

Initial stages of two Neolithisation models in the Lower Volga basin

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ABSTRACT – *In this paper, two groups of ancient sites located in the Lower Volga River basin are analysed. The first group is linked to the emergence of the oldest pottery in this region, which is one of the most ancient in Europe. The presence of this feature of the ‘Neolithic package’ can be dated to the middle of the 7th millennium BC. A production economy is a particular feature of the second group of sites, which can be dated to the end of the 6th millennium BC. This is one of the earliest pieces of evidence of the existence of domesticated species in Eastern Europe. These two groups of sites show the initial stages of two Neolithisation models in the Lower Volga basin.*

IZVLEČEK – *V članku analiziramo dve skupini najdišč na območju spodnjega dela reke Volge. Prva skupina je vezana na pojav najstarejše lončenine na tem prostoru, ki je hkrati ena najstarejših v Evropi. Navzočnost lončenine, ki je del t. i. ‘neolitskega paketa’, lahko datiramo v sredino 7. tisočletja pr. n. št. Pojav produktivnega gospodarstva je značilnost druge skupine najdišč, ki jih datiramo na konec 6. tisočletja pr. n. št. To je eden najstarejših dokazov o navzočnosti udomačenih vrst živali v Vzhodni Evropi. Obe skupini najdišč predstavljata začetne stopnje dveh različnih modelov neolitizacije na območju spodnje Volge.*

KEY WORDS – *Neolithic; Lower Volga; pottery; production economy*

Introduction

The Lower Volga basin lies in a special geographical area (Fig. 1); it connects the northern areas of the forest-steppe/forest zones of the Volga basin and the area of the Don basin with southern areas of the Caucasus and Central Asia. Such a location promoted contacts and interaction between cultures in these regions. The steppe zone of the Volga basin played a particular role in the Neolithisation process, whereby various characteristics of southern cultures could have penetrated farther. The emergence of ceramic production and cattle breeding in the steppe zone from the Dnieper to the Volga River basin can be linked to the region of Western Asia (Kotova 2002; Yudin 2004).

The innovations of the Neolithic constitute a ‘Neolithic package’, which includes a distinct set of components (Özdoğan 2011). In addition, the issue of

Neolithisation has led to many discussions and questions (Budja 2013), including the reasons for, and mechanisms of, the transition to the Neolithic era, as well as regional diversity. Since the publications of V. Gordon Childe (1958), a production economy has been considered one of the most important features of the Neolithic. The existence of pottery in the form of storage containers is also related to the appearance of a producing economy. However, no evidences of agriculture or cattle-breeding has been found in the Volga, Don, and Kama basins that date to the Neolithic, a fact which at first sight can be explained by its chronological position. On the other hand, early cases of ceramics appearing in hunter-gatherer cultures are also known today (Kuzmin 2015; Craig 2016; Gibbs, Jordan 2016). The term ‘ceramic revolution’ was coined to denote the oldest pottery remains found in Eastern Europe (Mazurkevich et al.

2006). New research on stone age sites located in the Lower Volga basin allowed us to take a new look at the issue of Neolithisation in this region.

Materials and discussion

Kugat IV and Kulagaysi are two of the earliest sites with pottery in the southern part of the Lower Volga basin (Northern Caspian) in the Astrakhan region. Based on the material from the Kairshak III site (Vybornov 2008), they are attributed to Kairshak early Neolithic types of site, commonly found in the northern Caspian area. This type of site existed from 6690 BC to 5980 BC (Tab. 1). At that time, blades and blade tools predominated in the stone industry. Geometric microliths – rhomboid and circular segments with a retouched convex edge – are well represented (Fig. 2). These artefacts are typical of the local Mesolithic industry (Vybornov et al. 2015). These testify to the local origin of pottery in this region. Pottery attributed to the Kairshak type was made from silt naturally tempered with the shells of freshwater molluscs. This ceramic technology is thought to be the most ancient in the Volga and Kama basins (Vybornov, Vasileva 2013). The sites in this region are the most ancient of the Kairshak sites, and are radiocarbon dated to 6690 cal BC (Zaitseva et al. 2009).

The climatic factors which influenced the transition from one period to another present a complicated picture (Budja 2007). Extensive aridisation is thought to have occurred between 6400 and 6300 BC in the southern part of the Low Volga basin (Bolikhovskaja 1990). This is also verified, according to the ^{14}C dates, by the absence of inhabited settlements at this time. Thus, the beginning of Neolithisation and pottery making in the Lower Volga basin could not have been connected to natural factors. The situation changed after the aridisation ended (6200 BC), and the number of sites increased (Kairshak I–IV, Baibek). Settlements became long-term; living conditions and the economic system changed, and so a great number of household objects, dwellings, artefacts and faunal and fish remains from that time can be found (Grechkina et al. 2014). We can suppose that the initial inhabitants of Kairshak-type sites in



Fig. 1. Map of the Lower Volga region. 1 Kugat IV; 2 Kulagaysi; 3 Kairshak III; 4 Baibek; 5 Tenteksor; 6 Varfolomeevskaya; 7 Algay; 8 Karahuduk; 9 Kombakte; 10 Kurpezhe molla; 11 Oroshaemoe.

this region were more nomadic than the inhabitants of subsequent periods.

With the exception of dogs (Vybornov et al. 2015), the faunal remains found on sites with pottery dated to 6500–5680 BC (Kairshak III, Baibek, Tenteksor, Zhekolgan) were all wild species: saiga, onager, tarpan, auroch, wild boar, wolf, and fox (Vybornov et al. 2015).

The Neolithisation process in the southern part of the Low Volga region during 6500–5500 BC did not include a producing economy. From the point of view of European researchers, sites of this period could be attributed only to the ‘ceramic Mesolithic’. In the eastern European scientific world, pottery is regarded as a marker of the beginning of the Neolithic era (Oshibkina 1996), which is why these sites were classified as Neolithic.

In the northern part of the Lower (steppe) Volga basin, sites with the earliest pottery are attributed to the Orlovskaya culture. The most important material was found in the lowest layer (3) of the Varfolomeevskaya site (Yudin 2004) and the lowest layer of the Algai site (Vybornov, Yudin 2015), both of which are located in the Saratov region. The flint industry is represented by blades and blade tools, and

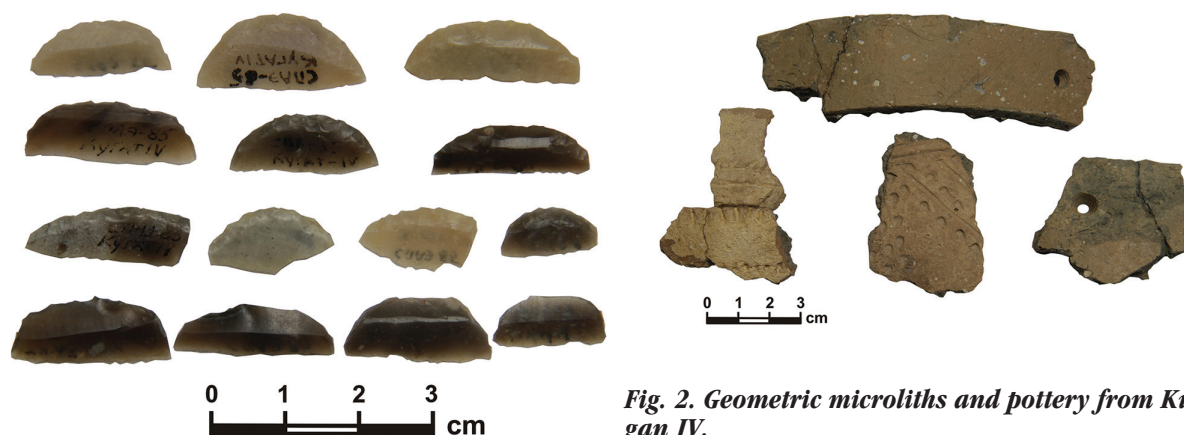


Fig. 2. Geometric microliths and pottery from Kugan IV.

geometrical microliths – circular segments with a re-touched arc. These features are typical of the stone industry of the Northern Caspian area. The flat-bottom ware of the Orlovskaya culture was made from silt and silty clay, naturally tempered with the shells of fresh-water molluscs – the same paste recipes as those used in the manufacture of Kairshak vessels. According to the ^{14}C dating, these materials date to 6200–6000 BC (Tab. 1), *i.e.* a period of a wider distribution of sites in the southern part of the Low Volga region. This allows us to suppose that the Neolithisation process in the steppe Volga basin was influenced by bearers of the Kairshak cultural tradition from the Northern Caspian area. The faunal remains in the steppe Volga (sites Varfolomeevskaya, Algai) during this time included saiga, onager, tarpan, auroch, wild boar, wolf, and fox. No evidence of a producing economy has been found at sites in the steppe Volga basin (Yudin 2004) or in the North-Western Caspian region (Koltsov 2004). Apart from dog, no traces of domesticated species have been found at Neolithic sites in this region (Vybornov et al. 2015). Thus, the Neolithisation model in the southern part of the Low Volga region during 6200–5500 (later than the beginning of Neolithisation in the Northern Caspian) was not connected with a producing economy. This process was not established locally. Neolithic culture was formed in the steppe Volga basin under the influence and by the interaction of some groups of Kairshak inhabitants from the Northern Caspian area with the local Mesolithic population.

Until recently, the appearance of a producing economy in the Low Volga was connected with Khvalynskaya culture sites (Karahuduk, Kairshak VI, Kombakte), which are dis-

tributed throughout the whole of the steppe zone. The lithic industry of this culture differs from the flint industry of preceding cultures, as it includes heavy flakes produced by enhanced pressure knapping. Scrapers, knives, points on large blades, and triangular arrowheads with a truncated base predominated. There are also insets on narrow blades. Pottery was made from clay tempered with crushed freshwater mollusk shells. The upper part of the round-bottom vessels is thickened (Fig. 3). The deco-



Fig. 3. Pottery and flint tools of the Khvalynsk culture.

ration and technique of applying it to vessels differs from that found in the preceding Kairshak and Orlovskaya cultures (Vasiliev 2003). Domesticated sheep bones were found at Khvalynskaya sites, along with the bones of wild species (kulan, saiga, tarpan). Detailed statistical data can be found in a number of publications (Kuzmina 1988; Vybornov et al. 2015). Khvalynskaya culture sites date to 4900–4600 BC (Tab. 1). There are two hypotheses about the origin of this culture. It has been suggested that it was an autochthonous culture formed on the basis of the preceding Prikaspiiskaya culture. Other researchers suppose that it could have appeared as the result of the migration of tribes from the southern region of the Trans-Caspian area.

It must be mentioned that the earliest copper ornaments were found in Khvalynskaya burials. This is why the culture could not have been involved in the Neolithisation process.

Remains of domesticated animals were also recently found at Prikaspiiskaya sites, preceding Khvalynskaya culture (Vybornov et al. 2015). It is located in the same area as Khvalynskaya culture.

Evidence of a quartzite stone industry has been found at Prikaspiiskaya sites (Kurpezhe-molla and Oroshae-



Fig. 4. Pottery and quartzite tools of the Caspian Sea area culture.

moe). Heavy flakes were used as preforms for tools produced by an enhanced pressure technique. Tools

Site	Age (BP)	Age, cal BC (2σ)	Material	Lab. No.
Kugat IV	7680±100	6690–6380	Pottery carbon	Ki-14501
Kugat IV	7560±90	6600–6220	Pottery carbon	Ki-14500
Kulagaysi	7380±120	6450–6027	Pottery carbon	SPb-1725
Kairshak III	7190±80	6230–5890	Animal bone	Ki-14633
Baibek	6986±44	5983–5759	Charcoal	Ua-50260
Baibek	6955±80	6002–5708	Animal bone	SPb-973
Baibek	6920±120	6021–5624	Pottery carbon	SPb-1053
Tenteksor	6695±40	5680–5530	Ceramic food crust	Ua-35277
Varfolomeevskaya	7230±90	6250–5890	Pottery carbon	Ki-14368
Varfolomeevskaya	7034±41	6010–5830	Ceramic food crust	Ua-41360
Algay	6800±40	5741–5631	Ceramic food crust	Poz-65198
Algay	6605±32	5617–5487	Charcoal	AAR-21893
Karakhuduk	5980±90	4960–4770	Pottery carbon	Ki-14907
Kairshak VI	5780±90	4880–4600	Pottery carbon	Ki-14910
Burovaya 41	6790±80	5840–5530	Pottery carbon	Ki-14618
Kurpezhe-Molla	6020±80	5150–4770	Pottery carbon	Ki-14832
Oroshaemoye	5806±26	4724–4557	Animal bone	UGAMS-23059

Tab. 1. Radiocarbon dates for Neo-Eneolithic sites in the Lower Volga region.

included scrapers, knives and points on large blades, 'fish-form' arrowheads, as well as insets on narrow flint blades. Flat-bottom pottery was made from clay artificially tempered with shells. The upper parts of the vessels have a thickened external side, called the 'neck-piece'. Pottery was decorated with comb impressions and traced lines (Fig. 4). All of these features are similar to the material from Khvalynskaya culture (Vasiliev 1981; Vybornov et al. 2015; 2016). Domesticated sheep bones were found alongside the bones of wild species (kulan, saiga, tarpan) (Vybornov et al. 2015). The Prikaspiiskaya sites are dated to 5500–4800 BC (Tab. 1). This culture is attributed to the Neolithic period, as no copper artefacts have been found. However, no traces of transition from the Kairshakskaya or Orlovskaya cultures to Prikaspiiskaya culture could be identified. The origin of Prikaspiiskaya culture is reckoned to be connected with the Lower Don region. Some migration from Western Asia could also have occurred. Thus, the Prikaspiiskaya sites in the Lower Volga region represent the second Neolithisation model proposed for this area. The model is connected with the appearance of a producing economy in the milieu of Prikaspiiskaya culture.

Conclusion

Two different Neolithisation models can be proposed for the Lower Volga region. The first could be dated to 6500 BC, and encompasses the appearance of the first sites with the oldest pottery, attributed to Kairshakskaya culture, in the Northern Caspian region. In the Lower Volga basin it could be dated to 6200 BC, and is represented by Orlovskaya culture sites, which appeared under the influence of the southern groups of Kairshakskaya culture. The second Neolithisation model could be dated to 5500–4800 BC, and encompassed the whole area of the steppe Volga basin. It is connected to the incoming Prikaspiiskaya culture, which has yielded reliable traces of a producing economy.

ACKNOWLEDGEMENTS

Special thanks to Prof. M. Budja for the invitation to participate in *Documenta Praehistorica* with our article, project 33.1195.2014/K state order of the Russian Ministry of Education and Science and to RFBR for support with grant number 14-06-00041 (r).

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