

THE FINAL PALAEOOLITHIC IN CENTRAL RUSSIA

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Abstract

The analysis of palynological, radiocarbon and geological methods dating of archaeological sites of the end of the Pleistocene and the beginning of the Holocene in Central Russia and the revision of available and not numerous dates shows that for mineral grounds these methods require serious correction, and the dates themselves do not correspond in most cases to the typological age of the archaeological materials.

Key words: Central Russia, Final Palaeolithic, palynology, radiocarbon, geology.

The setting

The absence of special studies devoted to the Final Palaeolithic of Central Russia reflects expressively the state of affairs in this field. One cannot say that attempts have not been made. One might mention a great number of publications, including recent ones, where these or other sites are mentioned, in whose materials there are artefacts from this period of time (Koltsov 1989, 2002; Kravtsov, Konnov 2002; Lisitsyn 2002; Lantsev, Miretsky 1996; Sidorov 1996, 2002; Sinit-syna, Kildyushevsky 1996; Trusov 2004; Zhilin 1995; Koltsov, Zhilin 1999). Nevertheless, as their analysis shows, the affair does not advance beyond these mentions. I think the reason is that for some time now archaeologists have begun to rely too much on natural-science methods of dating, and ceased to trust the main proper archaeological method of research, the typological one. Therefore, the absent and rejuvenated dates of these or other sites seem to prevail over the material itself. However, this does not mean that this article sees its main task as overthrowing one of these methods and reanimating the other. Instead, it attempts to escape the circle of ideas formed on the basis of the revision of the available source-study basis (both archaeological and natural-sciences) when dealing with the specific matter of sites of the Final Palaeolithic.

It would be no exaggeration to say that the epoch of the Final Palaeolithic in the European part of the Russian Federation is the least-studied. This circumstance is determined, apparently, not so much by the absence of Final Palaeolithic sites themselves, as by the firmly existing opinion of another, as a rule, younger (Mesolithic) age. A negative role in this is played by a number of circumstances, among which we should mention:

- 1) the heterogeneity of most of the material;
- 2) the small number and inexpressiveness of most of the available "pure" complexes;

- 3) the surface deposition of the majority of finds from that time;

- 4) the absence of marked cultural layers, denoted by the term "horizon deposit of finds";

- 5) the singleness and uncertainty of some natural-science dates; and

- 6) the absence of faunal remains.

If Upper Palaeolithic materials are deposited, as a rule, relatively deep, their age, even in the absence of carbon 14 geology and palynology, is affected by the presence of "mammoth fauna", which serves by itself as "a reliable antiquity sign", then for Final Palaeolithic materials the surface deposition of artefacts, the practical absence of coloration of "horizons of finds deposition", and the inexpressiveness or absence of faunistic remains are typical, as well as the lack of samples for dating. These circumstances create for archaeologists a peculiar "shock threshold", which has not yet been overcome. Because of this, even seeing the resemblance in dated Western materials, their East European analogues are attributed already to the Mesolithic, but in no way to the glacial epoch. One more reason of no small importance is that existing ideas of the cultures of the Final Palaeolithic and Mesolithic are based on an incorrect theoretical basis. In order to understand the meaning of this, it is enough to remember the names of some archaeological cultures, for example Ust-Kamsky Culture, Sredne-Vychegodskaya Culture, the eastern version of Federmesser, East Ahrensburg etc, which show a complete misunderstanding of their nature and essence. The territory of the archaeological culture is determined by the economy of a specific group of ancient people, their way of life and the behaviour of their main prey which they hunted, and not by the mouth of a river where field studies were conducted and by which these or other sites were fixed.

Realising clearly the depth of the touched-on problem of sites of the Final Palaeolithic epoch in the region, I will try to propose my own version of the approach to its solution. For this purpose, we have to revise the source-study basis and methods of natural-science dating. At present the methods of geological and radiocarbon dating are of little use for the objects of the examined period, for various reasons. The first gives a wide chronological interval, and, on account of its general non-concrete nature, is almost not used when dating archaeological sites of comparatively recent times. The high precision of the radiocarbon method makes it the most acceptable in the independent dating of material, but one peculiarity of Final Palaeolithic sites is that a sufficient number of sample batches cannot always be obtained. In recent years, the absence of means for the production of general analyses has also added to this.

It would not be an overstatement to say that at present, for dating Final Pleistocene and Early Holocene sites, the palynological method has become widespread. Taking into account this circumstance, it is interesting to look at the conclusions of one of the most competent specialists in this field, E.A. Spiridonova, which she has come to while developing Holocene chronology (Spiridonova, Aleshinskaya 1998, 1999). It is clear that this will concern not floristic or technical, but only the archaeological problems of this method.

Palynology: a user's doubts

Experience shows that the finds at Final Palaeolithic and Mesolithic sites begin to be met already on modern original grounds. At the same time the thickness of the cultural layer of the majority of Mesolithic and, in general, Holocene sites is 20 to 25 centimetres. As a rule, it does not reach 50 centimetres. There are significantly fewer sites with a layer of a thickness of up to one metre, and there are only a few sites whose layers are 1.5 and more metres thick.¹ One can also notice that a significant thickness of sediments is connected, as a rule, with areas of plumes or dune ridges, that is, relief elements whose formation, in its essence, is extreme (catastrophic). In its turn, the Holocene extension is determined, roughly, in 10,000 years (Khotinsky 1977, 1982, 2002). If we consider the speed of sediment accumulation (sedimentation) to be constant, it is easy, knowing the layer thickness, to count what thickness of deposits grows during a conventional unit of time. We will limit ourselves to the above-mentioned figures. In the first case, when the cultural layer thickness is 25 centimetres, in one centimetre of deposits a span of 400 years will be "concluded". In the second one, when the

¹ In practice sites are more often met overlapped by depositions of respective thickness.

thickness is about 50 centimetres, one centimetre of deposits will be formed during not less than 200 years. We should emphasise that this interval is the largest one; therefore, in respect to the sedimentation, it can be examined as monotonic and referential. Abstracting one's mind from the "extremeness" of two other figures and examining them also as some constant, we will get in the third case (10,000 years : 100cm) 100 years in one centimetre and in the fourth case (10,000 years : 150cm), about 67 years. Since the average sample for palynological analysis has a thickness of five centimetres, it means its pack includes in the first case 2,000 years, in the second case 1,000 years, in the third case 500 years, and last, in the fourth case about 335 years. It is also important to mention that even in those cases when samples are taken "by extension", in practice their thickness cannot be less than two centimetres, which as a result for each interval brings us ideally to figures of 800, 400, 200 and about 135 years. These simple calculations show the peculiar actual precision of the palynological method. Consequently, we can affirm, with all due evidence, that "the step in 200–300 years for measuring climatic variations", proposed for the age of E.A. Spiridonova's palynological samples (Spiridonova, Aleshinskaya 1996: 65), exceeds significantly the allowable precision limit of the method itself, calculated on monotonic and reference data. Especially, we cannot agree on the figures of 100 to 150 years (Spiridonova, Aleshinskaya 1996: 67).

These calculations bring us inevitably to some conclusions:

1. The archaeological layer is formed mainly after a time of real residing on the site, and the site structure is determined not so much by the "life-time" situation, as to a significantly greater extent by its postposition history.
2. The burial of artefacts takes place by no means immediately, but over a long period of time; therefore, pollen, which is deposited over the archaeological material, certainly rejuvenates these deposits.
3. Pollen is deposited each season, and what comes into the ground is found, for the most part, in the soil layer, which is mostly subject to different kinds of turbations, what, in addition to other reasons, brings inevitably to its mixture. Thus the "purity" of palynological samples, like the archaeological material, is more random than natural. And it is connected, as a rule, with catastrophic sediment accumulation, and not with the monotonic deposition of layers.
4. The slow sedimentation inevitably supports the standard situation when the original ground is one and the same for a long time, and on it different-time arti-

cles of different epochs can remain intact “in an open form” for a long time. That is, nature itself supports conventionally the situation of “contacts of things”, but not the people who produce them. The most vivid archaeological embodiment of this phenomenon is stray finds, in which, as a rule, articles from all times and peoples inhabiting the area are presented.

5. The age of palinological samples does not necessarily correspond to the age of the cultural layer and finds enclosed in it; therefore, their synchronism demands obligatory proof.

Thus, on this basis, both a critical attitude to natural-science data and the obligatory proof of correlation of specific samples with the layer and archaeological finds are necessary.

Interestingly, the above-mentioned arithmetical calculation is confirmed also by data on Upper Palaeolithic sites. Thus, in one of his recent works, L.D. Sulerzhitsky writes: “Judging by dates of forming the Sungirsky cut, here *the sedimentation took place very slowly for a long time* [hereafter my italics] from the beginning of accumulation, taking later on a cultural layer of soil (more than 30,000 years ago, when man still lived here) and until the time of the last dates on mammoths (20,000 years ago) *altogether less than a metre was deposited. But later on more than two metres of deposits accumulated at once*, which have overlapped the cultural layer” (Sulerzhitsky 2004: 107). As a matter of fact, there is no contradiction to what Sulerzhitsky writes, and the facts, with all their inconcreteness, correlate well between themselves, because both the duration of 10,000 years, referring to the first episode of “length” less than deposits of one metre, and 25,000 to 28,000 years, enclosed in two to 2.5 metres’ thickness of stratification, correlate very well with each other because the speed of sediment accumulation in both cases corresponds approximately to the standard value, one centimetre in a century.

A recalculation of data on sites of the Russian plain adjacent to the study polygon shows that the speed of sedimentation of one metre of loess at the Khotylevo 2 site is 85 years (Velichko et al 1999: 26), in Pushkary 1 about 200 years (Velichko et al 1999: 28), in Eliseyevichy about 115 years (Velichko et al 1999: 29), Timonovka 1 approximately 100 years (Velichko et al 1999: 32), and, finally, in Zaraisk about 90 to 120 years (Velichko et al 1999: 45).

Similar information was given for some other Upper Palaeolithic sites also in Y.N. Gribchenko’s report read by him in November 2004 at a meeting of the Stone Age Department of the Institute of Archaeology of the Russian Academy of Sciences. It is not out of place to

mention also the fact that, by his statement, “the profiles of archaeological sites are not absolutely similar to the profiles of cores taken beyond the sites, but in immediate proximity to them and under similar geomorphological conditions.” This observation is extremely important, because it reflects some very specific property which the archaeological cultural layer has. It will be shown below that this feature is that the layer serves as a peculiar barrier or “trap” both for pollen and fauna (the activation of earth-moving kinds of animals), and, probably, for changing the speed of deposit humification.

The nonconformity of spectra of natural profiles and archaeological profiles is also mentioned by E.A. Spiridonova, when she writes: “The formation of spore and pollen spectra on archaeological sites and in natural cuts has significant differences. Spore and pollen complexes of natural cuts reflect significantly the zone type of vegetation, typical in general for big regions (geographical zones). Upon the formation of spore and pollen spectra at sites, not only zonal, but also local flora, connected mainly with human activity, exert a great influence” (Spiridonova, Aleshinskaya 2004: 33).

The facts of the deposit accumulation time stated above bring us once more to the conclusion that finds of different times and peoples, visiting at different times one and the same place, were deposited on one and the same original piece of ground. That is, their archaeological co-existence in one horizon and layer is carried out by the fact of the location, but in no means by time or the mutual connection of people (Sorokin 2002). Actually, the deposit accumulation took place, apparently, still slower than the given figures, because what is enclosed archaeologically in the metre thickness reflects in practice only the spread of articles in a vertical line because of the numerous types of pedoturbation from the norm of their distribution (standard “dense” maximum), corresponding to the ancient original ground. And it is the same assumption, like any other, for example, half-decay value carbon 14, cycles of fluctuation of solar activity, etc.

It seems obvious that the “maximum of finds depth”, or otherwise the maximum of distribution on primitive sites, corresponds on the whole with the original ground of the inhabitation period, and slurry (“the cloud of finds distribution”) is often connected not so much with the people’s vital activity as with the subsequent displacement of artefacts. And this postpositional influence is more global in a number of cases, and you could even say fatal in that real distribution of material which is fixed by a field researcher. That is, the real thickness of the layer of artefacts accumulating

on the ancient original ground was significantly less than what is fixed archaeologically.

It will not be out of place to mention also the circumstance that objects of significant sizes (big bones, stone nodules, cores, macrolithic cutting tools, etc), in view of their volume, “run out of the layer” more. Therefore, these massive articles can “lie on the surface” longer and be “contemporaries” of those articles which were left significantly later. However, this circumstance requires, undoubtedly, an experimental check, because the effect of the origin of “barrow-like” mounds round tree stumps is well known.

Interesting data concerning the question of the speed of deposit accumulation and confirming the above reasoning is also contained in recent work devoted to the characteristics of a barrow burial ground from Scythian times where there are palaeosoil observations made during its excavation. “The comparative analysis of under-barrow and background chernozems on the burial ground area, according to the data of the soil scientist Y.G. Chendev, is evidence of the fact that during the last 2,300–2,500 years ... the thickness of humus horizons has increased only by nine to ten centimetres. In addition, the growth speed was 0.4 cm/100 years” (Berezutsky, Razuvaev 2004: 55). On the basis of this, we can say that the actual time of formation of one centimetre of humus horizon is equal to 250 years. This result is especially impressive, taking into account the fact that the speed of humus formation is on average higher than the speed of standard deposition accumulation. It is clear that the processes of sedimentation and humification of deposits are in their essence different, but the slow speed of humification of deposits only enhances the contrast of design speed of the probable deposit accumulation.

Speaking about the sedimentation speed, it is not out of place to remember also such known facts as the presence of foundation pits of dwellings, which in some regions of Russia (Karelia, the Middle Volga region, the near-Ural region, Siberia, etc) are until now viewed on the surface, although they were erected already in the Mesolithic and late Stone Age (Pankrushev 1978; Nikitin 1996, 1999; *Palaeolith USSR* 1984; *Mesolith USSR* 1989; *Late Stone Age...* 1996). Thus, time, enclosed in archaeological layers, and the relief are connected, but change differently, each according to its laws.

Archaeological material (and here it is necessary, undoubtedly, to take into account not only imperishable stone remains, but also the internal structure) which is not preserved by the moment of the archaeological dig is a peculiar “boundary horizon” for pollen, a special “trap”, where it is deposited and concentrated. It is also necessary to take into account in this process organic

materials, because for the moment of “the lifetime formation of the source” only they made up the mass of remains (waste products and vital activity wastes) accumulating on the surface and becoming the main cultural layer, its filler. Moreover, the decomposition of organic material created a convenient nutrient medium, not only for different living organisms, but also for pollen, which finally, furthered the preservation, accumulation, and, probably, the conservation of the latter. Any archaeological site is a place with an extreme concentration of material, because here, except for natural components which are deposited naturally in all places, during a short period of time, components accumulate which have been directly brought by man, have been part of his vital activity, and transformed the natural processes of deposit accumulation and “space organisation” (landscape). The settlement of any place, and, as a result, the appearance of a cultural layer, a peculiar marker of human habitation, brings us inevitably to the fact that this artificially created object becomes the epicentre of natural attraction, zoological, chemical and other activity, as well as a site (place) of concentration of remains, including palynological ones. Thus, the cultural layer, with all its content, is really an objective obstacle for pollen penetrating deposits. Moreover, this refers both to pollen which was deposited at the same time as the archaeological material, and to significantly later pollen. Evidently, a different structure, density and “fullness” of stratification, under which we should also mean those which appeared directly as a result of human activity, just explain the effect of “the profile inconsistency” observed by Y.N. Gribchenko and E. A. Spiridonova.

The extreme “thinness” of cultural layers of Holocene and Final Palaeolithic sites, the absence of colour cannot but lead to the pollen illuviated to them being distributed unevenly, not over the whole thickness, but deposited on different levels of the boundary horizons available in them. It is natural that only absolutely negligible quantities of “grains” from the number of “grains” which were deposited come to the attention of the palynologist. Undoubtedly, their distribution in a vertical line is uneven, but part is inevitably redistributed from the surface downwards and has been deposited on the boundary horizons and finds available in the rock. In addition, at the same time a significant amount of pollen disappears, and the more time passes, the less remains in the layer. Since pollen falls annually, and with age the remaining amount decreases in proportion, it is easy to imagine the situation whereby in the course of this process the consecutive substitution of ancient pollen by young pollen takes place; that is, an effect of the “rejuvenation of spectrum” appears. Such facts are evident when a significant chronological

interval separates one pollen from a later one; but can palynologists establish the rejuvenation effect for near, consecutively located climatic periods, when changes are accumulated permanently and monotonously? Apparently, the very method of sampling in known intervals is just necessary for them in order to cut a similar effect, and “reveal” accumulating changes. And then, this confirms once more the circumstance that on mineral grounds we can objectively catch only global, significantly spaced in time, climatic fluctuations and the flora spectra which mark them, in addition to not relying on the big divisibility and “narrowness” of palynozones.

A pollen fall takes place annually, and, in its essence, this process is, if not permanent, then of long duration. Every year, it is dispersed by air masses, falls and remains on the surface of the earth, is illuviated and penetrates the soil layer, is redistributed in it in a vertical line and horizontally, is destroyed, and grows though only in separate cases. That pollen which appears in the ground later on, adds to, inevitably, or even substitutes the pollen which appeared there earlier. In the course of time, a change of climate and growth takes place. If late pollen appears at the same level as earlier pollen, an inevitable spectrum rejuvenation takes place. If the sedimentation takes place monotonously in succession, then, also, the pollen accumulation should be, theoretically, consecutive and monotonous as well. But this is just the point: that both these processes, although they are interconnected, are different in essence. Because the accumulation of minerals takes place irrespective of the character of the flora and extremely slowly, the thickness of cultural layers reflects that fact rather expressively. And pollen is a seasonal phenomenon, although it is deposited annually in astronomical amounts. But not what remains on the surface is preserved, but what falls on rock. And the levels on which it is deposited are different and determined by the character and structure of the latter. These “density clots” or “concentration levels”, like peculiar traps, serve as boundary horizons in a long period of time. And their real composition will be, probably, determined both by the amount of the preserver of more ancient pollen, and by the composition of the younger pollen. It is also important that the “concentration horizons” differ by their height marks: that is, simultaneous pollen, for many reasons, is deposited at different levels. At the same time, not only natural formations serve as such levels, but also, what is especially important, artefacts. It is also of no small importance that the samples underlying the finds often appear “void”. Here we should also mention that the absence of pollen in a number of samples reflects not only a possible interruption in the deposit accumulation, but also confirms the assump-

tion of the reality of different horizons of its accumulation and the necessity to take this phenomenon into account. This does not happen in practice in a practical manner. The question arises: what happens then in such a case? I cannot speak already about cases of pedoturbation, especially zooturbation, when even ordinary worms over the years fully mix the soil layer most fit for pollen preservation, and are able to move not only the ground but also artefacts (Dokuchaev 1949; Wood, Johnson 1978; Alexandrovsky 2003; Striganova 2005; Bobrovsky 2005).

Thus, “normal” palynological spectra are possible only under conditions of quick deposit accumulation, as happens in flood-lands and alluvial depositions or peat-bogs. The periodic flood of flood-lands and the stable increase of the thickness of peat deposits create a real opportunity for pollen conservation under clear stratigraphic conditions. That is, one can finally observe the receipt of the natural core of deposits, what apparently cannot be, in principle, on terraces and watersheds.

Not for the sake of carbon, but for the sake of truth

Now we will talk about some archaeological aspects of radiocarbon dating. There is no doubt that radiocarbon dating is more precise and reliable than palynology, but, as before, there are very few dates for sites of the period we are interested in. Moreover, it is a rather standard situation when samples themselves can be taken from nowhere. In view of some circumstances, the main mass of Final Palaeolithic material lies under conditions where there are no simple usual cultural layers, but there are no carbons, or they are present as separate infrequent impregnation. Perhaps this is connected with the common change of climatic conditions at the end of the Glacial period, when the still more active warming brought to the formation during the winter of a significant blanket of snow, whose rapid thawing in spring washed away surface and loose deposits, pollen, carbons and small artefacts. Moreover, it is not necessary in the least that such disposals could be every year. The change in climatic conditions and the stoppage in the Late Glacial period of loess formation would lead also, to all appearances, to a slowing down of sedimentation. The loess is a significantly lighter and “volatile” fraction than other sedimentary rocks, such as sands, clay sands, loam and lime. Therefore, under the conditions of the Glacial period, it could be carried significant distances by wind, and cover much quicker the surfaces of periglacial steppes, the ecological niche of mammoths, also burying the sites of Palaeolithic man. The change in climate and character of deposited rocks will inevitably also lead to a fall in

the speed of sedimentation. Thus, warm snowy winters evidently caused not only the death of mammoths and other members of the “mammoth faunistic complex”, but also the transformation of archaeological remains, and, finally, determined the state of the very archaeological source. This circumstance inevitably leads to the conclusion that with both the palynological determination, and with the radiocarbon dating of Final Palaeolithic and Mesolithic sites, far from everything can be objectively simple.

If we proceed from the fact that the deposit accumulation under conditions of flat landscapes takes place on the whole very slowly, and in some duration it cannot take place at all because on the surface, within centuries, if not millennia, different-time materials will rest, then also scarce samples for radiocarbon dating will show a tendency to “co-existence”. First of all, the opportunity itself to come at different times to the same original ground assumes that on it different-time materials and organic materials can be stored, part of which can be used later on for dating. Probably, this might reflect the very widely known effect of “the spread of dating for one layer”. Secondly, on the same spaces, being increasingly overgrown with forest on Holocene, local forest fires could occur periodically, whose different-time coals appeared on the same original ground, which became periodically a place of human habitation. Thirdly, the effect of wood coalification has not quite been studied in this respect, to which archaeological organic materials can by no means be subject. But if this serves as samples for dating, then the dates will not be related to the layer’s age. Fourthly, the curvature of the very surface of habitation does not play a special role, the height difference of which was usually some centimetres, because, as a rule, man did not live on slopes and hillsides. Taking into account the methods of the archaeological dig by conditional horizons, prevailing until now, of which the minimal one is five centimetres, we receive an average comparable with the “precision” of palynological samples. In the first place this concerns those for which coal is gathered “along spreading”, which in practice takes place most frequently for Final Palaeolithic sites. However, the situation is also not better in cases when campfire filling is taken, because the height marks of different-time campfires differ between themselves so little, like the height marks of stone materials. “The history projected to the original ground” is flat and unique. Actually, we have no instruments for “making in time different-time campfires”, because what we excavate and call in literature a “structure” is not the same. “A unity of components,” otherwise a structure, is, contrary to A.E. Kravtsov’s opinion (2002, 2004), the imaginary product of a field researcher, but by no means a “rigid lattice of

elements”, which forms a fixed unity. Therefore, the dating of layers, dwellings, pits and other structures “floats”. Thus, without a reliable stratigraphy, the dating can be significantly rejuvenated and not correspond to the real age of finds in the same horizon or layer. And it is necessary to perceive this as an objective reality. Only the chronology, which is built on a series of analyses, made of samples from different layers of well-stratified sites, can be reliable on the assumption of binding these samples with specific documented places. And it will be better if these samples are taken from constructions whose finds are possible on peat sites, where, by the way, stratigraphy is present more often, and is significantly more expressive than on dune or terrace sites.

By the way, the possibility of the secondary use of the same places for a campfire is also fairly often forgotten. Practice shows that the ground round fires is more trampled down and dense, and within the fire, because of the burnt filling, is firmer, and therefore such places are less overgrown and, on the contrary, dry quicker and better. This circumstance can be of no small importance in wet weather, and “provoke” their secondary use. But again, fire was used everywhere as a means of “cleaning”, and this special role also guarantees the multiple use of the same fire sites. At the same time, in cases of overlapping different-time fires, the uniformity of their filling excludes the possibility of their “archaeological making in time”, but really provokes an effect of spreading dating.

Summarising the results of the revision of methods of dating, we should mention the following:

- 1) a small amount of natural science data from Final Palaeolithic sites is connected with both the conditions of forming cultural layers and also with their safety;
- 2) a few samples, taken from one layer or object, are not, evidently, really related to the time of their existing, and got there as a result of pedoturbation or destruction of the layer;
- 3) within the same fire site there can be different-time objects; therefore, the difference in dating can be explained not so much by the invalidation of some samples, as by their belonging to different “horizons” of the same “pressed” archaeological object;
- 4) radiocarbon analysis is not absolutely infallible, but the palynological method is still the least accurate for minerals;
- 5) the availability of a “young” date for a layer which includes ancient forms should not be considered to be the undoubted basis for rejuvenating the latter;

6) a critical attitude to the source, including also natural science dating, must be an attribute of any archaeological research.

One more circumstance of no less importance deserves attention. If the number of Mesolithic sites in the Volga-Oka basin is more than thousands, there are only about twenty Final Palaeolithic ones. Of course, population increases during historical development and, consequently, the increase of the number of sites is an objective factor, but can such a disproportion be normal? Especially because the duration of the Final Palaeolithic exceeds somewhat the duration in time of the Mesolithic. Or is the point nevertheless something else? And is it not things that are guilty, but rather those methods with the help of which we try to date them?

Now we will turn to the state of the source study basis of the Final Palaeolithic of Central Russia.

State of sources

Until the Valdai peak within the examined territory, the Sungir, Rusanikha and Zaisk sites are known. In the Desna basin, Khotylevo 2, Pushkari, Mezin, Suponovo, Eliseevichi and Betovo belong to this time, and in the Don basin Gagarino, Maslovka and the majority of sites of the Kostenkovsko-Borshevsky district. The industries of these sites were not culturally homogeneous (*Paleolith USSR*, 1984).

Around 15,000 years ago the Volga-Oka basin stopped being the “close Near Glacial period” (*Dynamics...* 2002; Kvasov 1975) and, consequently, this area was potentially ready for development. At present, there is no reliable date which could be evidence of the settlement of Central Russia during the peak of the Valdai glaciation (18,000–16,000 years ago). At the same time, if descendants remained, the secondary settlement of the region (after the peak of Valdai) was quite possible by descendants of the inhabitants of these places who lived here before the peak of glaciation. Therefore, it could be the population of Kostenkovsko-Streletskaya (Sungirskaya) Culture or East Gravettian population (Timonovka-Pushkari and/or Khotylevo-Gagarino). This does not give rise to special doubts that other groups, not inhabiting earlier this territory, but well adapted to the conditions of the Near Glacial period, also had a similar opportunity. The spaces of Eastern Europe, freed gradually from the glacier, were in a direct sense boundless. They could potentially admit both the descendants of those who lived here before the glacial peak and the new population, not connected by family roots with these places. All this is quite possible, especially if we regard this space in comparison with the probable amount of potential settlers, which

could really be included in the process of the secondary settlement of the region.

In the literature, an opinion exists of the “East Gravettian episode” (**Восточный граветт 1998**). In recent years, only H.A. Amirkhanov not simply speaks about the “long chronology” of the East Gravettian tradition and its existence in the Late Glacial period, but also extends this chain, evidently, till the beginning of the Holocene (Amirkhanov 1998, 2002, 2004). He thinks that the descendants of the Zaisk population left the Koltovo 7 Late Pleistocene site, whose population traditions, in their turn, found their continuation in the materials of the early stage of Ienevo Culture (Umryshenka 3). From the end of the 1980s similar ideas were also expressed many times by V.V. Sidorov, who thinks, however, that the Ienevsky population were the descendants of the Siberian, more exactly, the Altai population (Sidorov 2002). In 1970–1980, L.V. Koltsov wrote about the participation of “Desna Palaeolithic in the composition of the Volga-Oka Mesolithic” (Koltsov 1977; Krainov, Koltsov 1979, 1983; Koltsov 1989). The author expressed the idea of the development of Khotylevo-Gagarino (East Gravettian) traditions by the population of Reseta Culture (Sorokin 1987, 1989, 2002, 2004; Sorokin 1999). In his works, S.N. Lisitsyn (2000, 2002) and other authors touch actively on the problem of the Upper Palaeolithic heritage during the Final Palaeolithic. One thing seems to be obvious: all these assumptions require more fundamental developmental work. Nevertheless, if any of them do not find confirmation, they reflect a stable tendency in the search for connections among the populations of different chronological epochs. It is also clear that the discussion of this matter is determined mainly by the paucity of available sources. We will try to determine our position more exactly with materials which are at present available.

The data analysis shows that in the literature not so many sites are mentioned which were attributed in time to the Final Palaeolithic. Among them we can name: Altynovo, Zolotoruchye 1, Avsergovo 1, Sknyatino, Fedyukovo 1, Zaozerie 1 and 2, Elin Bor (n.s.), Ust-Tudovka 1, Podol 3, Baranov Mountain, Tioplyy Rutchey, Troitskoe 3, Sukontsevo 9 and 8, Tarusa 1, Shiltseva Zavod 5, Ladyzhino 3, Akulovo 1, Istok 1 (n.s.), Gremyachee 1, Umryshenki 3, Koltovo 7, Vyshetravino 1-3, Rybaki, Nerskoe Lake 1, 2, Briket 7, and Trostenskaya 7 and 10. Unfortunately, there are only a few full-value collections among them. In Altynovo, Avsergovo, Sknyatino and Fedyukovo 1 there are practically no materials (Formozov 1977; *Mesolith USSR* 1989). I think that if these collections contained at least some expressive tools, they would be published, and there would be no need to replicate

invalid data (Koltsov 1989; Krainov, Koltsov 1984, 1987; Koltsov, Zhilin 1999; Zhilin 2004). The availability of the latter in the literature allows us to speak about it in the best possible way. Indeed, in Altynovo, in spite of the repeated mentions in the press (Krainov, Koltsov 1984, 1987; Koltsov 1989), there are no edges of the Federmesser type, but there is only a casual article with an irregular retouch (Sorokin 2001; Kravtsov 1998: 207). What concerns Zolotoruchye 1 (Krainov 1964), then, is to acknowledge that this collection has preserved until now its integrity, and exists in the same form as it was excavated. In respect of tools this material is extremely inexpressive. And, of course, there are really no grounds to derive from it, as M.G. Zhilin does, Swiderian Culture (Zhilin 2004).

The Vyshetravino 1-3 sites (Sorokin 1987a, 1989a), to all appearances, belong to the late period of the Upper Palaeolithic, but the collection's volume is insufficient for establishing detailed characteristics, though the "Zaraisk tradition" is felt here without a doubt.

The material from Elin Bor is simply falsified. Out of 18 tools attributed to the so-called bottom layer of this site (Koltsov 1966, 1989) not one, judging by the list, comes from it, and a casual article was established as a tip, shaped by the irregular retouch, and originating from stray find material (Sorokin 2001). The core, supposedly taken by M.G. Zhilin on this site and dating by the so-called "bottom layer" to the Younger Dryas (Koltsov, Zhilin 1999), originated in reality no one knows from where, because in M.G. Zhilin's report there is no data about the bore pit, which is also evidence of its possible falsification.

The Zaozerie 1 and 2 collections are, mainly, lifting material. There is no distinct division into accumulations, and the material was sorted by the extent of the silicon patinisation. There is no natural science data (Frolov 1987). Of course, the division into two complexes by raw material is quite a possible operation; however, it remains unclear in what way both these complexes are related to complexes which once really existed. Even if the procedure itself of "cultural land-surveying" is carried out by A.S. Frolov correctly, it is already impossible to receive any actual confirmation of it, because at present the sites are destroyed.

The material from the Gremyachee 1 (Voevodsky 1942) and the bottom layer Istok 1 (Sorokin 1988) sites is scanty. The first one is, most probably, a hunting camp of Ahrensburg Culture. The hunting equipment of the second collection, except for the only tip, is greatly fragmented, which does not allow us to speak about its Ienevo and Ahrensburgian cultural attribution. There is no natural-science data from both sites.

The Tioplyy Rutchey and Troitskoe 3 (Lantsev, Miretsky 1996), and Anosovo 1 and 4 (Lisitsyn 2000, 2002) sites are also undated. There is an opinion of their belonging to Podolsk Culture, put forward by G.V. Sinitsyna (2000). The eponymous Podol 3 site is dated by pollen to the Late Glacial period (accumulation 1 to Younger Dryas Dr 3, accumulation 2 to Allerod; Sinitsyna 1996, 2000; Sinitsyna, Kildyushevsky 1996). Baranov Mountain is also attributed to about the same time (Sinitsyna 1996). All these sites are attributed to the Lyngby tradition.

Ust-Tudovka 1 is attributed by pollen to Younger Dryas (Dr 3; Zhilin, Kravtsov 1991), and culturally it is one of the early Ienevo sites (Sorokin 1991).

The geological age of Tarusa 1 and Sukontsevo 9 is determined as the end of the Pleistocene. Both these sites, along with very expressive Sukontsevo 8 materials, belong to Reseta Culture.

Among other sites we can name Shiltseva Zavod 5 (Dr 3 – Bo 1, pollen), Ladyzhino 3 (Pb, no one knows where the core was taken from; Frolov 1978; Frolov, Zhilin 1981; Kravtsov, Konnov 2002), Akulovo 1 (14C, 9990 ± 70 , Sidorov 1996: 76), Dalnyy Ostrov (Bo, no one knows where the core was taken from; Kravtsov, Leonova 1992), Mitino 5 (Bo 2), Elovka (Pb), Bragino (Pb), Koprino (Subboreal), Belivo 6B (Pb, Kravtsov 1998).

For Umryshenka 3, Koltovo 7 (Sidorov 2002; Amirkhanov 2002, 2004), Rostislavl (Trusov 2004), Tregubovo 2 (Trusov 2004), Nerskovo Ozero 1, 2, Briket 7, Tolstenskaya 7 and 10, Nastasyino 2 and 4 (Trusov et al 2004) there is no natural-science data. Analysis shows that in rare cases, where there is independent data, their authenticity causes serious doubts. This refers to most of the sites listed above.

Culturally, in cases when the material is sufficient for its attribution, sites of Lyngby cultures are singled out (Podol Culture according to G.V. Sinitsyna), Ahrensburg, Ienevo and Reseta cultures. Perhaps there was also a population of Federmesser Culture, but this cannot be confirmed. There is also a number of sites whose cultural belonging it is too early to judge (Akulovo 1). Thus, the main conclusion from the analysis of sources is that, within the examined territory, there was no unity of materials, and populations of different archaeological cultures existed.

Theory

"Cultural mixed character", which is traced by available materials, is well explained from the ecology of the concluding phase of Pleistocene. The disappearance

of mammoth fauna and the beginning, according to G. Clark's creative expression, of "the age of the reindeer" should inevitably bring us to the fact that part of the population which lived here should go over to the specialised hunting of it (Clark 1975, 1980), and lead a nomadic life. The seasonally mobile way of life, typical of the population of the epoch of Final Palaeolithic and Mesolithic, was determined by the ecology of the main hunting objects. The routes of wandering animals were stable, and only global climatic changes could influence change. Therefore, for people who hunted reindeer and knew their habits, coming from year to year to the same places, for example, along passages between water bodies, where overcrowding was maximal, success was guaranteed. Just this creates, in a number of cases, the archaeological illusion of significant site areas and collections of a mass character, which really was not and could not be.

However, the routes of human movements were determined not only by the routes of animals' wanderings, but also by tradition, which was passed from generation to generation, on a genetic level. In this respect, a radical ecological reorganisation on the Pleistocene-Holocene boundary could not but cause the activation of adaptation processes, a change in nomads' camps, and the "displacement of migration natural habitats". Since natural changes took place in a positive direction, towards climate warming, then it was, probably, easier to adapt to them, than to the "cold". There is no special doubt that the adaptive capability to exist in the region examined was firmly formed in man and biologically adopted not in the Mesolithic (Holocene) epoch, but already in the previous Glacial period. At that time, positive climate fluctuations were shorter and changed more abruptly by phases of cold spells, and, by virtue of this, were, apparently, more sensitive. In the Final Palaeolithic five consecutive phases are singled out: Dryas 1, Bölling, Dryas 2, Alleröd and Dryas 3. Moreover, it stretched in time for some millennia. The common length of the Final Palaeolithic was about 3,200 years. Dryas 1 lasted from 13,300 to 12,400 years ago, or 900 years; Bölling from 12,400 to 12,000 years ago, or 400 years; Dryas 2 from 12,000 to 11,800 years ago, or 200 years; Alleröd from 11,800 to 10,900 years ago, or 900 years; and Dryas 3 from 10,900 to 10,100 years ago, or 800 years (*Palaeogeography of Europe...* 1982; *Dynamics...* 2002; Zaliznyak 1999: 111). At the same time, a duration of 10,300–7,200 years ago, or 3,100 years, is assigned to the whole Mesolithic epoch (Khotinsky 1977). Thus, the Final Palaeolithic and Mesolithic are correctly comparable with each other in length. And by ecological "content"? The first, more inclement, is called, with full right, the Late Glacial period; the second one, warmer, is called the Holocene.

If for the first the radical nature of changes concerned the "mammoth faunistic complex", and there was almost no zone variability of flora, then in the second case the radical reorganisation and a change of growth took place. The European population, raised under severe glacial conditions, was, undoubtedly, well adapted to them. Global warming returned it to a forgotten "primitive state"; however, it was also what the type was already prepared for, because the human race, as is well known, comes from Africa.

When we speak about nomads' camps of groups of the primitive population, it is necessary to take into account one circumstance of no small importance: a human's physical abilities to move are significantly less than the abilities of reindeer; therefore, the amplitude of human nomads' camps was on the whole less and didn't present the tracing of the first ones, their true copies. The biological capacity of the landscape also provided the "non-cross" of natural habitats of nomads' camps of different groups of the population. The small number of these groups, and the self-sufficiency of traditional places of their nomads' camps, provided a means of existence for each of them without appearing on the territory of a neighbouring group. Ethnographic data shows that the ecological capacity of the landscape exceeds significantly the needs of the people. Living in the regions of the extreme north, though, undoubtedly does not exclude extreme situations and the disappearance of any of these populations.

The displacement of landscape zones and the expansion of oikumena led inevitably to a change of natural habitats of nomads' camps. The common vector of this displacement was towards the "drying out" Scandinavian glacier. In addition, because of the boundlessness of open spaces, one "ethnos" did not press another "ethnos", but moved, probably, by a "parallel course" and appeared on free territory, formerly unoccupied by anybody. No doubt, everybody who occupied the ecological niche of the Near Glacial period was well adapted to these severe conditions, otherwise they would not have survived in them. There were probably no skirmishes, because the newly opened territories surpassed significantly the abilities of their potential settlers. There was no permanent need to borrow, because each group had its own experience, its gestures, its strict traditions, to survive in this medium, and its own means of getting rid of a stranger, and, without exaggeration, alien, foreign influence. And why should the unchecked neighbour's things be of use and bring luck, and not harm and damage?

The forms of adaptation, like tool types were not deliberately chosen, and all the more, contrary to L.V. Koltsov's expression, "were not rejected" (Koltsov

2002: 46). All this was formed by natural selection, by trials, errors and elaborating on experience, with its consequent indispensable inheritance. Inherited experience is nothing more than a form of ecological-type adaptation. We fix archaeologically just the result of this process, distinguishing different cultures with their different tool and technology sets: Federmesser, Hamburg, Lyngby, Ahrensburg, Swiderian, Reseta, etc. Should we be surprised that for all of us almost the same categories of stone tools are typical? In the materials of each of these cultures, there are cores, chips-blanks and technological debris, and among the tools there are scrapers, knives, arrowheads and their substitutes, inserts, drills, drawing-knives and cutting tools. All this was determined by that minimum which was necessary for performing standard production and everyday operations in the Stone Age, processing the same types of raw materials and foodstuffs, which were required for supporting vital activity in a definite ecological niche of the Near Glacial zone. Part of them, especially the hunting requisites, was different. But should the attempts of different groups of ancient people to survive in the cold conditions of the Near Glacial zone be apparent at least in something, and should the traditions of specific population groups living here become apparent at least in something?

An analysis of the ecosystems of reindeer hunters allows us to claim with full right that there are no local archaeological cultures, but there are lacunas of our knowledge of them. The territory of a specific archaeological culture cannot be localised by the mouth of the Kama, the Middle Vychegda, the Upper Podneprovie, or even by the area of one river basin, no matter how large it is, because such is human ecology as a biological species. At the same time, it can also be infinitely large, and say, cover the whole of Europe or Asia. Therefore, we should establish the “territorial frames” of an archaeological culture not only by the similarity of the stone tools, but also by modelling the changes in the environment, flora and fauna, the way of life and the physical abilities of the human himself.

As far as we can judge, the seasonally mobile way of life of the primitive population underlies the “territorial unity of the archaeological culture”; therefore, for the Final Palaeolithic, the reindeer epoch, the minimum diameter of the natural habitat shall be approximately 1,000 kilometres. We might ask the question, how physically real are similar movements? We will make a simple calculation. If we accept a standard day of pedestrian motion as 30 kilometres, then he will cover a distance of 900 kilometres (approximately the distance that separates the Upper Volga Reseta sites and Pulli in Estonia; Sorokin 1999) in 30 days. By time, taking into account the speed of foot motion at

five kilometres per hour, a section of “one day of motion” is covered in only six hours. Thus, 18 hours a day are left for sleep, rest and labour. In this case, for movement of a distance of 1,500 kilometres, and this is the average seasonal route of reindeer wandering, 50 days are needed. This data not only fits well into the amplitude of annual seasonal reindeer migrations, but also of the movements of ethnographic reindeer hunters (Dzeniskevich 1987; Syroechkovsky 1986; Simchenko 1976). Of course, actual practice did not necessarily coincide with the norm, and was determined by an aggregate of circumstances which could speed up or, on the contrary, slow down the speed in each actual case. In this case, it is more important for us that the calculation itself shows the physical reality of a human for such movement. From an archaeological point of view, these calculations allow us objectively to make more exact the natural habitat of archaeological cultures of the end of the Pleistocene, when Europe remained a Near Glacial zone and the ecological niche of the mentioned animal.

In its turn, the whole aggregate of the mentioned circumstances determined not only the amplitude of seasonal population migration, the reciprocal character of this wandering, but also the archaeological markers: artefacts distributed throughout all of Near Glacial Europe, by which the natural habitats of archaeological cultures are reconstructed (Sorokin 2002, 2004). Glacier reduction, with the common vector towards Scandinavia, should inevitably be accompanied by both the gradual change of freed territories to oikumena, and by the significant latitude coverage of reindeer wandering and the amplitude of the movement of the “pursuers of reindeer herds” (not less than 1,500 to 2,000km in diameter). On the Great European plains, from west to east, there were no insurmountable geographical boundaries; therefore, places of habitation of the ancient population of the Near Glacial zone had no and could not have had natural boundaries. The natural habitats of different groups were outlined not so much by geography as by the very population figures. The division of Europe into east and west took place later on, already in the Holocene, but not earlier. This also shows the presence of similar materials in the Great European sand plains from Britain to the Urals. Nevertheless, to make more exact the cultural processes (components) of the epoch of the Final Palaeolithic, the available data is obviously insufficient, and it is the task of the future. Meanwhile, this picture is visible only very roughly.

The availability of at least two development lines seems to be obvious: the first is the Gravettian tradition, which from Khotylevo 2 to Gagarino connects the Final Pleistocene Reseta Culture with Holocene Pulli

and Butovo cultures (Sorokin 1999; Sorokin 2002, 2004). And the Lyngby tradition, which combines Ahrensburgian, Ienevo, Pesochny Rov, Grensk and Ust-Kama cultures, as well as the cultures of Fosna and Komsa (Zaliznyak 1999; Sorokin 2002). It does not raise doubts that the similarity, which is observed in the tools of Ienevo, Pesochny Rov, Grensk and Ust-Kama cultures, as in cases with the Gravettian tradition, could arise only in a definite ecological niche of the Final Pleistocene of Near Glacial Europe on territories unoccupied by the glacier during and after the peak of Valdai glaciation. That is, on those mainland areas which in the Final Pleistocene served as natural reindeer habitats. As the Baltic region and northern Europe were freed from glacial cover, Lithuania and the Scandinavian coast fell into the zone of nomads' camps of this population. In Scandinavia, this population is known archaeologically by materials of the Fosna and Komsa cultures. Some sites of Ust-Kama Culture (Syukeevsk Vzvoz, Tetyushinskaya 3) have geological dates within the end of the Pleistocene (Butakov et al 1999; Galimova 1999). The Ust-Tudovka 1 and, probably, Shiltseva Zavod 5 Ienevo sites are dated to the Younger Dryas. While one of the earliest sites of Fosna Culture, Toscer A, which is not distinguished by its set from the Ienevo-Grensk-Pesochny Rov collections, is radiocarbon dated to the beginning of Preboreal times (Taute 1968; J.&K. Kozlovsky 1975).

On the basis of what has been said above about palynological and radiocarbon dating, as well as about the state of layers of Final Pleistocene and Early Holocene sites, the Holocene data of the Reseta and Ienevo cultures should be considered false, and their appearance explained by the effect of the natural rejuvenation of palynological spectra and radiocarbon samples. Thus, on the basis of the palaeogeographical and economic and cultural reconstruction, Reseta and Ienevo cultures should be much more ancient, and recognised, together with Ust-Kama, Grensk and Pesochny Rov cultures, as Final Palaeolithic ones. Most likely, the population of the Lyngby tradition left the limits of Central Russia, Ukraine and Belorussia before the beginning of Preboreal times, when forest formations began to prevail, and went following the reindeer to the north. And their further destiny is connected with the population of the Fosna and Komsa cultures. At the same time, the East Gravettian population went on to master central regions and the eastern part of the natural habitat, the Vologda and Arkhangelsk regions and the Komi Republic (*Archaeology of the Komi Republic* 1997).

The concepts "eastern version of Federmesser Culture", "Eastern Federmesser" and "Eastern Ahrensburg", which are proposed by separate researchers (Koltsov 1977; Zhilin 1995; Koltsov, Zhilin 1999;

Zhilin 2004) suppose inevitably that there are also "western", and, perhaps, "northern" and "southern" versions of these cultures. In reality, there is nothing of the kind in the literature, like in life, and there is only complete confusion as to what to understand by archaeological culture. If we proceed from this term, as of the "gnoseological category of the space-time connection of fossil objects", and under the natural habitat of the archaeological culture of the Stone Age, to see "the amplitude of spatial oscillations of the population within the limits of the fodder territory" (Sorokin 2002, 2004), then everything falls into place. Thus, sites with points of Federmesser type are Federmesser Culture, and sites with Lyngby arrowheads, wherever they can be met, are sites of Lyngby Culture, and all arguments about "eastern" versions are only a verbal balancing act, behind which there is no real content. Similar terms do not take into account absolutely the economic basis of societies of the Final Palaeolithic, the ecology of reindeer, the main food animal of this time, and the way of life of the primitive population.

Archaeological culture in the Stone Age is an abstraction, a gnoseological category, like the concept "archaeological culture" itself (Zakharuk 1976), but not a natural habitat with rigidly controlled boundaries. It is necessary to perceive it as a geographical space, a habitation medium, a niche, within whose limits the population lived according to the seasonal cycle. The region's population in the examined period of time was so small in number that a situation when some group of Mesolithic population lived on the summer site and there was no winter nomad camp, and vice versa, is very likely. Actually, this is the "temporary succession of different forms of spatial organisation of the production collective". Because of the small number of groups of hunters-collectors, only a "piece" of visible space obeyed the control, and no more. In principle, control of the territory was out of the question.

Consequently, the boundaries of archaeological cultures of the Final Palaeolithic and the Mesolithic actually coincide with the natural habitat of annual, economic cycles; that is, it is actually the amplitude of spatial oscillations of the population within the fodder territory, which could be overlapped by the natural habitat of another population, but on the whole could not be controlled and defended at all. This simply could not be done by anybody. Because of this fact, the reindeer hunters had one natural habitat, mammoth hunters had another natural habitat, and elk hunters had a third natural habitat, so areas which were able to feed the population adapted to these species and were also different. This picture, which is fixed archaeologically, is the result of the summing up and overlapping on to each other of routes of the wandering popula-

tion, changing in time. Actually, it is a pressed-in-time sequence of different-time events, but not a reflection of the simultaneous occupation of population groups existing simultaneously, and basic and temporary sites, hunters' and fishermen's camps, places for the slaughter and butchering of animals etc, existing in parallel. This is the history of real events, projected on to a map, which took place with people within the whole period of existence of specific populations, while we are able to trace their features by specific material remains. This, apparently, explains the overlapping of natural habitats of synchronous cultures, but we have extremely little data for their strict correlation.

The above does not at all mean the complete leveling of collections of all sites within the limits of each culture. The differences remain, but the difference in measuring features and peculiarities in the stylistics of article processing at different sites of the same culture, divided by many hundreds of kilometres from each other, are not evidence of their different cultural belonging. Moreover, they are easily explained. As was shown for North American material by the Canadian archaeologist and ethnologist Brian Gordon, who lived a long time among Indian caribou hunters, all these indices are connected for the most part with different seasons for sites and their unequal remoteness from the sources of raw material (Gordon 1997). One can add here, apparently, the temporary and individual peculiarities of producers. But the first two features are still the main ones. This is why there is no necessity to single out separate Podolsk (Sinitsyn 2000) or Krasnoselsk cultures (Zaliznyak 1999) and connect their origin with Bromme-Lyngby. This is one and the same "Lyngby" population, which wandered following the reindeer along the endless spaces of the Near Glacial zone of Europe in the ecological niche of the Final Pleistocene.

The settlement of new territories which were freed from the glaciers was not an incidental act, but was a process of economic development, in a way "space filling", the "growing accustomed of the population to the territory". This process was carried out by people well adapted to the conditions of northern latitudes. It took place permanently as near-glacial lands were freed from glacial cover, in other words, the expansion of the geographical capacity of the landscape. However, the "landscape filling" was not carried out immediately, but through a known interval of time, only when and since the necessary prerequisites had matured. It is necessary to look at the seasonal movements of the people of that time in the context of the way of life of the primitive population and the economic and cultural type of the hunters of the tundra and incipient forest zones, viewing their migration not as a unidirectional

movement to the north, but as reciprocal, shuttle movements, subject to the annual natural cycle and ecology of the reindeer. The economic system, with which regions of European territory, being remote, at a significant distance from each other, were involved in the orbit of economic activity, and long seasonal migrations were vitally necessary, could be formed and exist only when hunting reindeer. For the territory under review, it is the end of the Pleistocene, the period of the Final Palaeolithic. The reindeer is the only animal of the middle zone for which long seasonal wandering is the norm, a behaviour stereotype (Syroechkovsky 1986; Seibutis 1974, 1980; *Big beats of prey...* 1978; *Palaeogeography of Europe...* 1982). And if there are people who are able to hunt it, archaeologically a "commonness of territories" which are at a significant distance from each other can arise. A reindeer hunter will inevitably wander significant distances following the reindeer herds (Dzeniskevich 1987; Simchenko 1976; Syroechkovsky 1986), and therefore will unavoidably leave material features of his presence.

In this connection, I want to draw attention to the following. In archaeological literature, as a rule, schemes of population migrations are traditionally marked by arrows, going in any direction. For example, the settlement of the Baltic lands by the Ahrensburgian population is marked as a unidirectional movement from west, from the north German lowland to the east, to the River Nemunas basin (Rimantienė 1971), and by the Swiderian population from the southwest, from the Polish and Polesie lowlands, to the northeast, to Upper and Middle Podneprovie (Zaliznyak 1999: 210), etc. In that way, the movement of "migration flows" seems to be determined at the moment of the settlement of the actual territory. Actually, it is implied that this territory was permanently and for long settled by the carriers of the archaeological culture. If the reconstruction of the economic and cultural type for this time is correct, the domestic conditions of the reindeer hunters could exist and be realised only as "shuttle" reciprocal migrations, and by no means otherwise.

Consequently, the unidirectional graphic representation of movements of the primitive population forms an inaccurate and one-sided picture of the Stone Age, because these migrations were neither en masse, nor, particularly, in flows. On the contrary, they were small in number, and, more importantly, seasonal. The ecology of animal types, the main objects of hunting, and their behaviour determined the economic strategy of people and their way of life. Therefore, the migrations were seasonal and reciprocal, that is, they went in both directions, obeying the laws of the behaviour of the prey. Certainly, the migration of people to new lands also took place in the Final Palaeolithic and the Meso-

lithic, but these single migrations did not determine the essence of the migrations of these epochs, not because the migration of people to new territories were not peculiar to them, but the stage-by-stage development of new lands and the expansion of oikumena by means of seasonal, reciprocal migrations. At the same time, global, positive changes in the natural medium at the end of the Pleistocene and the beginning of the Holocene inevitably brought an expansion to the territory and created favourable opportunities for its development. This does not mean that such opportunities were realised permanently; it means only one thing, that the opportunity itself for their realisation occurred.

In a number of cases, the extreme points of the natural habitat, fixed by archaeological sites, are the amplitude of spatial migrations of the population within the food territories. The small number of primitive collectives, living at the end of oikumena, and the peculiarity of the economic cycle of reindeer hunters also determined their way of life. From this, it follows that when the reindeer were in the tundra on pastures in the warm season, these were northern near glacial territories, and the whole population was probably there. And in the following cold times the reindeer population groups wandered southwards, as well as on the plains of Central Russia, where it was simpler both for reindeer and for people to spend the winter.

Only the evolution of climate and palaeomedium, which changed abruptly the world picture, on to which later the peculiarities of the latest political history, which erected interstate boundaries were superimposed, led to the fact that the archaeological mosaic can by no means be formed into a clear and logically connected picture. Moreover, this very picture still remains an abstraction as separate “territorially separate dabs”, badly connected to each other, whose study depends on the number of researchers and their financial possibilities.

Thus, at present the source-study basis of the Mesolithic of Central Russia includes only three cultures, Butovo, Purgasovo and Kultino (Sorokin 2004). The sites of Reseta and Ienevo cultures, attributed before to the Mesolithic, should be considered as Final Palaeolithic, which allows us not simply to withdraw from the agenda the matter itself of the character of sites of the epoch of the Final Palaeolithic within the limits of the region studied, but also gives a methodological basis for the further, detailed development of the question.

Conclusion

The sources on the Final Palaeolithic of Central Russia mentioned in the literature are for the most part scanty and inexpressive. However, the problem is not so much

their real absence, as the erroneous determination of their age and the wrong theoretical approach to the solution of these questions.

The analysis of palynological, radiocarbon and geological methods of dating archaeological sites from the end of the Pleistocene and the beginning of the Holocene, and the revision of the available but not numerous dates, shows that for mineral grounds these methods require serious correction, and the dates themselves do not correspond in most cases to the typological age of archaeological material. Palynology, which reflects, as a rule, not the time of habitation of the site but the age of the formation of overlapping deposits, extending to a long period the postpositional life of the cultural layer, appears to be the least reliable for these purposes. Consequently, this leads inevitably to the rejuvenation of deposits, and, as an archaeological result, to the younger age of artefacts enclosed in them. Furthermore, today’s palynological methods of sampling do not take into account the standard situation of re-depositing of archaeological materials and pollen under the influence of deposit pedoturbation. Geological dating is used little for the determination of the age of objects of the examined period, and at best allows us to speak about global events, that is, the attribution of deposits to the Pleistocene or Holocene. The change of the character of sedimentation and stoppage at the Late Pleistocene of the forest formation inevitably led to the reduction of deposit accumulation, which told distinctly negatively on the speed of the formation of cultural layers and sample safety for radiocarbon dating. Typological analysis and some natural-science data allow us to establish a more ancient age for Ienevo and Reseta cultures, and to consider them to be completely Final Palaeolithic. In this case, both the total number of sites increases, and their appearance becomes more physical. Thus, to the question about the presence of sites of this period in Central Russia, we can answer not simply affirmatively, but also give the actual material form of their content, at least, not less than by two cultural traditions, Gravettian and Lyngby, in which both the above-mentioned cultures are included.

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Abbreviations

- КСИА – Краткие сообщения о докладах и полевых исследованиях Института археологии РАН
 МИА – Материалы и исследования по археологии СССР
 РА – Российская археология
 СА – Советская археология

ТАС – Тверской археологический сборник
Труды ГИМ – Труды Государственного исторического
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CENTRINĖS RUSIJOS FINALINIS PALEOLITAS: BŪTI AR NEBŪTI?

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Santrauka

Literatūroje aprašyti Centrinės Rusijos finalinio paleo-
lito šaltiniai daugiausia skurdūs ir neišraiškingi. Tačiau
problema yra ne tiek minėtų šaltinių trūkumas, kiek jų
neteisingas datavimas ir šiai problemai spręsti taikomi
netinkami teoriniai metodai.

Pleistoceno pabaigos ir holoceno pradžios archeologi-
jos paminklų datų, gautų palinologiniu, radiokarboni-
niu ir geologiniu metodais, analizė, taip pat negausių
gamtamokslinių datų revizija rodo, kad mineraliniams
dirvožemiams taikant šiuos metodus, juos reikėtų pas-
tebimai tobulinti, o pačios datos daugeliu atvejų ne-
sutampa su archeologinės medžiagos tipologine chro-
nologija. Mažiausiai patikimas pasirodė palinologinis
metodas, kuris dažniausiai rodo ne archeologijos pa-
minklo amžių, o kultūrinį sluoksnį dengiančių ir per
ilgą laiką susiformavusių nuosėdų amžių. Taip pat
palinologinių bandinių parinkimo metodika nepajėgia
įvertinti fakto, kad paprastai dėl pedoturbacijos povei-
kio archeologinė medžiaga ir žiedadulkės yra perklos-
tytos. Geologinis datavimo metodas nagrinėjamam
laikotarpiui menkai tepritaikomas ir geriausiu atveju
teleidžia priskirti sluoksnius ledynmečiui arba holoce-
nui. Vėlyvuoju ledynmečiu, pasikeitus sedimentacijai
ir nutrūkus liosų formavimuisi, labai sulėtėjo nuosėdų
kaupimasis. Tai turėjo neigiamą įtaką gyvenviečių kul-
tūrinių sluoksnių radiokarboniniam datavimui.

Tipologinė analizė ir kai kurie gamtamoksliniai duo-
menys leidžia pasendinti Jenevo ir Resetos kultūrų
chronologiją ir jas visiškai priskirti finaliniam paleo-
litui. Šiuo atveju pastebimai išauga finalinio paleolito
paminklų skaičius ir tampa aiškus jų pobūdis. Todėl ne
tik galima teigiamai atsakyti į klausimą apie Centrinės
Rusijos teritorijos apgyvendinimą šiuo laikotarpiu, bet