

Leonid L. Zaliznyak *

BALKAN-DANUBE VERSION OF THE NEOLITHIZATION OF UKRAINE



The article deals with the problem of changing the concept of neolithization of the territory of Ukraine from the south-east, namely from the Caucasus to the south-west from the Danube region.

Key words: Neolithic, food-producing economy, Hrebennyky cultures, Criş culture, Bug-Dniester culture, Linear Pottery culture, Trypillia culture, Pre-ceramic Neolithic.

Neolithic is a chronological period of emergence and spread of food-producing economy, the archaeological feature of which is the oldest pottery. In recent years, there has been a fundamental change in the vision of scientists on the issue of the Ukrainian Neolithic origins and the time of the region. There are three main versions of the Neolithization of the Ukrainian territory:

1. Autochthonous
2. South-east (from the Caucasus and the Caspian)
3. South-western (from the Balkans through the Danube region) (Fig. 1)

The autochthonous version of the neolithization of Ukraine

Adherents of the autochthonous version are mainly patriot-minded amateurs, who believe that the primary domestication of plants and animals occurred in Ukraine, and hence farming and cattle breeding have spread to other territories of the Old World. According to one version, the Odessa gulf at the beginning of the Holocene was a land, on which, allegedly, the Pontic civilization was

developing, the humanity of which was the first one to domesticate wild animals and plants, when in the VII millennium BC because of the sharp rise of the Black Sea, the so-called Black Sea Flood happened. The territories between the Crimea and the modern mouth of the Danube were flooded, and the inhabitants of the Pontic area moved to east to Mesopotamia, to west to the Danube, to the Balkans and the Northern Black Sea, spreading the skills of food-producing economy and the oldest domestic plants and animals. This fantastic legend has been declared by American geologists W. Ryan and W. Pitman, but for the lack of proof, any professional researcher doesn't consider it as a serious scientific construction (Ryan, Pitman 1999; Залізняк 2019, с. 155—159).

The argument of autochthonists in favor of the emergence of the food-producing economy in the south of Ukraine is the presence of wild ancestors of some domestic plants and animals here: one-grained wheat in the Crimea, wild grapes at the mouth of the Danube, wild apples, pears, plums, cherries, onions, garlic, carrots and etc. However, there are no wild ancestors of the most ancient domesticated plants and animals (sheep, goat, several types of wheat, barley, peas) in the Black Sea region. It has been proved that primary domestication of agricultural crops occurred in a limited area, despite the spread of wild ancestors of these crops in large areas.

The overwhelming majority, if not all, of the plants and animals we know have been domesticated far beyond Ukraine and have already come to us in a domesticated form. I will remind about the homeland of some of them (Вавилов 1926; 1987):

1. **America:** sunflower, corn, potatoes, tomatoes, soybeans, beans, pumpkin, capsicum (bitter and sweet), tobacco, etc. Even the symbol of Ukraine — marigold is originally from Mexico.

* ZALIZNYAK Leonid L. — D. Sc., Professor, the Head of Stone Age Archaeology Department of the Institute of Archaeology, the National Academy of Sciences of Ukraine, ORCID 0000-0001-8924-8122, ZaliznyakL@ukr.net



Fig. 1. The migration of early mattock farmers from the Near East to Europe in VII—V mil. BC

2. **Mediterranean** — the homeland of vegetables — several varieties of cabbage, carrots, beets, onions, garlic, radish, parsley, dill, sorrel, salad. About the borrowing of onion from the Northern Mediterranean is evidenced by its very name in Ukrainian — onion (“tsybulia” as it is called in Ukrainian), which comes from the Italian *cippola*. Domestic grapes and oats come from the Balkans and the Apennines, according to M. I. Vavylov.

The primary domestication centers for wild grapes, cherries, pears, plums, and apples, despite their wild ancestors in Ukraine, were the Mediterranean, the Middle East, and Central Asia. The widely cultivated versions of these fruits and berries were imported to Ukraine from Europe quite late in the 17th—19th centuries. It is not accidental that the selected cherry version, which has a wild ancestor in Ukraine, is derived from the English cherry — sweet cherry (“chereshnia” as it is called in Ukrainian). The monastery gardens of southern Europe in the late Middle Ages and later were centers of fruit and vegetable selection.

3. **The Middle East** was homeland to the most ancient domesticated plants (wheatgrass, barley, rye, peas, flax) and animals (sheep, goat, bull), which are known in Ukraine since the Neolithic in the materials of the Criş culture, Linear Pottery culture, Cucuteni-Trypillia culture. Ancient Neolithic wheatgrass known from the Neolithic (especially spelt, better known as German wheat) has,

over the past two millennia, supplanted bare-grains varieties of wheat that, according to the famous Ukrainian paleobotanist, H. O. Pashkevych, came to Ukraine from the Mediterranean in Antiquity.

Wild buckwheat ancestors grow in the foothills of Nepal, from where it was brought to Europe by the Mongols or Arabs. The cucumbers come from India, apricots come from China, watermelons and melons from Africa (Вавилов 1926; 1987).

Thus, the first domesticated plants and animals of the Neolithic of Ukraine entered the region from outside, which contradicts the autochthonous concept of neolithization of Ukraine. Nowadays, the local origins of the Neolithic of Ukraine are only supported by adherents of quasi-scientific fantasies such as “Pontic civilization” or “sacred Trypillian Aratta”.

If the first domesticated animals and plants came to Ukraine from the Middle East, then when and by what means (through the Caucasus or through the Balkans) did it happen?

South-eastern version of the neolithization of Ukraine

It is often featured in the literature under the name “Eastern cattle breeding impulse”. “Parents” of this concept were known Ukrainian scientists V. M. Danylenko and I. H. Pidoplichko, thanks to the efforts of whom the mentioned concept was established in neolithic studies in the postwar times. In the 1950—1960-ies V. M. Danylenko explored the multi-layered settlement of Kamiana Mohyla I in North Azov region or Ciszovia and the Neolithic monuments of the distinguished by him Bug-Dniester culture (BDC) of the middle reaches of the Southern Bug. Namely on these materials he developed the south-eastern version of the neolithization of Ukraine, which came about as a result of the so-called “Eastern cattle breeding impulse”. In his main book, *The Neolithic of Ukraine*, in 1969, V. M. Danylenko proposed the first concept of the “Neolithic Revolution” at the territory of Ukraine, in which he combined as successive phases the south-eastern and south-western versions of neolithization of Ukraine.

According to V. M. Danylenko, as a result of economic crisis due to aridization of the climate in the 7th millennium BC hunters of the Caspian and the Ciscaucasia have tamed sheep, goats, aurochs. These ancient pastoralists, who hadn’t known pottery yet, searching for the best grasslands, moved west to North Azov region. Their traces in Ciszovia are the lower pre-ceramic layers of Kamiana

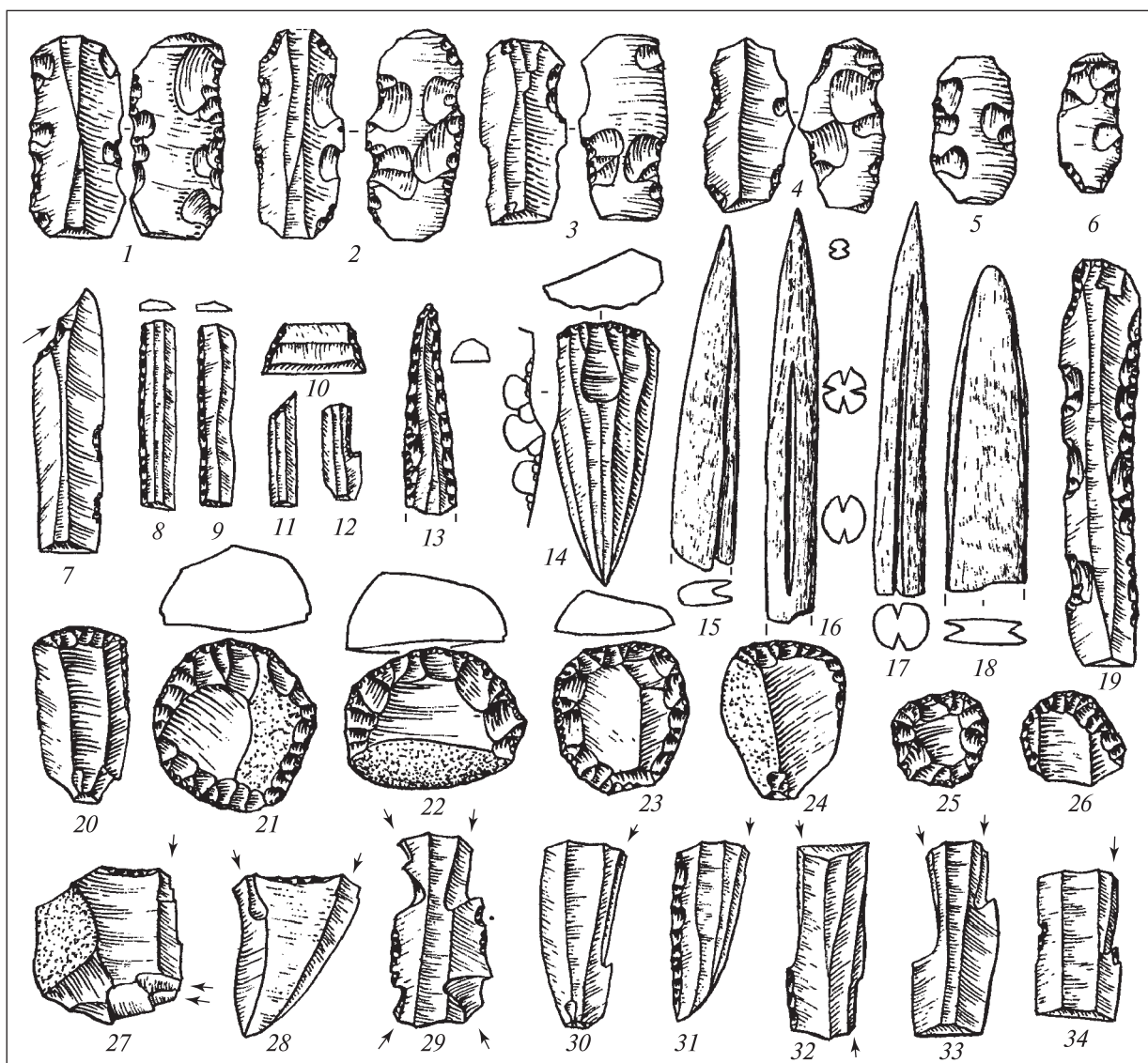


Fig. 2. Kukrek flint end bone implement from Ohrin 8 site in Middle Dnieper region

Mohyla I settlement on the Molochna River that contain bones of goats, sheep and cows, as well as flint tools inherent in Kukrek archaeological culture (Fig. 2).

According to V. M. Danylenko, the Kukrek pastoralists settled from North Azov region in three directions: north along the Dnieper into the Middle Dnieper, south to the Crimea and west to the Bug region. In the Middle Dnieper region, Kukrek migrants started the Dnieper-Donetsk culture (DDC), in the Crimea — the Tash-Air culture, and at the Southern Bug — the Bug-Dniester culture (BDC). Thus, the first pre-ceramic stage of the Neolithic of Ukraine began, whose bearers were Kukrek herders, who had not known ceramics yet. The second wave of migrants from the Caspian region brought the oldest clay vessels with a “pin-like” bottom of the Dzhebel type (Даниленко 1969, с. 11, 176, 177, 186).

According to V. M. Danylenko, cattle breeding in the south of Ukraine was brought from the east as a result of the “eastern impulse”, while later Neolithic colonists from the Danube spread agriculture to the Bug region. The second stage of the Bug-Dniester culture began with the arrival of the Criș culture population at the Southern Bug from the Danube region that, in addition to agriculture, brought some kind of Criș pottery. The movement of the Bug-Dniester culture population to the north-east into the Kyiv-Cherkasy Dnieper region led to the neolithization of the Middle Dnieper region. Here a new phase of the Dnieper-Donetsk culture emerged, the ceramics of which have direct parallels in the Bug-Dniester culture. V. M. Danylenko considered the early phase of the DDC as “a kind of ethno-cultural affiliation of the Bug-Dniester culture” (Даниленко 1969, с. 34).

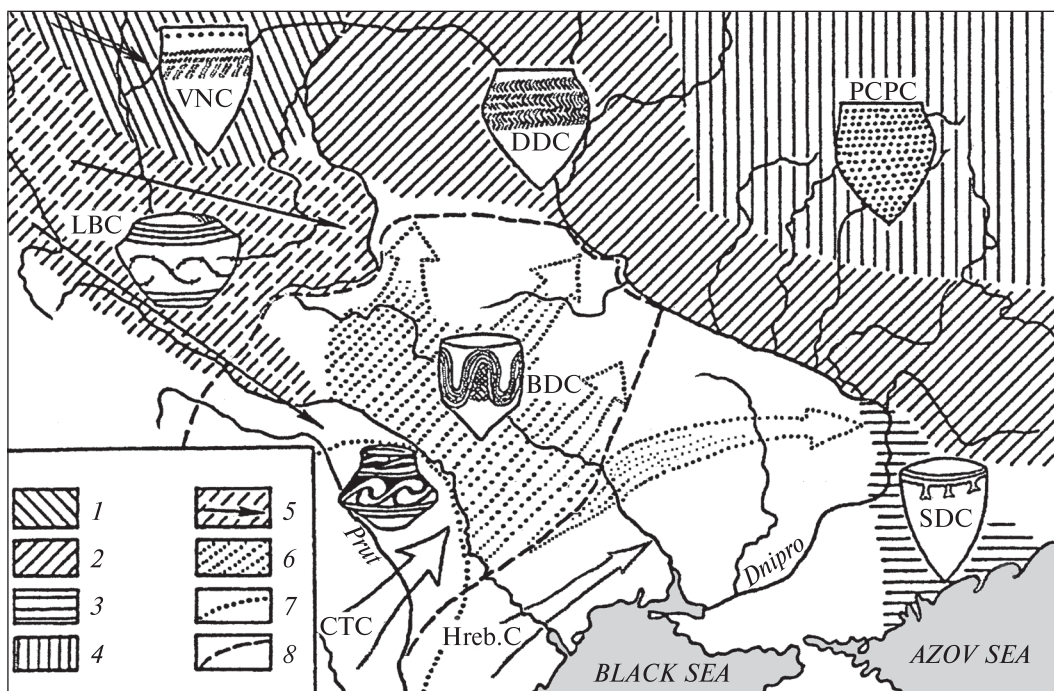


Fig. 3. Neolithic cultures of Ukraine: 1 — Volyn–Nieman (VNC); 2 — Dnieper–Donets (DDC); 3 — Sur-sko–Dnieper (SDC); 4 — Pit–Comb Pottery (PCPC); 5 — Linear Band Pottery (LBC); 6 — Bug–Dniester (BDC); 7 — Cucuteni (CC); 8 — Trypillia (TC)

The regulations on the BDC formation under the influence of the Criș culture and the leading role of the BDC in the transmission of Neolithic innovations to the north to the population of the Middle Dnieper region had been time tested (Fig. 3). At the same time, the idea of an “eastern impulse” that allegedly brought sheep, goats and cows from the Caspian region to Ukraine, and later the oldest eastern type of pottery, was not confirmed by further research.

It should be noted that V. M. Danylenko in the second half of 20th century was a leading ideologist in the field of Neolithic and Chalcolithic studies in Ukraine. His concept of neolithization of Ukraine was followed by most Soviet researchers of the second half of 20th century. The conceptual scheme of V. M. Danylenko was the brainchild of his time and bore traces of influence of both modern trends and certain dogmas of Marxism.

In particular, he explicitly borrowed the concept of pre-ceramic Neolithic from Gordon Child, who at that time was developing the idea of the “Neolithic Revolution”, an important component of which, the pre-ceramic Neolithic, had just been discovered in the Middle East. According to the modern trend, a pre-ceramic Neolithic was found in North Azov region on the settlement of Kamiana Mohyla I. However, unlike the Middle East, which, according to G. Child, was based on primitive forms of both cattle breeding and farming, the

economic basis of the Cisazovian pre-ceramic Neolithic, according to V. M. Danylenko, was exclusively cattle breeding.

The difference between the pre-ceramic Neolithic of Kamiana Mohyla I and the Middle East according to G. Child seems to be due to a certain influence on the constructions of V. M. Danylenko by Marxist dogmas, which was pointed out by D. L. Haskevych (Гаскевич 2012). According to F. Engels, the birth of cattle breeding preceded the spread of agriculture. “*In the east, the average degree of barbarism began with the domestication of animals that give milk and meat, while plant culture remained unknown for a very long time during this period*” (Енгельс 1979, с. 228). This dogma seems to have significantly contributed to the appearance in the constructions of V. M. Danylenko an unnatural, exceptionally cattle breeding pre-ceramic Neolithic.

Co-author of V. M. Danylenko in the discovery of the latter was the famous Ukrainian paleozoologist and academician I. H. Pidoplichko. At the time of treating the osteological collection from Kamiana Mohyla, he, according to D. L. Haskevych (Гаскевич 2012, с. 56), was involved into the politically committed fight against “*bourgeois theories..., which denied the role of Slavic, in particular Rus, tribes in domestication of wild animals and breeding new strains*” (Підоплічко 1952). The scientist strongly argued for the possibility of early do-

mestication of the bull, goat, sheep, pig and horse in the south of the USSR. It is clear that such an ideologically biased position of researchers when working with Kamiana Mohyla materials did not contribute to their objectivity and could not affect the conclusions, including the very early spread of cattle-breeding in the region.

Nowadays, the south-eastern version of neolithization of Ukraine is being steadily developed by N. S. Kotova. She is a long-standing and consistent supporter of V. M. Danylenko's oriental ideas, though she has quite fundamental differences in her views on the periodization of the Neolithic period of Ukraine. The researcher also believes that the cattle breeding was brought to Ukraine from the east, and the migrants from the Criş culture moved from the Danube region to the already neolithized Bug region. She also recognizes the mediating role between the Bug region farmers and aborigines of the Dnieper region of the Bug-Dniester culture (Котова 2002, с. 10).

N. S. Kotova substantially developed and even hypertrophied the idea of "Eastern cattle breeding impulse" of V. M. Danylenko, boldly claiming that in the Ciscaucasia and Cisazovia as early as in the 8th millennium BC not only all the major domestic animals of Ukraine — sheep, goats, bulls, horses, pigs, dogs, but also cultivated plants, were domesticated. In her opinion, it was from North Azov region that they spread throughout Ukraine. "... *Cultured plants were borrowed from the inhabitants of Ukraine from the population of the Northern Cisazovia and the Ciscaucasia, not the Balkan-Carpathian region*" (Котова 2002, с. 60, 75, 76, 82).

V. M. Danylenko and I. H. Pidoplichko initiated among Soviet researchers in the second half of the 20th century a kind of fashion for the search of the deep roots of wild animals' domestication in the south of the European part of the USSR.

Russian archaeologists D. O. Krainov and O. L. Dmytriyeva on the faunistic materials of the cave sites of the Crimea Tash-Air I and Zamil-Koba came to the conclusion of domestication of pigs, as well as sheep, aurochs and even horses (Крайнов 1960, с. 123—140). V. N. Stanko, on the faunistic materials of the Myrne site in Odesa region, concluded that domestication of aurochs in the north-western Black Sea had already been known in Mesolithic and the local roots of the European cow population (Станко 1991, с. 8, 14). D. Ya. Telegin saw traces of domestication of wild aurochs in the Mesolithic materials of Ohrin 8 site in Nadporizhzhia (Телерін 2002, с. 70). According to N. S. Kotova, the bones of a sheep from the lower layers of Semenivka site near Kamiana Mohyla

are in favor of the early domestication of cattle in Cisazovia. However, during the re-analysis of the mentioned remnants, it was found that they do not belong to the domestic sheep, but to the wild saiga and are dated from by C-14, not VIII, but the middle of VI thousand BC (Motuzaite-Motuzeviciute 2012, p. 14—17).

The key argument in favor of early spread of cattle breeding at the territory of Ukraine from the east is the conclusions made by an academician I. H. Pidoplichko 60 years ago about numerous osteological remains of cattle in the layers of the pre-ceramic Neolithic of Kamiana Mohyla (Підоплічко 1956, с. 54). However, the above-mentioned definitions of the faunistic remains from the excavations of V. M. Danylenko in 1947 raise doubts about the vast majority of specialists, because of the high probability of mixing materials of different layers of a multi-layered settlement during the excavation process. The famous paleozoologist O. P. Zhuravlov criticizes these paleozoological definitions of I. H. Pidoplichko on osteological materials from Kamiana Mohyla, up to their complete denial (Журавльов, Котова 1996, с. 5, 6). The author of these lines (Залізняк, Панченко 2007, с. 8, 9) and D. L. Haskevych (Гаскевич 2012) expressed doubts about the conclusions of I. H. Pidoplichko about the presence of domestic animal bones in the lower pre-ceramic layers of Kamiana Mohyla.

In general, for the Neolithic researchers of the second half of 20th century it was typical to suppress the beginning of the spread of the food-producing economy in Ukraine. If V. M. Danylenko the beginning of the "eastern impulse" dated from the 7th millennium BC (Danylenko 1969, с. 15), then his successor N. S. Kotova lowered the beginning of the Neolithization of the Ciscaucasia and Cisazovia to the 8th millennium BC (Котова 2002, с. 60, 75, 76, 82). Numerous prints of grains of cultivated cereals (wheat, barley, rye, millet, peas), which various researchers of the Neolithic of Ukraine of the 1980—1990-ies found on the ceramics of the Bug-Dniester, Dnieper-Donetsk, Volyn, Surska and other Neolithic cultures of Ukraine, allegedly testified about the spread of agriculture at most of the territory of Ukraine in the early Neolithic.

The illusion of extraordinary antiquity of the Ukrainian Neolithic, in comparison with the Central European at the turn of XX—XXI centuries were also created by numerous early dates from the Kyiv Radiocarbon Laboratory. In particular, it dates back for 400—500 years earlier for the key Neolithic regions the Bug-Dniester and Trypillian cultures than the corresponding dates of vari-

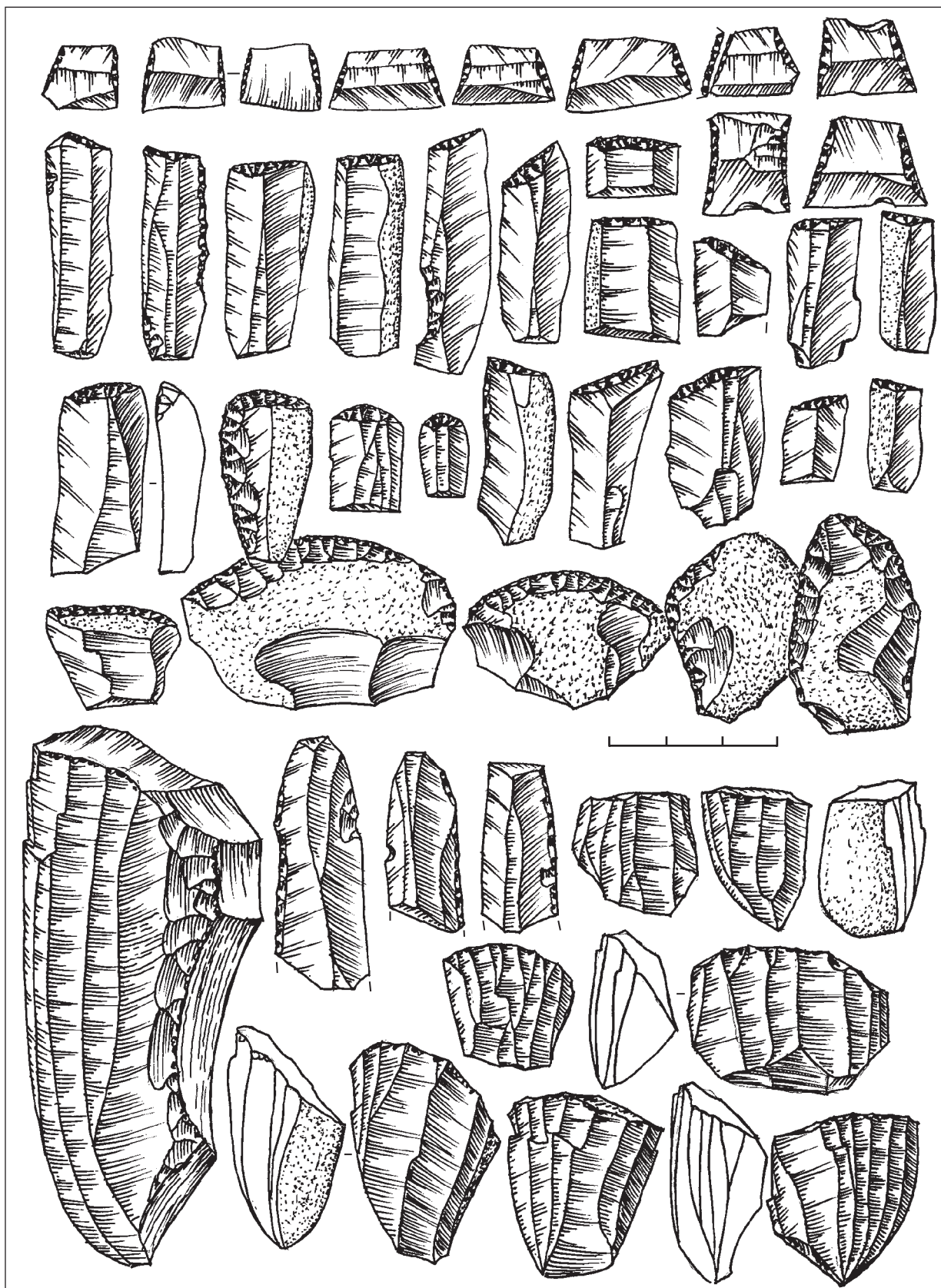


Fig. 4. Obsidian implement Körös culture. Mehtelek site, 5800—5600 BC (cal) (Starnini 1993)

ous European laboratories. On the discrepancy of the Kyiv dates to the established provisions of the Neolithic Europe chronology, based on large se-

ries of radiocarbon dates of different laboratories of the world, has been repeatedly written by various researchers (Бурдо 2003, с. 15; Товкайло 2004;

2005, с. 45; Залізняк 2005, с. 125; 2006, с. 15; Гаскевич 2016).

The abovementioned raises doubt about the widespread perceptions in the recent past about the early transition to the food-producing economy in Ukraine. Therefore, in recent years there has been a kind of revision of the evidence on the early spread of the food-producing economy in the Neolithic of Ukraine. In 2012, search results for traces of the food-producing economy were published at the Early Neolithic sites of North Azov region, the Seversky Donets Basin and the Lower Don. The studies were conducted at 18 key Neolithic sites of Eastern Ukraine and the Lower Don with washing the cultural layer in search of grains, examining ceramics for grain prints and examining faunal remains. The author of the study convincingly showed on a large mass of material that the earliest traces of cultivation of cultural cereals in the specified region are recorded only from the second half of 5th — beginning of 4th thousand BC on the Chalcolithic settlements of the Serednii Stig culture. By the same time, the oldest bones of domesticated animals are dated (Motuzaite-Motuzeviciute 2012, p. 14–17).

Recent studies have raised serious doubts about the abovementioned imprints of cultural cereals on ceramics of the Dnieper-Donetsk, Bug-Dniester, and Volyn Neolithic cultures of Right-Bank Ukraine. No imprints of grains of cultural cereals on the surface of ceramics of these cultures have been found by the latest studies (Endo etc. 2019, h. 27). The most ancient in Ukraine reliable prints of grains of cultural cereals were recorded on the pottery of the Linear Pottery culture (second half of VI thousand BC) and Cucuteni-Trypillia (V–IV thousand BC). There are also ceramics in the culture of Körös in Hungary, the eastern branch of which is the Criş monuments of Ukrainian Ciscarpathia (Fig. 4).

Particularly surprising and embarrassing is the lack of traces of cultural cereals cultivation at BDC sites in the Bug region. It is a key culture in the Neolithic of Ukraine, which was in direct contact with the developed farmers of the Danube region (Criş culture, LBC) and was the conduit of Neolithic innovations to the north in the forest of the Dnieper and Polissia region. After that, there is no surprise at the lack of signs of the food-producing economy at the sites of cultures Dnieper-Donets (DDC), Volyn-Neman (VNC), Pit-Comb Pottery (PCPC) of the Dnieper, Polissia and the Desna region.

The absence of grain imprints of cultural cereals on ceramics of the forest Neolithic of Ukraine,

as well as the residue of grains in the cultural layers of the sites, casts doubt on the presence of cattle breeding among the population of BDC, DDC, VNC, SC. After all, the oldest cattle breeding is known only in combination with early agriculture (Шнирельман 1980, с. 216).

V. M. Danylenko drew attention to the small number of domestic animal bones at the BDC monuments and concluded about “the dominant role of hunting and the small role of cattle breeding” in the economy of BDC. He wrote: “... *the need for meat from the tribes of the Bug-Dniester area was met at the expense of intensive development of hunting, and not at the expense of cattle breeding*” (Даниленко 1969, с. 165, 180). The fauna of domesticated animals at BDC sites is represented by a few bones of domestic bulls and dogs. They were identified by a well-known Ukrainian paleozoologist V. I. Bibikova, who, however, did not have full confidence in the correctness of her definitions (Журавльов, Котова 1996, с. 5). She explained the doubtful signs of domestication on the bones of bulls by “*an early form of domestication*” (Даниленко 1969, с. 178). In addition, in the 1990-ies traces of domestication on the bones of animals from the Bug-Dniester settlements were unsuccessfully searched for by a famous German paleozoologist, an expert on domestication of animals, N. Benecke.

The findings of recent studies are quite impressive, as they break the established stereotypes in the ideas about the early spread of the food-producing economy in the region even at the stage of the pre-ceramic Neolithic from the east, namely from the Caspian, the Caucasus and North Azov region (Даниленко 1969, с. 11, 176, 177, 186; Котова 2002, с. 60, 75, 76, 82). The oldest reliable traces of the food-producing economy in the region are traced not in the south-east, but in the south-west of Ukraine from the middle to the second half of the 6th millennium BC in cultures of the Danube origin (Criş, LBC, Trypillia).

The abovementioned gives a doubt not only the possibility of cattle breeding in Eastern Europe from the Caucasus and Cisazovia, but also the very idea of an “Eastern impulse” as a catalyst for the neolithization of Ukraine. At least the very existence of the latter at present requires further argumentation. It is significant that the leading Neolithic expert of Ukraine, N. S. Kotova, who for a long time was the most consistent supporter of the “Eastern impulse” concept of V. M. Danylenko, has recently radically changed her scientific position. In her latest book of 2015, the researcher derives the early Neolithic of Ukraine not from the Caucasus as before, but from the Neolithic of

Greece and the Danube region in the 7th millennium (Котова 2015, с. 62, 76).

Thus, with the south-eastern version of the neolithization of Ukraine, which dominated in the second half of 20th century, nowadays the south-western or Balkan-Danube version competes successfully.

South-western or Balkan-Danube version of the neolithization of Ukraine

The origins of the Balkan-Danube concept of neolithization of Ukraine reach the end of 19th century, when V. Khvoika discovered the first Neolithic culture at the territory of Ukraine, which was called Trypillia. Leading Ukrainian (M. Grushevskiy, M. Biliashkevskiy, V. Scherbakivskiy, O. Kandyba-Olzhych) and Russian (O. Spitsyn, O. Gorodtsov) archaeologists and historians of the late 19th — early 20th centuries almost unilaterally linked Trypillia to the Neolithic of the Danube region, the Balkans and Asia Minor (Залізняк 2019, с. 427, 428).

M. Grushevskiy was one of the first to point the analogies of the materials just explored by V. Khvoika among the “finds of the Middle Danube lands”, in Thessaly and “among the monuments of the old Aegean culture of pre-Mycenaean times”. These parallels, according to the historian, “*make quite a plausible hypothesis of independence* (of Trypillia culture — L. Z.) *and consider more hope to resolve the case from further Asian finds*” (Grushevskiy 1913, p. 45, 46).

The author of these lines has repeatedly expressed doubts about the pre-ceramic “Eastern cattle breeding impulse”, and at the end of 20th century formulated his own view of the south-western version of neolithization of Ukraine. It took place in the “balkanization” mode by successive waves of Neolithic colonial migrants from the Balkans through the Danube region — Hrebenyky culture (HC), Criş culture (CC), Linear Band Pottery culture (LBC) and Cucuteni-Trypillia culture (CTC) (Залізняк 1995; 1998, с. 231—235; 1999, с. 89, 90; 2006, с. 3—18; Залізняк та ін. 2016) (Fig. 1; 3). It was also suggested that Neolithic innovations could be spread from Anatolia to the north by cabotage navigation along the western Black Sea coast (Залізняк 1998, с. 173). These waves of neolithization of Ukraine are largely correlated with the phases of neolithization of Europe by the ancient farmers and herders of the Middle East, the main ones of which are the following:

1. The spread of flint lithic technology at first and then the Neolithic package together with the “Impresso” pottery at the Mediterranean coasts,

including the Balkan Peninsula, by cabotage navigation along the coasts — VIII—VI thousand BC (cal).

2. Colonization of the Balkan Peninsula from Anatolia in VII thousand BC (cal) (Fig. 1).

3. Colonization of the Middle Danube by culture bearers of Starčevo-Körös-Criş — first half of VI thousand BC (cal).

4. Colonization of the south of Central Europe by the humanity of Linear Band Pottery culture (LBC) in the second half of VI thousand BC (cal).

5. Colonization of the forest zone of Central Europe by the Chalcolithic Lengyel culture in V—IV thousand BC (cal).

It is not difficult to notice that the abovementioned five successive waves of Neolithic colonists from the Balkans and the Danube region to Ukraine are in fact local manifestations of these global phases of the neolithization of Southern and Central Europe — marine, Hrebenyky, Starčevo-Criş, Linear Band Pottery, Lengyel-Trypillia cultures.

1. The spread of Neolithic innovations by sea route

In addition to land, the sea route for the proto-Neolithic flint processing technique of Middle Eastern origin to the Northern Black Sea and Crimea was possible too. Twenty years ago, the author of these lines suggested that some Neolithic innovations (techniques of flintknapping, “Impresso” ceramics) could be spread to the south-west of Ukraine by sea route, that is, by means of cabotage navigation along the western Black Sea coast (Fig. 1). Such conclusions were prompted by known facts of cabotage way in VIII—VI thousands BC (cal) from the Middle East to the coasts of the Balkans, the Apennines, the Iberian Peninsula and the north coast of Africa, a package of Neolithic innovations — flintknapping technique, domesticated sheep, goats, wheat and barley, “Impresso” ceramics, including imprints of Cardiid shells. In addition, the flintknapping technology and typology of the artifacts of the late Mesolithic monuments of the Murzak-Koba Mountain in Crimea are very reminiscent of the so-called Castelnuovian of the Mediterranean coast of France and Spain, as well as of the Caspian monuments of the coast of Morocco, Libya, and Tunisia. It does not seem coincidental that the cultural layers of the Caspian monuments of the Southern Mediterranean and the Murzak-Koba in Crimea are connected by the powerful clusters of mollusk shells (Залізняк 1998, с. 173, 229; Залізняк та ін. 2013, с. 250).

A few years ago, D. L. Haskevych carefully analyzed the possibility of spreading the ceramics with comb-stamped decorations to the North-west-

ern Black Sea by transporting it by cabotage sailing along the coast. The researcher believes that the traces of colonization could appear underwater, since the sea level has risen by 10 meters in recent millennia (Гаскевич 2010).

M. T. Tovkailo found pottery with *Cardiidae* shells imprints at the Gard settlement of the Bug-Dniester culture, in the lower part of the Southern Bug. As an analogy, the researcher involves the Neolithic *Cardiidae* ceramics of the Adriatic and suggests its appearance at Gard by the settling of the “Impresso” culture carriers along the coasts not only of the Mediterranean, but also of the Black Sea (Товкайло 2012, с. 27–36).

Therefore, we have good reasons to believe that Neolithic innovations could be spread to the Northern Black Sea and Crimea from the Eastern Mediterranean both by land and sea (Fig. 1).

2. Hrebenyky wave of the neolithization of Ukraine

Monuments of the Hrebenyky culture (HC) in Odesa region that are dated from the Late Mesolithic, namely the second half of VII–VI thousands BC (cal.), can be considered as traces of the pre-ceramic wave of migrants from the Balkans. According to the canons of traditional Soviet autochthonous Ukrainian researchers view of XX c. the culture was considered to be local in origin (Даниленко 1969, с. 61, 176; Станко 1991, с. 8, 14). The views of V. M. Danylenko and V. N. Stanko on the origin of the Hrebenyky culture from the Osokorivka-Tsarynka type of monuments were shared by other researchers of the Black Sea Mesolithic: D. Ya. Telegin, S. P. Smolianinova, and M. P. Olenkovskiy (Оленковский 1991, с. 184). From the monuments of Bilolisia (Mykhailivka) type, I. V. Sapozhnykov derives Hrebenyky culture (Сапожников, Сапожникова 2005).

Author of these lines from 1990-ies has repeatedly argued for “*Balkan-Danube origins or genetic ties of Hrebenyky culture and BDC with the early Neolithic of the Danube and the non-ceramic Neolithic of Eastern Greece*” (Залізняк 1995, с. 6, 11, 12; 1998, с. 183; 2005, с. 122–126; 2006, с. 11–14).

For flint inventory of HC is typical a proto-Neolithic knapping technique (Fig. 5). With its help, from single-platform cores blades of middle width were made. Numerous trapezes were made from the intersections of these blades. There are a lot of scrapers on flakes, less end-scrapers and burins are almost absent, in Hrebenyky culture.

Namely such kind of flint inventory is typical for Starčevo-Criș culture of the Danube River region and Romania in the end of VII–VI mil.

BC (Fig. 4) that is genetically linked to the most ancient Neolithic of the Balkans. These include the pre-ceramic and early ceramic layers of Nea Nikomedeia, Argissa, Achilleion, Sesklo, Franchthi, and etc. in Thessaly in VII thousand BC (Perles 2001, p. 19–39, tabl. IV). (Fig. 6)

In other words, the direct analogies to the HC flint inventory in the early Neolithic of the Danube region, namely in the Starčevo, Criș, Körös cultures, give reasons to speak about the genetic connection of HC with the mentioned cultural phenomena. And since the early ceramic Neolithic of the Danube region, according to the vast majority of European researchers, is derived from the pre-ceramic Neolithic of Thessaly (Whittle 1985, p. 37–49; Perles 1985; Biagi 2005a; 2005b) therefore the genetic roots of Hrebenyky culture indirectly are dated back to the ancient Neolithic of Eastern Greece. This is also indicated by the direct typological parallels to the Hrebenyky flint complexes in the flint of the pre-ceramic Neolithic of Greece (Argissa, Franchthi, Knossos) (Fig. 4–6).

In fact, the Hrebenyky culture flint inventory is a striking example of the flint technocomplex of the Balkan-Danube Neolithic that is typical for the original Neolithic of Greece in VII thousand BC, related to the cultures Karanovo I, Starčevo, Criș, Körös, of the end of VII–VI thousands BC, and Linear Band Pottery cultures.

Due to the poor conservation conditions of the cultural layers of Mesolithic sites in the North-Western Black Sea region, the vast majority of HC collections originate from surface finds. Therefore, it is possible that a part of HC complexes of Odesa region, as well as the so-called “Tardenoisian” of Moldova and Romania, come from the destroyed settlements of the Neolithic Criș culture.

The large number of HC sites with flint of Balkan-Danube type in Odesa region contrasts with their small number in Bulgaria and in adjacent territories. The question is: how did the bearers of flintknapping tradition of the early Neolithic of Eastern Greece get to the Northern Black Sea? They may have passed along the west coast of the Black Sea, and their abandoned sites were later submerged by sea transgression. It is impossible to exclude maritime migration by cabotage sailing along the coast, which was discussed in the previous section (Fig. 1).

3. Criș wave of Neolithic colonists from the Danube region

Studies of the early Neolithic chronology of the Balkans and the Danube region indicate an extremely rapid spread of the most ancient pottery on the Lower and Middle Danube. It first appeared

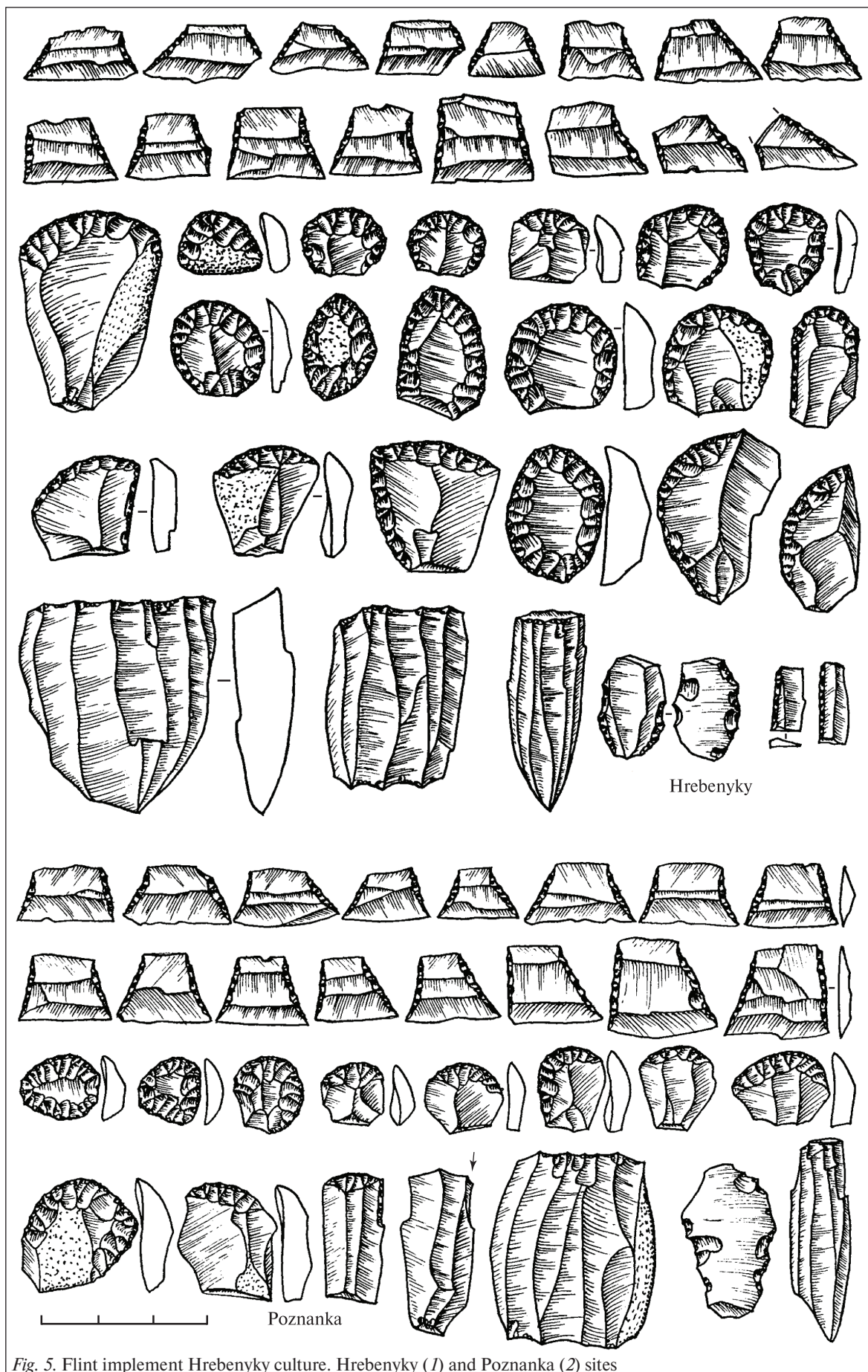


Fig. 5. Flint implement Hrebenyky culture. Hrebenyky (1) and Poznanka (2) sites

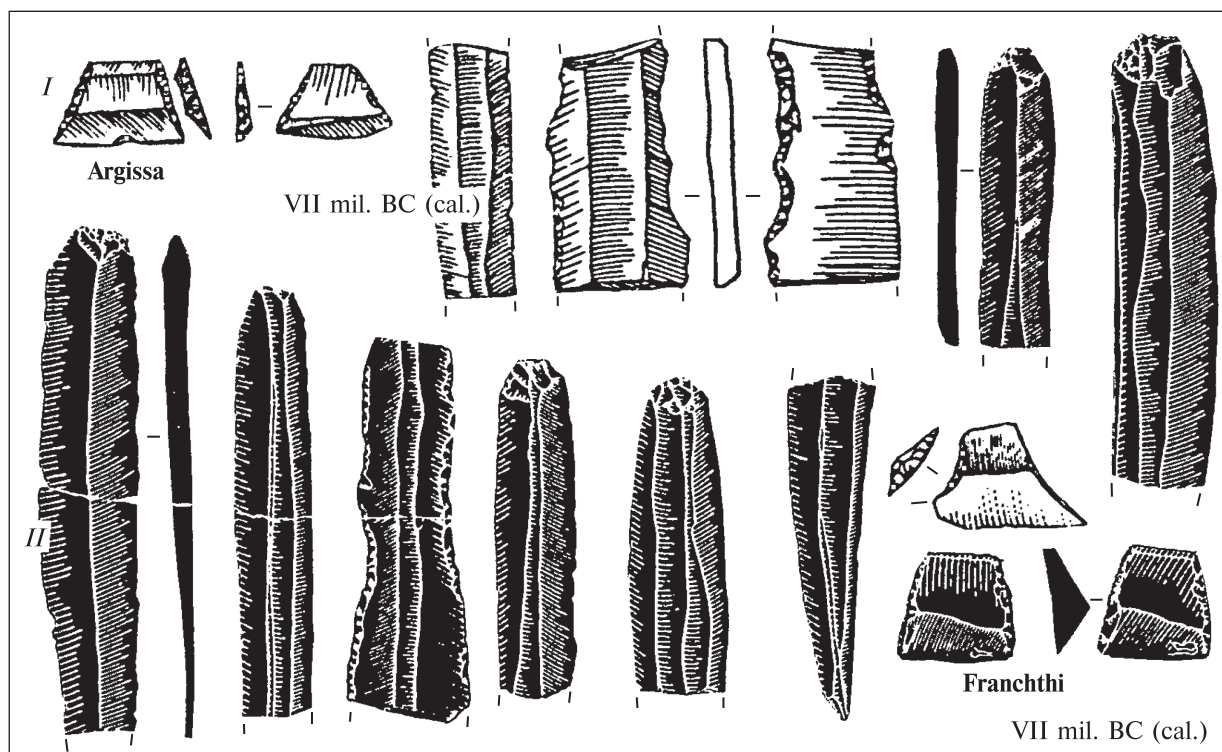


Fig. 6. Flint and obsidian implement Neolithic of Balkan. Argissa settlement (I), Franchthi cave (2) (Perles 2001)

around 6500 BC (cal.) in Thessaly (Sesklo). To the north in the valley of the Struma River, the oldest pottery was found at the Gulubnik settlement, dated by 6100 BC. From the Strymon River basin in Bulgaria, Neolithic peoples with monochrome ceramics had settled in just 150 years in vast expanses from the Tisa in the west and to the Prut in the east, initiating the abovementioned Starčevo-Körös-Criș cultural community (Biagi 2005a; 2005b).

In the first half of VI thousand BC (cal.) Criș settlements appeared in Transcarpathia, and in the second quarter of the same millennium, in the Dniester River region — Sakarivka 1 type monuments, dated by 6650 ± 60 BP (Bln 2425) or 5480 BC (cal.) (Ларина 1999). The powerful Criș wave of Neolithic colonists led to the spread of the corresponding pottery with the Criș decor not only in the Dniester region (Sakarivka 1), but also in the Bug River region. That is, it is impossible to exclude the possibility of discovering monuments of the Criș culture in the Bug-Dniester rivers interfluvium in the future. It was under the influence of these people that the local Kukrek culture hunters and fishermen of the Middle Bug came up with the Bug variant of the most ancient Neolithic culture of Ukraine — the Bug-Dniester (Даниленко 1969, с. 57—61; Залізняк 1995; 1998, с. 183) (Fig. 3).

As the Bug-Dniester culture of Ukraine was formed under the influence of Moldova's Criș, its early Pechery phase cannot be older than the most

ancient Criș monuments of the Dniester River region. Thus, the beginning of BDC formation probably falls in the middle of VI thousand BC (cal.). The current state of the Neolithic source base of Ukraine gives grounds to consider the early Bug-Dniester ceramics, which have direct parallels in the ceramics of the 3rd and 4th phases of the Criș culture, as one of the oldest in Ukraine.

Initiated by the Hrebenyky culture bearers and later continued by the humanity of the Criș culture, Linear Pottery and Cucuteni cultures, the long-lasting demographic pressure from the south-west on the aboriginal people of the Middle Bug caused a constant outflow of the autochthonous Kukrek population in the north-east direction (Fig. 3). From the end of VII to V millennia BC more and more waves of Balkan-Danube migrants rolled from the south-west to the Bug region, displacing to the Middle Dnieper at first the Mesolithic autochthons of the Kukrek culture, and then the population, emerged under the Balkan-Danube (including Criș) influences, of the Bug-Dniester culture. In fact, it was a synthesis of local Kukrek (flint) and brought by Moldovan migrants Criș (pottery, trapezes) traditions. At the developed Samchyn stage of the BDC (Fig. 7), these migrants from the Southern Bug reached the Middle Dnieper (Velyka Andrusivka, Starosillia) and Kyiv Polissia (Lazarivka, Krushnyky, Prybir 7a). With their direct participation in the second half

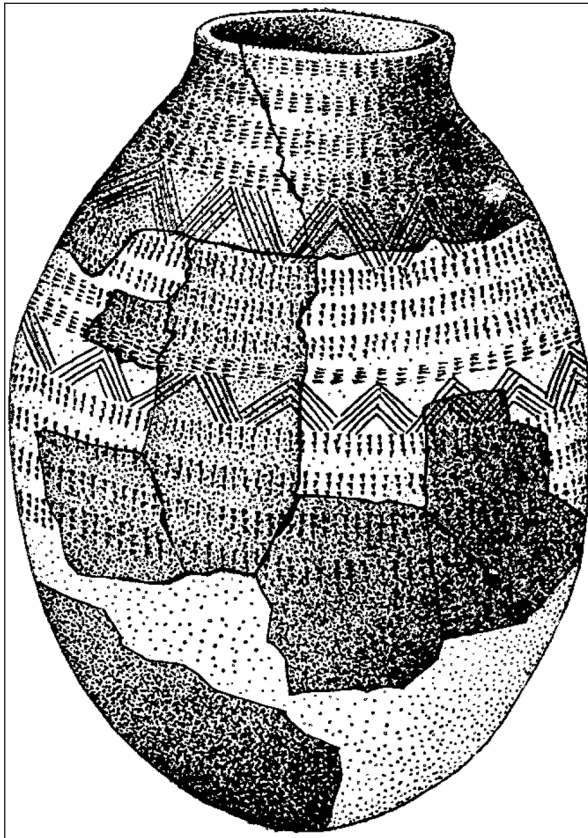


Fig. 7. Pottery of Samchinska phase BDC (Археологія Української... 1985, fig. 31: 15)

of VI thousand BC, the neolithization of the Middle Dnieper and Kyiv Polissia began (Залізняк 1998, с. 183, 231, 232; 2005; Залізняк та ін. 2013; Залізняк та ін. 2016), including the formation of the Dnieper-Donetsk culture (DDC) of the Kyiv-Cherkasy Dnieper River region (Fig. 3).

4. Linear Pottery culture wave of the neolithization of Ukraine

The culture of Linear Pottery (LBC) was formed in the middle of VI thousand BC (cal.) on the Middle Danube based on the late phase of the Körös culture. This culture played a leading role in the neolithization of the middle zone of Europe from the northern France to the western Ukraine (Fig. 8). The magnitude of agricultural colonization of the natural zone of deciduous forests of Europe by the tribes of the LBC was explained by a fundamentally new method of slash-and-burn agriculture at that time. Based on the latter Neolithic farmers of the LBC advanced the Upper Danube valley to Bavaria and further west to the Northern France. The rest of the LBC people moved from the Middle Danube to the north and through the Moravian Gate reached the land of Southern Poland. From there they moved east and reached Volyn, Upper and Middle Dniester, the territory of Moldova, where numerous settlements of the LBC

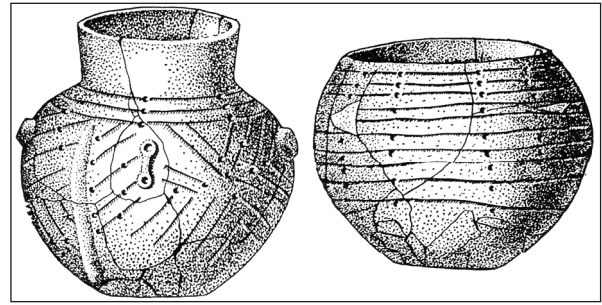


Fig. 8. Pottery of LBC (Археологія Української... 1985, fig. 31: 3, 11)

of the second half of VI thousand BC are known (Fig. 3). Farmers of the LBC Volyn Highland significantly influenced the neolithization of the Mesolithic hunters of Western Polissia, the people of the Janislawice culture, on the basis of which Volyn Neolithic culture emerged at the beginning of V thousand BC.

The pressure of the Linear Pottery culture bearers from the west to the BDC people caused the latter to move in north-east direction to the Middle Dnieper region.

5. Trypillia phase of the Neolithic revolution of Ukraine

The true agrarian colonization of the forest-steppe area of the Right-Bank Ukraine is related to the promotion from Romanian Moldova to the north-eastern direction of the mattock farmers of Cucuteni-Trypillia culture (Fig. 9). Cucuteni culture originated in the Southern Carpathian region at the end of VI thousand BC (cal.) Based on the traditions of the Danube cultures of Criș, Hamangia, Boian, LBC and etc. The colonization of chernozem soil of Right-Bank Ukraine on the boundary of VI—V thousands BC brought the Cucuteni people of Moldova at first to the Middle Dniester and Podillia, and at the beginning of IV thousand BC to Kyiv and Cherkasy Dnieper (Fig. 3). Mattock, and later plough farming (wheat, barley, peas), supplemented with household cattle breeding (sheep, goat, cow, pig) were the basis of the Trypillian economy, the people of which spread them across the forest-steppe area of Ukraine from the Dniester to the Dnieper. Archaeologically, the powerful influences of Trypillia on the autochthonous population of the Middle Dnieper, Southern Polissia, forest-steppe and even steppe Left-Bank Ukraine, have been traced.

The importance of solving the problem of Ukrainian Neolithic origins had continued discussion between supporters of the autochthonous nature of Trypillian culture and their opponents, who genetically linked the latter with the Anatolian-Balkan Center of the Neolithization of Eu-



Fig. 9. The clay ware and sculpture of Trypillia culture

rope. An important component of this discussion, dating back to the early 1990-ies, is the issue of the anthropological type of Trypillians, the solution of which is complicated by the small number of their osteological remains. Therefore, the claim about the southern genetic roots of Trypillians and their Mediterranean anthropology (Залізняка 1998, с. 256) (Fig. 10) has not been accepted for a long time by the Ukrainian Trypillia culture researchers.

Recently, strong evidence has been obtained about the genetic linkage of Trypillians with Neolithic Asia Minor and Balkan populations. This is evidenced by the results of the genome study of anthropological remains of Trypillians from the Verteba Cave on the Dniester, which has numerous direct parallels in the genome of Neolithic inhabitants of Anatolia and the Balkans. These sensational results were made public by the direct participant of anthropological research in Verteba I. D. Potekhina (Nikitin, Potekhina 2017, p. 1–13). Therefore, the Trypillian culture, leading in the neolithization of Ukraine, is a direct genetic descendant of the Neolithic colonists, who colonized Central Europe from Anatolia through the Balkans and the Danube region in VII–V thousand BC.

The process of final neolithization of the Right-Bank Ukraine forest-steppe by Trypillians in the Chalcolithic was in parallel with the strengthening of the food-producing economy in the forest zone of Central Europe by the Lengyel culture bearers in V–IV thousands BC. Thus, further endorsement of the food-producing economy's positions in Right-Bank Ukraine in the Chalcolithic by the population of Cucuteni-Trypillia culture was an organic part of the all-European process of neolithization.

The historical significance of Trypillian culture for the ancient history of Ukraine lies in the final victory of the food-producing economy at first in the Right-Bank Ukraine and later in the south of the Left-Bank Ukraine. After all, the inhabitants of the steppe of the Black Sea and the Cisazovia got their first cattle breeding and farming skills, probably from the Trypillians. This is evidenced by the materials of the so-called “steppe Trypillia”. Meaning, Zhyvotylivka-Vovchanka group type of burials dated by IV thousand BC, explored in the Azov-Black Sea steppes and even in Northern Crimea. They contain Late Trypillian pottery and, according to T. H. Movsha, M. Yu. Videiko, Yu. Ya. Rassamakin (Рассамакін 2004) were abandoned by the Late Trypillian population, which was

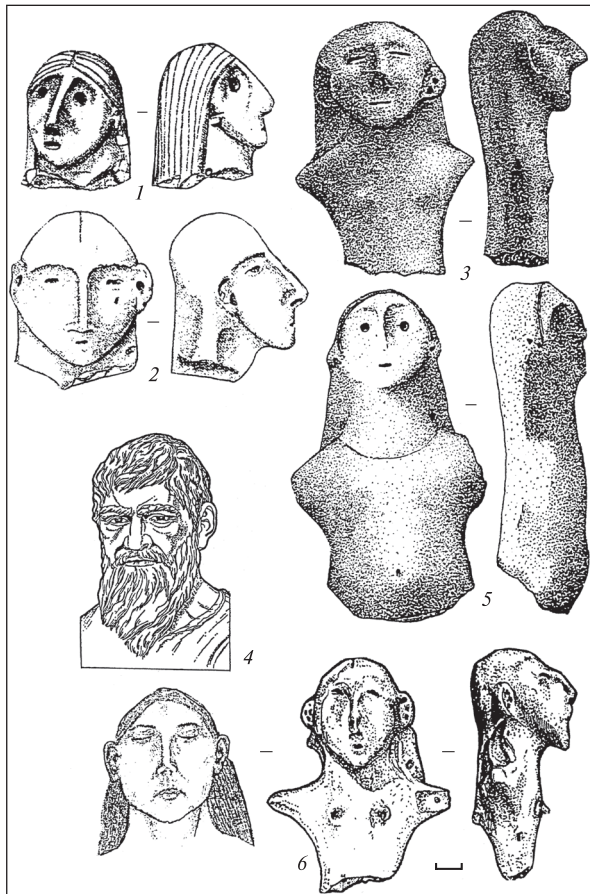


Fig. 10. Trypillian farmers (1–3, 5, 6) and oldest Indo-European stock-breeders (4). 1–3, 5, 6 — Trypillian clay sculpture; 4 — reconstruction based on the skull found in Dnieper rapids

displaced into the steppes by new waves of farmers, moving east from Prut-Dniester interfluvium. Appearing in the steppe, the Trypillians were forced to move to the early forms of transhumance, transferring the skills of the last local population of the steppe Neolithic and the Chalcolithic — Mariupol, Skelia, Kvitian, Stog cultures bearers. It is believed that these cultures of the steppe Chalcolithic of V–IV thousands BC were abandoned by the most ancient Indo-Europeans of Eastern Europe.

Summary

The modern state of archaeological sources from the Neolithic of Ukraine contradicts to popular in the end of XX century statement about local domestication of the oldest domestic animals (sheep, goat, bull) and cultural plants (wheat, barley, peas). Numerous facts convincingly testify in behalf on their domesticating on Near East with next distribution through Balkans and Danube region to Central-East Europe, including Right-Bank Ukraine.

The south-east version of neolithization of Ukraine, which was well-known at the second half of XX c. under the name of “eastern stock breeding impulse”, was not confirmed. On the other hand, there are numerous archaeological, paleozoological and paleobotanic data in behalf of south-western variant of neolithization of Ukraine.

The food-producing economy came on the territory of Ukraine by the same way like in Central Europe from the Balkan Peninsula through the Danube basin at the end VII–V mil. BC (cal.) (Fig. 1). It happened in the mode of “balkanization” due to five main waves of Neolithic farmers-colonists which rolled from Danube region to the Right Bank Ukraine from the end of VII mil. BC (cal.): 1) Naval; 2) Hrebenyky (the end of VII mil. BC); 3) Criș–Körös (the first half of VI mil. BC); 4) Linear Pottery (second half of VI mil. BC); 5) Cucuteni-Tripillia (V mil. BC) (Fig. 3). The oldest Bug-Dniester Neolithic culture of Ukraine aroused on autochthonic Kukrek culture base under Criș culture influences at the middle of VI mil. BC.

The earliest in Ukraine reliable traces of productive economy traced in materials of the Körös culture in Zakarpattia region (first part of VI mil. BC (cal.)) and the Linear Pottery cultures of Volyn and Dniester region (second half of VI mil. BC (cal.)). Right-Bank Ukraine had been definitively neolithized in V mil. BC (cal.) by population of the Cucuteni-Tripillia culture arriving to Neolithic of Ukraine from south-west.

The Bug-Dniester culture developed under the Criș culture influence from Moldova territory between Middle Dniester and the South Bug Rivers in the middle of VI mil. BC (cal.). Passed by the new migration waves of the farmers from the Danube region (Linear Band Pottery and Cucuteni-Tripillia). The Bug-Dniester culture bearers moved aside in the north-east direction in Kyiv and Cherkasy Dnieper region, where the Dnieper-Donets culture appeared at the end of VI mil. BC (cal.) (Fig. 3).

The historical value of the Trypillia culture for Pre-history of Ukraine is in final victory of production economy on the Dnieper’s right bank first, and later, on the south of Left-Bank Ukraine. In the fact, the population of the Black Sea stepper region, the Sea of Azov and Donbas regions obtained the first skills of cattle breeding and agriculture certain from the Trypillia culture in V–IV mil. BC (cal.). These Neolithic innovations from Trypillia to steppe Eneolithic of the Black and Azov Seas regions were provided by so-called “steppe Trypillia”, known by the burials of “zhyvotilov-vovcha type”.

Consequently, a Neolithic of Ukraine is not an exception from the whole-European context.

Right-Bank Ukraine was neolithized synchronously with Central Europe as a result of colonization by the oldest farmers-colonists from the Danube region in the VI–V mil. BC (cal.). Later Neolithic innovations from Right-Bank Ukraine spread to northward to Polissia lowland and to the east and south-east of Ukraine.

At the beginning of the XXI c., there was change of conceptions of the neolithization of the region in archaeology of Ukraine. The old south-east conception was replaced by south-western one which corresponds to the general-European vision of the Neolithic revolution in Central Europe by its colonization in the VI–V mil. BC (cal.) by the Neolithic farmers from Balkans through the Danube region (Fig. 3).

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Л. Л. Залізник

Доктор історичних наук, професор, завідувач відділу кам'яної доби Інституту археології НАН України,
ORCID 000-0001-8924-8122, ZaliznyakL@ukr.net

БАЛКАНО-ДУНАЙСЬКА ВЕРСІЯ НЕОЛІТИЗАЦІЇ УКРАЇНИ

Сучасний стан археологічних джерел з неоліту України суперечить досить популярному наприкінці ХХ ст. твердженню про місцеву доместикацію найдавніших домашніх тварин (вівця, коза, бик) та культурних рослин (пшениця, ячмінь, горох). Численні факти переконливо свідчать на користь їх одомашнення на Близькому Сході з наступним поширенням через Балкани і Подунав'я у Центрально-Східну Європу, у тому числі і на Правобережну Україну (рис. 1).

Не підтвердилася південно-східна версія неолітизації України, що була популярною серед радянських дослідників у другій половині ХХ ст. під назвою «східного скотарського імпульсу». Натомість маємо численні археологічні, антропологічні, палеозоологічні та палеоботанічні свідчення на користь південно-західного варіанту неолітизації регіону.

Неоліт України не є винятком із загальноєвропейського контексту. Як уся Центрально-Східна Європа Україна, передусім Правобережна, перейшла до неоліту у VI—V тис. до н. е., запозичивши його новації з Балкан через Подунав'я. Це сталося в режимі «балканізації» завдяки п'яти послідовним хвилям неолітичних землеробів-колоністів з Балкан та Подунав'я — морська, гребениківська, кришська, лінійно-стрічкової кераміки, кукутені-трипільська (рис. 3).

Принципові зміни в концепції неолітизації України, що сталися на початку ХХІ ст., по суті, є відходом від старого бачення «неолітичної революції» в регіоні. Останнє формувалося у повоєнні часи в умовах ідеологічного протистояння Заходу, значною мірою, під впливом відомих радянських ідеологів. Зокрема неписаним принципом радянської археології був патріотичний автохтонізм, що протиставлявся буржуазним ідеям безрідних космополітів міграціоністів. Сформована у повоєнні часи концепція «східного скотарського імпульсу» теж несе певний наліт радянського патріотичного автохтонізму. За В. М. Даниленком, скотарство було привнесено на південь України з поза її меж, але з радянської Туркменії та Передкавказзя, а не з країн ворожого НАТО — Туреччини та Греції.

Відхід від ідеологічного протистояння Заходу зняв зазначені ідеологічні обмеження в науці, а розвиток археології показав, що неоліт України, перш за все Правобережної, є органічною частиною неоліту Центральної Європи. Неолітичні культури Правобережжя є локальними проявами культурних спільнот Центральної Європи, а послідовні фази неолітизації останньої (морська, кришсько-керешська, лінійно-стрічкова, лендельська та ін.) прямо корелюються зі згаданими хвилями неолітичних колоністів з Балкан через Подунав'я на південний захід України (рис. 3).

Таким чином, Правобережна Україна перейшла до неоліту синхронно з Центральною Європою внаслідок колонізації найдавнішими неолітичними землеробами з Подунав'я у VI—V тис. до н. е. А у V—IV тис. до н. е. неолітичні новації з Правобережжя поширилися на північ у Полісся, на схід та південний схід України.

Фактично, на початку ХХІ ст. в археології України сталася принципова зміна концепції неолітизації регіону. На зміну старій південно-східній версії приходить південно-західна, що відповідає загальноєвропейському баченню неолітичної революції в Центральній Європі шляхом її колонізації неолітичними землеробами з Балкан через Подунав'я (рис. 1).

К л ю ч о в і с л о в а: неоліт, відтворювальна економіка, гребениківська культура, культура Криш, буго-дністровська культура, культура лінійно-стрічкової кераміки, культура Кукутені-Трипілля, докерамічний неоліт.

БАЛКАНО-ДУНАЙСКАЯ ВЕРСИЯ НЕОЛИТИЗАЦИЯ УКРАИНЫ

Современное состояние археологических источников по неолиту Украины противоречит достаточно популярному в конце XX в. утверждению о местной доместикации древнейших домашних животных (овца, коза, бык) и культурных растений (пшеница, ячмень, горох). Многочисленные факты убедительно свидетельствуют в пользу их одомашнения на Ближнем Востоке с последующим распространением через Балканы и Подунавье в Центральную и на юго-запад Восточной Европы, в том числе и на Правобережную Украину (рис. 1).

Не подтвердилась юго-восточная версия неолитизации Украины, которая была популярной среди советских исследователей во второй половине XX в. под названием «восточного скотоводческого импульса». Зато имеем многочисленные археологические, антропологические, палеозоологические и палеоботанические свидетельства в пользу юго-западного варианта неолитизации региона.

Неолит Украины не является исключением из общеевропейского контекста. Как вся Центральная и юго-запад Восточной Европы Украина, прежде всего Правобережная, перешла к неолиту в VI—V тыс. до н. э., позаимствовав его новшества с Балкан через Подунавье (рис. 1). Это случилось в режиме «балканизации» благодаря пяти последовательным волнам неолитических земледельцев-колонистов из Балкан и Подунавья — морской, гребениковской, кришской, культур линейно-ленточной керамики и кукутени-трипольской (рис. 3).

Принципиальные изменения в концепции неолитизации Украины, которые случились в начале XXI в., по существу, являются отходом от старого видения «неолитической революции» в регионе. Последнее формировалось в послевоенные времена в условиях идеологического противостояния Западу, в значительной степени, под воздействием известных советских идеологов. В частности, неписанным принципом советской археологии был патриотический автохтонизм, который противопоставлялся буржуазным идеям безродных космополитов-миграционистов. Сформированная в послевоенное время концепция «восточного скотоводческого импульса» несла определенный налет советского патриотического автохтонизма. За В. Н. Даниленко, скотоводство было привнесено на юг Украины из-за ее пределов еще в VII тыс. до н. э., но все-таки из советской Туркмении и Предкавказья, а не из стран враждебного НАТО — Турции и Греции.

Отход от идеологического противостояния Западу снял отмеченные идеологические ограничения в науке, а развитие археологии показало, что неолит Украины, прежде всего Правобережной, является органической частью неолита Центральной Европы. Неолитические культуры Правобережья являются локальными проявлениями культурных сообществ Центральной Европы, а последовательные фазы неолитизации последней (морская, кришско-керешська, линейно-ленточная, лендзельська и др.) прямо коррелируются с упомянутыми волнами неолитических колонистов из Балкан через Подунавье на юго-запад Украины (рис. 3).

Таким образом, Правобережная Украина перешла к неолиту синхронно с Центральной Европой в результате колонизации древнейшими неолитическими земледельцами из Подунавья в VI—V тыс. до н. э. А в V—IV тыс. до н. э. неолитические новшества из Правобережья распространились на север в Полесье, а также на восток и юго-восток Украины.

Фактически, в начале XXI в. в археологии Украины произошло принципиальное изменение концепции неолитизации региона. На смену старой юго-восточной версии пришла юго-западная, что отвечает общеевропейскому видению неолитической революции в Центральной Европе путем ее колонизации неолитическими земледельцами из Балкан через Подунавье (рис. 1)

К л ю ч е в ы е с л о в а: неолит, производящая экономика, гребениковская культура, культура Крыш, буго-днестровская культура, культура линейно-ленточной керамики, культура Кукутени-Триполье, докерамический неолит.

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