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Research paper

The Problems with Neolithization Chronology in The East European Steppe and Forest-Steppe (From the Volga River to the Don River)

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Abstract

The article deals with the problems of Neolithic chronology in the steppe and forest-steppe regions from the Volga to the Don. The main criterion of the transition to the Neolithic in the region should be considered the appearance of ceramic ware. In the southern region, the onset of the Neolithic was associated with indigenous processes in the period 7700-7200 years ago, with some influence from the Caucasus. In the northern territories, Neolitization occurred in 7500-7200 years ago and was influenced by the cultures of Central Asia. The early Neolithic on the border between the steppe and forest-steppe in the Volga river basin is represented by the Elshanka complexes with earthenware. The chronological ratio of the Neolithic of the southern and northern territories indicates the influence of steppe cultures on the development of the population in the forest-steppe of the Middle Volga region.

***Keywords**: steppe and forest-steppe, Neolithic, chronology, radiocarbon analysis, ceramics, interaction of cultures, Kairshak site, Djangar, Varfolomeevka.*

1. Introduction

The question about the age for the beginning of the Neolithic epoch in southern regions of the Russian Plain was repeatedly considered by scholars. The researchers were analyzing reasons and mechanisms of moving to the Neolith [1-6]. During the last 20 years, the team of investigators obtained new materials related to this issue, including a series of radiocarbon dates [7-19]. A fundamental source base has been created (Figure 1).
The series of radiocarbon dates on the greater part of sites of each region are received. All this allows us to specify the meaning of the first phase of Neolithic in the given region. The absence of reliable evidence regarding the presence of domesticated animal bones at sites of the Early Neolithic gave us cause to consider the appearance of pottery production as the main criterion for the transition to the Neolithic [20, 2].

2. Methods and Results

The radiocarbon age of Neolithic sites in steppes and forest-steppes from the Volga to the Don was identified with the help of dating different materials which contain organics. Methods of dating organics in ceramics were also used [21-24]. Specialists think that there can be not only anthropogenic organics in ceramics [25]. This can lead to the distortion of the received dates. Organics in clay can make it older and the soil where the clay lay can rejuvenate it. For this reason the received dates were rechecked by crust, bones and organics in ceramics in different laboratories (Universities of Arizona, St Petersburg, Uppsala, Poznan, Helsinki, Aarhus) at AMS. Similar values were received (Table1).

3. Results of Research and their Discussion

In the semi-desert northern coast of the Caspian Sea, sites containing the Kairshak type existed at ca. 7800 BP. Its level of ceramic production is archaic (Figure 2). The ceramics is made of silt, is flat-bottomed and its ornaments contain drawings and tattoos. The local Mesolithic basis such as geometrical microlithics in the form of segments and parallelograms can be seen in the stone industry. This allows us to suggest the indigenous (i.e., local) source of the Neolithization. In the north-western part of the Caspian Sea coast, the earliest sites of the Dzhangar type (Tubuzgu–khuduk site) are dated to the first part of the sixth millennium BC (Figure 2).

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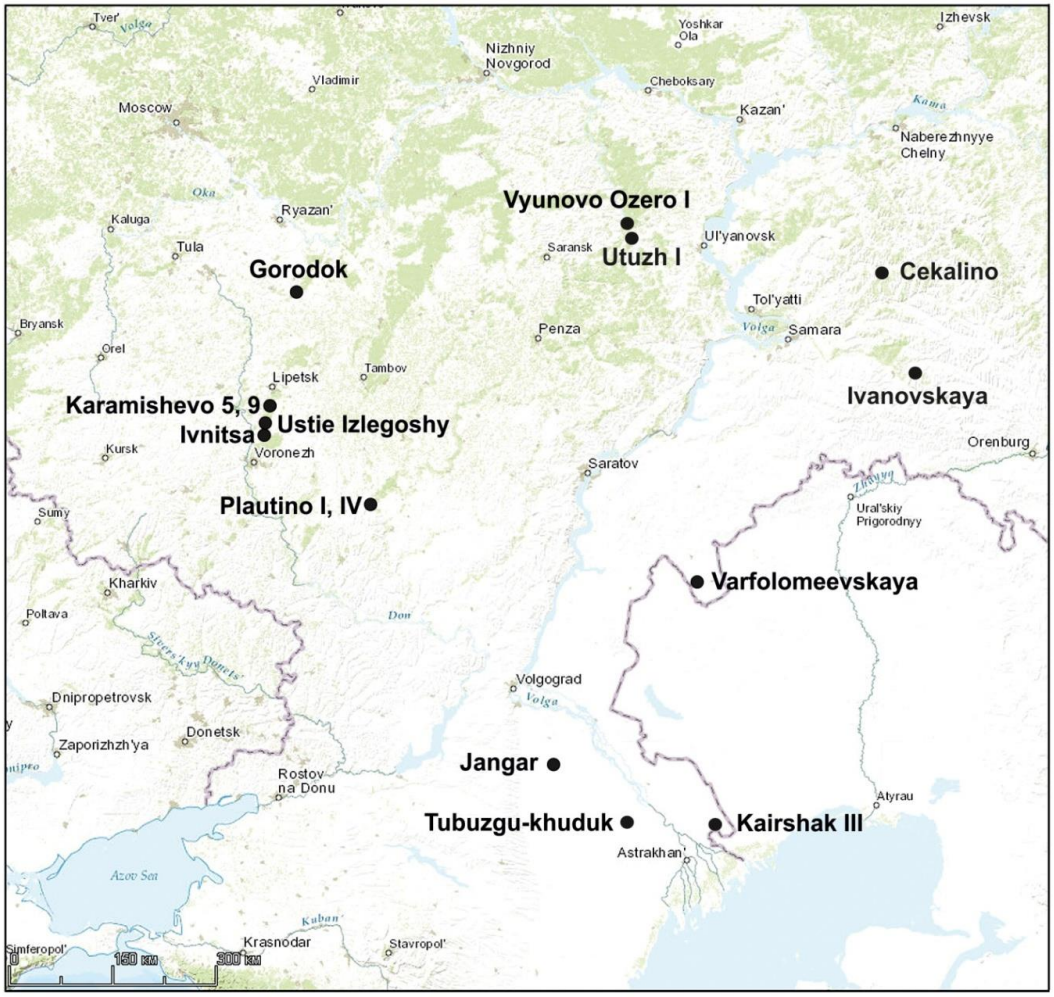


Fig. 1: Map of Neolithic sites from the Volga river to the Don river

Table 1: 14C dates of the Neolithic sites of the Northern Caspian sea, forest-steppe Povolzhye and Don River region

No	Site	Index	Material	Culture	Age (BP)	Age,cal BC (2 σ)
1	Kairshak III	Ua 41359	Ceramic food crust	Kairshakskaya	7775±42	6690-6490
2	Kairshak III	SPb - 377	Crust	Kairshakskaya	7700±120	7050-6250
3	Kairshak III	Ki-14471	Pottery carbon	Kairshakskaya	7780±90	7050-6400
4	Varfolomeevskaya3	Ki- 14108	Pottery carbon	Varfolomeevskaya	7760±100	7050-6400
5	Varfolomeevskaya3	Ki- 14142	Pottery carbon	Varfolomeevskaya	7620±100	6650-6230
6	Varfolomeevskaya 2B	Ua- 41360	Ceramic food crust	Varfolomeevskaya	7034±41	6010-5830
7	Varfolomeevskaya 2B	Ki-14370	Pottery carbon	Varfolomeevskaya	7070±90	6160-5730
8	Varfolomeevskaya 2B	Poz-52697	Crust	Varfolomeevskaya	6850±40	5816-5659
9	Jangar, layer 3	Ki-14639	Pottery carbon	Jangarskaya	7080±90	6160-5740
10	Jangar, layer 3-2	IGAN 2819	Charcoal	Jangarskaya	6870±130	5850-5670
11	Jangar, layer2	Ki-14641	Pottery carbon	Jangarskaya	6780±90	5840-5510
12	Jangar, layer3	Hela- 3255	Crust	Jangarskaya	6564±44	5620-5470
13	Ivanovskaya	SPb_587	Pottery carbon	Yelshanian	7560±70	6530-6240
14	Ivanovskaya	AA 96348	Pottery carbon	Yelshanian	6486±54	5620-5290
15	Chekalino IV	SPb - 424	Pottery carbon	Yelshanian	7660±200	7047-6202
16	Chekalino IV	Poz 42051	Charcoal	Yelshanian	7250±60	6229-6016
17	Iliinskaya	Spb-589	Pottery carbon	Yelshanian	6820±150	6000-5450
18	KrasnyiYar	SPb_755	Crust	Yelshanian	6700±70	5730-5490
19	Vjunovo lake I	AA 96017	Pottery carbon	Yelshanian	7222±58	6120-6010
20	Vjunovo lake I	Poz47870	Pottery carbon	Yelshanian	7160±40	6091-5981
21	Utuzh I	Ua- 44377	Crust	Yelshanian	6568±49	5620-5470
22	Utuzh I	SPb_586	Pottery carbon	Yelshanian	6500±100	5640-5290
23	Utuzh I	SPb_834	Pottery carbon	Yelshanian	6500±100	5640-5290
24	Utuzh I	AAR-17462	Crust	Yelshanian	6212 ± 31	5310 - 5030
25	Ozimenki II	Ki-12168	Pottery carbon	Yelshanian	6950±170	6250-5500
26	Imerka VII	Poz52651	Crust	Yelshanian	6200±50	5301-5026
27	Imerka VII	Ki 15097	Pottery carbon	Yelshanian	6270±80	5380-4990
28	Iwnica	Poz-42054	Crust	Yelshanian	6940±40	5904-5731
29	VasilievskyKordon V	Ki-11088	Pottery carbon	Karamyshevskaya	6570±160	5790-5230

This article contains 22 new dates published for the first time.
They are received in 2011-2013.

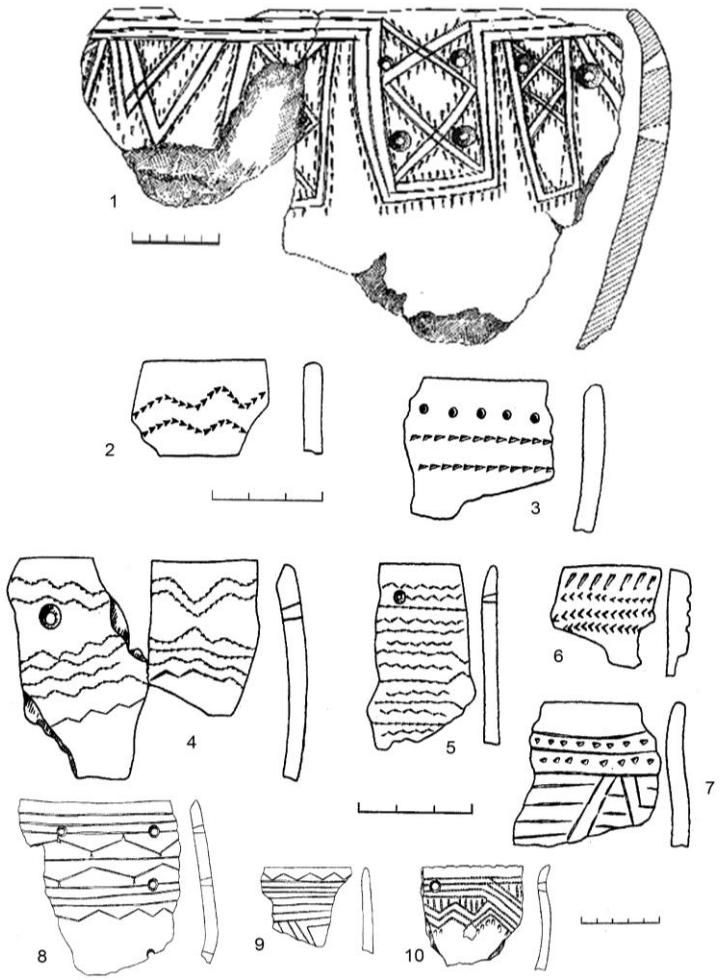


Fig. 2: 1-Kairshak III site; 2-3 Tubuzguhuduk site; 4-7 Jangar site; 8-10 Varfolomeevskaya site. Pottery

According to the nature of the flint industry and some pottery traits, the Neolithization of this territory took place under some influence from the Caucasus. For example, arrowheads and trapezes are identical. At the same time, some innovations are linked to local populations. It is connected with the addition of ceramic traditions. During ca. 7700–7600 BP, bearers of Kairshak and Dzhangar cultures influenced on the formation of the Orlovskaya Culture in lower reaches of
the Volga River (Figure 1). Microliths (such as E segments and the trapezes), typical for southern neighboring regions, were found in lower part of the third cultural layer of Varfolomeevka site. Natural silt (probably from the river shoals) was the basic compound for pottery-making. Pottery has a flat bottom, and with pin-scratched ornamentation (Figure 2). Because of ecological reasons, from ca. 7500 BP onwards the moving of part of the populations of Kairshak types from the northern Caspian shore towards the steppe region of the Volga River basin and northwestern Caspian Sea coast took place (Table1). There were no sites in the Notharn Prikaspy in 7500-7300BP. In these new regions, bearers of Kairshak cultures take part in the process of further development of the Varfolomeevka and Dzhangar traditions. This can be seen in the fabrication method and methods of making ornaments and compositions. Neolithization wasn't immediate. It has extended from 7700BP to 7100BP (Table 1). It is true both for the territory of the Northern Prikaspy and for the Lower Volga Region.

The earliest Neolithic sites on the border between steppe and forest-steppe in Volga River basin are presented by complexes with Elshanka type pottery (Figure 1). The most important sites of the early stage are the Ivanovo Site at the river Samara, Chekalino at the river Sok. The ceramics are made of oozy clay. They have sharpened bottoms. The vessels are sharp-pointed with sparse ornament: pits and lines (Figure 3).

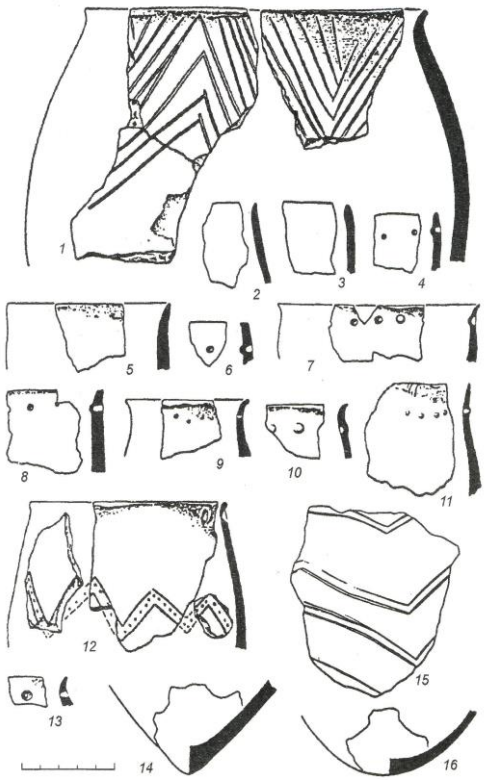




Fig. 3: Ivanovskaya site and Chekalino IV site. Pottery

The C14 dating of different materials (crust, bones, ceramics) confirms the age of this time period as ca. 7900–7200 BP (Table1). Typological and technological traits of the Elshanka pottery contradict its local origin. The closest analogs can be found southeast of these regions, on the eastern coast of the Caspian Sea and the Central Asian Interfluves: Uchaschy, Daryasay, Dzhebel [26]. Radiocarbon dates on the earliest Neolith in the Soviet Central Asia confirm this hypothesis [27]. Specific geometrical microlith also points out to this vector of Neolithization.

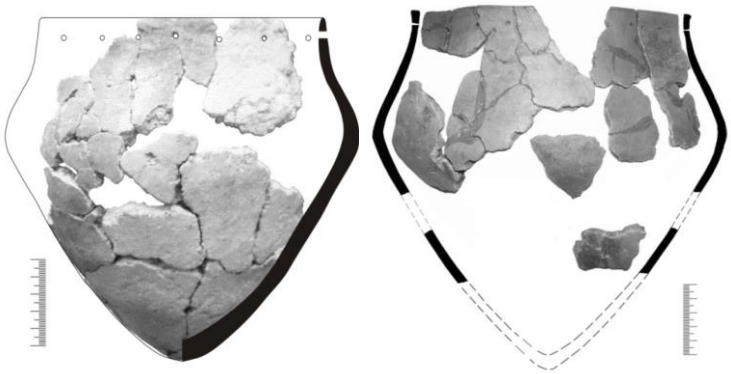


Fig. 4: Utuzh I site and Vjunovo lake I site. Pottery

There are several reasons to assume frequent and diachronic impulses during the Neolithization in this region. There were no sites in the steppe-forest Volga region in 7500-7300 BP. At the end of the sixth millennium BC, part of the Elshanka tribes directly influence the process of pottery appearance in the north-west of the Middle Volga region in the Posurie: VyunovoOzero I [28], Utuzh site (Figure 4), in the Moksha River basin: Ozimenky[29], Imerka 7 site, in the south-west of the middle Khoper Region (Plautino I, IV site), in the Upper Don Region (UstieIzlegoshysite), and sites of Karamishevo type: Ivnitsa and Karamishevo 5 and 9 [30] sites (Figure 5).

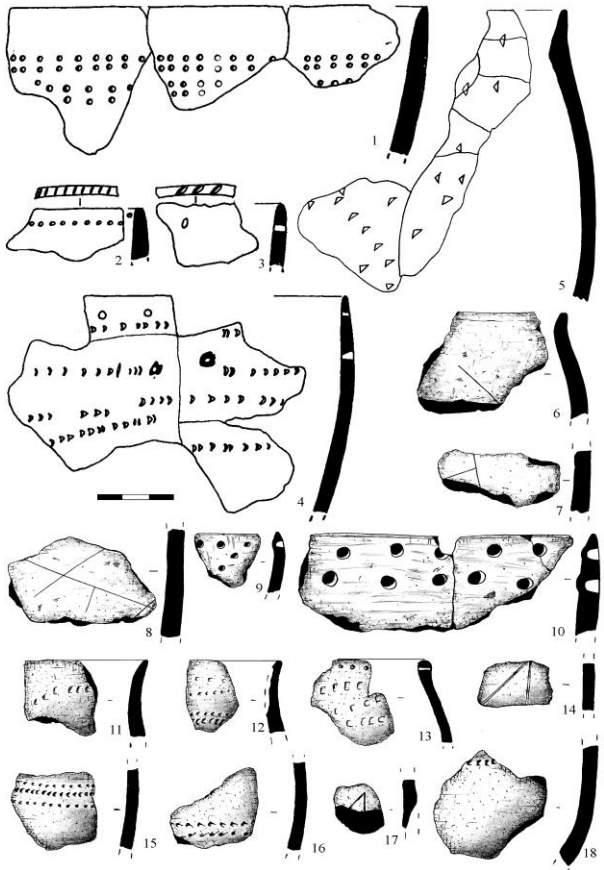


Fig. 5: 1-4 – Karamishevo 5 site; 5 – Ustie Izlegoshy site; 6-10 – Ivnitsa site; 11-18 – Plautino I site. Pottery

This article is devoted to early Neolithic sites with ceramics similar to the elshansky ceramics. The common characteristics are: methods of producing vessels, the shape of tops and bottoms, lack of ornaments, pits under the fillet, draw and pricks in ornament. The received dates show that Elshansky culture in the forest-steppe Volga region and Posurie existed till the V millennium BC. Neolithization in both the forest-steppe Volga region and the Sura region was from 7200 BP till 6500 BP (Table 1). The same was in the forest-steppe Don region (Table 1).

4. Conclusions

So, the complex of early Neolithic sites in steppe and forest-steppe regions from Volga to Don has been studied. In the south the materials of kairshak, jangar and bartholomew types were studied. There are sites containing Elshanky types to the north. The first ones appeared as a result of indigenous development and the second ones appeared due to migration of some part of the population from Transcaspia. Stratigraphic, typological, and radiocarbon data show the chronological priority of the above mentioned cultural complexes over other cultures in the given region. Steppe cultures influenced the development of the population in the forest-steppe Middle Volga region. The latter influenced development in the Sura and Moksha Regions. Representatives of the Elshansky culture took part in forming information on Neolith in Pohoperye, in the steppe Middle and Upper Don regions. Besides some regional differences, these complexes are considered by archaeologists within the framework of the Early Neolithic, formed under the impact of the Elshanka complex.

Therefore, the beginning of the Neolithization process in the Volga and Don regions of southern Russia was different from the view of its chronology, and more generally from the view of the mechanisms of this process.

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