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CORDED WARE, FATYANOVO AND ABASHEVO CULTURE SITES ON THE FLOOD-PLAIN OF THE MOSKVA RIVER

ABSTRACT

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This article presents new evidence from excavations in the Moskva river valley, where Early Bronze Age sites have been found under alluvial sediments on the flood plain. The finds were identified to the Corded Ware, Fatyanovo and Abashevo cultures. Radiocarbon dates and stratigraphy demonstrate that these sites developed from the middle to the end of the 3rd millennium BC. Analysis of pollen identified ancient fields and provided a general picture of the proportion of wild and culture landscapes.

Key words: Corded Ware culture, Fatyanovo, Abashevo, pollen studies, radiocarbon dating
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GEOMORPHOLOGICAL BACKGROUND

Archaeologists and soil scientists have been working on the Moskva river flood plain for only a few years. The great potential of flood plain sediments for local archaeology became clear after works in the 1980s by a multidisciplinary team comprising A. L. Alexandrovskiy (soil specialist), M. P. Glasko (geomorphologist) and B. A. Folomeev (archaeologist) at

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the site of Klimenty on the bank of the Oka River (Folomeev *et al.* 1988). In general the Moskva and Oka rivers have the same type of stratigraphy in their flood plain sediments. Buried soils show the periods of low floods, and these interruptions of alluvial accumulation over the surface of the high flood plain made the banks of the river especially attractive and suitable for settlement. Several buried soils in the alluvial sediments of the Moskva are dated to the Atlantic to Subatlantic periods (Alexandrovskiy, Krenke 2004). The thickest and most clearly visible is the well developed soil fourth in the sequence of soils. This is black and identified as a chernozem-like type, lying only slightly above the modern water level of the river at a depth of 2–3 m beneath the surface of high flood plain. Radiocarbon dates for the fourth soil span the period 6000–4900 years BP, or the 5th to the beginning of the 4th millennium BC. Neolithic sites of the Lialovskaya culture are found in the fourth buried soil (Krenke *at al.* 2012).

The second soil is also well developed and identified as a forest podzol, lying about 1–1,5 m above the fourth soil. Radiocarbon dates for this soil span the period 2500–900 BP, while archaeological finds from it date to the Iron Age and early medieval periods. The latest finds date to the 14th century AD (Alexandrovskiy *et al.* 2004).

The third soil, which has produced Bronze Age finds (Alexandrovskiy 2008), lies between the second and fourth soils and has a poorly developed profile. Sometimes the third soil is combined with the fourth.

Archaeological questions

There are a number of unsolved archaeological problems for the Moscow region. The Bronze Age period (Late Neolithic/Bronze Age according to classifications used in Poland) is one of the most intriguing. Most of the evidence is from Fatyanovo culture graves and numerous occasional finds of stone axes. Information about settlement sites is scarce, and the few radiocarbon dates are not sufficient (only three determinations by the end of the 20th century) to support a strong chronological scheme. Thus general questions such as the origins of the culture, interconnections of aboriginal people and newcomers, land use structure, economic base and dating remain to be understood. The Fatyanovo culture was succeeded by the Abashevo culture, for which the Moscow region is at its northwest margin (Lun'kov and Engovatova 2003). So far we have no Abashevo culture finds in the Moskva river valley.

Field study data

Three sites with Bronze Age finds were investigated in the Moskva river valley between 2005 and 2013. All are located on the high flood plain near Zvenigorod about 50 km upstream of Moscow (Fig. 1). The goal of the project was to find and excavate a Fatyanovo culture settlement site within a multidisciplinary approach (pollen, soil, geomorphology,

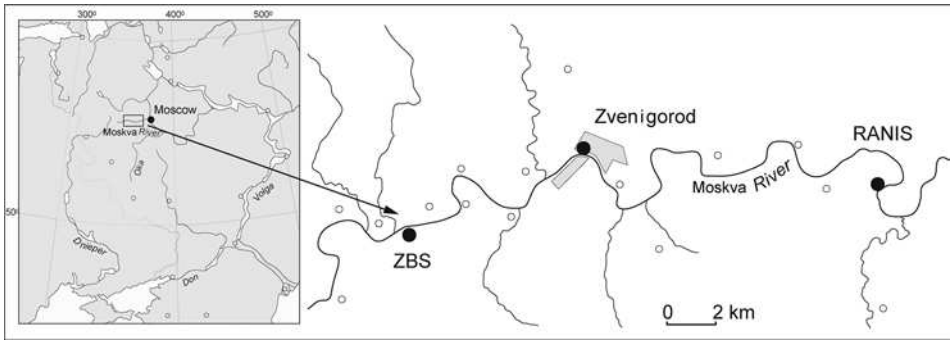

Fig. 1. Map of the Moscow region showing sites mentioned in the text

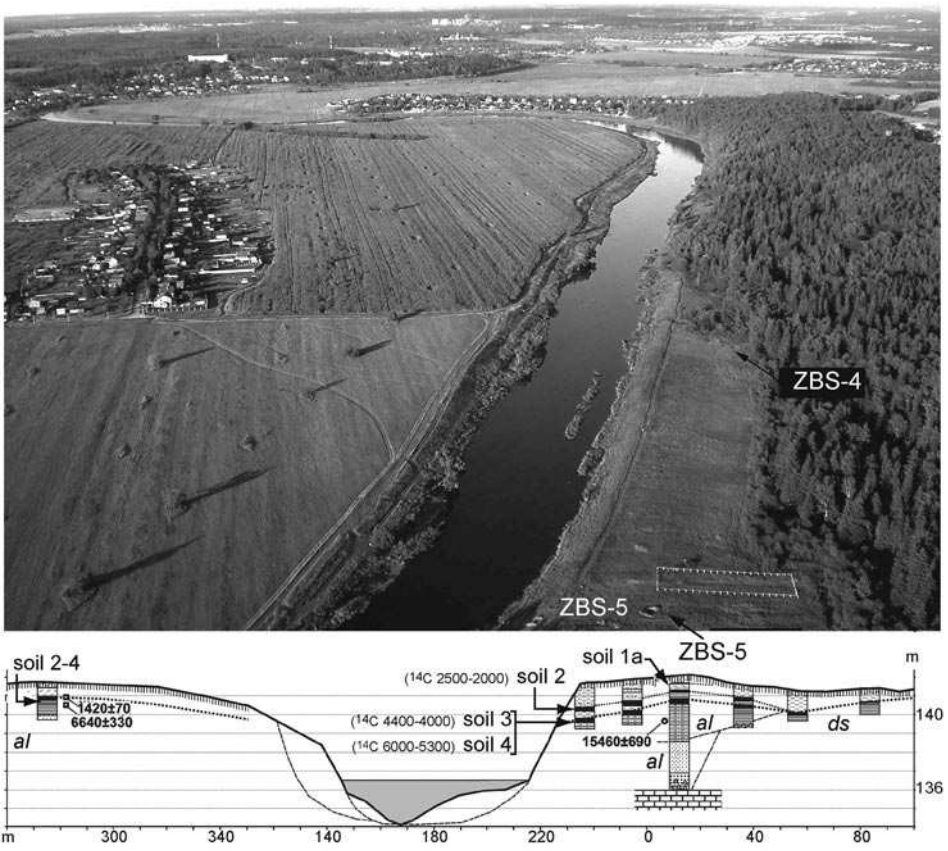

Fig. 2. View on the Moskva river flood plain and a section of sediments (after A.V. Panin, A. L. Alexanrovskiy and E. G. Ershova)

radiocarbon, OSL dating). The project was carried out by a joint team from the Institute of Archaeology Rushian Academy of Sciences (RAS), Institute of Geography RAS, Moscow University and Zvenigorod Museum. A team from Tomsk University (Prof. M. Chernaya) and students from Aarhus University (Denmark) participated as well. The description of sites is organized in chronological order.

Site ZBS-5 (Zvenigorod Biological Station) was found by chance with a test pit in 2011. The test pit was located on a barely visible slightly elevated ridge along the right bank of the river near a depression caused by a small spring buried under the alluvial sediments (Fig. 2). Bronze Age and Neolithic finds were found on the same surface of the fourth soil (combined with the third soil). An area of 80 m^2 was excavated (Fig. 3), with non-productive test pits beyond the main area indicating that the occupied area was not more than 30 x 10 m in size. Neolithic finds are represented only by sherds from a single pot (No 1) decorated in dot and comb style (late Lialovo culture). This can be dated to the beginning of the 4th millennium BC. A series of radiocarbon dates centre around 5000 years BP for the late stage of the Lialovo culture (Zaretskaya and Kostyleva 2011). Bronze Age finds concentrated a little to the side of the Neolithic one (Fig. 3). Two fire places were identified as areas of red burned clay, and within a radius of two meters there were found the remains of five Bronze Age pots and stone implements. There were very few flakes, but a 'hoard' of 14 stone implements was found near the fire place, including chisels, scrapers, knives and blades with retouch made of flint and limestone (Krenke *et al.* 2013). This archaeological evidence suggests that the site was a place of seasonal activity. Most probably the fire places were not contemporary (they are too close to each other) and some kind of light shelter was constructed over them.

The assemblage of decorated pots is very important (Fig. 4). All have a smooth surface and fine sand temper. The internal surfaces are black (lack of oxygen), while the outer surface is light brown. The rim of pot No 2 has parallel horizontal cord imprints with short loops below. There are no parallels for this decoration in the pottery from Fatyanovo-Balanovo culture graves (amongst a sample of about 1000 known vessels). The only analogy within the Oka river basin is at the Iberdus 1 multi-period settlement site located on the left bank of the Oka near Kasimov town, 300 km east of ZBS-5. In his publication of the ceramics from Iberdus 1 V. Sidorov looked for analogies in the Catacomb culture (Sidorov 2003, 186). Indeed, there are some analogies for this type of decoration in the middle and late catacomb pottery from East Ukraine (Bratchenko 2007). However, it is important to note that these Catacomb culture analogies are rare and very often details of the decoration are not the same as on pot No 2 from ZBS-5. More profitable to my mind is to look for analogies amongst the cord and epicorded ceramic cultures of the Baltic coast, Belarus and South Poland, where analogies are plentiful. The loops are typical in decoration styles of late cord ceramic cultures of South Poland and West Ukraine (Bunyatyan and Pozikhovskyin 2011; Kadrow and Machnik 1997). Sometimes similar loops are found in the Rzucewo culture of the Baltic coast (Kilian 1955; Rimantienë 1989; Zal'cman, 2010).

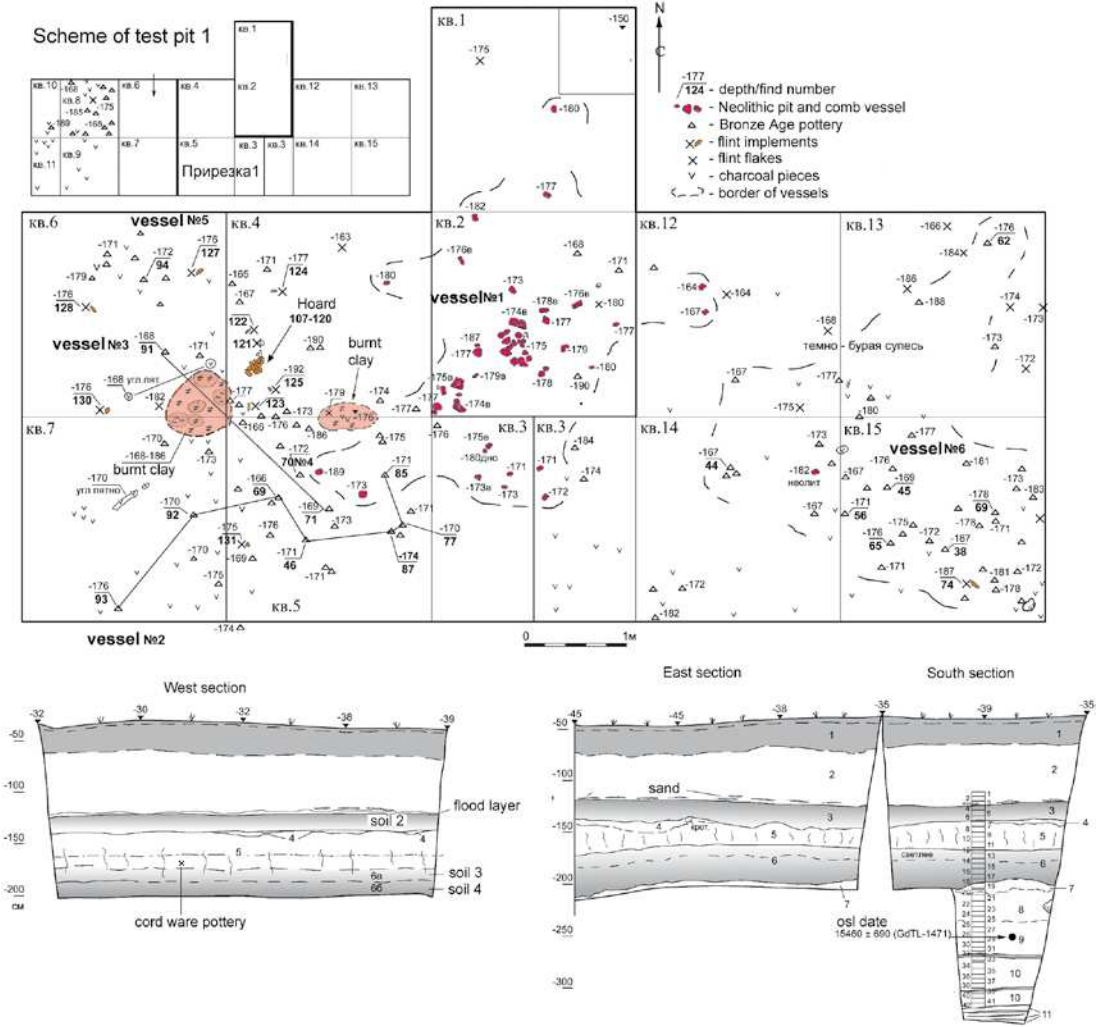

Fig. 3. ZBS-5 site. Plan of the area excavated in 2011 and 2012

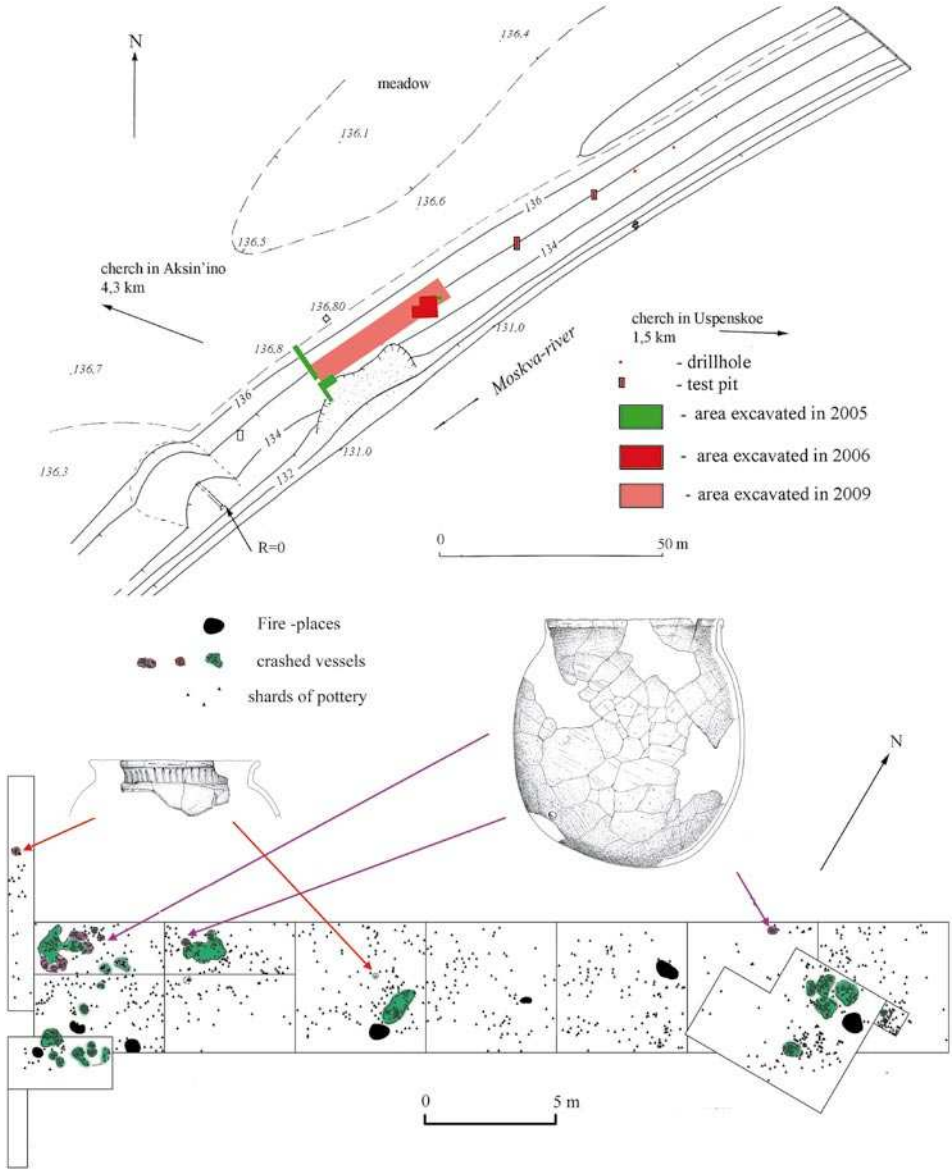

Fig. 7. RANIS site. Map of the site and plan of the excavated area

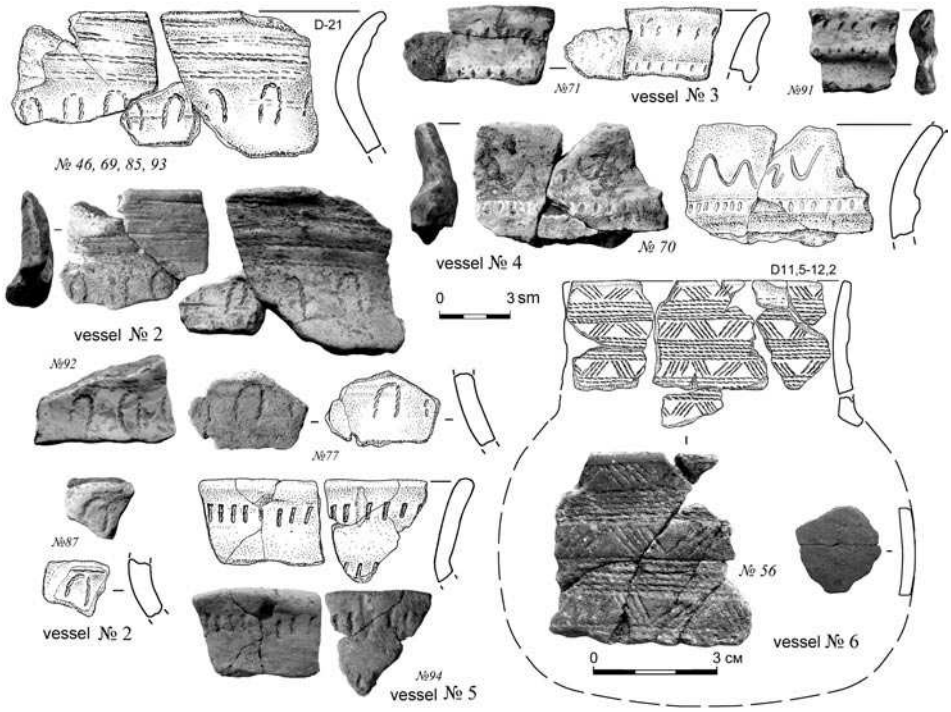

Fig. 4. ZBS-5 site. Corded ware pottery

The rims of pots No 3 and №4 have horizontal bands with small pits, and a decorative wave above the band made with the same instrument as the pits. There are many analogies amongst the Rzucewo culture, for example, at the Nida settlement (Rimantienë 1989). These analogies also apply to the decoration of pot No 6. Analogies for this multi-zone decoration can be found as far away as Switzerland (Furholt 2003, tab. 155) and North Germany (Struve K. 1955). For the Fatyanovo culture context we have only one more sherd with partly similar decoration from the fourth Novinki cemetery (Volkova 2010, fig. 67).

Finally, we can assume that the ceramic assemblage from ZBS-5 does not belong to the Fatyanovo culture, but to the cord ceramic tradition of more western areas (Baltic coast?).

Unfortunately we have only one radiocarbon date from ZBS-5, 6850±50 BP (GIN-14969) derived from the black buried soil four. This gives a *terminus post quem*. There is only indirect evidence to suggest that the ZBS-5 assemblage is older or synchronous with the early stage of the Fatyanovo culture graves. This evidence comprises: 1) decoration with cord imprint is only characteristic for the beginning of the Fatyanovo culture; 2) parallels with the Nida site prove an early date, since the youngest one from Nida is 4070±50 BP (Bln-2592); 3) the stratigraphic position of finds on the surface of the fourth soil 4) comparison with assemblages from RANIS and ZBS-4 described below.

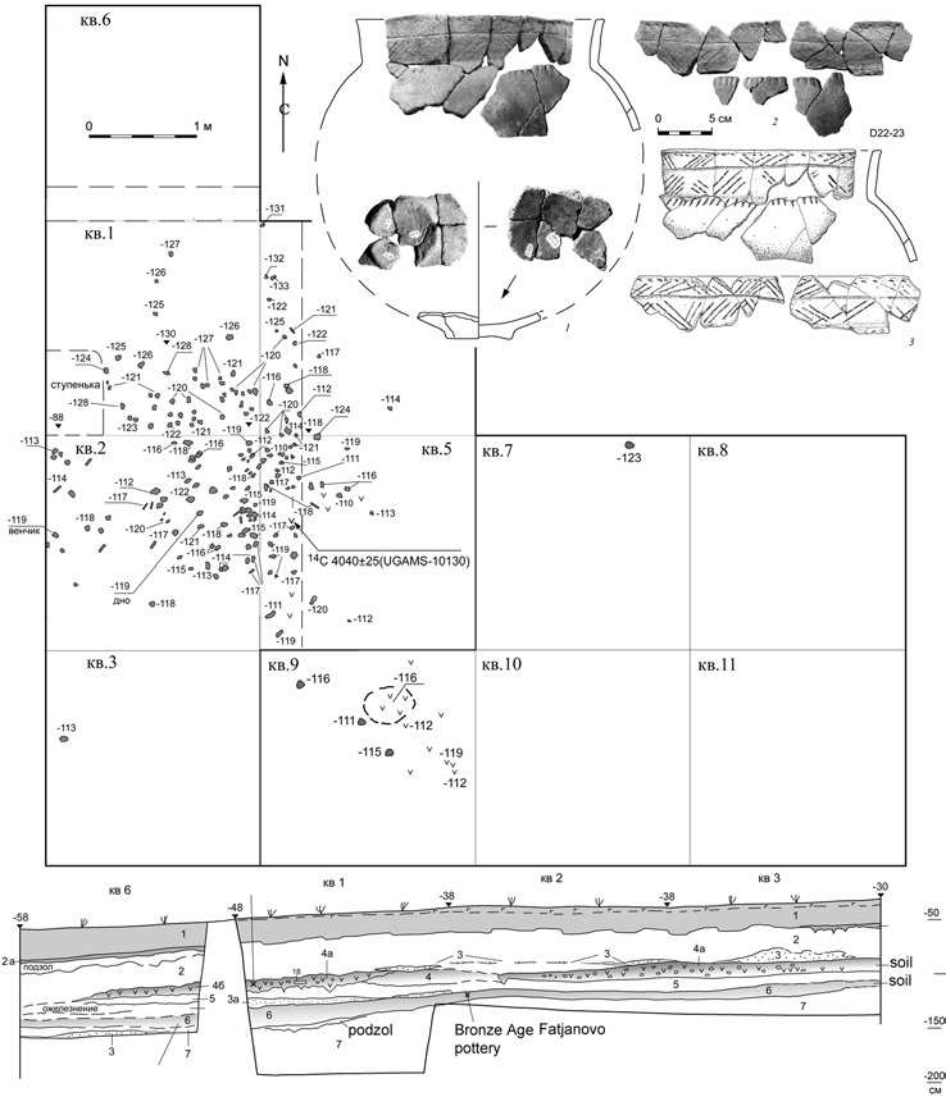

Fig. 5. ZBS-4 site. Plan of the lower layer with the Fatyanovo culture vessel

Site ZBS-4 is located 300 m downstream from ZBS-5 at the mouth of a small ravine formed with colluvium (talus), and at the same height of about 5,5 m above the river water level. An area of 44 m² was excavated with test pits in the vicinity as well. The base of finds was 1 m below the modern surface (Fig. 5). The sherds of a single crushed vessel typical of the early stage of the Fatyanovo culture were dispersed across an area about 3 m in

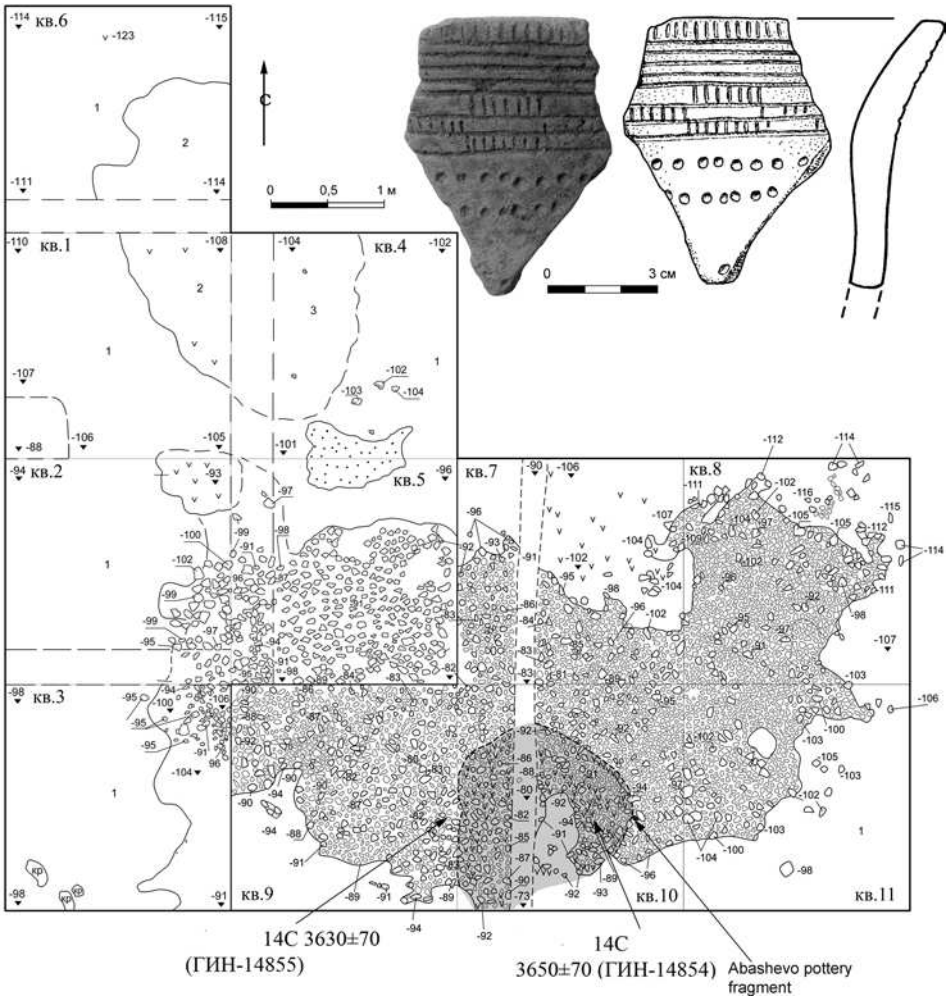

Fig. 6. ZBS-4 site. Plan of upper layer with the Abashevo culture vessel

diameter, on the surface of an undeveloped soil. Pollen from this soil shows that it was a cultivated field where cannabis was grown (Erschova *et al.* 2013).

Several pieces of charcoal were found beside the pottery, and AMS-dating of one gave 4040±25 BP (UGAMS-10130) or the middle of the 3rd millennium (2630–2470 BC) in calibrated age (using OxCal program version 3.10). Analogies for this pot are known from the Fatyanovo culture cemetery at Khanevo, 50 km to the west. The style of decoration is close to the Middle Dnieper culture. The Khanevo cemetery is a 'bridge' between the Middle Dnieper and Fatyanovo cultures.

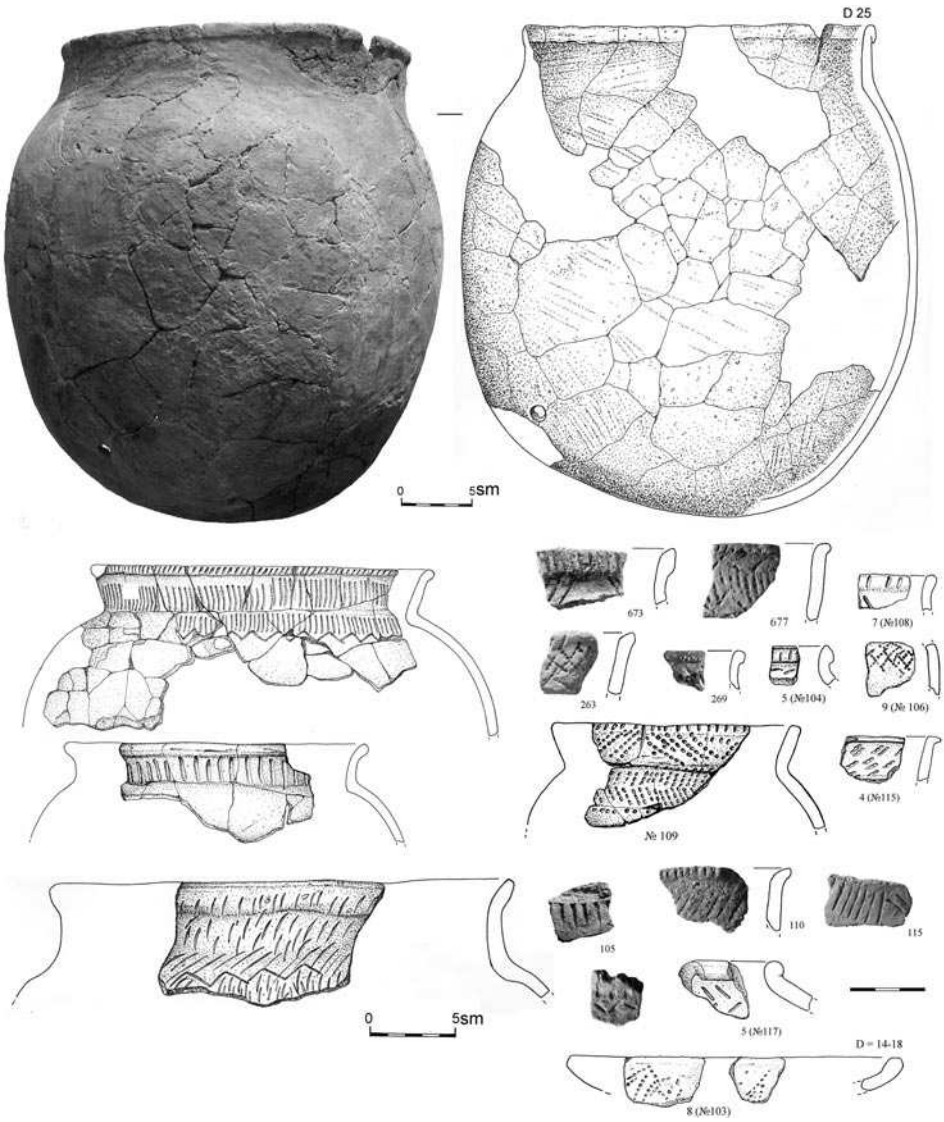

Fig. 8. RANIS site. Fatyanovo culture pottery

Probably the lower layer of ZBS-4 could be interpreted as a place of seasonal activity at the edge of the ancient field on the flood plain.

The site at RANIS (an acronym derived from the name of the resort settlement — rabotniki nauki i iskusstva) is located 19 km (as the crow flies) downstream of the ZBS sites. The finds lay on the surface of the third soil and few centimetres above it. An area of 200,5 m^2

was excavated. According to the geomorphological studies the Bronze Age river channel here was very close to its modern position (Panin 2008). A series of fire places lay in a line along the river bank (Fig. 7), each comprising red burnt clay patches less then 1 m in diameter. The thickness of the burnt clay in the middle of the patches was about 3–5 cm. The remains of eight crushed pots and 29 more vessels represented by single sherds lay near by, all probably deposited over a short time since the thickness of the cultural layer was only 5–10 cm. Because of acidic soil chemistry no bones survived, although a few teeth were identified belonging to cow, horse and sheep/goat (determination by N.V. Serduk, Institute of Palaeontology RAS). The ceramics from RANIS are typical of the developed stage of the Fatyanovo-Balanovo culture (Fig. 8). Large undecorated vessels have three or four holes near the round bottom, a special type of pot identified in the late 1950s by P. D. Stepanov. He excavated the settlement at Osh Pando of the same culture located far to the east in Mordovia (Stepanov 1967). Based on ethnographic parallels Stepanov suggested that these pots were used for milk food production. There is no cord imprint on the pottery from the RANIS site. Most decorations were made with comb imprints or with some tool like a thin stick. Combinations of 'fences' and zigzag motives are most typical. Flint implements were represented by perforators (drills), scrapers and flakes with retouch, but no arrowheads or axes were found (Krenke *et al.* 2008).

The question of prime importance is the dating of the RANIS site. Charcoal was very scarce, and that is why we had to use mainly AMS-dating. Four laboratories were involved in dating (Geological Institute in Moscow, University of Helsinki, Institute of Environmental Geochemistry in Kiev, University of Georgia USA). It should to be stressed that most of the charcoal lay on the same surface and was buried under alluvial sediments. Results of dating are presented in a table 1.

It is clear that there are two groups of dates. The younger group spans the period 3700–3600 BP, and the older group 4100–3900 BP. It is difficult to be 100% certain, but on the basis that three laboratories produced the older group it is probable that 4100–3900 BP is more correct. If so then the traditional dates for the Fatyanovo culture should to be revised, though there are some objections against such old dates. More dating evidence is required.

The settlement at RANIS is unique amongst Fatyanovo culture sites that had been excavated so far. Possibly it was a seasonal settlement, and possibly female types of activities were dominant within the excavated area.

Samples from RANIS had very low concentrations of pollen, and so the results are speculative (this statement is true also for the ZBS sites). It is clear enough that spruce forests predominated in the period of the settlement occupation. The pollen data do not show significant deforestation of the flood plain, and at the same time they indicate that the area around the site were occupied with grasslands and ruderal vegetation which may be a result of human activity (Spiridonova *et al.* 2008).

ZBS-4 site has a very important upper layer (Fig. 6), which is separated from the lower one by a sterile sandy horizon 15–20 cm in thickness. The upper layer is about 60–70 cm

Table 1. Radiocarbon dates for the RANIS site

Laboratory number	Locality, material	Date BP	Date calibrated BC
Ki-13227	Excavation 1 (2005), main charcoal layer	3590±70	2040-1870 BC (59,5%) 1850-1820 BC (4,5%) 1800-1770BC (4,2%)
Ki-13226	Excavation 1 (2005), upper charcoal layer	3690±100	2270-2250 BC (1,3%) 2210-1920 BC (66,9%)
Ki-16755	2009, square 5, depth* +95 +90, charcoal	3650 ± 100	2200-2170 BC (2,3%) 2150-1880 BC (65,9%)
GIN-13776	Excavation 2 (2006), main charcoal layer, depth +95 +100, charcoal	3950±250	2900 BC – 2050 BC (68,2%)
Hela-2536	2009 square 5, depth +80, fire-place charcoal	4134±34	2760-2630 BC (49,2%)
Hela-2537	2009 Square 3 depth +85, fire-place charcoal	4095±34	2680-2570 BC (53,6%)
Hela-2538	2009 Square 3 depth +89, fire-place charcoal	4118±35	2700-2620 BC (36,4%)
UGAMS-7956	2009 Square 5 depth +81, fire-place charcoal	4100±25	2670-2570 BC (51,9%)

* Depth was measured from the zero point shown at the Fig. 7.

below the modern surface, and comprised a large concentration of burned stones extending over about 20 m² with a hearth in the centre (Fig. 6). Small pieces of charcoal provided two radiocarbon dates, which fit very well with each other, of 3630±70 BP (GIN-14855) or 2040–1880 Cal BC and 3650±70 BP (GIN-14854) or 2140–1920 Cal BC. A single clearly Abashevo culture decorated rim sherd was found between the stones (Fig. 6). We have only a few dates for the Abashevo culture, and most of them are for human bones from the Pepkino barrow in the Chuvash Republic. Five dates from Pepkino cover the interval 3850–3640 BP, and four lie between 3690–3640 BP (Dobrovolskaya and Mednikova 2011). Thus, the dates from ZBS-4 fit the other Abashevo dates exactly.

Very importantly ZBS-4 provides a stratigraphic argument for determining the chronological position of Fatyanovo and Abashevo sites.

The pollen date from ZBS-4 proves that forest clearance increased during the Abashevo period by comparison with the Fatyanovo period, and that subsequently the forest regenerated again.

DISCUSSION AND INFERENCES

It is clear enough that the evidence presented here is not sufficient to answer all the problems posed at the beginning of this paper. Although only minimal traces of Bronze Age human activity in the Moscow area have been found, nevertheless this new information is important.

It is possible to propose that the origin of the Fatyanovo culture was very complicated. Finds from ZBS-5 have parallels amongst corded ware cultures on the Baltic coast and in Poland, while those from ZBS-4 are closer to the Middle Dnieper culture. This suggests that groups belonging to different strands of the corded ware tradition penetrated the Moscow region.

New radiocarbon dates demand the revision of the traditional chronology, raising the important question of whether it is possible that the beginning of the Fatyanovo culture dates within the second quarter of 3rd millennium BC. This problem requires more dates to be solved.

It is now clear that the Moskva river banks were heavily exploited in the Late Neolithic and Bronze Age. Seasonal settlements, places of regular activity and fields are hidden beneath the cover of alluvial deposits. The potential to identify fields is of special importance, indicating that the settlements are somewhere near by, but still invisible.

It is also clear that a stable cultural landscape had not been formed in the Moskva river valley in the 3rd millennium BC, with periods of local forest clearance alternating with periods of forest regeneration. The future development of this field of study depends on the refinement of methods for pollen studies.

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