

The North-West frontier of the Black Sea steppe in the Early Bronze Age

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Abstract. The article deals with the possibility of interpreting the archaeological material according to the theory of the frontier. The historiography of the problem and the possibility of reconstruction of intercultural relations in the frontier according to archaeological data are considered. The North-Western frontier of the Black Sea during the Palaeometallic Age is analysed. The works of the American sociologist Frederick Jackson Turner (late 19th century) have long become classics, and the main ideas of his frontier theory are not only recognised worldwide, but have been further developed. In Turner's concept, the frontier looks like a transitional zone, a dynamic moving boundary, where a clash between "barbarism" and "civilization" occurs. His theory was further developed in the works of American and European historians of the twentieth century. Now the majority of researchers on this subject interpret frontier as a special zone of interaction between different cultures. The frontier concept began to appeal to archaeologists, although in a rather narrow aspect, concerning social changes (in the context of anthropological archaeology). The system of intercultural communications depends on many factors, one of which is the history of the cultural landscape of the territory where the process of intercultural communications is taking place. The specificity of the base of sources of history and archaeology determines the possibilities (and differences) of research of the frontier by these sciences.

Key words: frontier, North-Western coast of the Black Sea, archaeological culture.

Nord-Vestul Mării Negre ca „spațiu de frontieră” al stepei la începutul epocii bronzului. Articolul ia în considerare posibilitatea de a interpreta materialul arheologic în conformitate cu teoria spațiilor de frontieră. Se analizează istoriografia problemei, posibilitatea de reconstrucție a relațiilor interculturale în spațiile de frontieră în funcție de datele arheologice. Este analizat spațiul de frontieră din nord-vestul Mării Negre din epoca Paleometalică. Lucrările sociologului american Frederick Jackson Turner (sfârșitul secolului al XIX-lea) au devenit de mult timp clasice, iar ideile principale ale teoriei sale de frontieră nu numai că sunt recunoscute la nivel mondial, dar au fost dezvoltate în continuare. În concepția lui Turner, spațiul de frontieră arată ca o zonă de tranziție, o frontieră în mișcare dinamică, unde are loc ciocnirea dintre „barbarie” și „civilizație”. Teoria lui a fost dezvoltată în lucrări ale istoricilor americani și europeni în secolul XX. În prezent, majoritatea cercetătorilor interpretează spațiul de frontieră ca fiind o zonă specială de interacțiune între culturi diferite. Conceptul a

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început să atragă arheologii, deși sub aspectul mai degrabă îngust al schimbărilor sociale (în contextul arheologiei antropologice). Sistemul de comunicare interculturală este dependent de mulți factori, unul dintre aceștia fiind reprezentat de istoria peisajului cultural al teritoriului în care procesul de comunicare interculturală are loc. Specificitatea bazei de surse a istoriei și arheologiei determină posibilitățile (și diferențele) de cercetare a spațiului frontierei ale acestor științe.

Cuvinte cheie: spațiu de frontieră, coasta nord-vestică a Mării Negre, cultură arheologică.

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Introduction

The formation and development of the theory of the frontier at the end of the 19th century is connected with the name of the American sociologist Frederick Jackson Turner. In his concept, the frontier is a transitional zone, a dynamically moving border, where the penetration and further consolidation of an expansive society, the clash between “barbarism” and “civilization” take place. Within the framework of the North American frontier (the US Midwest and the South), F. Turner formulated the concept of a “safety-valve”: in certain crisis situations, to solve acute social problems, an outflow of certain population groups to the territory of the frontier was carried out. In his opinion, the frontier was advancing not only geographically, but also socially, culturally and ideologically (Turner 2011). Later on, there have been many works both analysing and supplementing and criticising Turner’s concept. The concept of the “frontier” was modernised and then transferred to Eurasia, and this is the merit of Owen Lattimore (1962) and other scientists. Defining the frontier as a zone of intense interaction between different cultures, the researcher showed the heterogeneity of the frontier territory, the existence of an internal and external frontier, which differed by the ethnic composition of the population, its identity, etc. He drew the attention of historians to the Slavic states, the Black Sea Steppe, and Cossacks. However, one of the most important achievements of O. Lattimore, in our opinion, is the substantiation that intercultural contacts, according to the new understanding of the frontier, are not necessarily antagonistic.

Further, the concept of the frontier was established and continued to develop, mainly, in the Anglo-American science. In the 1970s and 1980s, the concept of the frontier attracted the attention of archaeologists and social anthropologists (reviews of major works: Feinman 1986; Parker, Rodseth 2016).

For the most part, researchers have accepted the main points of the classical theory of the frontier. In their works, historians rely on the philosophical concept of the frontier, according to which the frontier is, above all, a conflict zone. That is why all the laws of conflictology apply to the rules of its existence (Karabushchenko 2016, p. 94). The frontier is most often interpreted as a movable border, a special

transitional zone of contacts of several cultures, a territory of social interaction and cultural exchange. On the other hand, the frontier is a peculiar toolkit for identifying boundaries and distances between representatives of different socio-cultural communities on the borderland. Thus, the frontier is a special place (*locus*), a special period (*temporality*), special resources (special economy, *utopia/dystopia*) and a special way of life (*transgression*, *cultural regression*, etc.) (Romanova *et alii* 2014, p. 35).

Frontier theory is used in the context of history, anthropology, sociology, archaeology, and other sciences. The methods developed by American science in the study of the frontier have been used to evaluate Eastern European and Asian regions, primarily Siberia and the Far East. Note the works of I. Basalaeva, N. Bolkhovitinov, N. Zamyatina, M. Kolesnikova, S. Malovichko, D. Rezun, A. Romanova, A. Khromakh, M. Shilovsky, and others. The available rather detailed reviews of the literature on this topic (*e.g.* Romanova *et alii* 2014, p. 11-37) allow us not to dwell on this aspect.

Yaroslav Dashkevich was the first Ukrainian historian who transferred the theory of the frontier to Ukraine. He distinguished several types of natural and anthropogenic frontiers, paying attention to the frontier population, their contacts and interpenetration (Dashkevich 1989). He drew attention to the fact that Ukraine has long been a zone of ethno-cultural interaction between the Ukrainian population and its steppe neighbours; he singled out several types of natural and anthropogenic boundaries. In his works, where the thesis of the frontier as a zone of intensive interaction between different cultures is traditionally used, he substantiated the expediency and importance of frontier studies for understanding the Ukrainian past. Following him, other Ukrainian historians began to develop a relatively new topic for themselves: D. Belyj, V. Brekhunenko, T. Vinarchuk, V. Gribovsky, V. Kravchenko, P. Kabitov, Z. Kobozeva, V. Maisliyichuk, V. Maslak, V. Milchev, I. Storozhenko I. Chornovol, L. Shcherbakova and others (for reviews of the main directions, see: Vermenich 2012; Vinarchuk 2013, etc.). The necessity of the socio-cultural approach to the analysis of the phenomenon of the frontier is justified, the key aspects of interdisciplinary construction of the corresponding concept in the conditions of socio-cultural realities are considered (Maksimovich 2017).

The unambiguous assessments of the frontier are being replaced by a multivariate interpretation of this concept, and its content is changing as well. It is noted that along with the paramilitary spread of the power of a strong society, colonisation of the frontier can take place as a result of gradual expansion of the ethnic boundaries of more active and viable peoples (Karachoni, Pidgrushniy, Koval 2016). Ambivalence of contacts, *i.e.* opposition between cowboys and native

Americans, nomads and farmers, Ukrainian Cossacks and their opponents (Rzecz Pospolita/Russian Empire/Ottoman Porte), etc. – gives way to “frontier discourse”. It has become one of the most popular models for studying the history of ethno-contact zones, civilisation crossroads and societies located in the latter’s influence zones (Chornovol 2013). Andreas Kappeler² emphasizes the special importance of borderlands, highlighting frontier regions in the history of the Russian Empire (Siberia) and Ukraine (Black Sea region and Transcarpathia) (Kappeler 2007).

It is topical to find out the specificity of socio-dynamics of the frontier as a special archetype of culture, to classify the varieties of regional identities (Krivitska 2015, p. 186). The frontier may possess its own system of cultural, social, and technological stereotypes, some of which later acquire distribution outside this environment. At the same time, the stereotypes set by the era of the initial development of the territory (*i.e.* the era of the frontier) are preserved and transmitted over a long period. Understanding the frontier as a process makes it possible to move away from its spatial to social localisation, and helps to shift attention to the social aspects. The frontier (as a boundary, a limit) is promoted not only geographically, but also socially, culturally and ideologically (Vinarchuk 2013, p. 211).

The theory of the frontier can become a tool not only for the analysis of historical events in the recent past (new and modern history), but also for the reconstruction of ancient history in a certain area (“frontier zone”), based on archaeological data. This is facilitated, first, by the very notion of the frontier – as a movable border, as a zone of development, which is gradually expanding, as a symbolic space of intersection of social, cultural, ethnic markers of various communities. Taking into account the existing developments of historians and specialists in other humanities disciplines (sociologists, culturologists, anthropologists, philosophers, political scientists), it is necessary to develop new methods in archaeology as well.

The concept of the frontier in the archaeological context

In the archaeology of the “post-Soviet” space, the frontier concept is almost not developed. Among researches it is necessary to note the cycle of works of Andrey Epimakhov, devoted to the historiographic analysis of evolution of the concept of frontier, substantiation of possibility of its application for the interpretation of archaeological data, social structures in frontier conditions (on a concrete example of the Bronze Age of Southern Trans-Ural). The researcher has formulated the author’s understanding of this phenomenon, offered its archaeological criteria: locality, brevity of functioning, cultural variability. The frontier is characterised

² Austrian historian of Russian and Ukrainian subjects.

by ethno-cultural heterogeneity and is associated with the presence of conflicts (Epimakhov 2014, p. 876; 2018a, p. 94-95, 104).

It should be borne in mind that the opportunities and differences in the study of the phenomenon of the frontier in history and archaeology are largely determined by the specifics of the source base of these sciences. Firstly, archaeological information is incomplete (discrete, lacunar). Secondly, its interpretation is partly related to the personality of the researcher, the methods of his work, and his views on the issues. It is also necessary to take into account the peculiarities of archaeological artefacts, on which the study of archaeological cultures largely relies: they can spread over quite large distances by exchange, without moving people.

The frontier is characteristic of different eras and societies, reflecting the dynamics of the cultural landscape and being the locus of intersection of social, cultural, ethnic markers of different communities. The starting point of the frontier is the meeting of different communities and the interaction between them, stimulating internal transformations (Vinarchuk 2013, p. 211).

Valentin Dergachev proposed a term for the territory of interaction between different archaeological cultures – contact zone, which is partly close to the definition of the frontier (Dergachev 1991). Nevertheless, there is a difference between the contact zone and the frontier: the zone has to a certain extent static boundaries, in contrast to the frontier, whose characteristic feature is precisely the dynamism of the boundaries and the tendency to their advancement, expansion, and displacement. Moreover, understanding the frontier as a process allows us to move from its spatial localisation to social aspects, which makes it possible to apply the concept of the frontier to the interpretation of archaeological data (Ivanova 2019, p. 37; Ivanova 2021a; Ivanova 2021b, p. 98). There is no reason, in our opinion, to consider the territory of the frontier “always a conflict zone”. Modern historians conclude that the frontier is “not only a frontier, a limit, an agony, *i.e.* a clash of two polar actors or a battle of antinomies, but also a new open world of unlimited opportunities, attracting and giving hope to new resources, new prospects for development and prosperity” (Romanova *et alii* 2014, p. 77). Finally, the frontier does not create a certain type of society, but provides a kind of “springboard” for creating relationships between different cultures, between autochthons and allochthons, taking into account their value systems and interests. This is where its innovative role is manifested (Kappeler, Vulf, Kravchenko 2011, p. 56).

In the context of the frontier, there are various models of cultural dialogue: trade, military, ideological, religious, marital, etc. Relevant, in our view, are Ray Billington’s works on the typology of the American frontier, with his classification based on a socio-economic method. Contacts in the frontier zone are analysed

by the author as a certain system of relations, viewed from different points of view and by different methods: sociology, social anthropology, small group theory and, of course, postcolonial theory. Using specific materials from American history, he has distinguished several staged types of frontier, tracing not only their differences in typology and geography, but also their dynamics over time. In different chronological periods the content of this concept changed, the incentives to develop new territories (Hinterland) became different. Accordingly, the main occupations of the population of the frontier zone differed (Billington 2001). There are also other types of frontier classifications, with different numbers of types and subtypes, and combined variants are possible. The number of frontier types, taking into account their synthesis and multidirectionality, varies by different authors – from units to hundreds. Different vectors of relations are accentuated at different times and in different areas of contact, which determines, to a certain extent, the characteristics and typology of the frontier.

The following aspect is also important. The so-called “third space” (this concept is narrower than the concept of the frontier) appears on the borders of the territories developed by the multicultural population. It is a space of hybridity, a “sphere of agreements” initiated and sustained by everyday situations and encounters. “The third space” opens up discourse beyond simple binary antagonisms; it is a space of constant dialogue (Naum 2016, p. 107).

The Northwest Frontier (late 4th - 3rd millennia B.C.)

Certain archaeological cultures of different chronological periods and geographical ranges can provide the researcher with material not only for generalised conclusions, but also for specific analysis within the framework of the frontier theory. Of particular interest in the context of this topic is the North-Western Black Sea region of the Palaeometallic period (Eneolithic – Early Bronze Age). In archaeological and historical studies, this region is traditionally identified as a certain geographical and cultural-historical area and is quite suitable for the existing definitions of the frontier.

Archaeological data point to the pronounced cultural transformation of the North-West Pontic region during the Palaeometallic epoch. The emergence of new populations (at different times and from different territories) and intercultural interactions led to the formation of new cultures and the development of existing ones. However, this process was also a kind of catalyst for economic development and transformation of the material culture of the inhabitants. It is necessary to mark the special role of the region in the historical processes of South-Eastern and Central Europe, with interconnections and mutual influences.

It is presumed that in the North-West Pontic region there was an influence of several cultural-historical factors connected with different regions of Europe. According to Valentin Dergachev, the South-Eastern European factor was dominant in the periods from the Neolithic to Antiquity. Its position was determined by the susceptibility of South-Eastern Europe to the impulses from the advanced cultural centres (Mediterranean, Western Asia). The East European factor was second in importance; the third (Middle European) factor was fairly secondary. The role of each factor varied at different epochs, weakening or intensifying, blocking each other. In interrelation, they formed a single cultural-historical context, characterising the peculiarities of Carpathian – Danube development (Dergachev 1999, p. 211-218).

Piotr Włodarczak, considering the Yamnaya culture dominating in the Bronze Age of the region, points to the influence on this culture of four factors. These are: local Late Trypillia (Usatovo), Eastern (connected with the Black Sea and Caspian Sea cattle steppe communities), Western (with the Early Bronze Age of Anatolia and Balkans), and Northern (which is defined by appearance of the Globular Amphora culture in immediate proximity to the region) (Włodarczak 2010, p. 302-303).

According to Igor Manzura, in the Middle Eneolithic period a communication system emerged (so-called East-West “bridge”). In this system the Carpathian-Dniester region is a kind of indicator of European cultural processes. On the other hand, the region is a transfer medium, within it the cultural transformation looks especially dynamic and versatile. During the Eneolithic and Early Bronze Age, the development of the North-West Pontic region population was determined by the interaction of two cultural blocks – East European and Balkan-Danube. At certain stages, there were impulses from the Central European communities, direct or indirect, through the forest-steppe formations of the Carpathian-Dniester lands (Manzura 1992; 1993).

Thus, in the Late Eneolithic the territory of the North-Western Black Sea region is an “acquisition zone”, *i.e.* a frontier: this is how its researchers position the frontier (review: Zamyatina 1998). There are migrations from the forest-steppe of the Vykhvatynzy and then Gordineshty groups of the Trypillia CII, Lower Mikhaylovka culture from the east, Cernavoda I from the west (Frînculeasa *et alii* 2019, p. 56). The Usatovo culture is formed, which absorbed the alien traditions. The main area of the Usatovo population was the North-West Pontic region, its penetration into other ranges is slight, both eastward and westward (Tovkaylo, Fomenko 2013; Dergachev 2004, p. 111). Synchronously with the Usatovo, there is a small population that left graves of the Post-Mariupol/Kvitianska culture. In the Late Eneolithic in the Black Sea

steppes, there is a movement of a new group of population called the Zhivotilov (Zhivotilov-Volchansk) cultural group. Its graves are known from Prut River to Pre-Caucasus, including in the North-West Pontic region, Lower Bug, Lower Dnieper. Attribution of some burials of this time is difficult, in reports and publications they are assigned to the Eneolithic period.

In the Early Bronze Age, the region retains its frontier status. Late Eneolithic cultures continue to exist during the late 4th – early 3rd millennium B.C. However, at the same time on the basis of the Eneolithic cultural horizon the Budzhak culture is formed, as a part of the Yamnaya cultural-historical area. The barrows of the Yamnaya culture, based on the available numerous radiocarbon determinations, are dated by researchers in the range 3300/3200 – 2100/2000 BC (Telegin, Pustovalov, Kovalyukh 2003, p. 150). Similar dates are also known for the Budzhak culture (Ivanova 2013, p. 210-214).

What was the attractor for the movement of multicultural population groups from different territories to the North-West Pontic region? Cultural transformations in it are connected, in our opinion, with climatic changes and the expansion of the steppe zone suitable for cattle-breeding. It is the change of economic and cultural type, adaptation to the steppe conditions, allowed part of the Late Trypillia population (that moved to the North-West Pontic region) to find a way out of the crisis that marked the end of the Trypillia culture in the forest-steppe zone. The main feature of the cultural and economic evolution of some cultural communities of the Early and Middle Bronze Age³ (Budzhak and Catacomb Cultures) is that a new stage of their existence falls in the epoch of, at first sight, unfavourable natural conditions. They were represented by rapid climatic changes (aridisation, event 5300 cal BP) and regressions of the Black Sea basin (the Khadjibey Regression). There is reason to assume that climate aridisation, contrary to existing perceptions, did not have negative consequences for these human communities (Ivanova, Kiosak, Vinogradova 2011).

During the long period of the Budzhak culture existence, its cultural environment and the character of intercultural contacts changed. In the North-west Pontic region, during the process of formation of the Budzhak culture based on local substrate, it did not dissolve completely in the new culture, but continued its existence. During this chronological period (end of the 4th –beginning of the 3rd millennium BC) with Budzhak culture was neighbouring a Late Eneolithic population, as well as cultural groups of the Trypolye CII stage (Vykhvatynzy, Kirileni, Gordineshty), tribes of the Usatovo culture final stage. In some situations, in the zone of the North-Western frontier intercultural contacts were active.

³ In the terminology concerning chronological periods that are applied in Ukrainian archeology.

This is manifested, for example, in the formation of the specific cultural group Zhivotilovka-Volchansk (with Maikop-Gordineshty features), the appearance of the Late Trypillia and Cernavoda ceramics in the monuments of Usatovo culture. In other cases, it was single alien culture artefacts. It is also possible creating the common sacral space, *i.e.* the common ideology and similar “world outlook” of the population inhabiting the frontier zone. It can be seen in the common elements of the funeral rites.

Later only the tribes of the Budzhak culture remain the residents of the North-West Pontic region. Only minor penetrations of population of Globular Amphora culture and Corded Ware culture are recorded. Later, in the middle of the 3rd millennium BC the population of the Catacomb Culture appeared in the region, and the last quarter of the 3rd millennium BC is associated with the spread of the Babino Cultural Circle.

The absence or rarity of settlements makes it impossible to reconstruct the relationships of the multicultural population of the Northwest Frontier region in everyday life. In the material culture (mainly the funerary inventory), contacts of the Yamnaya and Catacomb populations are poorly represented. There are almost no Catacomb finds in the Babino culture either. Undoubtedly, the legacy of the Budzhak culture in Babino culture is more tangible. Most likely, we can speak of a gradual integration of the carriers of the Budzhak and Catacomb cultures into the Babyno at the end of the 3rd millennium BC, with some features preserved at an earlier stage. Within the Babino cultural circle, a distinctive Dniestr-Prut Babino culture is formed (Litvinenko 2009). The intercultural parallels are more significant in the Usatovo and Budzhak (Yamnaya) cultures, less so in other Eneolithic and Bronze Age cultures and cultural groups. Researchers note the influence of Late Trypillia, Coțofeni, Cernavoda II – Foltești II and Ezero cultures on material features of the Usatovo culture (Patokova *et alii* 1989, p. 114-115). For the Budzhak culture, its connections with local cultures of Late Eneolithic, Early and Middle Bronze Age as well as with the Balkan-Carpathian region are traced.

The distinctions between early and late stages of Budzhak culture are connected not only with a change of ethnocultural situation in the North-West Pontic, but also with a change of the cultural environment in the territory of South-Eastern and Central Europe, with the character of interrelations changes. The new absolute and relative dating of the Balkano-Carpathian cultures, an increase of the database allowed specifying the intercultural communication. These contacts influenced the formation of the ceramic complex and the development of the Budzhak culture metalworking. At the early stage (3200-2500 BC), we find parallels in the ceramic assemblage of the Budzhak culture with the Coțofeni, Kostolac, Globular Amphora

Culture, Cernavoda II, Ezerovo II as well as with the Corded Ware Culture. The change in the cultural environment changed the contacts and ties of the Budzhak population and their material culture. Contacts with the Corded Ware culture at a later stage (2500-2000 BC) and, for a time, with the Glina III – Schneckenberg, Mako-Kosihi-Čaka and Somodvar-Vinkovci cultural blocks were established. In the final stage of the Budzhak culture, there are small contacts with the population of the Babino cultural circle, manifested in the funeral rites and pottery. The changes from the early to late stage are manifested in two aspects – the development of the Budzhak culture and the perception of foreign cultural influence.

A characteristic feature of the Budzhak culture was the processing of alien traditions and not simply the importation of ceramics and artefacts. The main part of the pottery was produced by local potters, but they are imitations or derivatives. Nevertheless, the determination of the sources of these ceramic traditions allowed characterising the material culture of the early and late stages of Budzhak culture (Ivanova 2020).

Thus, the region of the North-Western frontier during the period of Late Eneolithic – Early and Middle Bronze Age (4th – 3rd millennia BC) has been occupied, mainly, by the population of Budzhak culture which lived in territorial groups, with the connections and relations. During certain periods, the area was a network of multicultural enclaves, with unconditional dominance of the Budzhak/Yamnaya culture. The construction of relations of different levels (or refusal of such relations) could not always be reflected in the funeral rituals. Movements within the area and inflow of new population are connected with climate change and expansion of the steppe zone, development of mobile cattle-breeding system, *i.e.* with new opportunities of economic and cultural relations (Ivanova 2010; 2013; 2014; Ivanova, Kiosak, Vinogradova 2011). This contributed to the expansion of the North-West frontier and the movement of the Budzhak population groups westward, mainly along the Danube.

Dynamics of the North-West Frontier

In the Early Bronze Age, the frontier dynamics was manifested in different ways. In some cases, there was an advance of the new population to the borders of the Budzhak cultural area (Globular Amphora culture and Corded Ware culture) and formation of certain connections between the local and newcomer population (Ivanova 2013). In other cases, the perception of innovations was connected only with penetration of insignificant groups of the Budzhak culture into the new cultural areas and translation of some elements of material culture to the original territory. Third, there was colonisation of new territories (Balkan-Carpathian region), while maintaining ties with the “homeland” (North-West Pontic region)

(Ivanova 2014). These situations are reconstructed mainly by the peculiarities of the funeral rites and burial equipment of the North-West Pontic region and Balkan-Carpathian area.

In our opinion, it is unnecessary to interpret the movement of the Yamnaya population westward as a mass invasion or large-scale migration (postulated from the results of genetic studies of the last period). It was a gradual colonisation of certain regions, expansion of the frontier territory, accompanied by acculturation and mutual influence of different cultures. Gradually two components of the Yamnaya culture – Budzhak culture of the North-Western Black Sea region and the communities of the Balkan-Carpathian region – were united in a single trading network (Ivanova 2013; 2014).

The consideration of the archaeological material within the frontier theory and studies of the European archaeologists have allowed to define the cultural context that the population of Northwest Black Sea region has been included in. There are sufficient arguments to combine all burial grounds of the Yamnaya culture of South-Eastern and Central Europe into a separate Balkan-Carpathian variant of the Yamnaya cultural-historical community. Its peculiarity is a certain syncretism, manifested in the fusion of features of Yamnaya culture with the main features of the autochthonous cultures. This is reflected both in the inventory and in some elements of funeral rites (Ivanova 2014). On the other hand, there are still connections with the ancestral homeland, where artefacts from the newly developed areas appear.

In the Central European region, the sites with features of the Yamnaya culture are located in the territories of different cultures, not constituting local groups (Bátora 2006, p. 190, fig. 134). Probably, these monuments could have been left by the Yamnaya population that came from different areas of the Yamnaya culture community. Undoubtedly, a small part of this population came exactly from the North-Western Pontic region and moved to the central part of Europe. This is indicated by a small number of barrows in the middle reaches of the Dniester and Prut, as well as findings of a typical vessel, a “Budzhak jar”, in the Lviv Region (Ivanova, Voytovich 2022). At the same time, study of the burial site in the locality Święte, located in the basin of the San River (a right tributary of the Vistula River), allowed to speak about the advance of the Yamnaya and Catacomb population from the territory of the Dnieper-Bug interfluves as well. The discovered feature combines elements of the Corded Ware culture, Catacomb culture and late stage of the Yamnaya culture (Kosko, Klochko, Olshevskiy 2012).

However, the possibility of migration of Yamnaya tribes from the territory of the Volga-Ural region raises great doubts. We will consider this question below.

The isotope analysis of human bones from the Yamnaya graves from Alföld made it possible to determine regular movements of the Yamnaya people, over several generations, to this territory. They had previously inhabited the Western Romanian Mountains of Transylvania (Apuseni) (Gerling, Banffy, Dani 2012). Consequently, the advance to the west was gradual, with a gradual colonisation of the territories rather than a swift invasion. The possibility of movement of the Yamnaya population to Transylvania from the territory of the North-West Pontic region along the Suceava mountain road is quite consistent with this direction (Dergachev 1999).

The routes of the movement to Alföld can also be reconstructed on the basis of the archaeological finds, involving for comparisons the written sources and historical data of later epochs, for example about the movement of medieval nomads to Pannonia. The Pechenegs and Kipchaks mastered three routes from the South Russian steppes to the Central European plain (Hungary): the first one through the Iron Gate; the second one through the Southern Carpathians along the upper reaches of the Olt, Mureş and Someş rivers; the third one from the upper reaches of Siret and Prut to Tisza (Rasovskiy 1933, p. 3).

And what are the possible reasons for the widening of the frontier zone, the movement in the western direction, the formation of a new frontier in the Balkan-Carpathian area? At least two of them can be identified: the pursuit of metal sources (silver, copper, bronze) and the further development of the steppe zone, the basis of welfare of pastoral communities from the steppe. Probably, the supply of metal can be connected with the deposits of the Balkan-Carpathian region, where mines are known not only for copper (Thrace, Banat), but also for natural bronze and silver (Transylvania).

It is possible to conclude about the dominant and mediating role of the North-West Pontic region in trade and exchange contacts with the West and East. It was this region that connected the Black Sea steppes with other European territories, along the Dniester and Danube trade routes. The expansion of the North-Western Frontier in the Late Eneolithic and Early Bronze Age into the Balkan-Carpathian direction led to the appearance there of population groups that left under-barrows Eneolithic burials and burials of the Yamnaya culture (Frinculeasa *et alii* 2019, p. 63).

In our opinion, the North-Western Frontier in the Late Eneolithic and Early Bronze Age from the typological point of view shows complex directions of development, with a combination of two dominant aspects – pastoral and trade. This is indicated both by the peculiarities of the material culture and by the advance of the population in the western direction, towards the Balkan-Carpathian region with certain aims. At the early stage (Early Bronze Age/late Eneolithic), the inflow of the new population and the formation of the Budzhak culture are connected

with the expansion of the steppe zone, caused by the aridisation of the climate and the development of cattle breeding. However, already at the turn of the 4th and 3rd millennia BC, the Yamnaya (Budzhak) population begins to move westward. And this vector is quite correlated with the main provisions of the frontier theory.

Exchange and trade. Exchange networks (metal, flint, obsidian, stone raw materials, etc.) easily penetrated cross-cultural boundaries, bringing together the most diverse cultural groups. The region north of the lower Danube is thought to provide an ideal starting point for such questions, since it is also currently at the centre of an intense debate about what constitutes identity in the context of the emerging relationship between archaeology and genetics (Preda-Bălănică, Frînculeasa, Heyd 2020, p. 98).

In our opinion, the archaeological data indicate that the movement of the frontier borders and colonisation of new territories (in this particular case) did not create a conflict situation in the processes of intercultural communication. Burials with weapons or wounds are rare in the Balkan-Carpathian region, but with prestigious artefacts (silver jewellery) are quite numerous. Burial features with a combination of several cultural traditions (Yamnaya culture + Coțofeni culture, Yamnaya culture + Ezero culture) are known. The mapping of the Yamnaya culture burials in the Balkano-Carpathian region (**Pl. I-II**) indicates their proximity to the copper deposits.

In this context, the observations and conclusions of researchers on the natural changes in the territory of the Greater Hungarian Valley in the Subboreal⁴ are interesting. It is noted that in the Neolithic, 85% of the territory of Hungary was covered with oak-beech forests; willow and poplar grew near bogs and lakes, nowadays this figure is 17%. It has been suggested that the natural conditions have changed, mainly as a result of human activity, although climatic fluctuations may also have played a role. Deforestation is associated with the increase in metal production in the Copper and Bronze Age, which is impossible without fuel (Duffy 2010, p. 90-97). Therefore, we think it is possible to assume that Transylvania and Alföld were connected by production relations. It is known that there are no deposits of important natural minerals (copper, tin, salt) in Alföld. Nevertheless, already in the middle of the 3rd millennium BC the territory of Alföld was the most developed in the Carpathian Basin, and in the Late Bronze Age it became one of the most significant metallurgical centres in Europe. Raw materials for bronze foundries were imported, and it is quite natural – it is much more rational to transport ore than wood (Kavruk 2012, p. 30). In our opinion, it is likely that

⁴ The Subboreal is a climatic period; it followed the Atlantic and was followed by the Subatlantic, after the Blyth-Santander stages. It lasted from 3710 to 450 BCE.

the ore was transported to Alföld by the population of Yamnaya culture, for further smelting. This might explain the huge number of burial mounds located here, as well as the regular population movements, taking place over several generations, from the Western Romanian Mountains (Apuseni) region, as revealed by the isotope analysis.

The population of the Budzhak culture received metals (copper, bronze, silver) from there as ore, ingots or artefacts. The locations of burials and silver ornaments indicate the routes by which the metals reached the North-West Pontic region, as well as possible sources of silver.

The appearance of silver in the Early Bronze Age sites in Central and South-Eastern Europe is associated with the Yamnaya culture; with its disappearance, silver also disappears (Jovanović 1993). The exchange equivalent in these relations could have been salt, which requires a hot and arid climate for its natural deposition (Ivanova 2013). Aridisation also contributed to the development of the road network, increasing the periods of their use, stimulating the movement of population over great distances, the development of new territories, and the formation of trade/exchange routes. The colonization of the Balkan-Carpathian area by the population of the Yamnaya culture determined the character of the relations between the newcomers and the autochthonous population in the context of the frontier.

The aridisation of the climate opened new economic possibilities for the steppe communities. The subsequent expansion of the steppe zone stimulated the development of cattle-breeding economy. It also allowed the population of the North-West Pontic region to use more natural resources than before, contributing to the increase of salt production.

The economic upswing, based on new economic opportunities and successful adaptation to climatic changes, was a factor that influenced the dynamics of the frontier. It contributed to the expansion of the frontier zone and to the advance of the population from the North-West Pontic region to South-Eastern and Central Europe. It is possible to speak about parallel development in the Early Bronze Age of two regions – the North-Western Black Sea region and the Balkan-Carpathian area. Bilateral contacts in the Eneolithic and Early Bronze Age intensified the expansion of the frontier area, affecting the social and economic potential of the population.

Genetic aspect. In recent years, there have been several articles presenting the results of the joint work of archaeologists and palaeogeneticists. They focused on the interpretation of the results obtained from the genome-wide analysis (Allentoft *et alii* 2015; Haak *et alii* 2015).

They are primarily related to the problems of ancient population migrations, but special attention was also paid to the search for their ancestral home of the first Indo-Europeans, taking into account the genetic data. The main conclusion of these complex studies was that the migration of the Yamnaya culture tribes to Central Europe led to the formation of the corded pottery cultures and the spread of Indo-European languages in Europe.

The data on genomic markers served as a proof of the hypothesis. They found similarities between the two cultural communities. The presence of “Yamnaya genetics” in the genetics of central and north-western Europe of the Bronze Age was revealed: the gene pool of the Corded Ware culture was two-thirds related to the gene pool of the Yamnaya culture. The specificity of the Yamnaya genome is determined by the inclusion of two non-autochthonous components – Iranian farmers and Caucasian hunters and gatherers (Nikitin *et alii* 2017; Ivanova, Kiosak, Nikitin 2019).

Conclusions were drawn about the “Samara ancestral homeland” (Russia), from where the Yamnaya tribes moved to conquer Europe, but this hypothesis almost immediately caused criticism from leading Russian geneticists (Balanovskiy 2015) and archaeologists (Kleyn 2017 and others), undoubtedly specialists in this complex problem. Leo Kleyn noted several controversial points. The identified similarity could be a consequence of a common genetic source for the Yamnaya population and the Corded Ware culture, and this source could be somewhere in the north at an earlier time. He considers the opinion of archaeologists about the influence of the Yamnaya culture on cultural transformations in Europe to be exaggerated (Kleyn 2017, p. 367).

The emergence of steppe genetics in Europe in the 3rd millennium BC should probably be explained by the interactions that took place earlier. It is necessary to take into account the early and rather deep (up to the Caucasus) penetration of the genetic complex of the early farmers to the steppe. The material correspondence of this impulse can be numerous finds of Trypollian pottery in the steppe (Govedarica 2004), the role of the Gumelnița culture is also possible (Kotova 2013; Manzura 2013). The interactions between the steppe world and the world of “early farmers” were reciprocal and lasting. Instead of unidirectional movement – migration, the model of numerous mutual contacts and advances of separate groups of population, which were not necessarily connected with radical change of the habitats of large cultural communities, looks more realistic. Apparently, the economic factor (rather than invasion or conquest) was dominant in the cultural-historical processes and interrelations between the populations of the Yamnaya cultural-historical community and those of different parts of Europe, as well as in the formation and spread of the

frontier zone. A special role in these processes is given to the Budzhak culture of the North-West Pontic region. One of the main stimuli for the movement of its population in the western direction was the establishment of trade relations and the formation of trade routes (Ivanova, Kiosak, Nikitin 2019; Ivanova, Nikitin 2020). The expansion of the steppe zone created habitual and comfortable living conditions for pastoralists in new places.

In spite of some differences, the genetic composition of the Yamnaya population was sufficiently homogeneous throughout the area of distribution of the burial features. In our opinion, this situation can be explained not by the advance or invasion of the Yamnaya population from the Samara (Volga-Ural) region to the Black Sea steppe and Central Europe, but by the common genetic substrate of the vast territory, formed in the Eneolithic, in the times of the Sredny Stog culture and connected exactly with it.

The erroneousness of the outdated ideas about the origin of the Yamnaya culture in the Volga-Ural region and the advance of the population from there in the western direction is indicated not only by the difference in the material culture (under the common world outlook – funeral rites), but also by the quantitative data. In the Volga-Ural region (“homeland”) we know 162 burials of the Yamnaya culture from 152 barrows (according to 2013 data) (Morgunova 2014, p. 36), whereas in the North-West Pontic region there are at least 5-6 thousand (the exact accounting is complicated by the fact that not all results of the excavations are published). At the end of the 1980s the number of the excavated burials of the Yamnaya culture in the Ukraine exceeded 10,000 (Dr. M. Videiko, personal comment). On the lower Don, more than 300 Eneolithic and Early Bronze Age burial mounds were excavated until the end of the twentieth century, where about 1,500 burials of the Yamnaya culture were found (Fayfert 2018). Between the Prut and Dniester rivers alone, more than 700 mounds and more than 5,000 Eneolithic and Bronze Age burials have been excavated and published. In addition, there are more than 10,000 mounds between the Prut and Dniester rivers, of which more than 50% were built during the Eneolithic and Early Bronze Age (Topal 2019).

In Romanian Transylvania, the number of mounds of “Yamnaya time” is about 600, together with unexcavated ones (Diaconescu 2020). As of 2020: in Romania, 177 barrows containing 714 burials of the Yamnaya culture were investigated; in Hungary, 75 investigated barrows; in Serbia, 15; in Bulgaria, 80 barrows containing 460 burials of the Yamnaya culture were excavated. According to radiocarbon dates, three main burial horizons in barrow mounds are distinguished: 3050/2950 BC; 3050/2950-2550/2450 BC; 2550-2200 BC. In the last decade, a group of Late Neolithic burials, predating the Yamnaya culture, was identified from the mound

features of lower Danube, Transylvania, and Alföld, which for many years have been attributed to the Yamnaya culture. They have been dated between 3300-3050 BC (Dani 2011, p. 26; Kaiser, Winger 2015: 9; Preda-Bălănică, Frînculeasa, Heyd 2020) (Pl. I).

Apart from the aspects related to the material culture and chronology of its separate regions (Ivanova 2006), the small number of burials of the Yamnaya culture in the Volga-Ural region, despite substantial archaeological excavations is noteworthy. This potential is insufficient for the conquest of Europe, and the lack of archaeological evidence so far for advancement from the Volga-Ural region westward has been noted repeatedly.

All these features cast doubt on the theory of large-scale Yamnaya migration to the west (the eastern direction is assumed as well). Judging by the arguments of the authors of the hypothesis, Yamnaya migration takes place in all regions according to the same scenario (occupation of new territories, displacement and replacement of the male population, with replacement of genetics) and with similar consequences (formation of new cultures).

Peculiarities of identity formation in the context of the frontier

The concept of the “Yamnaya package” was formulated in archaeology quite a long time ago. It describes the variants of interrelations between allochthons and autochthons in the frontier conditions, but without applying this term. The idea is that a recurring set of well-defined artefacts and customs visible in archaeological manifestations corresponds to an equivalent set of “social habits” that identify a cohesive social group. The function of the insignia that make up the “Yamnaya package” is to create and maintain a cultural boundary with other people living in the same area. These can be artefacts as well as clothing, drinking, culinary traditions and elements of ideology materialised in a special way. Yamnaya package transmission and adoption can be very rapid indeed, with demographic or economic pressures on one region being transferred to regions that are more distant as well (Harrison, Heyd 2007, p. 196-200, fig. 45-46).

Relationships in different habitats of the frontier zone may be structured differently, which is most often related to the quantitative ratio of the local to the newcomer population, the intensity of contacts, their purpose, etc. Both natural and socio-cultural factors play an important role (Ivanova 2014). The formation of a new reality in frontier conditions manifests itself in going beyond one’s own culture, in various aspects of cross-cultural dialogue. For example, a peculiarity of the residence of the newcomers and locals is the practice of placing some burial mounds in sites previously occupied by other communities. As examples, we can mention the situation in Romanian Moldova, where several burial mounds

have been erected over the remains of Late Cucuteni B (Horodișteea-Erbiceni) settlements (Burtănescu 2002, p. 224-225). In Muntenia, they overlap the settlements of Cernavoda II-Foltești II. The same situation is in the settlements of Kostolac and Baden (dominating in Baden). There are different explanations for this situation. It is suggested that the populations of different cultures avoided each other because of their different lifestyles, but in some cases a special form of symbiosis was possible. It manifested itself in the overlapping of settlements with barrows (Ecsedy 1979, p. 15, 19, 39). This situation can be interpreted as an indicator of the social relationship between the two cultures, with a subordinate position of the Baden culture population (Anthony 2007, p. 137-138, 378-379). Tumuli were created after the abandonment of settlements, but the chronological interval between these two processes is unknown. A partial coexistence of the two cultures is also possible, but in a peculiar form (Horváth 2011, p. 89-90). Finally, this practice may be related to the marking of possession of these territories (Heyd 2011, p. 542; Frînculeasa *et alii* 2017, p. 39). Most likely, such marking, in addition to illustrating social hierarchy and/or territorial control, played a role in field orientation (Vernescu, Croitoru 2013, p. 89).

On the other hand, the relations in the frontier zone are never static, as has been noted by researchers. Frontier realities create conditions for the invention of practices and the formation of new relationships between people and their material world. At the same time, resettlement did not always mean radical and encompassing changes in practices and traditions. Differences in behaviour may have led to the formation of social groups or the emergence of a discourse of “otherness” and “sameness”. Nevertheless, a fair amount of difference may have been accepted and tolerated, even taken for granted and embedded in the intermediate space of the frontier (Naum 2010, p. 107, 113, 116). At the same time, more often alien communities did not create a new culture, but sought to recreate the cultural tradition of the homeland – in the first stages, at least (Chornovol 2016).

The first group of the Yamnaya population that appeared in the zone of the Balkan-Carpathian area/frontier did not remain “newcomers” forever, but after some time they became “locals”, autochthons. Nevertheless, new groups of the same Yamnaya population arriving from the steppe might well have been considered “newcomers”, with special relations both with the local population and with the already adapted related Yamnaya. For many local communities (who lived in long-term settlements and buried their dead in flat cemeteries) that were used to the presence of steppe people and their way of life, the “newcomers” did not stimulate any significant changes (Heyd 2011, p. 545). At the same time, new types of relationships were forming: between local and newly arrived population, between autochthons and people who had been living in the area for several generations,

between autochthons and outsiders regularly moving along seasonal trade routes, etc. The difficulty also lies in trying to determine who is a newcomer and who is a native in a scenario of interaction that lasted some 500 years (Preda-Bălănică, Frînculeasa, Heyd 2020, p. 96-98).

Archaeological excavations and radiocarbon dates allowed us to identify the period when pre-Yamnaya burials coexisted with Yamnaya burials (Frînculeasa *et alii* 2019, p. 63). Researchers note that the definitions “local” or “non-local” are not something frozen in time; they reflect states that are actively changing and transforming (Preda-Bălănică, Frînculeasa, Heyd 2020). As an example, the observations about the relations between local and non-local (Yamnaya) population, made as a result of the excavations of the barrow from Strejnicu (jud. Prahova), Romania, may be cited (Frînculeasa *et alii* 2021). They demonstrate the dynamics of intercultural relations in the zone of Balkan-Carpathian frontier. As the results of absolute dating and some elements of the burial ritual and tools show, there is a certain chronological evolution – both in terms of their origin as well as in the questions of correlation of the Yamnaya communities with local ones, who already used burial mounds in their funeral ritual. And this is not a static picture, but a dynamic one: originally the Yamnaya population did not use mounds that had already been built. Such an approach may indicate a well-defined political relationship with the local population/elite; it manifests itself institutionally, with the possible preservation of the status quo, including the territorial one. The incoming Yamnaya communities are detached from the Northern Pontic, but at the same time they have long retained the ability to build barrows and preserve the traditions of the Yamnaya culture outside the territory of their origin. In the first stages Yamnaya mounds are created, they are also used for successive (secondary) burials, probably of community/family members. Later, Yamnaya culture communities reuse and resize tumuli previously built by pre-Yamnaya locals. In the middle of the 3rd millennium BC, the Yamnaya population stops building barrows, reusing existing ones. It is likely that not only common social relations and institutions but also a common sacral space emerged (Frînculeasa *et alii* 2021, p. 87). Flat necropolises with burials of the Yamnaya culture also appear (Ailincăi *et alii* 2021, p. 231, fig. 13; Alexandrov, Stefanova 2021, p. 69-72).

The peculiarity of the material culture of the settlers in the new territories was a gradual loss of the forms of dishes, typical for the Yamnaya/Budzhak culture⁵, and further introduction of Balkan-Carpathian and Central European features and artefacts into the funeral rites (**Pl. III-VI**). Not only the position of the skeleton on the side or stretched out on the back, common in the Danube region, but also

⁵ They are found only in the burials in the Romanian Moldova and Dobrogea.

a flat burial rite (e.g. Brailița and Zimnicea cemeteries in Muntenia) are used. At the same time, the classical Yamnaya features are also preserved. The impact on the autochthonous population was manifested mainly in the funerary rites, and to a lesser extent in pottery and other artefacts (knives, silver ornaments). It is assumed that the cord ornamentation on the ceramics of the Balkan-Carpathian region arose under the influence of the steppe population of the Black Sea region (Pl. VII-VIII).

This indicates the presence of certain integration processes and the formation of relatively stable relations between aliens and cultures of the Carpathian-Balkan frontier.

Frontier theory and archaeological research: perspectives

In general, frontier theory can become a tool not only for the analysis of historical events in the recent past (new and modern history), but also for the reconstruction of ancient history in a particular area (frontier zone), based on archaeological data. This is facilitated, first of all, by the very notion of the frontier – as a mobile border, as a gradually expanding area, as a symbolic space of intersection of social, cultural, ethnic markers of various communities. Taking into account the existing developments of historians and specialists in other humanities disciplines (sociologists, culturologists, anthropologists, philosophers, political scientists) it is necessary to develop new approaches in archaeology as well. In the archaeology of the Bronze Age it is already traditional to allocate not simply archaeological cultures, but cultural-historical communities (Yamnaya, Catacomb), cultural circle (Babino) or cultural phenomenon (Bell Beakers). There is a gradation into separate cultures and cultural variants. This approach, which has justified itself, is still not complete. Out of the spotlight, can remain the relationships between different population groups within the same culture. In addition, attention is not always paid to the nature of the relationship between the newly arrived mono-cultural population and the autochthons. Autochthons may use various cultural traditions, which may differ even in relatively compact geographic areas. Contacts which are reconstructed based on the archaeological data can be differed both in the material sphere (artefacts) and in the spiritual one (funeral ceremonies, sacral world). On the other hand, their absence in the synchronic cultures indicates the distancing of human collectives, most likely within the framework of the opposition “native – alien”. And at the same time, the intensity and direction of contacts are not always influenced by the distance: sometimes contacts are more distinctive with the remote cultural groups than with the neighbouring ones (for example, presence of Yamnaya graves with the features of Coțofeni culture in Thrace, in the area of Ezero culture) (Nikolova 2000).

“The frontier is not just a natural landscape to be conquered, it is, above all, a certain space inhabited by people with a different culture... In the process of settling new territories, peoples constantly had to come into contact with representatives of other cultures. In the course of such contacts, principles of perception of the «alien» and ways of communication with him were crystallized. This encounter at a distant borderland radically changed the culture of the peoples involved, transforming both themselves and their worldviews. The «alien» in these contacts very often appears not only as an object, but also as a subject of historical processes, their driver and motivator” (Yakushenkova 2014, p. 2, 8).

Conclusion

The analysis of the archaeological material allowed us to conclude that the integration processes of different cultural traditions of the local Eneolithic population (Kvitianska, Lower Mikhaylovka, Zhivotilovka, Post-Stog, Late Cernavoda, Usatovo cultures and cultural groups), possibly with external cultural influence, against the background of intensification of cultural-historical processes, led to the formation of the Budzhak/Yamnaya culture of the North-West Pontic region on the basis of the local, proto-Budzhak horizon (Ivanova 2015). It was formed in the conditions of intensification of migration processes and cultural integration in the zone of the forming frontier.

Archaeology has traditionally focused on the study of the centres of formation and development of various cultures. Only relatively recently (and to a limited extent so far) has the gaze of specialists been turned to the periphery and the frontiers. This has been facilitated to a certain extent by the involvement of frontier theory. Probably, in this context it will be possible to find the answer to a serious question – why on peripheries of the Yamnaya cultural-historical area separate archaeological cultures are allocated – Budzhak in the West, Novotitorovka in the South and Poltavka in the East. Only local variants are known in the vast central territory. On the other hand, considering the North-West Pontic region and the Balkan-Carpathian region through the prism of the frontier theory, two types of frontier characteristic of these territories can be distinguished. The first of them (North-Western) can be attributed to the complex, pastoral and trade type. The second (Balkan-Carpathian) is predominantly a trade type (in relation to the communities of the Yamnaya culture).

The North-West Pontic region has all the necessary signs of a frontier: the transformation of local cultures, the arrival of new populations, their expansion to certain loci, the integration or isolation of groups of autochthons and aliens. Over time, the Northwest Frontier spreads and acquires a new appearance due to the formation of enclaves in new territories and contacts with them. The transformation

of individual enclaves into a unified network, expanding in different directions, was the basis of the Balkan-Carpathian frontier of the Early Bronze Age.

The aridisation of the climate did not have negative consequences for the population of the western Black Sea Steppe of the Late Eneolithic-Early Bronze Age: as a result of climatic changes, steppe communities flourished. That is why the economy of the population was also complex, pastoral-agricultural, with pastoralism having a leading role. This aspect was a certain (but not the only) attractor that facilitated the influx of new population and the development of new territories. Researchers consider the territory of the North-West Pontic region as a linking chain or a kind of “bridge” between East and West, between the world of farmers and the world of pastoralists (Manzura 1993). Archaeological data also indicate the advance of the population from the territory of the North-West Pontic region in a westerly direction and the creation of frontier zones, first on the territories of Romanian Moldova, northern and southern Dobrogea and then further west and southwest, mastering the Balkan-Carpathian region. In the process of this gradual movement, the cultural appearance and cultural ties of the Yamnaya population in the new places of residence changed.

The economic factor was dominant in the cultural-historical processes and relations of the population of the North-West Pontic region and different parts of Europe and in the formation and spread of the frontier zone. The special role is given to the Budzhak culture, from which area the population mainly spread to different regions of the Balkans, Pre-Carpathian and Central Europe. One of the basic stimuli to its movement in the western direction was the establishment of trade relations and the formation of trade routes, an important goal was to obtain metals: silver, copper, bronze, and mastering the techniques of their processing. The genetic homogeneity of the population of a large territory, in our opinion, should be explained not by the invasion, but by the genetic relationship in an earlier time. This phenomenon may be associated with the Sredny Stog community of the Eneolithic period.

Thus, various aspects of the frontier theory provide an opportunity to reconstruct different variants of historical development and cultural dialogue in a certain territory and in a certain chronological period on the basis of archaeological data.

Taking into consideration the possible interrelations of the population of the North-West Pontic region, leaving sites of different cultures, allows defining the character of the North-Western frontier, the direction of its advancement, and the dynamics of intra-cultural changes. The frontier (as a limit) advances not only geographically, but also socially, culturally and ideologically. The theory of the frontier allows the conciliation of different aspects of life in a single process,

promotes transfer of attention to social aspects, and allows allocating a plurality of variants of mutual relations and development to the frontier zone and the dynamics of cultural landscapes.

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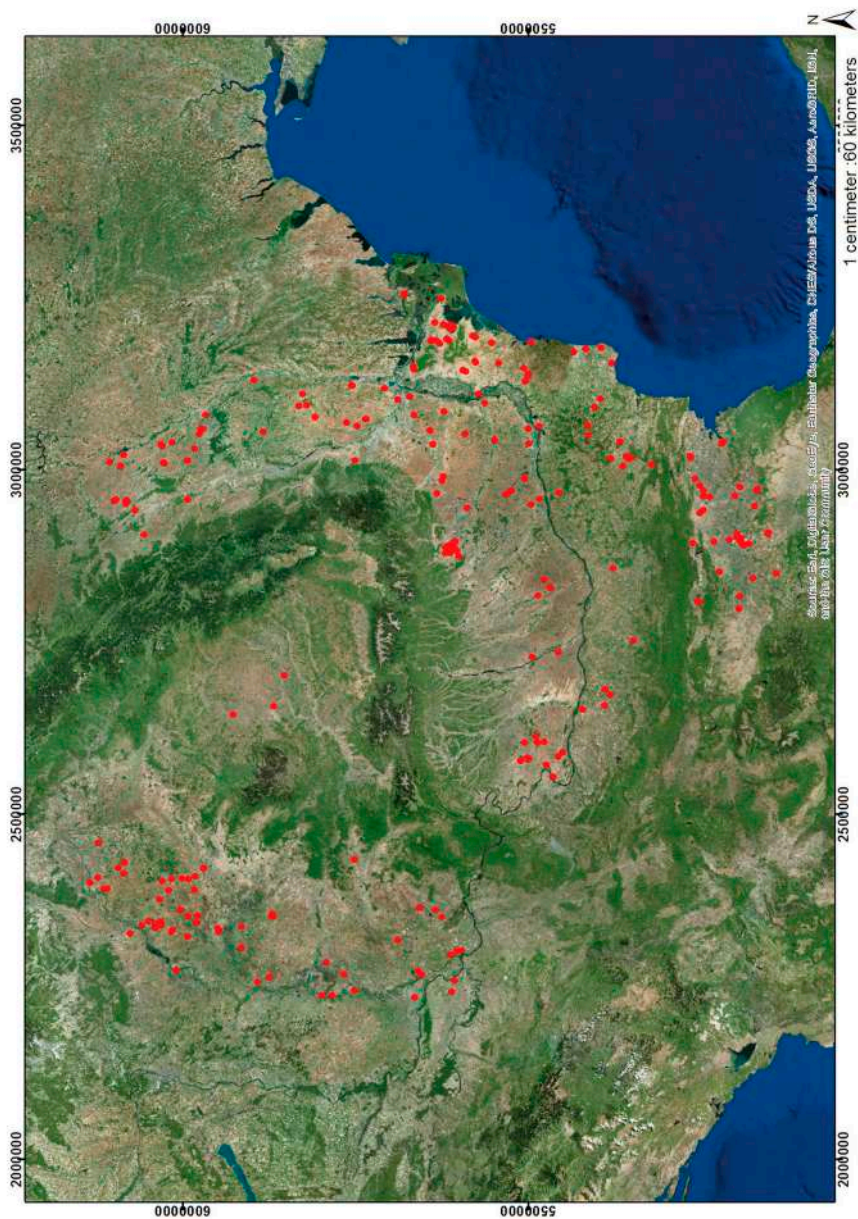
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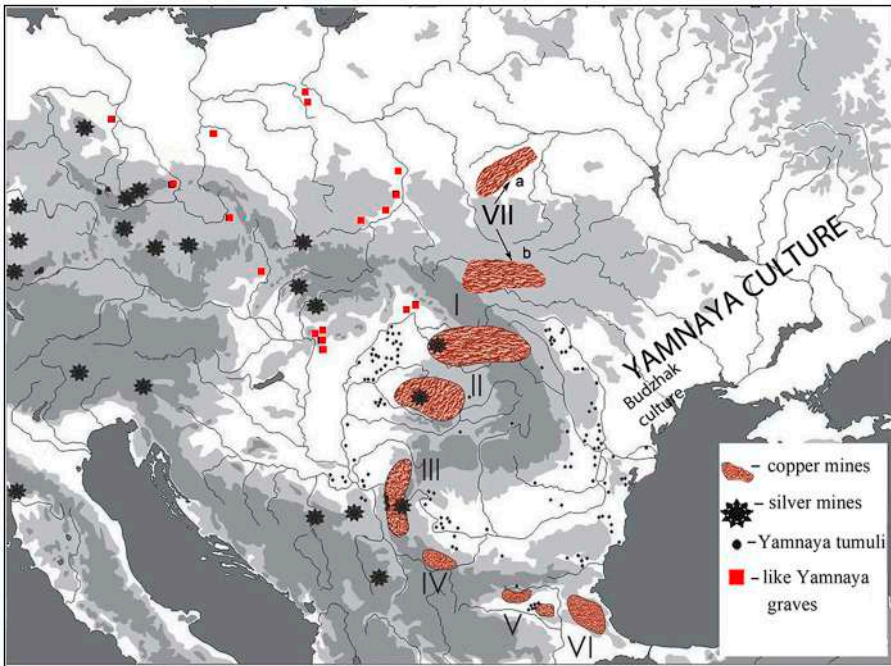
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Pl. I. Map of Yamnaya burial mounds excavated on the territory of present-day countries of Romania, Bulgaria, Serbia and Hungary (after Preda-Bălănică, Frînculeasa, Heyd 2020)
Pl. I. Harta movilelor funerare Yamnaya excavate pe teritoriul actual al României, Bulgariei, Serbiei și Ungariei (după Preda-Bălănică, Frînculeasa, Heyd 2020)

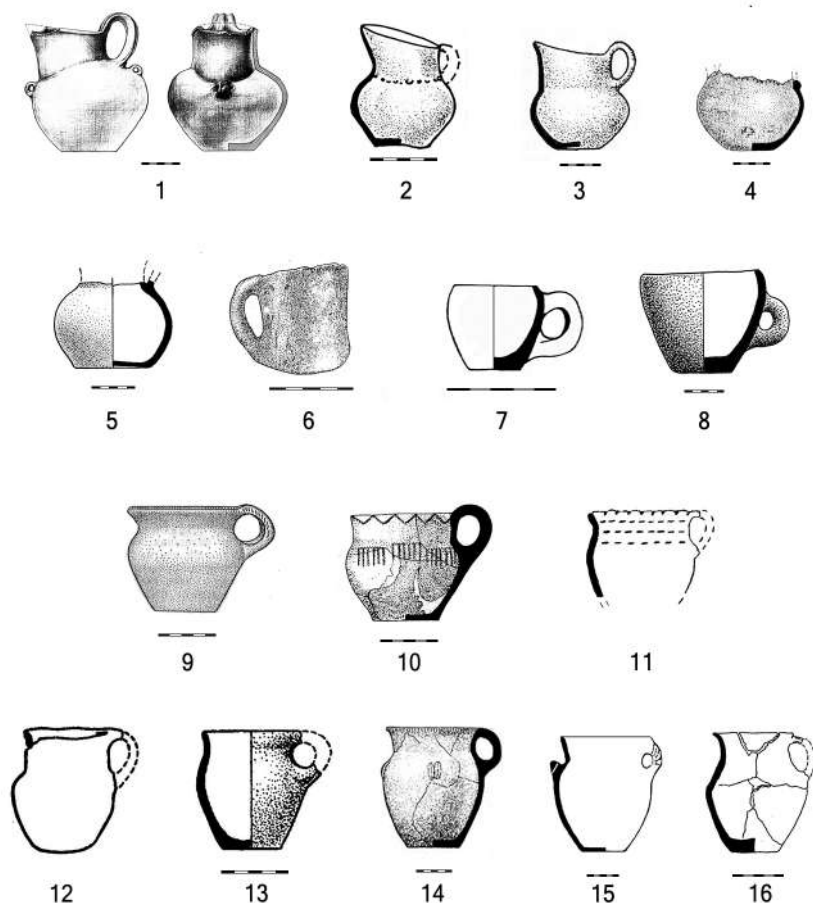


Pl. II. Location of copper-ore zones, silver mines and Yamnaya burial mounds of the Balkan-Carpathian region (after Chernykh 1976; Klochko 2004, added by the author).

Copper-ore areas: I – Northern part of the Eastern Carpathians (Baia Mare, Rodna, Baia Borșa, Southern Bucovina); II – Western Romanian Mountains (Apuseni), Metaliferi and Bihorulului ore regions; III – Banat, Bor, Vidin deposit group; IV – Vrancea group; V – Upper Trakia group; VI – Strandja; VIIa – native copper in Volhynia; VIIb – cuprous sandstones

Pl. II. Localizarea minelor de argint din zonele de minereu de cupru și mobilele funerare Yamnaya din regiunea balcano-carpatică (după Chernykh 1976; Klochko 2004, adăugat de autor).

Zone cu minereu de cupru: I – partea de nord a Carpaților Orientali (Baia Mare, Rodna, Baia Borșa, Bucovina de Sud); II – Munții României de Vest (Apuseni), Munții Metaliferi și Bihorulului ; III – Grupul de depozite Banat, Bor, Vidin; IV – grupul Vrancea; V – grupul Traciei Superioare; VI – Strandja; VIIa – Cupru nativ în Volhynia; VIIb – gresii cuproase



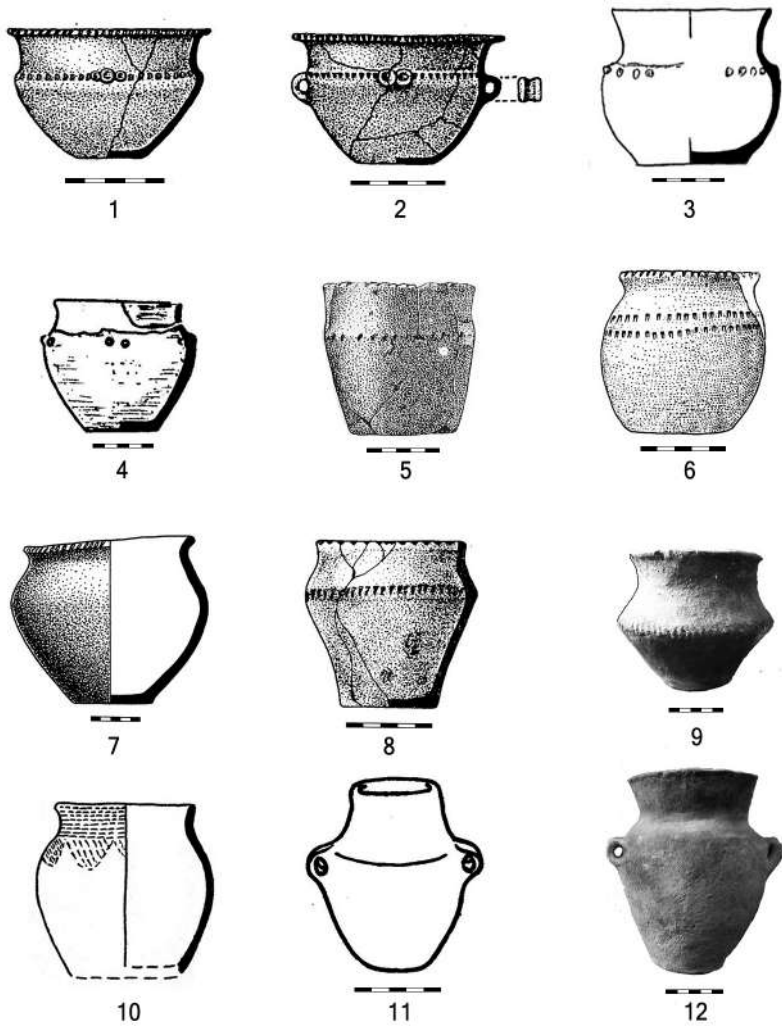
Pl. III. Ceramics of the Budzhak culture, with parallels in the cultures of the Balkan-Carpathian region (after Ivanova 2021c). 1. Matroska, 1, destroyed grave; 2. Kubej 21/5; 3. Glubokoe 2/11; 4. Ursoaia 3/6; 5. Diviziya II, 5/7; 6. Kovalevka I, 3/2; 7. Novogradkovka 2/9; 8. Vishnevoe 54/1; 9. Mayaki III, 1/18; 10. Olănești 1/28; 11. Frikacej 1/5; 12. Bolgrad 1/12; 13. Novogradkovka 2/9; 14. Taraclia 16/5; 15. Strumok 1/3; 16. Novaya Dolina 3/5

Pl. III. Ceramica culturii Budzhak, cu paralele în culturile din regiunea balcano-carpatică (după Ivanova 2021c). 1. Matroska, 1, mormânt distrus; 2. Kubej 21/5; 3. Glubokoe 2/11; 4. Ursoaia 3/6; 5. Diviziya II, 5/7; 6. Kovalevka I, 3/2; 7. Novogradkovka 2/9; 8. Vishnevoe 54/1; 9. Mayaki III, 1/18; 10. Olănești 1/28; 11. Frikacej 1/5; 12. Bolgrad 1/12; 13. Novogradkovka 2/9; 14. Taraclia 16/5; 15. Strumok 1/3; 16. Novaia Dolina 3/5



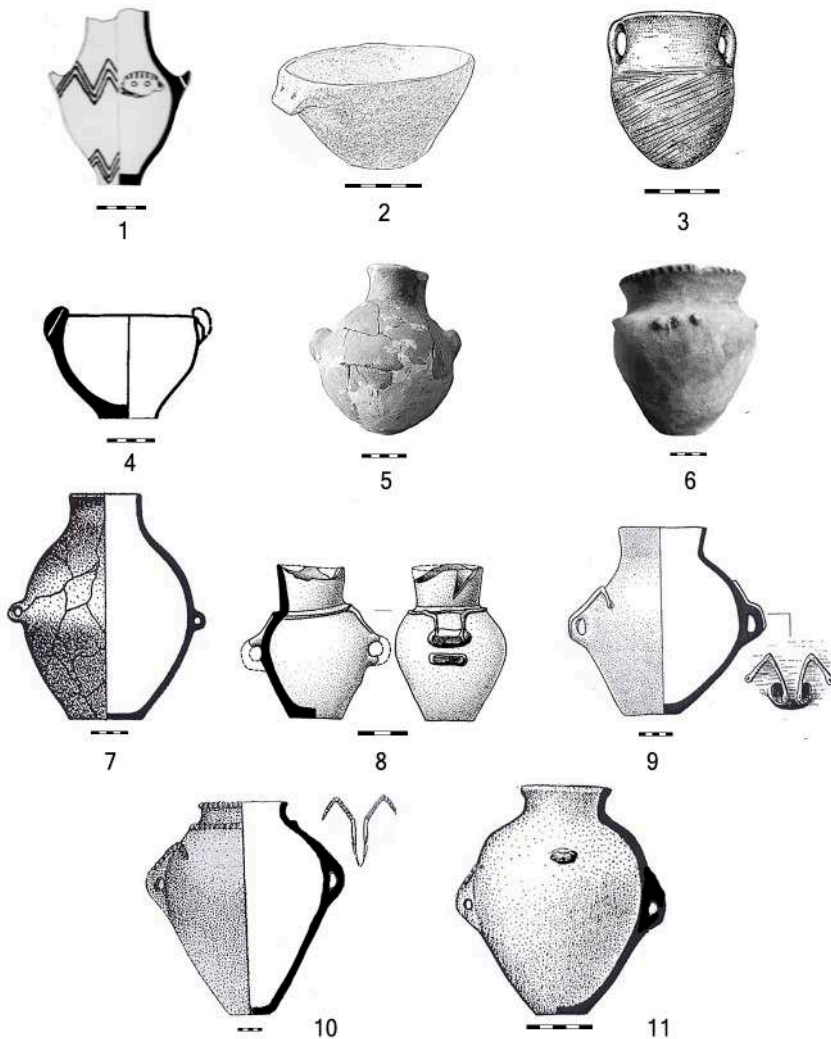
PI. IV. Ceramics of the Budzhak culture, with parallels in the cultures of the Balkan-Carpathian region (after Ivanova 2021c). 1. Nerushaj 9/9; 2. Vishnevoe 52/3; 3. Novogradkovka 2/9; 4. Alkaliya 4/2; 5. Starye Belyary 1/14; 6. Novogradkovka 5/3; 7. Shcherbanka 1/10; 8. Trapovka 5/6; 9. Bolgrad 5/6; 10. Novogradkovka 5/4; 11. Dubăsarii Vechi 1/38; 12. Taraclia 14/16; 13. Dzinilor 9/12; 14. Holmskoe 1/16; 15. Diviziya II, 2/5; 16. Kurchi 3/8

PI. IV. Ceramica culturii Budzhak, cu paralele în culturile regiunii balcanico-carpatice (după Ivanova 2021c). 1. Nerushaj 9/9; 2. Vishnevoe 52/3; 3. Novogradkovka 2/9; 4. Alkaliya 4/2; 5. Starye Belyary 1/14; 6. Novogradkovka 5/3; 7. Shcherbanka 1/10; 8. Trapovka 5/6; 9. Bolgrad 5/6; 10. Novogradkovka 5/4; 11. Dubăsarii Vechi 1/38; 12. Taraclia 14/16; 13. Dzinilor 9/12; 14. Holmskoe 1/16; 15. Diviziya II, 2/5; 16. Kurchi 3/8



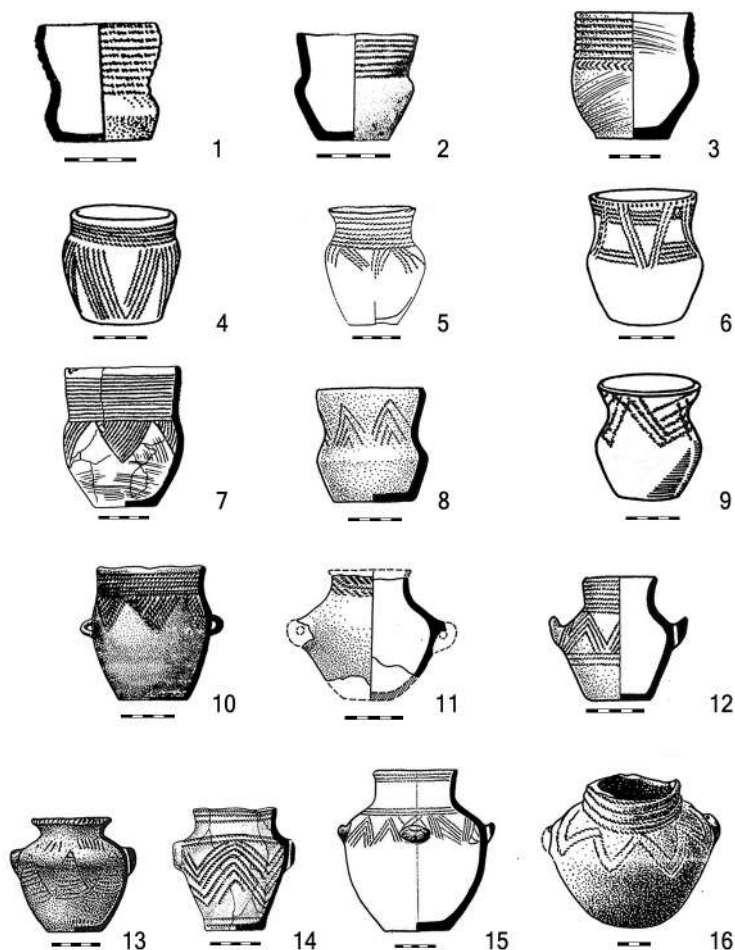
Pl. V. Ceramics of the Budzhak culture, with parallels in the cultures of the Balkan-Carpathian region (after Ivanova 2021c). 1. Cazaclia 8/5; 2. Taraclia 14/1; 3. Plavni 9/7; 4. Medveja 4/4; 5. Kovalevka I, 3/8; 6. Kovalevka II, 8/4; 7. Belolesë 11/9; 8. Olănești 3/8; 9. Nikolaevka 8/10; 10. Glubokoe, k. 2, mound; 11. Bolgrad 3/1; 12. Plavni 12/9

Pl. V. Ceramica culturii Budzhak, cu paralele în culturile regiunii balcanico-carpatică (după Ivanova 2021c). 1. Cazaclia 8/5; 2. Taraclia 14/1; 3. Plavni 9/7; 4. Medveja 4/4; 5. Kovalevka I, 3/8; 6. Kovalevka II, 8/4; 7. Belolesë 11/9; 8. Olănești 3/8; 9. Nikolaevka 8/10; 10. Glubokoe, k. 2, movilă; 11. Bolgrad 3/1; 12. Plavni 12/9



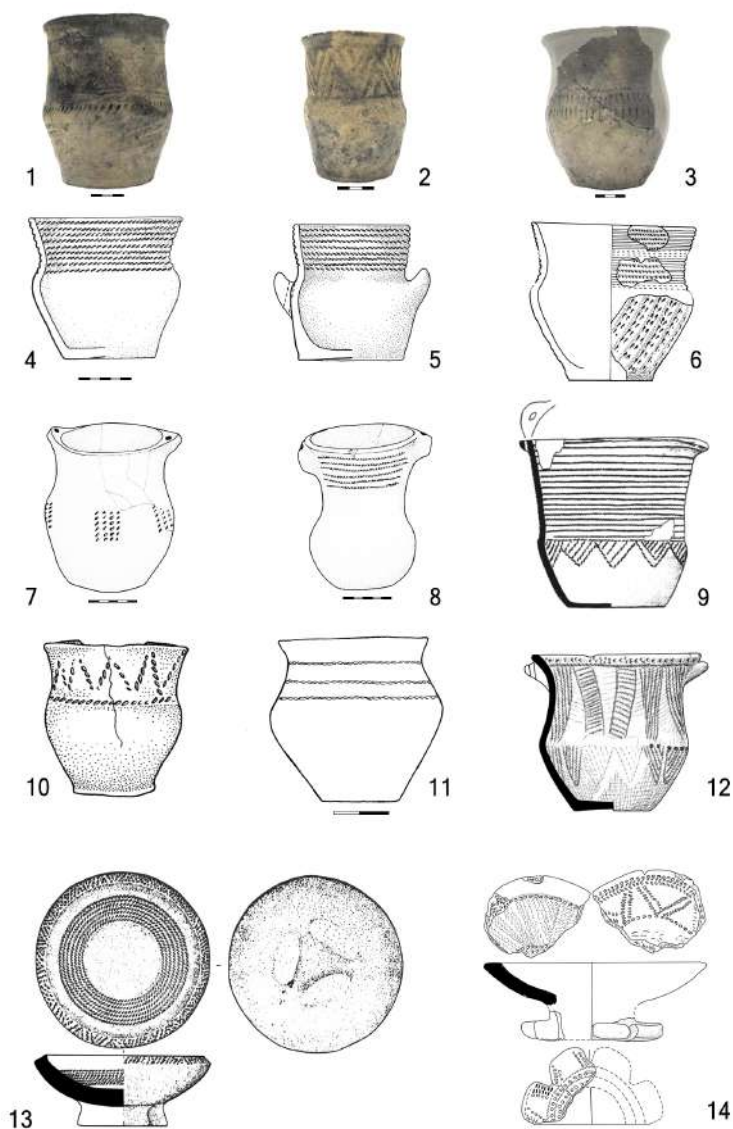
Pl. VI. Ceramics of the Budzhak culture, with parallels in the cultures of the Balkan-Carpathian region (after Ivanova 2021c). 1. Alkaliya, k. 25; 2. Belyaevka 1/20; 3. Kovalevka VII, 1/24; 4. Vishnevoe 17/36; 5. Holmskoe 1/21; 6. Petrodolinskoe 1/4; 7. Sărătenii 2/10; 8. Trapovka k. 1; 9. Gradeshka I, 5/11; 10. Camenka 6/18; 11. Camenka 3/13

Pl. VI. Ceramica culturii Budzhak, cu paralele în culturile din regiunea balcanică-carpatică (după Ivanova 2021c). 1. Alkaliya, k. 25; 2. Belyaevka 1/20; 3. Kovalevka VII, 1/24; 4. Vishnevoe 17/36; 5. Holmskoe 1/21; 6. Petrodolinskoe 1/4; 7. Sărătenii 2/10; 8. Trapovka k. 1; 9. Gradeshka I, 5/11; 10. Camenka 6/18; 11. Camenka 3/13



Pl. VII. Ceramics of the Budzhak culture with cord decoration (after Ivanova 2021c).
 1. Mirnoe 1/12; 2. Butory 9/3; 3. Trapovka 6/20; 4. Bashtanovka 7/21; 5. Kurchi 3/11;
 6. Bashtanovka 7/12; 7. Holodnaya balka 1/13; 8. Trapovka 4/5; 9. Efimovka 9/17; 10. Purcari
 1/29; 11. Gradeshka I, 5/1; 12. Mihajlovka 3/6; 13. Nicolscoe 16/16; 14. Olănești 1/15;
 15. Gradeshka I, 5/11; 16. Beloleșe, 1, mound

Pl. VII. Ceramica culturii Budzhak cu decor de șnur (după Ivanova 2021c). 1. Mirnoe 1/12;
 2. Butory 9/3; 3. Trapovka 6/20; 4. Bashtanovka 7/21; 5. Kurchi 3/11; 6. Bashtanovka 7/12; 7.
 Holodnaya balka 1/13; 8. Trapovka 4/5; 9. Efimovka 9/17; 10. Purcari 1/29; 11. Gradeshka I,
 5/1; 12. Mihailovka 3/6; 13. Nicolscoe 16/16; 14. Olănești 1/15; 15. Gradeshka I, 5/11;
 16. Beloleșe, 1, movila



Pl. VIII. Pots with cord decoration from burial mounds north of the Lower Danube
(after Preda-Bălănică, Frînculeasa, Heyd 2020)

Pl. VIII. Vase cu decor șnurat din movile de la nord de Dunărea de Jos
(după Preda-Bălănică, Frînculeasa, Heyd 2020)

