speculative nature of that taxon [Diachenko 2007: 84-90].

Therefore, to characterize such a particularly worthy of note phenomenon of prehistory as, no doubt, the one represented by the Catacomb cultural community, it is more appropriate to speak about a "phenomenon", as included in the title of this paper. It was rightly used by Katarzyna Ślusarska before, as the "Catacomb entity phenomena" [Ślusarska 2006: 44-47]. The analysis of cultures will be provided within the Ukrainian Catacomb province, since the process of identifying new and segmentation of old Catacomb cultures and types of monuments is still under way in the adjacent Russian Catacomb province [Gey 2011: 4-7]. However, the cultural content of the Ukrainian Catacomb province has rather changed since the publication of the above papers by Klein. The identification of a separate Nikopol Catacomb culture was not supported by specialists, while the Pryazovie Catacomb culture began to be viewed within the system of Pre-Donets, i.e., Early Catacomb antiques [Gey 2011: 4-5]. In the late 1970s, the Ingul Catacomb culture was identified [Shaposhnikova 1978: 6-8]. By the mid-1980s, the Donets, Kharkiv - Voronezh, Dnieper - Azov and Ingul Catacomb cultures were identified on the territory of Ukraine [Bratchenko, Shaposhnikova 1985: 405-417]. After some time, it became clear that the Dnieper - Azov culture is a mechanical combination of complexes of the Early Catacomb and the Ingul Catacomb cultures [Otroshchenko 2001: 19-40]. Differences between those cultures were registered not only in terms of the barrow stratigraphy, the comparison of burial rituals and material complexes, but also in terms of anthropological types of their populations [Kruts 1977: 11-13].

Summarizing the features of the Catacomb cultures phenomenon, it is worth noting their exclusiveness compared to previous or subsequent cultural entities (circles). Shishlina describes the Catacomb world as the era of change, contrary to the "era of stability of the Yamnaya culture" [2013: 134-136]. The pervasive destruction of the Catacomb cultures at the end of the 3rd mill. BC has been perceived by researchers of the Babyno circle as a kind of "Yamnaya" renaissance. However, it also failed to bring the sought-after stability that is a feature of stagnation.

In order to evaluate the phenomenon of a specific Catacomb culture, it is important to know its relative (see above) and absolute chronology. Having used the improved calibrated date methodology ¹⁴C, Kaiser identified the age of the "Early Catacomb culture", according to her terminology, within 2800-2500 BC, assuming its coexistence with the late complexes of the Yamnaya entity [Kaiser 2012: 20-24]. The dates of the Ingul and its synchronous Catacomb cultures fall within the second half of the 3rd mill. BC. Importantly, a clear time difference between burials of the Yamnaya entity and the Ingul culture was identified [Kaiser 2012: 24-25].

The massive excavations of barrows in the 1970s-1980s allowed dividing the Catacomb antiques into stratigraphic horizons and find out that differences between them were not only of chronological, but also cultural nature. The Catacomb world has become increasingly diverse and differentiated in time within the confines of



Fig. 1. Materials of the Early Catacomb culture: 1, 2, 53 - Kamyanka-Dniprovska, barrow 11, grave 9; 3, 7, 24 - Kalynivka, barrow 2, grave 6; 4, 50 - Kalynivka, barrow 1, grave 8; 5, 26-33 - Ogorodne, barrow 3, grave 6; 6, 38 - Novoselivka, barrow 6, grave 6; 8-16 - Kuybysheve, barrow 1, grave 22; 17 - Novotroitske, grave 3, barrow 3, grave 9; 18, 21, 22, 35-37 - Oleksandrivsk, barrow 9, grave 25; 20, 25 - Mariupol, grave Vynohradnyky, barrow 1, grave 5; 34, 41 - Mariupol, grave Vynohradnyky, barrow 1, grave 8; 39, 42, 47 - Shevchenko, grave 1, barrow 13, grave 4; 40, 43 - Orlovske, barrow 1, grave 13; 44 - Mariupol 1930 p.; 45 - Novoselivka, barrow 3, grave 2; 46 - Mykolayivka, barrow 2, grave 2; 48 - Volonterivka, barrow 1, grave 8; 49 - Ohorodne, barrow 1, grave 9; 51 - Orlovske, barrow 1, grave 3; 52 - Ohorodne, barrow 3, grave 2. 1 - plan and sections of a catacomb; 2 - wood; 3-17, 19-25, 53 - bronze; 18, 34 - flint; 26, 27 - animal teeth; 28, 29 - sea shells; 30-33, 39, 40 - bone, horn; 35-38, 41 - stone; 42-52 - ceramics. [after 1, 2, 53 - Chernykh 1991; Korpusova, Lyashko 1990; 17, 52 - Sanzharov 2001; 18, 21, 22, 35-37 - Bratchenko, Balonov, Gershkovich 2004]

the Middle Bronze Age, according to the chronological scale of the southern part of Eastern Europe.

1. THE EARLY CATACOMB CULTURE

The Early Catacomb culture is a notion that gradually makes its way to the vocabulary of researchers of the Catacomb entity [Sanzharov 2001: 138, Tab. 19; Otroshchenko 2005: 157-159, Fig. 16; Kaiser 2012: 24]. As mentioned above, the early catacombs are located around the Azov Sea, where their concentration was as high as 30-40% [Bratchenko 2001: 194, Fig. 120]. Kiyashko narrows down the area of origin of that culture to the Lower Don [Kiyashko 1999]. Subsequently, the ritual of inhumation in catacombs spread to the "Yamnaya" environment along large and small Rivers towards the east, north and west of the Azov Sea. The substitution of the Yamnaya culture with the Early Catacomb initially, was not accompanied with a change in population. This is indicated by the conclusions of anthropologists [Kruts 1984: 90-91] and the nature of the material culture, still filled with "Yamnaya" features. It could be traced how the "Yamnaya" population gradually moved to the ritual of inhumation in catacombs, following the change of the ideological (religious) paradigm. For that period (the second quarter to middle 3rd mill. BC) we can speak about a certain coexistence of the late Yamnaya and the Early Catacomb traditions, while the latter's bearers steadily pushed their predecessors to the periphery of the "Yamnaya" territory.

The idea of a catacomb, most probably, was brought to the steppe environment either in a ready-made form or as an interpretation of a megalithic dolmen, which is semantically identical to a catacomb. Both a dolmen and a catacomb symbolized the (female) Mother-Earth's womb, which took the deceased into herself. The underground part of the construction was not filled with soil. The entrance to such a chamber was closed with wooden poles of stone boulders (stellae) and the entrance shaft was filled with soil. The catacombs were dropped into burials of the Yamnaya entity, with subsequent topping up of existing mounds. Early catacombs were built T-shaped, with the burial chamber located across the elongated entrance pit (Fig. 1:1).

The bodies were placed in a curled (foetal) position, on the back or on the side, with unstable orientation. The latter can be explained by the location of catacombs at the barrow's periphery in a circle, with their chambers oriented towards the imaginary centre of the mound. The bodies' heads and extremities were painted with ochre. The grave goods included round- or flat-bottomed pots, decorated with scratches with a toothed stamp or impressions of a cord along the body and shoulders; bronze belt buckles, decorated with poinçon; horn ham-



Fig. 2. Materials of the Donets Catacomb culture: 1-2 - Svatove, barrow 18, grave 6; 3 - Svatove, barrow 18, grave 7; 4 - Zhovtneve, barrow 12, grave 2; 5, 10, 11 - Zholobok, barrow 3, grave 6; 6 - Kamyanka, grave II, barrow 4, grave 5; 7, 9 - Petrovske, barrow 3, grave 4; 8 - Mariupol 1932 p.; 12-18 - Svatove, barrow 12, grave 2; 19, 26 - Donetsk, barrow 4, grave 4; 20 - Osypenko, barrow 2, grave 1; 21, 31 - Pokrovske, barrow 205, grave 6; 22, 25, 28-30 - Zymohirya, barrow 1, grave 7; 27 - Voitove, grave III, barrow 4, grave 10. 1, 12, 28 - plans and sections of the catacombs; 2-4, 6, 7-9, 13, 14, 20, 29, 30 - ceramics; 5, 27 - flint; 10, 11, 19, 22, 26, 31 - bronze; 15, 21, 23-25 - stone; 15, 22 - wood; 16-18 - bone. [*after* 3, 12-18 - Bratchenko 2004; 4, 8, 21, 31 - Sanzharov 2001; 5, 10, 11, 27 - Sanzharov 2008; 22, 25, 28-30 - Bratchenko 2001]

mer-like pins, covered with geometric ornaments; bronze and flint knives, bronze adzes, hoes, awls, various jewellery made of bronze, silver, bone and horn (Fig. 1). Cattle-breading was a predominant part of economy.

The population grazed their sheep, cattle and horses under the guard of shepherd dogs and also engaged in agriculture. A catacomb near the village of Bolotne in the Crimea contained a sack of grains of wheat, monococcum and dicoccum [Korpusova, Liashko 1990: 169-172, Fig. 3]. Settlements of the Early Catacomb culture are known along the Dnieper River, particularly in the Nadporizhya (the area above the Dnieper rapids) islands: Perun, Vynohradnyi, Bayda, where numerous traces of production of stone axes and other tools have been found.

As the culture expanded to new territories, local features came into contradiction with the Early Catacomb standards. The picture became even more complex due to local migrations of various groups of the population within the confines of the Catacomb territories. Finally, during the second (late) period there was a wide variety of cultures within the Catacomb area. There are a number of periodisations of the Catacomb entity into three stages. Among them, we would like to specifically point out to the works by Kovaleva [1983: 8-24] and Evdokimov [1987: 46-48]. However, in this author's view, only two periods can be certainly identified, the early and the late ones, which has been confirmed by hundreds of stratigraphic observations.

Additional periods are based on complexes of transitional types from the first period, the second one, or from Catacomb cultures to the Babyno entity.

2. THE DONETS CATACOMB CULTURE

The Donets Catacomb culture is seen as a classical one among other cultures. It was identified by Gorodtsov as the Catacomb and later added the word "Donets". Its genesis falls into the period of 2500 – 2300 BC. The Donets culture, localized in Eastern Ukraine (the Siversky Donets basin and the exit to the Lower Don River) occupies a central place in the general system of Catacomb antiques. Its monuments are the best researched in the Luhansk Region (excavations of 1970s-1980s directed by Bratchenko, Bondar, Pislariy, Cherednichenko, Sanzharov and others). To date over 1000 Donets Catacomb burials have been researched, most of them dropped into the Yamnaya barrows. The settlements (Serdiukove on the Donets River, Mynyivsky Yar and Liventsivka in the Lower Don) have been under-researched. Remainders of a semi-dugout dwelling were found in the Serdiukove settlement where the absolute majority of materials were obtained during the excavation of graves. It may be observed that the planigraphy of burials preserves traditions of the Early Catacomb culture.

The deceased were placed in the foetal position, mostly on the right side, with their faces towards the entrance opening. The hands were stretched towards legs bent ("horse-rider's position") (Fig. 2:1, 12, 28). The southward orientation of bodies prevailed, with some deviations. As the final stage of genesis, the northward orientation became more common. The ritual included sprinkling with ochre and putting lumps of paint into the chamber, where we also found skins of sacrificial animals (cows, sheep, goats) with skulls and extremities. Burials of the Donets culture stood out due to their rich and diverse grave goods. The variety of pottery forms is impressive: roasters, funnels, pots, goblets and bowls. To make a roaster, vessel walls were filled with coals. The funnels were shaped as cups on a cross-like base with a compartment for oil on the inner wall. The pottery was flat-bottomed, of medium proportions, the neck and shoulders covered with a sophisticated ornament made with a cord, a braid, a comb, or pricked, etc. A special note can be taken of compositions of festoons and concentric circles on the body.

The Donets culture is the richest in terms of the number of bronze objects in the catacombs: knife-awl sets, looped axes, adzes, hoes, hooks and a variety of small decorations (cylinder beads, pendants, temple rings, roundels, necklaces). The collection of flint objects becomes narrower (knives disappear). The only fine-ly produced items are deep-notched arrowheads. Stone tools include mace heads of different shapes, arrow-shaft straighteners made of sandstone, pestles, graters, mortars, and axes with holes (Fig. 2).

The economy was based on cattle-breading (bovines, sheep, goats); agriculture played a secondary role. Metallurgy and metal processing was an important branch of the economy. A high concentration of bronze goods found in the area of Bakhmut copper ore deposits in the Donets Ridge allows a suggestion that the deposits were already explored by bearers of the Donets culture [D. Kravets, L. Chernykh *et al.* excavation – *see* Chernych 2003]. An opinion has been expressed about the existence of a Donets metal processing Centre [Nechytailo 2011]. An additional argument in favour of such assumptions can be found in burial complexes of master smelters, which indicate their professional specialization (Luhansk, Pryshyb). Due to their control of the Catacomb entity (and for a good reason). They proved themselves distinct from others by means of a painful ritual of deformation of infants' skulls. As grown-ups, those tower-headed individuals made a deep impression on others.

The final phase of the genesis of the Donets culture was marked by the emergence of turnip bowls, decorated with several rolls; bi-conical forms of pottery and the growth of other indicators of the Babyno culture, which were linked, among others, with the migration of the Kharkiv–Voronezh and the Pre-Caucasian populations to the Siversky Donets Region. As a result of those processes, *monuments of the Bakhmut type* began to form in the Siversky Donets and the Lower Don areas, as identified by Bratchenko in the location of the Donets Catacomb culture [1976: 60-77; Sanzharov 2001: 108-128].



Fig. 3. Materials of the Oskol-Donets type of monuments: 1-3 – Kolesnykivka, grave II, barrow 9, grave 2; 4, 17 – Novo-Platonivka, barrow 3, grave 2; 5 – Verbivka, barrow 11, grave 6; 6 – Verbivka, barrow 6, grave 1; 7 – Novo-Platonivka, barrow 6, grave 2; 8-10 – Herasymivka, barrow 14, grave 1; 11 – Novo-Platonivka, barrow 8, grave 4; 12 – Stanislavka, barrow 2, grave 5; 13 – Stanislavka, barrow 1, grave 10; 14 – Kolesnykivka, grave II, barrow 9, grave 1; 15 – Okhrymivka, barrow 1, grave 5; 16 – Zalyman, grave II, barrow 1, grave 1; 18 – Mala Kamyshevakha, barrow 4, grave 2. 1, 8 – plans and section of the catacombs; 2, 3, 9, 11-13, 15 – pottery; 4, 5, 7, 18 – bronze; 6 – bronze, gold; 10 – bronze, iron; 14 – flint; 16, 17 – stone. [*after* 7, 18 – Berestnev 2001; 8-10 – Shramko, Mashkarov 1993]

3. MONUMENTS OF THE OSKOL – DONETS TYPE

Monuments of the Oskol – Donets type proliferated into the territory of Ukraine in the Kharkiv and Luhansk Left-bank area of the Siversky Donets. That group of monuments was identified back in the 1930s by Podgayetsky as the Middle Don group. In the 1950s, Popova identified the Kharkiv–Voronezh local version of the Catacomb culture. Voronezh archaeologists traditionally use the term "Middle Don culture", while Ukrainian archaeologists refer to it as "Kharkiv-Voronezh". A researcher from Kharkiv, Berestnev, views the Ukrainian segment of that culture as monuments of the Oskol-Donets type [2001: 28-39]. This study shall focus on characterizing the latter.

The Kharkiv-Voronezh Catacomb culture in general and monuments of the Oskol-Donets type in particular, are linked in their genesis with the northbound movement of bearers of the Early Catacomb and Donets Catacomb cultures. Having come in contact with the local "Yamnaya" substrate, the Catacomb population, in fact, created a new bright culture in the Forest-Steppe area in the second half of the 3rd mill. BC. Over 30 settlements have been discovered, including Prokazine on the Aidar River, a number of settlements on the left bank of the Siversky Donets near the town of Kreminna of the Luhansk Region and others. Surface-level dwellings were built of wood (on up to five poles), as well as semi-dugout huts with a system of supporting pillars.

However, more telling material comes from some 200 graves made under burial mounds. Some of them were made in line with the old tradition in pits, about the same number were made in T-shaped catacombs, but the predominant majority (85% of the sample) were made in H-shaped constructions, in which the longitudinal axis of the entrance pit and the chamber were parallel to each other (Fig. 3:1). The construction of new graves (50) and adding up soil over dropped-in catacombs became increasingly active. The bodies were placed on the right side, face to the entrance, but the body orientation was unsteady due to the radial planigraphy of the catacombs. Sprinkling the chamber floor with ochre and chalk, putting lumps of ochre, as well as sprinkling the bodies of women and children with red paint were practiced. Some 36% of the burials contained skins of cattle, sheep and goats, which had served as offerings during the burial ritual.

The majority of the grave goods were pottery that stood out due to their bright originality and difference from the Donets items. Goblets, richly ornamented with braid, no longer occur, while the most worthy of note are tall pots with a three-member broken profile, entirely covered with ornament. Medium-sized pots also occurred, but alongside there were turnip-like vessels of the Northern Caucasian origin. Modelled rolls become a key element of ornamentation, alongside with cord, braid and comb. Decorative compositions consisted of combinations of horizontal and vertical "pine-trees" with upward-looking triangles and festoons (Fig. 3:2, 3, 9, 11-13, 15).



Fig. 4. Materials of the Ingul Catacomb culture: 1, 2, 11 – Zamozhne, barrow 5, grave 7; 3-5, 27 – Zamozhne, barrow 5, grave 7; 6 – Chkalovska, grave I, barrow 7, grave 12; 7, 25, 26 – Vasylivka, barrow 1, grave 20; 8 – Orlyanka, barrow 4, grave 17; 9 – Pryvilne, barrow 1, grave 16; 10 – Barativ-ka, barrow 2, grave 18; 12, 14, 15 – Kovalivka, grave VIII, barrow 1, graves 15; 13, 28 – Kovalivka, grave VIII, barrow 1, grave 12; 16 – Antonivka; 17-23 – Davydivka, barrow 1, grave 17; 24 – Chkalovska, grave I, barrow 7, grave 8; 29 – Kovalivka, grave VIII, barrow 1, grave 14 . 1, 6 – plans and sections of the catacombs; 2-5, 9, 14 – bronze; 7, 10, 15 – stone; 8 – gold; 11 – wooden bowl; 12, 13, 16, 24-26, 28, 29 – ceramics; 17-23 – flint; 27 – model amphora of osteoceramic mass. [*after* 3-5, 27 – Otroshchenko, Pustovalov 1991; 6, 24 – Buniatian, Kaiser, Nikolova 2006; 7, 25, 26 – Chernykh, Pleshyvenko 1993; 8 – excavations by the author; 10, 16 – Bratchenko, Shaposhnikova 1985; 13, 28, 29 – Kaiser 2003; 17-23 – Ruzumov 2011]

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Bronze items included: knives of two types (flame-like and with parallel blades), axes with holes, short-tanged awls, sleeved hooks and small jewellery (Fig. 3:4-6). Bronze axes came from hoards (Kolontayivka hoard, Kharkiv Region; Skakun hoard, Kursk Region) [Krivtsova-Grekova 1955:145-147, Fig. 35:1-17] and odd finds. Special attention should be paid to Ukraine's oldest iron objects (3 cases), including an iron knife with a bronze handle from grave 1 of barrow 14 near the village of Gerasimovka of the Valyisky District, the Belgorod Region of Russia on the border with the Kharkiv Region (Fig. 3:10) [Shramko, Mashkarov 1993: 164-167, Fig. 3]. The finds included a series of polished stone axes with holes (Fig. 3:16, 17), tied axes, flint knives (Fig. 3:14) and scrapers. Bone items were represented by hoes, a harpoon and rings. The economy can be identified as a mixture of cattle-breeding and agriculture.

4. THE INGUL CATACOMB CULTURE

The Ingul Catacomb culture (the second half of the 3rd mill. BC) was identified by Shaposhnikova in late 1970s after the excavation along the Ingul River in the Mykolayiv Region [Shaposhnikova 1978: 6-8]. At the beginning, the territory of the Ingul culture was confined to the area between the Bug and Ingul rivers, while identical complexes of the Lower Dnieper Region were regarded as part of the Dnieper-Azov Catacomb culture. The latter, as noted above, represented a mechanical combination of two cultures, in which the early layer of monuments belonged to the Early Catacomb, while the late layer belonged to the Ingul culture.

The Ingul culture is not a product of the genesis of the local early Catacomb culture that emerged as a result of migration of a Catacomb community from the Northern Caucasus to the Northern Pontic steppes. Presumably, the early Catacomb population, on the contrary, moved from here to the Kalmykia steppes. An in-depth study determined that bearers of the Ingul culture had populated the western segment of the steppe part of the Catacomb territory, from the Eastern part of the Upper Azov (the Mius River) to the Lower Danube and the Prut rivers. From the Steppe, they went up northwards along the Dnieper as far as the Kyiv Region. Several settlements with oval dwellings on the stone foundation have been excavated (Matviyivka on the left bank of the Southern Bug to the north of Mykolayiv). All in all, 63 Catacomb settlements have been explored in the lower current of the Southern Bug and the Ingul, as well as on the banks of the Dnieper – Bug estuary [Nikitin 1989: 136-139, Fig. 1-3].

Inhumations were made in barrows. Dozens of primary inhumations are known, but the absolute majority is dropped-in. For over 2000 discovered graves, a typical inhumation method was a catacomb with a round shaft, a bean-shaped chamber and



Fig. 5. Modelled skull from a grave of the Ingul Catacomb culture: v. Zhovtneve, barrow 2, grave 3 [Otroshchenko, Pustovalov 1991]

the body placed stretched on the back (Fig. 4:1, 6). The orientation of the bodies was unstable, while the southward vector prevailed. The entrance to the chamber was sometimes blocked with parts of a wooden wheel and plastered with clay solution, while the entrance shaft was filled with continental clay. The graves were single and double, though group burials (up to six bodies in the chamber) also occurred. Secondary inhumations in earlier built catacombs were a common practice. Such constructions served as sepulchers. The grave goods included stone axes and maces, arrowheads with a deep notch at the base, bronze knives and awls, elegant vessels (pots, bowls and amphorae) made of clay and metal jewellery (Fig. 4). The vessel of osteoceramic mass shall be examined, which copied the shape and dimensions of a ceramic pot but was made specifically for the funeral ritual and, therefore, was not supposed to be baked and could not be used for everyday purposes (Fig. 4:27). In fact this is a ritual imitation object [Likhachov 1981: 72-74, Fig. 1].

The Ingul economy was based on mobile cattle-breeding and agriculture (a wooden plow was found in a catacomb of the Vysoka Mohyla near the village of Balky of the Zaporizhya Region) [Bidzilia, Yakovenko 1973: 136-139]. The authors of that publication mistakenly referred that burial to the Yamnaya culture without understanding that they had opened a catacomb of the Ingul culture [Nikitenko 1977: 44-46]. The population had a complex social hierarchy that included the nobility (priests, warriors, and rulers), shepherds, craftsmen and dependent individuals. One of the centres of the Ingul entity was located on the Molochna River. The Middle Eastern and Mediterranean influences (modelling skulls, the foot cult,

sanctuaries, "embryos" of a system of symbols, some shapes of vessels) can be traced in the ideology of the Ingul culture bearers.

5. THE MODELLED SKULL PHENOMENON

The modelled skull phenomenon was discovered as a trend of culture and art on the verge of the 1970s and 1980s during the excavations performed by the Kherson and Zaporizhya expeditions of the Institute of Archaeology of the Academy of Science, Ukrainian SSR in the basin of the Molochna River [Kruts *et al.* 1991: 51--53, Fig. 1]. Over 100 skulls bearing traces of modelling were found in catacombs of the Ingul culture, which outlines the territorial confines of that phenomenon: the Northern Pontic steppe and the Upper Azov area. The ritual of *post mortem* cutting off the head and maceration of the skull or the entire skeleton of soft tissues was practiced. A specially prepared mixture of clay was used to model the face or some of its elements, based on the skull (Fig. 5). In the case of maceration of the entire skeleton of the deceased, a dummy was made. The skulls, modelled with the help of that method, had been used for some time in rituals related to the worship of ancestors and later returned to the catacomb where the beheaded body was confined [Otroshchenko, Pustovalov 1991: 74-82].

6. ANTHROPOLOGY

Anthropologic materials play a key role in facilitating a better understanding of the phenomenon of Catacomb entity cultures of the late period. As mentioned above, monuments of the early period prove ethnic continuity with the late period of the Yamnaya entity, except for the principle innovation: the catacombs. Anthropological data also indicate the heredity of the anthropological type of the population. Skulls from early Catacomb graves were dolichocranial (dolichocephalic), much more narrow-faced, long-faced, mesognatic, while skulls from the Ingul graves were mesocephalic, very wide-faced, shorter-faced and ortognatic [Kruts 1984: 90-91]. The second period's cultural diversity correlated with the presence of several anthropological types of the population. The most visible differences between belief systems of populations that belonged to different cultures are displayed by the artificial deformation of skulls by bearers of the Donets Catacomb culture and the *post mortem* skull modelling by the Ingul Catacomb culture. The influx of the population


Fig. 6. Anthropomorphic sculpture and its versions in graves of the Ingul Catacomb culture: 1 - Western Donuzlav barrow, grave 18; 2 - Novolozuvatka, barrow 1, grave 39; 3 - Kostyantynivka, barrow 2, grave 2; 4 - Pervomayivka, barrow 7, grave 2; 5 - Georgiyivka, barrow grave Popivska Mohyla; 6 - Pryvilne, barrow 2, grave 27; 7 - Starohorozhene, barrow 1, grave 10; 8 - Lymantsi, barrow 1, grave 26; 9 - Orlyanka, barrow 1, mound; 10 - Ordzhonikidze, Cherednykova Mohyla, grave 3; 11 - Zamozhne, barrow 6, grave 3; 12 - Vasylivka, barrow 1, grave 20; 13 - Rybasove, grave 2, barrow 2, grave 4. 1-10, 13 - stone; 11 - plan and section of a catacomb with a geoglyph represented by an anthropomorphous stella made with liquid ochre and surrounded with grave goods; 12 - geoglyph represented by an anthropomorphous stella made with liquid ochre on the burial chamber floor. [*after*1 - Dashevska, Golentsov 2003; 2 - Melnyk, Steblyna 2012; 3, 8 - Dovzhenko 1991; 4 - Titenko 1955; 5 - Telegin 1991; 9 - excavation by the author; 10 - Kaiser 2003; 11 - Otroshchenko, Pustovalov 1991; 12 - Chernykh, Pleshyvenko 1993; 13 - Melnyk, Balabanov 2007]

groups from the steppes between the Caspian, the Azov and the Black Sea made an impact. Additional peculiarity was brought in by the practice of lifetime skull trepanation, common for bearers of the Catacomb cultures. The above demonstrative innovations that could be observed on the anthropological material disappear

together with the phenomenon of the Catacomb cultures.

According to the research by Shepel, up to 60% of individuals' remains found in the Donets Catacomb culture area had had their skulls artificially deformed [Shepel 1985: 15]. In practice there could have been more, for the sample also included skulls of the early Catacomb culture, which were close to the "Yamnaya" skulls in terms of their features. The researcher made an interesting conclusion: the population with deformed skulls had had more favourable living conditions, which had had an effect on the duration of life (40.7 years for men, 37.4 years for women). For the "Yamnaya" population of the Siversky Donets area, those figures were 33.6 years and 26.9 years, respectively. Moreover, it was noted that women with artificial deformation of heads had experienced less physical activity (workload) [Shepel 1985: 16]. Hence, the question is whether the relatively longer lives were connected with the reduced physical workload, or was that a positive effect of the artificial deformation of skulls? It is worthy of note that highbrow men also lived noticeably longer lives without having reduced physical activity. For representatives of subsequent entities (Babyno, Srubnaya), in which deformation of heads was no longer practiced, the lifetime was reduced, particularly among women, by 6-7 years. This "recipe" of longevity requires more thought and subsequent investigation.

7. ANTHROPOMORPHIC SCULPTURE

Compared to the development of monumental sculpture in the Early Bronze Age, the practice of making stellae and their use in the burial ritual by the Catacomb population was noticeably reduced. Specifically, the number of stellae found in the Catacomb burial constrictions was significantly smaller (up to 20 sculptures) compared to the previous age [Dovzhenko 1991: 125]. The population of the early Catacomb culture, genetically related with the "Yamnaya" population, used stellae of Yamnaya standards, meant to dig in the lower, roughly processed edge, to shut the entrance to the burial chamber (dromos). Grave 18 of the Western Donuzlav barrow in the Crimea contained an anthropomorphous stella, 1.2 m tall, that covered the dromos entrance of only 0.4 m high and 0.6 m wide (Fig. 6:1) [Dashevska, Golentsov 2003: 12, Fig. 5:1, 3]. The same phenomenon was observed in grave 39 of barrow 1 near the village of Novolozuvatka, the Kryvyi Rig District of the Dnipropetrovsk Region (Fig. 6:2) [Melnyk, Steblina 2012: 342, 346, Fig. 212:7; 218:2-3].

The development of the appropriate "Catacomb" anthropomorphic sculpture falls within the second period of genesis of the object. Apparently, the stellae were made mostly for use in funerary rituals. Notably, compared to the "Yamnaya" standards, the sculptures became smaller in size and their proportions changed so as to make them fit the section of the dromos. The stellae were 0.4-1.1 m high. 0.23-0.5 m wide and were placed 0.2 m deep. While the "Yamnaya" stellae were narrowed down from the top to the bottom and were meant for digging the lower part into the ground or a hole in a pedestal, the "Catacomb" ones had a rectangular or even a widened down body and were designed to be placed on a horizontal or a slightly rounded surface (the dromos portal). Therefore, the piquetage technique was used to process not only the top, but the entire body of the statue [Dovzhenko 1991: 125]. The identified parameters of the stone sculpture of the Middle Bronze Age allows including a number of odd finds to the Catacomb circle. The examples include a stella from the barrow near the village of Georgiyivka in the Zaporizhya Region, which Telegin was ready to attribute to the Early Middle Ages (Fig. 6:3) [1991: 50] and a massive widened-down stella from the exposition of the Zaporizhva Kossacks Museum on Khortytsva Island.

The certain diminution and unification of the "Catacomb" stellae is connected to the fact that they were placed in front of usually small entrances to the burial chamber, against the portal. Dovzhenko suggested denoting them with the term "stone plastic art" as distinct from the Eneolithic – Early Bronze monumental sculpture. She identified three types of sculpture typical for the Catacomb culture: stellae, anthropomorphous stellae and phalloid stones [Dovzhenko 1991: 124-125]. Additional images on Catacomb stellae surfaces are quite rare. A remarkable example is the hands, folded on the chest in a prayer position on the stella from Pervomayivka in the Kherson Region (Fig. 6:4), morphologically close to the Georgiyivka stella [Titenko 1955: 78-79]. It is worthy of note that grave 2 of barrow 7 near Porvomayivka with that stella was interpreted in the earliest publications as "Yamnaya-Catacomb". Dovczenko noted that the inhumation had not been made in a pit, but in an untraced catacomb and referred it to the "early Catacomb period" [1991: 123]. Meanwhile, the simple oval chamber, designed for an inhumation in a straightened position and a wide-bottomed pot, allow relating that catacomb with the Ingul culture of the second period of the Catacomb entity. Generally, the predominant majority of Middle Bronze Age stellae were found in Ingul catacombs (Fig. 6:3-9).

Interestingly, drawings of the stellae en face were sometimes made with ochre on the floor of burial chambers of the Ingul culture. For instance, a "stella" geoglyph on the catacomb floor near the town of Vasylivka in the Zaporizhya Region (barrow 1, grave 20) had the shape of a tall trapeze (height -0.7 m, width at the top -0.2 m, width at the bottom -0.38 m), matching the stone sculpture's dimensions (Fig. 6:12). The drawing was made with purple ochre powder [Chernykh, Pleshivenko 1993: 244, Fig. 1]. The anthropomorphous "stella" (geoglyph) from the village of Zamozhne of the Zaporizhya Region (barrow 6, grave 3) had a body covered with liquid ochre, widened towards the shoulders, with a distinct neck and the "head" marked with a lump of ochre (0.16 x 0.13 m). The figure was 0.6 m high, its width in the shoulders was 0.3 m and the width at the base was 0.14 m (Fig. 6:11) [Otroshchenko, Pustovalov 1991: 67-69, Fig. 10:3]. The assumption about the ochre-made images of stellae is confirmed, to a certain extent, by their location along the right arm of the body, head to head, as well as by the concentration and location of the grave goods near the head of the "stella", not the buried body. Similarly, it is possible to observe the concentration of grave goods near the drawn feet or directly on the feet in the catacombs [Dovzhenko, Soltis 1991: 117-127, Fig. 1-3]. In general, ochre drawings of anthropomorphous stellae, feet, solar and other images on the catacomb floor between the buried body and the dromos is typical for Catacomb cultures of the second period, particularly of the Ingul culture.

The smallest figurines are anthropomorphous stellae-pounders with a functional notch on the chest. A pounder from grave 3 of the Cherednykova Mohyla near Ordzhonikidze of the Dnipropetrovsk Region was of a trapeze shape with a protrusion of a head on the broad shoulders (Fig. 6:10) [Kaiser 2003: 191, Fig. 72, 2-3]. In Rybasove-2, barrow 2, grave 4 near Kryvyi Rig, a square pounder had grooves along the perimeter of the walls, which gathered together to the broad flattened protrusion of the head (Fig. 6:13) [Melnyk, Balabanov 2007: 570]. Generally, the anthropomorphous sculpture of the Catacomb population continues the "Yamnaya" tradition in noticeably simplified, degraded forms [Dovzhenko 1991: 123-126].

The processes occurring in the Catacomb world had touched, in some way or another, the territory of Poland or, more specifically, of Malopolska. Bratchenko took notice of catacombs of the Kraków-Sandomierz group, having regarded them as evidence of influences of the early Catacomb and Corded Ware populations [Bratchenko 2001: 53-54. Fig. 110, 4]. His observations were confirmed by materials from the Święte 11 Catacomb at the edge of the San River valley [Kośko, Klochko, Olszewski 2011: 67-71, Fig. 4-6]. In general, this spectrum of cross-cultural contacts deserves a more in-depth study by the joint efforts of Ukrainian and Polish colleagues.

The study of the Catacomb cultures phenomenon is far from complete. Clarifications or even corrections are needed for the nomenclature of cultures of the Catacomb entity, issues of periodisation and chronology, trends in the development of material and spiritual cultures, issues of art, culturally differentiated characteristics of anthropological materials, social structures of bearers of individual cultures that represent the components of the entity being researched. Further investigation into the Catacomb issue areas requires not only a more in-depth study of narrow local groups of sources, but also development of approaches to a generalised vision of this great challenge.

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COMPLEX OF METAL GOODS BETWEEN THE VISTULA AND DNIEPER RIVERS AT THE TURN OF THE 4TH/3RD TO THE 3RD MILLENNIUM BC. CONCEPT OF THE CARPATHIAN – VOLHYNIA "WILLOW LEAF" METALLURGY CENTRE

This study aims at identifying a complex of metal objects at the turn of the 4th/3rd to 3rd mill. BC in the region between the Vistula and the Dnieper Rivers, based on hoards, grave materials and random finds, providing analysis of the main features of that complex, their origin and chrono-typology. The study is based on hoards and finds from graves that are traditionally viewed as those of the Corded Ware culture. The metalware complex of the Corded Ware culture has not been an object of a specialized research so far. A major number of finds, which thus need to be introduced into scholarly discussion, significantly expand the contemporary base of sources and allow raising the issue of identifying a new Carpathian-Volhynia metallurgy centre at the turn of the 4th/3rd to 3rd mill. BC in the region between the Vistula and the Dnieper Rivers.

1. THE SOURCE BASE OF THIS STUDY COMPRISES THE FOLLOWING COMPLEXES:

The Stublo Hoard. Found in 1927 near the village of Stublo (Steblivka) of the Dubno District of Volhynia [Antoniewicz 1929], the hoard included two bronze axes, six "willow-leaf" temple pendants, two flat bracelets, a "lunula" and six bracelets of a round rod (Fig. 1: A).

The Mezhyhirtsi Hoard. Found in 1998 near the village of Mezhyhirtsi of the Galytsky District the Ivano-Frankivsk Region [Klochko, Tkachuk 1999], the hoard



Fig. 1. Hoards and finds in inhumation of the Coded Ware cultures: A. Stublo hoard; B. Mezhyhirtsi hoard; C. Kyiv hoard; D: 1. Sokal, Lviv Region, 2. Pochapy, Lviv Region, 3. Vysotske, Lviv Region, 4. Sirnyky; E. Grzęda Sokalska; F. Kyrylivski Heights hoard; G – Węgliny hoard. [*after* A – Antoniewicz 1929; B – Klochko, Tkachuk 1999; C – Movsha 1957; D – Sveshnikov 1974; E – Bagińska, Koman 2011; F – Klochko 2012; G – Blajer 1990]

contained a bronze axe of the "Stublo" type and two golden pendants of the "Irish" type (Fig. 1: B).

The "Kyiv Hoard". Found in 1905 in Tryokhsvyatytelska Street in [Movsha 1957: 96-99], the hoard contained three "willow-leaf" temple pendants, a "diadem" and a "lunula" (Fig. 1: C; 2).

The Kyrylivski Heights Hoard. Found at the Kyrylivski Heights in Kyiv in 2004 [Klochko 2012: Fig. 1:2], the hoard consisted of two axes, one of the "Kolontaivka" type (the Catacomb a culture) and the other of the "Stublo" type (Fig. 1: F).

Finds in graves include temple pendants and a torc from the grave at the Grzęda Sokalska, Lublin Region [Bagińska, Koman 2011] (Fig. 1: F).

Daggers: barrow VII in Balychi, barrow 1 in Sirnyky, barrow in Vysotske [Sveshnikov 1974: 50, 67, Fig. 10:9; 19, 3] (Fig. 1: D: 3, 4).

Flat axes with flanges: random finds from Khilchytsians Sokal of the Lviv Region [Sveshnikov 1974: 67, Fig. 19:4, 5] with wide curved blades (Fig. 1: D: 1, 2).

Therefore, the Corded Ware metal complex, primarily based on the analysis of complex finds, consists of *flat axes with flanges, axes of the Stublo type*, "pro-to-Únětice" – type daggers and "willow-leaf" temple pendants.

2. ANALYSIS OF METAL COMPLEX CONSTITUENTS

2.1. "WILLOW-LEAF" TEMPLE PENDANTS AND OTHER JEWELLERY.

The decor of the Bronze Age jewellery found in the European territory was based on geometric ornaments, among which various kinds of spirals prevailed. Among those, the most worthy of note were phytomorphic decorations that resembled a willow leaf. When they were first noted by archaeologists, the search for archetypes of the objects began, followed with the research of their proliferation, usage and semantics.

Specialists have been studying willow-leaf-shaped jewellery for a number of decades (Sveshnikov, Machnik, Movsha, and Artemenko). Their research has proved that jewellery of that kind had been found in graves of various Corded Ware tribes. Therefore, the objects can be united by the notion of an "industry": the collection of artefacts of a certain category, the taxonomic analysis of which allows assuming that those objects were produced by the same community.

The research into metal gives a reason to speak about a single source of the raw material and the same production methods: forging followed by treatment of the workpiece (chopping off the edges, engraving the ribs and relief lines). The finds were registered in graves and hoards on a vast territory. The so-called "Kyiv Hoard" is of particular interest (Fig. 1: C; 2). The bronze objects (5 items) were discovered by construction workers during works in Tryokhsvyatytelska Street in Kyiv in 1905. Objects from the hoard changed owners several times until they were given to the Ukrainian National Taras Shevchenko Museum in 1925. However, the first publication did not appear till 1957: the objects of all categories that comprised the hoard were studied by Movsha, who based her research on similar materials from monuments of the Corded Ware culture [1957: 96-99]. Artemenko considered the "Kyiv Hoard" to be the evidence of connections between the Middle Dnieper tribes and the Corded Ware tribes that had populated the Volhynia and the Western Podolia [1987: 123].



Fig. 2. "Kyiv hoard"

After the "Kyiv Hoard", another was found near the village of Steblivka (Stublo) in the vicinity of the town of Dubno in the Volhynia Region. Various objects lay 0.5 m deep from the present-day surface, including two axes, copper bracelets – two plated and six made of round wire, pendants, consisting of a leaf-shaped corymb and a long wire bracket (10 items) and a moon-shaped "lunnytsya" pendant (Fig. 1: A).

The hoard was included in scholarly discussion rather quickly and in 1929 was published by Antoniewicz [1929: 135-148]. He analyzed all the found objects, but since this part of the article looks at pendants with a leaf-shaped corymb, our attention has been primarily focused on his views about such jewellery, i.e., phytomorphous items. Their dimensions are as follows: d – 83 mm; 73 mm; 72 mm; 72 mm; 70 mm; 65 mm; 60 mm; 55 mm; 46 mm; 45 mm; 40 mm, with the width ranging from 15 to 22 mm [Antoniewicz 1929:138, Fig. 12-13,14-19]. The researcher addressed peculiarities of willow-leaf jewellery, its chronology and its place among the Bronze Age finds. As to their analogies, the author mentioned finds in the Volhynia Region: in a grave near Horodok (Rivne Region), at Podolia, at the Dniester River: near the village of Peredivanie (Horodenky District) and Pre-Carpathia: the village of Khlopy near Lviv. The jewellery items differ in size but demonstrate a certain consistency of proportions.

Antoniewicz studied several versions in order to identify the jewellery archetype, but believed it most likely that decorations with an oval corymb and a rib in the middle to have emerged as a syncretic type, based on spiral pendants with



Fig. 3. Reconstruction of the head-gear

boat-like ends and wire jewellery with one of the ends shaped like a flat spiral that resembles an oval corymb [Antoniewicz 1929:145]. It is worthy of note that, Antoniewicz's idea of the emergence of the shapes of jewellery was not supported by subsequent research into the issue. For instance, pendants with a flat-spiral corymb belong to the Únětice culture of a later time [Antoniewicz 1929: 143, Fig. 22-25]. He also suggested that the pendants had similarities among monuments of the Carpathian-Danube circle and that their subsequent routes led through the Bukovyna or Eastern Carpathian mountain passes, through Podolia and the Red Rus to the Volhynia Region [Antoniewicz 1929:145].

Much later, the Stublo Hoard was included in the Pochapy culture [Kostrzewski 1938-1948: 206]. Meanwhile, Sveshnikov regarded the above items from the hoard as artefacts of the Strzyzów culture [Sveshnikov 1974:137, Fig. 50, 9-26].

Analogies to the pendants that comprise a part of the Steblivka (Stublo) Hoard can be seen among willow-leaf-shaped jewellery found in Kyiv (Fig. 1: A, C; 2). The hoard from Tryokhsvyatytelska Street included three items with a typical outline of the corymb and a long wire tail. All of them look like a leaf with a rounded edge, narrowing down to a long petiole made of wire, round in section. The wire is curved; one of its ends goes behind the leaf-shaped corymb. In the middle of each there is a convex roller that imitates the central fibril of the leaf. The pendants differ in size and in some details. One of the leaves is oblong, smooth (d – 85-90 mm; length – 66-68 mm; width of the leaf – 41 mm). Two other are distinguished by short relief lines, three at each side. The items' dimensions are as follows: d – 80- \cdot 84 mm; length – 70-75 mm; width of the leaf – 39 mm; d – 84-87 mm; 62-66 mm; width – 43 mm.

According to Sveshnikov, the jewellery, whose shape resembles a leaf with a long petiole, were found in a grave near the village of Peremozhne (the Upper Dniester group), Peredivannya (Podolia group) of the Sub-Carpathian culture, the Pochapy-type burial mounds (v. Pochapy, Ripniv), Nitra, as well as in the monuments of the Strzyzów culture (graves near Ozliev, Torchyn, Dubno) [Sveshnikov 1974: 51; 67-68; 71-79].

The pendants, most probably, belonged to the head gear, as they were usually found next to the skull, mostly in female graves. Yet, Antoniewicz noted that, according to the information he had, in a grave found near Horodok the decorations were located near a male skeleton [1929:140]. The items varied in general shapes and size: most were 30 - 40 mm in diameter. In addition to the "Kyiv Hoard", large pendants – about 80 mm in diameter – were found in a grave near the village of Semaky [Sveshnikov 1974: 138, Fig. 49, 37].

The inspection of the finds – willow-leaf-shaped pendants – allows identification of their typological features. Apart from the leaf-like plate, a significant difference is in the method of finishing the longitudinal relief line (imitation of the central fibril). Sveshnikov identified three types: smooth-surfaced items, those with other impressed sulcus in the middle of the leaf-like corymb and those with three relief lines. According to the observations made by Nosek, pendants of types 1 and 3 were common on the territory of Poland [Nosek 1947: Plate XV, XVII]. Pendants of type 2 (with a central sulcus) belong to typical features of monuments of the Corded Ware culture in the territory of Volhynia, Transniestria and Podolia.

Interestingly, pendants with a different decoration of the corymbs were found in a grave near the village of Peremozhne: one piece's leaf has a central relief sulcus, while another piece has two relief lines, impressed parallel to each other [Sveshnikov 1974: 46, Fig. 10, 3, 4]. The spectral analysis of items of that grave produced the results suggesting that the pendants had been made of copper with



Fig. 4. Hoards of the 4th/3rd mill. BC: A. Bytyń hoard; B. Śmierdnica hoard; C. Kietrz hoard; D. Hoard from Remedello, Italy; E: 1. Flanged axe of the mummy from the Hauslabjoch, Italy; 2. Flint flat axe of the Globular Amphora culture with Tovryzhyn, Volhynia Region. [*after* C – Łęczycki 2004; D: E:1 – Egg 1992; E:2 – Klochko 2001]

minor admixtures of silver, bismuth, magnesium, calcium, lead and tin. The jewellery from a grave near the village of Peredivannya were made of fused copper containing a small amount of tin and lead [Sveshnikov 1974: 69, Fig. 19:7]. The same could be said about the finds from barrows near the village of Pochapy, Ripnevo: the pendants were forged from copper, which contained tin (1%), lead (up to 2%) and arsenic (1-3%). Finds from the Mierzanowice culture, discovered near the village of Machnowek (Grzęda Sokalska), resemble willow-leaf jewellery from Ripnevo by their shape and the impressed relief line [Sveshnikov 1974: 76, Fig. 22, 3, 4]. Grave No 1 (near Machnowek) contained two pendants (dimensions d - 24 mm, length 89 mm, length of the leaf – 50 mm, width – 13 mm; d - 23 mm, length – 94 mm, length of the leaf – 45 mm, width – 16 mm) placed next to the skull [Bagińska, Koman 2011: 374, 376, Fig. 9]; grave No 2 contained a piece of jewellery (dimensions d - 49 mm, length – 200 mm, length of the leaf – 69 mm, width – 24 mm) located behind the skeleton's back [Bagińska, Koman 2011: 376, Fig. 10]; in grave No 4 there was one piece of jewellery (dimensions d - 23 mm, length – 82 mm, length of the leaf – 52 mm, width – 15 mm) found at the temple of the skull [Bagińska, Koman 2011: 379, Fig. 12] (Fig. 1: E).

The time of existence of the "willow-leaf" jewellery is approximately the same; so far it has been difficult to identify an earlier monument. Analysis of the willow-leaf pendants allows making conclusions about the nature of changes in that category of objects. Jewellery from the "Kyiv Hoard" stand out among the finds due to their oval-shaped leaves, a distinct decor (convex lines on the leaf plate), as well as a specially diligent production; most probably they are the oldest. When comparing the Kyiv pendants with others mentioned above, one may see certain peculiar features that inevitably emerge at a later time in products of individual workshops, as the items were most probably made without any mould. However, we can also observe a general trend in the change of properties of the decorations: they gradually become smaller, the corymb transformed into a strip that no longer resembled the shape of a willow leaf. That change was typical of items of the Únětice culture [Sveshnikov 1974: 69, Fig. 19:7]. We may assume that the "Kyiv pendants" belong to the earliest samples of that category of goods.

A stand-alone item of the "Kyiv Hoard" is an elongated copper strip (30 mm wide). It abruptly narrows down towards the ends that are shaped as hooks. The strip resembles a leaf, since a narrow roller was made in the centre with a czekan peak axe to imitate a central fibril. That item may be identified as a forehead ribbon (a diadem). It is oval in section ($d - 230 \times 200 \text{ mm}$), weights 95.71 grave, made of copper with micro-admixtures of other metals (Sn, Pb, Ni, Zn).

Analogies to the forehead ribbon can be observed among the goods of the Steblivka (Stublo) hoard: those include bracelets made of a thin bronze sheet (width 28 mm), narrowed at the ends, which come one behind the other [Antoniewicz 1929: 137, Fig. 4:5]. However, the similarity between the "Kyiv diadem" and the bracelets is relative and limited to the general traces alone: both kinds of decorations are made of a metal plate and have narrowed ends. More similarity can be observed between the ribbon of the "Kyiv Hoard" and the find from the Pochapy burial site: a bracelet made of a narrow strip (width – 20 mm), that could be distinguished by its longitudinal rib impressed from the inner side [Sveshnikov 1974: 76, Fig. 22:2].



Fig. 5. Flat axes of the Bytyń type: 1. Garazhda, Lutsk District, Volyn Region, 2. Balym, Dunayevtsi District, Khmelnytsky Region, 3. Ternopil Region, 4. Prykordonne, Ostrog District, Rivne Region, 5. Zelena Lypa, Khotyn District, Chernivtsi Region, 6. Ostrog, Rivne Region, 7. Volyn Region, 8. Stryzhavka, Vinnytsia District, Vinnytsia Region, 9, 10. Volodymyr-Volynsky, Volyn Region, 11. Polonne District, Khmelnytsky Region. Flat axes of the Altheim-Vinca type: 12. Bank of the Dniester river, Sokyryany District, Chernivtsi Region, 13. Parkhomovtsi, Khmelnytsky District, Khmelnytsky Region. Flat axes, type?: 14. c. Anopol, Chernyakhiv District, Zhytomyr Region, 15. "between the towns of Irpin and Bucha", Kyiv Region 16. Volyn Polissya

One more item from the "Kyiv Hoard", a moon-shaped decoration (d - 115 x 117 mm; inner d - 862 mm, width - 25 mm), was cut from a copper plate; one of the ends was bent into a loop, the other end was elongated, narrowed and sharpened (length of the "needle" - 110 mm). The item's body had the following features: bent-in inner edge, short lines impressed on the surface, located in groups at 40 mm from each other. Left to right: a segment with 6 lines 3-4 mm long; farther on, 8 identical lines; then three groups of 8 short (1-2 mm) lines each. The marks are probably connected with the sacral meaning of the "lunnytsya". The time of emergence of the moon pattern goes deep into thousands of years; in any case, the moon was clearly visible on the early Tripolye monuments. In art, the same meeting was given to the common position of the celestial body, as well as the "horns

up" position or the moon "boat". The image is woven into the overall fabric of the symbols of the fertility cult of the Neolith – Bronze Age cultures of the Near East and Southern Europe.

As the finds indicate, in the Bronze Age the moon-like shape (lunula, Halbmond) was typical for the head and neck decorations. For instance, items cut of copper were found in graces of the Middle Dnieper culture [Artemenko 1967: 34--35, Fig. 23, 27, 4]. However, the difference between these costume details and the decoration from the hoard from Kyiv can be seen even at first glance. The latter is similar to the item from the Węgliny Hoard (the latter's dimensions: d - 200, d - 62) [Blajer 1990: 274, Plate CXXII, 1] (Fig. 1: G). Both items have similar outlines and technological qualities, but the Węgliny decoration belongs to the Únětice period and can be distinguished by much larger dimensions. Yet another analogy was found in the Steblivka (Stublo) Hoard: a moon-like decoration cut out of a copper plate, with its ends shaped like spiral curls (one of them broken off). The item's dimensions: distance between the ends – 80 mm, height – 65 mm; width – 21 mm [Antoniewicz 1929: 137, Fig. 3].

The above lunnytsya from the Węgliny, Stublo and "Kyiv Hoard"s have been conditionally referred to as "pendants". No doubt, they were decorative elements of the garments. Yet, probably some lunnytsya were worn as neck decorations, while others were part of the head gear (temple pendants). Probably the find from the "Kyiv Hoard" was used exactly that way (i.e., as a temple pendant). The analysis of the "Kyiv Hoard" allows assuming that its items comprised a whole set that belonged to a socially distinct individual, namely a woman. Indications of that include the artistic combination of decorations that reflects not only aesthetic traditions of ornamenting a costume, but also has a symbolic meaning. We therefore suggest hypothetical reconstruction of elements of the women's costume, based on analysis of the decorative items.

One important aspect in this study is to analyze the components of the costume, characteristic of the population of Central and Northern Europe, as well as findings recorded *in situ* in the graves (burial site Strilytsya, Vetkovskyy District, Gomel Region; graves № 43 and 53) [Artemenko 1987: 8-9].

The main position was occupied by the head gear – a diadem or a forehead ring, to which temple pendants were attached. Probably they were three, i.e., an odd number: a lunnytsya on one side and the willow-leaf decorations on the other. The moon-like lunnytsya pendant was a rather large and heavy item (38.36 grave), but it served as a counterweight to the willow-leaf pendants, attached at the other side. Together the decorations formed a composition, the semantics of which is linked to the fertility cult. It was possible to attach the pendants in a way that to accentuate the shape of the corymb, due to the rather long 'tail" of the pendants, bent as a spiral (the weight of the two pendants totaled 43.79 gr).

Yet another willow-shaped item was probably worn on the forearm as a bracelet. Different functions of the willow-leaf decorations can be indicated by various dimensions of the items included in the sets, as well as the fact that the decorations were not always located next to the skull in the graves. For instance, an item was found behind the back of the skeleton in grave # 2 near Machnowek (Grzęda Sokalska) [Bagińska, Koman 2011: 376, Fig. 10].

All of the pendants can be distinguished by their large sizes, which gave some peculiarity to the head gear. Possibly, it consisted of a diadem and a veil. Both head sets are all-purpose, i.e., they are common for festive and everyday costumes of many peoples. In the costume we shall reconstruct the veil that served as the background for metal ornaments, while the entire gear served as a frame to the woman's face (Fig. 3).

Flat axes with flanges. The first metal flat axes with flanges in Central and Eastern Europe were axes of the Bytyń type. In Poland they were found in the hoards of Bytyń, Wielkopolska Region, Śmierdnica, West Pomorania Region and Kietrz, Opole Region [Łęczycki 2004: Fig. 3:7, 8, 9] (Fig. 4: A, B, C). The Bytyń and Kietrz hoards were located in late stage of the FBK culture [Łęczycki 2004]. Similar axes were also found in the hoard from Remedello, Italy and next to the mummy from Hauslabjoch, Italy [Egg 1992] (Fig. 4: D, E1). The mummy from Hauslabjoch dates back to 3350 – 3120 BC [Spindler 1993: 33]. Interestingly, metal axes of the Bytyn type are very similar in terms of their shape and dimensions to the flat axes of the Globular Amphora culture. As an example, a metal axe of the mummy from Hauslabjoch and a flint flat axe of the Globular Amphora culture from Tovryzhyn, Volhynia shall be presented [Klochko 2001: Fig. 18:8] (Fig. 4: E: 1,2).

In the Pre-Carpathia, Podolia and Volhynia, the Bytyn-type axes were found: at the village of Garazhda of the Lutsk District, Volhynia Region [Markus, Okhrimenko 2010: Fig. 4.24, 5] (Fig. 5:1); the village of Balym of the Dunayevetsky District, the Khmelnytsky Region; in the Ternopil Region and the village of Prykordonne of the Ostrog District, the Rivne Region (collection of Kozymenko, Kyiv) (Fig. 5:2-4). In the village of Zelena Lypa of the Khotyn District, the Chernivtsi Region, a minor axe of the Bytyn type was found together with an ingot of "raw" copper (a collection of Kozymenko, Kyiv) (Fig. 5:5). Axes of that type were also found in Ostrog, Rivne Region, the Volhynia Region, the village of Stryzhavka of the Vinnitsa District, Vinnitsa Region (collection by Kozymenko, Kyiv) (Fig. 5:6-8); Volodymyr-Volyńskyi of the Volhynia Region [Markus, Okhrimenko 2010: Fig. 4.25, 4; 4.26, 7] (Fig. 5:9-10); the Polonsky District of the Khmelnytsky Region (collection by Kozymenko, Kyiv) (Fig. 5:11).

Hence, in right-bank Ukraine, primarily in the Volhynia Region, flat metal axes of the Bytyń type proliferated, most probably, as early as the end of the 4th mill. BC, during the existence of the Tripolye and the FBC cultures in those territories. Probably, their emergence in the region was connected with links with the Danube basin.

Markers of connections with the Balkan – Danube Region of that time in the Transniestria are the finds of flat axes of the *Altheim-Vinca type* (similar to axes from the Kietrz hoard [Lęczycki 2004: Fig. 2:3]) at the bank of the Dniester Riv-



Fig. 6. Flat axes of the Sokal type. 1. t. Novovolynsk, Ivanychi District, Volyn Region, 2. Volyn Region, 3. Volodymyr Volynsky, Volyn Region, 4. Rivne Region, 5. Volyn Region, 6. t. Polonne, Khmelnytsky Region, 7,8. Volodymyr Volynsky District, Volyn Region, 9. v. Yarevyshche, Starovyzhevsky District, Volyn Region, 10. Radekhiv District, Lviv Region

er in Sokyrnyansky District, the Chernivtsi Region and the village of Parkhomovka, Khmelnytsky District, Khmelnytsky Region (collection by Kozymenko, Kyiv) (Fig. 5:12, 13). Probably, a later version of that type (Corded Ware culture period?) should include flat axes with flanges from the village of Anopol of Chernyakhivsky District, Zhytymyr Region, those found between the towns of Irpin and Bucha of the Kyiv Region (collection by Kozymenko, Kyiv) (Fig. 5:14, 15) and from Volhynia and Polissya [Markus, Okhrimenko 2010: Fig. 4.26, 5] (Fig. 5:16). During the Trziniec culture, such axes become smaller and thinner [Klochko 2001: Fig. 63, 6-11].

In our view, further development of the Bytyn-type flat axe line of the Corded Ware cultures is represented by somewhat smaller flat axes, which we suggest be denoted as the *Dunakomlod-Sokal type*. In addition to the aforementioned finds from Khilchytsi and Sokal of the Lviv Region (Fig. 1: D:1, 2) we can refer to finds from Novo Volhyniask of the Ivanichivsky District, the Volhynia Region and the Volhynia Region [Markus, Okhrimenko 2010: Fig. 4.26, 5] (Fig. 6:1,2); Volodar Volhyniasky of the Volhynia Region [Klochko 2001: Fig. 63, 5] (Fig. 6:3); the Rivne and Volhynia Regions [Klochko, Kozymenko 2011: I Fig. 1. 29-30] (Fig. 6:4-5); from the town of Polonne of the Khmelnytsky Region (collection by Kozymenko, Kyiv) (Fig. 6:6). A Sokal-type flat axe was found in the Dunakomlod hoard together with the Kozarac-type axes (see further, Fig. 19: B 9).

The most recognizable versions (of the Trziniec culture) of that type of axes are those of the so-called Únětice type (Wroclaw-Szczytniki type, after Blajer [1990:



Fig. 7. Axes of the Samara type: 1. Sokolovo, Dnipropetrovsk Region; 2. Zvenyhorodka, Cherkassy Region; 3. Balky, Zaporizhia Region; 4. Ivan'ky, Cherkassy Region; 5. Dolynka, Dnipropetrovsk Region; 6. Hrechanyky, Kyiv Region; Axes of the Baniabic-Pidlissya type: 7. Hnidyn, Kyiv Region; 8. Kyiv Region; 9. Stayky; 10. Chapayivka, Kyiv Region; 11. Pidlissya, Kyiv Region [Klochko 2001]

19-21]). In Ukraine those include finds from Sadraky, Narodychi and Volodymyr Volhyniasky [Klochko 2001: Fig. 63, 1-4]; the Volodymyr Volhyniasky District and the village of Yarevyshche of the Starovyzhevsky District, the Volhynia Region [Markus, Okhrimenko 2010: Fig. 4.24, 4; 4.25, 1, 3] (Fig. 6:7-9) and the Radekhiv District of the Lviv Region (collection by Kozymenko, Kyiv) (Fig. 6:10).

Axes of the Stublo type. The origin of the Stublo-type axes has been connected with the Vucedol metallurgical tradition of the north of the Carpathian basin [Klochko 2001: 127-130; Batora 2006: 44]. At the same time, the origin of that metallurgical tradition of central Europe and the Upper Dniester has been linked to the "Caucasian influences" [Sveshnikov 1974, Machnik 1987; 1991; Buniatian 2010], which, in our opinion, is outdated and does not correspond with the contemporary source base, first and foremost, with Ukrainian archaeology materials.



Fig. 8. Hoard, found near v. Ivan'ky, Mankivka District, Cherkassy Region

At some point, all the oldest copper axes found in the steppe territory of Ukraine were classed among the "Caucasian" types and explained by influences from the Northern Caucasus [Chernykh 1967; Korenevsky 1974; Nechytailo 1991]. The situation was changed by the finds of moulds for casting axes in "post-Mariupol" graves near the village of Mayivka of the Dnipropetrovsk District, barrow group XII, barrow 2, burial 10 [Kovaleva, Volkoboy *et al.* 1977: 20 – 22, Tab. XV, XVI] and the Samarsky island near the village of Sokolove, the Novomoskovsk District of the Dnipropetrovsk Region, barrow 1, burial 6 [Kovaleva 1979: 64, Fig. 6] (Fig. 7:1). As of today, those are Europe's oldest graves of master smelters and the casting forms, found in them, representing Ukraine's oldest copper bludgeon axes. In addition to the casting forms, such copper axes were found near Zvenyhorodka of the Cherkassy Region and the village of Balky of the Vasylkiv District, the Zaporizhya Region [Nechytailo 1991: Fig. 4:4] (Fig. 7:2,3), in the burial of the Dolynka Kemi-Oba culture in the Crimea and in a grave from the hamlet of Hrechanyky in the Pereyaslav area [Klochko 2001: Fig. 27, 3,4] (Fig. 7:5, 6) and



Fig. 9. Hoard, found near v. Ivan'ky, Mankivka District, Cherkassy Region



Fig. 10. Dagers of the Usatovo type: 1. Usatovo, Odessa Region 1.1.1.; 2. Usatovo, Odessa Region 1.3.1.; 3. Sukleya, Tiraspol Region (Moldova) 3; 4-8. Ivan'ky hoard; 9. Bibl. [*after* 3 – Klochko 2001; 4-8 – Sandars 1961]

in a hoard from the village of Ivanky, the Mankivsky District of the Cherkassy Region (collection by Kozymenko, Kyiv) (Fig. 7:4).

The hoard, found in 2013, contained a copper axe and five swords made of arsenic bronze (Fig. 8; Fig. 9). The swords, 28.3 to 41.5 cm long, were close to daggers of the "Usatovo" type from burials of the late Tripolye group of Usatovo (Usatovo culture): Usatovo 1.1.1 and Usatovo 1.3.1 (length – 18.9 cm) in the Odessa Region and barrow 3 near the village of Sukleya in the Tiraspol Region [Klochko 2001: Fig. 13, 4-6] (Fig. 10:1-3). Large daggers of the "Usatovo" type were made of highly alloyed arsenic bronze and clad with arsenic, which gave them a silvery colour (an original way of imitating silver). The composition of the metal and the production technology allowed some researchers to regard the items as imported from Anatolya and date them to mid-3rd mill. BC [Ryndina, Konkova 1982]. The radiocarbon date identification allows moving their existence deeper to the second half of the 4th to the first half of the 3rd mill. BC [Klochko, Kośko, Szmyt 2003: 397-398]. Unfortunately, the chronotypology of Middle Eastern metal objects has been developed insufficiently to date and, therefore, does not allow us quote detailed, well-dated analogies to those items; the only object we managed to find is a sword from the village of Biblo [Sandars 1961: 397-398] (Fig. 10:9), which, obviously, is a more developed and younger object than the swords from the Ivanky Hoard.

The finds of casting forms in graves of smelters near the villages of Sokolove and Mayivka point to the local production of such tools. They have received the



Fig. 11. Hoard, found near v. Chapayivka, Cherkassy Region

name of "Samara-type axes" [Klochko 2001: 68]. Samara-type axes differ from the oldest Northern Caucasian axes of the Maikop type by their longer and narrower body. In terms of construction, Samara casting forms are close to the oldest currently known axe casting forms from the Kura – Araxes monuments from the Caucasus [Martirosian 1964: 25 - 28; Kushnareva, Chubinishvili 1970: Fig. 40, 4, 5, 9; Munchayev 1975: Fig. 30, 4-6]. However, the shape of Samara axes differs from that of Kura-Araxes axes by its less pronounced butt. The origin of the most ancient metal axes of the Caucasus and Ukraine remains insufficiently explored. A long time ago, Gordon Childe explained their emergence in those regions by close their connection with the Middle East. In the opinion of the authors, this hypothesis has some potential. The Usatovo daggers and swords from the Ivanky Hoard confirm that such connections at the North-Western Pontic Region could be observed from the second half of the 4th to the first half of the 3rd mill. BC.

The "Samara" tradition was further developed during the Yamnaya culture in the Baniabic – type axes, found in the Vilcele Hoard in Romania [Vulpe 1970: Plate 1 - 3] and in a Yamnaya grave near the village of Polissya, the Brovary District of the Kyiv Region and Hnidyn (the town of Brovary near Kyiv), as well as in the Kyiv Region (the village of Stayky, the Kaharlyk District of the Kyiv Region) and the village of Chapayivka, the Zolotonosha District of the Cherkassy Region [Klochko 2001: 79-83] (Fig. 7:7-11). It can therefore be said that the proliferation of axes of the Baniabic-Polissya type covers the steppe zone from the Lower Danube in the west to the Northern Caucasus in the east, with the centre in the Lower Dnieper area.

The most ancient axes of the late Neolithic – Early Bronze Age in Eastern Poland and right-bank Ukraine are the Chapayivka-type axes, which are close to



Fig. 12. The most ancient axes of the Early Bronze Age of Eastern Poland and Right-bank Ukraine: 1. Chapayivka hoard, Cherkassy Region; 2. Rudna Mała, Podkarpackie Region; 3. Pistyn, Ivano-Frankivsk Region; 4. Borodyanka, Kyiv Region; 5. Munina, Podkarpackie Region; 6. Bilousivka (Bilousovychi), Vinnytsia Region; 7. Horokhiv, Volyn Region; 8. Smolihiv, Lutsk District, Volyn Region



Fig. 13. The most ancient axes of the Early Bronze Age of the Carpathian basin: 1. Fajsz hoard [Kalicz 1968], 2. Brno-Líšeň hoard [Benešová 1956]; Northern Pontic Region (A – Eastern Poland and Right-bank Ukraine, B – Dnieper Ukraine (Naddnipryanshchyna) and 3. the Northern Caucasus (Majkop)

the axes of the Fajsz type, the oldest in central Europe (see further). Such an axe was found in 2013 in a *hoard near the village of Chapayivka, Zolotonosha District of the Cherkassy Region*, together with a knife of the Bodrogkeresztur type [Vajsov 1993] (Fig. 11). Such knives are typical of the Bodrogkeresztur culture in Hungary and the "Lažniany"culture group in Slovakia. Those are the most ancient copper knives – daggers in Europe, which fully follow flint prototypes (dating back to the second half of the 4th to the beginning of the 3rd mill. BC) in terms of their shape and the method of fastening the handle. Hence, the Chapayivka Hoard may be referred to the second half of the 4th to the beginning of the 3rd mill. BC.

In addition to the axe from the Chapayivka Hoard (Fig. 12:1) other finds classed among the Chapayivka type of axes include those from Rudna Mała of the Rzeszów Region in the east of Poland [Kostrzewski 1964: Fig. 78, 1] and Pistyn of the Ivano-Frankivsk Region [Sveshnikov 1974: Fig. 18, 2] (Fig. 12:2, 3). Earlier on, we associated them with other types [Klochko 2001: 124-128], but the discovery of the Chapayivka Hoard made it possible to develop a new chronotypological scheme for such axes.

A version of this type is represented by narrower axes from the town of Borodyanka of the Kyiv Region (collection by Kozymenko, Kyiv), an axe with a grooved butt from Munina near Yaroslav in the east of Poland [Kostrzewski 1964: Fig. 53] and the find from the village of Bilousivka of the Tulchyn District, the Vinnitsa Region [Bronzezeit 2013: № 80] (Fig. 12, 4-6). We include an axe with a long bushing from the Horokhiv District of the Volhynia Region and the village of Smolihiv of



Fig. 14. Axes of the Stublo type: 1. Gaisyn District, Vinnytsia Regio; 2. Volyn Region; 3. Komariv, Ivano-Frankirsk Region; 4. Malynivka, Volyn Region; 5. Chertkiv District, Ternopil Region; 6. Burty, Kyiv Region; 7. Vinnytsia Region; 8. Stublo hoard; 9. Mezhyhirtsi hoard; 10. Zelen'ky, Kyiv Region; 11. Vinnytsia Region; 12, 13. Sadovoye hoard; 14. Kyrylivski Heights hoard; 15. Skakun hoard; 16. Kolontayivka hoard



Fig. 15. Sadovoye hoard

the Lutsk District, Volhynia Region [Markus, Okhrimenko 2010: Fig. 4.23, 1, 3] (Fig. 12, 7, 8).

As noted above, the most ancient axes of the Early Bronze Age of the Carpathian basin are the Fajsz – type axes, which Batora dates back to 2890-2770 BC [2006: 29]. As examples, there is the Fajsz Hoard itself [Kalicz 1968] and the Brno-Lisen Hoard [Benešova 1956] (Fig. 13, 1, 2). Earlier on, it was suggested some of the Chapayivka-type axes were borrowings (imports?) from the Carpathian basin [Klochko 2001: 124-128]. However, a more detailed analysis points to distinctions between the central European Fajsz-type axes and the Chapayivka-type of Eastern Poland and right-bank Ukraine; the majority of the latter display visible cannelures, while none such occur on axes of the Danube basin, though they are typical of the Bronze Age axes of Anatoliya (!) (Fig. 13, A 1-8). Practically in parallel, at the same time in central and left-bank Ukraine, the genesis of the Samara type of axes began (Fig. 13, B 1-6) and axes of the Maikop type emerged in the Northern Caucasus [Korenevsky 1974] (Fig. 13).



Fig. 16. Dagger from the Sadovoye hoard

Axes of the Chapayivka type found in the territory of Eastern Poland and rightbank Ukraine follow the model of axes of the Stublo type. Those include finds from the Haisyn District of the Vinnitsa Region and the Volhynia Region (collection by Kozymenko, Kyiv) (Fig. 14, 1,2), Komariv of the Ivano-Frankivsk Region [Sveshnikov 1974: Fig. 18,3] (Fig. 14, 3), the village of Malynivka of the Rozhyshche District of the Volhynia Region [Markus, Okhrimenko 2010: Fig. 4.23, 2] (Fig. 14, 4), the Chertkiv Region (collection by Kozymenko, Kyiv) (Fig. 14, 5), the villages of Burty and Zelenky of the Kaharlyk District of the Kyiv Region [Klochko 2001: Fig. 57, 3,4] (Fig. 14, 6,10), 7. (collection by Dobrovanov, Vinnitsa) (Fig. 14, 7, 8). Stublo Hoard [Antoniewicz 1929: Fig. 2] (Fig. 14, 8, 9). Mezhyhirtsi Hoard [Klochko, Tkachuk 1999] (Fig. 14, 9), the Vinnitsa Region [Klochko 2006: Photo 3] (Fig. 14, 11) Kyrylivski Heights Hoard in Kyiv [Klochko 2006: Photo 8] (Fig. 14, 14), Skakun Hoard [Gimbutas 1965] (Fig. 14, 15) and Kolontayivsky



Fig. 17. Sickles and adzes from the Eastern Mediterranean: 1. Cyprus, Stylianon hoard; 2. Palestine, Beisan level XVI; 3. Troy; 4. Sadovoye hoard. [*after* 1 – Catling 1964; 2 – Schaeffer 1948; 3 – Bronzezeit 2013]

[Korenevsky 1976] (Fig. 14, 16) from the Kharkiv Region in the East of Ukraine. That group also includes two axes from the Sadovoye Hoard (Fig. 14, 12, 13).

The *Sadovoye Hoard* was found in 2012 in the Crimean peninsula (Ukraine) and is kept in the collection of Kozymenko (Kyiv). The hoard was found in the Bakhchisaray District at the village of Velyke Sadovoye at the bank of the Belbeck River, not far from the city of Sevastopol, at the southern edge of the peninsula. The hoard included two sickles, a sleeved adze, five flat adzes, four axes, five daggers and knives, five large awls, one small awl and a dart-head (Fig. 15).

Sickles (length – 19.5 and 22.5 cm, width – up to 2.5 cm, thickness – 0.5 and 0.8 cm) had been cast in stone moulds (Fig. 15:1, 2). The metal had been poured from the side of the blade tip. Holes in the handles had been made during the casting process by means of inserting special rods into the moulds. One side of the sickles had been hammered. The blades had been hammered from both sides and sharpened. Similar sickles (tanged sickle) were found in the Stylianou Hoard, Nicosia, Cyprus [Catling 1964: Fig. 8:1-2; Pl. 5, a, b, c] (Fig. 17:1). Catling referred them to the late LC period; however, in the view of the authors this is a mistake. The hoard should be attributed to the Early Bronze Age.

A chisel with a "twisted" sleeve (length -12 cm, sleeve diameter -2.5 cm) had been cast after a wax model (Fig. 15:3). The blade and edges of the sleeve's "wings" had been hammered. Tools with a "twisted" sleeve (hoes and chisels) were present in Asia Minor since the Early Bronze Age.

Adze (length -14.5 cm, thickness -0.7 cm, width of the blade -4 cm) had been cast in a closed mould (Fig. 15:4). The blade had been hammered and sharpened. Such adzes were quite common in Asia Minor and the Middle Mediterranean in the Early and Middle Bronze Age.

Four large adzes for processing stone (length - 19.8; 19.6; 19.5; 17.4 cm, thickness - 0.7-0.6 cm, width of the blade - 6 cm) had been cast in closed moulds; the metal had been poured from the side of the blade (Fig. 15:5-8). The surface had been strongly hammered on both sides. The blades of all tools had been strongly hammered, but then worn out and blunted in the process of use. One adze was broken. The type of adze was typical for Asia Minor and the Eastern Mediterranean during the Early and Middle Bronze Age.

Two axes (length -15.5 and 12.8 cm, sleeves' diameters -3.5 and 3 cm, width of the blades -7 and 7.5 cm) had been cast in two-folding ceramic casting moulds (Fig. 15:12, 13). Metal had been poured from the "back" into a hole near the rod that had been inserted into the mould for making the hole in the butt. The axes belong to the Kolontayivsky type, which is typical for the Northern Pontic Catacomb culture (the Early Bronze Age) [Korenevsky 1976].

Two axes (length 6.2 and 11.6 cm, sleeves' diameters -2 cm, width of the blades -3.2 and 4.5 cm) had been cast in two-folding stone moulds (Fig. 15:10, 11). Metal had been poured from the butt side. The pouring canals had been whittled away and resurfaced as "cones" on the butt. The blades had been hammered and sharpened. We do not know of any analogies of these axes. The manufacturing technology and the composition of the metal, similar to those of other objects of the hoard, which originate from Asia Minor (see below) point in the opinion of the authors, to Asia Minor, where stone (soapstone) casting moulds had been known at least since the beginning of the 3rd mill. BC.

Five long tetrahedral rods – "awls" (length – 23, 22, 20, 18, 17 cm, thickness – 0.9-0.6 cm) had been cast in closed casting moulds (Fig. 15:16-20). Metal had been poured from the side of the tangs; the pouring canals had been whittled away. In one case, the tang had been hammered down. The tips had been sharpened. That kind of rod was typical for a wide range of cultures of the Circum-Pontic and Mediterranean Regions in the Early and Middle Bronze Age.

A tetrahedral rod with an intertwined handle topped with a small mushroom-shaped head (an awl?) (length -17.4 cm, thickness -0.6 cm, length of the intertwined handle -5.5 cm, diameter of the head of the handle -0.8 cm) had been cast in a closed stone casting mould (Fig. 15:21). Metal had been poured from the side of the handle's head. The pouring canal had been whittled off, the tip had been sharpened. The head of the handle resembles tops of the pins typical for the Early Bronze Age of Asia Minor.

A knife (length -27 cm, width -2.8 cm, thickness -0.3 cm, length of the tang -3 cm, length of the sharpened end -5 cm) had been cast in a closed stone mould (Fig. 15:15). Metal had been poured from the side of the handle. The pouring canal had been whittled away and the tip of the tang had been sharpened. Most of the blade had blunt edges and the tip alone had been riveted and sharpened. In general, that knife was close to so-called "daggers of the Pryvilne type" of the Catacomb culture [Chernykh 2011]; however, they differ from the latter by a larger length and more sophisticated production technique. That technique allowed classing the item as an imported piece from Asia Minor.

A dagger (length -21 cm, width of the blade -4.3 cm, thickness up to 0.6 cm, length of the tang -4 cm) had been cast in a closed stone mould (Fig. 15:9). Metal had been poured from the side of the handle. The pouring canal had been whittled away and the tip of the tang had been riveted. The edges of the blade had been hammered and sharpened. The production technique allowed classing the item as an imported piece from Asia Minor.

A dagger with a short tang and a blade decorated with an ornament (length -17.2 cm, width - up to 4.3 cm, thickness -0.4 cm, length of the tang -2 cm) (Fig. 15:24; 16). The dagger had been cast in a closed stone (most probably, soapstone) mould. Metal had been poured from the side of the handle. The pouring canal had been whittled away and the tip of the tang had been riveted. The blade edges had been hammered and sharpened. The central part of the blade had double groove ribs at both sides, decorated with a "pine-tree" ("fishbone") ornament cut in the mould. That kind of mould could only be cut out of steatite (soapstone), a soft and plastic stone. The ribs on the daggers, decorated with the "pine-tree" or-

an 889	29 Cu 97,56 33 As 2,04 15 P 0,254 28 Ni 0,087 47 Ag 0,026 27 Co 0,018 26 Fe 0,011 50 Sn trace	an 843	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
an 841	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	an 842	29 Cu 90,649 14 Si 4,492 33 As 4,185 17 Cl 0,375 16 S 0,167 26 Fe 0,04 20 Ca 0,029 50 Sn 0,025 27 Co 0,023 47 Ag 0,016
an 844	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	an 895	29 Cu 98,333 15 P 0,732 33 As 0,658 28 Ni 0,167 13 AI 0,049 47 Ag 0,027 27 Co 0,015 26 Fe 0,014 83 Bi 0,005 50 Sn trace
an 896	29 Cu 98,444 15 P 0,804 33 As 0,53 13 A 10,095 28 Ni 0,08 47 Ag 0,023 27 Co 0,015 26 Fe 0,009 82 Pb trace 50 Sn trace	an 897	29 Cu 96,275 12 Mg 2,08 33 As 1,222 15 P 0,348 27 Co 0,03 28 Ni 0,023 47 Ag 0,021
an 846	29 Cu 99,256 16 S 0,221 14 Si 0,2 15 P 0,116 17 Cl 0,095 28 Ni 0,082 27 Co 0,019 50 Sn 0,011	an 894	29 Cu 91,859 15 P 6,141 33 As 0,991 12 Mg 0,909 27 Co 0,031 28 Ni 0,025 47 Ag 0,021 50 Sn 0,012 26 Fe 0,01 50 Sn trace

Fig. 18. Sadovoye Hoard

an 885	29 Cu 97,881 33 As 1,315 15 P 0,657 28 Ni 0,071 47 Ag 0,034 27 Co 0,015 26 Fe 0,001 50 Sn trace	an 886	29 Cu 97,08 15 P 1,478 33 As 1,309 28 Ni 0,075 47 Ag 0,03 27 Co 0,016 50 Sn trace
an 887	29 Cu 97,627 15 P 1,01 33 As 0,783 12 Mg 0,379 28 Ni 0,077 13 Al 0,067 47 Ag 0,024 26 Fe 0,017 27 Co 0,016 50 Sn trace	an 888	29 Cu 99,116 33 As 0,274 15 P 0,246 12 Mg 0,235 28 Ni 0,083 27 Co 0,018 47 Ag 0,018 82 Pb 0,011 50 Sn trace
an 890	29 Cu 97,536 15 P 1,732 33 As 0,577 28 Ni 0,075 26 Fe 0,041 47 Ag 0,023 27 Co 0,016 50 Sn trace	an 891	29 Cu 94,798 15 P 3,664 33 As 1,396 28 Ni 0,075 26 Fe 0,026 47 Ag 0,026 27 Co 0,015 50 Sn trace
an 845	29 Cu 97,282 14 Si 1,802 33 As 0,496 16 S 0,147 17 Cl 0,122 28 Ni 0,086 47 Ag 0,021 27 Co 0,02 20 Ca 0,012 50 Sn 0,01	an 893	29 Cu 96,726 15 P 1,803 33 As 1,038 12 Mg 0,226 28 Ni 0,071 13 Al 0,067 16 S 0,029 47 Ag 0,023 27 Co 0,016 50 Sn trace
an 892	29 Cu 97,995 33 As 0,836 15 P 0,586 12 Mg 0,319 28 Ni 0,122 13 Al 0,055 47 Ag 0,051 27 Co 0,019 26 Fe 0,015 82 Pb 0,003 50 Sn trace		

Fig. 18. (continued)

nament, are known in monuments found in Asia Minor and Cyprus [Catling 1964: Fig. 3]. The metal used for making that dagger is different from all other objects of the hoard, made of arsenic bronze, by a large percentage of admixtures of gold, silver and tin (Plate 2, an. 841). Its fine shape and the composition of the metal allow attributing that dagger to elite, "royal" items. The production and ornamentation techniques allow attributing it to imports from Asia Minor.

A large leaf-like knife (length -20 cm, width of the blade - up to 7.2 cm, thickness - up to 0.4 cm, length of the tang -5 cm) (Fig. 15:23) had been made in a closed casting mould; metal had been poured from the side of the handle. The blade had been strongly riveted and polished, the edges had been sharpened. The tip of the tang had also been riveted. In general, that was a rather typical knife of the Northern Pontic Catacomb culture [Chernykh 2011]; the only distinguishing feature was the unusually large size.

A leaf-like knife (length -13.5 cm, width - up to 4.7 cm, thickness - up to 0.3 cm, length of the tang -5 cm) (Fig. 15:14) had been made in a closed casting mould; metal had been poured from the side of the handle. The blade had been strongly riveted and polished, the edges had been sharpened and the tip of the tang had also been riveted. It was a rather typical knife of the Northern Pontic area's Catacomb culture [Chernykh 2011].

A dart-head (length -11.7 cm, width - up to 3 cm, thickness - up to 0.5 cm, length of the tang -5.5 cm) (Fig. 15:22) had been made in a closed casting mould; metal had been poured from the side of the handle. The blade and the tang had been riveted. Such tanged dart-heads are known to occur in monuments of the Catacomb culture of the Northern Pontic Region [Klochko 2001: Fig. 43:5, 9].

Most of the hoard's goods were made of copper (as the base) with a rather different composition of included elements (Plate 2, an. 889, 843, 842, 844, 895-897, 846, 894, 885-888, 890, 891-893, 845).

Hence, it may be proposed that the Sadovoye Hoard comprises both items of local types (the Catacomb culture) and items imported from the South.

The typochronology of metal objects of the Early and Middle Bronze Age of the Eastern Mediterranean and Asia Minor remain under-explored. With the presently available knowledge, it is possible to argue only that the elongated trapeze-like adzes emerged in Egypt as early as in the early period of the Old Kingdom (Bet Challaf, the Neteri-chet tomb and the Sanachtmastaba) [Müller-Karpe 1974: Plate 36, 18,19; 38, A 18-20]. They have been known in Palestine: Beisan, layer XVI (Fig. 15:2), in Lebanon: Byblos, Temple "Syrien", hoard "d" [Schaeffer 1948: Fig. 150:47; 61, P], in Asia Minor: Troy II, hoard [Müller-Karpe 1974: Plate 334, A, 17,18] and Troy, hoard "K" [Schaeffer 1948: Fig. 167] (Fig. 17:3), in the Cycladic islands: Chalandriani [Müller-Karpe 1974: Plate 358, 56], the Crete island: the Chamaisi Hoard [Müller-Karpe 1974: Plate 378, B 1] and in Greece: Sesklo, Eutresis, FH II, Lernara Leukas, tomb S [Müller-Karpe 1974: Plate 412, C 4; 407, C 1; 397, C 5; 412, A 31].



Fig. 19. Axes of the Early Bronze Age from Central Europe: A – Kozarac hoard [Truhelka 1909],
B – Dunakömlőd hoard [Róska 1957]; Ukraine (axes of the Stublo type) and Eastern Ukraine: 1.
Kolontayiovka hoard [Korenevsky 1976], Skakun hoard [Gimbutas 1965], Kyrylivski Heights hoard;
Axes of the Rybakovka-Kostromskaya type: 4. Rybakovka hoard; 5. Oleksandrivsk hoard; 6. Kirovohrad Region; 7. Tarasivka, Dnipropetrovsk Region; 8. Veseli Tarny, Krivy Rig Region [Klochko 2001]

Early and Middle Bronze Age objects of the southern type had been known in the Pontic Region before. As an example, we may refer to the hoard from the village of Yankovo of the Shumen province in Bulgaria [Dergachev 2011: Fig. 130], the Yemenska Peshtera Hoard in the north of Bulgaria [Chernykh 1978: Plate 25:5; 27:3, 5; 28:3, 5, 8, 12, 13, 39, 40; 29:1, 22] and the Safaalan Hoard in the north-west of Turkey [Chernykh 1978: Fig. 110], all of them belong to the Early Bronze Age. In the Yankovo Hoard, as an analogy to the Sadovoye Hoard, we can refer to a large knife with a widened sharpened tip of the blade (unlike the knife in Sadovoye, this knife has no tang) and a chisel with a twisted sleeve. The Yemenska Peshtera Hoard contained an adze with a wide curved blade and a hook, the same as in the hooks found in Catacomb graves in the Northern Pontic Region. The Safaalan Hoard contained an elongated trapeze-like adze and small sickles (harvesting knives). However, the Sadovoye Hoard presently is the most northern hoard containing items of the Asia Minor types in the Northern Pontic Region.

Therefore, objects of the Catacomb types – *axes of the Kolontayivka type and leaf-like knives* – play an important role in the identification of absolute chronology of the Sadovoye Hoard. These objects belong to the "classical" period of the



Fig. 20. Axes and battle adzes of the Middle Eastern type: 1. Ur; 2. Cherkassy Region; 3. Vinnytsia Region; 4. Stublo hoard. [1 – Müller-Karpe 1974]

Catacomb culture [Klochko 2001: 100; Chernykh 2011]. Radiocarbon dates for that period are at about 2800 – 2500 BC [Telegin, Pustovalov, Kovaliukh 2003: 183; Bratchenko 2003: 207], which can be accepted as an approximate date of the hoard.

Axes of the Fajsz type in the Carpathian basin took after axes of the Kozarac/ Komlod type, which, based on the data gathered by Batora [Batora 2006: 31-39], may be dated within 2800-2500 cal. BC. As examples of complex finds of axes of that type, we may refer to the Kozarac Hoard [Truhelka 1909] (Fig. 19: A) and the hoard of Dunakomlod [Róska 1957] (Fig. 19: B); It is worthy of note that, axes of the Kozarac/Komlod type in that hoard were found together with a flat axe of the Dunakomlod-Sokal type.

At the same time, in Eastern Poland and right-bank Ukraine, *the Chapayiv-ka-type axes took after those of the Stublo type* (Fig. 19) and in Eastern Ukraine *Stublo-type axes of the Corded Ware cultures co-exist with Kolontayivka-type axes of the Catacomb culture*. As examples, in addition to the Sadovoye Hoard referred to above, we may refer to the Kolontayivka Hoard [Korenevsky 1976] and the Skakun Hoard from the Kharkiv Region [Gimbutas 1965] and the Kyrylivski Heights Hoard in Kyiv [Klochko 2006: 88] (Fig. 19:1-3). Based on the dates for the Catacomb culture, quoted above, they could be dated *within 2800-2500 BC*, although, obviously, late versions of axes of the Stublo type continued to exist till a later period, having transformed into the Rybakovka-Kostromskaya type of the Babyno culture circle (Mnogovalikovaya Pottery culture) [Klochko 2001: 172-173]. Examples of axes of the Rybakovka-Kostromskaya type can be seen among



Fig. 21. Daggers: 1. Vysotske, Vysotske Brody District, Lviv Region, barrow VIII; 2. Balychi, Balychi Mostysko District, Lviv Region, barrow VII; 3. Sirnyky; 4. Bilshivtsi, Ivano Frankivsk Region; 5. Lyubar District, Zhytomyr Region; 6. Zaluzhany, Okhtyrka District, Sumy Region; 7. Vinnytsia Region. [4 – Bandrivskyi 2011]

the objects from the hoards of Rybakovka in the Mykolayiv Region and Oleksandrivsk in the Dnipropetrovsk Region, from the Kirovohrad Region, the villages of Tarasivka of the Dnipropetrovsk Region and Veseli Tarny of the Kirovohrad Region [Klochko 2001: 172-173] (Fig. 19:4-8).

The Stublo Hoard included one more axe with a wide heavy blade (Fig. 20:4) that has been traditionally compared to axes of the Faskau type of the Northern Caucasus culture [Korenevsky 1981: Fig. 7:11] and used as evidence of connections with the Northern Caucasus. Axes of the Faskau type represent a version of "heavy"-bladed axes that were widespread in the Middle East. As an example, the authors refer to "textbook" finds of axes and battle adzes from the "royal" Uru tombs (Fig. 20:1). Similar objects have been recently found in right-bank Ukraine. A bronze "battle" hoe, similar to the hoes found in the Uru "royal tombs" in Mesopotamia [Müller-Karpe 1974: Plate 172, 5,10,15,19,24], was found in the Cherkassy Region [Klochko 2012: Fig. 7:2] (Fig. 20:2). A bronze battle axe, similar to the axes from the Uru "royal tombs" in Mesopotamia [Müller-Karpe 1974, Plate 172: 8, 17], was found in the Vinnitsa Region [Klochko 2012: Fig. 7:3, Fig. 18:3].



Fig. 22. Map of location of the "willow-leaf" metal complex

They serve as proof of direct (most probably, trade) links between right-bank Ukraine and the Middle East, rather than the Northern Caucasus.

Daggers of the "proto-Únětice" type. In addition to old finds from graves of different groups of the Corded Ware culture of Western Ukraine: Vysotske, barrow VIII; Balychi, barrow VII; Sernyky; Bilshivtsi [Bandrivsky 2011: Fig. 12] (Fig. 21:1-4), allow to include new finds from the Lubar District of the Zhytomyr Region; the village of Zaluzhany, the Okhtyrka District of the Sumy Region (collection by Kozymenko, Kyiv) (Fig. 21:5, 6) and the Vinnitsa Region [Klochko 2012: Fig. 3:1] (Fig. 21:7). They represent a common Central and Eastern European type of dagger of the second half of the 3rd mill. BC to the beginning of the 2nd mill. BC (proto-Únětice), whose origin is linked to daggers of the Kukuteni – Usatovo type [Klochko 2001: 133], which, in their turn, have Middle Eastern roots. Most probably, the genesis of those daggers occurred in parallel with the genesis of axes of the Fajsz – Kozarac/Komlod type in the Carpathian basin and axes of the Chapayivka – Stublo type in Eastern Poland and right-bank Ukraine.
3. CONCLUSIONS

The study of the complex of metallurgical goods from the region between the rivers of the Vistula and Dnieper shows that from the end of the 4th mill. BC a metallurgical centre had emerged in the Pre-Carpathian and Volhynia Regions, based on local deposits of copper [Klochko *et al.* 2000; Kloczko *et. al* 2003]. The centre was founded by metallurgists of the late Tripolye culture and migrants from central Europe.

From the early 3rd mill. BC, that centre became the main producer of metal goods (the "willow leaf" metal complex) for the Corded Ware cultures between the rivers of the Vistula and Dnieper (Fig. 22). The "willow leaf" metal complex includes the objects referred to above: "willow leaf" temple pendants and other pieces of jewellery, flax axes with flanges of the Dunakomlod-Sokal type, Stublo-type axes and daggers of the "Proto-Únětice" type. The Carpathian-Volhynia centre had connections with the Carpathian basin and the Eastern Mediterranean.

Probably, the theory of the development of metallurgy in the late Neolithic – Early Bronze Age in Europe, in the form of the Circum-Pontic metallurgical province as defined by Evgenij Chernykh [1992], requires revision. First, a new Carpathian-Volhynia centre emerges within the Circum-Pontic metallurgical province that served the Corded Ware cultures. Second, the formation of the Circum-Pontic metallurgical province was determined primarily by direct immediate connections (most probably, maritime trade) of Central and Eastern European Regions with the Middle East and not the relations with the Caucasus, as suggested by Evgenij Chernykh.

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IN THE WEST OF THE CATACOMB AREA

The process of research on monuments of the Bronze Age steppe cultures in the western part of their area has been slow. This is particularly true for specific monuments of the Catacomb culture (CC), which have been known from the early 20th century.

Nowadays one can get an idea about the history of research and the historic source base of the CC of the Northern Pontic Region and adjacent areas from summarizing the studies performed by Dergachev [1986;. 1994], Toschev [1987; 1991; 1998], Subbotin [2000], Dumitroaia [2000], Burtănescu [2002].

Domestic monuments were found mostly in the lower area of the Yuzhnyi Bug; they also occurred farther west on Tiligul lake. Only occasional locations in the North-Western Pontic area can be regarded as summer settlements ("letovki"). These include Usatovo at the Kuyalnik estuary and Mayaki in the Lower Dniester area. Possibly, the transgression of the Black Sea and related transformations had caused a major number of such monuments to disappear.

Burial complexes -460 as of 2012 – serve as the main source for characterising the Catacomb monuments of that region (Fig. 1).

CC graves were found in barrows, better studied along the banks of river valleys and estuaries. The main graves are not numerous (simple pits, more rarely catacombs), with the dominating occurrence of drop-in burials.

They were usually made in the mounds of previous periods. In individual cases, there were additional mounds made over those graves. More than 60 mounds contained single graves, mostly located in the southern part. A similar location was observed in the mounds that contained two and more (up to five) graves. Larger burial sites are rare. In those burial sites the predominant majority of catacombs were located in the southern part of the mound. A certain order in the location may indicate the presence of outer signs above the graves over the entrance pits (wells).

Grave constructions are represented by catacombs, rarely by simple soil pits; the latter were occasionally covered with stone slabs. The catacombs were built with their chambers towards the centre. The entrance pits were mostly round in



F i g. 1. Map of burial monuments of the Catacomb culture in the Northern Pontic Region: 1 – Dubinovo; 2 – Ageevka; 3 – Revova; 4 – Velikozimenovo; 5 – Katarzhino; 6 – Popilnaja; 7 – Sychavka, Koshary; 8 – Stab. Beljary; 9 – Bolshoj Adzhalyk; 10 – Vapnjarka; 11 – Shevchenkovo (Odessa) 12 – Slobodka – Romanovka (Odesskij kurgan) 13 – Velikodolinskoe; 14 – Holodnaja Balka; 15 – Aleksandrovka; 16 – Sanzhejka; 17 – Novogradkovka; 18 – Mirnoe (Belyaevka District) Novaja Dolina; 19 – Petrodolinskoe; 20 – Dalnik (Ovidiopol District) 21 – Efimovka, Nikolaevka; 22 – Nadlimanskoe; 23 – Majaki; 24 – Berezan'; 25 – Scherbanka; 26 – Jasski; 27 – Belenkoe; 28 – Mologa; 29 – Divizija II; 30 – Alkalija; 31 – Monashi; 32 – Semenovka; 33 – Olaneshty; 34 – Purkary; 35 – Novye Raskaecy; 36 – Glinnoe; 37 – Talmaz; 38 –

Trapovka; 39 – Vishnevoe, Kochkovatoe; 40 – Novoselica; 41 – Zheltyj Jar; 42 – Liman; 43 – Belolese; 44 – Divizija; 45 – Sergeevka; 46 – Hadzhider; 47 – Primorskoe; 48 – Strumok; 49 – Bashtanovka; 50 – Borisovka; 51 – Mirnoe (Kiliya District) 52 – Chervonnyj Jar; 53 – Holmskoe; 54 – Dzinilor; 55 – Kislica; 56 – Utkonosovka; 57 – Vinogradovka (Kurchi / Curci) 58 – Bolgrad; 59 – Ogorodnoe; 60 – Balaban; 61 – Taraklija; 62 – Kazaklija; 63 – Tomaj; 64 – Svetlyj; 65 – Krihana Veke; 66 – Dojna; 67 – Sjereten; 68 – Chimishlija; 69 – Gradishte; 70 – Gura – Galbene; 71 – Ursoaja; 72 – Kaushany, Kyrnacen'; 73 – Chobruchi; 74 – Sukleja; 75 – Tiraspol'; 76 – Nikolskoe, Konstantinovka; 77 – Roshkany; 78 – Bychok; 79 – Butory; 80 – Speja; 81 – Gura – Bykuluj; 82 – Kirka, Meren; 83 – Dancheny; 84 – Balabaneshty; 85 – Starye Dubossary; 86 – Korzhovo; 87 – Garmackoe; 88 – Kirilen; 89 – Choropkany; 90 – Kodrul – Nou; 91 – Kamenka (Oknica) 92 – Kuzmin; 93 – Duruitory, Novye Duruitory, Ivanovka; 94 – Dumeny; 95 – Starye Kukoneshty; 96 – Korpach; 97 – Hankaucy; 98 – Bezeda; 99 – Teckany; 100 – Korzheucy; 101 – Kotjuzhany; 102 – Medvezha; 103 – Korlaten'; 104 – Slobodzija – Hjenesht'; 105 – Glavenesht' Veke; 106 – Jakoben; 107 – Kotargachi; 108 – Holboka; 109 – Kilija Veke; 110 – Mihaj Bravu; 111 – Brailica; 112 – Lishkotjanka; 113 – Smeen; 114 – Bolotesht; 115 – 116 – Ploeshti – Triazh, Baldovinesh Tab

section, occasionally they have corners. In rare cases the pit was located exactly over the chamber.

The entrance was covered with stone slabs; occasionally, wooden blocks or clay "plugs" were used. Some catacombs had a step, rarely two.

The burial chambers usually were oval, less often bean-shaped; chambers of other shapes were rare.

The predominant majority of graves were individual; however, double, triple, quadruple graves, graves with dropped-in burials, re-burials, and cenotaphs also occurred. In a number of graves, the position of the buried body could not be identified.

The position of the skeleton enables identification of three ritual groups (RG). The first, most prolific, is represented by catacombs with skeletons stretched on the back (Fig. 4) the second (early) contains skeletons curved on the back or on the right side (15%), (Fig. 2:3) and the third, the latest, contains skeletons curved in the side (1%).

The first group is represented by principle and dropped-in graves in barrows, as well as by a series of barrowless complexes (Dancheny, Harmatske, Slobodzeya, Lishkotyanka). The skeletons in the graves lay stretched on their backs, occasionally in a slightly bent position. There were six different positions of hands and arms. The buried bodies were located clockwise in the chamber, which largely determined the orientation; generally, the third direction, with deviations, prevailed.

Graves of the early RG II occur in far smaller numbers. The construction of the catacombs, their locations in the mounds, positions of the skeletons, positions of hands and arms, and orientation largely coincide with the previous group. Moreover, in a number of cases they are included in the location system (curve-like) with complexes of RG I. The distinguishing feature is the location of legs to one side or in the rhomb-shape, or the buried body's position on the right side. It may be assumed that in a number of cases the bodies were buried with their legs bent at their knees and raised up.



Fig. 2. Types of burial constructions and materials of the early Catacomb group: 1, 14 – Dubinovo, 1,12; 2 – Belolese, 3,11; 3 – Medvezha, 4, 6; 4. – Liman, 3-A, 31; 5 – Gura-Bykuluj, 5, 11-12; 6, 24 – Krihane-Veke, 1, 19; 7, 18, 25 – Divizija II, 5, 4; 8 – Gura-Bykuluj, 1, 5; 9 – Belolese, 1, 11; 10 – Vapnjarka, 1, 3; 11, 16 – Taraklija II, 1, 11; 12 – Hadzhider I (Kostjukova Mogila), 20; 13 – Sergeevka, 1, 13; 15 – Hadzhider I (Kostjukova Mogila), 6; 17 – Kuzmin, 2, 5; 19, 21 – Glinnoe, 1, 44; 20, 26 – Liman, 3A, 44; 22 – Novaja Dolina, 3, 12; 23 – Oknica, 3, 5

The scarcest group, the latest RG III, which is represented by only 15 graves (less than 1%), in which curved skeletons lay on the right or left side. The constructions of the catacombs feature more variety; some combine different shapes of entrance pits and chambers. This can be regarded as transitional to the Corded Ware culture (Babyno).

Burial goods were found in 60% of the graves. They included ceramics of various shapes and sizes, and occasional wooden vessels. Usually there was one vessel in a grave, but some graves contained two or three. The ceramics included different kinds of pots, flat or oval-bottomed bowls, amphorae and amphora-like vessels, a variety of kinds of jars, and occasional vessels of other shapes. The ornaments included scratched lines, cuts, or rarely, impressions of the cord².

The groups' ceramics are rather similar; however, amphora-like vessels and bowls are predominant in RG I, while vessels of various shapes with the corded ornament are rather rare (Fig. 6).

There are individual finds of vessels that can be compared with the Donets and the Pre-Caucasian materials.

The collection of bone items includes working tools and decorations; a collection of flint artefacts includes weapons (arrowheads and spearheads) and tools (plates, scrapers, knives); stone items are production utensils (anvils, grinders, shaft "straighteners" etc.) and weapons (mostly short sub-rhomb-shaped axe-hammers, more rarely of elongated shapes). Bronze objects are rare; there are occasional working tools and jewellry: awls, rolled cylinders. They occur evenly in both RGs. The only silver item was found in the RG II complex.

It is worth of note that most of the weapons (axe-hammer, arrowheads) were found in the latest (1) RG (Fig. 6). No concentration of the complexes in a specific micro-zone could be observed.

Graves of RG I in the Lower Dniester area, at the village of Nikolskoye (a craftsman's set), Glinnoye, the city of Tiraspol, which contained various categories of ceramics, tools and weapons, can be regarded as the most significant, in terms of the collection of goods (Fig. 5).

The series of graves contained ritual "farewell" food (a sheep, a bull and a horse) in one case, the barrow near the village of Glinnoye (RG I) represented a unique feature for the whole Catacomb area: a drop-in grave of a horse (Fig. 5:25). The graves also contained skeletons of a sheep (a goat), astragalus and individual bones.

The graves also contained ochre, sprinkled around as powder or in lumps; chalk, and more rarely, traces of a grass mat on the floor of the chamber.

Hence, the catacomb monuments in the western part of a vast area are represented by all RGs that are known to occur to the east of the Bug Region. In a number of cases they form poly-variant complexes that are hard to attribute to a specific RG.

² The illustrations present published materials (studies by V.A. Dergachev, L.V. Subbotin, S.V. Ivanova, S.M. Agulnikov, V.V. Petrenko, and the author). Scales differ.



Fig. 3. Typical burial complexes of the early chronological group: 1-2 – Oknica, 3, 5; 3-5 – Velikozimenovo, 1, 4; 6-7 – Vishnevoe, 17, 3; 8-9 – Korzheucy, 4, 10; 10-12 – Novaja Dolina, 3, 12

It is worth of note that graves of these three groups often occur within one burial site or one mound. The available stratigraphic facts indicate that catacomb graves generally follow the late Yamnaya graves and precede those of the Corded Ware culture (CWC).

The available materials do not indicate the substitution of one culture with the other (YC with CC), but rather their territorial co-existence within a certain period of time. In general, graves of the two cultures contained comparable vessel forms. A series of catacombs of RG I and RG II contained vessels of the late Yamnaya kind (Vyshneve, 17,31; Yassky, 5,12; Tiraspol-83, grave 1, Lyman, 2, 4).

The Yamnaya complexes also displayed the opposite trend: Novogradovka, Dubinovo, 1,11 (pottery of the Catacomb), the finds also included axes and arrowheads with a groove at the base, the latter were located next to the skeleton or in the bones of the buried.

It is worth of note that the very pronounced kind of late Yamnaya vessels, jars on a "tray" (with and without cords, with "stops") were found far from their concentration area, in the Yamnaya and early Catacomb monuments of the Bug Region, the Lower Dnieper area [Evdokimov 1980: 49; Melnyk, Steblina 2012: 48, Fig. 29:1-2], their replicas were found in the Yamnaya monuments of the Crimea [Toschev 2007: 34, Fig. 7:5; P. 44, Fig. 14:1]. In their turn, they also serve as specific markers of coexistence on a rather significant territory.

In rare graves of the two cultures, the finds included skulls, parts of which were coated with clay and ochre, which can be regarded as a kind of modelled skulls – Curci, 20,16, Jasski, 5, 8,9,12.

The opinion about the coexistence, in various forms, of the two cultures for a certain period of time in specific micro-zones, which the author expressed in the early 1980s, has been supported by researchers of that territory [Dergachev 1986: 110; 1999; Subbotin 2000: 376; Yarovoy 2000: 43]. Probably, some elements of rituals and material culture within the cultural entities were cross-introduced in the areas of active interaction.

The monuments of that region (its periphery area) are part of the Catacomb area in the west and are comparable with the eastern ones, though they have a number of special features. The latter are represented by the termination of the tradition of making mounds over the graves, by practical absence of settlements and graves of the nobility with their emblems of power, "priests" and "craftsmen", etc. There are also no known finds of carts, chariots and modelled skulls. Based in the Dnieper area and the Azov Region's materials, such a population can be regarded, en masse, as ordinary. This is a process, which is rather typical for sufficiently advanced communities, when the excessive population was forced out to the periphery And had to squeeze itself onto other tribes' territory, by making quick raids to the latter's lands, driving them out or coexisting with them.

Presumably, the exploration of the territory between the Dniester – Prut and the Danube and farther on by CC tribes was a gradual process. The infiltration



Fig. 4. Burial constructions, grave goods of the late chronological group: 1 – Vishnevoe, 17,41; 2 – Vasilevka, 1,4; 3 – Zheltyj Jar, 5,17; 4, 19 – Trapovka, 4,14; 5 – Trapovka, 10,7; 6 – Vishnevoe, 17,22; 7 – Kislica, 8,8; 8, 10 – Ursoaja, 1,11; 9, 24 – Vishnevoe, 17,16; 11-12 – Holodnaja Balka, 1,21; 13 – Hadzhider I (Kostjukova Mogila), 15; 14 – Jasski, 5,12; 15 – Korpach, 3,7; 16 – Nikolskoe, 1,13; 17 – Novye Raskaecy, 1,12; 18 – Tiraspol; 20 – Svetlyj, 1,2; 21,31 – Nikolskoe, 8,11; 22 – Hankaucy, 1,8; 23 – Sergeevka, 1,3; 25 – Tiraspol-83; 26, 28 – Glinnoe, 1,43; 27 – Vishnevoe, 17,48; 29 – Liman, 3A, 54; 30 – Semenovka, 14,16; 32 – Vishnevoe, 17,15; 33 – Vishnevoe, 17,45

grew and reached its peak in the late Catacomb time; simultaneously, mini-groups of bearers of the Donets, Late Manych type of monuments also moved westwards. In the course of that, some groups of the Yamnaya population strengthened their pressure on the Carpathian-Danube cultures. Therefore, groups of the Yamnaya population created a kind of "barrier", which, apparently, countered the filtration of the Catacomb population and served as a certain obstacle to contacts between the latter and the Carpathian – Danube tribes. The late Yamnaya, Budzhak graves are specifically worthy of note for their significant number of pottery finds, imported goods of eastern and, predominantly, western origin [Ivanova 2010; 2013].

Individual groups of the Late Yamnaya population continued to abide in those hard -to-reach "reservations" for a rather long period of time. No Catacomb monuments have been found in those areas, but one can observe continuity with the subsequent Multi-cordoned Ware (Mnogovalikovaya Pottery) culture (Babyno).

According to anthropologists, the Catacomb tribes in that territory, most probably, were not homogenous and contained a certain proportion of the Yamnaya population [Segeda 2000], which may be evidence of various forms of coexistence.

Regarding the dating, based on constantly progressing radiocarbon dates within the recent decades, the situation is as follows. The Catacomb monuments of the Dnieper-Bug Region, according to the radiocarbon data analysis, date back to 2300-1970 BC [Chernykh, Orlovskaya 2004]. Pustovalov defined the period of existence of the Ingul Catacomb culture within the last third of the 3rd mill. – to the end of the 1st quarter of the 2nd mill. BC [1999].

Based on the materials of the area between the rivers of Dnieper and Prut, Kaiser attributed the CC monuments in general to 2450-1950 BC [2003] catacombs of the Dnieper area are dated by the same period, pointing to the coexistence of the early Catacomb and Yamnaya cultures [Kaiser, Plešivenko 2000; Kaiser 2009].

A small series of dates for the North-Western Pontic Region (Table 1) fits within the range of 2580-2341 to 2267-1981 BC [Ivanova, Ostroverkhov *et al.* 2012].

Hence, at the end of the 3rd, the turn of the 3rd and the 2nd mill. BC, two cultures in Yamnaya and Catacomb, coexisted (alternating, patchwork-like) on the territory of the North-Western Pontic Region; the former, more prolific, absorbed the main part of the influence of the Carpathian-Danube cultures. Moreover, some categories of movable items indirectly made their way farther east and south.

The conclusion about the North-Western Pontic Region as of a generally hermetically sealed, one resisting influence of neighbouring western counties in the period of the end if the early Bronze to the beginning go the Middle Bronze periods was reflected in some researchers' works [Toschev 1998; Kaiser 2003].

Some kinds of movable items, first of all, weapons – $axes^3$, arrowheads may well have arrived to that area. According to Klochko, such items occur in the steppe areas. Some distant indications of indirect relations could be observed in el-

³ Some of the axes, small and made of fragile materials (e.g., Trapovka, 6,13) played the role of votive objects



Fig. 5. Burial complexes of the late chronological group: 1-10 – Tiraspol; 11-24 – Nikolskoe, 8,11; 25-31 – Glinnoe, 1,43



Fig. 6. Samples of corded pottery and weapons. 1-8 – early group; 9-28 – late group. 1 – Medvezha, 4,6; 2 – Korzheucy, 4,10; 3 – Duruitoarja Noua, 3,2; 4 – Slobodzija-Hjeneshti,1,3; 5 – Hadzhider I (Kostjukova Mogila), 8; 6 – Divizija II, 5,4; 7 – Kuzmin, 2,5; 8 – Talmaz, 3,15; 9 – Velikodolinskoe, 2,5; 10 – Holmskoe, 2,14; 11 – Odesskij barrow, grave 22; 12 – Novaja Dolina, 3,8; 13 – Kotjuzhen', 1,1; 14 – Efimovka, 9,20; 15 – Taraklija III, p.18; 16 – Kazaklija, 17,8; 17 – Tiraspol'-83, 1,7; 18 – Scherbanka, 1,28; 19 – Holmskoe, 2,24; 20 – Katargachi; 21 – Novye Raskaecy, 1,12; 22 – Jasski, 2,14; 23 – Primorskoe, 1,14; 24 – Trapovka, 6,13; 25 – Semenovka, 14,16; 26 – Ursoaja, 3,13; 27 – Hankaucy, 1,8; 28 – Yefimovka, 9,2

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No.	Site	Lab Index	ВР	BC Probabilisty 68%	References
1	Vapniarka 4/3	Ki-15012	5090±60	3962-3800	Ivanova, Vetchinnikova 2009
2	Vapniarka 4/3	Ki-15230	3960±70	2572-2346	Ivanova, Vetchinnikova 2009
3	Revovo 3/13	Ki-11172	3940±60	2562-2343	Ivanova et al. 2005
4	Dubinovo 1/8	Ki-11200	3940±70	2565-2310	Ivanova et al. 2005
5	Dubinovo 1/12	Ki-11203	3900±80	2479-2214	Ivanova et al. 2005
6	"Liubasha" burial 17	Ki-11217	3890±60	2464-2296	Ivanova <i>et al</i> . 2005
7	Katarzhyno 1/3	Ki-11250	3890±60	2464-2296	Ivanova et al. 2005
8	Katarzhyno 1/3	Ki-11206	3300±100	1691-1454	Ivanova et al. 2005
9	Starye Beliary 1/33	Ki-11208	3810±80	2436-2138	Ivanova <i>et al</i> . 2005
10	Velikozimenovo 1/4	Ki-11210	3780±70	2334-2048	Ivanova <i>et al</i> . 2005
11	Dubinovo 1/11	Ki-11202	3720±70	2270-1984	Ivanova et al. 2005

Radiocarbon dates from the burials of Catacomb culture [Ivanova, Ostroverkhov et al. 2012²]



² Comments: 7-8 – Katarzhino, 1,3; 10 – Velukozimenovo, 1,4; 5- Dubinovo, 1,12; 1-2 – Vapnyarka, 4,4 – early chronological group; 9 – Starye Belyary, 1,33; 4 – Dubinovo, 1,8; 3 – Revovo, 3,13 – late chronological group; 6 – "Lyubasha", 17 – reference to CC is doubtful; 11 – Dubinovo, 1, 11 – preferably to be seen as the Yamnaya culture with the Catacomb pottery

ements of decor and rather rare individual pottery forms, more often with the corded ornamentation (Korheutsi, Velikodolinskoye, Svetloye, Duruitoaria, Kholmskoe and others [*see* Toschev 1991; Toschev 1998; Ivanova 2013].

It should also be noted that the corded Catacomb pottery comprises only 6-7% of the entire known collection of pottery for that territory, which is far less frequent than in the Yamnaya pottery collection.

When considering issues of the ethno-cultural history of the corded and epi-corded ware of the Carpathian basin – the Kraków and Sandomierz groups, Złota [Buchwaldek 1987], Strzyżów [Kośko 1991: 250-251; Machnik, Gediga, Miśkiewicz, Hensel 1978: 79; Machnik 1977: 103; Sveshnikov 1990; Taras 2007; Okhrimenko 2012], researchers almost always allocate a special place to the Catacomb culture bearers, though sometimes, particularly in early works, that culture was regarded as part of the system of Yamnaya culture or jointly with the Mnogovalikovaya pottery (Multi-cordoned Ware) culture.

The comparisons were based on similar elements in burials and grave goods (some forms of pottery and decor, individual items: axes, arrowheads).

Comparisons with the Corded Ware cultures, Yamnaya and Catacomb, were also made [Klochko, Kośko 2009], as well as comparisons with the Middle Dnieper and the Corded Ware cultures of Malopolska (shapes and ornaments of vessels, axes, and arrowheads) and influences of the former [Machnik 1999; Kadrow 1998: 259]. Meanwhile, according to Kadrow, there was no reason to speak about a major east-to-west migration wave for that period. Similar conclusions have been recently made by Ivanova based on Catacomb materials [2013: 52], which confirm, once again, the view expressed in the 1980s [Toschev 1987].

So far, no data of direct contacts between the Catacomb culture and the Corded Ware culture in the European part have been found [Włodarczak 2006]. The issue of the Catacomb culture's influence and the emergence of the Catacomb ritual among the Corded Ware culture bearers on the territory of Malopolska also at present offers no single answer [Ślusarska 2006].

It is worthy of note that a certain concentration of early Catacomb monuments can be observed in the borderland forest-steppe at the north-west of the Catacomb culture area: Korzheutsi, Bezeda, Tetskany, St. Kukoneshty, Medvezha, Slobodziya-Henesht. They suggest that small groups of the steppe population already migrated at the early stage, mostly in the Prut River basin. The monument from Święte in the Vistula River basin, containing an early Yamnaya vessel (similar complexes are known in the Lower Dnieper area and the Azov area) has so far been a stand-alone [Kośko, Klochko, Olszewski 2012] and possibly, new finds will allow making a "bridge" between the two cultures. Generally, no chain of monuments that would link the Catacomb and Corded Ware culture areas has been found as of today.

Dergachev believed that the proliferation of the steppe tribes (Yamnaya, Catacomb) in different culture areas had occurred due to short-term deep expansions, often accompanied with situations of war [Dergachev 1998]. This view can also be supported by the weapons found: arrowheads and axe-hammers. Recently, more in-depth consideration has been given to the issue of river valleys (in this case, of the Dniester and the San, and, possibly, the Yuzhnyi Bug and the Prut) as the ways of the most active migration [Kośko, Klochko, Olszewski 2012]. However, most probably, the river valleys, always populated quite densely, served as trade routes and a means for the proliferation of movable goods, ideas and knowledge.

It also should be noted that the scarce Catacomb monuments at the north-west of their proliferation area point out to the fading migration in that direction.

Based on today's level of knowledge on this issue of research, we may note that at the turn of the 3rd/2nd mill. BC (the period of coexistence of the Yamnaya and Catacomb cultures in the North-Western Pontic Region), different kinds of contacts between the bloc of Corded Ware cultures can be observed quite clearly at the level of the Yamnaya culture, which served as a kind of a transit link in the spread of innovations [Włodarczak 2010], and – only generally and vaguely – the Catacomb culture. This circumstance is still waiting to be explained.

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CONNECTIONS BETWEEN THE BUDZHAK CULTURE AND CENTRAL EUROPEAN GROUPS OF THE CORDED WARE CULTURE

Dergachev referred to the North-Western Pontic Region (the territory between the southern Bug, the Prut and the Danube) as the "contact zone" that displayed interactions between various cultural entities and the region manifested itself as an area of interaction between several cultural and historical factors. In his opinion, the south-eastern European one was predominant in the Eneolithic and the Bronze Age. The eastern European was the second most important; the third (middle European) was less significant [Dergacev 1988]. The role of each of the factors changed in different epochs. Włodarczak noted the impact of four factors in the early Bronze Age: the local late Tripolye (Usatovo), the eastern one, connected to the Northern Pontic and Northern Caspian cattle-breeding steppe entities; the Western one, connected with the Early Bronze Age of Anatolya and the Balkans; and the Northern, which was determined by the emergence in direct proximity of the Globular Amphora culture area. The influence of different cultures from the west and the east was manifested in the formation in the region of a specific Budzhak culture of the early Bronze Age [Włodarczak 2010].

Graves of the North-Western Pontic Region were identified by Merpert into a specific cultural version of the Yamnaya cultural-historic entity community [Merpert 1974]. Later on, Klein referred them to a particular "Nerushayska" culture [Klein 1975], which Cherniakov renamed into the "Late Yamnaya Budzhak" culture [Cherniakov 1979]¹. In our view, the specificity of the Budzhak culture was manifested already at its formation stage, which allows synchronizing it with the Yamnaya cultural-historical region in general (3100–2200 BC; Fig. 23:11) and not only with the late Yamnaya period. Two stages in the genesis of the Budzhak culture can be identified: the early and the late, with the boundary within the range of 2600/2500 BC.

¹ Other researchers also suggested their names, but the name introduced by Chernyakov, in its various versions (Budzhak culture, Budzhak culture version, Budzhak culture group) proved to be the most commonly used.



Fig. 1 Cultural-historical Yamnaya community (=Yamnaya culture) and Budzhak culture distriburion. Legend: GAC = Globular Amphore culture; CWC = Corded Ware cultures

To date, almost 500 Eneolithic and Early Bronze barrows have been excavated in the North-Western Pontic Region; over 2600 burials of the Budzhak culture have been found (Fig. 1; Fig. 2). It is significant that, three fourth of the barrows were built by Budzhak tribes themselves, while in other cases they used Eneolithic or Usatovo mounds. No settlements have been known to occur in the North-Western Pontic Region, but there are traces of short-term Yamnaya settlements – Tashlyk II and Tashlyk III – on the left bank of the Southern Bug River [Shaposhnikova *et al.* 1986: 8]. Possibly, season's settlements of the Budzhak tribes, like those in other regions, could be located in river, lake and estuary floodplains and are now hidden under the sludge.

Barrows of the Budzhak culture are located in groups and form burial sites; single mounds also occur. The barrows' height ranges from 1 to 3 m (with the diameter of 30-60 m) only some of the barrows were higher than 5 m (with a diameter of 80-100 m), some barrows lower than 1m also occurred. Other elements of barrow architecture were ditches (ring-shaped, with one or more bridges). The graves could be grouped into curves and circles (Fig. 3:1) and the bodies had been placed with a clockwise or counterclockwise orientation [Dvorianinov *et al.* 1981]. The burial chambers were rectangular pits; other shapes were rare (Fig. 3:6, 9). About one-third of the pits were made with rectangular shelves; round or square shelves also occurred (Fig. 3:2, 11).



Fig. 2. Budzhak culture sites in north-west Black Sea area: 1 – Dubinovo; 2 – Nedelikovo; 3 – Golma; 4 – Ageevka; 5 – Grigorevka; 6 – Marianovka; 7 – Novogrigorevka, "Liubasha" barrow, 8 – Revova; 9 – Velikoziminovo; 10 – Katarzhyno; 11 – Baranovo, "Soldatskaya slava" barrow; 12 – Scherbanka; 13 – Popilnoe; 14 – Koshary, Sychavka; 15 – Starye Beliary; 16 – Bolshoi Adzhalyk;

17 - Vapniarka; 18 - Schevchenkovo (Odessa); 19 - Kholodnaya Balka; 20 - Slobodka-Romanovka; barrow Odesskiy; 21- Chernomorka; 22 - Dalnik (Ovidiopol District); 23 - Mirnoe 24 - Petrodolinskoe; 25 - Novaya Dolina; 26 - Novogradkovka; 27 - Aleksandrovka, Velikodolinskoe; 28 -Sanzheyka; 29 – Cuzmin; 30 – Hristovaia; 31 – Camenca (Ocnita); 32 – Medvezha; 33 – Corjeuti; 34 – Burlănești; 35 – Tețcani; 36 – Hancăuți; 37 – Corpaci; 38 – Cuconeștii Vechi; 39 – Scherbaki; 40 - Dumeny; 41 - Duruitoarea Nouă; 42 - Costesti, Costesti Noi, Ivanovka; 43 - Iabloana; 44 -Mărculesti; 45 – Podoima; 46 – Frunzeny; 47 – Bursuceni; 48 – Mîndresti; 49 – Timkovo; 50 – Mocra; 51 - Novokrasnoe; 52 - Codrul Nou; 53 - Ciocîlteni; 54 - Brăviceni; 55 - Orhei (Orgeev); 56 – Doibani; 57 – Pohrebea; 58 – Krasnoe; 59 – Corjova; 60 – Dubăsarii Vechi; 61 – Bălăbăneşti; 62 – Cimiseni; 63 – Speia; 64 – Chetroasa; 65 – Anenii Noi; 66 – Gura Bîcului; 67 – Roscani; 68 – Butor; 69 – Bîcioc; 70 – Nikolscoe; 71 – Constantinovca; после Frunze; 72 – Tiraspol; 73 – Parcani; Ploskoe; Tîrnauca; Serbka; 74 – Slobozia; 75 – Hagimus; 76 – Chircăieşti; 77 – Ursoaia; 78 – Căuşeni; 79 - Cioburciu; 80 - Hlinaia; 81 - Novocotovsc; 82 - Limanskoe; 83 - Purcari; 84 - Răscăieții Noi; 85 – Olăneşti; 86 – Khadzhillar; 87 – Căplani; 88 – Tudora; 89 – Yasski; 90 – Belaevka; 91 – Mayaki; 92 – Nadlimanskoe; 93 – Yefimovka; Nikolaevka; 94 – Ovidiopol; Dalnik (Ovidiopolraion); 95 - Roksolany; 96 - Karolino-Bugaz; 97 - Semenovka; 98 - Podgornoe; 99 - Karnalievka; 100 -Sadovoe; 101 - Turlaki; 102 - Mologa; 103 - Zatoka (Akkembetskiy barrow); 104 - Alkaliya; 105 -Khadzyder; 106 - Sergeevka; 107 - Diviziya; 108 - Liman; 109 - Zholtyi Yar; 110 - Vishniovoe, Kochkovatoe; 111 - Zaria; 112 - Mikhailovka; 113 - Belolesie; 114 - Tatarbunary; 115 - Zarechnoe;116 – Novoselitsa; 117 – Trapovka; 118 – Berezino; 119 – Sarata; 120; Artsiz; 121 – Pavlovka; 122 - Borisovka; 123 - Vinogradovka 124 - Bashtanovka; 125 - Strumok; 125 - Glubokoe; 177 - Nerushay; 128 - Desantnoe; 129 - Primorskoe; 130 - Kholmskoe; 131 - Chervonyi Yar; 132 -Mirnoe (Kiliyskiy District); 133 – Schevchenkovo; 134 – Parapory; 135 – Ostrovnoe; 136 – Dzinilor; 137 - Gura Galbenei; 138 - Valea-Perjei; 139 - Gradishte; 140 - Ecaterinovca; 141 - Cimişlia; 142 - Carabetovca; 143 - Comrat; 144 - Beşalma; Congaz; 145 - Tomai; 146 - Svetlîi; 147 - Cazaclia; 148 - Balaban; 149 - Taraclia; 150 - Ogorodnoe; 151 - Gavanoasa; 152 - Copceac; 153 - Kubey; 154 - Kalcheva; 155 - Bannovka; 156 - Bolgrad; 157 - Zhovtnevoe; 158 - Kalanchak; 159 - Kamenka (Ukraine); 160 - Novokamenka; 161 - Suvorovo; 162 - Utkonosovka; 163 - Ozernoe; 164 - Bogatoe; 165 - Kislitsa; 166 - Kurchy; 167 - Mresnota Mogila; 168 - Vladychen; 169 - Nagornoe; 170 - Chaush; 171 - Plavni; 172 - Novoselskoe; 173 - Orlovka; 174 - Gradeshka; 175 - Petreşti; 176 - Chirileni; 177 - Sărăteni; 178 - Crihana Veche; 179 - Zîrneşti; 180 - Vadullui Isac; 181 - Etulia; 182 - Giurgiuleşti; 183 - Frikatsey

The pit floor was covered with remainders of plant litter, sprinkled with ochre of various shades; there were traces of woven mats on the shelves (Fig. 3:2). Traces of various rituals could be registered not only in the burial chamber, but also on its roof: remainders of bonfires, animal bones or skeletons. Burial chambers often had stone or wooden roofs (Fig. 3:2, 5). A boat-like construction was found on the roof of grave 8/8 near the village of Semenovka (Fig. 23:1, 2). A wooden roof could be longitudinal or transverse; a stone roof could be made of large and small stones, processed slabs, among which anthropomorphic stellae occurred (Fig. 3:4, 5). Burials in stone cist graves were found in barrows of the North-Western Pontic Region (Fig. 4).

In our view, burials of that type, including the ones connected with influences and traditions of other (Kemi-Oba, Globular Amphorae) cultures should be regarded within the framework of the Budzhak culture. Indicators of that include



Fig. 3. Burials of Budzhak culture: 1 – Plan of barrow 19 near the village of Novoselitsa; 2, 3 – Semenovka 14/12 (2 –plan of the grave, 3 – fragment of stone axe); 4-8 – Sychavka 1/15 (4 – anthropomorphic stellae, 5 – stone cover, 6 – general plan, 7 – vessel, 8 – stone pestle); 9, 10 – Vapniarka 4/16 (9 – general plan, 10 – vessel); 11 – Novoselitsa 19/16 [*after* 1 – Subbotin *et al.* 1995; 2, 3, 11 – Subbotin 1985; 4-8 – Ivanova, Savelev 2011; 9, 10 – Ivanova *et al.* 2012]

the key components of the funeral ritual: the method of inhumation, the position of the body and the grave goods. Some burials were made in stone cist graves with the walls covered with drawings made with red ochre (Velikoziminovo 1/1, Stari Belyary 1/14, Alkaliya 33/3, Katarzhino 1/1). Radiocarbon dates for that group of graves (2700–2200 BC) synchronous with the period of existence of the Budzhak monuments in the region [Szmyt, Cherniakov 1999; Ivanova *et al.* 2005: 98].

Some 17 graves of the North-Western Pontic Region contained remainders of wooden carts – both wheels and parts of the carcass (Fig. 3:11). Complexes with four cart wheels are predominant, though in some cases the burial contained three wheels (Kholmskoye 2/10) and two wheels (5 graves).

Five main positions of the buried body can be identified: (1) curled on the back, arms stretched along the body (Fig. 3:2, 11; 4:8) legs had been placed with knees up, but then fell to one side or the other, or fell apart (or has been deliberately placed?) in a rhomb position (57.2 %) (2) bent to the right, the left arm bent in the elbow, the hand at the pelvis, stomach or chest; the right arm stretched along the body (16.3 %) (3) legs bent to the left, the right hand placed at the pelvis (13.1 %)(4) on the right side (Fig. 3:9), with different positions of arms (7.3 %) (5) on the crouched left side (Fig. 3:6), with different positions of arms (6.1 %). While some researchers trace more fractional gradation within these variants [Yarovoy 1985], others merge them into three groups: on the back, on the right side, on the left side [Rychkov 1990, Nikolova 1992]. Inhumations of variant 1 dominate in numbers and in most cases are the main ones in burial mounds. Graves with dissected skeletons and cenotaphs also occur. Rare features of the funeral ritual include single cases of cremation and the sitting position of the body. Individual categories of grave goods (some types of vessels and jewellry) correlate, more or less clearly, with certain positions of the body, this fact allowed Yarovoy to identify "ritual groups" [Yarovoy 1985: 95].

The information obtained as a result of many years of excavations of barrows of the North-Western Pontic Region allow defining the Budzhak culture not only as a unique structural entity within the Yamnaya cultural-historical area, but also as a mobile community opened to "cultural dialogue" and capable of long-distance migrations. Indications of that include imports, imitations, derivatives in the material complex, as well as the population's westward movement to the Balkan – Carpathian Region. Merpert was the first to define the territory from which the westward migration occurred: the area between the Bug and the Danube rivers [Merpert 1982: 329], i.e., the area populated by the Budzhak tribes. The work of Ukrainian and Polish archaeologists within a joint project allowed interpretation of available materials, clarification of their cultural affiliations and identifying parallels in various cultures.

The pottery (467 intact and restored vessels) comprises over 40 % of the total number of finds. The production technique used to make the vessels was a traditional one: handmade, with admixtures of grog, limestone or sand, with the surface treatment with a putty knife, tufts of vegetation, glazers. The colour varies from



F i g. 4. Burial of Budzhak culture in stone cist graves: 1-6 – Baranovo 1/9 (1, 2 – stone cist (tomb), 3, 4, 6 – vessels, 5 – copper necklace); 7-9 – Katarzhyno 1/1 (7, 8 – stone cist (tomb), 9 – tile frescoes) [Ivanova *et al.* 2005]



F i g. 5. Main Budzhak culture ceramic forms from burials: 1 – Scherbanka 1/7; 2 – Novogradkovka 1/4; 3 – Sergeevka 11/7; 4 – Liman 3A/30; 5 – Semenovka 12/2; 6 – Kubey 1/16; 7 – Trapovka 4/5; 8 – Trapovka 6/20; 9 – Primorskoe 1/34; 10 – Olăneşti 1/14; 11 – Hagimus 2/17 [Ivanova 2013]



Fig. 6. Rare and imported ceramic forms in Budzhak culture graves: 1 – Gradeshka I, 5/11; 2 – Gradeshka I, 5/11; 3 – Corpaci 2/13; 4 – Olăneşti 1/28; 5 – Sergeevka 1/10; 6 – Novogradkovka 1/10; 7 – Corpaci 2/7; 8 – Glubokoe 2/11; 9 – Matroska, devastated barrow [Ivanova 2013]

rose and yellow hues to dark-grey. The surface of some kind of vessels is covered with engobe.

The main kinds of vessels are pots (Fig. 5:1, 2), "Budzhak jars" (Fig. 5:3, 5), amphorae (Fig. 6:1-3, 7), amphora-like vessels (Fig. 5:4, 6), beakers and beaker-like vessels (Fig. 5:7, 8), bowls (Fig. 5:10, 11), cups (Fig. 5:9). Round-bottomed vessels (Fig. 6:5), jars, cups (Fig. 6:4) and arkoses (Fig. 6:8, 9) were less common. Apart from the pottery, burials contained tools and weapons (Fig. 7): stone and flint axes, copper and bronze knives and awls and jewellry made of silver, copper, gold and bone (Fig. 8).

To a large extent, it is the pottery that allows identifying the directions of the Budzhak tribes' relations and contacts. Some of the vessels have parallels in terms of their shapes and styles in various cultures of the late Eneolithic - Early Bronze Age in south-eastern and central Europe (Fig. 9:10). At the early stage we are able to reconstruct the relations in two main directions: eastbound (with tribes of the Yamnaya cultural-historical area) and westbound (with cultures of the Carpathian - Balkan Region). In the late Eneolithic and the early Bronze Age, the same categories of pottery – amphorae, beakers and askoses – occurred both in the Balkan - Danube Region and the Budzhak culture. It is possible to speak about similarity of some forms with vessels of the Cotofeni, Cernavoda II and Zimnicea cultures (Fig. 9). Some elements of decoration of the Budzhak pottery, as well as most of the stone axes, have parallels in the Ezero and Ezerovo II cultures. The connection between the two cultures is reflected by a group of amphorae that have their analogies in the Globular Amphora culture [Szmyt 1999]. At the late stage the Budzhak population, probably, made connections with synchronous cultures of the Carpathian basin. The Budzhak pottery complex displays influences of the Glina III – Schneckenberg, Makó-Kosihý-Čaka, Somogyvár-Vinkovci (Fig. 10) cultures. Some elements of pottery from Budzhak graves of that period have parallels with several cultures at the same time and that is not surprising. Machnik included those cultures into the so-called "European civilization of the Early Bronze Age", while the proximity of their pottery complex (identification of some types of pottery that were common in that horizon) and similarity of metal artefacts is one of the distinguishing features of that entity [Machnik 1991: 174–181].

Some of the later amphorae are similar to those of the Makó-Kosihý-Čaka culture² (e.g., Kamenka 3/13, 6/18, etc.). In that context, it is interesting to compare an amphora from the Battonya settlement of that culture [Vollman 2009: 284, Plate 2:12] with an amphora from Kamenka 3/13 (Fig. 14:20). Apart from two loop-like handles both amphorae have an additional protrusion; however, it is located at the amphora's neck in Battonya and on its body in Kamenka; in the latter case it looks like a typical handle with a vertical through hole, which has been known to occur on Budzhak jars and small amphorae. An amphora from Sărăteni 2/10 (Fig. 14:18)

 $^{^2}$ I would like to thank Professor Jan Machnik for drawing my attention to this.



Fig. 7. Work tools from graves of Budzhak culture: 1 – Alkaliya 35/6, pick, adze 2 – Taraclia II, 10/19, knife-razor, 3 – Frikatsey 4/12, knife-dagger, 4 – Utkonosovka 1/6, knife-dagger, 5 – Kholmskoe 2/8, sickle (knife for harvesting), 6 – Nagornoe 14/16, knife, 7 –Vishniovoe 17/43, knife for carving wood, 8 – Vishniovoe 1/43, wood saw, 9 – Congaz 11/5, arrow , 10 – Chaush 20/2, shave, 11 – Kholmskoe 5/14, axe, 12 – Grigorevka 1/10, axe, 13 – Vishniovoe 17/43, scraper, 14 – Schevchenkovo 3/11, pestle for copper ore, 15 – Brăviceni 7/2, awl, 16 – Svetlîi 3/25, axe, 17 – Hlinaia 1/1, arrow blades, 18 – Chervonyi Yar I 1/6, tools for straightening arrow shafts, 19,20 – Olăneşti 6/2, tools for straightening arrow shafts, 21 – Alkaliya 5/6, axe (1-3, 15 – copper/bronze, 4-13 – flint, 14,16,18- 21 – stone, 17 – bone) [Subbotin 2003]

is similar to the vessels of the same kind from the Somogyvár-Vinkovci culture [Kalicz-Schreiber 1989: 281, Fig. 3:16].

Researchers note the arrival of metal to the North-Western Pontic Region from the Ezero metallurgical source [Kamenski 1990]. The proliferation of silver objects in south-eastern Europe was linked with the Yamnaya tribe migration to the area [Jovanovich 1994]. However, the sources of silver were probably located in the Transylvania. Possibly, Transylvanian copper and poly-metal ores were used, given that we know of natural bronze deposits in the area [Duffy 2010]. The finds of Budzhak pottery in Romanian Moldova and Dobrogea [Simion 1991] confirm the fact that the westward proliferation of the Yamnaya cultural-historical entity should be primarily connected with the migration of the Budzhak population. An indirect proof of that is the geographic location of the North-Western Pontic Region.

1. CONTACTS AND CONNECTIONS WITH CORDED WARE CULTURES: EARLY STAGE

Judging by the finds, contacts with the Corded Ware cultures had been already established in the first half of the 3rd mill. BC (Fig. 11). The early-stage pottery includes two beakers (Butor 9/3, Trapovka 6/20), which, most probably, may be referred to Horizon A³ (Fig. 13:2, 3). The same common European horizon may include a beaker from Myrne 1/12⁴ (Fig. 13:1). According to Włodarczak and Kośko, most of the amphorae, found in the Budzhak culture area, were connected to the early stage (2800–2600 BC) (Fig. 14). Some items with a spherical body also have their parallels with Horizon A (Fig. 14:2, 3, 14), others – with later groups of the Corded Ware, the Bohemia-Moravia and the middle German cultures (Fig. 14:1, 6, 12). Of particular interest are so-called "oval" amphorae with relief décor on the handles and the body in the form of rolls with incisions (Fig. 14:5, 15, 19).

This kind of amphorae was not common, but it still occurs in southern areas of the Corded Ware culture and its origin is believed to be connected to the Carpathian Basin culture circle. Włodarczak explains the emergence of innovations in the southern areas of the Corded Ware culture (genesis of the barrow ritual, proliferation of individual graves and some other elements of the material culture, in particular, "oval" amphorae, as compared with the spherical "Thuringia" amphorae) by the absorption of new ideas from the Carpathian basin and the Northern Balkans District. The transformations under way in that territory were greatly influenced by

³ I would like thank Dr. P. Włodarczak for his help in the identification of cultural parallels and the chronological position of those beakers and a range of vessels of the Budzhak culture.

⁴ I would like to thank Professor Jan Machnik for defining the chronological position of this vessel.



Fig. 8. Bone and metal ornamentations, artefacts from Budzhak culture burials: 1 – Novoselitsa 19/2; 2 – Nerushay 10/14; 3 – Yasski 1/18; 4 – Nikolskoe 7/28; 5 – Starye Beliary 1/14; 6 – Gura Bîcului 3/13; 7 – Orhei (Orgeev) 1/2; 8 – Semenovka 8/15; 9 – Semenovka 2/2; 10 – Dobroaleksandrovka 1/5; 11 – Răscăieții Noi 1/11; 12–18 – Glubokoe 1/21 (1,4,5, 12-18 – bone; 2 – copper, beast of prey tooth; 3,7 – silver; 6,8,9 – copper/bronze; 10 – lead [Subbotin 2003]

the Yamnaya tribes, which served as a transit environment that ensured proliferation of innovations [Włodarczak 2010: 305]. The Yamnaya population moves far westwards, Yamnaya graves bearing local features (Vucedol) are known in Gönyü in the West of Hungary, Neusiedl-am-See in eastern Austria; Essling near Vienna and Bleckendorf, Saxony-Anhalt [Harrison, Heyd 2007; Heyd 2011].

The search for analogies to the so-called "corded" (or "ovoid", "oval") amphorae from burials of the Budzhak culture demonstrated the complexity of a univocal solution of the problem. The point is that the type of pottery in question is typical not only for the Corded Ware cultures but is also broadly represented in cultures of the Balkan – Danube Region. Analogies and handles of some amphorae have been found there (Fig. 14:5, 8). A visual study of available items of that type of amphorae allows speaking about various technological methods and, hence, a possibility that some of them are of a different origin.

Some amphorae resemble pottery of several cultures (Cernavodă II, Corded Ware culture), while comparing others is rather conditional due to obvious differences. These kinds of amphorae have their parallels not only in the Corded Ware culture, but also in the cultures of the Carpathian hollow: Makó-Kosihý-Čaka (Kamenka 3/13, 6/18, Trapovka, b. 1), in the central Balkan area – Vinkovci (Sarateny 2/10). Most probably, we may speak about local (imitation) production of the majority of amphorae, which have their analogies in cultures of south-eastern and central Europe, mostly in the Balkan – Danube Region. Manifestations of that include the decoration of amphorae with a plastic ornament and in the shape of handles and in the combination of various cultures' elements in a single object.

Of particular interest is an amphora from Trapovka 1/18 (Fig. 14:15), made in accordance with Corded Ware traditions but having a slightly asymmetric body and a slant rim, which makes it related to askoses known in the Lower Danube Region's cultures. The vessel demonstrates an original combination of several cultural traditions; probably, it was locally produced. On some amphorae, there were three (Kamenka 3/13) or four handles (Gradiška I, 5/11) instead of two. In these cases the extra handles were similar to typical "Budzhak" handles (pseudo-tunnel and tang-like), which indicates local production of those amphorae. An amphora with four handles (two of them pseudo-tunnel) was found in 2013 during the excavations of the Hlinaia burial mound in the Dniester Region, Moldova.⁵

Amphorae of elongated proportions occasionally occurred in complexes of the Corded Ware culture [Buchvaldek 1958]. Nevertheless, the shape of the body of the amphora and its decoration style are an important chronological feature. The early stage (and the "common European horizon of the Corded Ware culture") is characterized by the proliferation of amphorae with a spherical body. Amphorae with an elongated body belong to a somewhat later time; Buchvaldek connects their origin with cultures of the Lower Danube and identifies a special "Danube type" with its distinguishing relief (rolled) ornament, which is rather common in synchronous cultures of the Lower Danube [Buchvaldek 1997: 182]. Włodarczak points to the fact that "oval" amphorae had existed since the Early Bronze Age practically throughout the entire Balkan – Carpathian basin, but in the Corded Ware Region they were found only in the areas adjacent to the proliferation of the Yamnaya culture, i.e., in the Transniestria and the southern groups: Bohemia, Moravia and Lower Austria.

 $^{^5}$ I would like to thank the authors of the excavation V. Sinik, S.N. Razumov and S.D. Lysenko for this information.

Budzhak	Kostolac	Coțofeni	GAC	Cernavoda II

Fig. 9. Analogies in Budzhak culture ceramic ware and Carpathian-Danube cultures: 3000 – $-\,2500$ BC

Budzhak culture	Schneckenberg- Glina III	Makó-Kosihy- Čaka	Samogyvár- Vinkovci	Balkan-Danube & Prut-Carpathian regions
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Fig. 10. Analogies in Budzhak culture ceramic ware and Carpathian-Danube cultures: $2500--2200\ BC$

Budzhak culture	A – Horizon	CWC – Moravia group	CWC – Mittelelbe-Saale group	CWC tradition
		8 0		
				+
	•			
		000		+
				+

Fig. 11. Ceramic ware from Budzhak culture inhumations and its analogies in Corded Ware culture: 3000 - 2500 BC

Budzhak culture	CWC – Moravia group	CWC – Mittelelbe-Saale group	CWC – Subcarpatian cultural region	CWC tradition
				+
				+
				-+
ED,		5		+
			$\langle \rangle$	
	An and the second			+
				-
				+

Fig. 12. Ceramic ware from Budzhak culture inhumations and its analogies: 2500 - 2200 BC



Fig. 13. Beakers and beaker vessels of Budzhak culture (1–12) and Ceramic Ware culture from Germany (13) and Denmark (14–17): 1 – Mirnoe 1/12; 2 – Butor 3/9; 3 – Trapovka 6/20; 4 – Bashtanovka 7/21; 5 – Kurchy 3/9; 6 – Bashtanovka 7/12; 7 – Kholodnaya balka 1/13; 8 – Trapovka 4/5; 9 – Yefimovka 9/17; 10 – Ogorodnoe III, 1/16; 11 – Yasski 5/24; 12 – Beliaevka 1/32; 13 – Taubertal; 14, 15 – Kongehajem; 15 – Tottrup; 17 – Skivum [*after* 1, 11, 12 – Alekseeva 1992; 2 – Sinika, Razumov, Telnov 2013; 3, 8 –Subbotin *et al.* 1995; 4, 6, 9 – Shmagliy, Cherniakov 1970; 5 – Toschev 1992; 10 – Subbotin *et al.* 1984; 13– Dresely 2004; 14–17 – Hübner 2005]

At the same time the researcher, having identified the "Danube way", also noted a certain influence of the Yamnaya culture on the formation of a pottery complex in some groups of the Corded Ware culture. The Yamnaya population served as the intermediary that enabled the Corded Ware communities to absorb the types of amphorae that were typical for Carpathian cultures, as well as some elements of the funeral ritual. The Yamnaya influence is the most visible in the Moravia group [Włodarczak 2010: 302].

In addition to parallels in the group of large amphorae, some similar elements, in the view of Włodarczak, could be traced among small amphorae and amphora-like vessels. The stylistics of an amphora-like vessel from Olăneşti 1/15 (Fig. 14:25) is similar to that of vessels of the middle German group of the Corded Ware culture. Corded Ware traditions could also be traced in the décor of small amphorae from Gradiška I, 5/1 (Fig. 14:22), Mykhailovka 3/6 (Fig. 14:23), Nikolskoye 16/16 (Fig. 14:24). The amphora from Gradiška I, 5/1 and a fragment of an amphora from Curci 1/6 were of terracotta colour and polished; their shape and décor are comparable with central European samples.

An amphora-like vessel from Purcari 1/28 (Fig. 14:21) is similar to the vessel from the late Corded Ware burial Viktorov, b. 8 [Machnik 1960: 69–72]. In its turn, it shows similarity with vessels from the territory of middle Germany; the complex of Abtsbessingen, containing similar vessels, is dated within the range of 2600–2500 BC: KI-4139, 3960 + 85 BP [Dresely, Müller 2001: 310, Fig. 17]. Hence, it is quite acceptable to date the Purcari vessel to the mid-3rd mill. BC or some time later. It is worthy of note that some burials bearing Yamnaya traces have been found in central Europe on the territories of the contemporary Czech Republic, Slovakia, eastern Germany and Poland (Fig. 15). However, here these graves (about two dozen all in all) do not comprise any single cultural group and were found in burial mounds of different cultures – the Corded Ware, the Funnel Beaker, Nitra and Únětice [Bátora 2006: 190].

Therefore, we may speak about parallels between pottery complexes of the Corded Ware and the Budzhak cultures. Reproductions, borrowings and imitations in the Budzhak pottery reflect the presence of certain connections and impulses from the Corded Ware cultures. The production and decoration technique of some of the amphorae found in the North-Western Pontic Region (clay, processed surface, extra handles, similar to those present on the "Budzhak jars" and amphora-like vessels) point to syncretism, the emergence of local traditions and the Corded Ware culture.

In addition to pottery, there are other goods reflecting connections with the Corded Ware culture. Those include polished stone axes⁶ – Berezino 1/2 (Fig. 16:11), Slobozia 1/19 (Fig. 16:12). Usually researchers of the North-Western classed all axes, found in Budzhak graves, to the Corded Ware culture, which is incorrect.

⁶ I would like to thank Dr. V. Klochko for their definition.



Fig. 14. Amphorae (1 - 20) and amphorae-like vessels (21 - 25) from burials of Budzhak culture, with analogies in Corded Ware culture: 1 – Gura Galbenei 2/5; 2 – Olăneşti 14/1; 3 – Bursuceni 1/19; 4 – Bursuceni 1/14; 5, 9 – Gradeshka I, 5/11; 6 – Căuşeni 1/4; 7 – Căuşeni 1/18; 8 – Yefimovka 10/7; 10 – Ostrovnoe 2/12; 11 – Yasski 5/26; 12 – Belolesie, barrow 1, fill; 13 – Ogorodnoe III, barrow 1, fill; 14 – Iabloana 1/1; 15 – Trapovka, barrow1, fill; 16 – Taraclia 10/19; 17 – Cazaclia 3/13; 18 – Sărăteni 2/10; 19 – Camenca 6/18; 20 – Camenca 3/13; 21 – Purcari 1/28; 22 – Gradeshka I, 5/1; 23 – Mikhailovka 3/6; 24 – Nikolskoe 16/16; 25 – Olăneşti 1/15 [*after* 1 – Dergachev 1973; 2, 21, 25 – Yarovoy 1990; 3, 4 – Yarovoy 1985; 5, 9, 22 – Subbotin *et al.* 1995; 6, 7 – Chebotarenko *et al.* 1989; 8 – Shmagliy, Cherniakov 1985; 10, 11 – Alekseeva 1992; 12, 15 – Subbotin *et al.* 1995; 13 – Subbotin *et al.* 1984; 14 – Yarovoy 1983; 16 – Agulnikov 2002; 17 – Agulnikov 2008; 18 – Levitki *et al.* 1996; 19, 20 – Manzura *et al.* 1992; 22 – Subbotin *et al.* 1995; 23 – Subbotin 2000; 24 – Agulnikov, Sava 2004]


F i g . 15 . Localisation of central European cemetery complexes with elements of Pit Grave culture [Bátora 2006]

Flint axe-adzes from the territory of the North-Western Pontic Region (Fig. 16:1--10) are not identified clearly enough and they may be provisionally referred to either the Globular Amphorae or the Corded Ware culture [Szmyt 2000]. Razumov links their origin with the Corded Ware cultures [Razumov 2010; 2011].

2. CONTACTS AND CONNECTIONS WITH CORDED WARE CULTURES: LATE STAGE

Connections with Corded Ware cultures continued in the second half of the 3rd mill. BC (Fig. 12). There are two burial sites that contain sets of weapons of the Corded Ware culture: Purcari 1/38 and Alcalia 33/3 (Fig. 17). The first (Fig. 17:1) is believed to be the evidence of close contacts between the Corded Ware and



Fig. 16. Stone and flint axes- analogies in Corded Ware culture (from burials of Budzhak culture): 1 – Grigorievka 1/10; 2 – Purcari 1/4; 3 – Semenovka 8/13; 4 – Kholmskoe 5/14; 5 – Mayaki 9/1; 6 – Gavanoasa 9/2; 7 – Aleksandrovka 1/16; 8 – Alkaliya 33/3; 9 – Roşcani 1/13; 10 – Nikolskoe 11/7; 11 – Berezino 1/2; 12 – Slobozia 1/19 [*after* 1-10 – Subbotin 2003; 11 – Alekseeva 1992; 12 – Agulnikov, Sava 2004]

Yamnaya (in this case, the Budzhak) cultures of the late stage [Klochko 2006: 67]. The collection of weaponry present in the second burial (Fig. 17:2) may also be considered to belong to the late Corded Ware, although the flint axe is somewhat shorter than axes of the Corded Ware type and the black diorite mace resembles Catacomb objects [Klochko 2006: 70]. All kinds of weapons, found in the Budzhak

graves, are mostly located in the Lower Dniester area and in the Budzhak territory that is adjacent to the sea. The presence of weapons in the Budzhak graves can be explained in different ways: by the tension that emerged in relations between different groups of the population and by the borrowing of such practice from the Corded Ware environment, contacts with which were rather visible.

Decoration of pottery in some cases may also point out to connections between the Budzhak and the Corded Ware cultures. The borrowing of "alien" ornamental compositions and translating them into traditional pottery have been known to occur in various cultures of the Bronze Age. Another way of adopting foreign cultures' traditions of vessel decoration – altering the ornamentation technique while preserving the previous ornamental schemes – was registered in the Balkans [Katincharov 1987: 173].

Some borrowings of this kind can be also found on Budzhak pottery. Hence, the motif represented by shaded triangles – Semenovka 8/18 (Fig. 18:1), is similar to the pottery decoration in Halle (Saale) Region (Saxony – Anhalt State) (Fig. 18:13), as well as in Bohemia (Fig. 18:23), although individual finds of vessels with similar ornaments (but of different shapes) were registered in the Sokal ridge (Fig. 18:25, 26), where they represented imported goods [Machnik 2009].

Stylistics in the decoration of some middle German beakers [Matthias 1982: Plate 54: 10; 109. 6] are similar to those of the North-Western Pontic Region, for example, a vessel from the Kholodnaya Balka 1/13 (Fig. 13:7), on which horizontal marks of a cord (arranged in a spiral) are located on the rim and shaded triangles with their tops up are located on the body. According to Włodarczak, the influence of late cultures of the Corded Ware circle can be traced on the beakers from Curci 3/9 (Fig. 13:5), Bashtanovka 7/12 (Fig. 13:6), Yefimovka 9/17 (Fig. 13:9). The local production of these beakers is indicated not only by the vessel's shape, but also by the disfigured ornamental schemes, interrupted rhythm of the ornament and the horizontal frieze broken by a zigzag. However, such infringements on the standards do occur in the periphery of the Corded Ware culture. For instance, similar "non-standard" motifs with a broken ornamental rhythm were noted on beakers from the territory of the extreme western periphery of the Corded Ware culture: from the south-western part of Germany, on the Tauber River (Fig. 13:13) and from Denmark (Fig. 13:14-17). A beaker-like vessel from Bashtanovka 7/21 grave (Fig. 13:4), decorated with horizontal impressions in the ornamentation on beakers of the late group of the Corded Ware culture in Germany, according to Włodarczak [Matthias 1982: Plate 29: 7].

A variety of methods of making the cord ornament on the vessel's surface: around the rim in the shape of a spiral (Fig. 19:1), with a single cord (Fig. 19:2), with a triple cord or a braid (Fig. 19:3-5) have been registered in the Budzhak culture. The first and the third versions have analogies in the decoration of pottery in central Germany (Fig. 19:6-10). Some researchers expected that corded ornaments would appear on Budzhak pottery under the influence of Catacomb





Fig. 17. Budzhak burials with grave goods that have correspondeces in Corded Ware culture: 1 – Purcari 1/38; 2 – Alkaliya 33/3. [*after* 1 – Yarovoy 1990; 2 – Subbotin 2003]

cultures. However, the drawn ornament was predominant on Catacomb vessels of the North-Western Pontic Region and the area between the Bug and the Dnieper rivers; hence, we may assume that the ornamentation technique used for decoration of some of the vessels could be connected with the influence of the Corded Ware culture.

Włodarczak reconstructed the Danube way of westward migration of the Yamnaya tribes [Włodarczak 2010]. The routes of migration to Alfeld could be restored based on archaeological finds with the use of written sources and historic data from later epochs, e.g., about the migration of Medieval nomads to Pannonia. Pechenegs and Cumans mastered three ways from the southern Rus steppes to the central European Plain, to Hungary: the first, through the Iron Gates; the second, through the southern Carpathians in the headwaters of the Olt, Mures and Szomes rivers; the third, from the Upper Siret and Prut rivers to the Tisza [Rasovskiy 1993: 3].

The first two ways were connected with crossing over the River Prut, while the third way did not require crossing major water obstacles. According to Dergachev, the Yamnaya tribes got to the Middle and Upper Tisza River area on the Suchava highland road, which ran in the north of Transylvania [Dergachev 1986: 81]. Ciugudean reconstructed the movement of the Yamnaya tribes to Transylvania by the rivers of Mures and Szomes [Ciugudean 2011: 29–30]. Meanwhile, the way along the Danube or the Carpathian hollow was not the only one used in the relations between the Budzhak and the Corded Ware cultures. We may also speak about the movement towards the west (north-west). The amphorae, comparable to the Corded Ware samples, found in the north of the Republic of Moldova, marked the westward direction of the contacts along the Prut and the Dniester.

The researchers pointed out to the Dniester way [Klochko, Kośko 2009: 300], which, most probably, linked the Budzhak culture and the Corded Ware culture. A burial found on the San River combined the features of the Corded Ware, Yamnaya and Catacomb cultures [Kośko, Klochko, Olszewski 2012]. In this context, interesting finds were made in Yamnaya graves in the Vinnitsa Region in the Middle Dniester area (information provided by Razumov). Hence, finds in the burial mound near the village of Porohy included amphorae of various kinds – both of oval shape that had been usual for the early types of the Corded Ware culture (Porohy 2/6) and of elongated proportions, with a cut-apart little relief roller at the bottom of the rim (Porohy 1/8).

A unique amphorae handle from Sloboda Podlesna was made in the shape of a bucranium; most probably, it could be compared with handles of the ovoid amphorae from the North-Western Pontic Region and vessels belonging to cultures of the Balkan-Carpathian Region: Cernavodă III, Cernavodă II, Glina III, on which the relief roller resembles, rather schematically, bucrania. Grave Pysarivka 6/2 of the Vinnitsa Region on the Dniester contained a wooden cart [Zahoruiko *et al.* 1993]. Probably, its emergence was also connected with the Budzhak population's northward migration from the North-Western Pontic Region along the Dniester.



Fig. 18. Ornamental motifs on ceramics: Budzhak and Ceramic Ware cultures: 1 – Semenovka 8/18; 2 – Pohrebea 4/4; 3 – Grigorievka 1/12; 4 – Purcari 1/23; 5 – Nagornoe 14/15; 6 – Gradeshka I, 5/1; 7 – Belolesie, κ. 1, fill; 8 – Bashtanovka 1/21; 9 – Olăneşti 1/15; 10 – Plavni 5/3; 11 – Kholodnaya balka 1/13; 12 – Mikhailovka 3/6; 13 – Saalegebiet; 14 – Gleina; 15 – Schftstadt; 16 – Pritzen; 17 – Wurtzen-Deuben; 18 – Gorsleben; 20 – Schotterey; 21 – Keuschberg; 22 – Mockerling; 23 – Marefy 1/1; 24 – Praha-Vinohrady; 25 – Werszczycast. 1/12; 26 – Klekacz 10, 1/1; 27 Zlota "Grodziskol"; [*after* 1 – Subbotin 1985; 2 – Toschev 1987; 3 – Subbotin 1982; 4, 9 – Yarovoy 1990; 5 – Toschev 1992; 6 – Subbotin *et al.* 1995; 7 – Subbotin *et al.* 1995; 8 – Shmagliy, Cherniakov 1970; 10 – Andrukh *et al.* 1985; 11 – Petrenko 2010; 12 – Subbotin 2000; 13, 24 – Buchvaldek 1966; 15, 18, 19, 20, 21, 22 – Matthias 1982; 14 – Witkowska 2006; 16 – Wetzel 1990; 17 – Matthias 1969; 23 – Šebela 1999; 25, 26 – Machnik 2009; 27 – Krzak 1961]



Fig. 19. Techniques for corded ornamentation application: 1-5 – Budzhak culture; 6-10 – CWC – Mittelbe-Saale group; [*after* 1 – Petrenko 2010; 2-4 – collections of the Museum of Archaeology in Odessa, author's photograph; 6-10 – Mattheas 1982]

The authors believe that the Dniester way linked the population of the late Eneolithic - Early Bronze Age of the North-Western Pontic Region not only with the Sokal ridge or Malopolska, where the pottery complex of the Zlota culture contained vessels comparable with the pottery of the Usatovo type [Włodarczak 2008: 520]. Probably, the Budzhak population migrated westwards to central Europe across Malopolska and northern slopes of the Carpathians. The evidence of such connections could be found in the presence of Yamnaya graves in the central European area (Fig. 15), as well as in the similarity of individual shapes of pottery and ornamental motifs (Fig. 11, 12, 18-20). The possibility of using that route is confirmed by modern-time written sources. At the end of XIX centure, a group of peasant wine-makers moved from the Swiss town of Vevey to the Lower Dniester area and founded the Shabo settlement (Belgorod-Dniestrovsky District of the Odessa Region). Thirty people, including women and children, accompanied by cattle, arrived in eight carts drawn by oxen and horses; they brought grape seedlings with them. Their route went through St. Gallen, Munich, Vienna and further southwards from Kraków to Lemberg, then through Chisinău to the banks of the



Fig. 20. Distribution of some types of pottery decoration in Central Europe and other regions [Machnik 2009, complemented by the author]



Fig. 21. Amphorae and beakers in Budzhak culture and Yamnaya culture inhumations, Crimea: 1 – map of amphorae dissemination; 2 – map of beaker dissemination with CWC analogies; 3 – Istochnoe12/5 inhumation [3 – Gening, Korpusova 1989]



Fig. 22. A comparison of Budzhak culture and Novotitorovka culture ceramics: 1a – Corpaci 2/7; 1b – Orhei 1/3; 2 – Yefimovka 2/14; 3 – Belolesie, barrow 1 fill; 4a – Corjova 2/13; 4b – Semenovka 8/18; 5 – Briukhovetskaya II, 4/1; 6 – Briukhovetskaya II, 6/15; 7 – Ust-Labinskaya, barrow 1; 8a – Ovalnyi, inhumation 38; 8b – Lebedi I, 2/120; [*after* 1a – Yarovoy 1985; 1b – Popovich 2008; 2 – Shmagliy, Cherniakov 1985; 3 – Subbotin *et al.* 1995; 4a – Borziyak *et al.* 1983; 4b – Subbotin 1985]

Dniester estuary, to the area of the future Shabo settlement. It took the migrants 3 months and 10 days to cover the distance of 2649 km.⁷

Machnik believes that the Globular Amphora population had served as kind of a barrier that blocked the proliferation and migration of other cultures and that contacts between them became possible only after the decay of the Globular Amphora culture in the second half of the 3rd mill. BC [Machnik 1979: 60]. However, the analysis of the pottery complex and the dates of some complexes indicate rather early connections between the Budzhak culture and the Corded Ware culture, which had not been encountered by the populated territories in the Pre-Carpathian Region. The evidence of that can be seen in the early types of beakers and amphorae in the North-Western Pontic Region as well as to the north of it. Possibly, those objects marked the routes connecting the Budzhak culture with cultures of the central European circle.

Arguably, these conclusions are contradicted by the absence of Yamnaya graves in the Upper Dniester area and Malopolska. Probably, one needs to refer to anthropological data in order to explain that phenomenon. Ethnologists are aware of taboos that banned the inhumation of the dead on foreign territories (the presence of hostile deities, alien ancestors, or other reasons). Given the symbolic nature of the funeral ritual, one may assume that the populations in question had different cultural traditions and different semiospheres.⁸

Toschev provided justification of his opinion that during the Bronze Age the Crimea had served as a transit territory linking the Northern Pontic steppes with the Northern Caucasus [Toschev 2007: 8]. The eastward proliferation of the Budzhak traditions shall now be considered. In this context, an interesting inhumation can be found at Istochnoye 12/5 (Fig. 21:3), which contained a Corded Ware-looking beaker [Gening, Korpusova 1989: 33], which had analogies in the North-West-ern Pontic Region. One should also take note of the pottery from the Crimean Yamnaya burials, which likewise resembles the Budzhak items [Toschev 2007: 43, Fig. 13:10; 44, Fig. 14:1; 45, Fig. 15. 7 *et al.*]. When analysing the Yamnaya pottery of the Steppe Ukraine, Nikolova emphasised a rather significant degree of similarity between the North-Western Pontic Region, the south of the Kherson Region and the Crimea [Nikolova, Mamchych 1997].

Taking into account all the above observations, the proliferation of a common anthropological type on those territories does not appear coincidental [Kruts 1997: 381] in a rather diverse anthropological composition of the population of the Yamnaya cultural-historical entity as a whole [Kruts 1997: 380–383; Shishlina 2007: 121-122]. Yet another part of the picture of the Budzhak culture's western and eastern connections and its possible status as a transfer medium of

 $^{^7}$ The information was obtained in the Wine Culture Museum in Shabo, Odessa Region.

⁸ "The semiosphere can be understood as a system above all other semiotic formations and at the same time, one that coalesces them into a united whole. The semiosphere in itself embraces all semiotic spaces and functions as a field of interaction of sign systems of various types" [Lotman 1992: 11].



Fig. 23. Radiocarbon dating of Budzhak culture inhumations: 1, 2 – Semenovka 8/8; 3 – Semenovka 8/13; 4-6 – Baranovo 1/10; 7, 8 – Nikolaevka 8/10; 9, 10 – Semenovka 2/6; 11 – summary chart of radiocarbon dates for Budzhak culture: [*after* 1-3, 9, 10 – Subbotin 1985; 4-6 – Ivanova *et al.* 2005; 7, 8 – Alekseeva, Bulatovich 1990]

different cultural traditions are vessels of the Globular Amphora and the Corded Ware.

Radiocarbon dating. The project involved the identification of radiocarbon dates for several burials of the Budzhak culture.⁹ Seven dates were performed on the basis of samples of human bones and wood (Plate 1; Fig. 23:1–10). One of them appears too young (Sychavka 1/10) and, possibly, is incorrect.

The dating of a wooden cart from 2/2 (the burial itself has not been published) produced a date that is synchronous with available dates for wooden carts of the Yamnaya cultural-historical area. Almost all of them date back to the first half of the 3rd mill. BC [Nikolova 2006]. The burials of Baranovo 1/10 (with a stone axe comparable to axes of the Ezero culture), Nikolayevka 8/10 (with a beaker that had analogies in the Lower Danube area, the cernavodă II culture), Semenovka 8/8 (with a model of a wooden boat on top of the roof of the grave) and Semenovka 8/13 (with a flint axe) were linked to a rather early stage of the Yamnaya cultur-al-historical entity. The date of Semenovka 8/13 is probably not fully reliable and appears too old. The grave contained a flint axe, similar to Corded Ware axes; however, the date of the grave was older than the initial stage of the Corded Ware culture. Possibly, the reason was the age of the wood itself. Researchers noted before that the dates obtained for wooden samples appeared older than those obtained for bone. The burial of Semenovka 2/6, containing an amphora-like vessel, belongs to the second half of the 3rd mill. BC.

In general, all dates are comparable with the date range of the Budzhak culture (Fig. 23:11).

3. CONCLUSION

A specific feature of the cultural – historical genesis of the North-Western Pontic Region at the turn of the 4th to the 3rd mill. BC is manifested by relations of its population with a foreign cultural environment. This concerns, first and foremost, the Budzhak culture that is a component of the Yamnaya cultural-historical region. The Budzhak culture represents connections with the Carpathian and Danube, the Corded Ware and the Globular Amphora cultures. The contacts were reflected in two aspects: imports, imitations and parallels in the Budzhak pottery and the occurrence of the Yamnaya burials found in other territories. Some forms of pottery and elements of its décor are rather surprisingly similar to central European groups

 $^{^{9}}$ An attempt to date some ceramic ware samples turned out to be unsuccessful in respect to the insufficient amount of carbon in these artefacts.

Table 1

1.	Baranovo 1/10,	Ki -17903	4350 ± 50	1 [™] 3020-2900 BC
	human bone			2 ^{тм} 3100-2880 ВС
2.	Nikolayevka 8/10,	Ki -18044	4210 ± 50	1™ 2890-2850,
	human bone			2820-2690 BC
				2 TM 2910-2620 BC
3.	Semenovka 8/8,	Ki -17899	4410 ± 30	1 [™] 3100-3010 BC
	wood			2990-2910
				2 TM 3110-2910 BC
4.	Semenovka 8/13,	Ki -18042	4380 ± 30	1 [™] 3020-2920 BC
	wood			2 ^{тм} 3100-2910 ВС
5.	Semenovka 2/6,	Ki -18043	3800 ± 50	1 [™] 2310-2140 BC
	human bone			2™ 2460-2120,
				2090-2040 BC
6.	Yassky 2/2 (wood)	Ki -17902	4080 ± 50	1 [™] 2860-2810 BC
				2700-2560
				2 TM 2870-2800 BC
				2760-2470
7.	Sychavka 1,10,	Ki -17906	3340 ± 70	1 [™] 1690-1520 BC
	human bone			2 TM 1780-1440 BC

Radiocarbon dates for burials of the Budzhak culture (performed within the Polish-Ukrainian project)

of the Corded Ware culture. The analysis of the mainland culture of the Budzhak population enables us to assume the existence of contacts with the Corded Ware culture circle as early as in the first half of the 3rd mill. BC.

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CENTRAL EUROPEAN PARALLELS TO THE DNIEPER – DON CENTRE OF BABYNO CULTURE

During the Early and Middle Bronze Age, steppe cattle-breeding cultures of the Northern Pontic mainland demonstrated very scarce ties with Europe to the west of the Carpathians. Apparently, these contacts were more visible only in the north-western part of the Northern Pontic Region [Dergachev 1986; 1999; Ivano-va 2013; Savva 1992; Toschev 1986], well as those of the forest-steppe Polissya cultures of eastern Europe that displayed certain "corded-ware" and "epi-corded-ware" features, namely the Sub-Carpathian, Gorodok-Zdovbytsa (Mierzanowice), Strzyżów, Middle Dnieper, Balanovo, Fatyanovo, Middle Volga Abashevo and Volsko-Lbishchenskaya cultures [Artemenko 1967; 1987; Bader, Khalikov 1987; Vasiliev 1999; 2003; Yefimenko, Tretiakov 1961; Sveshnikov 1974; Krainov 1972; 1987; Machnik 1958; 1961; Bátora 2006].

All the more significant, at first glance, are the recently identified parallels between the Dnieper–Don centre of Babyno Culture (DDBC) and central European early Bronze cultures / groups [Klochko, Kravets 1991; Klochko 2006; 2012; Cherniakov 1996; Bratchenko 2001; Lytvynenko 2001; 2006; 2007; 2009; 2011]. The point is that DDBC, together with two other Babyno cultures – the Dnieper-Prut Babyno Culture (DPBC) and the Volga-Don Babyno Culture (VDBC) – and a number of peripheral groups form the Babyno culture circle (area) (Fig. 1) [Lytvynenko 2009a; 2011b; Mymokhod 2013], which in turn, belongs to the post-Catacomb culture bloc of eastern Europe. This fact is very important, as the complex of central European parallels is not demonstrated by the most western of the Babyno cultures (DPBC) but by DDBC, the one that is far more distant from the provisional central European centre of cultural influence.

It is worthy of note that the DDBC archaeological complex clearly displays traces of several constituents: (a) genetic heritage of the preceding Catacomb world (primarily the Donets-Don Catacomb Culture); (b) external innovations; (c) a complex of internal innovations, which are a result of self-development [Lyt-



F i g. 1. Babyno cultural Circle: VDBC – Volga-Don Babyno culture; DDBC – Dnieper Don Babyno culture; DPBC – Dnieper-Prut Babyno culture (local variants: DB – Dnieper Bug; DD – Dnieper -Dniester; DP – Dniester-Prut)

vynenko 2011a]. This article will focus therefore on the second constituent of the Babyno culture complex, namely, the complex of external innovations. The external innovations include a part of the DDBC culture complex that cannot be linked to the local genetic source (i.e., the Catacomb cultures) and, at the same time have convincing similarities outside. Such external innovations include a peculiar set of decorations and garment details: bronze neck torcs, oculus-like - binocular pendants, spiral (spring) bracelets; necklaces of tin rolled tubules and spiral cylinders, drilled predators' fangs; bone / horn hook-cleat and ring buckles; stone bars with drilled holes at the edges (commonly interpreted as archers' protective plates). Another external innovation is the binary opposition principle in the burial rite (based on gender): fully opposite orientations and poses for men and women, with the relevant difference in the composition of burial implements. That sub-complex of the material culture and the burial rite (Fig. 2), although not typical for the steppe cattle-breeding cultures of the Pontic - Caspian Region and impossible to derive from the local source, has rather close similarities in the Epi-Corded Ware horizon of the Carpathian - Danube Region's cultures / groups, which chronologically mostly belong to Phases A1-A2 (after Reinecke) of the early Bronze Age.

First and foremost, the focus is on the analogies found in the environment of the pre-Carpathian Epi-Corded-Ware cultural circle, identified by Machnik [1972], which practiced the production of wire decorations (made with the use of the wil-



Fig. 2. Central European parallels in the burial rite and the material complex of DDBC: 1 – Rebrykovka-II 1/3 (no. of barrow / grave) 2 – Rebrykovka-II 1/5; 3-9 – Beyeva Mohyla grave 3; 10 – Hnarovske 1/6; 11 – Kerchyk, Gat-III 16/5; 12 – Vidrodzhennya-II2/4; 13 – Shakhtarsk 8/2; 14 – Chykmari-II 1/4; 15, 27-29 – Novo-Pylypivka 2/4; 16-17 – Oleksandrivsky hoard; 18 – Novozary-ivka 2/2; 19 – Pryvillya 11/13; 20 – Obilne 2/5; 21 – Kerchyk 17/9; 22-23 – Vetyutniv 2/1; 24-26, 37 – Novooleksandrivka-I 2/1; 30-33 – Andriyivka 1/1; 34-36 – Sokolove 5/11; 38 – Buzivka-XXII 1/6; 39 – Donetsk 4/19; 40 – Novolakedemonivka grave 10; 41 – Mykolayivka 1/8; 42 – Pryvillya 1/5; 43 – Petrovske 1/4; 44 – Spaske-IX 1/5; 45 – Pryvillya 7/4; 46 – Tsymlyansk 2/3

low-leaf technique) [Kadrow 2000], namely the Mierzanowice and Nitra cultures. Specifically, burial rites of all cultures of the pre-Carpathian cultural circle, like DDBC, involved the principle of opposition in the poses and orientations of the dead of different sexes, though in a version that was opposite to the one practiced in Babyno burials [Lutteropp 2009; Machnik 1972: 58-65, 88-92, 146, 152-154, 163-165; Müller-Karpe 1974, Fig. III/1: 248, 250; Stloukal 1985: 167]. Coinci-

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Artifacts/ritual	Cultures	Babyno (DDBC)	Mierzanowicka	Strzyżowska	Nitra	Únětice	Unterwölblinger	Straubinger	Singen	Adlerberg	Rhone/Wallis	Ries	Neckar	Kisapostag	Vatya	Mures-Periam	

Fig. 3. Common elements of material culture and funeral ritual in cultures / groups of Central Europe and DDBC * gender onnosition in the hurial rite gender opposition in the burial rite

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F i g. 4. Central European analogies of the funeral ritual and material complex of DDBC: A – Mierzanowice culture; B – Nitra culture; C – Únětice culture

dences at the level of material culture refer mainly, though not exclusively, to the set of decorations. The categories of items, common with DDBC, include (Fig. 3):

Mierzanowice culture (Fig. 4: A) – necklaces of copper-bronze spiral rolled tubes (German Spiralröllchen aus Bronze/Kupferdraht), tin shells (Bronzeblechhülse), faience beads and segmented cylinders (Segmentierte zylindrische Perle aus glasartiger Masse), drilled canine fangs – *Canidae* (Durchlochte Wolfszähne) flint dart heads with a groove at the base (Flächenretuschierte Silexspitze mit kontraver Basis) [Kadrow, Machnik 1997: Fig. 23, *3, 5, 20-28*; 32; 34; 68]



F i g . 5. Central European analogies of the funeral ritual and material complex of DDBC: A – Gata-Wieselburg cultural group; B – Unterwölbling cultural group; C – Straubing cultural group

Nitra culture / group (Fig. 4: B) – copper–bronze neck torcs with loops (Ösenhalsring) spiral protective bracelets (Armspirale) stone plates with transverse grooves (a rarer kind of archers' protective plates, compared to drilled ones – English: Bracer, German: Armschutzplatten, Polish: płytka łucznicza, Slovak: nátepni ploténka) [Sangmeister 1974; Fokkens, Achterkamp, Kuijpers 2008] necklaces of bronze spiral cylinders, tin rolled beads, faience beads and segmented cylinders; arrow-heads with a grooved base [Müller-Karpe 1974; Ondrãček 1985].



F i g. 6. Central European analogies of funeral ritual and material complex of DDBC: A – Adlerberg cultural group; B – Ries cultural group; C – Neckar cultural group; D – Rhone / Wallis culture/ group; E – Singen cultural group; F – Polada culture

Further west and north-west, in the basins of the Vistula and Oder, the Upper Danube, the Upper and Middle Rein, as well as the neighbouring areas of the Alps (Bohemia, Moravia, southern Bayer, Middle Germany, Gessen, Lower Austria, Switzerland and Northern Italy) there are a number of more or less similar culture groups of the early Bronze Age, which chronologically occupy the common European epi-corded-ware horizon (periods A1 – A2, after Reinecke): Únětice (Únětice Kultur), Gáta-Wieselburg, Unterwölblinger (Unterwölblinger Gruppe), Straubinger (Straubinger Gruppe), Singen (Singen Gruppe), Adlerberg (Adlerberg Gruppe), Ries (Ries Gruppe), Neckar (Neckar Gruppe), Rhone/ Wallis (Rhone/ Wallis Kultur/Gruppe) and Polada. A complex of common features also makes these groups culturally similar to DDBC. Almost all demonstrate the principle of gender-based orientation in the burial rites of men and women, though somewhat different from the Babyno version [Bartelheim 1998, Tab. 1: 176; Müller-Karpe 1974, Fig. III/1: 256, 257, 260; Nagy 2013: 90]. The list of similarities between the Babyno material complex (DDBC) and those groups / cultures is rather remarkable (Fig. 3):

Únětice culture (Fig. 4: C) – copper – bronze neck torcs, spiral protective bracelets, binocular pendants; necklaces made of metal spiral cylinders, tin rolled beads, faience beads and segmented cylinders, drilled canine fangs; bone rings (Knochenscheibe) flint arrow-heads with a grooved base; archer's protective plates [Bartelheim 1998, Tab. 1: 56-57, 63, 74-79; TAB. 2: Plate 45, R1; 46, S6.1; 47, U1, 5, 7, 10; V1; Matuschik 1996: 23; Müller-Karpe 1974, Fig. III/1: 250, 252-255; Fig. III/3: Plate 525, A; Fig. III/4: Plate 300, A, G]

Gáta-Wieselburg culture (Fig. 5: A) – copper-bronze neck torcs, spiral protective bracelets, binocular pendants; necklaces of metal spiral cylinders, drilled fangs [Honti, Kiss 2013: 750; Müller-Karpe 1974, Fig. III/1: 248; Nagy 2013: 90-92, 101-102, 103-104, Plate 1; 14; 24, 1-2; 29, 3-4; 30, 6]

Unterwölblinger group (Fig. 5: B) – copper-bronze neck torcs, spiral protective bracelets, binocular pendants; necklaces of metal spiral cylinders, drilled canine fangs, tin rolled beads, faience beads (in particular, with four protruding parts) bone rings; archers' stone protective plates and fling arrows with a grooved base [Bertemes 1989: Plate 27, 1-2, 8-13, 24-25, 28; Koschik 1981: 112-115; Plate 49, 5; 60; 61, 7; Lißner 2004: 5, Tab. 3-6; Matuschik 1996: 23; Müller-Karpe 1974, Fig. III/3: Plate 528-529; Neugebauer C., Neugebauer J.-W. 1997: Tab. 1; Ruckdeschel 1978: 194]

Straubinger group (Fig. 5: C) – copper-bronze neck torcs, spiral protective bracelets, binocular pendants; necklaces of metal spiral cylinders, drilled canine fangs, tin rolled beads, bone rings of several types; archers' plates [Hundt 1958; Lißner 2004: 3, TAB. 2-6, Plate 2-3; Matuschik 1996: 23; Müller-Karpe 1974, Fig. III/3: Plate 530-533; Ruckdeschel 1978: 192-196, Fig. 17:1-7, 20]

Adlerberg group (Fig. 6: A) – copper-bronze neck torcs, necklaces of tin rolled beads, spiral cylinders and drilled fangs, bone rigs, archers' plates [Gebers 1978;



F i g. 7. Ceramics with Mnogovalikovaya (multi-cordoned) décor: A – DDBC; B – Polada culture; C – Adlerberg group; D – Rhone/Wallis culture

Lißner 2004: 2-3, TAB. 2-6, Plate 1; Müller-Karpe 1974, Fig. III/3: Plate 534; Ruckdeschel 1978: 194-195]

Ries group (Fig. 6: B) – copper-bronze neck torcs, spiral protective bracelets, tin rolled beads, bone rings, archers' plates [Lißner 2004: 3-4, TAB. 2-6, Plate 5]

Neckar group (Fig. 6: C) – copper-bronze neck torcs, spiral protective bracelets, bone rings [Lißner 2004: 4, TAB. 2-6, Plate 6]

Rhone culture (Wallis group) – copper-bronze neck torcs; spiral cylinders, hooked buckles; tin rolled beads; bone rings (Fig. 6: D) [Hafner, Suter 2003: 327, 328-329, Fig. 2-5; Müller-Karpe 1974, Fig. III/1: 262; Ruckdeschel 1978: 194]

Singen group (Fig. 6: E) – copper-bronze neck torcs, spiral protective bracelets, binocular pendants; spiral cylinders, tin rolled beads, bone rings [Lißner 2004: 3, Tab. 2-6, Plate 4]

Polada culture (Fig. 6: F) – bronze binocular pendants, necklaces of spiral cylinders and drilled fangs, bone rings and hooked buckles, flint grooved arrow-heads and archers' protective plates [Barich 1971: Fig. 13, 3, 6, 7, 11, 13, 17, 18; 14, 16; 15, 11-12; 19, 3-5; Bartelheim 1998, Tab. 1: 79; Fasani 1984: 498, Fig. 16; 501, Fig. 1-2; 502, Fig. 9:12; 516, Fig. 2.12; 1988: Fig. 5:11-35; 6, 17-18, 21; Grigoriev 2002: 390; Marzatico, Tecchiati 2001: Fig. 1:22, 23, 29: Matuschik 1996: 20, Fig. 11; Perini 1971: 65, Fig. 32, 2.12; 33, *1*; Ruckdeschel 1978: 194].

It is worthy of note that, some of the above groups of that time (Adlerberg, Wallis / Rhone, Polada, Straubing *et al.*) developed a fashion for decorating ceramics with smooth and carved rolls, sometimes whole compositions thereof (Fig. 7) [Gebers 1978: Plate 19, 20; 57, 20-29; 59, 17-19, 24, 63, 14; 64, 17-20, 24-26; 66, 4-5, 9-11; Grigoriev 2002: 390, Fig. 148, 15, 29; Hafner, Suter 2003: Fig. 11, D; Hundt 1958: Plate 20-47]. This circumstance is an additional proof in support of certain epoch-wide parallelism in the genesis of DDBC and Early Bronze Age central European cultural groups.

Also worthy of note is the fact that DDBC is not the only culture that finds clear parallels among the early Bronze Upper Danube cultures and groups, but also among the Middle and Lower Danuber cultures. As an example, one can refer to the Middle Bronze Age cultures / groups of Hungary and Serbia, as well as the early Bronze Age of Romania:

Kisapostag group (Fig. 8: A) – copper-bronze spiral bracelets, binocular pendants, necklaces of metal tin rolled beads, spiral cylinders and dripped fangs [Machnik 1978: 23; Müller-Karpe 1974, Fig. III/1: 247; Fig. III/3: Plate 521; Melis 2013: 3-4, Fig. 5; 8; Szathmári 1983]

Vatya culture (periods I, II) (Fig. 8: B) – copper-bronze spiral bracelets, binocular pendants, tin rolled beads and spiral cylinders faience necklace with protrusions, archers' stone plates [Bona 1975: 51, Plate 16, 19, 21, 26; Müller-Karpe 1974, Fig. III/1: S. 247-248, Plate 527; Szathmári 1996; 76, 78-80, Fig. 3:4-8, 18-21; 5, 5-10, 38-43, 52-63; 6, 1, 3; 2002: Fig. 2:12-13; 4, 2-5].



Fig. 8. Central-eastern European (Middle Danube) analogies of funeral ritual and material complex of DDBC: A – Kisapostag cultural group; B – Vatya culture; C – Mures / Periam (Szőreg) culture

Mures (Maros, Maris) culture or *Szőreg group of Periam (Perjámos) culture* – gender opposition in male and female inhumations, copper-bronze neck torcs, spiral bracelets, binocular pendants, tin rolled beads and spiral cylinders, faience



Fig. 9. Cultures / groups of the Central, South-Eastern and Southern Europe bearing common features of the material culture and the funeral rite: 1 – Rhone / Wallis; 2 – Singen; 3 – Adlerberg; 4 – Neckar; 5 – Ries; 6 – Straubing; 7 – Unterwölblinger; 8 – Únětice; 9 – Nitra; 10 – Mierzanowice; 11 – Strzyżów; 12 – Kisapostag; 13 – Vatya; 14 – Mures / Periam (Szőreg) 15 – Babyno (DDBC)

necklace of faience segmented cylinders and beads with four protrusions, as well as drilled canine fangs, bone rings, archers' plates (Fig. 8: C) [Bratchenko 2001: 47; Bende, Lörinczi 2002: Fig. 6:5; 8, 5; Bona 1975: 85-86, 102, Plate 85, 87, 116, 120, 122, 123; Girić 1971; Matuschik 1996: 23; Müller-Karpe 1974, Fig. III/1: 251; Fig. III/3: Plate 520, F; Ostojuĥevo 1994: catalogue, No. 24; Stefanović 2006: 201-212; Szabó Gábor 1997: Fig. 7; 8; 9, *12-19*; 10, *34-38*, *45-48*; 11].

Monteoru culture (phases IC_3 -Ia) – bronze neck torcs, necklaces of tin rolled beads and spiral cylinders, drilled fangs, an axe and an adze of the Kostroma type, bone rings, flint arrow-heads with a grooved base (Fig. 9) [Savva 1992: 159-169, Fig. 63; Motzoi-Chicideanu 1995: 235, Fig. 11, *5*, 8].

Obviously, the very complicated task of clarifying the chronological correlation of DDBC periodisation stages and relevant phases of the above cultures and groups is a matter of further research, as those cultures and groups are not absolutely synchronous but, most probably, demonstrate partial co-existence.

Of particular note is that the identified parallels in the material complexes of the compared cultural areas of, on the one hand, central and south-eastern Europe, and, on the other hand, of eastern Europe, are numerous and repetitive in their occurrence enough to suggest a general common conditionality and not an accident of this phenomenon. Naturally, when making such ambitious conclusions one should provide substantial proof that some kinds of decorations, particularly the neck torcs, wristband-like spiral bracelets, oculus-like pendants, tin rolled beads, spiral cylinders and alike, are used correctly in chronological assumptions. There is an opinion that such categories of objects may not be used for constructing sophisticated chronological schemes, as they, allegedly, demonstrate a vast time range of practical usage that spans throughout the Eneolith - Bronze period. At a glance, one can accept this reasoning, as for the majority of the above artefacts it takes little effort to demonstrate their practically uninterrupted chronological sequence from the Copper Age till the end of the Bronze Age. However, the point is that in order to construct such a sequence one would have to artificially collect the material from various sites of Europe, the Caucasus and even Western Asia. Moreover, it will become evident that none of the local regions of Western Eurasia (the Balkans, the Carpathian basin, the Danube Region, the Northern Pontic Region, the Don-Volga-Urals Region, the Caucasus, Anatolia, the Middle east, etc.), which sometimes demonstrated uninterrupted cultural heritage throughout the entire Paleo-Metal Age, will be able to demonstrate permanent usage of the above elements of decorative sets.

For instance, even such relatively simple to make and unpretentious-looking jewellry as tin and spiral cylinders are also not permanently present chronologically at a certain territory throughout a number of periods. In the Northern Pontic Region and the adjacent steppe areas, such cylinders were commonly present only in the Late Steppe Eneolith and Late Yamnaya monuments [Bratchenko 2001: Plate I: 42]. Such decorations are already not typical for the early Catacomb and Middle Catacomb monuments [Bratchenko 2001: Plate I: 43-45; Plate II: Fig. 74; 104, B, C]. A new state of usage of the above types of jewellry can be traced only from the Late catacomb period and not everywhere, as they are found only in some areas [Dergachev 1996: 106; Syniuk 1996: 118, 131-132, Fig. 35, 5; 41, 57; Toschev 1991: 96, Fig. 5:3-4; Feschenko 1992: 95, Fig. 2:4]. On most of the territory of left-bank Ukraine, tin and spiral cylinders are absolutely absent in the Catacomb culture jewellry sets; they only occur in that territory at the end of the Middle Bronze Age, more specifically, with the early stage of DDBC monuments. After a rather short period of usage, they disappear again and never re-occur in the latestage Babyno complexes and the subsequent Srubnaya cultures. Somewhat similar (though with its own peculiar features) cycles of usage of the above jewellry can be observed in the regions further to the west and to the east of the Babyno cultural area. These facts need to be taken into account and demand a more balanced, sophisticated attitude to the evaluation of chronological potential of even relatively simple and undemonstrative categories of items that are routinely classed among the so-called background types.

Second, there is another, more significant argument that supports the correctness and relevance of our assumption of the typological – chronological parallels between DDBC and archaeological entities of Central Europe. It is the fact that the central European cultural groups, included in the comparison, demonstrate the whole series of clear and sustainable similarities (up to 7-10 points), not only individual analogues, often together with characteristic features of the burial rites (gender-based binary opposition, burial constructions represented by wooded frames).

As mentioned above, given a systemic and complex approach, these common elements of the ritual and material culture can no longer be seen as the "back-ground", but as diagnostic features, a certain "fashion" of the epoch that proliferated in the early Bronze Age throughout the significant territories of Europe, not only its western part alone, but also, partially, to the eastern part. For never before or after this chronological period that corresponds with phases A1b – A2a (after Reinecke), central European cultural groups demonstrated so many common features [compare: Lißner 2004: 5-6]. Moreover, never again in other periods of the Bronze Age the eastern European cultures demonstrated so clear parallels with the central and eastern European, as can be observed in the case of the Babyno culture circle, primarily the DDBC. Hence, these are not individual accidental coincidences, but a sustainable systemic parallelism in the development of the compared central and eastern European cultural entities, which was possible only if they co-existed within the same epoch.

Third, the above chronological comparisons may not be devaluated by the fact that a certain proportion of western parallels, identified in the DDBC material complex, are not represented in large numbers, but only by individual finds in graves: metal torcs (4 finds), oculus-like pendants (3 finds), tin rolled beads (8 finds), spiral cylinders (3 finds), spiral bracelets (a hoard, 1 find) and archers' stone plates (6 finds). In this case, the small numbers do not reduce the quality and the essence of the phenomenon. Of particular significance is the fact that a similar situation can be observed among the central European close / related groups of the early Bronze Age, synchronous to the Babyno, in which the same categories of the material culture are represented in different numbers and with different frequency. Meanwhile, the frequency of the occurrence of specific categories of artefacts is not directly connected to their status as determining (diagnostic) markers [Lißner 2004: 5, 6]. In this case, importance lies in the fact that all of the above items (with the exception of bronze cylinders) are absolutely unknown in the material complexes of Eneolithic, Yamnaya and Catacomb monuments of the Northern Pontic Region; therefore, they could not be inherited by bearers of the Babyno culture from the preceding local cultural environment.

In order to prove this author's conclusions about the involvement of the Central European (Carpathian – Danube) impulse in the formation of DDBC is correct, one needs to refer to the absolute chronology data. A series of ¹⁴C dates identifies the time of the existence of the Babyno Culture Circle within the range of 2200-1700 BC



Fig. 10. Romanian analogies of burial inventory of DDBC: 1-7, 8-9 – Girceni 2/4; 11-13 – Măgura Dudaşului; 10, 18 – Baldovineşti, burial 3, 12; 14 – Mircin; 15-17 – Brailiţa, burial 158, 86, 145; 20, 24 – Sărata-Monteoru; 21-23, 25-26 – Kîndeşti

cal. [Lytvynenko 2009a: 14-15; Mymokhod 2010: 34-43; 2011: 38-45]. Hence, the Babyno Culture Circle is synchronous with certain phases of the above central European early Bronze Age cultures / groups, which existed within the periods A1-A2 of Reinecke's scheme. It should be noted that the early DDBC horizon – which is the one marked with Carpathian – Danube features – dates back to the range of about 2200-2000 BC cal. and should correspond with the central European period A1a of



Fig. 11. A. Epi-Corded-Ware entities of Western Podolia and Carpathians: 1, 8 – Kutianka (Iserna); 2 – Horodenka; 3 – Lypa; 4 – Velykyi Boratyn; 4a – Torchyn; 5 – Stadnyky; 6 – Pochapy; 7 – Ozliyiv; 9 – Rusyliv; 12, 16 – Surmychi-III; 13 – Tarakaniv; 14 – Lahodiv; 15 – Zoziv-II; 17 – Svytaziv; 18 – Zvenyhorod; 19-22 – Palykorovy; 23,24 – Pereverdov; B. Strzyżowska culture.

Reinecke's modified scheme, or the end of the early Hellas period (EH-III). The late phases of Babyno are generally synchronous with the eastern European period A2b, or the beginning of the Middle Hellas period (MH-I). It is particularly important that the central European (Carpathian – Danube) sub-complex can be observed only at the early stage of DDBC (period I). That sub-complex serves as a certain marker, which, taken together with other indicators, reliably proves the end of the Catacomb culture age and the beginning of a new, post-Catacomb one. At the beginning of period II (phase II-A), the central European sub-complex disappears completely and, subsequently, practically never re-appears in DDBC's material culture and the burial rite. This circumstance can be explained by the fact that the western epi-cord-ed-ware impulse that occurred at the stage of DDBC's cultural genesis was a short and single splash. The absence of further nourishment caused that impulse to fade and lose its features in the late DDBC's visual image.

Hence, external innovations in DDBC have rather convincing similarities in the environment of early Bronze cultures of central Europe and, possibly, of south-eastern Europe (Fig. 10). Then there is a logical question: how all those elements of the central European "fashion" reached the south of eastern Europe (the Northern Pontic Region) and were included in the DDBC's material complex and burial rite? Searching for an answer to that question, one should take into account that the central European sub-complex, identified within DDBC, is surprisingly practically absent in the western areas between the Carpathians and the Dnieper, i.e., the intermediary territories through which the impulse from the Carpathians and the Danube should have logically passed on its way to the Azov-Dnieper-Don Region, where the DDBC had been formed. Hence, Epi-Corded-Ware entities of Western Podolia and Volhynia (the Gorodok Zdovbytsva Mierzanowice culture, the Pochapy type, the Podolia group of pre-Carpathian culture and Strzyżów culture) demonstrate, to a different degree, individual elements (but never the entire set) of the central European sub-complex (Fig. 11): gender opposition in the burial rite, bronze torcs, binocular pendants, tin rolled beads; bone or shell buckle rings. segmented faience necklaces, flint arrow-heads with a grooved base [Sveshnikov 1974: 61, 66-67, 71-79, 111, 114, 127-128, 133-134, 137, 139, Fig. 15, 14-15; 23, 6, 8; 38, 3; 40, 1; 49, 2-12, 35, 36, 40; 1993: Fig. 3: IV; 4, 15, 24; Bargieł, Libera 2005: 198-200, Fig. 4, 4-7; 6, 6-12; 7, 2; Gedl 1985: 80-81, Plate XVII, 6, 8].

Also It is worthy of note that, the central European sub-complex in question was absolutely unrepresented in DPBC, which is territorially farther west, i.e., closer to the above Epi-Corded-Ware cultures of the Podolia and Volhynia and, therefore, to the presumed Carpathian-Danube source of its origin. This fact makes us look for some other way of penetration of the central European impulse from to the Azov-Dnieper-Don source of the DDBC cultural genesis, than the direct west-east vector from the Upper Carpathians. Possibly, the ambiguity of the situation is caused by the relative weakness and uneven archaeological investigation of the right-bank Ukrainian forest-steppe and Polissya.

It is worthy of note that, the central European Late Corded-Ware – Epi-Corded-Ware eastward splash had, most probably, not one, but at least two directions. First of them, farther north, went across the eastern European forest belt towards the North-East-East: approximately from the Northern Pre-Carpathian area to the Upper Volga Region, farther on to the Middle Volga and, possibly, even farther to the Pre-Urals.

Probably, that impulse left its traces in the funeral ritual (the gender opposition) and the material complex (bronze oculus-like pendants, jewellry made in the willow-leaf technique, etc.) of the cultures listed at the beginning of this article – the Balanovo, Fatyanovo, Middle Volga Abashevo and Volsk-Lbishcheno. The second direction, farther south, was most clearly represented by DDBC. Meanwhile, it had a rather different set of central European borrowings, which included items unknown in the eastern European forest cultures: bronze torcs, spiral bracelets, tin and spiral cylinders, bone buckles and archers' stone plates. Instead, unlike the Epi-Corded-Ware groups of the eastern European forest zone, the DDBC jewellry sets did not contain any wire objects made in the willow leaf technique, well-known in cultures of the Pre-Carpathian Epi-Corded-Ware culture circle [Kadrow 2000]. Possibly, this difference can be explained by the fact that both Epi-Corded-Ware impulses (the farther-north – forest and the farther-south – forest-steppe / steppe ones) had somewhat different primary epi-centres. Which exactly and where exactly in the Carpathian-Danube Region those primary epi-centres were located, remains a matter of further investigation. However, the "Epi-Corded-Ware" nature of those influences on eastern Europe causes practically no doubt.

In this connection, it is worth noting that the most recent studies have proved that the Babyno culture's anthropological type had been formed "on the basis of the population of eastern Corded-Ware cultures with the involvement of groups whose origin was connected with the territories of the Northern Caucasus and the Trans-Caucasus" [Kazarnitskiy 2013: 76]. The involvement of the Caucasian cultural phenomenon as the second external component of the Babyno cultural genesis has been also clearly fixed in the archaeological material [Lytvynenko 2007; 2009; 2011; 2012], however, that is a topic for a separate study.

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BABYNO-TYPE CERAMICS IN THE EASTERN POLESSIYE

1. INTRODUCTION

The Babyno culture circle (2200 – 1800 BC) belonged to the post-Catacomb block of cultures of the Northern Pontic – Caspian Region. The main territory of proliferation of monuments associated with the Babyno culture circle (BCC) lies within the steppe and forest-steppe zone of the Northern Pontic area: from the right-bank Prut and the lower Danube in the west, to the Lower Don in the east [Litvinenko 2009a; 2011b]. Groups of monuments and individual finds of the Babyno types oc-cur outside of the main territory: in the north of the forest-steppe and in the south of the forest zone [Litvinenko 2008a]. The eastern Polissya is a peripheral region of monuments containing Babyno materials in the south of the forest zone.

The issue of occurrence of materials linked culturally to the circle of steppe antiquities (with their typical multi-roll Mnogovalikovaya pottery patterns) in the south-east of Belarus became a matter of discussion, for the first time, after Pobol published an article on the Borysovshchyna grave [Pobol 1966: 194-197]. In 1967, Vladymir F. Isaenko and Mikhailo M. Cherniavsky named several eastern Polissya monuments, which, in their opinion, contained materials "displaying borrowings of elements of the Mnogovalikovaya pottery culture" [1967: 157]. In 1982–1983, Bychkov excavated the settlement of Zaspa 2 on the Dnieper near Rechytsia [1982; 1983a; 1985]. In the cultural layer of the monument, he found a representative and typical collection of multi-cordoned ware (Mnogovalikovaya pottery) and, therefore, finally confirmed his proposition in respect to the presence of Babyno materials on the territory of south-eastern Belarus.

In the first decade of 2000, this author published articles with a preliminary summary of all data for Babyno materials collected by that time in the eastern regions of the Belarusian Polissya [Kryvaltsevich 2001:318-322; 2004:154-156;

2005: 149-156]. Apart from systematisation of Mnogovalikovaya pottery from 13 monuments located in Belarus, the articles pointed out to some of its specific features and suggested an assumption that it contained some elements typical for the Middle Dnieper culture (MDC). It was also noted that the Borysovshchyna grave, found by Pobol, should be regarded as an object bearing syncretic features, where the Babyno culture elements had but a relatively small role [Kryvaltsevich 2001: 318-322; 2004: 154-156; 2005: 149-156]. The published material was used by Litvinenko to characterise the Dnieper – Pripyat local group of BCC monuments that he had identified. In his view, the Dnieper-Pripyat group had to be provisionally considered within a system of other northern and north-western periphery groups of the Babyno type (Desna-Seim, Podolia-Volhynia groups) that had emerged as a result of infiltration of bearers of the Babyno community into a different cultural environment [Litvinenko 2008a; 2009a].

Within the recent decade the historical scholarly base of antiquities of the Babyno type in the Belarusian eastern Polissya has expanded, which allows a deeper analysis and identification of new circumstances regarding their proliferation and genesis.

2. SOURCES

This article analyses materials of the Babyno type from 27 Belarusian eastern Polissya monuments: Lomysh 2, Zhakhovychi 1, Narovlya, Tulgovichi 1, Teshkov 2, Konotop 2, Orevichi 1, Dernovichi 1, Khvoshchevka 2, Yurovichi 3, 4, 5 on the Prypyat River (objects gathered from the surface and excavated by Isaenko) the settlement of Mozyr - Kimborovka on the Prypyat River (excavations by Zolashko, Bulkina, Kolosovsky) Abakumy 1 in the estuary of the Sozh River (excavations by the author and Makushnikov) Derazhichi (objects gathered on the surface by Isaenko, Ksendzov and this author), a group of monuments near the village of Byvalki (objects gathered on the surface by this author and Sinila), Belyi Bereg (objects gathered on the surface by Melnikovskaya), the settlement of Mokhov (excavations by Melnikovskaya), Mokhov 3A (excavations by the author), Unorytsa (objects gathered on the surface by Ksendzov), Kopan 1 (objects gathered on the surface by Bychkov), Zaspa 2 (excavations by Bychkov) on the Dnieper; the barrow burial mound Pribor on the Uza River (excavations by Bychkov and the author) Borysovshchyna 1 on the Ptich River (excavations by Pobol and the author) (Fig. 1). The materials of the above monuments are kept in the archaeological reserves of the Institute of History of the Belarusian Academy of Sciences and in the collection of the Gomel Palace Park Ensemble, the Mozyr and the Rechytsa local history museums. The majority of finds were obtained as a result of surface gather-



Fig. 1. Monuments with the Babyno-type pottery on the territory of the eastern Polissya of Belarus (a): 1 – Zaspa 2; 2 – Abakumy 1; 3 – Mokhov hill fort; 4 – Mokhov 3A; 5 – Derazhichi; 6 – Byvalki-Dyubicheva Gora; 7 – Byvalki-Rubezhnyi Rov; 8 – Byvalki-Sholomova Gora; 9 – Byvalki-Most; 10 – Belyi Bereg; 11 – Kopan 1; 12 – Unoritsa 2; 13 – Mozyr-Kimborovka hill fort; 14 – Yurovichi 3; 15 – Yurovichi 4; 16 – Yurovichi 5; 17 – Zhakhovichi 1; 18 – Lomysh 2; 19 – Narovlya; 20 – Tulgovichi 1; 21 – Teshkov 2; 22 – Konotop 2; 23 – Orevichi 1; 24 – Dernovichi 1; 25 – Khvoschovka 2; 26 – Pribor. Pottery with elements of the Babyno type (b): 27 – Borisovshchina 1

ing; some were obtained through excavations. Multi-cordoned (Mnogovalikovaya) ware was present in multi-cultural complexes and identified with the help of the comparative typology method. Multi-cordoned ware objects found in those monuments were usually accompanied by objects and materials of the eastern Polissya



Fig. 2. Zaspa 2. Babyno-type pottery: Group I (1, 3-5) Group II (2)
version of the Dnieper Donets Culture (EPDDC) Middle Dnieper culture (MDC) the Trzciniec culture circle (TCC) (including the Sosnitsya type) monuments containing the Polissya-type corded ware (CWPT). The Babyno-type ceramics were represented by a relatively small number of individual fragments (from one to a few dozen) or several piles of fragments of broken pots (Zaspa 2).

2.1. DISSEMINATION RANGE AND CONDITIONS OF MONUMENT LOCATION

Almost all of the above monuments were located within the confines of the Gomel and Mozyr Polissya along the rivers of Pripyat and Dnieper. Individual monuments were found in the estuary of the River of Sozh and the lower current of the River of Uza (the right tributary of the Sozh). The Borysovshchyna 1 grave, in which only individual elements of the Babyno type could be traced, was found in the confines of the Bobruysk plain of the eastern Pre-Polissya in the basin of the River of Ptich, the left tributary of the Pripyat (Fig. 1). It is worthy of note that the multi-cordoned ware occurred, in most cases, on the banks of relatively large rivers (Pripyat, Dnieper, Sozh) that had direct connections along the Dnieper with the territories farther south, primarily the forest-steppe lands. Within the Polissya, those rivers boast broad valleys with extensive floodplain meadows. The monuments, in which the multi-cordoned ware occurred, were located directly in the floodplains (on sand dunes, the remnants of terraces), or on the edges of river terraces. Some of the monuments were found on the highest parts of the local relief: on the right (root) bank of the Dnieper (settlements Mokhov, Byvalki) on the high point of the Mozyr heights, adjacent to the Pripyat (Mozyr-Kimborovka hill fort).

2.2. PRINCIPLE POTTERY COMPLEXES AND TAXONOMY

In general, a number of features indicate that a piece of eastern Polissya pottery belongs to the Babyno culture circle (BCC): (a) ornamental elements represented by rolls, smooth and decorated with finger impressions, which were arranged in Horizontal rows, tree-like, triangular or "parquetry" patterns; (b) combination of rolls with scratched ornaments, including the patterns formed by shaded triangles, parquet and tree-like ornaments and others; (c) the shape of some pots with a turned-out rim and a bi-conical; (d) technological features, represented by dense, hard and sometimes heavy clay mass with the admixture of



Fig. 3. Abakumy 1. Babyno-type pottery: Group I (1, 2, 8); Group III (3 - 7, 9)

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a large amount of sand and some other artificial barren agents; smooth (sometimes engobed), reddish-brown, dark red, yellow-red colour of the outer surface and darker inner surface of the vessels, smooth or with traces of rubbing; many of the vessels relatively thick-walled (up to 1.0 - 1.2 cm). These features rarely occurred combined at the same time and within the same complex. Usually the eastern Polissya pottery displayed only some of the above features. Moreover, the Babyno type pottery in the eastern areas of Polissya was not homogenous. Judging by materials of four of the most demonstrative pottery complexes (Zaspa 2, Abakumy 1, Mokhov settlement, Mozyr-Kimborowka settlement), we can identify three key groups of Babyno-type pottery.

2.3. ZASPA 2

The monument is located on a small right-bank floodplain hill of the Dnieper River. Bychkov studied Zaspa 2 with excavations in 1982–1983 [1982; 1983a; 1983b]. The Babyno-type pottery complex from Zaspa 2 included incomplete assemblages and shards of five pots, as well as five fragments of other multi-cordoned vessels (Fig. 2). It is worthy of note that the Zaspa 2 settlement also contained materials of other cultures and types: Neolithic Pit-Comb Ware; Middle Dnieper culture and the Sosnitsya type comb-ring ceramic ware. The dominating finds and objects (household and domestic) on the monument were those connected to the late Sosnitsya stage of the Bronze Age [Bychkov 1982; 1983a; 1983b; 1985; 1989]. Researching Bychkov's excavation materials (kept in the reserves of the Institute of History of the Belarusian Academy of Sciences) allows us to identify two groups of Babyno-type pottery.¹

Group I includes incomplete broken pots and fragments of four pots, five fragments of walls of other vessels (Fig. 2:1, 3-5). Those ceramic shards had a relatively dense and heavy clay mass with admixtures of a large volume of sand. The surface was smooth or engobed, red-bordeau or dark-bordeau. The ceramics were thick-walled (up to 1 - 1.2 cm), ornamented with cordons, smooth or with finger-made indentations. On one of the vessels, the impressions of a large rectangular stamp were added to the cordoned ornament (Fig. 2:1). Judging by the presence of the majority of the Babyno features, it may be argued that the collected pottery matched, to the highest extent, types of pottery that were characteristic of the Babyno culture circle.

Group II included fragments of only one of the pots (Fig. 2:2). Its similarity to Babyno pottery is limited to the typical cordoned ornament with finger inden-

¹ My earlier papers [Kryvaltsevich 2004; 2005] used drawings with reconstructions of multi-cordoned pots from Zaspa 2, made earlier by Bychkov [1985; 1989]. The research into Zaspa 2 materials compare Fig. 2



F i g . 4 . Mozyr-Kimborovka hill fort. Babyno-type pottery: Group I (1, 8); Group III (2 – 7)

tations. The vessel's surface was engobed. It differs from the previous by its production technique (the dough contains admixtures of small and medium pieces of crumbly sediments) and the grey colour of the surface.

The Babyno-type pottery displays some elements borrowed from the Trziniec culture circle: a tulip-shaped body and a thicker corolla. One of the vessels was covered with an ornament made with a rectangular stamp, a trace inherited from the Middle Dnieper culture. Trziniec elements (admixtures of crumbly sediments, thickened corolla) can be also observed in the pottery of Group II.

In general, one should admit that while maintaining many of the traditional features of the Babyno type, the multi-cordoned pottery from Zaspa 2 stands out due to the presence of elements of the Trziniec culture circle (Groups I and II) on the one hand and following the Middle Dnieper elements (Group I), on the other. This feature makes Zaspa 2 close to the pottery of the Malopolovetske type from the Kyiv Dnieper area, in particular, with the complex of Horizon I (the "Babyno Horizon") of Malopolovetske, identified by Lysenko. The key form of the "Babyno Horizon" pottery is represented by slightly profiled tulip-shaped pots. Monuments of the Malopolovetske and Khodosovka type, with complexes of the "Babyno Horizon", were located on the border between the forest-steppe and the Polissya. According to Lysenko, elements of the Babyno culture proliferated to the Kyiv Dnieper area at the stage of Malopolovetske Horizon I (1800 – 1600 BC) and were added to the local "epi-corded substrate, in which the influence of the western massif of the Trziniec culture circle could already be observed" (Lysenko 2007: 344). Hence, the Babyno-type ceramics of Zaspa 2 features some resemblance to the Malopolovetske Horizon I pottery. This allows assuming that those complexes emerged at about the same time, i.e., at the late stage of development of the Babyno culture circle.

2.4. ABAKUMY 1

The monument is located on a high point of the right terrace of the estuary of the Sozh River. Makushnikov and this author performed excavations on the monument in 1998 – 2000. The multicultural monument was represented by materials and objects of the Sosnitsya type as well as complexes of Mesolithic finds, flint items and the "forest Neolithic" pottery, the Middle Dnieper culture. Other artefacts included about 40 potshards of the Babyno culture circle type (Fig. 3).

Many fragments resemble the Babyno ceramics of *Group I* from Zaspa 2 (Fig. 3:1, 2, 8). They were made of clay with the admixture of some sand used as leaner. Traces of smoothing the inner surface by rubbing can be often observed. The ceramics were yellow-red, their walls about 0.7-1 cm thick. The ornamentation



Fig. 5. Mozyr-Kimborovka hill fort. Pottery of the late stage of the Middle Dnieper culture

consisted of smooth and finger-impressed cordons. In addition to Horizontal rows of cordons, there were tree-like cordon motifs (Fig. 3:2). In some cases, cordons were used to decorate the surface of the part of the pot attached to the bottom. The ornament was made with the help of a large rectangular stamp (Fig. 3:1). The finds included a fragment of the upper part of the pot with a steep turn of the body.

A small part of the pottery stood out because its production had included the use of both sand and grog as leaner in the dough and traces of smoothing on the inner surface. The ceramics were relatively thick-walled (about 0.7 cm); the cordons were narrow and low. This author arranged the above fragments into Group III of the Babyno-type pottery (Fig. 3:3-7, 9).

Technological features of Group III of the multi-cordoned ware make it closer to the local pottery of the Middle Dnieper culture. The literature contained multiple references to the presence of Middle Dnieper elements in multi-cordoned ware of some regions. Specifically, such features could be observed in Babyno-type ceramics found on some monuments of the Middle Dnieper area [Berezanskaya 1986:14-23], and, possibly, in the basin of the Desna and Sejma rivers [Litvinenko 2008a].

3. THE MOZYR-KIMBOROVKA SETTLEMENT

The settlement was studied through the excavations performed in 1982–1983 and in 2000–2002 [Zolashko 1982; 1983a; 1983b; Kolosovskiy 2000; 2001; 2002]. The monument is located on the high right bank of the Pripyat River (about 15 m high). The settlement (hill fort) emerged in the Iron Age on the place of more ancient settlements and was actively used in 700-1000 AD. Its cultural layers sometimes contained ceramics of the Dnieper- Don Neolithic culture. The Bronze Age is represented by a few hundred potshards and flint items. Most of the Bronze Age artefacts were found in the Iron-Age and Medieval sites. Only one small part of the Bronze Age cultural layer remained intact, covered by a medieval wall. Unfortunately, only a small portion of the Bronze Age pottery collection of the Mozyr-Kimborovka (materials of the 2000–2001 excavations performed by Kolosovskiy), which consisted of 82 fragments, remained available for research. It contains two main complexes: the pottery of the Babyno-type and the late stage of the Middle Dnieper culture.

Babyno pottery (15 potshards) corresponds with features of Group I (Fig. 4:1, 8) and Group III (Fig. 4:2-7) of Zaspa 2 and Abakumy 1. Meanwhile, potshards of Group prevail, ornamented with smooth and finger-indented cordons and three-like stretched motifs. It is worthy of note that in some cases the cordons were made by moving the fingers against the wet surface of the vessel (Fig. 4:2-4). The pottery



Fig. 6. Babyno-type pottery, Group I (4 – 6), Group III (1 – 3, 7 – 11) from the monuments of the Mokhov hill fort (1 – 11) and Mokhov 3A (12)



Fig. 7. Babyno-type pottery, Group III: 1 – Yurovichi 5; 2 – Khvoschovka 2; 3-5, 7 – Dernovichi 1; 6 – Byvalki-Rubezhnyi Rov; 8 – Orevichi 1; 9-12 – Byvalki-Dyubicheva Gora



Fig. 8. Borisovshchina 1. Schematic plan of the site, plan and section of the grave [Pobol 1964]. Legend: 1 - location of the grave; 2 - cremated bones; 3 - artefacts; 4 - sand bulges; 5 - fragments of pot; 6 - flint goods; 7 - a fragment of a human skull; 8 - cremated bones in the grave





Fig. 9. Borisovshchina 1. Grave goods: A – reconstruction of a pot; B – reconstruction of a suspension of the pot; 1-7 – flint grave-goods

of Group I included the "parquetry" ornament made by fine drawn lines (Fig. 4:1). The use of the "parquetry" ornament allows looking for a genetic connection between the Babyno-type pottery with that of Middle Dnieper culture. The making of cordons with the above method was one means of cordon ornamentation on the pottery of the so-called Malopolovetske type that had emerged at the stage of Horizon I of Malopolovetske and continued to exist throughout the later periods [for details, see: Lysenko 2007:346, 348].

Technological features of pottery of the late stage of the Middle Dnieper culture (67 fragments) (Fig. 5) resembles the Babyno pottery from the Mozyr-Kimborovka settlement, described above. It was smooth or sometimes with traces of smoothing on the inner surface. The ceramic dough was dense, with admixtures of sand, grog, or sometimes crumbly sediments, of yellow-red colour. The width of the walls is about 0.8 - 1 cm, rarely 0.5 - 0.6 cm. The main ornament is made by impressions of a rectangular stamp (Fig. 5:1, 2, 4, 5, 8, 9, and 11). The use of drawn lines was less common; in individual cases, corded and pinned ornaments were used. The pottery was flat-bottomed, with short straight and bent out thickened corollas. The ceramic fragments included a round spindle whorl (diameter about 4.5 cm) with a hole drilled in the middle, made of a pot wall (Fig. 5:10). The late-stage nature of the pottery could be determined based on some elements of micro-morphology (bentout short thick corollas), the noticeable domination of ornamentation with impressions of a rectangular stamp and a "herring-bone" Horizontal pattern [Kryvaltsevich 1999]. Thickened and bent outward short corollas appear at that time on TCC, found in the Strzyżów culture, on the late Corded Ware of the Polissya type (Ozernoye 1 type) [Kryvaltsevich 1999; 2010]. The pottery of the late stage of the Middle Dnieper culture, identified in the Mozyr-Kimborovka settlement, differs from the local Corded Ware Polissya-type pottery of the Zagoriny group in Mozyr Polessye. Most probably, given their late-stage origin and the technological similarity, it could have appeared in Mozyr-Kimborovka simultaneously with Babyno-type pottery.

4. THE MOKHOV SETTLEMENT

This Iron-Age settlement (hill fort) is located 2 km to the north from the village of Mokhov, on the high cape-like ledge of the right bank of the Dnieper River. Excavations in the settlement were performed by Melnikovskaya in 1955, 1956 and 1961 [1967]. The settlement's cultural layers contained materials of the Middle Dnieper culture, the Sosnitsya type. The collections, excavated by Melnikovskaya in 1955 and 1956² also contained Babyno-type pottery (24 potshards) (Fig. 6:1-11).

² Archaeological collections of Gomel Palace & Park Ensemble and Rechitsa Local History Museum

Babyno-type pottery from the Mokhov settlement corresponds, to the highest extent, to features of Group III (Fig. 6:1-3, 7-11). Sand and grog served as the artificial admixture. The pottery was dense, with a smooth outer surface and only in some cases did the items bare traces of outer or inner surface smoothing. In addition to smooth cordons with finger-made indentations, the ornamentation occasionally included vertical tree-like motifs, combinations of drawn lines with elongated punctures, as well as rectangular stamp marks. The collection also included individual fragments of Group I pottery (Fig. 6:4-6).

Single finds (between 1 and 10 potshards) of Babyno-type pottery were found in other monuments of the Gomel and Mozyr Polissya (Fig. 1). In most of the cases, these ceramics corresponded with features of Groups I and III and very rarely Group II. The ornaments had dominated motifs of smooth cordons and cordons with finger-made indentations; there were also motifs made by drawn lines (Fig. 7).

5. ISSUES OF DEFINING THE CHRONOLOGY

Presently, pottery of the Babyno culture circle on the territory of the Gomel and Mozyr Polissya can be dated only approximately, based mostly on the comparative-typological method. First of all, there is the proposition that the emergence of multi-cordoned ware in eastern regions of Polissya, as well as generally in the south of the forest area and the northern forest-steppe territories, occurred, most probably, at the late stage of genesis of the Babyno cultures [Litvinenko 2008a; 2009a; Lysenko 2007:344-346; 2011:134-139]. As this author mentioned above, the identified groups of the Babyno-type pottery in the eastern Polissya have some analogies and similar elements in the Middle Dnieper culture, the late stage of the Corded Ware Polissya type, as well as in the emergent Trziniec culture. Some similarities can be found with the pottery of Horizon I Malopolovetske of in the Kyiv Dnieper area.

Pottery complexes of the Babyno type in Mozyr-Kimborovka share similar features with those of the Middle Dnieper, which suggests that they possibly co-existed within the same period. Importantly, elements of the Middle Dnieper culture were observed in the multi-cordoned ware of the Middle Dnieper area [Berezanskaya 1986; Lysenko 2007] and the Desna-Seima group [Litvinenko 2008a].

Hence, pottery of the Babyno culture circle, found in Bronze Age monuments in the Gomel and Mozyr Polissya, most probably emerged simultaneously with the late stage of the Middle Dnieper culture (about 1900/1800 – 1700 BC) [Kryvaltsevich 2006], at the stage of Horizon I ("the Babyno Horizon") of Malopolovetske (1800 – 1600 BC) [Górski, Lysenko, Makarowicz 2003:291, 296, 298; Lysenko 2007:342-346; 2011:134-139], the dissemination of early elements of the Trziniec culture circle [Górski, Lysenko, Makarowicz 2003; Makarowicz 2010:30-54] and the late stage of the Corded Ware Polissya type (beginning of the 2nd mill. BC) [Kryvaltsevich 2010; 2011a]. Generally, this corresponds with the period of the end of the 1st beginning of the 2nd quarter of the 2nd mill. BC.

6. THE PHENOMENON OF BORYSOVSHCHYNA 1 AND BABYNO CULTURE CIRCLE

The burial site in Borysovshchyna 1 (Glusk District, Mogilev Region) has no analogies between currently known synchronous monuments of the 1st half of the 2nd mill. BC and represents an example of a synthesis of local and exogenous cultural traditions, including those of the Babyno. A repeated study of burial materials³ produced some details that allow for corrections and additions to earlier interpretation versions.

The burial site was discovered on a long cape-like debt of a terrace into the floodplain of the Zarudecha River and the Ptich (left tributary of the Pripyat) [Pobol 1966:294-297] (Fig. 8). Most likely, the burial was not a single one. Clusters of cremated bones and pits occurred on other segments of the northern part of the upland and nearby [Pobol 1964: Fig. 107; 1966:295; Kopytsin 2004:75]. Pobol found remainders of a burial pit (0.5 m in diameter and depth) on a sand surface with a ruined soil layer. The pit had been filled with humus sandy loam with charcoal, ash and fragments of burnt bones (about 100 pieces) (Fig. 8). The upper layer of the filling of the pit contained assemblage of a funerary vessel (Fig. 8:9; A), as well as burnt flint items and small fragments of barpoons.⁴ It is worthy of note that fragments of some flint items were located in different parts of the pit. At the bottom of the pit, under traces of cremation, there was a fragment of a human skull that bore no traces of burning⁵ and two ceramic items that had not been put in the fire (Fig. 8).

The set of grave goods also included a unique ceramic vessel (Fig. 9: A)⁶. The pot had a wide upper part that steeply narrowed towards the bottom, which was flat

³ The majority of items from that burial are kept in the reserves of the national History Museum in Minsk (Ne 40458/23-29; 40459/1-12).

⁴ Fragments of bone items and remainders of bones are not represented in the museum collection.

⁵ The remainders of the skull are not represented in the museum collection.

⁶ The analysed vessel remains preserved in the collections of the National History Museum in Minsk (Ne 40459/1-12) have allowed this author to propose a more credible variant of its reconstruction (Fig. 9: A), as well as to observe highly interesting details that drew one's attention.

and relatively narrow (up to 6 cm in diameter). The pot's neck (about 6 cm high) was slightly narrowed. The diameter of the vessel at the rim could have reached 26 cm and the diameter of the body, 28 cm. Fine grog had been used as natural thinner in the dough. The inner surface displayed traces of dense horizontal smoothing (with dry grass?). The outer surface was smooth. Possibly, it had been smoothed with liquid clay. The colour of the fragments was yellowish or yellow-grey. Most probably, the vessel had been made with strips about 6-7 cm wide. In the upper part, the vessel's walls were up to 1.0-0.7 cm thick, while the lower part was 0.5 cm. The relief decoration of the surface consisted of rounded bulges and six Horizontal cordons.

It is worthy of note that elements of ornamentation included round bulges of clay plastered to the pot's neck and a high (about 1.1 cm) upper cordon under the edge of the rim. One of the cordon's ends hanged down. Through vertical holes about 3 mm in diameter had been pierced in the raw clay almost next to the wall, in the cordon located below the round bulges. Probably, the holes were located in pairs around the entire perimeter of the pot

The entire outer surface of the pot, including the bottom, was covered with ornaments. The decoration could be also seen under the inner rim of the pot. The ornament was made with a short and curved "caterpillar" stamp which, however, did not always leave traces of an interwoven thread.

The found grave goods included remainders of 7 flint items (Fig. 9:1-7)⁷. Some were severely burnt and crumbled (Fig. 9:1-5). Among the flint items, there were three morphologically close scrapers of similar sizes based on relatively wide and flat flakes (Fig. 9:2-4). Only fragments of the scrapers were preserved, with some of their parts were missing. One item could be identified as a scraper with side notches (Fig. 9:1). Most probably, it had been made of a flake removed from a polished stone axe. The grave goods included a burnt flint axe with a flat butt part (Fig. 9:5) and a knife made of dark-grey flint on a fragment of a flat plate flake without a trace of thermal processing (Fig. 9:7).

Of special interest is an object without a trace of being affected by fire, made of dark-grey, almost black flint (Fig. 9:6). The tool was 6.6 cm long, 1.8 cm wide and 0.9 cm thick. It was made of a thick flake plate, processed with retouch along the side edges and on the rounded distal part. The retouch reached the back of the tool, which displayed traces of being intensively used. The ribbed edge of the distal part had traces of heavy rubbing. The ribbed edges of the proximal part looked less worn-out. The bulges on the back of the proximal and distal parts, as well as on the right side, bore traces of polishing. However, the protrusion on the heel of the tool looked even more heavily polished. The tool could have been used as a fire striker, as could be derived from relevant analogies and rubbing and polishing marks that gave it a worn-out look. [Budziszewski, Tunia 2000:127, Fig. 14: G; Budziszewski, Włodarczak 2010:59-61].

⁷ Collections of the National History Museum (№ 40458/23–29).

The macro-morphology of the pot differed from typical multi-cordoned ware and resembled individual vessels with a narrow flat bottom of the late stage of the eastern Polissya version of the Dnieper Donets culture [Isaenko 1976: Fig. 42, B8]. The technological elements like smoothing the inner surface and using the grog inclusions occurred in the Polissya settlements of the Dnieper Donets culture, as well as in the Corded Ware Polissya type (see, for example: Kryvaltsevich 2010: 217-242). The Dnieper Donets culture and monuments of the Corded Ware Polissya type were regarded as a source of the tradition to decorate the entire outer surface of the pot, from the rim to the bottom, ornamentation of the part below the inner edge of the rim and the use of short "caterpillar" marks on ceramics with the "caterpillar" pattern were most frequently found in Corded Ware Polissya type monuments [Kryvaltsevich 1999: Fig. 17:1; 22, 13-15; 26, E4; 2010]. Meanwhile, we should note that the above type of ornamentation became significantly popular in the Pripyat Polissya area mainly as a result of proliferation of traditions of the Middle Dnieper culture.

The connections with the Babyno culture circle traditions can be seen in the application of the multi-cordoned décor and round bulges [Berezanskaya 1986: Fig. 11:1; 6, 19]. The ornament, identical to the hanging down cordon edge, has been practically never observed on multi-cordoned pottery. Yet, fragments of a pot with "turned-down curls" were found in Babyno III [Bratchenko 1977:31, Fig. 5:9]. Cord ornaments with "turned-down curls" can be observed in the Corded Ware Polissya type [Kryvaltsevich 1999: Fig. 18:3]. Similar corded decorations were present on a vessel found in grave 81 of Rudnya Slyagina-Strelitsa [Artemenko 1976: Fig. 8:10].

The Borysovshchyna funerary pot represented a unique synthesis of traditions, i.e., the combination of elements of several cultures and types of monuments: (a) Babyno culture circle; (b) eastern Polissya Dnieper Donets culture; (c) monuments with Corded Ware Polissya type and, probably, the Middle Dnieper culture. Generally, the above interpretation does not contradict the cultural identification of the flint items found in the grave. The flint axe corresponds, to the largest extent, with types of weapons of the "forest Neolithic". The use of flint items made of wide flat flakes and the inclusion of them as grave goods is typical of the Middle Dnieper culture. Objects, made of fragments of polished flint tools, were often used in the "Corded Ware" period. Objects that could be functionally used as fire strikers were commonly placed in graves of the Middle Dnieper culture. In this case, an analogy can be found in the set of grave goods of grave 1 of the Khodosovichi-Moshka barrow, which included a flint fire striker [Artemenko 1964: Fig. 10:2] and accompanying tools for making a fire [Budziszewski, Tunia 2000: 128; Budziszewski, Włodarczak 2010: 60-61].

Inhumations of the Babyno culture circle were practically never made with the use of the cremation ritual. At the same time, the custom of burning the dead and burying the ashes in soil mound was quite wide-spread in the Middle Dnieper culture in the Upper Dnieper area (Rudnya Shlyagina-Strelitsa, Syabrovichi-Lipov Brod, etc.) [Artemenko 1976; Kryvaltsevich 2011b].

One should also draw attention to other specific features of the ritual used in the Borysovshchyna burial. Not only multiple fragments of cremated bones and burnt flint items were found in the pit, but also an upper part of a human skull and flint items bearing no trace of thermal action. The skull fragment and the unburnt flint items were found at the bottom of the pit. Hence, we may assume that the flint items without any trace of fire, a part of the head or the whole head of the dead man, had been placed to the bottom of the pit first and then covered with cremated bones and burnt objects, most probably, brought from the funeral pyre. The funeral pot was also placed there in the upper layer. Therefore, the burial was made with the use of the cremation rite combined with the interment of the head, i.e., with partial inhumation.

Interesting specific features can be observed in connection with the functional usage of individual grave goods. Through vertical holes in the cordon, most probably, were made in order to make it possible to hang the pot up (Fig. 9: B). An indirect proof of this can be the presence of a narrow ornamented bottom of the pot. Unusual décor, a narrow ornamented bottom and the use of pot in the hung-up position, allow making the assumption that the pot had been used for ritual purposes.

In this context, a symbolic role could have been played by the flint fire striker, which, possibly, had been used to make a ritual fire. Moreover, the body was buried with the use of the cremation rite, among others. The funeral fire burnt some of the flint and bone items (that had belonged to the dead man?). Given the above factors, it is possible that the dead man buried in Borysovshchyna had had some direct relation to performing sacral functions. Fire therefore had played a great role in the rituals that he had practiced.

In this connection, it is worth remembering some similar elements in burials of the Middle Dnieper culture found in the Upper Dnieper area. Specifically, they can be observed in grave 1 of barrow 11 of Khodosovichi-Moshka on the Dnieper near Rogachev (Gomel Region). The grave goods there contained residues of a polypore fungus and a heavily worn-out flint knife [compare: Artemenko 1964: Fig. 10:2], i.e., the objects that could have been used for lighting a fire. The same kind of fire strikers, some together with fire-making materials, were found in many other burial and household sites of the Corded Ware culture and the Early Bronze Age of Europe. Usually, heavily worn-out flint knifes on thick flakes had been used for those purposes [Budziszewski, Tunia 2000: 127-130; Budziszewski, Włodarczak 2010: 60-61].

Some common features can be traced in materials from the Borysovshchyna grave and grave 43 of a mound-less burial site of the Middle Dnieper culture of Rudnya Shlyagina-Strelitsa (Upper Dnieper area). The grave contained two minor vessels: a small wholly-ornamented pot covered with cross-like signs and a small round-bottomed vase with a lozenge ornament [Artemenko 1976: Fig. 7:4, 5]. The pottery from grave 43 – minor vessels decorated with occasional ornamental sym-

bols – had been clearly meant for ritual purposes. To an extent, this assumption can be confirmed by an interesting detail: holes had been pierced at two opposite sides under the edge of the rim of one of the vessels, which had been used to hang it up⁸. The grave also contained there heavily worn-out knife-like flint tools made of thick plate flakes [Artemenko 1976: Fig. 7:1, 2, 7].

No direct analogy to the Borysovshchyna burial has been found so far among the known Bronze Age complexes. The uniqueness of the burial is that it had been made as a result of synthesis of cultural traditions that had spread all over the eastern Polissya territory. It is worthy of note that the material and the ritual complexes of that burial contained only individual elements similar to those found in monuments of the Babyno culture circle. A more visible role in the emergence of the Borysovshchyna burial belongs to traditions genetically originating and collected with the Middle Dnieper culture and monuments of the Corded Ware Polissya type and the eastern Polissya version of the Dnieper Donets culture. The date of the burial may be identified with the help of the presence of the above cultures' elements and types of monuments, first of all, of the Babyno type. In that case, the chronology of the Borysovshchyna burial may range approximately within the end of the 1st – beginning of the 2nd quarter of the 2nd mill. BC.

Borysovshchyna can serve as an example of survival of some elements of the Dnieper Donets culture until the late stages of the Middle Dnieper and the Babyno cultures. The "forest Neolithic" component can be traced in materials from late burials of the Middle Dnieper culture at the Rudnya Shlyagina-Strelitsa burial site [Artemenko 1976]. In Borysovshchyna, parallels with the Middle Dnieper culture can also be seen in the identification of a symbolic role of some grave goods (e.g., a flint knife, a fire striker) in performing the cremation burial ritual. It is possible that the dead man buried in Borysovshchyna had been directly involved in performing ritual functions during his lifetime. The reflection of a lifetime social role and importance of the dead was an element of the funerary ritualism of the Middle Dnieper tribes [Kryvaltsevich 2006; 2007; 2011b].

7. CONCLUSION

The eastern Polissya pottery of the Babyno type, discovered in 26 monuments, can be classed into three main groups and described in terms of certain cultural syncretism, i.e., the inclusion of some elements of the Middle Dnieper culture and the Trziniec culture circle, which makes it different from the multi-corded ware

⁸ The pot is kept within the archaeological collections of the museum of the Gomel Palace and Park ensemble (Gomel) (N_{0} 13217/2A).

of the main "mother" area. The unique burial of Borysovshchyna serves as yet another example of the involvement of traditions of the Babyno culture circle in shaping the eastern Polissya monuments of the Bronze Age. Studying the pot and other grave goods from that burial, as well as of traces of the funeral ritual, has only allowed the identification of individual elements, parallels to which can be found in monuments of the Babyno culture circle. A more significant role in the emergence of the Borysovshchyna burial belongs to traditions that genetically derive from (and are linked with) the Middle Dnieper culture and monuments of the Corded Ware Polissya type and the eastern Polissya version of the Dnieper Donets culture. Possibly, the individual buried in Borysovshchyna had been directly involved in performing sacral functions.

The Babyno-type ceramic material in the territory of eastern Polissya dates back, most probably, within the range of the end of the 1st to the beginning of the 2nd quarter of the 2nd mill. BC. The dissemination of the Babyno traditions to the Gomel and Mozyr Polissya could have occurred from the south and south-east along the Dnieper and the Pripyat rivers, primarily from the Kyiv Dnieper area. The dissemination process probably took the form of the infiltration of individual groups and bearers of the Babyno culture, which had already undergone partial acculturation in the Kyiv Dnieper area, where monuments of the Malopolovetske "Babyno Horizon" occur. The infiltration to the Mozyr and Gomel Polissya was accompanied with further cultural influence by local groups that belonged to the final stage of the "Corded Ware" period, thus, enhancing the assimilation process.

The proliferation of Babyno traditions to the eastern areas of Polissya represents one of the episodes of the spread of steppe cultures onto that area. Elements from the south and south-east had been brought to the Gomel and Mozyr Polissya in the previous and subsequent periods of the pre-historic era.

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The paper offers an analysis of pottery of the Babyno culture circle, found on 26 monuments of the Mozyr and Gomel Polissya in the Upper Dnieper area and the Lower Pripyat River. The study identified three key groups of pottery, which are distinct from the main "mother" area of the Babyno culture circle and contain elements of the Middle Dnieper culture and the Trziniec culture circle. Most probably, the proliferation of the Babyno traditions to eastern Polissya took place from the Kyiv Dnieper area at the end of the 1st to the beginning of the 2nd quarter of the 2nd mill. BC. The unique inhumation in Borysovshchyna1 serves as an example of the presence of individual Babyno elements in a burial vessel. Possibly, the individual buried in Borysovshchyna had been directly involved in performing some sacral functions.

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PONTIC AND TRANSCARPATHIAN CULTURAL PATTERNS IN THE TRZCINIEC CIRCLE BETWEEN THE PROSNA AND DNIEPER

The purpose of this paper is a comprehensive study of Pontic and Transcarpathian cultural inspirations found in the societies of the Trzciniec Cultural Circle (TCC) in the area bounded by the Prosna and Dnieper rivers in the 2nd mill. BC. Generally speaking, we intend to identify a package of cultural traits and behaviour patterns within the TCC, characteristic of the populations occupying lands neighbouring on this vast communication community [Makarowicz 2010]. The connections with the steppe/forest-steppe zone are seen in the interactions with societies bordering on the TCC in the east and southeast. They involve direct or indirect inspirations which made TCC communities adopt goods made of metal, clay, amber, glass, stone and antler of a specific style or assimilate the knowledge and technology necessary to make such goods according to original models. The paper shall also attempt to interpret the nature of interactions between the TCC and its Pontic and Transcarpathian neighbours - the steppe and forest-steppe cultures and Carpathian Basin groups groupings as well as ones developing immediately east of it (Babyno, Srubna, Noua-Sabatinivka, Costiša, Otomani-Füzesabony, Mad'arovce, Tumulus, and Piliny). It also appears that some TCC rituals and material culture elements can be interpreted as reminiscences from the environment of steppe cultures from the Early and Middle Bronze Age such as Yamnaya and Catacomb cultures.





F i g. 1. Distribution of barrow cemeteries between the Samara and Orel rivers (1) and between the Dnieper and Tiasmyn rivers (2) [Kushtan 2013: Fig. 52]

1. THE HERITAGE OF THE YAMNAYA AND CATACOMB CULTURES IN THE TRZCINIEC CIRCLE

An indirect heritage of the 3rd mill. BC steppe cultures, large barrow cemeteries, often extending along watersheds and the banks of large rivers (Fig. 1), are known earlier in the forest and forest-steppe zones from the Corded Ware culture (CWC). Within the TCC they are found in all its regional versions: Trzciniec, Komarov (Fig. 2), and Sosnitsa cultures [Makarowicz 2010: Fig. 4.1].

The ritual of dismemberment originated no doubt with the funerary rites of megalithic cultures (especially the Globular Amphora culture) but it is also encountered on the steppes in the Early and Middle Bronze Age (in the Yamnaya culture -1.71%and in the Catacomb culture -3.98% of all studied cases; Litvinenko 2011, Tab. 2-3). Dismemberment is a diagnostic trait of the 'Trzciniec' funerary rites (Figs. 3 and 4).

Certain common traits can be observed in the form, rim shapes and ornamentation of vessels. In the Yamnaya culture, there were encountered vessels with a round belly and S-shaped profile (Fig. 5:1), which were also common in the Komarov culture – the southern version of the TCC (Fig. 5:2-4). Collars on Yamnaya-Catacomb pottery (Fig. 5:6) can be viewed as the precursors of a characteristic thickening of rims of Middle Dnieper culture vessels and later of the pottery of the classic TCC phase (so-called Iskovshchina type from the middle Dnieper area; Bondar 1974:174). The vessels of the Yamnaya and Catacomb cultures often bear an incised ornament (Fig. 5:5) which later became one of the major ornamentation techniques of TCC pottery in the eastern province.

A mention must be made here of the claim that fluted stone maces, recorded mainly within the TCC oecumene, have an eastern origin. Their precursors, according to Aleksander Kośko, originated from the Middle East and spread west owing to steppe populations, in particular the Catacomb culture [Kośko 2002].

2. TRZCINIEC CIRCLE AND THE BABYNO CIRCLE (FIG. 6)

Connections with the Babyno Cultural Circle (BCC; former Mnogovalikovaya culture) are visible in both funerary rite elements and pottery. In the Dnieper-Don and Dnieper-Prut cultures of the BCC, wooden grave structures are common (Fig. 7; Savva 1992: 78-81; Litvinenko 2006: 170-172; 2009: 7-8; Kushtan 2013: Fig. 58). In the Komarov culture, such features were recorded in barrow 2 at the cemetery in Ivanye, Volhynia Upland [Fig. 8:4; Sveshnikov 1968; Makarowicz 2008], in grave 48, at the cemetery in Kozarovitsi, middle Dnieper area [Fig. 8:6;



Fig. 2. Distribution of barrow cemeteries of the Trzciniec circle: 1 – Komariv; 2 – Gordiyivka. [*after* 1 – Makarowicz 2010: Fig. 4.14.B; 2 – Berezanskaja, Kločko 1998: Taf. 1]

Lisenko 1999: 72, Fig. 3], in graves 83 and 94 [Fig. 8:5; Lysenko, Lysenko Sv. 2002: 170-171, Fig. 2; 2003: 168-179, Fig. 3] at the cemetery in Malopolovetskoe, middle Dnieper area, and in barrows at the cemetery in Gordiivka [Fig. 8:1-3; Berezanskaya 1999: Fig. 2] in barrow 2/2012, in barrow group I, at the cemetery in Bukivna, on the upper Dniester [Fig. 9; Makarowicz, Lysenko, Kočkin 2013]. In both Babyno and Komarov features wooden vessels were recorded (Fig. 7:16; Fig. 9:2). The Dnieper-Don culture of the BCC practised also corpse dismemberment [1.27% of all burials; Litvinenko 2011, Tab. 3]

Particularly interesting, burials reflecting the rite of the Dnieper-Prut culture of the BCC but containing vessels analogous to the pottery of the Komarov version of the TCC. Two such features were identified in the vicinity of the villages of Porohy and Klembivka, in the area where the TCC and BCC overlapped. The burial located in barrow 3/2011 in Porohy held a vase with a protruding belly and a handle [Fig. 10:2-3; Razumov, Lysenko, Kośko 2012]. In burial 11, barrow 1/2012, in Klembivka, a two-handled vase was discovered (Fig. 10:1; excavations by A. Kośko and S.M. Razumov). It has a perfect counterpart in a vase from the TCC cemetery in Vojcechivka [Lahodovska 1948: Fig. 1: 2; Lagodovs'ka, Zakharuk 1956: Fig. 3: 5].

Peripheral BCC groups – Desna-Seym, Dnieper-Pripet and Podolia-Volhynia [Litvinienko 2009:11 ff.] – partially overlap the oecumene of the Komarov and Trzciniec cultures of the TCC. They are represented chiefly by characteristic Babyno pottery found in syncretic assemblages. Pottery shards with similar ornaments were also on the upper Dniester. Barrows 1/2010 and 2/2010-2012 of barrow group I at the cemetery in Bukivna yielded pottery which in terms of ornamentation and surface finish resembles Babyno type vessels [Makarowicz, Lysenko, Kočkin 2013]. At the current stage of research it is not possible to determine its relationship to the TCC. It cannot be ruled out, however, that early TCC patterns co-existence can also be observed in the eastern TCC oecumene, in the middle Dnieper area and in the Desna drainage basin.

In the middle Dnieper area (Kyiv-Cherkasy group), in the Malopolovetskoe settlement complex, the BCC is considered a substratum on which the TCC developed. Babyno elements penetrated into this area from the southeast and overlaid a local epi-Corded substratum. In this region, the BCC development, situated in horizon MP-I, immediately preceding horizon MP-II (Malopolovetskoe), is dated to 1800-1600 BC, hence, in parallel to early and classic Trzciniec assemblages in the west and – in the light of recent dates from the barrow cemetery in Bukivna on the upper Dniester and from Romanian Bukovina – synchronously with the early Komarov culture [Makarowicz, Lysenko, Kočkin 2013] At the cemetery in Malopolovetskoe 3, the BCC is represented by burials without any grave goods in which the dead were laid on their side in a slightly flexed position, with the head pointing west [Lysenko 1998]. At the cemetery, in pits identified as ritual, characteristic



F i g . 3 . Examples of dismemberment in the Yamnaya culture between the Prut and Dniester rivers [Agulnikov, Popovich 2010: Fig. 2]

pottery with a multi-cordon ornament is recorded and found to resemble classic 'Trzciniec' S-shaped pots with relief strips [Lysenko 2007]. Pottery with a typical multi-cordon ornament was found also on a site in Khodasivka on the Dnieper [Fig. 11:1, 2; Lysenko 2007: Fig. 6-12].

'Babyno' traits are also recorded further west of the compact range of this group (Fig. 6). They were transmitted mainly in two directions: north- and south-western. The first carried little Babyno-type materials to the south of upper Dnieper area and to the lower Pripet river. Further west, from Borysavshchyna in Belarusan Polissya, a cremation grave is known, holding a vessel in which 'Babyno' (cordons) and 'Trzciniec' traits are combined to make the local 'Sosnitsa' version (ornaments, angularity, granite temper in ceramic body; Fig. 11:3). The second resulted in the presence of the 'Babyno' component in Volhynia and Podolia [Sveshnikov 1990] and at the already mentioned cemetery in Bukivna, Ukrainian Sub-Carpathia.

At the next stage of TCC development (MP-II; 1600-1500 BC), on the forest-steppe on the middle Dnieper, from Kyiv to the upper Inhulets River, pottery of the Malopolovetskoe type (PMT) is found, which combines 'Babyno' traits (smoothed out pseudo-cordons, fine crushed stone and sand as a temper in ceramic body) with 'Trzciniec' ones [tulip-shaped vessel, broken stone in ceramic body, thickened rims; Lysenko 1998; 2007]. Being a product of a 'symbiosis', as it were, of Trzciniec and Babyno patterns in the early stages of the TCC, the PMT is characterized by large, tulip-shaped vessels, with a poorly marked profile, relatively thick walls and massive rims, frequently bearing traces of grinding. Their ceramic body has a large temper of broken crushed stone/gravel, often with chalcopyrite. The rims and bottoms of vessels are smoothed out or slightly polished, while bellies are intentionally rough-cast with thin clay (sometimes containing gravel) and ornamented for the most part with a 'multi-cordon' motif (horizontal pseudo-cordons on the neck and vertical ones on bellies) made by moving fingers over thin clay (Fig. 12). The sites on which PMT was identified were originally found on the Dnieper, in the Kyiv-Cherkasy area [Palaguta 1996; Lisenko, Kushtan 1997; Lysenko 1998a; Lysenko, Skiba 1998; Lysenko, Gaskevich 1999; Kushtan 2001; 2013: 41; Lysenko et al. 2011]. PMT sites are also recorded in the forest-steppe part of Ukraine, from the Chernivtsi Oblast [Lysenko 2012: Fig. 1:1] to the Chernihiv and Sumy Region (excavations by G.V. Zharov).

The PMT and a number of other pottery types of the eastern TCC developed no doubt under the impact of the Don-Volga culture of the Abashevo circle. The influence is seen in broad-opening fluted rims, sometimes with horizontal flutes on the inside [Fig. 13:2-3; Kuhtan 2013: Fig. 2-3]. A direct penetration of the TCC by 'Abashevo' populations was recorded on the Bilogorodka site, west of Kyiv (Fig. 13:1; excavations by E.N. Kucharska and Y.Y. Bashkatov). Abashevo pottery ornaments include broad, shallow, horizontal grooves and groups of slanting lines making them similar to the ornamentation of Trzciniec vessels. However, the Abashevo pottery differs from the latter in that it contains a temper of crushed shells.



Fig. 4. Examples of dismemberment in the Komarov culture: 1-3 – Malopolovetskoe 3, burials 28, 29, 30, 31; 4-5 – Voytsekhivka, barrow group 3, barrow 1, burial 1 (4); barrow 2, burial 4 (5) [*after* 1-3 – Lysenko 1998: Fig. 19; 4 – Lysenko, Lysenko Sv. 2012: Fig. 1; 5 – Lysenko, Lysenko Sv. 2013: 24]

Only the next stage in the TCC development on the middle Dnieper – Teklino horizon (MP-III; 1500-1400 BC) – reveals the classic traits of the West Trzciniec Sub-Circle and stronger connections to its 'Komarov' enclave [pottery, metal; Lysenko 2007: 350-354].

3. TRZCINIEC CIRCLE AND SRUBNAYA CULTURE (FIG. 14)

On the middle Dnieper, the TCC and the 'Srubnaya' circle came into contact and produced the Berezhnivka-Maivka Srubnaya culture [BMSC; Otroshchenko 2001]. The impact of this culture is seen especially in the area (chiefly specific vessel types, bone tools and the Leboikivka metallurgical tradition) but also in the Dniester drainage basin and Volhynia.

Srubnaya culture pottery in the versions of Pokrovsk-Mosolovo and Berezhnivka-Maivka is encountered in ritual-funerary assemblages within the Malopolovetskoe cemetery [Fig. 15; Lysenko 1998: Fig. 7-8; 10-11; 14-16; Lysenko, Lysenko Sv. 2002: Fig. 5-6]. The pottery is found together with the PMT (horizon MP-II; 1600-1500 BC). In particular, these are cooking pottery types I and II and serving pottery types I, IV and VI. In the horizon in question of the cemetery under discussion, finds are also made of 'Late Srubnaya' cordon pottery. On the site in question, a number of ceramic forms were unearthed: pots, footed beakers, vessels with lids; they are ornamented with motifs specific to the Maivka variety of the Srubnaya culture such as triangles, finger impressions, chevrons, incised lines, as well as rough-cast.

At the cemetery in Malopolovetskoe 3 (horizon MP-II; 1600-1500 BC), vessels were en-countered which combined the traits of the TCC and Srubnaya culture. From burial 1, assemblage 2, in which many Srubnaya culture vessels were found, two containers come: an S-profiled pot and a vase bearing a Komarov-type ornament but with the temper of fine sand, as in Srubnaya-culture vessels, and not broken flint and granite. A vase from assemblage 4, found in the context of 'Srubnaya' vessels, is decorated with a groove surmounting a 'Trzciniec' motif of groups of vertical lines, converging at the bottom at a certain angle [Lysenko 1998: Fig. 7:1, 2]. Grave 87, assemblage 5, radiocarbon dated to 1440-1250 BC, yielded a pot decorated under the rim with two rows of hatched triangles and an angular vase, the ornament of which consisted of a horizontal incised line, slanting lines and hatched triangles [Górski, Lysenko, Makarowicz 2003: Fig. 20]. Profiled vases are recorded in both the BMSC and TCC. Footed beakers, characteristic of the BMSC [Kovalova, Volkoboy 1976; Otroshchenko 2001], finding analogies in the Andronovo circle assemblages too [Berezanskaya, Gershkovich 1983], were discovered at Malopolovetskoe 3 cemetery, in assemblages 2 and 17, together with the PTM [Fig. 16:1-3; Lysenko 1998].

The stylistic patterns of the Srubnaya culture were noticed on settlement sites in the forest and forest-steppe zones of left-bank Ukraine, in particular in the drainage basins of the Desna and Seym rivers. Among these patterns are 'Srubnaya' globular vessels from Ivanivka, a geometric ornament on a mug fragment from Mezinskiy Ostriv, angular vessels, and ornaments made with a toothed stamp, as well as thick cord impressions from various 'Sosnitsa' sites. A lower portion



Fig. 5. Yamnaya-Catacomb (1; 5-6) and Trzciniec (2-4) type pottery. 1 – Pidlisivka, barrow 1 (2010), Yamnaya culture burial; 2 – Komarów, barrow 8; 3 – Gordiyivka, barrow 27; 4 – Komarów, barrow 6; 5 – Malopolovetskoe 3, feature 64; 6 – Malopolovetskoe 3, cultural layer. [*after* 1 – Razumov, Kośko, Karnaukh 2011: Fig. 1:2; 2 – Swesznikow 1967: Plate I:10; 3 – Berezanskaya, Lobay 1987: 6, Plate V:2; 4 – Swiesznikow 1967: Plate V:12; 5 – Lysenko, Lysenko Sv. 2004: Fig. 2:2]





Fig. 6. The range of (1) the Trzciniec circle [Makarowicz 2010: Fig. 1.1] and (2) Babyno circle [Berezanska, Otroshchenko 1997: Map 13]. Arrows represent impact directions

of a footed beaker, bearing a 'barbed wire' ornament characteristic of the TCC Sosnitsa culture, was recorded on site Mala Bugaivka 3, on the middle Dnieper [Fig. 16:4; Lysenko 2006]. A low footed vase comes from barrow 3, barrow group I, at the cemetery in Bukivna, in the upper Dniester drainage basin (Fig. 16:5; excavations by S. Lysenko, P. Makarowicz and I. Kochkin). Significantly, the vessel is decorated on its belly with oblique appliqué cordons, triangular in cross-section, which can be considered a vestige of the 'Babyno' style.

There is a striking similarity between the bowls/vases of the Maivka type and the analogous vessels of the Komarov culture [Lysenko 1998: Fig. 11:5; Górski, Lysenko, Makarowicz 2003: Fig. 20:1]. Some 'Srubnaya' specimens from this cemetery display traits characteristic of the Andronovo cultural circle [Berezanskaya, Gershkovich 1983]: oblique triangles, trellises [Lysenko 1998: Fig. 15:1; 16:15]. Andronovo elements can be observed also on later Komarov pottery from the middle Dnieper area [Kozarovichi, burial 43 – Fig. 13:4; Lysenko 1999: Fig. 1:2].



Fig. 7. Timber structures in Babyno cultural circle burials: 1-4 – Gubnykha, burial 3-4 (II)/10; 5-8 – Zaplavka, burial 5(I)/9; 9-12 – Mykhailykhy, burial 1/6; 13-16 – Oleksandrivka, burial 3(II)/3 [Kushtan 2013: Fig. 58]

MP-II horizon assemblages at the Malopolovetskoe cemetery and settlement Bezpalche 1 (Cherkasy Oblast, Drabiv region) contain bone tools that find analogies on the sites of the Pokrovsk-Mosolovo culture and BMSC, as well as in the Sabatinivka and Noua cultures [Pankovskiy 2005; 2010; Lysenko *et al.* 2011].

Interestingly, the connections between 'Trzciniec' and 'Srubnaya' metallurgy look unclear in the light of finds. In a double grave from barrow VIII in Netišyn, a javelin point was recorded which was stylistically foreign to the TCC tradition [Berezanska, Goško, Samoljuk 2004]. It has a good equivalent in a specimen from a hoard from Odaje-Podari, Romania; the hoard contained also a sickle adhering to the early 'Srubnaya' style [Klochko 2001].

Assemblages 5 and 17, Malopolovetskoe 3 cemetery, contained fragments of clay casting moulds [Lysenko 2013: Fig. 1: 4-6], analogies of which are known from the Mosolovo settlement [Priachin, Savrasov 1989; Priachin 1996]. Assemblage 17 held also a bronze sickle, representing the Don-Volga variety of type I Brakayevo from the Volga-Ural group [Dergachev, Bochkarev 2002: 59-86]. Another metallurgical tradition is represented by a bronze leaf-shaped knife recorded in assemblage 4 in Malopolovetskoe 3 and finding direct analogies in the hoard from Leboikivka [Klochko 1998: Fig. 11]. It is also to the Leboikivka metallurgy that a fragment of a talc-schist casting mould from the same assemblage should be related.

The Leboikivka metallurgical centre tradition, dated to 1600-1200 BC by Viktor I. Klochko, rose where the oecumene of the TCC and Srubnaya Cultural circle overlapped. The centre first rose on the middle Dnieper where most of old workshops can be found (Golovuriv, Dereviana, Zazimye, Ivankovichi and Mazepinci) which once manufactured daggers and javelin points of the Golovuriv type (one such point was found in a barrow in Kvetun, on the Desna), Kabakov-type axes and sickles, and knives, chisels, awls, etc. Gradually, the centre extended down the river and further east [Klochko 1998: 217-218, 236]. Klochko associated the Leboikivka metallurgical tradition with the societies of the Sosnitsa culture [Klochko 1994: 119, 132; 1998: 236] and in a later work with the BMSC [Klochko 1998:73].

The oldest workshops in the Leboikivka centre on the Dnieper in principle coincide with the sites on which PMT pottery was found. The area over which talc-schist casting moulds are found within this metallurgical centre coincides with the area in which cups made from analogous raw material are discovered. Three such vessels were discovered in complexes 2 and 5, horizon MP-II, Malopoloveskoe 3 cemetery, and fragments of other two were found on sites Lipovskie 1 and Chikalivka [Fig. 17; Lysenko, Kushtan 2005; Kushtan, Lisenko 2005].

According to Petrun the basic source of talc-schist in Ukraine in the Late Bronze Age (according to the chronology for this area) was the region of Kryvyi Rih – the area over which the Sabatinivka-Noua-Coslogeni complex extended [Petrun 1967: 185-194]. Additionally, a schist outcrop was exploited, located close to the Vovnigskiy cataract [Sharafutdinova 1989: 175; Nikitienko 2011: 81]. It is



F i g. 8. Timber structures in Komarov culture burials: 1 – Gordiyivka, barrow 11; 2 – barrow 23; 3 – barrow 7; 4 – Ivanye, barrow II, burial 4-5; 5 – Malopolovetskoe, burial 83; 6 – Kozarovychi, burial 49. [*after* 3 – Berezanskaya 1999: Fig. 2 ; 4 – Sveshnikov 1968; 5 – Lysenko, Lysenko Sv. 2002: Fig. 2; 6 – Lysenko 1999: Fig. 3]



Fig. 9. Bukivna, barrow group I, barrow 2/2012, feature 3 (excavations by S. Lysenko, P. Makarowicz, I. Kochkin)

from the Dnieper cataract area or the Kryvyi Rih Region that the raw material came from which the mug included in complex 2 of the Malopolovetskoe cemetery was made (expert opinion of I.S. Nikitienko). In the light of the above data, it can be presumed that the Leboikivka metallurgical centre arose in the area interspersed with the sites of the Malopolovetskoe where the Trzciniec Circle, Srubnaya Circle and Sabatinivka culture overlapped. Further expansion east of the Leboikivka metallurgical tradition must have been related to the climatic optimum of the Subboreal period as it caused a major expansion of inhabited areas in the left-bank part of the forest-steppe and northern steppe.

The connections between the Kyiv-Cherkasy group of the TCC and the Donetsk metallurgical centre continued also in the next period (horizon MP-III). The spectral analysis of Komarov bronze ornaments found in graves at the Malopolovet-skoe cemetery showed that their chemical composition resembled that of metal



Fig. 10. Babyno circle burials with Komarov type pottery: 1 – Klembivka, barrow 1 (2012), burial 11 (excavations by A. Kośko, S. Razumov); 2-3 – Porohy, barrow 3 (2011), feature 5. [Razumov, Lysenko, Kośko 2012: Fig. 1]



F i g. 11. Babyno circle pottery from Khodasivka [Lysenko 2007: Fig. 6, 7] and Borysavshchyna [Kryvaltsevich 1998: Fig. 10]



Fig. 12. Malopolovetskoe type pottery and accompanying finds from the Dnieper drainage basin, Cherkassy Oblast: 1-6 – Chervonokhyzhentsy 5; 7-14 – Chapaivka 8 [Kushtan 2013: Fig. 27]


Fig. 13. Pottery of the Don-Volga Abashevo culture: Bilohorodka (excavations by N.E. Kukharskaya, Y.Y. Bashkatov); 2-3 – Malopolovetskoe type pottery: Voloshkove 1 [Lysenko 2012: Fig. 1:1] (2), Popovychka 2 (excavations by G.W. Zharov) (3); 4 – pottery showing traits of the Andronov culture, Kozarovychi, burial 43 (excavations by S.I. Kruts)



Fig. 14. The range of (1) the Trzciniec circle [Makarowicz 2010: Fig. 1.1] and (2) Srubnaya culture [Berezanska, Otroshchenko 1997: Map 14]. Arrows represent impact directions

obtained from both Carpathian ores and 'Donetsk' ones from which BMZK good were made [Goshko *et al.* 2009: 106].

4. TRZCINIEC CIRCLE AND THE COSTIŠA CULTURE (FIG. 18)

Contacts between these two groups occurred solely in the drainage basins of the upper Dniester, Prut and Seret rivers, i.e. in Ukraine's Carpathian Foothills, part of Moldova and Romanian Moldavia. The similarity of Costiša pottery to some vessels of the TCC Komarov enclave in terms of their morphology and ornamentation is striking (Fig. 19). Some archaeologists consider the Costiša culture one of the



Fig. 15. Malopolovetskoe 3, complex 2. Vessels found together with Malopolovetskoe type pottery

southern groups of the TCC [Lysenko 2012a], while Romanian researchers have a problem with the taxonomic assignment of materials from some sites. They are usually classed as Komarov-Costiša or Komarov-Costiša-Biały Potok [Bilyi Potik] complex [Romaniszyn 2013].



Fig. 16. Mugs and vases on a solid foot from Komarov and Trzciniec culture sites: 1-2 – Malopolovetskoe 3, complex 2; 3 – Malopolovetskoe 3, complex 17; 4 – Mala Buhaivka 3; 5 – Bukivna, barrow group 1, barrow 3 (2012) (excavations by S. Lysenko, P. Makarowicz, I. Kochkin); 6 – Samborzec. [*after* 4 – Lysenko 2006; 6 – Gardawski 1959: Plate XXXV:1]

The impact of the Costiša culture on the TCC Komarov enclave is noticeable among others on barrow cemeteries where similar vessel assemblages reoccur: vases and two-handled amphorae (the handles often protrude above the rim) or jars ornamented with the motif of hatched triangles or horizontal incised lines. Such specimens were recorded in Komarów, barrows 28, 33 and 46 [Sulimirski 1968:



Fig. 17. Talc schist beakers: 1-2 – Malopolovetskoe 3, complex 5; 3 – Malopolovetske 3, complex 2; 4 – Chykalivka; 5 – Lypivske [Kushtan, Lysenko 2005: Fig. 2]

Plate 17: 13], Okniany, barrow II [Swiesznikow 1967: Tab. III: 14, VI: 11, XIII: 5; Sulimirski 1968: Plate 17: 11] and Bukówna, barrow IV [Rogozińska 1959: Tab. III: 5, 6; VII: 2, Tab. IX: 4-6]. Besides barrow cemeteries, Costiša culture patterns, especially ornamentation motifs, are found also in settlement materials, e.g. in Kostjaniets, Nezvisko, Vorosylivka, Babyno, and Ovechiy Yarok [Swiesznikow 1967; Sveshnikov 1990]. Vessels exhibiting such traits are found especially in the



F i g . 18. The range of (1) the Trzciniec circle [Makarowicz 2010: Fig. 1.1] and (2) Costiša culture [Klochko 2001: Fig. 78, Munteanu: Fig. 2]. Arrow represent impact directions

Biały Potok group of the TCC [Kostrzewski 1928: Figs. 1, 6, 7] and related assemblages from Moldavia and northern Romania [Vulpe 1961; Florescu 1964; 1970; Krušelnićka 1985; 1999; Dimitroaia 2000; Coirvuc, Dumitroaia (Eds) 2001; Niculică 2004-2005; Dascălu 2007; Munteanu 2010].

5. TRZCINIEC CIRCLE AND THE NOUA-SABATINIVKA COMPLEX (FIG. 20)

In the second half of the 2nd mill. BC, a strong impact coming from the Noua and Sabatinivka cultures, which border on the TCC in the south, is seen in a num-



F i g. 19. Costiša culture vessels: 1-3 – photo Covruc, Dumitroaia 2001: Fig. 22, 23 and Komarov culture vessels: 4-6 – photo J. Romaniszyn, P. Makarowicz and the Archaeological Museum archives in Poznań

ber of metal goods and vessel ceramics from right-bank Ukraine (chiefly the upper Dniester drainage basin), Volhynia and the middle Dnieper area.

The impact of the Noua culture on the Komarov enclave of the TCC is usually associated with the spread of two-handled vases in the latter. Now, we know of over

20 such vessels in the assemblages belonging to the various groups of the Komarov culture. The vessel from the 'Babyno' burial in Klembivka mentioned earlier shows that such pottery appeared quite early on the right-bank forest-steppe. The same is true for mugs/cups with a single handle occurring within the Komarov, Noua and Sabatinivka cultures [Savva 1992: 38: Fig. 15-17; Gershkovich 1997: 133, 135, Fig. 4:11-14; Savva 1998: Abb.14; 23, Abb. 5]. Igor K. Sveshnikov distinguished two types of cups in the Komarov culture. In the first, he included specimens without ornaments or ornamented with incised lines while the second type was to comprise cups ornamented with circular protrusions and flutes. In his opinion, the second type could have been a borrowing from the south in the Komarov culture while the first type finds many analogies in the Corded Ware culture in the Carpathian Foothills, Volhynia, southern Poland and Slovakia [Sveshnikov 1976: 104, 108, Fig. 4-5].

More two-way inspirations are observed in the relations between the TCC and the Noua culture, occupying roughly the northeast of the Carpathian Basin and the drainage basins of the upper and middle Prut and Seret rivers, and the middle Dniester. Its traits are visible in the pottery of the younger stage of the Komarov culture in the Carpathian Foothills, Podolia and Volhynia. They are also readily observable in the Lublin and Rzeszów areas, but in a later chronological context.

Coming from Noua culture pottery workshops, very clear stylistic models such as two-handled vases and - less often - mugs/cups and jars with handles are known from 'Komarov' mound-covered graves in the Carpathian Foothills and Podolia, for instance, in barrows 11 and 33 on the eponymous necropolis in Komarov [Fig. 21:1-3; Sulimirski 1968: Fig. 30: 1; Plate 21: 14, 16], barrows in Kulczyce Szlacheckie [Sulimirski 1968: Plate 22: 2 & 4], barrow V in Krasów [Sulimirski 1968: Fig. 30: 8], barrow II in Korytne [Sulimirski 1968: Plate 23: 2], barrow II in Okniany (Fig. 21:4) and barrow in Dubno (Fig. 21:5). A number of Noua culture pottery traits were recorded on 'Komarov' vessels from the Volhynia Upland: Kustovce [Kostrzewski 1928a: Fig. 2: 1, 2], Ivanye, barrow I and II [Svešnikov 1968: Fig. 1: 9; 4: 1, 8; for a broader account see Makarowicz 2008], Netishyn, barrow 1 [Berezanska, Samoljuk, Taras 2003: Fig. 5: 2, 4, 7], Dorogoshcha, barrow 2, grave 1 and 2 [Vinokur, Gucal, Magiev 1998: 438ff, Fig. 3: 1-5], Vojcechivka, barrows 1 and 9, burials 3 and 4 [Lagodovs'ka 1948: 63, Fig. 1: 2; Lagodovs'ka, Zacharuk 1956: Fig. 3: 5]. Vessels with Noua morphology and ornamentation are recorded in the materials of the Biały Potok enclave the TCC, e.g. in Beremiany, grave 3 [Sulimirski 1968: Fig. 32: 3] and Podgórzany [Sulimirski 1968: Plate 22: 8], as well as in the settlement on Moldavia Plateau between the Prut and Dniester rivers, in Kotjalia (Kotelnia), sites La chyrton and La gradine [Dergachev, Savva 1985: Fig. I; Dergachev 1986: Fig. 39: 12, 14,15, 18, 19]. In the settlement in Magala, one of many recurrent stratigraphic arrangements was exposed in which the Noua culture stratum overlies the materials of the 'Komarov' version of the TCC [Smirnova 1976].

In terms of currently prevailing Komarov culture periodizations, Noua elements appear in its phases III and IV according to T. Sulimirski [1968] and in phase II according to Svešnikov [Swiesznikow 1967], while their absolute chronology points to the middle of the 2nd mill. BC. Curiously enough, a similar process is witnessed in Moldawia and Bukovina, Romania [Dascălu 2007; Munteanu 2010]. At barrow cemeteries in Costana, Prajeni and Adacanta (excavation of B.P. Niculica), discoveries are made of two-handled vases and mugs manufactured following the style of the Noua culture.

In the western zone of the Trzciniec area, Noua culture elements were identified relatively early and discussed several times in a broader context [Czopek 1996: 38; 2003: 217-219; Taras 2007: 187ff, Przybyła 2009: 63]. These are very characteristic two-handled vases with knobs, which sometimes are seal-shaped. They are known from several sites located in the oecumene of the Tarnobrzeg Lusatian culture [Fig. 22:1-5; Taras 2007: Fig. 7]. Two such vases are particularly interesting: one was discovered in an inhumation grave in Paluchy [Lewandowski 1978: Fig. 10], the other in a cremation pit grave in Grodzisko Dolne [Czopek 1996: Fig. 14]. In the same area, similar vessels are known from the cemetery in Lipnik [Blajer 2000: Fig. 8:d] and from Przemyśl-Nehrybka [Lewandowski 1978:149]. Similar specimens or their fragments are also known from the western frontier of the Tarnobrzeg group [Piaseczno and Machów; Krauss 1977: 40, Tab. 6:27], as well as from beyond its range: the Volhynia Upland [Podlodów, site 2; Niedźwiedź, Taras 2006: 95-96, 103-104, Fig 5:1] and the vicinity of Kraków [Przybyła 2009:63]. Sylwester Czopek believes that the vessels in terms of their morphology show affinities with the Noua culture materials, whereas their ornamentation resembles the Tarnobrzeg patterns of the Lusatian culture. The dating of these artefacts should in principle be limited to phase A1 of the Hallstatt period [Czopek 2003: 219]. A fact is stressed that the style in question could have penetrated into Poland's present-day territory through the agency of the Komarov culture [Czopek 1996: 38; Dabrowski 2009: 35] and been one of the elements making the San drainage basin part of multilateral cultural ties, covering the drainage basin of the upper and middle Tisa, Podolia and Volhynia as well [Przybyła 2009:64].

Characteristic of the Noua-Sabatinivka complex, infrequent in the Wietenberg, Monteoru and Coslogeni cultures, pins with rhomboid heads are recorded in TCC graves in Komarov, barrow 6, Bukivna, barrows 1/2010 and 3/2012 on the upper Dniester [Makarowicz, Lysenko, Kočkin 2013] or in Gulay Gorod and Malopolovetskoe 3 [Lysenko 1998] on the middle Dnieper. Most of them are encountered along the eastern edges of the Carpathians Romanian Lowland, Moldavian Upland [Dascălu 2007; Munteanu 2010] and in the steppe portion of southern Ukraine – on the Black Sea Lowland [Makarowicz 2010]. The diverse varieties of this pin are found in the inventories of the Early Bronze cultures of Central and Eastern Europe.

Specific to the Noua tradition too, the Werzennadel comes from the mentioned barrow in Ivanye [Sveshnikov 1968; Lysenko Sv. 2006: 6]. Such specimens were made of bronze and bone, and the largest number of analogies come from the Great Hungarian Plain, Transylvanian Upland, Moldavian Upland and Podolian Upland,



Fig. 20. The range of (1) the Trzciniec circle [Makarowicz 2010: Fig. 1.1], (2) Noua culture, and (3) Sabatinivka culture [Berezanska, Otroshchenko 1997: Map 14]. Arrows represent impact directions

for instance Ghindeşti, Rîşeşti, Cluj, site 'Strada Banatului', graves: 13, 18, Dealu Morii, Nyirkarász-Gyalaháza, Bohemia, and Magala [Kaiser 1997; Makarowicz 2008]. Radiocarbon dates from grave 72 in Malopolovetskoe 3 and barrows 1/2010 and 3/2012 in Bukivna permit to establish the chronology of the pins in Ukraine at 1700-1500 BC [Górski, Lysenko, Makarowicz 2003; Makarowicz, Lysenko, Kočkin 2013].

The impact of the Noua culture may be behind the emergence of ritual ash piles in the drainage basin of the Horyn River – a major enclave of the TCC. Examples of such features come from the younger development phase of the cemetery in Netishyn [Berezenska, Goško, Samoljuk 2004].

Less clear, the relations between the TCC and the Sabatinivka are illustrated in principle only by bronze objects, chiefly weapons. One of such objects is the celebrated dagger from Ślipcze, on the upper Bug. A similar specimen recorded in



Fig. 21. Komarov vessels showing Noua culture traits (1-3 – Komarów, barrow 33; 4 – Okniany, barrow II; 5 – Dubno [*after* Sulimirski 1968; photos 1-4 – Makarowicz]

Daumyany (Cuconeşti Vechi) [Fig. 22:6, 7; Taras 2007: Fig. 6], Moldavia, is alternatively associated with the Babyno culture by Savva [1992]. The impact of the Noua-Sabatinovka complex on the early Lusatian culture is responsible, according to Bukowski [1976], for the later daggers of the Sosnowa Maza type found in Przemyśl, Jarosław and Rożubowice [Taras 2007]. In the context of a Sabatinovka stylistic impact (next to the patterns of Transcarpathian and Mycenaean cultures), researchers consider a prestigious dagger from a barrow-covered grave in Ivanye, barrow 2, Volhznia. In this case, chief attention is drawn to the button at the end of its handle [Makarowicz 2008].

The Noua-Sabatinivka complex (Noua-Sabatinivka-Coslogeni) is associated with Krasnyi Mayak metallurgy [Ingul-Krasnyi-Mayak metallurgic centre according to Chernykh 1976]. The sites related to the metallurgy (workshops and hoards) are found on the right bank of the middle Dnieper and also on the lower Dnieper, hence already beyond the TCC oecumene. A special trait of the western regions of the Sabatinivka culture is the presence of objects following the Danube-Transylvania style, chiefly weapons: knobbed shaft-hole axes, javelin points, concave-sleeve axes [Klochko 1994: 119; 2006: 188-191; Terenozhkin 1961: 122-126, 133-134, 138-140]. Krasnyi Mayak inventories occasionally contain casting chalk-schist moulds, various types of sickles, pins and bracelets as well as adzes



Fig. 22. The vessels of the Tarnobrzeg Lusatian culture showing Noua culture traits (1-5). Daggers from Ślipcz (6) and Daumiany (7) [Taras 2007: Fig. 6, 7]

and chisels. In the eastern (left-bank) part of the middle Dnieper area, there were also syncretic assemblages distinguished that combined sets of objects characteristic of Sabatinivka and Leboikivka metallurgical traditions [Klochko 1994:119].

The presence of casting moulds and metal objects on 'Trzciniec' sites on the middle Dnieper may result from barter (exchange) contacts. On the other hand, in spite of the fact that the origins of the two metallurgical traditions seem foreign – related to the neighbouring cultural units – one should not reject the idea that the impact led to the transfer of knowledge and the acceptance of patterns coming from these metallurgical centres in the TCC environment.

6. TRZCINIEC CIRCLE AND THE CULTURES OF THE CARPATHIAN BASIN AND VICINITY (FIG. 23)

Crucial for the development of the TCC, contacts with Transcarpathian groups (Carpathian Basin and its immediate surroundings) resulted in the presence of prestige objects of bronze, gold, amber, glass and antler, as well as pottery in the lands occupied by TCC communities. The style of these objects resembles that of goods attributed to the Otomani-Füzesabony, Mad'arovce, Tumulus and Piliny cultures (inspirations coming from the Costiša and Noua cultures have been described earlier). Examples of such interactions were discussed already [e.g. Górski 2003; Makarowicz 1999; 2009; 2010], hence in this paper only a representative selection shall be given.

Within the TCC range, in both the drainage basins of the Baltic and Black seas, there appear varied vessels, finding analogies mainly in the Otomani-Füzesabony and Mad'arovce cultures. Other objects include bronze and gold goods, bone cheekpieces, amber and glass beads, stone knives (Krummesser) and clay models of wagon wheels. Such artefacts are found in hoards, graves and settlements. The presence of such objects coincides with the rise of stable Otomani-Füzesabony settlement, including fortified settlements, in Sub-Carpathia [Gancarski 2002; 2011 Przybyła, Skoneczna 2012]. Dating to the same period, Baltic amber finds are encountered south of the Carpathians [Makarowicz 2010: Fig. 6.1].

The cultural relations between 'Trzciniec' and Transcarpathian communities were described in detail, as was the set of 'southern' traits, for the west of the TCC oecumene. The conclusions are applicable to some extent to its eastern portion.

To identify Transcarpathian traits on pottery is not always easy. In the territory occupied by the TCC western branch, there are vessels that find analogies in the south and 'Trzciniec' ones in which motifs diagnostic of the Otomani-Füzesabony culture were strongly transformed. This is the case of knobs encircled with broad



Fig. 23. The range of (1) the Trzciniec circle and (2) the Otomani-Füzesabony culture [Makarowicz 2012: Fig. 1]. Arrows represent impact directions

grooves [Polesie style; Górski, Makarowicz, Wawrusiewicz 2011: 60-64, Fig. 232a, 232b; Górski 2012]. Several independent mappings of such finds in the present-day territory of Poland brought similar results [Makarowicz 1999: Fig. 1; Górski 2003: Fig. 4, 5, 11; Dąbrowski 2004: Karte 8]. It is widely accepted that the following have southern provenance: jars, often footed, bearing ornaments of vertical flutes or 'drooping' knobs (less frequently these are amphorae) of the Otomani-Füzesabony culture or later units descending from it, long-necked jars, finding analogies in the milieu of the Mad'arovce culture as well as footed vases or beakers whose cultural provenance is unclear but not doubt southern. The first and third groups of vessels are also represented on sites in Ukraine, mainly Podolia and Volhynia; the third is also found, albeit very rarely, on the middle Dnieper.

Southern provenance is shared by a vast majority of bronze objects known from the drainage basins of the Vistula and Warta rivers. They are products of the Otomani-Füzesabony culture and later Piliny culture metallurgy. Only late-



Fig. 24. Rosiejów, eastern barrow, grave 19 [Górski 1994: Plate IV:17, 18]



Fig. 25. Żerniki Górne, site 1. A deposit of two vessels from underneath a barrow mound [Kempisty 1978: 218: Fig. 260:1, 2]

Trzciniec goods, exhibiting traits of local production, followed the stylistic patterns of the Tumulus culture. In the context of the intercultural relationships, an interesting case study is western Małopolska. The area is known for stable and dense TCC settlement [Górski 2003: Figs. 6, 7] and widespread southern elements. In the rest of the TCC oecumene, only few relevant artefacts were found. However, there are enclaves with the artefacts of foreign, southern, provenance. One of them is the area between the Warta and Prosna rivers, and Kujawy [Makarowicz 1999, Fig 1; Górski 2003: Figs. 4, 5, 11; Dąbrowski 2004: Karte 8]. Moreover, a cluster of sites displaying southern traits is observable along the Vistula, which suggests a communication artery.

In western Małopolska, relevant traits not only co-occur with TCC materials [Górski 1994: Tab. IV: 17, 18; Górski, Wróbel 2000: Fig. 7], but also form autonomous settlement [Górski 1998] and funerary [Górski, Jarosz 2006: Fig. 16:1-9] contexts. These inspirations come from various cultures and directions, which can be seen in the references to Füzesabony and Mad'arovce styles.

There are relatively many examples of features which, next to Trzciniec pottery, held some foreign, southern elements. The following can be named: the inventory of grave 19 from a barrow in Rosiejów [Fig. 24; Górski 1994: Tab. IV:17, 18], the inventory of grave 108 in Kraków-Nowa Huta-Cło [Górski, Wróbel 2000: Fig. 7] or a deposit of two vessels from a barrow in Żerniki Górne [Fig. 25; Kempisty 1978: 218, Fig. 260:1, 2]. There are many cases of two groups of materials co-occurring in settlements [e.g. Mysławczyce, feature 29; Dobrzańska, Rydzewski 1992; Kraków-Nowa Huta-Mogiła, site 55, feature 228 ; Rachwaniec 1985: Tab. XVII, XVIII: 1]. In each of these features, typical Trzciniec vessels – S-shaped pots with a thickened rim and decorated with relief strips or vases with horizontal flutes – are accompanied by specimens with a knob ornament manufactured in the style of Otomani-Füzesabony culture.



Fig. 26. Gabułtów. Barrow-grave goods [Górski, Jarosz 2006: Fig. 16:1-9]



Fig. 27. Żerniki Górne, site 1. Part of grave goods from grave 69 [Kempisty 1978: Fig. 228, 229]

Many graves yielded only well-preserved containers, finding analogies usually in the milieu of the Otomani-Füzesabony culture (jars with the ornament of encircled knobs) and the Mad'arovce culture (long-necked jars, usually footed). In this context, one can name graves in Gabułtów [Fig. 26; Górski, Jarosz 2006: Fig. 16:1-9], Iwanowice, grave 26/64 [Gajewski 1969: Tab. 133/1, 2], Kraków-Nowa-Huta-Pleszów, site 17 [Górski 1995] and some burials from the cemetery in Żerniki Górne, e.g. grave 69 [Kempisty 1978: Fig. 225-232], grave 123a [Włodarczak 1998: Fig. 7-8]. While discussing this group of materials, one should mention a deposit of three vessels discovered in the ceiling portion of grave 71 in the last-mentioned cemetery [Kempisty 1978: 86, 188, Fig. 235:1, 6, 13] and, believed to be entirely an import, a bronze hoard from Stawiszyce [Dabrowski, Okuliczowa 1962]. A few settlement features can be indicated, too, in the fills of which pottery was found lacking any traits typical of the TCC or at least incidental to this taxon. Above all, they include pits 201 and A47, site 55, Kraków-Nowa-Huta-Mogiła [Górski 1998: Figs. 3, 5, 6]. Outside western Małopolska, there are no compact assemblages which would include only pottery with southern characteristics. In this context, materials from two barrows in central Poland appear very interesting [Łubna, barrow 23 and Strugi, barrow 2; Kłosińska 1997: Tab. LI, LII, LXXVI]. No well-preserved vessel found in any of the two features has any traits typical of the TCC.

A peculiarity of western Małopolska is grave assemblages in which vessels characteristic of various southern cultures co-occur. This is seen best in the grave

goods from grave 69 in Żerniki Górne [Fig. 27; Kempisty 1978: Fig. 225-232]. A knob-decorated jar with its lower belly characteristically undercut occurred in this grave with a long-necked jar. Analogies to the former are known chiefly from the Otomani-Füzesabony culture, while the latter is typical of the Mad'arovce culture. A similar co-occurrence of traits of various cultures is observed in the settlement features in Nowa Huta-Mogiła referred to above.

The impact of Transcarpathian cultures was recorded also in the east of the TCC. Besides metals – bronze goods (twisted pins, bracelets, armlets, pendants with spiral ends and few gold objects (ear wraps, pendants)) manufactured following the style of the Otomani-Füzesabony culture and occurring mostly in barrows (Bukivna and Komarov in the upper Dniester drainage basin) – we see pottery-making patterns there which are popular in the Carpathian Basin [Makarowicz 2008; 2009; 2010; Lysenko, Lysenko Sv. 2009; Makarowicz, Lysenko, Kočkin 2013]. The pottery style traits of the Otomani-Füzesabony culture within 'Komarov' assemblages are not as many in the area under discussion as in the western province, especially on the Małopolska Upland. They occur mostly in Ukrainian Sub-Carpathia and on the upper Dniester, less frequently on the Podolia and Volhynia uplands. In turn, between the Seret and upper Dniester rivers (TCC Komarov variety), in dispersion also on the Podolia, Volhynia and Dnieper uplands, there are found – discussed earlier – the pottery style traits of the Costiša and Noua cultures.

The style of the late Otomani-Füzesabony culture may be discerned on jars, mugs and vases bearing a knobbed and spiral-knobbed ornament and found in a number of barrow cemeteries in the upper Dniester basin. Such artefacts were recorded in Komarov, barrows 8, 21 and 48 [Swiesznikow 1967: Tab. I: 7; Sulimirski 1968: Fig. 30:9; Plate 16:4, 10, 14; 19:4], Bukówna, barrows I, IV and VI [Swiesznikow 1967: Tab. VIII: 10; Sulimirski 1968: Plate 19:1, 5, 6, 7], Stopczatów [Swiesznikow 1967: Tab. IX: 5; Sulimirski 1968; Plate 19:2, 3], Wolica, barrow IV [Swiesznikow 1967: Tab. IX: 10, 16] and Ditinichi on the upper Styr River [Swiesznikow 1967: Tab. XII: 5]. A vase with a spiral-knobbed ornament was recorded also in Marochna between the upper Stokhid and Veselukha rivers - right tributaries of the Pripet [Volhynia Lowland; Kryvalcevič, Kalečyc 2006: Fig. 3:17], as well as in grave 1, assemblage 2, cemetery in Malopolovetskoe 3 [Lysenko 1998: Fig. 7:2]. In addition, on the upper Dniester, for instance in Wolica, barrow IV [Swiesznikow 1967: Tab. IX:11], jars showing southern traits are recorded, ornamented with vertical flutes or vertical and horizontal incised motifs, and pointing to connections with specimens recovered in western Małopolska. Relatively frequent there, vases, mugs and jars bear broad, often oblique flutes. They were discovered, for instance, in Komarov, barrows 11, 45 and 48 [Swiesznikow 1967; Tab. II: 12, III:2; Sulimirski 1968: Plate 17:1, 2, 6], Sarniki, barrow IV [Swiesznikow 1967: Tab. VII: 11], and Bukówna, barrow IV [Swiesznikow 1967: Tab. VIII: 9; Sulimirski 1968: Plate 19:14].

Otomani-Füzesabony-style bronze goods (pins and bracelets) are found in the cemetery in Malopolovetskoe 3, already much referred to, on the middle Dnieper. They are recorded in horizon MP-III – Teklino (1500-1400 BC) in the context of elite burials [Lysenko 1998; 2007].

In the west of the TCC oecumene, goods were recorded that are believed to be local imitations of Tumulus culture patterns. A strong impact coming from the Tumulus circle largely determined the style of 'Trzciniec' bronze artefacts between the Prosna and Vistula rivers and further east as well. Such artefacts are encountered in both hoards and as grave goods. Most stimuli related to the cultural environment under discussion come in principle from Silesia and Wielkopolska, less often from Pomerania and beyond the Carpathians [Dąbrowski 1977: 208]. The cultural tradition in question is associated with armlets with spiral disks from the hoard in Dratów [Gardawski, Wesołowski 1956] and armlets with a 'wolf's teeth' ornament from the hoard in Piastów [Dąbrowski 1977; Blajer 1998: 338ff.]. To the local bronze manufacturing following the Tumulus culture style, especially on the Wielkopolska-Kujawy Lowland and in the borderland between the Małopolska Upland and Mazovia Lowland, may testify the special traits of some bronze goods found in the area in question [Blajer 1998:339, 342].

Next to the examples given earlier, 'Tumulus' connections are shown by two pins from grave 11/64 in Iwanowice, site Góra Klin, with perforated and bent shafts and disk-like and semicircular heads of the Sudoměřice and Leobensdorf varieties [Makarowicz 2010: Fig. 3.18:18, 19]. Such pins are found in Tumulus culture inventories in Silesia, the Carpathian Basin and in Germany [Gedl 1975: 17; David 2002: Taf. 323:3; 327:7; 333:1]. It is in the Tumulus inventories that one should look for the prototypes of richly ornamented pins from graves in Wolica Nowa, site 1, and a pin and a bracelet from a collective grave in Gustorzyn, site 1, Kujawy [Makarowicz 2010: Fig. 3.17:12; Grygiel 1987: Fig. 9:1, 2 and Fig. 13; Blajer 1998: 338]. Many of goods of this provenance were deposited in graves from the cemetery in Borek, site 1, between the Prosna and Warta rivers, where 'Tumulus' metals accompany the dead buried according to the 'Trzciniec' rules [Ziabka 1987]. Tumulus culture patterns are discernible in the style of bronze goods from hoards. These are, for instance, bracelets, armlets with spirals, pins and a javelin point [Makarowicz 2010: Fig. 3.19:10] from Żyrardów, Mazovia Lowland, or objects from the hoard in Niechmirów on the middle Warta River [Blajer 1998: 340]. 'Tumulus' impact is also noticed on the Lublin Upland [Taras 2007: 260]. It is in this style that spiral armlets had been made which were found in the collective grave in Kosin [Chomentowska 1964] or objects included in the Dratów hoard mentioned earlier.

7. TRZCINIEC CIRCLE AND OTHER CULTURAL GROUPS – ROUTES AND MECHANISMS OF CONTACTS

It appears that the TCC owed its stability chiefly to the movement of people, circulation of ideas and exchange of goods along two directions: south – north and east – west. They tied together 'Trzciniec' settlement centres to the Carpathian Basin and regional centres on right-bank Ukraine to upland and lowland enclaves in the west. An important role in maintaining these ties was played by long- and short-distance transit routes along which the societies under discussion communicated. The contacts are borne out by the traits of southern and eastern provenance (for instance, stylistic patterns of bronze, flint/stone and clay – vessel ceramics – goods) but also some settlement-economic patterns and types of social behaviour.

Hence, it can be justifiably believed that the impact of cultures from the Carpathian Basin and its surroundings penetrated western Małopolska along two routes. From the areas occupied by the Otomani-Füzesabony cultures, the impact must have followed the valleys of the Dunajec and Wisłoka rivers [Furmánek, Veliačik, Vladár 1991: 155ff; Makarowicz 1999: Fig. 1], while from the home area of the Mad'arovce culture, it reached western Małopolska through the Moravian Gate [Górski 2003: 128; Dąbrowski 2004: 119]. Further north, southern patterns were transmitted along routes following the Vistula or continuing towards the Warta River and Kujawy.

In turn, the emergence of Transcarpathian patterns on the uplands of western Ukraine may be explained by the transmission of cultural patterns (ideas, skills or technologies) and the movement of small groups of people from the Carpathian Basin along the valleys of the right tributaries of the Tisa (Uzh, Latavitsa, Borzhava, Rika rivers), across Carpathian passes towards the right tributaries of the Dniester (Stryi, Svich, Limnitsa, Lukva, Bystrytsia) and further north and east along the valleys of the Styr, Horyn and Sluch rivers as far as settlement clusters in Volhynia, Polissya and on the Dnieper Upland.

The second category of routes along which cultural patterns were transmitted east-west in the Baltic-Pontic area comprised overland communication trails, avoiding river valleys and following watersheds; they were already discussed elsewhere. It may be presumed that their individual sections were controlled by local 'Trzciniec' elites, who profited from serving as intermediaries or taking care that certain crucial sections stayed passable. The mechanisms of exchange along the east-west axis between the TCC groups and Pontic zone communities have already been discussed in detail [Makarowicz 2009; 2010; 2012], hence here we shall largely focus on north-south relations between the TCC and the Carpathian Basin cultures.

The relations between the 'southern' and 'northern' cultural groups are described best, as it seems, by the world-systems theory [Wallerstein 1974; Braudel 1992:12-56], which helps anticipate the model of interactions between the 'civilized' world (centre) and peripheries (less developed territories). The question, in the context relevant to us here, has been discussed recently [Górski, Makarowicz 2007; Makarowicz 2009; 2010]. In the situation at hand, the central area would be the oecumenes of the Otomani-Füzesabony and Mad'arovce cultures also north of the Carpathians. The peripheries would comprise mainly western Małopolska and the upper Dniester drainage basin where TCC settlement was stable. The rest of its range is a marginal zone interspersed with settlement centres where southern traits are more conspicuous (Polish Lowland, Podolia and Volhynia uplands, middle Dnieper drainage basin).

The roles of these zones varied. Otomani-Füzesabony communities no doubt initiated and organized exchange routes, connecting the south with loess soils around today's Kraków. Further north, 'people of the route' must have been TCC representatives [Górski, Makarowicz 2007; Makarowicz 2009, 2010]. Within an extensive exchange network, areas conveniently located along the trail from the Baltic coast to a territory occupied by the communities in question grew in importance [Dąbrowski 2004:123]. These may have been Kujawy, mentioned earlier, the area on the middle Warta-Prosna rivers, western Małopolska, and Podolia and Volhynia uplands in Ukraine all of which could have served as stage zones along the route. These areas played a special role in the system of long-distance exchange by supplying raw materials to the centre and importing readymade goods. Imported metal goods and objects made of other materials had solely a prestige function. They could have been monopolized by 'peripheral' elites and used to legitimize their authority. The marginal zone had a minor part only in this structure and the exchange system did not have a significant impact on the way it functioned.

An important question concerns the presence of local elites that could organize and manage the distribution of amber and bronze. Generally speaking, TCC communities were rather moderately ranked. Prestige goods of bronze, gold, amber and glass were rare and 'exotic' [Makarowicz 2003; 2009; 2010]. The study of the situation in western Małopolska in the classic phase of the TCC points to slightly different conclusions than those for the whole Trzciniec circle. Three groups of burials can be distinguished in this region. The first group comprises graves without any artefacts displaying Transcarpathian traits. Grave goods in such graves include 'local' TCC objects. The second group is made up of burials containing mix-trait pottery. Next to TCC pottery, graves in this group contain vessels, finding analogies in the 'southern' style. Finally, the third group consists of graves containing only objects of foreign provenance and lacking any objects typical of the local cultural environment [Górski 2012]. These are not only vessels but also prestige objects (mostly ornaments) of bronze, glass and amber, making burials in this group by far the richest in the area in question. They stand out in terms of the kind and quality of grave goods, betraying foreign origin. Whereas, the funerary ritual is typical of the local TCC communities. All the grave groups are encountered in the same cemeteries (Iwanowice, Gabułtów and Żerniki Górne, western Małopolska). The differences in grave goods among the grave groups are not a result of different chronologies. Collective inhumation graves are commonly believed to be the resting places of mem-bers of real units of social organization – families or lineages [Makarowicz 2003; 2010].

Keeping in mind, the diverse reservations to the simple representation of a social structure in a funerary rite [Kadrow 1995: 98-99], it can be accepted that grave goods do reflect to some extent the original status, wealth, role and prestige in the world of the living [Wason 1994; Parker Pearson 1999; Vandkilde 1999; Makarowicz 2010]. In our specific case we deal with the accumulation of 'exotic' and prestige objects in selected collective graves. They stand in a clear contrast to the analogous – in terms of the funerary rite – burials with meagre grave goods. These facts may support the hypothesis that in the time of the TCC, in western Małopolska and possibly also in the upper Dniester drainage basin, Podolia and Volhynia, people buried in mound-covered graves, local elites emerged (family or lineage ones) who gained control over the exchange with populations living across the Carpathians [Makarowicz 2009; 2010]. One of the manifestations legitimizing the domination by such groups is reflected in rich grave goods [Górski 2012].

The situation on TCC settlements in the Małopolska enclave resembles that in cemeteries. In some features, only pottery with southern traits was found or one with very few 'Trzciniec' vessels [Górski 1999]. An inescapable conclusion comes mind that the inhabitants of farmsteads using features with such pottery used a different set of vessels and did not follow the 'Trzciniec convention' in making them. The differences between the compared 'Trzciniec' (local) and 'southern' (foreign) inventories are so large as to make one think that the makers of Transcarpathian-trait vessels had different typological and stylistic patterns imprinted on their minds. On the thoroughly excavated settlement in Kraków-Nowa Huta-Mogiła, it was observed that features with the discussed characteristics did not group within the settlement but were clearly part and parcel of regular village structures. The available data suggest that the settlement was inhabited, next to the autochthonous population, by families (or only potters – women, no doubt), who had come from outside and had not originated with the 'Trzciniec' environment. This situation could be explained by adopting a hypothesis about the exchange of women among the populations inhabiting western Małopolska (especially the vicinity of today's Kraków), the Carpathians and lands south of the mountains. Such an exchange would explain the relationships discussed above.

The permanent contacts of western Małopolska dwellers with populations living across the Carpathians induced considerable changes in material culture. Post-classic phase pottery, from the end of the older period of the Bronze Age, finds no analogies in other zones of the TCC oecumene. Instead, it resembles the inventories of the Piliny culture [Górski 2003; 2007]. For this reason, it can be claimed that owing to intensive and permanent contacts, the most popular ele-

ments of the material culture were changed in the vicinity of today's Kraków. The evidence of this change is also visible in the lowland parts of the drainage basins of the Warta and Vistula rivers but only in regions saturated earlier with southern traits [Lutomiersk; Muzolf 2012]. Certain changes in the appearance of pottery is discernible in other parts of the Polish Lowland, far away from the trails along which southern patterns travelled. The 'Polissya style' developed there. It is highly probable that the emergence of this style involved a peculiar reworking of Transcarpathian patterns.

8. CONCLUSIONS

The impact coming from the circle of the named groups varied and – to a large extent – depended on the distance between 'Trzciniec' settlement clusters and steppe/forest-steppe and Transcarpathian cultural centres [Górski, Makarowicz 2007]. The mechanisms of cultural pattern transmission, circulation of luxury goods and everyday articles (or rather their 'mental representations'), as well as the transfer of knowledge and movement of people included a broad range of interactions: from exchange contacts (mercantile and ritual) through exogamy, imitation and local reproduction of certain ideas and/or objects to armed conflicts.

We do not wish to claim we know for a fact what the individual scenarios of the reception were in each particular case. However, considering the current factual knowledge and reflecting upon it theoretically, a more credible conclusion seems to be one about the existence of long- and short-distance communication routes and a formalized (institutionalized) exchange [Makarowicz 2009; 2010]. It was mainly thanks to an extensive network of inter-group contacts that Pontic and Transcarpathian cultural patterns appeared in the 'Trzciniec' world.

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