

Earliest pottery in Eurasia continent

Nejstarší keramika na eurasijském kontinentu

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This paper presents an overview of the latest information about the beginnings of the technology of pottery making in the area of the forest-steppe belt in Siberia and the Russian part of Eastern Europe all the way to the Ural Mountains. From a continental point of view, a brief spatiotemporal diagram presents a completely different background of the beginnings of pottery in our lands and also in corresponding parts of Southeast Europe, where the origin of pottery has traditionally been linked to the Neolithisation of Europe. The earliest pottery technology in China dates back to 20 000 BP, followed by all the subsequent data from the Far East area to Lake Baikal. The earliest pottery culture, Jomon, which had been developing in Japan for more than ten thousand years, is not included here. In the Russian part of Eastern Europe, pottery technology starts developing only after 8 000 BP. Typologically uniform and mostly unchangeable development of beaker-shaped pottery, mostly with a pointed bottom, is common for both these areas. This development continues in Scandinavia and adjacent areas of the Baltic and in Atlantic Europe. In the central parts of Europe, similar shapes only occur sporadically in the earliest period. However, the earliest Eurasian pottery had influenced the development of later prehistoric periods. Numerous settlement groups on the Eurasian continents were characterised by two traditions that are archaeologically recognisable. In simple terms, one of the traditions was agricultural, the other conservative.

Neolithic – Mesoneolithic – Palaeolithic – Pleistocene – Holocene – Siberia – Eurasia

Práce předkládá přehled nejnovějších informací o počátcích technologie výroby keramiky v oblastech leso-stepního pásma Sibíře a ruské východní Evropy až k Uralu. Data nejstarší keramické technologie v Číně přesahují číslo 20 tis. BC. Na území ruské východní Evropy začíná vývoj keramické technologie většinou až po roce 8000 BC. Obě oblasti spojuje typologicky jednotný a málo proměnlivý vývoj kotlovitých tvarů převážně se špičatým dnem. Na tento vývoj navazuje srovnatelně kulturní posloupnost ve Skandinávii a v přílehlých oblastech Baltu i Evropského pobřeží Atlantiku. V centrálních oblastech Evropy se podobné tvary vyskytnou v nejstarším období zcela ojediněle. Eurasijská nejstarší keramika však nepochybně ovlivnila vývoj i v pozdějších pravěkých obdobích. Početné skupiny osídlení na evropském i eurasijském kontinentu se vyznačovaly dvojitými tradicemi hmatatelnou archeologicky nejen v keramice. Zjednodušeně řečeno, jedna byla zemědělská, druhá konzervativní.

neolit – mesoneolit – paleoneolit – pleistocén – holocén – Sibíř – Eurasie

Introduction

It has become apparent that the existing view of the archaeological area of Neolithised Central Europe, which seemingly comes from the inside, will get a completely new meaning once we situate it in a considerably wider and more global background. This background has, as usual, an expected time frame, which is broadened by several millennia to encompass the period of Late Pleistocene and upcoming Holocene. The second dimension – space – has not been taken into account yet, for reasons that were mostly insignificant. Lack of information was one of the factors, but there were also conceptual reasons. It is obvious that the background of European Neolithic can be displayed on the colossal area of the Eurasian continent; this is only the first step towards understanding its global

significance. A few decades ago, the literature on the areas of forest-steppe in Siberia and on the Far East was very sparse; the Chinese and Japanese works on the Far East were inaccessible for language reasons (cf. *Jordan – Zvelebil eds. 2009*). The transcontinental link is surprisingly constituted by the technology of pottery making rather than the means of subsistence. The concepts in Russian literature are not the most up-to-date (*Okladnikov 1941*); rather, they are more traditional, since the findings of pottery always implied Neolithic dating regardless of the archaeological contents found alongside the technology. It was only the radiocarbon dating method that has shown that the earliest pottery in the Far East and in China came along much earlier than was thought, with data now pushed to up to 20 000 years before present. Some authors only accept these facts with utmost scepticism; nevertheless, these facts have brought about a necessary change in the overall concept of the Eurasian archaeology. That is why, in this work, we present some of the principal points of this new concept, which connects the origins of pottery on the axis starting at the Pacific and going all the way to the Baltic and the Atlantic. We use this as an opposite axis to the so far preferred connection of Near East development.

The beginnings of the Neolithic and the earliest pottery

The historical period of the Neolithic is currently well known not only to experts but also to the public. It is universally agreed that the Neolithic was the period in which the earliest farmers and earliest settlements emerged in the most fertile lands of the wider area of Central Europe. However, several outdated notions still circulate today that are quite difficult for archaeologists to replace with new ones. These are the notions of earliest manufactured products such as pottery, fabrics and polished axes and adzes; notions of cyclic agriculture; and the notion of the density of population in Bohemia, in accordance with which settlements with large houses filled the entire area just like today. Now we know that pottery emerged in the Far East, earlier than 10 000 BC; in the Far East it is not strictly connected to either permanent settlements or agriculture (*Rice 2015, 9*). The weaving of fabrics from nettle fibres is evidenced in Dolní Věstonice in the Upper Palaeolithic (26 000 cal BC; *Adovasio et al. 1999*) and polishing of stone tools is, albeit sporadically, present already in the Preneolithic. There is also evidence that Jistebsko-type metabasite was exploited for the purpose of making these tools already in the Mesolithic (*Šída 2014, 99*). Agriculture did not have any stabilised system of land cultivating; mixtures of crops were grown in small patches near the houses (*Boggard 2004, 159*). Large houses of several types are found in numerous settlements while settlements with tens of houses grouped together are very rare, and represent only a fraction of all known sites (*Pavlů 2012, 99*). The number of settlements existing in the first 300 years of the Neolithic is not much higher than 25 and only in delimited regions of Bohemia. This period was grandly denominated as “Neolithic revolution” (*Barker 2006, 10*); however, it took at least two thousand years to form in the Near East (*Pavlů 2005; 2012*).

The fundamental historical importance of this period is not questioned but its manifestation cannot be followed all over the world within one time horizon. Its form differs at least within the continents. The European approach to the Neolithic as the period of the earliest farmers with all its elements and time-space relations as we understand it today represents only one of the possible manifestations of changes to various societies at the

time starting in the Late Palaeolithic and culminating after the beginning of the Holocene (compare below). The content of a new approach to the whole term will have to be widened by various, so far uncomparing, forms of subsistence and settlement.

Eastern Mediterranean

At the turn of the eighth and seventh millennium BC the several centuries long development of aceramic Neolithic in the Eastern Mediterranean and the Levant, culturally described as Pre-Pottery Neolithic B (PPNB), came to an end. The subsequent archaeological complex in the southern part of this area is the fully ceramic Yarmukien with a wide range of shapes created using relatively developed technology. The large settlements of the PPNB end perished (*Rollefson et al. 1992*) and their inhabitants moved to more advantageous areas (*Asouti 2006*) seemingly according to various methods of subsistence ('Ain Ghazal). Some farmers moved to the west, some to the east and some looked for even more advantageous areas further north in modern Anatolia (*Pavlů 2008*).

This development is supported today in the details of the situation in the Eastern Mediterranean. The entire process of domestication of wild plants and animals is accompanied by archaeologically visible development of pyrotechnologies (*Rice 2015*, 12) starting with badly fired wares up to faultless painted ware. One of the first commodities used in trade exchange between remote regions was created in this manner. At the same time, the tradition of the archaeological research of Neolithic ceramic cultures in Central Europe to use a simplified scheme, i.e. pottery = agriculture = Neolithic, as the image of the cultural-historical interpretation, took root. As is the case of other basic archaeological terms, this image has to be considered as too simplified. That is easy to support if we leave the restrictive borders of Central Europe and our home countries and compare with the known archaeological situation in other parts of the Eurasian continent.

During the seventh millennium BC, the aceramic Neolithic within various regions of Anatolia was replaced by geographically delimited groups of settlements characterised by fully evolved, mostly painted ceramic ware. Only after several centuries of further development did the idea of Neolithic farming spread to other territories together with the entire complex of the Neolithic lifestyle. Gradually new cultural centres come into existence on the Aegean peninsula, in the northern Balkans and in the Carpathian basin. The development is archaeologically well trackable with changeable styles of pottery shapes and decoration (*Mazurié de Keroulain 2003*, 55).

If we compare the development of domestication of agricultural crops and animals and the development of ceramic technology in the Near East then we can see certain independence to both processes. In the former case, the domestication developed logically in places where the wild predecessors of crops and animals existed. In the case of cereals, we consider the hilly area in the north between rivers Euphrates and Tigris (Kara Dağ), in the case of sheep and goats these were domesticated mostly in the foothills of the north-east edge of Mesopotamia. There could have been more centres for cereal domestication, while pigs, for example, were probably domesticated separately. On the other hand, ceramic technology developed in the wider space of Levant within the context of wooden and stone vessels. It is possible to observe relations between these preceramic products and late Palaeolithic ways of subsistence, while significant disruptions to hunter-gatherers' mobility appeared together with the creation of social centres of Göbekli Tepe type. In

this manner, we can follow various and slightly overlapping processes in the Near East, in different areas of settlement and subsistence, which after some time led to the creation of the Neolithic complex of the post-Palaeolithic society.

This historical development led to the establishment of a new system based on domesticated sources of subsistence and at the same time to corresponding changes in the social life of large regions of the Near East and gradually in Central Europe. Within the whole concept, we cannot leave out research on the people who carried out this process. These were members of populations who lived in the centres of these processes from early times and which probably individually took part in spreading the new ways. Only with new methods of molecular biology is it possible to follow the variability of Neolithic populations, which often vanishes below the unity of pottery ware (*fig. 1*). The situation of the Carpathian basin amongst the populations of Starčevo–Kőrös–Criş, Linear Pottery culture and the earlier inhabitants has been evaluated for the first time from the view of spreading Neolithic technologies.

Specific forms of Neolithic spread today oscillate between direct demic diffusion of agriculturalists from the Near East and mediated form of cultural diffusion of new forms (*Budja 2013*). The progress in the research of in-detail classified groups of mitochondrial DNA (mtDNA) and non-recombining region of the Y chromosome (NRY) allows us to observe the proportion of defined groups of these characteristics in different regions based on fossil sources and modern materials. The results show a relatively identical history of mixing for both men and women and also their differing demographic history (*Rasteiro – Chikhi 2013, 7*). Despite the fact that the data is not based on representative sample numbers, it is already possible to show the growing role of men in the process of sedentarisation and occupation of given regions. It is also showing that Transdanubia in west Hungary was an important corridor for prehistoric migration (*Szécsényi-Nagy et al. 2015, 7*).

Central Europe

Although the genetic studies support some form of demic diffusion on the Aegean – Carpathian Basin axes as a suitable form for Neolithic spreading from the Near East to Europe, it seems that the spread of Neolithic farming and neolithisation of prehistoric societies occurred in some regions was more likely due to cultural diffusion from the Carpathian basin further into central Danube, Central Europe and west to the Rhine valley. In the earliest period (5600–5300 cal BC) there are 680 sites listed (*Fisher – Hilpert 2016*), although not contemporary. This represents a very low population density, probably single microregions, which were gradually settled from the pioneer phase of the Earliest Linear Pottery culture (*fig. 2*).

The whole process of Central Europe Neolithisation took place gradually over several centuries, as represented in the culture by linear pottery (*Zvelebil et al. 2010*). At the moment we cannot determine the ratio of single population groups more accurately, as the results of the DNA studies are ambiguous. They do allow estimating a bigger or smaller share of earlier local Mesolithic population. The exception could be the detailed analyses of data from the cemetery in Vedrovice which show great mobility of inhabitants and gender differentiated life experiences (*Zvelebil – Pettitt 2008*).

These original inhabitants are presumed in three different situations. First, in the marginal regions, where they create contact zones with very close contact of two different ways

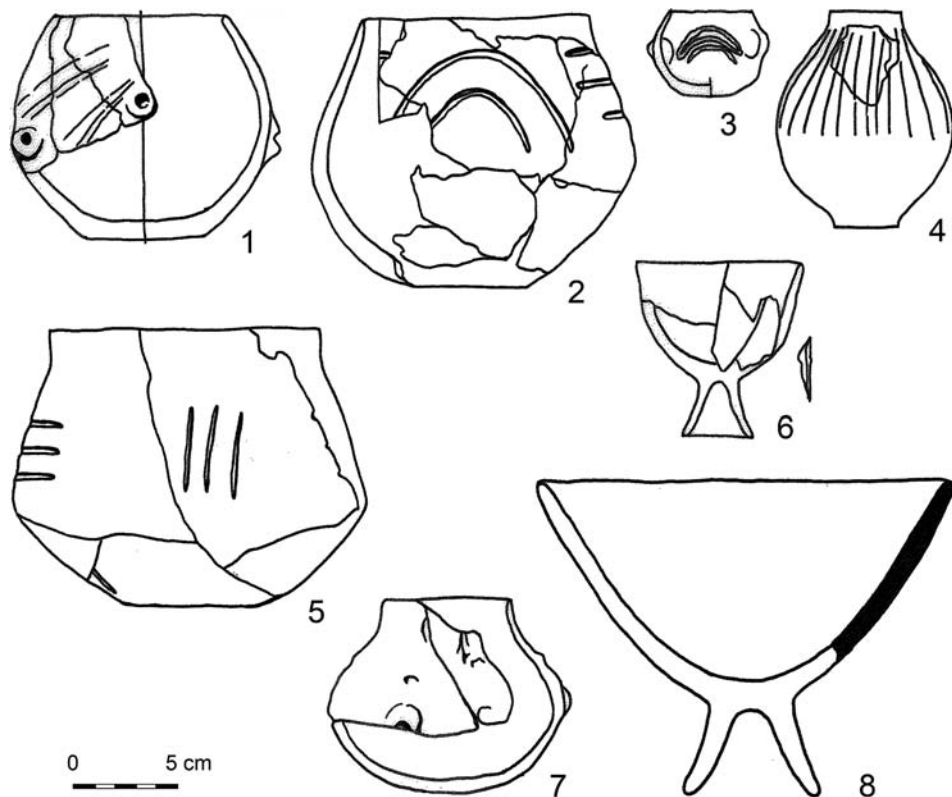


Fig. 1. Forms of the earliest period of Linear Pottery culture. 1–2 Balatonszárszó (Hungary; according to *Marton – Oross 2012*); 3–8 Bicske (Hungary; according to *Makkay 1978*), feature no 1–III/76. Drawings in figs. 1–3 by A. Pchálková.

Obr. 1. Tvary nejstaršího období lineární keramiky. 1–2 Balatonszárszó (Maďarsko; podle *Marton – Oross 2012*); 3–8 Bicske (Maďarsko; podle *Makkay 1978*), feature no 1–III/76.

of settlement and subsistence. One example could be the settlements in northern Poland (*Nowak 2009*), separated from each other only by narrow streams. Second, in the Rhine area, there are settlements with the earliest linear pottery features with two distinct types of La Hoguette ware (*Lüning et al. 1989*), as if two different societies were present together in one settlement, each with its own equipment. The third situation could show evidence of different ways of subsistence, on some settlements with linear pottery, which have buildings of various sizes, different plan and different content of accompanying artefacts and ecofacts (*Pavlů 2013*).

Bohemia

Since Bohemia and Moravia are relatively small in terms of area, we tend to observe the expansion of new ways of agriculture, means of subsistence and technology on an axis. With the starting point somewhere in the north of Mesopotamia, the axis then went through the Balkans and the Carpathian Basin until it reached our lands and continued to the west.

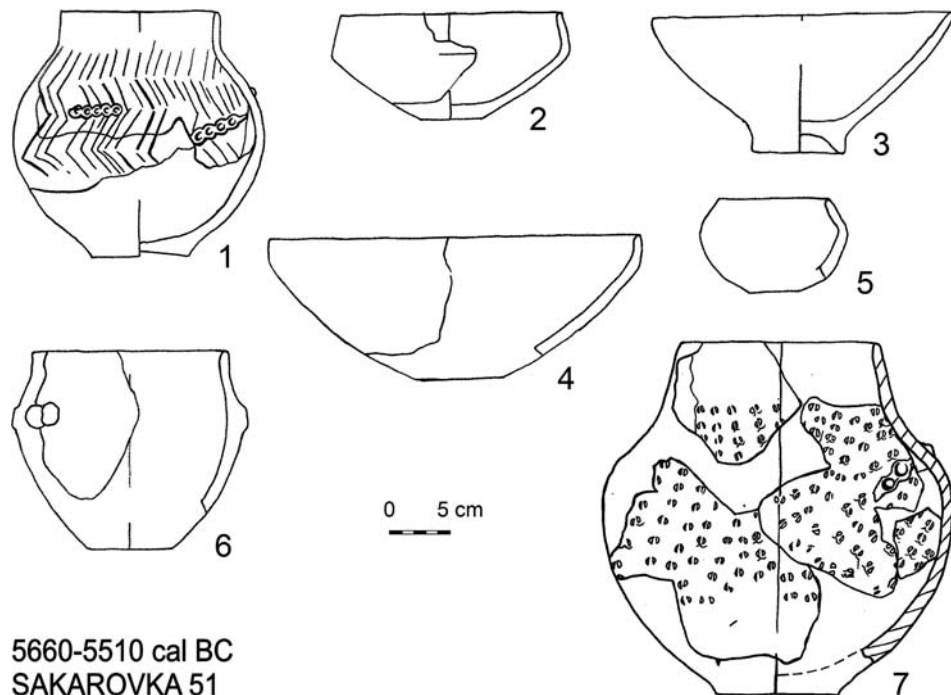
The Neolithic as an economic and social system, with corresponding technology, was considered to be a closed historical unit that came after the Mesolithic and was replaced by the Eneolithic. These historicising coordinates were seldom disputed or criticised until recently, even though the boundary of new findings and occasional new theories about the beginning of the Neolithic system and the contribution of new technologies has been crossed many times. We are aware that trying to pinpoint the beginning of anything is merely an illusion that draws us deeper and deeper into the uncertain nooks of the past. This applies not only to the beginnings of the Neolithic but also to the origin of pottery making and all the other origins that archaeology likes to study. After 6200 cal BC, a wider society of people of different genetic origins settled in Central Europe and established a simple form of a permanent though unstable settlement. These inhabitants used their early experience with farming to grow cereals and breed cattle, sheep, goats and pigs. Undoubtedly out of keeping with the traditional interpretation, they must also have cooperated with those groups of inhabitants who refused to try and overcome the obstacles of farming and kept to the tried and tested techniques of hunting and gathering.

Chronology of the Earliest LBK in Central Europe

Today, the centre of the origin of the Earliest LBK is distinguished as a formative region with several sites in two smaller areas (compare map on *fig. 6*). The first one is situated to the south of the Balaton Lake in current Hungary (*Makkay 1978; Marton 2000; Oross – Bánffy 2009*) and the second one in southwest Slovakia (*Pavúk 2014*). The excavated settlement Wien – Brunn is one of the characteristic sites (*Stadler – Kotova 2010*). In more detail we can differentiate between the Earliest Linear Pottery culture (Earliest LBK: 5600–5300 cal BC), Classical LBK (5300–4900 cal BC) and the following development of groups with Stroked Pottery Ware (SBK: 4900–4500 cal BC), which continued into the Eneolithic during the changing cultural conditions in the wider region of Central Europe. It is necessary to point out that this depiction of the development of the LBK within the wider geographical view is more complex and differs within the specific developments in the eastern part of the Carpathian. In the early part of the Neolithic, this style reached its eastern limit (*fig. 2*) in Moldova (Sakarovka: *Dergachev – Larina 2015*). Later, styles that originated in Transdanubia (Music Note Pottery) spread into this eastern region, probably by a way to the north of the Carpathians (*Bardeckyj et al. 2013*).

Archaeological characteristics of Earliest LBK

The Earliest LBK is the most important for the beginnings of the Neolithic within Central Europe. It was not archaeologically defined until the 1960's (*Quitta 1960*). Settlements were usually situated on the borders of two ecological zones; they comprise several contemporary buildings (*Rulf 1983*). They are often in places which remind us of the traditions of earlier Mesolithic settlements (*Pavlu 2005*). It was a farming society with both cereal production and cattle herding. It is possible that the inhabitants of single houses only practised a restricted range of farming. The gains were then shared with others within the settlement. This system is partially similar to farming activities in PPNB settlements in the Levant (*Rollefson et al. 1992*).



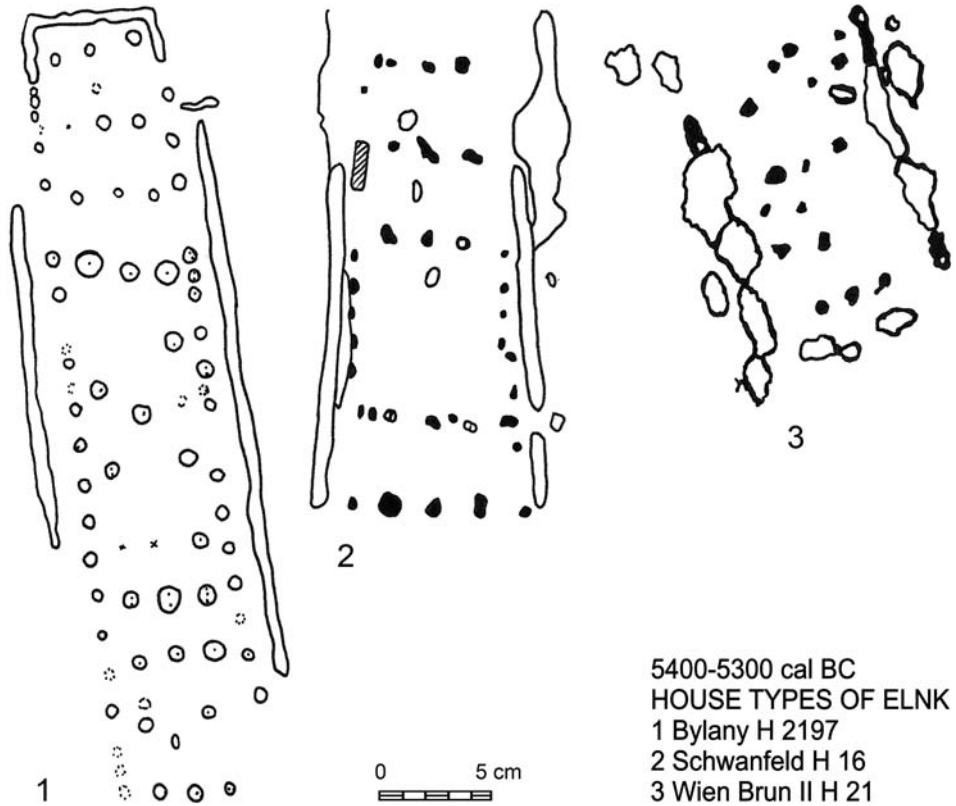
**5660-5510 cal BC
SAKAROVKA 51**

Fig. 2. Forms of the Starčevo-Körös culture at its most eastern area: Sakarovka (Moldavia), feature no 51 (according to *Dergachev – Larina 2015*).

Obr. 2. Tvary z období kultury Starčevo-Kriš na její východní hranici: Sakarovka (Moldávie), objekt 51 (podle *Dergachev – Larina 2015*).

Houses are at the beginning roofed, post-built structures. They have typically three deep postholes on the north end of the living area with grooves for roof-supporting posts outside (*fig. 3*). These details do not repeat in the following period of classical linear pottery. The buildings are accompanied by characteristic building pits, which contain artefacts usually assigned to the find assembly of the given building. These types of houses are in groups of up to three units, which probably have an agricultural role (*Lenneis 2004*). From the earliest period there is practically no evidence of cemeteries with ritual burials (*Pavlů 2013*). The single finds come from various regions and are very rare mostly crouched inhumations (*Zápotocká 1998, 18*).

Pottery is presented by three basic shapes – bowls, semi-spherical vessels and bottles. These can all be placed on a hollow foot. The technology is characterised by strong organic tempering, the result of mixing cow dung into the ceramic mixture (*Neumanová et al. 2016*). Mineral temper is not often used at the beginning. Pottery is decorated mostly by strong grooved lines, occasionally other methods are used, such as polishing and fingerprints or barbotine imitation on rough ware (*Stadler – Kotova 2010*). Other artefacts such as chipped polished or bone industry are also characterised by chronological rarities which in the course of later development disappear or change (*Mateiciucová 2008, 79*). In addition to other standard shapes, these are trapeze arrowheads and asymmetrical adzes spatulae.



5400-5300 cal BC
HOUSE TYPES OF ELNK
1 Bylany H 2197
2 Schwanfeld H 16
3 Wien Brun II H 21

Fig. 3. Houses of the Earliest period of Linear Pottery culture. 1 Bylany (Czech Republic), house 2197; 2 Schwanfeld (Germany), house 16; 3 Wien Brunn II (Austria), house 21 (according to *Pavlů 2000; Lenneis 2004*).
Obr. 3. Typy domů nejstaršího období lineární keramiky. 1 Bylany (ČR), dům 2197; 2 Schwanfeld (Německo), dům 16; 3: Wien Brunn II (Rakousko), dům 21 (podle *Pavlů 2000; Lenneis 2004*).

Eurasian geography

Geographically, Europe and Asia are divided by the Ural Mountains that run approximately from north to south along the 60th meridian east. The northern part of the Asian continent is now Russian Siberia bordering to the south with Kazakhstan and, as the case may be, with Mongolia and China. Three great rivers run through the area from south to north: the Ob River (with the Irtysh River as a tributary), then more to the east the Yenisei River (with the Angara as a tributary) and in the Far East the Lena River (with the Vitim as a tributary). The eastern part of the border with Mongolia is constituted by the Amur River and the border with China by the Ussuri River. The great West Siberian Plain lies between the Yenisei and the Urals; the landscape is jagged in the east and mountainous in the south where the Central Siberian Plateau lies, comprising a number of vast plateaus and low mountain ranges separated by rivers. To the east of Lake Baikal, plateaus alternate with long mountain ranges all the way to the Sea of Okhotsk.

Europe is a part of the Eurasian continent but because of its structure and natural conditions, it has been treated as an independent continent. Its surface is very rugged with

several mountain ranges but does contain the East European Plain, the Polish Plain and the North German Plain. The largest rivers are Volga and Danube. The former runs from North to South to the west of the Ural Mountains and flows into the endorheic basin of the Caspian Sea, while the latter runs from the West to the East as if through the centre on the continent and flows into the Black Sea. The coastline of Europe is also very rugged. The division of Europe into the east, central and west or alternatively north and south has historical origins; these are mostly political divisions which do not have stable natural borders. From the point of archaeological Neolithisation of the continent, it is possible to differentiate continental settlement of Central and Southeast Europe, East European settlement including North Europe and settlement of the Mediterranean coast including both the Apennine peninsula and Atlantic coasts.

The East European Plain comprises most of the European part of Russia. In the south, it subsides into the steppes of Azov-Kuban Lowland demarcated by the Caucasus Mountains. All the hills are lower than 500 metres a.s.l. The southwest comprises the vast and low Central Russian Upland. Several rivers run from north to south in the European part of Russia: from the east, it is the Volga River that runs into the Caspian Sea; the Don River; the Dnieper; and the Bug and the Dniester that flow into the Black Sea. The latter forms the border between Moldova, Ukraine and Russia. Russia and Ukraine border lies to the south.

Climatically, 21 thousand years ago the Earth was in the middle of the last glacial period, known as the Last Glacial Maximum (LGM). Analyses of the ice cores in the Antarctic, in Greenland and several places in sea and lake bottoms, show that the average global temperature was more than 5 Kelvins lower compared to today's temperatures. A number of variables can be observed in deep boreholes in glaciers: the ^{18}O isotope; electrical conductivity; yearly changes of glacier layers; Na^+ concentration; dust; and deuterium (*Walker et al. 2009*). The beginning of the Holocene, which marks geological present, was set as 11 700 yr b2 k (before AD 2000).

Before 16 500 – 13 070 cal BP, in the period of Bölling and Alleröd, there was a short warm spell, which separated the short cold period of late Dryas from the actual beginning of the Holocene (*Stuiver et al. 1995*). This first warm spell probably caused melting of the Arctic glacier, which led to a rise in the water level at the confluence of the Amur and Usuri thereby creating a large inland lake. The oldest sites were found on the northern edge of the island elevations in this lake (*Shevkomud – Janshina 2012*, 61). The rise of water level happened also in the West area of the Baikal Lake at the end of Sartan cooling. Its late stage is characterised as a period of water disasters, showing in the typical stratification of corresponding sediments (*Levi et al. 2015*, 66).

Earliest pottery technology

The technology of pottery making originated independently in the earliest period, in several regions of the Far East during the warm interstadial period of Bölling-Alleröd (14 700 – 12 900 cal BP). In accordance with one hypothesis, pottery came as a response to new sources of vegetable food that needed to be cooked or stewed (*Kuzmin 2015*). So far, four areas with the presence of earliest pottery (from before the beginning of Holocene, i.e. in the cultural context of late Palaeolithic) have been processed (*Bar-Yosef – Wang 2012*, 330; *Li et al. 2016*; *Morisaki – Sato 2015*). Dating in these areas observes the gradually descending time of the origin of pottery technology in the direction from the east of

China and Japan (*Habu 2004*, 32) to the lower Amur and further towards the upper Amur. The earliest technology of pottery making in hunter-gatherer environments is represented by simple, not too varying shapes. The localities are found in an extensive area and far apart. Culturally, they belong to the late Palaeolithic and Mesolithic.

The basic sequence of Neolithic cultures in the lower Amur region is represented by Mariinskaya culture (8th – 7th millennium BC), Kondon culture (7th millennium – first half of the 5th millennium BC) and Malyshevo culture (second half of the 7th millennium – turn of 4th, 3rd millennium BC). These cultures follow after a lengthy period of Neolithic beginnings, which is represented mostly by single sites (*Medvedev 2010; 2015*). It is assumed that during the maximum of the last glaciation the Siberian area became depopulated and was re-inhabited only at the end of the Pleistocene. The Europid inhabitants moved both ways through the step regions. The modern genetically varied settlement did not emerge until 3 400 BC in the Early Bronze Age. In the Far East, there is evidence of genetic movements from the South, to the West and from Central Asia. Even after these changes, there is evidence of some European ancestors within the population representing the earliest share of European predecessors in the mixed population (*Pugach et al. 2016*, 1788).

Eastern Siberia and the Far East

The Osipovka culture (12 330 – 16 450 cal BP) represents the earliest archaeological find in the Russian Far East. The cultural complex was uncovered in several dozen localities where a small number of fragments with Mesolithic laurel leaves were found. The pots are organically tempered, but there is no trace of sand in other localities. The Osipovka culture might have also affected the Japanese isles. It belongs to late Palaeolithic, while it is sometimes also labelled as Neolithic (due to the occurrence of pottery) or Mesolithic. However, evidence of Neolithic agriculture does not exist. The means of subsistence of the bearers of the culture was changing only very gradually; millet growing is only evidenced in the 4th millennium.

The Goncharka locality (12 000 – 10 000 mil. BP) lies on the right bank of the Amur, approximately 20 km southwest of the city of Khabarovsk which lies on the confluence of the Amur and Ussuri rivers. In the years 1995–1999 and in 2001 approximately one tenth of the locality (cca. 500 m²) was excavated, affecting a layer of hillside soils. Cryogenic wedges were embedded into the bedrock to form a system of rectangular intersecting grooves. One of the embedded objects was interpreted as a burial with the use of fire. This is evidenced by burned out areas that formed a part of a silhouette of a buried body in the northern part and other artefacts amassed in another part of the embedded area. In addition to stone artefacts, a pot was reconstructed from several dozen fragments. It is a beaker-shaped pot with a flat bottom and sand tempering, of a light grey to ochre colour. A decorative punctured rhombic shape is discernible on the surface. A large flat bowl completes the set of shapes of pottery found at the locality (*fig. 4: A*).

The Gasya locality (15 150 – 15 920 cal BP) with multiple layering of cultural horizons lies on the right bank of the Amur River close to the Malyshevo area north of Khabarovsk. It was examined in 1975 and 1970–1980 (*Medvedev 1995*). The pottery from this area comes from the deepest layer of the Mesolithic Osipovka culture, is of grey to black colour, lightly fired (in temperatures of 350 to 500 degrees Celsius) with an organic additive, and shaped on some kind of plant underlayment. On the inside of the surface, there are

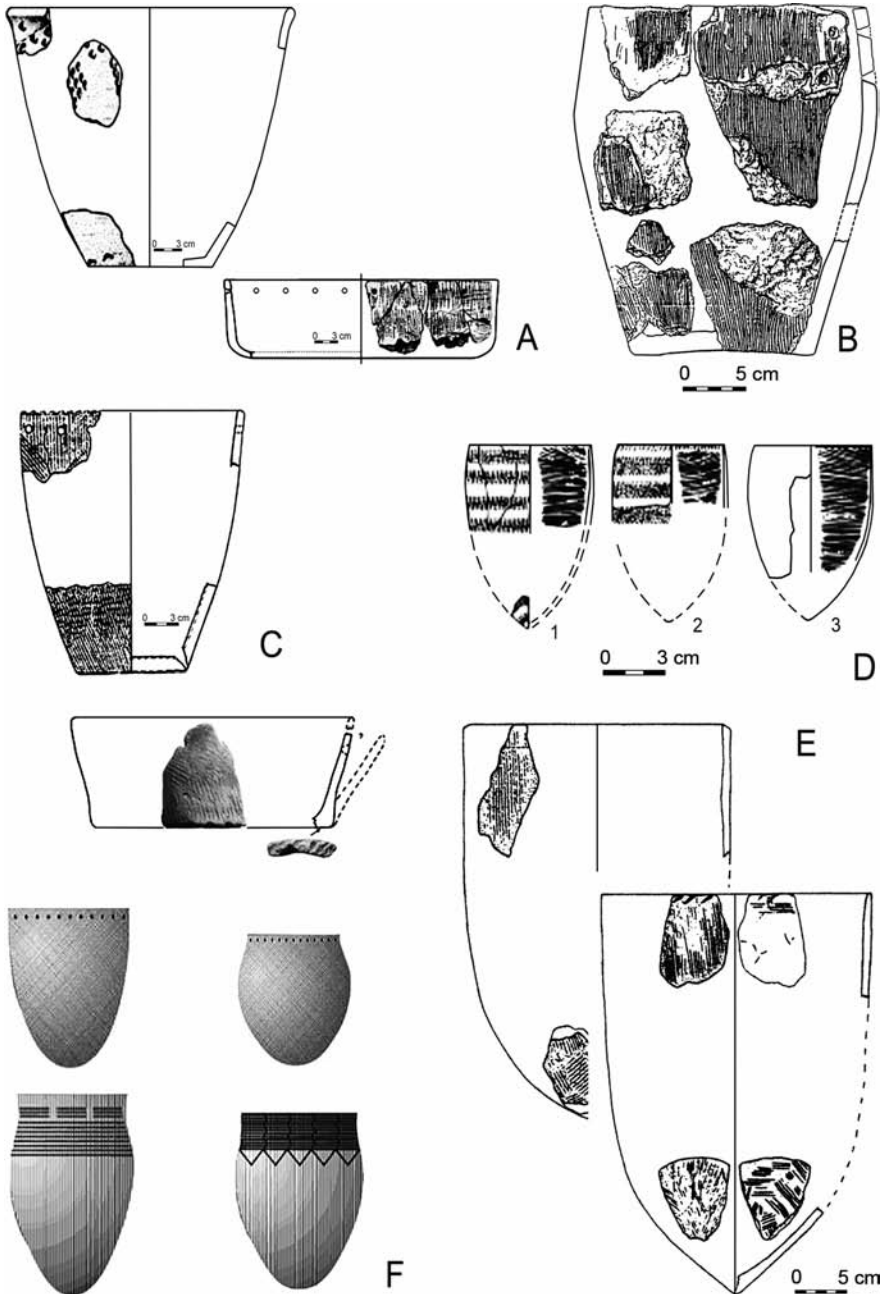


Fig. 4. Forms of the earliest pottery at the eastern Amur and Baikal area. A Goncharka 1; B Gasya; C Gromatukha; D Ust-Karenga; E Studenoje; F Cisbajkal. (according to *Shevkomud – Janshina 2012; Medvedev 2010; Kuzmin – Vetrov 2007; Razgiljeva et al. 2013*).

Obr. 4. Tvary nejstarší keramiky v oblasti východního Amuru a Bajkalu. A Gončarka 1; B Gasya; C Gromatucha; D Ust'-Karenga; E Studenoje; F Cisbajkal (podle *Shevkomud – Janshina 2012; Medvedev 2010; Kuzmin – Vetrov 2007; Razgiljeva et al. 2013*).

horizontal imprints, while on the outside, there are vertical imprints or gouges and other imprints, such as imprints of plants or maybe reed. The earliest pottery was found in the 5th and 6th layers. The 5th layer, recorded in probes 1 and 2, was dated by radiocarbon method to 10 875±90 BP (A13 393) a 11 340±60 BP (GEO1413), from the deepest part of the layer we get the date of 12 480±120 BP (*Zhushchikhovskaya 2005*, 126). We can see three types of pottery there (*fig. 4: B*): the earliest type is the pot found in the deepest layer by probe 1, followed by fragments of pots in probe 2 and latest pot fragments in probe 1 which can be compared to pots found in the layer Goncharka 3B (*Shevkomud – Janshina 2012*, 199). The pot from layer 1 had a flat bottom and organic additive was found in a shard. The pottery represents a longer time period, from 11th to 10th millennium BC (*Shevkomud – Janshina 2012*, 196). The chipped industry dates these layers to the Osipovka culture. It is characterised by arrowheads and spearheads with surface retouch.

The Khummy locality was discovered and explored in the 1990s. It lies on an elevation at the confluence of the Khummy creek and the Amur River, approximately 20 km north of Komsomolsk-on-Amur. Five layers were discovered, created by a complex process at the end of the Pleistocene. There are perceptible cryogenic rifts in the deepest layers, similar to the Goncharka 1 locality. Several radiocarbon data give us a wide range of the 42nd to 7th millennium BP, but the context of the layers and pottery finds have not been securely determined. The pots have flat bottoms and contain organic sands and also additives such as fireclay and other minerals in various proportions (*Shevkomud – Janshina 2012*, 205). The earliest can be dated to 12th millennium BP, the latest to the 10th millennium. The locality is one of the northernmost places where the Osipovka culture has been discovered.

On the Chernigovka River, in the western Primorsky Krai, approximately 600 km from the city of Khabarovsk, the Chernigovka 1 locality lies (10 770 – 7475 BP), where excavation was carried out in the years 1980–1990. Pottery with mineral and organic additives was found there in the context of early Holocene stone industry. Another locality, Ustinovka 3 (9360 BP) characterises the earliest pottery technology in the Primorsky Krai area. Pottery was found in the late Pleistocene and early Holocene horizons. The fragments are decorated both on the inside and outside. There is also evidence of moulding, probably into baskets. The Gromatukha culture has been documented by excavation carried out in 1960 at the confluence of the Gromatukha and Zeya rivers (the latter is a tributary of the Amur). Tents dwellings have been uncovered there (*Shevkomud – Janshina 2012*, 207). Pottery with organic lightweight materials, or with inserted wool, was found in the excavation. The surface of the pots is rough, with imprints of plants. The pots have flat bottoms and punctured rims (*fig. 4: C*). Chipped industry contained large symmetrical spearheads with retouching on both sides. This culture is contemporary to the Osipovka culture. The subsequent cultures in the area were Novopetrovka 9765 – 12 720 BP and the Osino Lake 3470–4300 BP.

The Ust-Karenga locality (12 180 – 10 600 BP) lies at the confluence of the Karenga and Vitim rivers. The Vitim is a right bank tributary of the Lena River (*Vetrov 1985*). Since 1976, multiple culture layers divided by sterile sediments have been explored on site 12 on the right bank of the Karenga River, approximately 200 metres from the confluence with the Vitim River, 600 metres above sea level, and approximately 20 to 25 metres above the surface level of the Karenga. Horizontal layering is evidence of regular depositing of cultural remains in river sediments. The earliest layer with pottery, layer 7, approxima-

tely 10 to 20 cm thick, was separated from later Late Palaeolithic layers by 1-metre-thick sediment (*fig. 4: D*). Radiocarbon data obtained from samples of carbon gave us a range of 12 180 – 10 600 BP. The pottery is unique, egg-shaped, 17 to 35 cm tall, with a rim diameter of 12 to 20 cm. It is decorated by a comb or by imprinting a cogged wheel. Zig-zag and fishbone motifs on the surface are divided into stripes. The outside and the inside of the pots show evidence of modification done by strawing. The materials show marks of organic lightweight material. The chipped industry has either pebble or flake forms (*Kuzmin – Vetrov 2007*).

The Studenoye site (12 056 – 11 322 cal BC) is in the southern area of the Transbaikalia region. There are 19 sedimentary layers documented, two of which contained pottery sherds (*Razgildejeva et al. 2013*). Similar finds were provided by the layers on the Ust-Menza site. The earliest pottery comes from layers 9G and 8. It is beaker-shaped, with a pointed bottom and with organic lightweight material (*fig.4: E*). There are imprints of a string on the surface (*Kuzmin 2015*).

West Siberian Plain

On the eastern side of the Baikal, there are the last localities where the earliest pottery from the period prior to the beginning of the Holocene was found (*McKenzie 2009*). These localities form a very sporadic series of places far apart, in the direction from the eastern coast of the Primorsky Krai, which seem to give evidence of a gradual expansion of pottery technology in the forest-steppe belt of southern Siberia from the east to the west. No such evidence is found in the area further west in the southern part of the West Siberian Plain. In this belt, which is at least 3 thousand kilometres long, the apparent expansion is interrupted and only resumes in an area west of the Urals in 7th millennium BC, i.e. at least three thousand years after the beginning of the Holocene (11 700 b2k 2000 – before 2000 AD, *Walker et al. 2009*).

The area of the Upper Angara River, where a nearly continuous sequence of pottery since the end of the 6th millennium BC was processed (*Berdnikov et al. 2017*) is an exception. It represents regionalised pottery in the subsequent three millennia. Egg-shaped pots of various sizes underwent a very limited spatiotemporal evolution of both shapes and decoration. Individual types often occur continuously next to one another, for a long time (*fig. 4: F*). At the beginning, the shapes had next to no decoration; there was often only a row of dents under the rim or a plastically emphasised rim. The earliest pots are decorated with imprints of a kind of fabric (*setchataya*) pottery. Only later does come pottery with a shaped upper part, decorated with imprints of string or various stamps names as the Khajtinski type (*Berdnikov 2013*).

East European Plain

East European pottery appears for the first time (*Tsybrij et al. 2016*) in the second half of the 8th millennium (BP) on the lower Don, upper Dnieper and the Dvina (Serteja area) (*Mazurkevitch – Dolbunova – Kulkova 2013*). The earliest locality, Rakushechnyi Yar (*Tsybrij et al. 2014*), lies on the bank of the lower Don. Its profile consists of typical layers of cultural sediments. The pottery found in the deepest layers tends to be egg-shaped and beaker-shaped and is seldom decorated. Layers of river shells were found in the sediments.

7950+/-90 - 7530+/-90

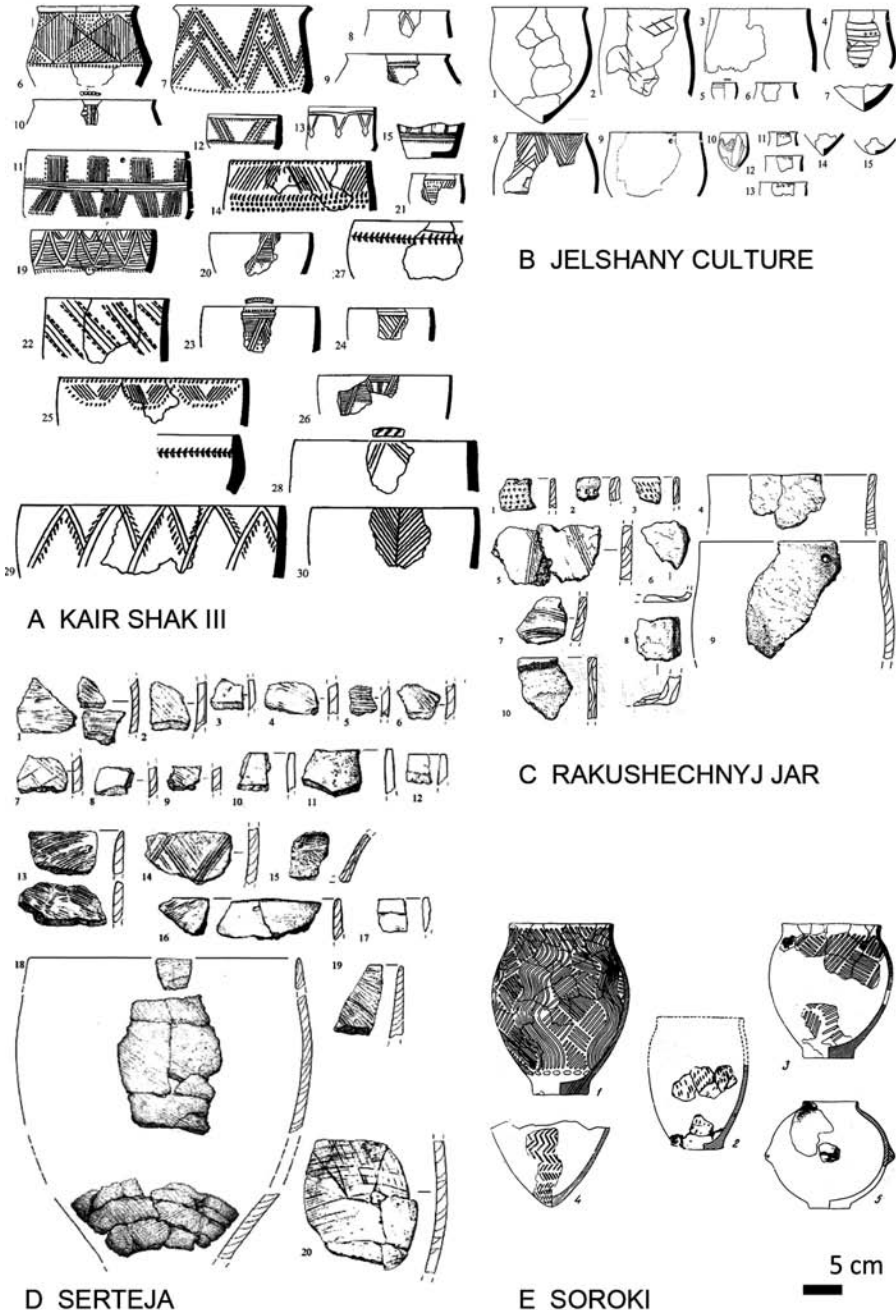


Fig. 5. Forms of the earliest pottery at the European part of Russia. A Kair-Shak; B Jelshany culture; C Rakushechnyj Jar; D Serteja; E Soroki (according to Mazurkevich et al. 2013; Markevich 1974).

Obr. 5. Tvary nejstarší keramiky evropského Ruska. A Kairšak; B jelšanská kultura; C Rakušečnyj Jar; D Serteja; E Soroki (podle Mazurkevich et al. 2013; Markevich 1974).

On the lower Volga, close to where it flows into the Caspian Sea (Vybornov 2008, 45), there are several localities dating to the beginning of the eighth millennium uncal BP. The pottery found there (fig. 5: A) is more diverse in terms of its shape and is decorated by carving or puncturing (Kair Shak III). On the middle Volga (Vybornov 2016; Vybornov et al. 2016) a Yelshan culture region is documented, dating also to the beginning of the eighth millennium uncal BP (fig. 5: B). Beaker-shaped pottery with indentations under the rim and pointed bottoms was found at several dozen localities. It is sporadically decorated by punctures. The earliest pottery in context of shellmidden was found on the lower Don in Rakushchynj Jar (fig. 5: C). Several localities around the upper Dnieper, the Dvina (Mazurkevich et al. 2016) and Serteja rivers also date to the first half of the eighth millennium uncal BP (fig. 5: D). These have a similar character of settlement on the banks of the river. During the seventh and sixth millennia, the eastern area of the European part of Russia was more densely populated by other groups with beaker-shaped pottery with pointed bottoms (Lykhagina 2016; Zhilin 2016).

Pottery typical for the Bug-Dniester culture (Potushnjak 1996) is found in several places around the village of Soroka (Markevich 1974). An evolution of pottery starting with the local Neolithic (Telegin et al. 2003) is documented there. The pottery was probably influenced by the earliest Starčevo-Criș culture, which extends from the Carpathian Basin over Transylvania to western Moldova. Excavations carried out in the locality of Sakarovka in the years 1979–1997 has uncovered a number of embedded objects that correspond in character to the settlements in the Danube area (Dergachev – Larina 2015, 12). Some of the objects were interpreted as embedded houses. Pottery is rich in terms of its shapes, comparable to Criș pottery in both shapes and technology. The chipped industry is Neolithic, with blades with a smaller share of trapeze arrowheads. The share of hunted and domesticated animals is approximately 70 % : 30 % (Wechler 1998).

Criș pottery reaches all the way to the Dniester in the east. The area of the Bug-Dniester culture begins to the east from there, which belongs amongst the Eurasian cultures both in terms of pottery and the character of settlements. The settlement of the Criș culture is distinctively separated from the Bug-Dniester culture area (Manko 2016). There is a distinct borderline between two contemporary populations (Dergachev – Larina 2015, 341).

It corresponds to the border between the earliest agricultural cultures of the Danube area and the non-agricultural cultures of the eastern Eurasian forest-steppe belt. Characteristic for both is pottery specific in terms of both shape and decoration; however, these cultures influenced each other in terms of types of pottery. The borders between the settlements of the Balkans, the Danube area and Eurasia are also evident in the robust display of palaeogenetic haplogroups according to yDNA.

Eurasian pottery on the European coast

In Scandinavia and on the Baltic Sea coast, specific groups with beaker-shaped pottery with egg-shaped bottom appear in various cultural groups during 6th and 5th millennia BC: i.e. Sperrings; (Hallgren 2009) Säräisniemi; Narva; Neman; Ertebölle. These groups follow the local Mesolithic development and continue even into later periods. The western Atlantic coast and the western Mediterranean coast underwent their own specific development. The pottery is more local in character. The Iberian Peninsula coast saw an evolution of regional groups of Cardial Pottery synchronous to the lingering Mesolithic groups inland

(*Willingen 2006*, 35). Further inland, in Central Europe, La Hoguette and Limburg pottery are present (*Lüning et al. 1989*). In terms of shape, these two types of pottery are comparable to other groups of non-agricultural settlement in the north. However, they meet in the same localities with Linear Pottery, especially in the earliest period in the first half of the 6th millennium cal BC.

An island-like Neolithic settlement is best evidenced in today's Poland (*Nowak 2009*). The areas between those "islands" are filled with post-Mesolithic cultures of hunters and gatherers (post-Maglemose, Janislawice, Komornica), which document the long-term co-existence of different populations in one area. Beaker-shaped pottery with pointed bottom only appears sporadically in the western part of the Danube area (Alsace: *Jeunesse 1986*, 41). In exceptional cases, specific pottery with comb and dent decoration appears in Bohemia too. Pottery with puncture decoration was found, in isolated cases, at the fortified settlement of Hrazany (Příbram District). In literature, it has been compared to the pottery of Neman culture (*Dobeš – Korený 2011*). Additional known findings in Bohemia come from the Bohemian Karst. Fragments of pots typologically dated to the Bronze Age (*Veňcl 1978*) were found in the Koda cave but it could be even later.

Concluding remarks

The stylistic range to the East and West of the Ural

The pottery of the Eurasian area to the East and to the West of the Ural Mountains occupies a large territory of forest-steppe belt, in two units (*fig. 6*). The first unit comprises the Far East, from the confluence of the Amur and the Ussuri to Lake Baikal. It is connected to the evolution of technology in eastern China, south of the Yellow River, and Japan, and dates back to the late Pleistocene. It lasted for several millennia from the first signs of warming in 21 mil BP until the beginning of the Holocene (11 700 BP b2k). It comprises very sparse mobile *Palaeoneolithic* settlement of hunters and fishermen. The typological evolution of the goods with the prevalence of beaker-shaped pots of various sizes was very slow. The pots served mainly for storage, which can be seen on pots with a flat bottom; or for large-scale cooking on the open fire, as evidenced by pots with an egg-shaped or pointed bottom. There are technical details to the shapes: a reinforced rim or a row of punctures below the rim. The surface of the pots tends to be modified in various ways, on the inside and the outside, but a decoration of ornaments cannot be detected.

The second unit occupies the area of Eastern Europe from the Dniester to the Urals. To the west of the Ural Mountains, it is possible to add the development in the East European Plain to these regions, where a second pottery area developed from the beginning of the Holocene. This region's character is typologically connected to the previous region in the Far East.

It appears shortly before the year 8000 BC in isolated regions, but before 6000 BC it quickly spreads throughout the whole area. It continues into the Baltic and Scandinavia. It comprises mostly semi-settled *Mesoneolithic* inhabitants linked to the rivers, who in select cases gradually adopted elements of Neolithic farming. Pottery is mostly egg-shaped with the pointed bottom; in time, pots become decorated with various types of imprints and simple ornaments. The development in the area of West Siberian Plain east of the Urals and towards Lake Baikal had a similar course, but it is documented several centuries later



Fig. 6. Sites with the earliest pottery in the forest-steppe area of the Eurasian Continent (compiled by I. P.).
Obr. 6. Lokality s najstarš keramikou v lesostepní oblasti eurasijského kontinentu.

(Chairkina –Kosinskaja 2009). This is evidenced by localities in the Angara River region to the west of Lake Baikal, where development is recorded after 7800 BP.

The stylistic range in Eastern Europe

The earliest pottery of the east European range can be, from the chronological point of view, compared to the development to the west of Baikal (Vybornov *et al.* 2015). The earliest radiocarbon dates North of the Caspian Sea and on the lower Don moved identically after the year 8000 cal BC and are connected to beaker-like shapes with flat bottoms (Zajtseva *et al.* 2016, 213). This morphology of the earliest pottery could indicate the remote contacts with the environment in upper Mesopotamia (Brunet 2004). Over most of the area of the East European Plain, there are the earliest shapes present of conical or ovoid form with round pointed bottoms. Similar developments can be observed further north in the Upper Volga and the Baltic. Later pottery of comparable characteristics developed in several cultural groups still further North in the whole area of modern Scandinavia (Hallgren 2009).

Archaeological data in the delimited belt from the Pacific all the way to the west coast of the Atlantic document a wide time span of individual centres where the earliest technology of pottery making originated. It was mostly linked to societies that based their means of subsistence on hunting and fishing (Kuzmin 2013). It seems that pottery technology originated independently in different centres, given the large spatiotemporal distance between those centres. Even though the origin of pottery technology was undoubtedly influenced by general factors of the natural environments, society needs, and ideology, in the

ultimate moment it was determined by the intended function for processing and storage of food (Hommel 2014, 681). The existing notion of a discontinuous evolution of pottery shapes could be changed by way of new findings to one of a continuous, uninterrupted evolution, which is evidenced by a striking long-term tradition of shapes corresponding to an archaeological model of long duration.

The stylistic range of Eurasian pottery occupied a large territory during several millennia in a unified typological rhythm. During the whole evolution, in the whole area, we observe only one simple beaker-like shape, later also a beaker shape with a wide mouth and flat or egg-shaped bottom. On the other hand, the Danube range, which follows the Balkan and undoubtedly also Western Asian development, occupied a much smaller territory; however, it is much more regionally and typologically varied according to the silex artefacts (Mateiciucová 2008, 78). There are three shapes of ceramic containers that can be observed at the beginning: dishes, bowls and bottles. The different forms are evidence not only of functional differences in both types of pottery but probably also of the difference in the technology of shaping. As is evident on the eastern border of the Danube area, the delimitation of each group was stable in the long term, not only territorially, but also in terms of typology of pottery and the contents of the stone industry. The cause of this is probably the difference in ways of settling and farming, as well as genetic differences of the bearers of the culture.

Main Neolithic regions of Europe and Eurasia

The earliest pottery in Central Europe is connected to the beginning of early Linear Pottery culture of the first half of the sixth millennium BC. Its eastern limits lay in Moldova on the Dnieper River from the time of the preceding Starčevo–Kőrös–Criş culture (fig. 7). This population represents the earliest agricultural people connected to settlement in the Balkans. Further to the East in the European part of Russia, there were a number of pottery groups from the seventh millennium BC, as stated in the most recent available literature.

The characteristic groups with the earliest pottery in Eastern Europe are stylistically very varied and at the beginning do not create any bigger, either in time or space, delimited groups which can be described within the usual archaeological culture terms. Nowadays we have enough radiocarbon data but they do not allow us to solve unequivocally the origin and development of single pottery groups.

These groups are characterised mostly by hunter-fishing settlements of a late Palaeolithic tradition. Both differ from the archaeologically well determined types of early pottery vessels. At the same time, there is evidence for two different populations; the first (*Neolithic*) contained a mix of genetic elements from Near East, while the second (*Mesoneolithic*) is the genetically varied continuation of the long Palaeolithic tradition. In the following fifth millennium BC new archaeological cultures developed on the basis of the Danube Neolithic in Central Europe. The current groups created there a nearly continuous settlement of the whole region. The limits of the two different traditions stayed apparent before substantial cultural changes happened to both sides from the fourth millennium BC onwards.

From the time of the earliest Danube Neolithic in the seventh and sixth millennia BC, it is possible to describe the Dniester as a border between the world of Central Europe developing on the different foundations and the world of East European Neolithic which developed within the context of new methods of subsistence of populations within late

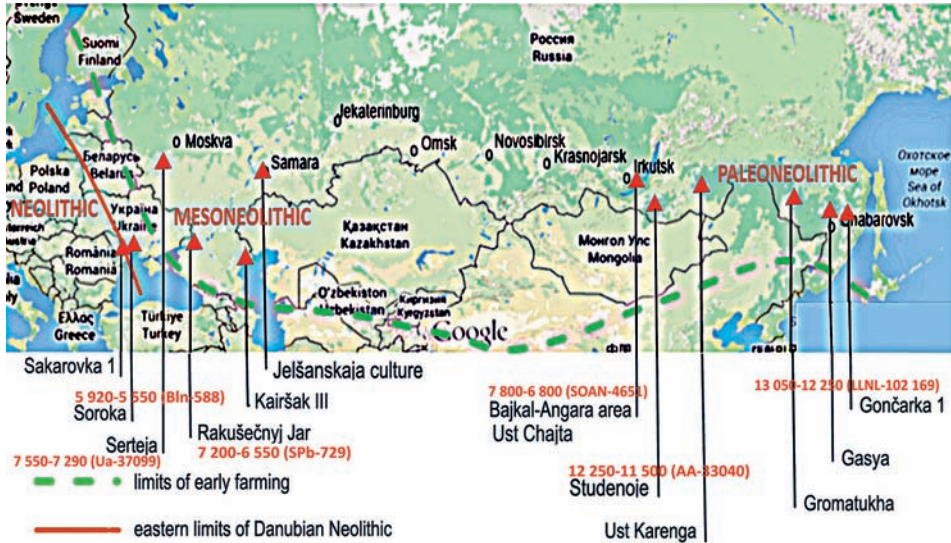


Fig. 7. Central and Eastern Europe in the period of the earliest Neolithic pottery (compiled by I. P.).
Obr. 7. Střední a východní Evropa v době nejstarší neolitické keramiky.

Palaeolithic traditions. The Neolithic settlement of Central Europe presents genetically related populations of agriculturalists, which have limited connections to the inhabitant of the Balkan and the Near East. Similarly, it is possible to prove relations to the original Preneolithic inhabitants of continental Europe.

From the perspective of the whole continent, the traditional region of the European Neolithic presented by the earliest pottery creates a certain genetic, culturally and economically limited unit. During the entire Neolithic development, this unit was surrounded by other populations whose historical centre lied in subsistence provided by coastal regions of Europe in the South, West and North of the continent. At the same time, this Neolithic settlement bordered in the north and especially in the East with Mesoneolithic populations with a long lasting tradition of hunter-gatherer-fisher settlements. Their pottery traditions were fundamentally different. The ways of using ceramic vessels and their cultural importance reflected in the different long term development of technology, shapes and decoration. Tens of archaeological groups over the vast space of both continents are characterised by two traditions tangible in archaeology and not only in terms of pottery. One was the new, agriculturalist, and the other conservative. Despite that they both present new ways of cultural-social response to climate changes from the end of the Pleistocene and beginning of the Holocene. It remains to determine as to whether they should be both included in the wider approach to the Neolithic.

Appendix: Proposal of terminology

At the time of the earliest pottery, there are asynchronous archaeological groups on the Eurasian continent that differ in terms of the knowledge of pottery technology (present –

Stone industry	Pottery	
	absent	present
middle size blades	ACERAMIC NEOLITHIC	NEOLITHIC
microlithic	MESOLITHIC	MESONEOLITHIC
flakes and cores	PALAEOLITHIC	PALAEONEOLITHIC

Tab. 1. Proposal of the terminology (compiled by I. P.).

Tab. 1. Návrh terminologie.

absent) in various typological contexts of the stone industry. At the same time, this situation does not correspond to the previous development of the subsistence of prehistoric communities and the accompanying archaeological content (*Jordan – Gibbs 2019, 5*). Therefore these communities run counter to the established terminology (*Palaeolithic – Mesolithic – Neolithic*) of archaeological stages in the Old World and across continental Eurasia. With the emergence of ceramic technology, these groups are ranked in the Neolithic period, although it is a hunting-gathering society dated deeply before the end of the Pleistocene.

Individual proposals for the creation of compound terms, such as “Mesolithic with pottery”, may not be the most appropriate solution. Therefore, we present a simple paradigmatic terminology (*Palaeoneolithic – Mesoneolithic – Neolithic*) which combines different values of two nominal features: pottery and stone industry (*tab. 1*). In this proposal, however, the notion of Neolithic is understood in a broader sense than usual. Neolithic is not just an expression of new archaeological manifestations: polished stone industry, pottery, agriculture, permanent settlements, as they are known from the development of the Near East from the Holocene (after 11 700 BP). It would have to be perceived as a concept for a deeper change in the way of life of prehistoric people, which occurred much earlier in the climatically very fluctuating period at the end of the Last Glacial Maximum (LGM). It manifested itself in different places in the continent in various ways and therefore it did not always lead to the development of agriculture. The very old beginnings of pottery technology can be perceived as one of the first steps of this change, or as a promise of a new era that has been reflected in some places several millennia later.

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Nejstarší keramika na eurasijském kontinentu

Všeobecně je přijímáno, že období neolitu je dobou prvních zemědělců a nejstarších osad, které poprvé zaujímaly nejurodnější oblasti širšího území střední Evropy. Tradují se i některé dnes již zastaralé představy, k nimž patří ta o současném objevu některých nejstarších artefaktů, jako jsou keramika, textilie a broušené nástroje, nebo cyklické zemědělství a husté osídlení Čech, kde osady s velkými domy zaplňovaly celé území téměř jako v dnešní době. Dnes již víme, že keramika se objevila téměř před 20 tisíci lety na Dálném východě a není striktně vázána ani na usedlé osídlení, ani na zemědělské hospodaření. Tkaní jednoduchých látek z kopřivového vlákna je doloženo z Dolních Věstonic okolo 26 tis. př. n. l. Doklady broušení kamenných nástrojů pocházejí, byť sporadicky, již z doby předneolitického mezolitu, na řadě míst jsou v pozdně paleolitickém období zabrušována ostří silicovitých seker. Zemědělství ještě nemělo na počátku žádný ustálený systém obdělávání půdy: směsi plodin se během dlouhodobého nevědomého šlechtění pěstovaly na zahrádkách poblíž domů. Velké domy známé v centru Evropy nacházíme jako jednotlivé stavby v řadě lokalit, ale současná seskupení domů v rozsahu desítek staveb bývají zcela výjimečná jako důsledek dlouhodobého obývání určitých mikroregionů, a představují jen zlomek ze všech známých lokalit.

Období vzniku neolitu podle vývoje na Předním východě bylo nadneseně nazváno jako neolitická revoluce, přestože v době svého formování trvalo nejméně dva tisíce let. Jeho projevy nelze v globálním měřítku sledovat v jednom časovém horizontu. Také formy se liší na rozsáhlých územích v souvislostech eurasijského kontinentu a jsou výrazně odlišné i na dalších kontinentech. Evropské pojetí neolitu jako doby nejstarších zemědělců se všemi jeho znaky a časoprostorovými analogiemi chápeme dnes jen jako jeden z možných projevů změn různých společností, které se odehrávaly na eurasijském kontinentu v době prvních klimatických změn od maxima pozdního glaciálu a vrcholící po počátku holocénu. Obsah nového pojetí celého období bude nutno rozšířit o různé dosud nesrovnatelné formy obživy i osídlení, které kombinují pozdně paleolitické lovecko-sběračské způsoby života a vznikající méně mobilní způsoby doprovázené někdy domestikovanými druhy obživy. Archeologicky se významně rozrůžňují dosud ustálené způsoby společenského života, které jsou zahrnuty do ustálených pojmů, jako jsou paleolit – mezolit – neolit. Nová archeologická data v odborné literatuře vedou i k novému pojetí uvedených pojmů a přeformulování jejich obsahu.

Historický vývoj vedl k ustavení nového hospodaření založeného na domestikovaných zdrojích obživy a současně k odpovídajícím změnám společenského života v rozsáhlých regionech Předního východu a postupně i centrální Evropy. V celé naší představě nelze vynechat zkoumání lidí, kteří tento proces uskutečňovali. Byli to samozřejmě členové populací, které v ohnisku tohoto dění žili z předchozích dob a které se podílely i na šíření nových způsobů. V širším území střední Evropy se ustavilo po roce 6200 cal BC společenství obyvatel nestejně genetického původu, kteří vytvořili jednoduchou formu usedlého, ale nestálého osídlení. Praktikovali počáteční zkušenosti s pěstováním obilnin a chovu domácího skotu a bravu. Nepochybně také v rozporu s tradičním výkladem

spolupracovali se skupinami obyvatel, které odmítly překonávat obtíže pěstování potravy a zůstávaly u ověřených technik lovu a sběru.

Pro počátky keramického neolitu ve střední Evropě je nejvýznamnější nejstarší lineární keramika, která byla archeologicky definována až v 60. letech 20. století a vzhledem ke genetické podobnosti s klasickou lineární keramikou označena jako její první vývojový stupeň. Hospodaření jejích nositelů bylo typicky zemědělské, zahrnuje jak obilnářství, tak dobytčářství. Není vyloučeno, že obyvatelé jednotlivých typů domů praktikovali jen omezený druh hospodaření, jeho výsledky potom sdíleli společně s ostatními v rámci jednoho sídliště. Domy jsou od počátku složeny z jednoho, dvou nebo tří dílů, které mají zřejmě hospodářskou úlohu, patrně v kontextu původního hospodaření jejich obyvatel. Z nejstaršího období nejsou prakticky doložena pohřebiště s rituálními pohřby. Keramiku reprezentují tři základní tvary – misky, polokulovité nádoby a láhve. Výzdoba keramiky byla prováděna především silnými žlábkovanými liniemi, výjimečně se vyskytují i jiné techniky.

Středoevropský neolit byl dosud vnímán jako vývoj v centrální oblasti Evropy s kontextem v Karpatské kotlině a na Balkánu a jako vzdálený ohlas na předovýchodní kořeny tohoto vývoje. Evropa však tvoří součást obrovského eurasijského kontinentu, kde se ve vzdálených časoprostorových souvislostech vyvíjely archeologicky svěbytné oblasti. Jejich nejviditelnější charakteristikou je samostatná aplikace pyrotechnologie při výrobě nádob. Zatím byly vypracovány čtyři oblasti s výskytem nejstarší keramiky již z doby před počátkem holocénu. Stáří nejstarší keramické technologie v Číně dosahuje k 20 tis. let. Datování těchto oblastí sleduje postupně se měnící dobu počátků technologie keramiky směrem od východní Číny, Japonska k dolnímu Amuru a dále na západ k pramenům horního Amuru. Nejstarší technologii výroby keramiky v prostředí lovců a sběračů představují jednoduché a málo variabilní tvary. Lokality jsou nalézány na velkém území daleko od sebe. Kulturně spadají podle dosavadního pojetí do mladého paleolitu až mezolitu. Zdálnivý trend šíření této technologie ukazuje podle radiokarbonových dat směr od východní Číny až po Ukrajinu. V oblasti dolního Amuru a Přímoří se uvádí celá sekvence následných kultur, které tvoří další archeologické celky charakterizované různě zdobenou keramikou s kotlovitými tvary.

Na východní straně Bajkalu jsou zatím poslední lokality, na kterých se nachází nejstarší keramika, z období před počátkem holocénu. Tyto lokality tvoří sporadickou sérii míst velmi daleko od sebe vzdálených směrem od východního pobřeží Přímořské ruské oblasti, jež jakoby dokládají postupné šíření keramické technologie v lesostepním pásmu jižní Sibiře směrem od východu na západ. V oblasti dále na západ, na jihu Západosibiřské nížiny, podobné doklady chybějí. V tomto pásmu nejméně tři tisíce kilometrů dlouhém je zdánlivý postup přerušen a pokračuje až v místech západně od Uralu v 7. tisíciletí př. n. l. Výjimkou je území na horní Angaře, kde je vypracována téměř souvislá keramická sekvence od počátku 8. tisíciletí. Představuje regionalizovanou keramiku v následujících třech tisíciletích. Keramika různě velkých ovoidních forem prodělává zřejmě velmi omezený časoprostorový vývoj jak tvarů, tak výzdoby, jednotlivé typy se často vyskytují dlouhou dobu průběžně vedle sebe. Zpočátku zůstávají tvary téměř nezdobené, často mívají jen řadu důlků pod okrajem nebo plasticky zdůrazněný okraj. Nejstarší jsou zdobeny otiskem tkaniny. Později bývá horní část nádob tvarována a zdobena otisky šňůry nebo různými kolkami (chajtinský typ).

Keramika východní Evropy se objevuje poprvé ve druhé polovině 6. tisíciletí př. n. l. na dolním Donu (Rakušečnyj Jar), v Příkaspí (Kairšak III), na střední Volze (jelšanská kultura) a horním Dněpru a Dvině (Sertecká oblast). Nejstarší lokalita, Rakušečnyj Jar, má typický vrstvený profil kulturních sedimentů. Keramika z dolních vrstev se vyznačuje vejčitými, kotlovitými tvary a bývá zřídka zdobená. V sedimentech se našly vrstvy říčních mušlí.

Na dolní Volze při jejím ústí do Kaspického jezera je několik lokalit datovaných na počátek 7. tisíciletí př. n. l. Jejich keramika má členitější tvary a starší rytou nebo mladší výzdobu prováděnou jednoduchým taženým vpichem. Jelšanská kultura je datovaná také na počátek 7. tisíciletí. V několika desítkách lokalit se nachází kotlovitá keramika s důlky pod okrajem a se špičatými dny. Bývá jen sporadicky zdobena vpichy. Z první poloviny 6. tisíciletí pochází také několik lokalit v okolí Serteji na horním toku Dněpru a Dviny. Mají podobný charakter osídlení na březích řek. Během 6. a 5. tisíciletí je oblast východního evropského Ruska osídlena hojněji dalšími skupinami s kotlovitou keramikou, která má většinou špičatá dna.

Typická keramika kultury Bug-Dněstr se nachází na řadě míst v mezi oběma řekami. Je zde doložen vývoj od místního neolitu. Keramika je patrně ovlivněna již nejstarší Starčevsko-krišskou kulturou, jejíž osídlení přesahuje z Karpaté kotliny přes Sedmihradsko do západní Moldávie. Výzkum lokality Sakarovka v letech 1979–1997 odkryl řadu zahloubených objektů, které odpovídají charakterem sídlištím v podunajském okruhu. Krišská keramika dosahuje na východě až ke Dněstru. Východně odtud začíná oblast bugo-dněstrovské kultury, která patří již do okruhu eurasijských kultur podle keramiky i charakteru sídlišt. Představuje velmi zřetelnou hranici dvou současných populací. Odpovídá hranici nejstarších zemědělských kultur Podunají a nezemědělských kultur východního eurasijského lesostepního pásma. Charakteristická je pro obojí tvarově i výzdobou specifická keramika, která se však typologicky vzájemně ovlivňovala. Hranice mezi osídlením Balkánu, podunajské oblasti a eurasijským územím se projevují i ve zřetelném zobrazení paleogenetických haploskupin podle yDNA.

Stručný přehled navzájem vzdálených archeologických oblastí, kde se setkávají dosud asynchronní formy štípané industrie a keramické technologie, vedl k různým variantám jejich terminologické klasifikace. Jednotlivé návrhy na vytvoření složených výrazů, např. „mezolit s keramikou“ apod., nemusejí být tím nejvhodnějším řešením. Jedním z možných řešení je kombinace tradičních termínů podle dokládáných typů dvou vůdčích archeologických druhů artefaktů.

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