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THE MESOLITHIC AGE IN THE TERRITORY OF THE KOMI REPUBLIC

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1 CHARACTERISTICS OF THE MESOLITHIC AGE

The Mesolithic Age, an age of stone tools, follows the Palaeolithic. Its beginning coincides with the end of the glacial period (Pleistocene) and the beginning of modern geology (Holocene). In the European Northeast, Final Palaeolithic sites are unknown, nor are authentically dated Mesolithic sites older than 9-10,000 years. Therefore, the Mesolithic Age obviously began with the penetration of a population already having an existing material culture (techno-complexes and a strategy of survival).

The Mesolithic Age is that time when ancient people used and developed economic achievements begun in the previous Palaeolithic Age, and that could adapt to sharp changes in natural conditions in the beginning of the Holocene. A technique of stone processing was significantly improved with a hafting or inserting technique in all industries occupying a significant place, and denoting the prevalence of compound tools. Their wide circulation comprised cutting tools, including ground ones, and also bows and arrows. All this gave an opportunity to utilize diverse natural resources, a flexible reaction to the change in natural conditions affecting the economy. The prevailing way of life was mobile and connected to seasonality. Vast recently deglaciated territories, including all of the European Northeast, were colonized.

The end of the Mesolithic and onset of the Neolithic is most reliably documented by ceramics. The earliest Neolithic sites in the region date 7,000 years ago.

The regional Mesolithic is short and placed within the framework of the Boreal (8,000-9,200 years ago) and Initial Atlantic periods (7,000-8,000 years ago) of the Holocene. At this time, regional modern relief and drainage had already developed, and the modern landscape zones were being formed. It is a zone of middle and northern taiga, forest-tundra and tundra, with borders during the Mesolithic subject to rather significant change. In the initial Boreal or "thermal maximum", forest vegetation advanced 100-200 km north of its modern situation. In the south part of the territory, a zone of dark-coniferous forests grew. At the end of the Boreal, a short strong cold spell was observed, transforming dark-coniferous forests into light north-taiga ones. A tundra zone formed north of the region. The zone vegetation structure was fully developed. At the beginning of the Atlantic period, there is a northern shift of natural zones. Latitudinal zones sharply diverged. In the Vychegda-Mezen interfleuve and along the middle Pechora, dark-coniferous forests dominated at mid-range, with a reduction in tree size and extent in the lower or northern Pechora taiga. The borders of the forested zones were displaced north from their modern locations 100-150 km (NIKIFOROVA, 1980).

2. HISTORY OF RESEARCH OF THE MESOLITHIC AGE

Research on Mesolithic sites in the territory of the Komi republic began in 1957, when Burov excavated Mesolithic sites in the valley of the Vychegda (BUROV, 1959,

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1961)[1]. Vychegda sites (Anyb 1 & 2, Vol 1, Ulianovo, Kuzvomyn, Palevitza 2, Nidz 2, Pezmog 1, Kuryador, Jagkodzh 3 & Pojeg) were tested by Burov in 1958 and partially again in 1959 and 1963. The most representative collections are from the completely excavated Ulyanovo and Kuzvomyn sites, and in collections from the pillaged sites of Pezmog 1 and Kuryador (BUROV, 1965, 1967).

In 1957, when the first Mesolithic sites on the Vychegda were opened, Burov had certain doubts concerning their age. Describing the material of one of these sites, he noted their similarity to the Pre-Kama Mesolithic sites of Ogurdino, Kama-Zhulanovskaya and Nizhne-Adishchevskaya. However, he added that the blade technique of the newly discovered Vychegda sites can be traced in Sub-Kama up to 2,000 B. C. (BUROV, 1959). Thereafter, Burov rejected his initial doubts (and accepted greater antiquity for Vychegda sites), the point of view shared by Bader (BADER, 1961).

A comparison with Kama materials allowed Burov to assert that the Vychegda and Kama sites form one extensive area, with recolonization on the Vychegda from tribes of the Pre-Kama (BUROV, 1961).

From 1960-1967, Burov investigated one of the most well-known Mesolithic sites of the European north, the Vis 1 peatbog and adjacent dryland complexes, whose material was also partially referred to as Mesolithic. From the excavations of this peatbog, a unique collection of wood products, birchbark, pine cores and grass was safely retrieved. The Vis 1 peatbog sediment was subjected to pollen analysis, and wood samples from the peatbog yielded a series of radiocarbon dates (BUROV, 1967, 1986).

Further accumulated material and the use of the statistical ratio of blades to flakes after O. N. Bader's analysis of flint material, gave a base for associating regional Mesolithic sites and the Kama as one group - the Kama-Pechora-Vychegda Mesolithic (BUROV, 1965). His suggested date for material in this group was "after 6,000 years B. C. ". The Kama-Pechora-Vychegda Mesolithic was compared and appeared to be different to the materials obtained in Sindor Lake research. They were attributed to the VII-VI millennium B. C. , according to the radiocarbon dates of the Vis peatbog artifacts. He compared Vis materials to a Mesolithic arc of Baltic cultures such as Kunda and Suomusyarvi (BUROV, 1967).

In the Pechora basin in 1962-1963 Kanivets, with V. E. Luzgin's participation, surveyed in connection with a project of re-directing northern rivers into the Volga. In the zone of projected reservoirs, the following Mesolithic sites were excavated: Tyb'u, Kasianel locality 2, Zaton 1 locality 1, Zarechenskaya, Martushevskaia 3 locality 2, Martushevskaia 4 locality 1 Kodachdis 1, Rogodinskaya 2, Mitrofan-Dikost, Vanpi 1, Deminskaya 2 & 3, Sherdinskaya 1, 2 & 5, and Cherepanka-dee. More Mesolithic complexes known from Chernov's work are Petrushinskaya 3, 4, 5 & 6 and Nizhne'petrushinskaya 3. These resemble the earliest artifacts from the settlements of Ust-Pidzh and Kodachdi 2 (KANIVETS & LUZGIN 1963; KANIVETS, 1965), which are very likely Mesolithic, too. Limited site work allowed only surface material to be collected, with insignificant excavation. Nor did research continue at Vissa-yag site (Borovaya river valley, left tributary of the Pechora), begun by Kanivets in 1965 (KANIVETS, 1974).

As Kanivets also had certain doubts concerning the age of the Pechora Mesolithic, he called sites discovered by him in 1962 "Mesolithic and (or)early Neolithic"[2]. In his

1 The first Mesolithic sites in the European Northeast were found outside the Komi Republic in the Bolshezemle tundra by the geologist Chernov in the 1930's. A.I.Blokhin in the 1950's. In the Pechora basin on the Kolva tributary they assembled collections of stone artifacts found on sandy loam soil. The inclusion of these collections in the Mesolithic was much later determined by I.V. Vereshchagina. At that time, Mesolithic camps on the Vychegda and Pechora were already known (Vereshchagina, 1973). Recent data suggests the Bolshe'zemle tundra Mesolithic includes the following sites: Adzva 13 & 42, Kolvavis 8 & 4, and Sandybey-yu 1, 5, 8 & 9 (Vereshchagina, 1989). In 1956, Chernov found the Adzva 1 (Larvanik) camp and Adak 1 on the Usa River, near Adzva and Adak villages. Research on these sites was continued by Kanivets, who determined they were Mesolithic.

2 Few items forced him to be cautious regarding periodization. An established criterion of the Mesolithic was its microlithization i. e. presence of prismatic blades. However, in the region, it was found that Neolithic sites also have a blade tradition in its flint industries (Kosinskaya, 1992). Unfortunately, the Neolithic in the Pechora basin was until now absolutely unsurveyed. Nevertheless,

preliminary publication of Mesolithic material, he noted arrowheads and assumed that although the Vychegda and Pechora Mesolithic connect to the Kama region, it also was influenced by the Mesolithic of the Volga-Oka interfleuve. He concluded (KANIVETS & LUZGIN, 1963) that in the Mesolithic, the Vychegda and Pechora basins were settled by tribal societies from the south (Sub-Kama) and west (Volga-Oka interfleuve).

In 1964 under the direction of Luzgin, archaeological research began in the Izhma valley, connected to the project of building the Izhma-mouth hydroelectric station. During work in 1964-1967, four Mesolithic sites were found: Kelchiur 1, Lek-Lesa 1 & 2 and Turun-Nur 1, with excavations of Turun-Nur 1 in 1964-1965. Luzgin (1972) analyzed the material by comparing it with all available data on the Vychegda and Pechora Mesolithic, concluding that the European Northeast at "the end of the Mesolithic" involved a uniform local culture area, the peculiarity of which is a combination of Kama and Volga-Oka Mesolithic features (LUZGIN, 1972, p. 122). An original Mesolithic complex is typologically identified in the multi-cultural level site of Pizhma 2 excavated in 1970 by Luzgin on the Pizhma River near Lake Yamozero (LUZGIN, 1973). He mentioned the presence of Mesolithic artifacts in the collection of the stratified sites of Pizhma 1 and Kysko (LUZGIN, 1972à).

In 1968-1970 on the middle Pechora and Usa Rivers, Kanivets tested the Mesolithic sites of Topyd-Nur 5 & 6, Zibun-Nur 2 and Adak 2 & 3, and reexamined Chernov's Adzva 1 and Adak 1 sites. Adak 2 (1970) and Topyd-Nur 5 (KANIVETS, 1973) were excavated, with especially important research at Topyd-Nur 5 in 1968. Here, the remains of a dwelling were investigated which has received great popularity as a basic example of adaptive capacities of Mesolithic people. Materials of this site pushed Kanivets to create a Mesolithic sequence for the Pechora. In other words, he formed two site groups (early and late) using techno-typological flint analysis. The first group incorporates Adak 1 & 2, Adzva 1 and Zybun-Nur 2, its age determined at 6,000 years B. C. The second group of Topyd-Nur 5 and Cherepanka-dee date to 5,000 B. C. Kanivets believed that material in the second group has attributes showing the beginning of Neolithic stone working. These attributes in Kanivets opinion are an increasing number of flakes, their frequent use as tool preforms, large blades, very few microblades, and the presence of ground tools such as adzes (KANIVETS, 1973)[3].

In 1961-1962 on the Vym River, E. A. Saveleva excavated the Mesolithic camps of Bozhyudor 1, Vet'yu, Ust' Koin 2 and Chasador, with a Mesolithic complex in the stratified settlement of Veslyanskoe 1 (1975-1976). On the Vychegda in 1970, Kanivets with help from Pankrushev and Loginova, excavated the Mesolithic site of Kebanel, in which speckles of red paint were found in the pit. Deeper investigations of these sites did not occur.

If earlier Mesolithic studies of sites were spent on continuous investigation of extensive territories, subsequent studies since 1975 rest on systematic research on the Mesolithic itself.

Loginova investigated Mesolithic sites on the middle Vychegda: Kuzhba, Kuzhu, Ozyag 4, Chertas 1 & 2 and Kuryador 2 (1980); with excavations at Chertas 1 & 2 and Kuryador 2 in 1982, plus a Mesolithic dwelling in the Neolithic site of Yenty 3 (LOGINOVA, 1985).

After excavating the Mesolithic sites of Chertas 1 & 2, Loginova suggested a definition of a special group of later sites inside the Vychegda Late Mesolithic. She believed the Vis 1 peatbog and Chertas 2 can be included into this group. The Chertas and Vis 1 collections are defined according to Loginova on the presence of large blades and

the Neolithic sites of Dutovo 1 with its clearly seen blade-technology has only recently been excavated (Volokitin & Sazhin, 1994). Thus, Kanivets' care concerning the periodization of Pechora sites appears justified and obviously some of the sites are attributable to the Neolithic.

3 One must emphasize that Kanivets considered the problem of separating the Mesolithic, Palaeolithic-Mesolithic and Mesolithic-Neolithic. He believed Mesolithic includes non-ceramic complexes with high microlithization but without specific types. Although his latter statement is not completely clear ,it seems like he professed faster technological than chronological approach, which it seems, is not methodologically justified. And we must note that the term microlithic was meant to be the prevalence in collections of prismatic blades.

wider use of flakes and ground cutting tools. Under this definition, this sites were assigned to the same group as the Pechora site of Topyd-Nur 5. Thus, Kanivets' periodization applies to the Mesolithic of the whole region. The material of Vis 1 peatbog is referred to as late group, contradicting the conclusions of Burov published in the 1960's.

Successful research on the Mesolithic of adjacent territories using Loginova's material resulted in Burov conceiving a regional Mesolithic (BUROV, 1986). He suggests two cultural types: Kama-Pechora dating 8,000-7,000 years B. C. , and Vis dating to the second half of 7,000-6,000 years B. C. According to Burov, the Kama-Pechora type on its "micro-macrolithic assemblage" includes Mesolithic sites in the Urals, Valdai, Sukhona, Irtysh and part of the Volga region[4]. On the Vychegda are camps of the middle-Vychegda culture (Kuryador 1, Pezmog 1, Ulianovo, etc.), which have quartzite cutting tools and a few trapezes and Post-Swiderian arrowheads, plus Kuzvomyn with its uncertain cultural status. The first cultural type comprises most Pechora sites (including those of the Bolshe'zemle tundra) and the Izhma camp of Turun-Nur 1 with Ahrensburgian arrowheads, according to Burov. The cultures of the "Kama-Pechora micro-macrolithic Mesolithic", in his opinion, suggests a basis for regional dialects of an ancient Ural language[5].

The second cultural type (the cultural type of Vis 1 peatbog) includes the collection of Vis 1 peatbog itself and Mesolithic dryland complexes of Vis 1, Simva 3 as well as the sites of Chertas 2 and Topyd-Nur 5.

Burov's interpretation of regional Mesolithic differs from that of Kanivets, Luzgin and Loginova in defining culturally-distinct forms (cultures or cultural types). The problem of periodization as such is not fully examined by Burov[6], but his relative chronology of sites of those cultural types coincides with the chronological groups of the aforementioned researchers.

Kosinskaya worked on the Vim River from 1975 to the second half of the 1980's. Tested sites are Lyalskii Bor, Vet'yu 2, Evdino 2, Ostrov and Erozdino 1, with excavations at Lyalskii Bor (1979,1974), Vet'yu 2 (1983) and Evdino 2 (1978, 1980, 1981, 1986). V. A. Semenov tested the sites of Bozhyudor 2 (1980) and Vozindor 1 (1981), with excavation at Ust'Koin 2. Kosinskaya's survey on the middle and lower Vychegda (1981-1987) revealed Kozhmudor (completely destroyed), Ydzhyd-ty, Rev'yu 2, Arabach 2, Yarega, Korev and Dzhib-Vad, with excavation (1987) at Ydzhyd-ty (KOSINSKAYA, 1988). The destroyed site of Rozmanovka was tested by Semenov (1978) in the lower Vychegda.

Kosinskaya divided the Mesolithic sites of the middle and lower Vychegda into two groups[7] on the analysis of knapped stone products. The first group includes Evdino 2 and Yarega. The second group has Vet'yu 2, Yazhid-ty and the destroyed sites of Ostrov and Kozhmudor. Evdino sites of the first group resemble sites of the middle and upper Vychegda, and sites of the Pre-Kama and Kama-Vyatka interfleuve. Typological dating with nearby sites suggests an occupation of 6,000-5,000 years B. C. Kosinskaya considers them a component of the Vychegda Mesolithic, which in turn represents one of the variants of the overall Ural Mesolithic.

The group of Vet'yu 2 collections has analogies with sites of the Volga-Oka interfleuve (Butovo culture). Their age is supposed to be older than the first group, but is limited to 6,000 years B. C.

4 Rather, what is meant is a dominant prismatic blade technique, the prevalence of narrow blades, the prevalence of retouched blades, burins and scrapers, and the presence of large cutting tools - axes and adzes. One must note that for differentiating sites to cultures and groups, Burov used D.Ya.Telegin's scraper-burin parameter - the ratio of the number of burins to scrapers.

5 For problems of ethnolinguistic interpretation of Mesolithic regional materials, see Volokitin, 1994.

6 Burov developed a periodization "of a Mesolithic Vis cultural type" on the Vis 1 peatbog using radiocarbon dating, palynology, co-occurrence of wooden artifacts of various types, and the technique of determining conventional depths of artifacts in peat. That is actually a periodisation of material of Vis 1 peatbog only. The individuality of artifacts of organic material narrows even more the opportunities for ascertaining the periodization.

7 Kosinskaya's technique for analyzing flint artifacts is based on prevailing material - e.g., blades, proceeding from their width and length of segments using statistical traits like trends, type of distribution, parametre of similarity and verification of statistical hypotheses (Robinson's criterion) (Kosinskaya, 1988).

Unlike Burov, Kosinskaya does not allocate cultures, but suggests that material of the first group is expressed distinctly in the Kama (Sub-Ural) tradition, while material of the second group represents a weakened Volgo-Oka tradition (KOSINSKAYA, 1988). One can consider Kosinskaya's and Burov's general methodological approaches as alike, though detailed consideration reveals slight differences in their material analysis and how their conclusions are interpreted.

In the opposite vein, I. V. Vereshchagina, by analyzing materials from all Mesolithic sites of the European Northeast, continued to develop insights along the lines of Kanivets, Luzgin and Loginova. She believed the Mesolithic regional population came from an extensive territory, including the Volga-Kama basin, eastern areas of the Upper Volga region and the Volga-Oka interfleuve. By living under identical natural conditions and close contact, there was a common framework of cultural traditions. On the "basis of typologically classification", two groups of sites are proposed, their difference also chronological. The first group, dating 7,000-6,000 B. C. , includes the Vychegda sites of Kuryador 1 & 2, Pezmog 1, Kuzvomyn, Ulianovo, Chertas 1 and Ozyag, plus the Pechora camps of Martushevskaia 4, Adak 1 & 2 and Zybunnur 2. The second group, dating 6,000-5,000 years B. C. , includes the Pechora basin sites of Topyd-Nur 5 & 7, Petrushinskaya, Cherepanka-dee, Adak 3, Pizhma 2, and presumably the Vychegda sites of Chertas 2, Nidz 2, Pojeg and Jagkodj 3. The material of Turun-Nur 1 has attributes of both groups. In Vereshchagina's opinion, the Mesolithic complexes at Sindor Lake lean more to sites of the first group. Distinctions in the techno-typological parameters between sites of the two groups include the unequal use of various types of preforms, different frequencies of blades and finished tools, the role of secondary manufacture, and different toolkits. Vereshchagina assumes a gradual development of the flint industry. This opinion is supported by the presence of sites occupying an intermediate position between the groups (VERESHCHAGINA, 1989).

It is suggested that both interpretations of regional Mesolithic material (Kanivets, Loginova and Vereshchagina, and Burov and Kosinskaya), have merit and the right to be presented.

They both contribute to developmental representations of this Age. Whether or not researchers allocate cultural types to regional Mesolithic, the basic obstacle to resolving problems in both their works is the absence of reliable, independent dating. Until recently, we settled only on a series of radiocarbon dates and palynological data on the Vis 1 peatbog. All other dates were based on analogies to materials of neighboring regions.

In light of the aforementioned problem, Volokitin's research on the upper Vychegda, the middle Pechora and Izhma are very important. They overcome partly the lack of dating and environmental data on the Mesolithic regional population, and also assign material to cultural and chronological attributes.

A 1984 survey lead by Loginova on the upper Vychegda found the Mesolithic site of Parch 1. Parch 1 excavation begun by Volokitin in 1985 (VOLOKITIN, 1986) was extended to 1991 and renewed in 1996. In 1986, Parch 2 & 3 were found in immediate proximity, and are distinguishable from each other and Parch 1 by deposits connected their cultural remains. Excavation of Parch 3 was in 1986-1988 (VOLOKITIN, 1988); that of Parch 2 in 1986-1989.

On the middle Pechora in 1984-1985, A. M. Murygin and Volokitin found the remains of a Mesolithic structure while excavating the Medieval site of Topyd-Nur 7 (VOLOKITIN, 1987). The Mesolithic materials were typologically distinct from discoveries at the Medieval Topyd-Nur 4, excavated in 1984 by Murygin.

On the Izhma River in 1986-1987, T. V. Istomina found the sites of Ust'Ukhta 1, Diyur 4, Moroshkoi 2 and Vylys-Tom location 6 and discovered an intact cultural layer at Lek-Lesa 1 opened earlier by Luzgin. On Izhma tributaries were the Mesolithic sites of Zolotoy-Kamen (Pizhma tributary, by Yu. V. Beigun) and Ust'Ayuva (Ayuva tributary) and Gyrdel (Ukta tributary, by A. Bagin). Excavations at Lek-Lesa 1 and the Ust'Ukhta 1 were done by Volokitin in 1988-1989 (VOLOKITIN, 1992).

Research at Parch 1, 2 & 3 on the upper Vychegda is especially important. The first excavation years yielded materials

strongly differing in diversity of form and techno-typological traits from Mesolithic collections found earlier. Moreover, these sites on floodland terraces, gave valuable information using natural-scientific methods. They allow us to denote a special Mesolithic industry which, in it's turn, enables us to assume a special archaeological culture. Besides flint inventories, the Pechora basin sites of Lek-Lesa 1, Ust'Ukhta 1 and Topyd-Nur 7à gave palaeogeographical data, including dating. It is now possible to say there were sites with culturally different flint toolkits here in the first half of the Boreal period. This difference can be defined as the basic for cultural assignment.

The allocation of various cultural traditions of the regional Mesolithic is confirmed by the analysis of the technical basis of their industries (VOLOKITIN, 1992). For these purposes, Kosinskaya's technique was used for statistically processing all significant Mesolithic regional collections. For comparison, some Mesolithic collections were also used from the adjacent Sub-Kama, Trans-Ural and Volga-Oka (VOLOKITIN & KOSINSKAYA, 1995). This is an important stage in culturally differentiating Mesolithic regional materials.

Thus, gradual data accumulation from purely archaeological and related sciences allow conclusions about the cultural (ethnocultural?) heterogeneity of the Mesolithic regional population.

3. TYPOLOGICAL CHARACTERISTICS OF THE MESOLITHIC SITES

Total sites related to the Mesolithic in the Komi Republic number 79 (Fig. 1). Many of them, however, represent only small collections from a destroyed surface or few findings excavated during a survey. Therefore, the problem of a regional Mesolithic is solved using well-investigated material from sites with large collections, numbering only 25. Excavated sites number 20, with common excavations of less than 2000 sq. m. The most significant excavations are at the Vis 1 peatbog (566 sq. m), Kuzvomyn (242 sq. m), Parch 1 (150), Ulianovo (246), Lyalskii Bor (104) and Evdino 2 location 4 (102). These sites are in the Vychegda basin. In the Pechora basin, the most excavated sites are Topyd-Nur 5 (67 sq. m), Topyd-Nur 7à (98), Lek-Lesa 1 (92) and Turun-Nur 1 (64). Thus, the Vychegda and Pechora Mesolithic sites are almost numerically equal, but the Vychegda investigations are incomparably better.

At the moment, only open-air Mesolithic sites are known, while cave sites are unknown. Geomorphologically, most sites are on pine-covered terraces. The exceptions are rare: peatbog, floodlands and camps on rocky ground.

Pine-forest Mesolithic sites are on the edge of first and second river terraces or their remnants. An exception is the middle Pechora site of Topyd-Nur 5 which is 125 m from the terrace edge (KANIVETS, 1973)[8]. Mesolithic camps, as well as later camps, are usually where the terrace approaches the river channel or oxbow. Only some sites like Kuryador 2 are separated from the river channel by floodland. Usually, swamp with widths in some cases to 1 km, intrude.

Pine-forest sites characteristically have cultural strata of insignificant depth: 5-40 cm below ground level, and usually at the bottom of a layer of whitish sand or at the top of the illuvial horizon. As organic matter is unpreserved, the cultural layer is uncertain. It is marked by neither color nor depositional peculiarities. Therefore, we have to deal with rather a "horizon of findings". However, this horizon gives an image of how the artifacts were dispersed in the past[9]. All of this complicates palaeogeographical interpretation and dating by natural-scientific methods. Excavated collections are almost entirely stone artifacts: overwhelmingly flint with insignificant quartzitic-sandstone, sandstone and shale. Fauna remains are almost entirely unpreserved, the exception being some sites in the pine-forest with small calcined bone fragments: Ust'Ukhta 1 (elk or American moose), Lek-Lesa (elk or American moose, beaver, bear), Topyd-Nur 7à and Chertas 2.

8 However, the analog of Topyd-Nur 7à on the edge of the same terrace, is 0.3 km from Topyd-Nur 5.

9 Its stratigraphy is sometimes upset by the powerful root system of pine, literally dislocating finds up to several meters. There is also artifact disorder caused by vertical change in root drainage. Roots are visible while cleaning excavated areas, appearing in the plan and wall sections of sites. At the precise contact between podzol and illuvial horizon is a line of different size and configuration scallops.

Such findings occur at the top part of illuvial horizons[10]. Lek-Lesa has pieces of birchbark. Dwelling remains are in sites Ulianovo (?), Chertas 2, Lyalskii Bor, Chasador, Evdino 2 (Fig. 2), Ydzhyd-ty, Topyd-Nur 5 (Fig. 3), Topyd-Nur 7à (Fig. 4) and Lek-Lesa (Fig. 5). Most dwellings[11] may be identified as chums or tents, but shallow pits were at Chertas 2 and Chasador. After testing similar remains at Topyd-Nur 7à, Kanivets' Topyd-Nur 5 dwelling which he thought was a shallow pit with stone roof or circle, is considered to be a paved surface dwelling. Hearths are at Turun-Nur 1 (cobbles with fire vestiges and oxidized-earth which Luzgin does not envision as a dwelling), Ulianovo (center of proposed dwelling), Yenty 3à (outside dwelling) and Evdino 2 (two hearths along inside walls). The presence of hearths in the central part of the dwelling is proposed for Lek-Lesa and Topyd-Nur 5 & 7à. Turun-Nur 1 has an ochre stain, its purpose unclear, but it is small (44cm x 39cm).

A special place among Mesolithic sites is the site of Adak 2 on the Usa River near the mouth of the Adzva. It is on a narrow rocky ledge 32 m above the river. Friable deposits on the ledge at Adak 2 are in sandy loam lacking the timely cultural remains of a site. In it, Kanivets noted calcined bone, its presence, localization and quantity allowing him to assume a campfire, but clear outlines of its hearth were absent[12].

Specifically, the Vis 1 peatbog presents a unique collection of organic objects. The oxbow deposits contain artifacts of wood, grass, birchbark and other bark. They were obviously thrown out by the ancient people from their camp on the remains of the terrace near the oxbow lake. Plenty of Mesolithic artifacts were found at the dryland site, but these artifacts were unfortunately mixed with later material. Burov believes[13] the organic artifacts floating on this oxbow lake eventually sank and were preserved by organic bottom sediments and peat (BUROV, 1986, p. 9). It is a totally unique regional site, its discoveries representing personal Mesolithic activities such as art. Sculptural elements and designs in wood allowed Burov to attempt a reconstruction of the collective spiritual world of the people inhabiting the banks of oxbows in the Sindor Lake region (BUROV, 1986; BUROV, 1989; 1989a).

Among regional Mesolithic sites is the special geomorphological situation accorded Parch 1, 2 & 3. Their cultural remains are in deposits of Vychegda river floodland terrace (various origins for each site) sealed by very thick loam and sandy-loam. This location allows pollen analyses of the deposits. Attempts were made at radiocarbon dating of charcoal in cultural horizons and wood remains in overlapping deposits. Parch 2 has the remains of a surface dwelling, its centre having hearths with mottled oxidized-earth, charcoal filling and burnt bone. The faunal remains, unfortunately, were poorly preserved and few: Parch 3 - beaver; Parch 2 dwelling 1 - beaver; Parch 2 dwelling 2 - elk or American moose and beaver; and Parch 2 dwelling 3 - beaver, wolf, dog, marten, European grouse, duck, crow, pike, perch and carp.

All regional Mesolithic sites are either places where people live or they connect to these places, like at the Vis 1 peatbog. There is only one stone-processing workshop: Kuryador 2 (LOGINOVA, 1985). Burials are absent[14].

Among the sites and settlements, there is the special case of Adak 2. Kanivets explained the special position of Adak on a rocky ledge by "its decisive role relating to safety. . . . Mesolithic settling of the Pechora and Usa valleys grew on a background of intertribal or interfamilial struggle for new territories" (KANIVETS, 1973). One should also note that P. Yu. Pavlov in 1995 excavated

10 As faunal remains at Topyd-Nur 7à and Chertas 2 have been seemly lost, their identification has not been done.

11 Classes of dwellings follow a normal scheme (see Borzunov, Kiryushin & Matyushchenko, 1993, Ñ.7): surface depth to 30 cm, shallow pit dwellings at 30-150 cm and pitdwellings at more than 150 cm.

12 As bone from Adak 2 was also lost, their identification was not made.

13 Remaining questions are the ratio of Mesolithic terrace-remnant material with peatbog samples, which Burov has not completed. Unclear also is the number of flint artifacts from the peatbog and why they are there.

14 Noteworthy in Kebanel (Vychegda) are recorded red lenses in pits, but on the modern surface hollows are absent. One pit was excavated : length 1.3 m and depth 0.6 m, with one bladelet and two fragments of blades. Pankrushev and Kanivets during excavation discussed the question of ochre lenses, and did not exclude the possibility of burials (pers. comm., Loginova, 1970). They reminded Pankrushev of Mesolithic burials in Karelia. Unfortunately in 1975, the site was completel y destroyed (Loginova, 1985).

a similar Pymva-shor 3 Mesolithic site on the Adzva headwaters in Arkhangelsk province. This allows us to suppose a special typesite peculiar to the strategy of the peopling of the north Ural by the Mesolithic population. Not superfluous in this connection is the fortified Neolithic settlment of Amnya 1 on the middle Kazym River in the adjacent Traps-Ural Tyumen province (MOROZOV & STEFANOV, 1989). At the same time, Kanivets' conclusion about safe sites remains insufficient and premature.

A typological analysis of completely investigated regional Mesolithic sites was done in order to reflect their economic purpose. The geomorphology of the sites and the conservation of cultural remains mentioned above allowed only attributes of seasonality and stone-preparation to be used for this analysis. There also was an attempt to estimate a site's ancient population according to cultural horizon size, and settlement duration according to collection size. Seasonality was construed from topographic analysis and traits in the dwellings themselves. Unfortunately, natural-scientific methods were limited to assessing seasonality from faunal remains such as age-grouped bone and the condition of teeth and antler[15]. The "particular situations" which helped to determine the seasonality of some Trans-Ural sites are not found in the region (VARANKIN & SERIKOV, 1989). The intensity of stone-preparation and its completeness were estimated using a technique based on the statistical analysis of stone artifacts (KOSINSKAYA & VOLOKITIN, 1993)[16].

Site types identified are as following

1. Small short-term seasonal sites with and without dwellings. Summer occupation based on limited stone-preparation (Ust' Ukhta and Lek-Lesa dwelling 2).

2. Small short-term sites of small groups with simple dwellings without hearths. Summer and nonspecialized (Ydzhid-ty and Lyalskii Bor).

2à. Like 2 but dwellings have hearths. Seasonality uncertain (Parch 2 dwellings 1 & 2).

3. Small seasonal but longer term settlement of small groups, unspecialized. Seasonality and the presence of dwellings are unclear (Parch 3).

4. Small seasonal camp-workshops for flint knapping. Summer use, but without dwellings (Parch 1 and Yarega).

5. Small seasonal, longer-term settlements with "home" workshops for the making of semi-finished items such as tool preforms. Winter and summer (?), with heated dwellings (Evdino 2 location 4 and Lek-Lesa dwelling 1).

6. Large longer-term seasonal sites used in summer, but without dwellings (Vet'yu 2).

Significant variability in the above sites is probably proof of the complex organization of the annual economic cycle of the regional Mesolithic population.

4. CHARACTERISTICS OF THE REGIONAL MESOLITHIC, CULTURAL CORRELATION AND CHRONOLOGY

The regional Mesolithic has two traditions, Sub-Ural and Western, relating to human migrations from the Baltic and near-Onega regions.

Sub-Ural tradition includes camps of the Middle Vychegda culture (Kuryador, Ulianovo, Pezmog 1; etc.), Evdino group sites on the Vim River (Evdino 2 location 4, Lyalskii Bor locations 2 & 3) and the Izhma sites of Lek-Lesa 1 and Ust'Ukhta 1.

The Western tradition includes camps of the Parch culture and the unique Vis 1 peatbog. The Parch culture has two phases: Early or pure Parch phase (Parch 1, 2 & 3, Pizhma 2, Adzva 1), and Late or Topyd-Nur phase(Topyd-Nur 5 & 7à and Chertas 2).

Intermediate sites of the two traditions with borrowed traits are Vet'yu

15 An exception is material from dwelling 3 of Parch 2 where distinct seasonal habitation based on faunal remains suggests summer and autumn.

16 The typology of Mesolithic sites was discussed by Kosinskaya in a separate paper (Kosinskaya, 1993). In her opinion, Topyd-Nur 5 is minor winter seasonal and Turun-Nur 1 is minor summer seasonal and their type of stone-preparation are undefined (the same paper).

type (Vet'yu 2, Ostrov, Kozhmudor, Ydzhidty and Evdino 2 location 1) on the lower and middle Vychegda, and Yenty 3à (Vychegda) and Turun-Nur 1 (Izhma).

4. 1. Sub-Ural tradition

Excavated collections from sites of the Sub-Ural tradition are alike in knapping technology. There are conical (Figs. 7, 10, 13, 14; 8, 1) and pencil-like cores in the collections (Figs. 7, 8, 9). Blades dominate with 65-80% of the total number of blades and flakes. Trend of narrow blades increase. As a rule microblades comprise more than 10% of the overall number of blades; i. e. , industries are characterized by high microlithization. There is a prevalence of long blade sections. Toolkits do not represent a significant diversity of forms; retouched blades, and their fragments prevail in the collections. The ratio of tools with ascertainable morphology in collections is small and there are no arrowheads[17]. In this connection, it is thought that hafted tools, including projective points, prevail in industries of this tradition. Flake tools are end scrapers on the whole or so-called retouched flakes.

4. 1. 1. Middle Vychegda culture

Middle Vychegda culture sites investigated by Burov are Kuryador, Pezmog 1 & Ulianovo (BUROV, 1986). Kuzvomyn in the Vychegda headwaters was excluded by him because of its many scrapers, absence of quartzite tools and some other reasons. However, its differences seem insignificant and this site should be part of the Middle Vychegda culture.

Blades comprise more than 80% of the total number of blades and flakes in collections.

Toolkits from sites are very limited. Besides end scrapers normally on regular blades and only few "carinate" end scrapers (Fig. 6, 5, 9; 7, 11, 12; 8, 14, 23), angle burins on broken blades are necessary presented(Fig. 8, 16, 17, 19). There are very large burins, for example, Kuzvomyn ones (Fig. 6, 17, 18). Quantitatively, burins prevail over end scrapers, more at certain times than others. Characteristic toolkits of the Middle-Vychegda culture are so-called little cheasel which are a special type of microscraper. These little cheasel have a characteristic form: their preforms are thin curved bladelets with narrow, straight or oblique ends (Figs. 6, 1-3; 8, 11, 24). Some are on ridged blades. In Vychegda sites, they comprise 0. 7-2% of the number of flint artifacts (BUROV, 1965, 1967). Blades and their fragments with retouched edges comprise 10-20% of the general number of blades, and represent the main toolkit (Figs. 6, 6-8, 11-15; 8, 2-9, 12, 15, 21, 22). It is supposed that unretouched blades were used in hafted tools as well. It can be proved by the fact, that some of these blades are notched. Unique tools include points of unstandardized form, as there may only be one or two in a collection. At Pezmog 1, a high trapeze (Fig. 8, 10) is recorded. At Kuryador and Ulianovo, quartzito-sandstone cutting tools were found (Fig. 9, 7-10) and the examples from Ulianovo collection are strangled axes[18].

4. 1. 2. Campsites of Evdino 2 type

The Vim sites of Evdino 2 location 4 and Lyalskii Bor 2 & 3 have the Middle Vychegda knapping technology (KOSINSKAYA, 1988; VOLOKITIN & KOSINSKAYA, 1995). Among the tools are burins on broken blades, and end scrapers on blades. Quantitatively, burins outnumber scrapers. The little cheasel (microscrapers) are not as numerous as in Middle Vychegda sites, but there are significant numbers of retouched bladelets. Blade segments with retouched or fragmentary corners of blade segments are rare. At Evdino 2 location 4 are two points on gently dorsally-retouched blades which Kosinskaya refers to as "untanged arrowheads", but one with use wear is a drill. On the same site are flint "macrotools" such as chisels (2 examples).

4. 1. 3. Ust'Ukhta 1 site

On the Izhma River, Ust'Ukhta 1 has a small accumulation of artifacts in a 7 sq. m

17 The presence of "Swiderian-like" arrowheads is unproven (Volokitin, 1989).

18 Burov thinks, quartzite cutting tools or quartzito-sandstone flakes as vestiges of their manufacture from can be considered as culturally-indicative. This explanation demands comment, as quartzito-sandstone occurs in sites of the other tradition; e.g.s, Parch 1, 2 & 3. That is, the presence of quartzite flakes is not a cultural trait. On the other hand the form and fashion of axes, including ones of quartzito-sandstone, can be considered as culture indicative.

area (VOLOKITIN, 1992; KOSINSKAYA & VOLOKITIN, 1993). Its collection of 300 objects (including 30 quartzito-sandstone flakes) is dominated by 200 bladelets. Cores are unrecorded, but there is resharpening platform debitage. The industry is highly microlithized, and the trend to narrow blades can be easly traced. Long segments of blades prevail. There are only blade tools . Examples of bladelets with edge retouch and ones with use traces on their edges are presented. Notched bladelets and bladelets with burin spalls are of equal number. Among blades with retouched ends are microscrapers (2) and a fragment of oblique retouched point.

4. 1. 4. The Lek-Lesa 1 site

Dwellings 1 and 2 at Lek-Lesa 1 on the Izhma (VOLOKITIN, 1992) have different inventories, in case of their composition of toolkits and statistical ratios in knapping technique. The reason most probably is that one dwelling was not excavated completely[19].

Few conical cores were recorded. Blades absolute prevail in the collections. The industry is known by high microlithization, and increased (in the case of dwelling 2 sharply increased) trend to narrow blades. Most of blade segments are long. Tools are made only from blades. There are only few retouched. End scrapers are made on regular blades (Fig. 10, 1-6); a sides scraper on a flint slab is seen. Angle burins on broken blades are numerically equal to end scrapers. There are also microscrapers. Points are isolated: tapered blades, oblique retouched point and an awl on a very large blade (Fig. 10, 9). Notched tools are uncommon. Bladelets and their retouched fragments (10% of all blades) comprise about half the toolkit. Prominent in dwelling 1 is a series of macroblade tools, often ventrally retouched, like knives (Fig. 10, 7, 8, 10). They, as well as a large awl, were broken (and refitted after excavation, during collection study). Dwelling 1 also has series of narrow blades and microblades with retouched truncation, including those with double. Both ends of two complete specimens are straight trancated, but in two others, one end is straight, the second obliquely trancated.

19 The collection from dwelling 1 includes more than 1,500 artifacts; that of dwelling 2 (excavated partially), some 280 examples.

4. 2. The Western tradition

This tradition can be characterized by the presence of conical cores with complete absence of pencil-like ones, insignificant number of microblades (5% or under) compared to common blades, an equal ratio of narrow and middle-sized blades, and a rather high number of wide ones. Blade segments are common and often short. Generally, blade percentage in combined blades and flakes is 50%. The ratio of tools in collections is high (5 -15%). Toolkits are diverse morphologically, and the types of tools are serial . More common then in Sub-Ural tradition sites are flake tools, including not only scrapers but many other forms.

4. 2. 1. Parch group (culture)

4. 2. 1. 1. Parch chronological group.

This characteristic of the group's material is given according to Parch 1, 2 & 3 collections. *And it* is natural. The fact is that few Mesolithic materials from the many-layered but unstratified site of Pizhma 2 are typologically identified, and the Adzva 1 collection of 60 examples presented by the surface material.

Preserved cores are few. The knapping front of cores is mostly open-ended with one crest preserved (Fig. 11, 5). There is only one conical microcore. Many of the cores are in the final stage of knapping (Fig. 11, 3, 4), with some turned into spokeshaves and end scrapers (Fig. 14, 10). All cores as far as can be judged in preforms and cores in final stages and stages of removal of blade- blanks as well as in technological debitage and blocks of refitting by them are conical cores. Despite this, double-platformed cores are frequent.

The tools (backed knives, large burins on retouched trancation, spokeshaves, etc. ,) on ridged blades are recorded.

Specific feature of the industry of these sites is the technology of cutting of side scraperlike tools and scrapers. This technology gives tools which are like large burins on retouched trancation . These tools obviously can be assumed as a so-called connected group, relevant to the large burins. Flakes in which this operation is resulted usually retain part of an edge of an original

tool on their ends. They are thick, long and frequently used for the manufacture of tools (Fig. 16, 6, 10).

Blade tools more than twice exceed flake tools, while total flakes (together with flake tools) are 1. 5 times as common as blades.

Toolkits are divided in a variety of types and these types are batch-produced. There are arrowheads, inserts or sideblades, end scrapers, burins and pieces with burin spall, notched and notched-denticulate tools, perforators (points, borers, drills, reamers and barbed tools), tools with truncated ends, scaled pieces, retouchers and sidescrapers. In this category, only arrowheads and inserts are made on blades only; other tools are on blades and flakes. Blade fragments and retouched flakes are numerous. As a rule, these are parts of tools intentionally resharpened or broken during use or manufacture. Retouched blade segments as inserts of compound tools are separately considered. They frequently have use wear and new processing via small burin blows, and also retouched or "crushed" truncated corners. Sometimes, a few inserts are made from a blade that has gentle large-facetted retouch and then split (Fig. 14, 5). Inserts on narrow backed blades (Fig. 14, 3, 4) are typical.

Among them are fragments with truncated ends. They are, most probably, broken rectangular inserts. At Parch 3, a series of fragments of such rectangular inserts are on blades taken from one core (Fig. 17, 5-8). In the insert category are also microblades with one notched-serrated edge and one finely retouched edge.

Arrowheads on blades occur in each of Parch 1, 2 & 3. There are a dozen, including whole examples and fragments (Fig. 12, 1-4; 16, 12; 17, 1-4) and vary greatly in size. Mean length is 3. 7 cm; the longest is 7. 7 cm. Preforms are rather massive bladelets and blades. Tangs have abrupt ventral retouch. A common feature of arrowheads is an asymmetric tip. Peculiarities in processing include abrupt edge retouch (Fig. 12, 1, 2) and continuous gentle retouch on the tip (Fig. 12, 3; 17, 1). This is probably evident in various thicknesses of bladelet ends where they are pressed, and in blade curvature itself. Abrupt retouch gives generally right form to the tool. It is necessary to note that points with the first of tip variant are in Adzva 1 (Fig. 16, 14), and the second variant in Pizhma 2 (Fig. 16, 13)[20].

Regarding perforators, borers (esp. on narrow blades Fig. 12, 5) can be arranged sequentially. There are some with strong single and double shoulders. A large blank with a long tip occurs (Fig. 12, 7). Less frequent are tapered (Fig. 12, 8, 16) usually ventrally processed blades, borers (Fig. 12, 13), reamers used on bone (Fig. 12, 9). Flakes are also retouched into oblique points (Fig. 11, 1) and barbed tools (Fig. 12, 12; 15, 4).

Many blades have retouch or truncated ends (Fig. 16, 2-4, 9; 17, 10-13). Truncated ends are straight or retouched simply along a gentle convex edge. Some tools of this group are microscrapers on massive narrow blades (Fig. 14, 2; 17, 9). One is very large (Fig. 14, 13). However, they differ from the so-called dolotses (little cheasel) or huge microscrapers of the Middle Vychegda culture, and obviously have other functions. There are flakes with truncated or retouched ends; some of them, microscrapers (Fig. 14, 12; 17, 15, 16).

Barely more than half of end scrapers are on blades (Fig. 14, 6, 7, 9, 11); others are on flakes, ridged flakes and core reduction fragments. Most scrapers are of so "thick form" they can be referred to as core-like scrapers (Fig. 14, 15). Almost all have a convex edge, but some have straight (Fig. 14, 1) or serrated edges. Some end scrapers made on flakes are splited. Parch 2 dwelling 2 has accumulated large end scrapers arranged in 1 sq. m. Obviously, this is a bone proceeding station. All six tools here were applied to bone.

Burins and scrapers are equal in number[21]. Burins made on blades are five

20 About arrowheads of other sites appearing in the literature of the regional Mesolithic, see Volokitin, 1989. We note that among numerous artifacts from the multy level dry- land site of Vis 1 are arrowheads like those from Parch. Such arrowhead is known in Veslyansk settlements.

21 The ratio of scrapers to burins in collections (after D.Ya.Telegin) was of great importance to Burov (Burov, 1986) for culturally differentiating collections, but it requires special comments. The ratios of certain types of tools, plus the concept of artifact faciality are badly "correlates with each other". Six scrapers and only one burin from the place of bone processing in dwelling 2 of Parch 2

times more frequent than those on flakes. Angle burins on broken blades (Fig. 13, 1, 2, 5, 8, 9) prevail, and include single, double and triple spurs, plus those on short blade segments (Fig. 13, 4; 16, 5; 17, 14). There are burins on retouched trancation on blades (Fig. 13, 3, 7), flakes (Fig. 13, 15) and multi-facetted asymmetric dihedral burins (Fig. 13, 10, 16). There are original tools on wide short blade segments, one edge of which has opposed retouch on a barb, the other with a series (up to 8) of burin spalls (Fig. 13, 6).

There are numerous notched-denticulate and notched tools (Fig. 12, 10, 11, 15) including not only spokeshaves but also backed tools with irregular retouch for sawing bone (Fig. 12, 14).

Scaled piece tools are not serial. They are made on pieces of flint as well as on blades and flakes.

Most of side scrapers occur at Parch 1. One of them is made from a piece of flint. It has a converging cutting edge. The other, massive, long, and having one or two lateral cutting edges are made from large flakes, sometimes primary ones (Fig. 11, 6, 7; 15, 5).

Besides flint, there are objects and tools of other stone. A very large chopping tool, cobble piece with chipped edge was at Parch 1, and a chipped pebble from dwelling 2 in Parch 2. Parch 3 has ovoid pebble with tapered ends having traces of beats (like a hammerstone usually has). It has a pocked-out round shallow hole near it's wider end (Fig. 15, 3). Tool use marks made by a bow drill are absent, so it's suggested purpose (as spindle supports) is unclear. Inside Parch 2 dwelling 2 are fragments and primary flakes of quartzito-sandstone, plus pebble fragments and a slate flake.

Parch 3 has sandstone artifacts and ground tool fragments with narrow ends. Tool sections are ovoid with smashed ends and percussion signs on each side (Fig. 15, 1). At Parch 1, an ovoid sandstone artifact resembles a pebble with first, third and second dihedral ends shaped by some form of work (grinding - ?).

The Parch 1 collection has a of peppery-textured sandstone wand. It has ovoid section, ground surface and cross circular cuts on its ends and centre. One end is notched and obviously suspended (Fig. 15, 2).

4. 2. 1. 2. Topyd-Nur's chronological group

The Middle Pechora sites of Topyd-Nur 5 and 7à are separated by 0. 3 km. They have the remains of similar in their characteristic objects (dwellings) and similar toolkits. Thus, they are monocultural with similar chronology (KANIVETS, 1973; VOLOKITIN, 1987).

Alike the Parch type sites, they have few microblades but many large blades. Examples are splitting of side scraper-like artifacts (Fig. 21, 3), similar scrapers, and tools that are split or have splited edge (Fig. 19, 6-9; 21, 2, 11, 12). All cores are in the finishing stage (Fig. 18, 1-4; 21, 6, 7, 9). However, one can assume all are conical. Quite often, they are resharpened into tools. Alike in Parch 1, 2 & 3 they are usually spokeshaves (Fig. 21, 6). Among the tools are Parch type point-awls (Fig. 18, 5) and a series of bladelets and flakes with retouched, truncated ends (Fig. 19, 2-4; 22, 9-11). There are also burins (Fig. 22, 1-7) which are less numerous and diverse then in Parch 1, 2, 3. They occur in Topyd-Nur 7à, with half on short blade segments. There are backed blades-inserts (Fig. 19, 1). Characteristic of Parch sites and tools is a significant number of flake tools. The truth is that at Topyd-Nur 5 & 7à, the basic flake tool is the scraper (Fig. 18, 7-9, 11), some of which have notched or notched- denticulate edges (Fig. 21, 11, 12). A distinctive site feature is the presence of ground siliceous shale tools. At Topyd-Nur 7à, their presence is confirmed in ground debitage, while at Topyd-Nur 5, a ground adze and axe occur (Fig. 20,7). which was flaked later.

Arrowheads are absent, presumably because these dwellings are winter occupation and had very specific toolkits . Probably, the later Topyd-Nur 5 & 7à sites signify a loss of tradition arrowheads manufacture.

Kanivets assumed, Topyd-Nur 6 170 m away is continuation of Topyd-Nur 5. And one may include Topyd-Nur 4 having the few

will essentially change the ratio of tools of certain categories throughout the site.

Mesolithic artifacts found among the Medieval complex[22].

Chertas 2 with its probable deep dwelling has only two microblades, plus conical and residual cores (Fig. 23, 3). More than half of tools are end scrapers (Fig. 23, 7, 8, 10-12, 14), there are no burins with many flake tools, and a (Fig. 23, 13) ground axe of siliceous shale (LOGINOVA, 1985).

4. 2. 2. Vis 1 peatbog

For the Vis 1 peatbog, Burov depicts[23] 1018 flint objects[24]. A significant number of tools are made on flake. These are spokeshaves, and also the most part of (Fig. 26, 5, 8, 11, 14) end scrapers (29 of 43 examples). Burins (total 9) are made from an equal number of flakes (Fig. 26, 10) and blades. There is also a burin on retouched truncation. Points and a microscraper are on curved blades (Fig. 26, 3) . There are blade inserts (Fig. 26, 7). The peatbog had more than 10 ground soft stone axes with small parallel edges as well as divergent edges reaching their bits (Fig. 9, 2-4, 6). Burov believes ice-chisels which are found in the dry-valley remains of Vis 1 and Simva 3 (Fig. 9, 1) and ornamented on each side by zigzags and ridge notchings like the decorated wood artifacts of the peatbog are included into the Mesolithic of Vis type (BUROV, 1973).

In the dry-valley site of Vis 1, Swiderian like tanged arrowheads occur including those like at Parch 1, 2 & 3, which the author presumably connects to the peatbog artifacts; i. e. of "Vis cultural type ".

More than 200 wood, birchbark and grass artifacts relate to hunting and fishing, transport, household utensils, building remains and preforms. Hunting weapon include bows for hunting of Hol'megor and Vis type (Fig. 24, 8), Vis type large crossbows (Fig. 24 ,2), conical (flat tapering) arrowheads, wood arrows with tapered tips and grooves or fissures for blade-inserts, thick-based wooden lances with flame-shaped foreshafts, and diverse forms of clubs and projectiles for hunting swimming game. Fishing tools include a piece of net made from sedge (Fig. 25, 11), a net float of pine bark, disk with shaft aperture - a tip of tool used for driving fish, net hoops and fishtrap fragments. Transport items include a debarked sled runner of Heinola*(Finland)* and Vis type (Fig. 24, 3,4); Verete type ski with elk{American moose} head image (Fig. 25, 3); Vis type ski (Fig. 25, 4) and a paddle with pointed blade (Fig. 25, 1) to be used as a shaft for poling in shallow water. Wood-working tools include a spokeshave curved with grooves for blade-inserts (Fig. 25, 9) and an axe-handle with a massive plug. there are little bows like ones Vis hunting type for drilling holes and fire hearths. Household utensils include a birchbark box (Fig. 25, 12) made with wood dowels (BUROV, 1973, Abb. 4,5). Some of bows, ski, sledlike runners and the tool handle are ornamented with zigzag, straight line, grid, cross and notched designs.

5. INTERMEDIATE MESOLITHIC REGIONAL SITES ENGAGED IN BORROWING FROM THE TWO SUB-URAL AND WESTERN TRADITIONS

5. 1. Site of Vet'yu 2 type (Lower Vychegda)

This group includes Vet'yu 2, Ostrov, Kozhmudor, Ydzhid-ty and Evdino 2 location 1 (KOSINSKAYA, 1988; 1988)[25].

Unlike the Parch group sites these have a technique of flint knapping showing an increased trend to microblades, and both conical and prismatic cores. At the same time, there are many short blade segments (they dominate at Vet'yu 2) and tools made on them. Arrowheads are unrecorded and there are no backed blades, blades with truncated or retouched ends are less numerous than at Parch 1, 2, 3 and Topyd-Nur 5 & 7à. However, toolkits contain side scrapers, reduction (by retouching and breaking) of the corners of blade segments is very common. There are points with awl-like shoulders and burins on

22 Kanivets, using Topyd-Nur 5 artifacts, compared Cherepanka-dee material, but its artifacts are few and form no basis for interpretation.

23 Other items of information are given under Publications; in particular, Burov, 1967; Burov, 1973; Burov, 1986.

24 If Burov has convincingly proved that wooden objects were thrown from the terrace by ancients from their place of residence to the lake. Where they sinked and became embedded in lake marsh deposits, his clarity is obscure how the stone artifacts got in the peatbog. Burov (1967) mentioned that large blades prevail because it is difficult to find microblades in the peatbog.

25 The expression "sites of Vet'yu type" was entered into the scientific nomenclature by Kosinskaya.

short blade segments. At Vet'yu 2, flake end scrapers prevail. Thus, knapping techniques and tool traits of the Vet'yu 2 combine similarities to the Parch group and also distinguishable features which are, however, comparable to the traits of Sub-Ural tradition.

5. 2. Yenty 3à

A modest (134 artifacts) collection from this site is from a small surface dwelling, with no cores, but some flakes and splinters. The toolkit includes two angle burins on broken blades (Fig. 27, 14, 15) and blades with retouched ends (Fig. 27, 10, 11, 13, 17-19) or edges (Fig. 27, 4, 5, 9, 12). So-called dolotsa - little chisel are absent. On the whole, the site has an integrated blade industry with equal ratios of short and long blade segments (VOLOKITIN & KOSINSKAYA, 1995).

5. 3. Turun-Nur 1

While small, it has a representative collection of a conical core (Fig. 27, 20), preforms and debitage from resharpening of conical cores (Fig. 27, 28). Blade percentage is high. The blade industry is integrated, although the trend to narrow blades is somewhat higher than to medium, with an equal ratio of short and long blade segments (VOLOKITIN & KOSINSKAYA, 1995). In material, splitting of artifact are observed. There is corner retouching of blades. End scrapers prevail and are made on flakes (Fig. 27, 41, 42, 44, 51), but mostly blades (Fig. 27, 21, 34, 35, 43). Burins are 5 times less frequent. All examples are angle on broken blades (Fig. 27, 22, 23). Among them are burins on short blade segments (Fig. 27, 3). There are retouched blades, bladelets and their fragments, including inserts (Fig. 27, 24, 25, 31, 33, 37, 40, 45). There is a borer type tool on a narrow bladelet (Fig. 27, 32). Luzgin has written about tanged arrowheads "of a Swiderian type"(LUZGIN, 1972), which Burov calls points "of Ahrensburgian tradition" (BUROV, 1986), but which are actually points on a tapered blade and drill (Fig. 27, 26, 27). In the collection, a cutting tool - adze with flaked surface (Fig. 27, 50), is very marked.

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Cultural relations of the two Mesolithic traditions are distinct now. Parch 1, 2 & 3 are techno-typologically close to Butovo culture sites of the Volga-Oka interfleuve, especially those in Meshchera. They have identical trends in blade ratios (an approximately equal middle to narrow blades trends ratio), a prevalence of conical cores, morphologically variable toolkits and plenty of flake tools. There are tanged Swiderian-like arrowheads on blades, backed bladelets, rectangular- inserts, many truncated tools with retouched ends; there are dihedral burins and burins on retouched trancation as well as burins made on short blade segments and examples of large borers with extended bits (SOROKIN, 1981; 1989; 1990). Sorokin believes the Butovo culture formed on the base of Ressetino culture under an influence of the Swiderian tradition approached through sites of Smyachki XIV type (Desninskoe Poles'e). Noteworthy is that part of the "Ressetino" population migrated into Baltics and formed the beginning of Early Kunda culture (SOROKIN, 1990). However, this point of view seems to have been reconsidered (SOROKIN, 1994). Sorokin considers the Pulli industry (Early stage of Kunda culture) as a development of the Ressetino tradition. The Butovo culture is regarded as a descendant of the Pulli industry. Thus, Ressetino, Early Kunda and Butovo cultures are "a uniform chronological and genetic chain". In this connection it would be justified to consider Parch 1, 2 & 3 sites as descendants of Early Kunda culture, and the Butovo culture of the Volga-Oka interfleuve and Parch type sites of the northern Ural as the closing points of Sorokin's chronology. One must note that the exeted chronology of the Butovo culture in the Pre-Boreal and Boreal periods coincides with Parch 1, 2 & 3 dating of not later than the first half of the Boreal (VOLOKITIN & KONOVALENKO, 1988; VOLOKITIN & KOSINSKAYA, 1989).

The problem of interpreting Vis 1 peatbog material should be considered within the context of contact of this part of regional Mesolithic industries with Early Kunda culture. Burov believes the origin of the Vis Mesolithic is connected to the eastern Baltic and Near-Onega. Originally, he connected the Vis 1 peatbog material directly to Nizhnee-Verete in Near-Onega (BUROV, 1973). S. Kozlovskski believes the Vis 1 peatbog and Nizhnee-Verete are Kunda culture (KOZLOWSKI, 1973). Oshibkina also

considers Verete materials as Kunda tradition (OSHIBKINA, 1995). However, she asserts that as Vis 1 peatbog material has little in common with Verete, they are different cultures. In her opinion, the Vis Mesolithic is close to the Karelian Mesolithic and Suomusyarvi culture (OSHIBKINA, 1983, ñ. 275). After Oshibkina's publications, Burov is more cautious in his conclusions. He considers the Vis 1 peatbog as younger than Nizhnee Verete 1 and that Nizhnee Verete site corresponds to the middle stage of Vis 1 periodization. His most convincing statement is that Vis material is connected to the Near-Onega sites of Andozero and Muromskoe 7, in which Oshibkina traced features of Kunda culture (Verete culture, too), the Karelian Mesolithic and Suomusyarvi culture. The Vis 1 peatbog is reliably dated on spore-pollen and radiocarbon data to the final Boreal and initial Atlantic periods. These dates are coordinated with those (including radiocarbon) from the site of Muromskoe7.

The generally western direction of cultural relation of Parch 1, 2, 3 sites and the Vis 1 peatbog can be seen. In the region in the initial Boreal period, there were industries connected to Early Kunda culture, while in the final Boreal and initial Atlantic, they were connected to industries in which Kunda cultural traditions can be traced[26].

Rather than unite in one cultural type with Vis 1 peatbog material, Topyd-Nur 5 & 7à and Chertas 2 connect to Parch 1, 2 & 3 on techno-typological traits.

Kanivets' dating of Topyd-nur 5 to the 5th millenium BC arose from his idea that blade industry integration, use of flakes for tool preparation and groving of cutting tools were sings of Neolithic technique's emerging. (KANIVETS, 1973). It is no longer accepted that these traits determine site chronology within Mesolithic limits. Radiocarbon dates at Topyd-Nur 7à are not completely trustworthy. One date, which is pushed far up toward the recent, forces doubt on the second of 6450±60 (Le-2790), a date generally concurrent with that offered by Kanivets (VOLOKITIN, 1987). We believe that the younger industrial traits (compared with Parch 1, 2, 3) of these sites follow from a typological depletion of of toolkits that date to the end of the Boreal period.

Middle Vychegda culture sites and comparable regional sites coexist with the early industries of Parch 1, 2 & 3. The Middle Vychegda culture was dated by Burov to 8,000-7,000 B. C. using analogies to Mesolithic material in adjacent regions. Radiocarbon dating of the Barinka 2 site of the Kama-Vyatka interfleuve and the Romanovo-Il'murzino culture of the southern Urals was decisive. In addition to other data, a charcoal date at Lek-Lesa 1 suggests a boundary at 9,000-10,000 years ago and well fits in these limits. All researchers coordinate these materials with a Middle Sub-Ural Mesolithic: Kama sites of Nizhne-Adishchevo type and camps of the Kama-Vyatka interfleuve of Barinka 2 type. Obvious similarity allowed S. Kozlowsky (KOZLOWSKI, 1973) to include Kuzvomyn as a typical Kama culture site. This author also includes in the Kama culture, the Kama-Zhulanovo and Nizhne-Adishchevo sites of the Romanovo-Il'murzino culture, and the Tartarskii Azibey 4, and Russkoe Lugovoe 2 type of the lower Kama. It corresponds to the view pioneered by O. Bader of the Sub-Ural Mesolithic as the Kama Mesolithic culture, Kama Mesolithic, Kama mesolithic cultural unity. (BADER, 1966)[27]. Burov's last work expands this concept by including it in an overall Kama-Pechora macrolithic-microlithic Mesolithic, along with sites of the Volga-Oka interfleuve (with inadequate proof), and with Sukhona and Trans-Ural sites. Statistical analysis of blade widths has shown a high degree of affinity of the above-mentioned industries seen in type sites (except the Butovo culture) (VOLOKITIN & KOSINSKAYA, 1995). These circumstances allows most researchers to assume a common genetic basis for this Mesolithic tradition seen in sites of the final stage of both of the Upper and Final Palaeolithics of the Urals and Western Siberia, such as the Talitskogo site (in memory of archaeologist Talitskii), Medvezhya Caves, Chernoozer'e 2à, Gari and Gornaya Talitsa sites. It is difficult not to agree with this, but the question demands detailed study. For the Romanovo- Il'murzino

26 The presence of a few tanged point in the dry-land site of Vis 1 like those of Parch forces us to assume large affinities with Parch 1, 2, 3 and the Vis Mesolithic, but it is only an assumption based on the premise that these points are connected to Mesolithic peatbog material.

27 As problems connected to the periodization of the Kama Mesolithic, materials of Ogurdino and earlier sites , as well as their relation to the Ust' Kama culture are not examined here, see Volokitin, 1995.

culture, G. N. Matyushin (MATYUSHIN, 1976) offered the scheme that its early stage is Palaeolithic (bottom layer at Ilmurzino). Unfortunately, little material in this layer does not allow us to unconditionally accept his point of view

Absence of continuation of the regional sites of Sub-Ural tradition in the Neolithic as well as impossibility to detect isolate chronological stages forces us to assume that they existed in a pure state for a rather short time. A chance of finding earlier sites (Initial Boreal and Pre-Boreal periods) is not excluded, but they are unknown.

So the problem of dating the Vet'yu 2 type sites, Yenty 3à and Turun-Nur 1, is complex. Kosinskaya's dating of Vet'yu 2 type sites to 6,000 B. C. is based only on analogies to the Mesolithic of the Volga-Oka interfleuve, without considering the specified dating of the Butovo culture (KOSINSKAYA, 1988). Nevertheless, one may admit these sites reflect a mixture of local and Western Mesolithic traditions, and that they should be rather than early sites of both of them. Most probably, they date to the second half of the Boreal period.

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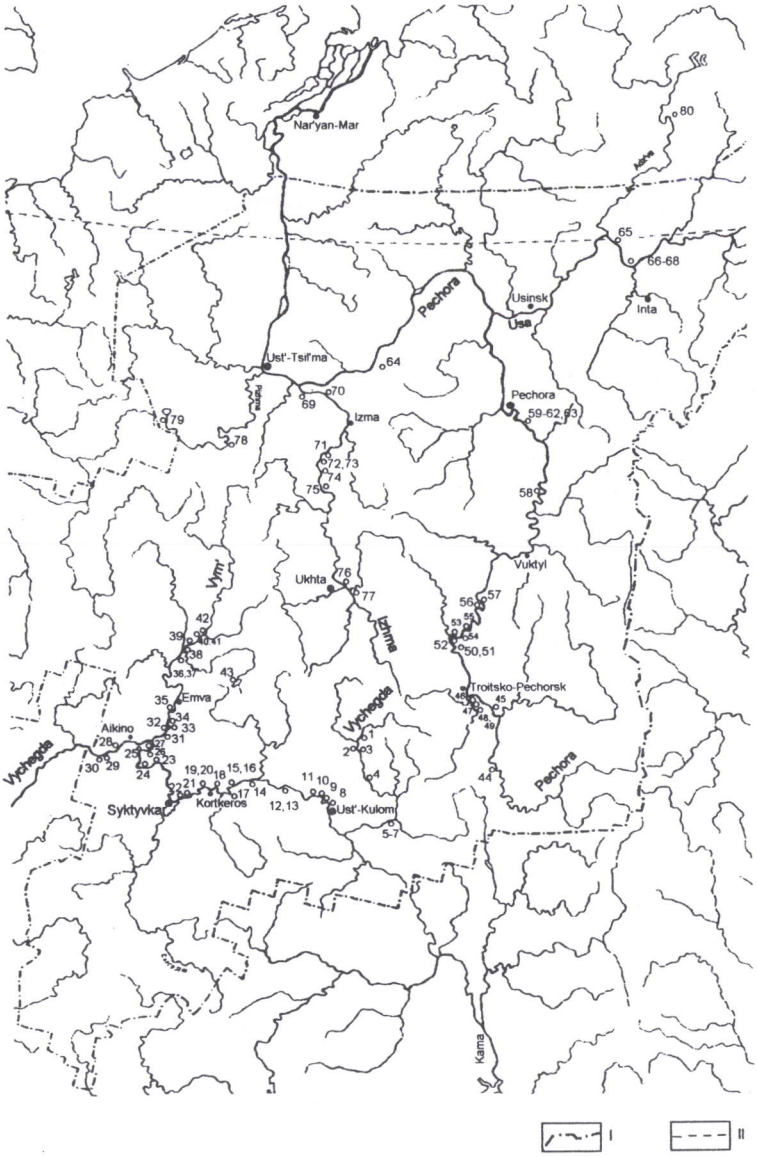

Fig. 1. Map showing the distribution of the mesolithic sites of Komi Republic.
Key: I - the boundary of Komi Republic, II - Polar circle.
Sites:

VYCHEGDA river

*1.*Kuz'vomyn, *2.*Vol'1, *3.*Yagkodzh 2, *4.*Pozheg, *5-7.* Parch 1,2,3, *8.*Keban'el', *9.*Kuzh'yu, *10.*Ul'yanovo, *11.*Oz'yag 4, *12-13.*Anyb 1, 2, *14.*Ugdym 2, *15-16.*Chertas 1, 2, *17.* Nidz' 2, *18.* Pezmog 1, *19-20.*Kur'yador 1, 2, *21.*En'ty 3, *22.*Ozel, *23.* yarega, *24.*Palevitsa 2, *25.*Kozhmudor, *26.*Kor'ev, *27.*Ydzhyd-ty, *28.*Arabach 2, *29.*Dzhib-Vad, *30.*Rev'yu 2.

VYM' river

*31.*Erozdino 1, *32.*Lyalskii Bor, *33.*Ostrov, *34.*Chasador, *35.*Polovniki, *36-37.*Vet'yu 1, 2, *38.* Veslyana 1 settlement, *39.*Evdino 2, locations1&4, *40-41.*Bozh'yudor 1,2, *42.*Ust'-Koin 2.

SINDOR lake

*43.*Vis 1 peatbog.

PECHORA river

*44.*Tyb'yu, *45.*Kas'yan-El', *46.*Zaton 1, *47.*Zarechenskaya, *48-49.* Martyushevskaya 3, 4, *50.*Petrushinskaya, *51.*Nizhne-Petrushinskaya, *52.*Kodach Di 1, *53.*Rogodinskaya, *54.*Mitrofan Dikost, *55.*Van pi, *56.*Deminskaya, *57.*Sherdinskaya, *58.*Cherepan'ka-di, *59-62.*Topyd-Nyur 4, 5, 6, 7, *63.*Zybun-Nyur 2, *64.*Vissa-yag.

USA river

*65.*Adz'va 1, *66-68.*Adak 1, 2, 3, *80.*Pymva-Shor(Adz'va river)

IZHMA river

*69.*Kel'chiyur 1, *70.*Diyur 4, *71.*Moroshkoi 2, *72,73.*Lek-Lesa 1,2, *74.*Turun-Nyur 1, *75.*Vylys'-Tom, location 6, *76.*Ust'-Ukhta 1, *77.*Ust'-Aiyuva.

PIZHMA river

*78.*Zolotoi Kamen', *79.*Pizhma 2.

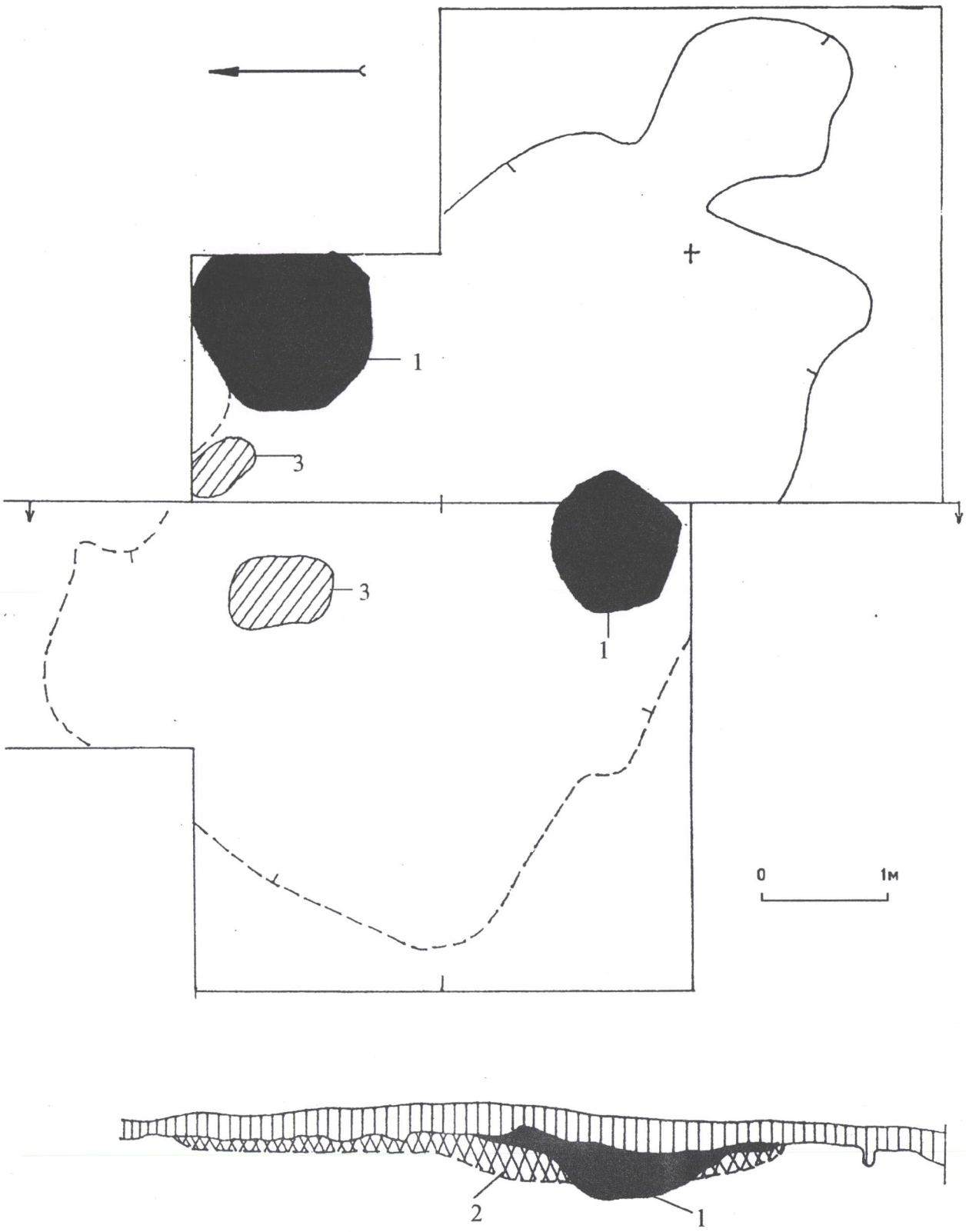

Fig.2. Evdino 2, location 4. Dwelling: plan and section. 1 - hearths, 2 - deposit of dwelling (infill of dwelling pit), 3 -refuse pits.

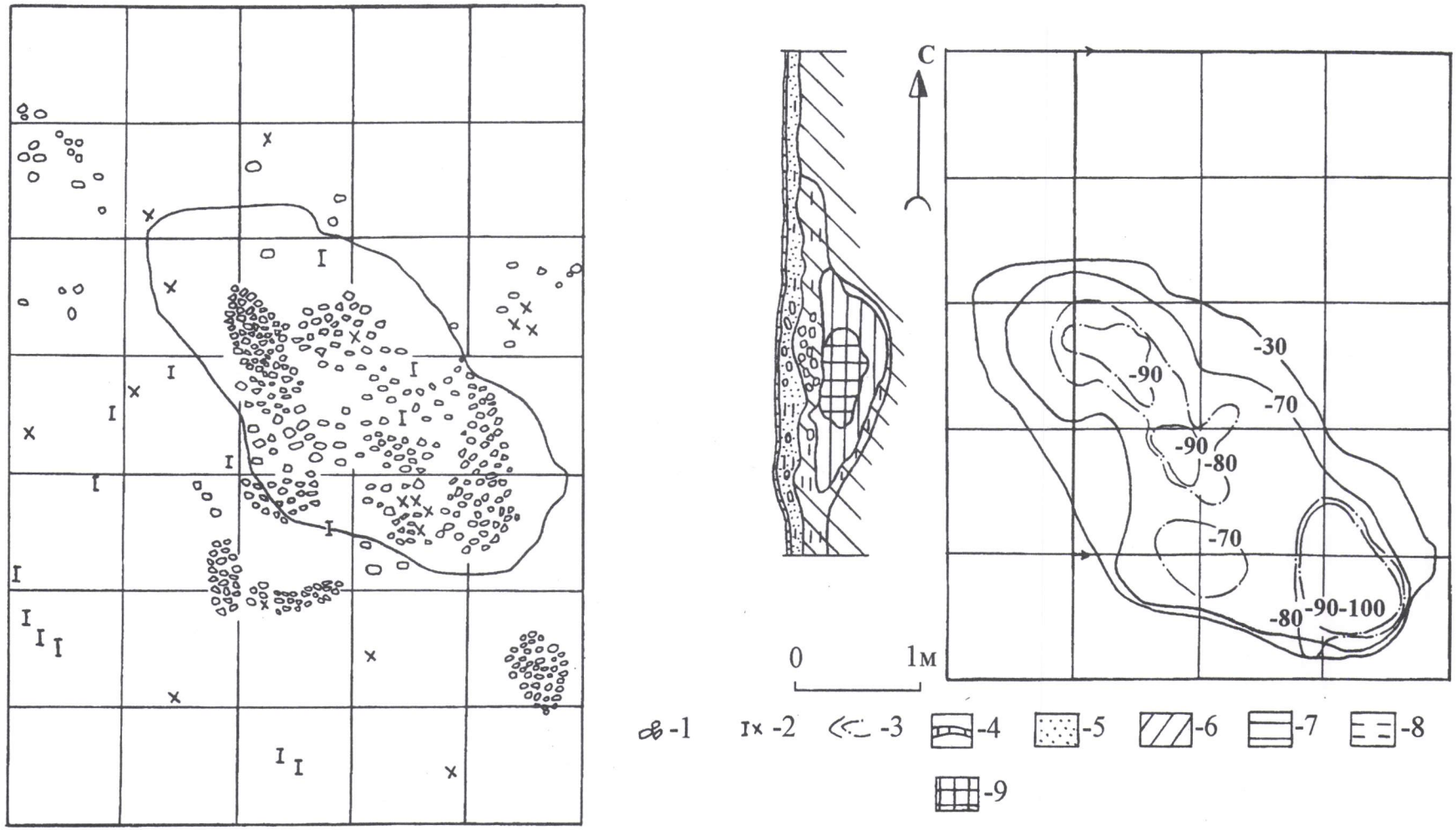

Fig.3.Topyd-Nyur 5. Dwelling: plans and section (according V.I.Kanivets,1973). Key: 1 - skatter of stones, 2 - flint implements, 3 - outlines of charcoal lens on different depths, 5 - white sand, 6 - yellow sand, 7 - gray sand, 8 - charcoal fragments and lenses of ashes, 9 - dark charcoal layer.

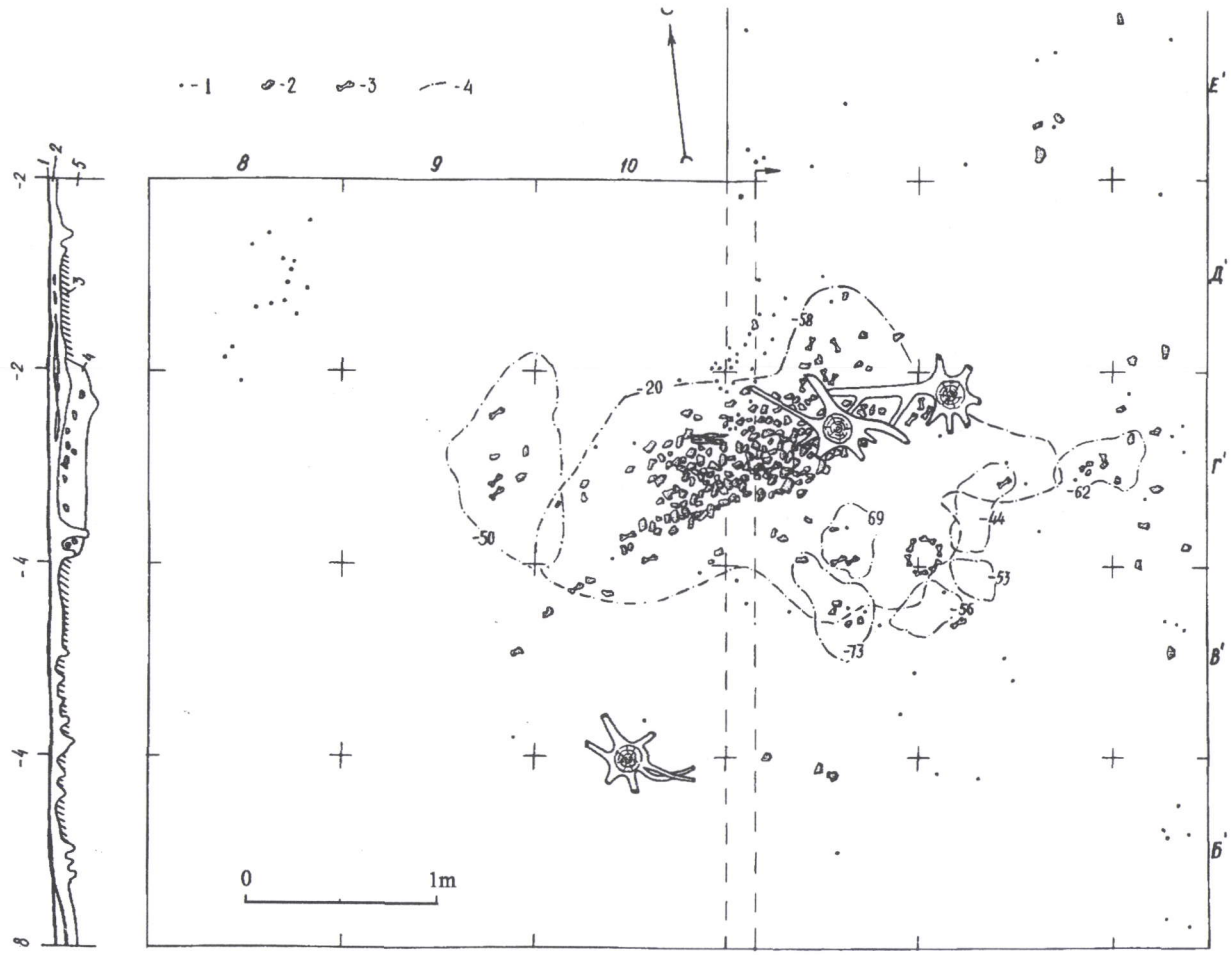

Fig.4. Topyd-Nyur 7à. Dwelling: plans and section. Key: 1 - flint implements, 2 - pieces of pebbles, 3 - outlines of charcoal lens on different depths.

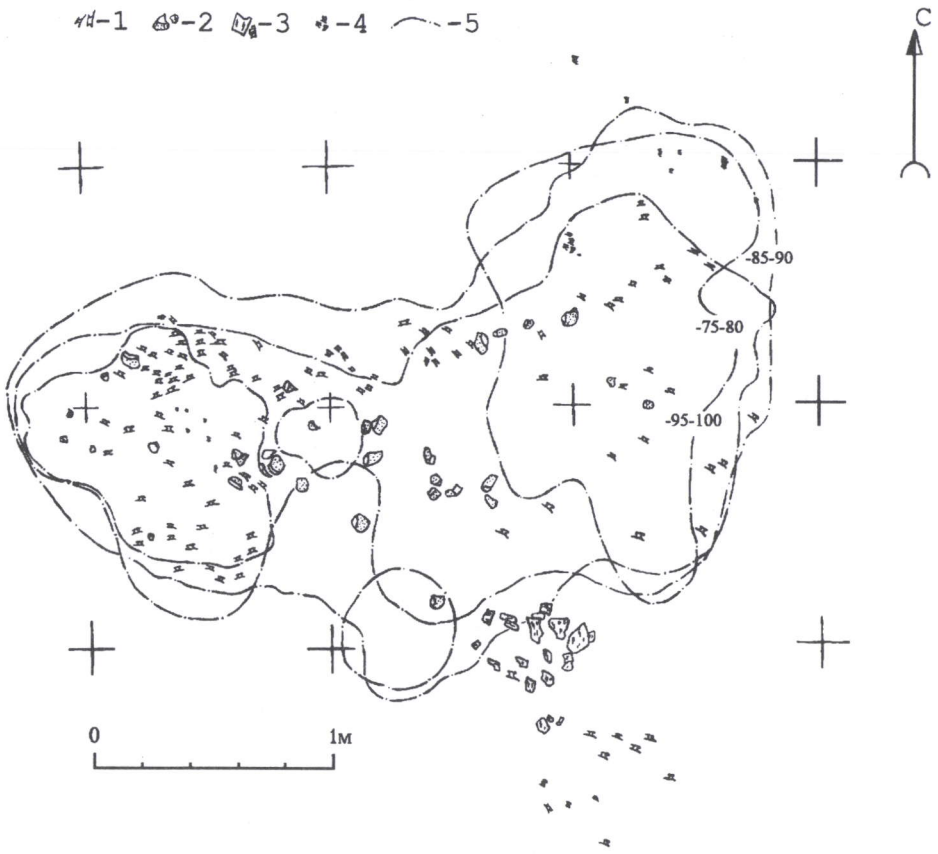

Fig.5.Lek-Lesa 1. Dwelling 1. Key: 1 - bone fragments, 2 - pieces of pebbles, 3 - fragments of the birchbark, 4 - charcoal fragments, 5 - outlines of charcoal lens on different depths

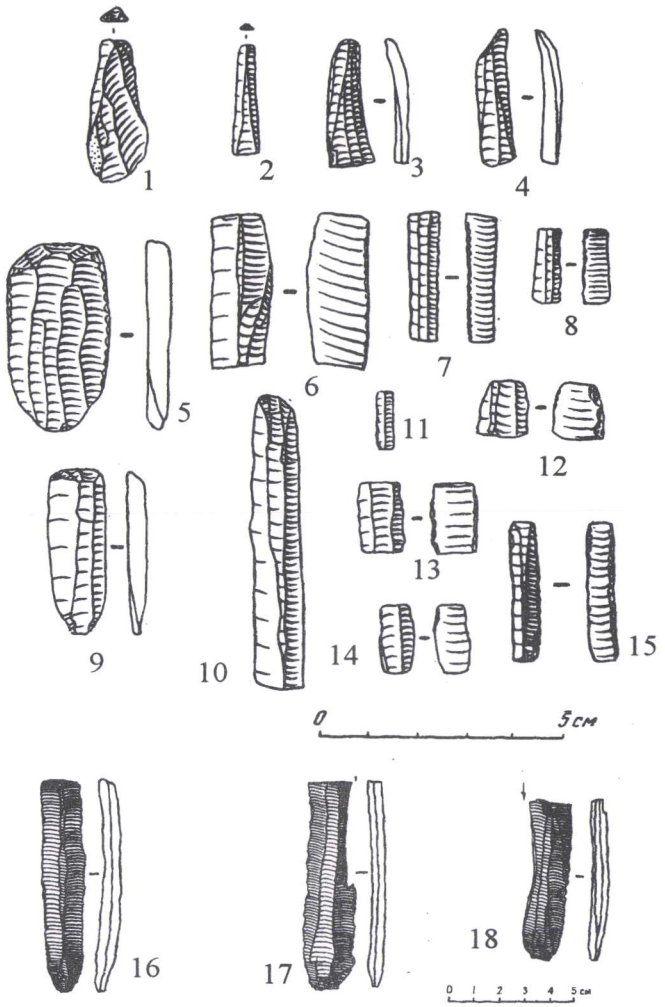

Fig.6. The Middle Vychegda culture. Flint inventories of Ul'yanovo (1, 2, 6, 8 - 11, 13, 14), Kuz'vomyn (3 - 5, 7, 16 - 18), Anyb 2 (12), Kur'yador 1 (15) sites. 1-4 - little chisels, 5, 9, 16 - end scrapers, 6-8, 11-15 - retouched blades (inserts), 10 - unretouched blade, 17, 18 - burins. (According G.M.Burov).

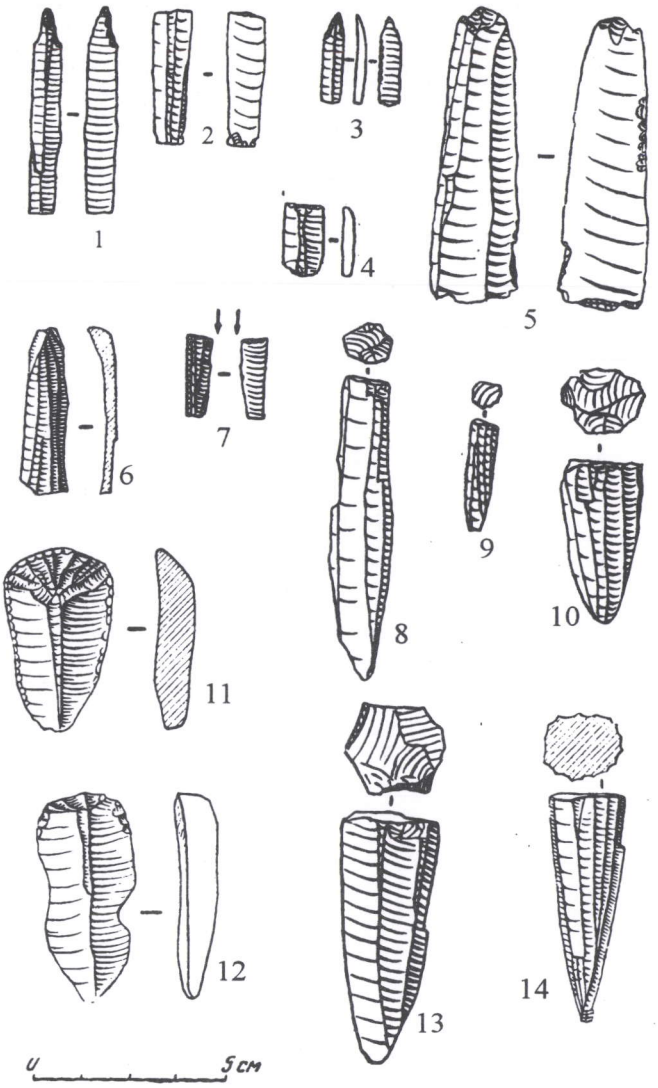

Fig.7. The Middle Vychegda culture. Flint inventories of Kuz'vomyn (1, 3, 4, 13), Ul'yanovo (2, 5, 9), Kur'yador 1 (6, 7, 10, 14), Pezmog 1 (8), Yaqkodzh 3 (11-12) sites. 1-3 - points, 2-5 - retouched blades, 4 - blade with the retouched end, 6 - little chisel, 7 - burin, 8-10, 13, 14 - cores, 11, 12 - end scrapers.

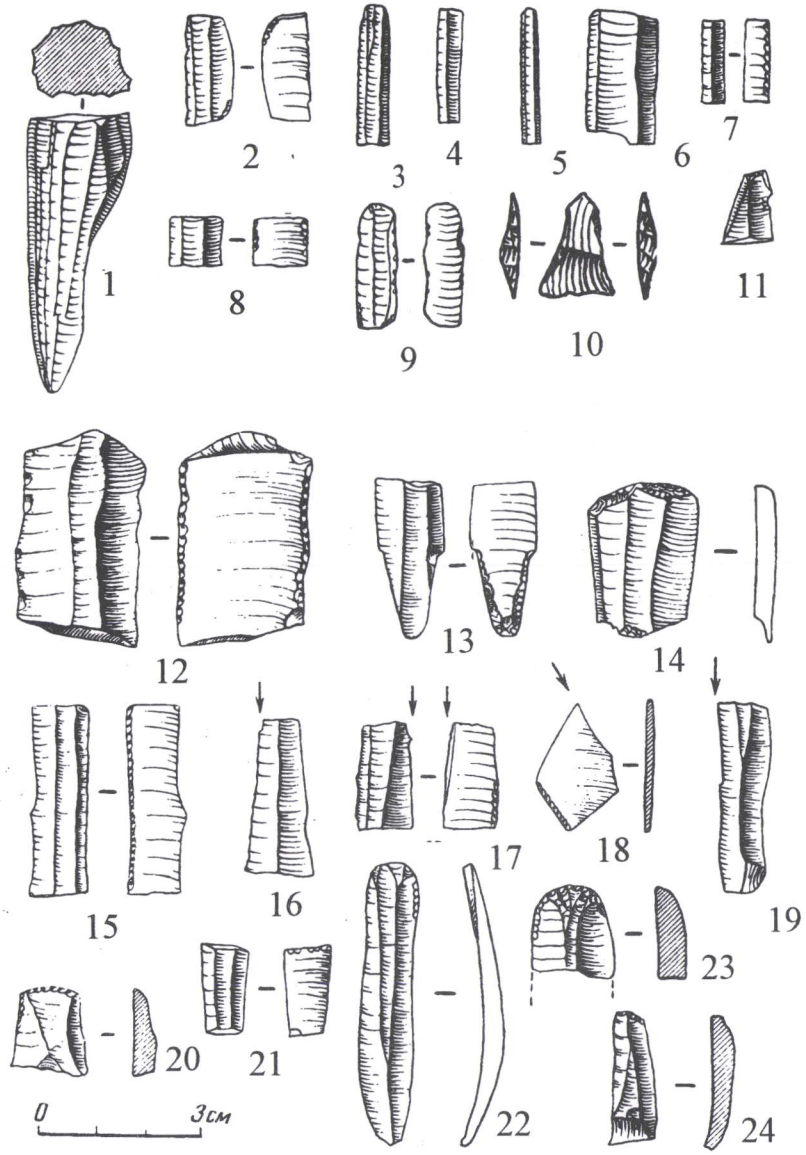

Fig.8. The Middle Vychegda culture. Flint inventory of Pezmog 1 site. 1 - core, 2 - 9, 12, 15, 21, 22 - retouched blades, 10 - trapeze, 11, 24 - little chisels, 13 - the tool fragment (arrowhead-?), 14, 20, 23 - end scrapers, 16-19 - burins.

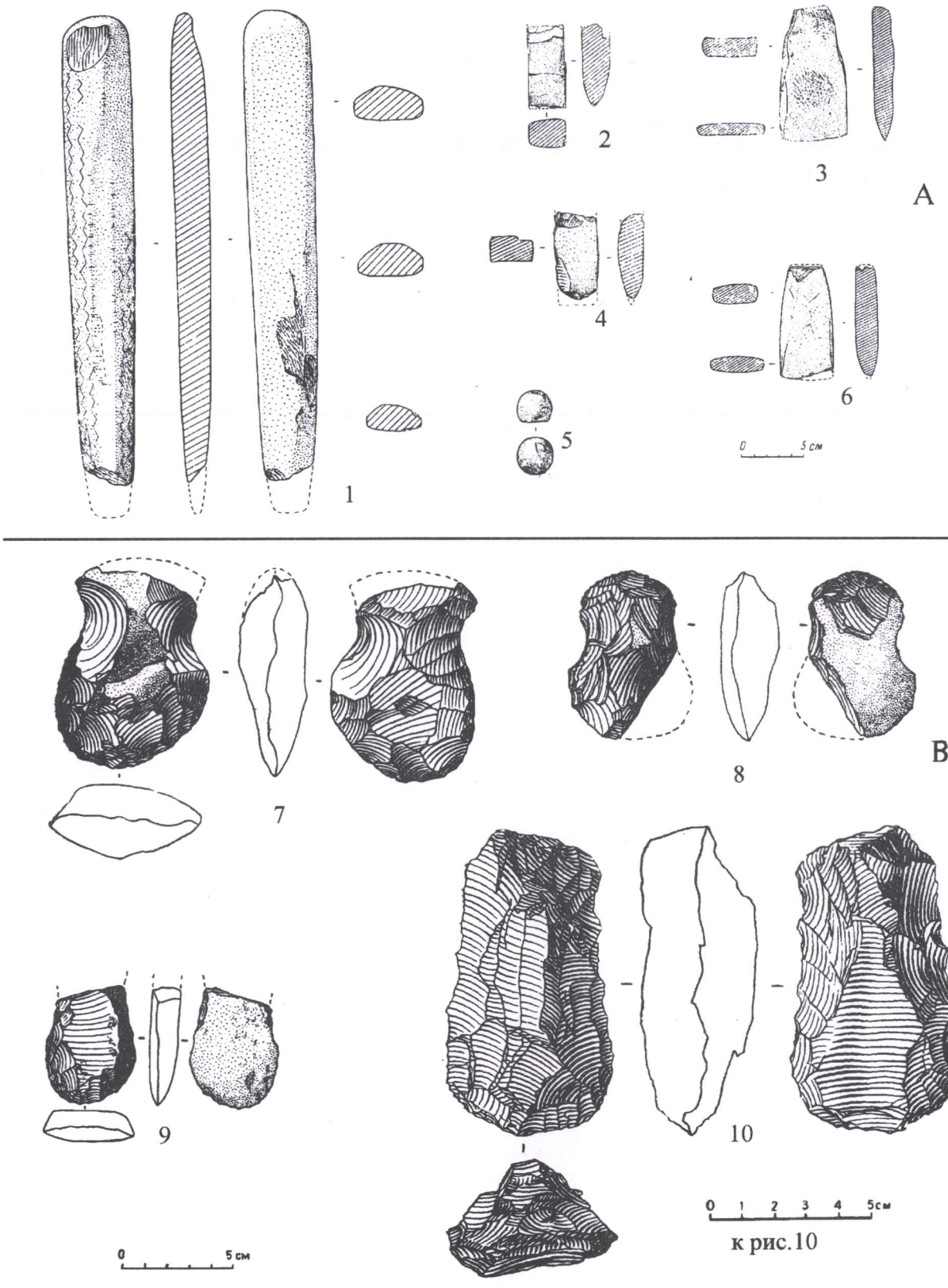

Fig.9. The Vis culture type (According G.M.Burov) - A, The Middle Vychegda culture - B. Simva 3 (1), Vis 1 peatbog (2-6), Ul'yanovo (7-9), Kur'yador 1 (10) sites. Cutting tools. 1-6 - argillite and shale, 7-10 - quartzite and quartzite sandstone.

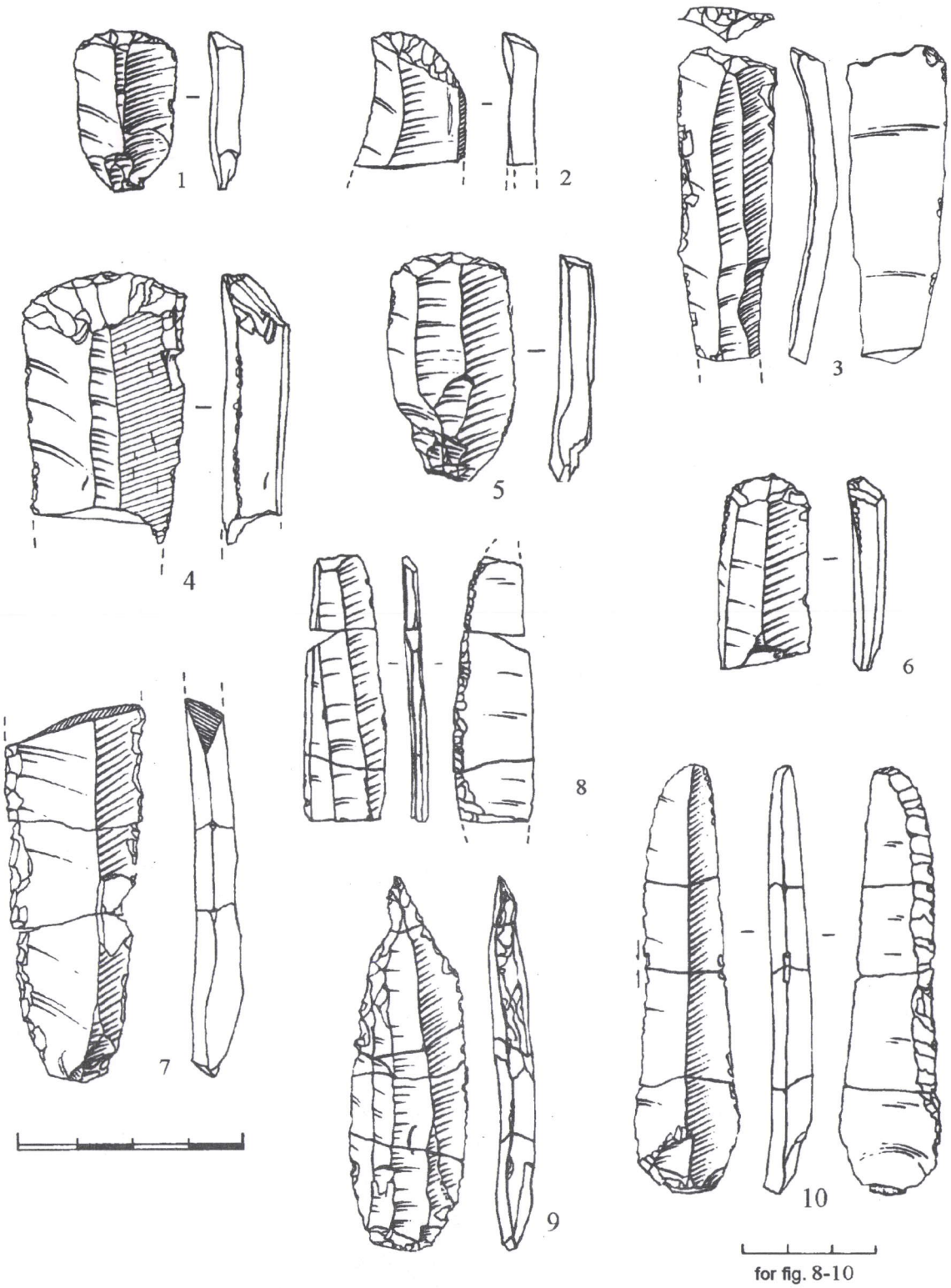

Fig.10. Sub-Ural tradition. Flint inventory of Lek-Lesa 1 site. 1-6 - end scrapers, 7, 8, 10 - knifes, 9 - point.

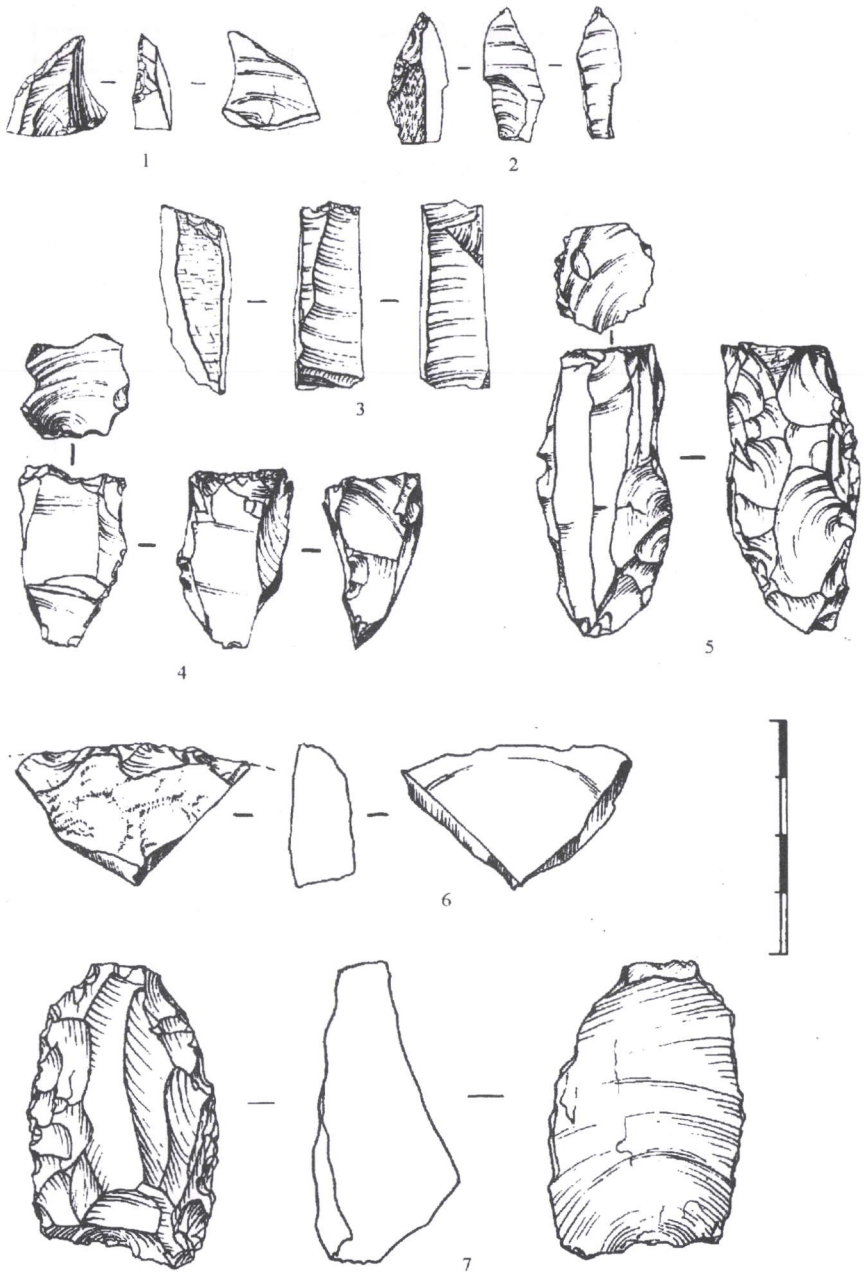

Fig.11. The Parch culture. Flint inventory of Parch 1 (1-3), Parch 3 (4, 5) sites. 1, 2 - points, 3-5 - cores, 6, 7 - side scrapers.

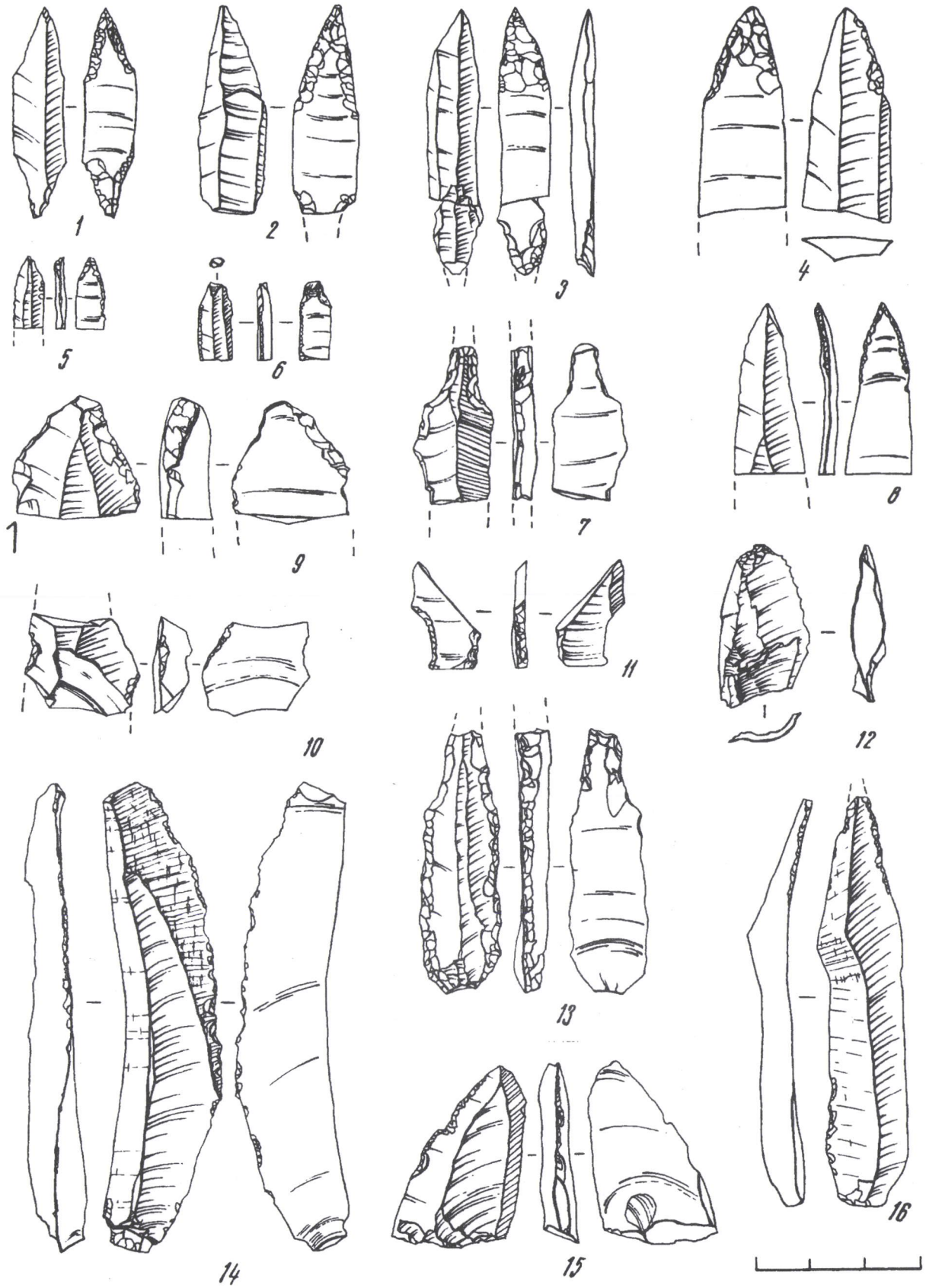

Fig.12. The Parch culture. Flint inventory of Parch 1 site. 1-4 - arrow heads, 5-9, 12, 13, 16 - perforators, 10, 11, 14, 15 - notched pieces.

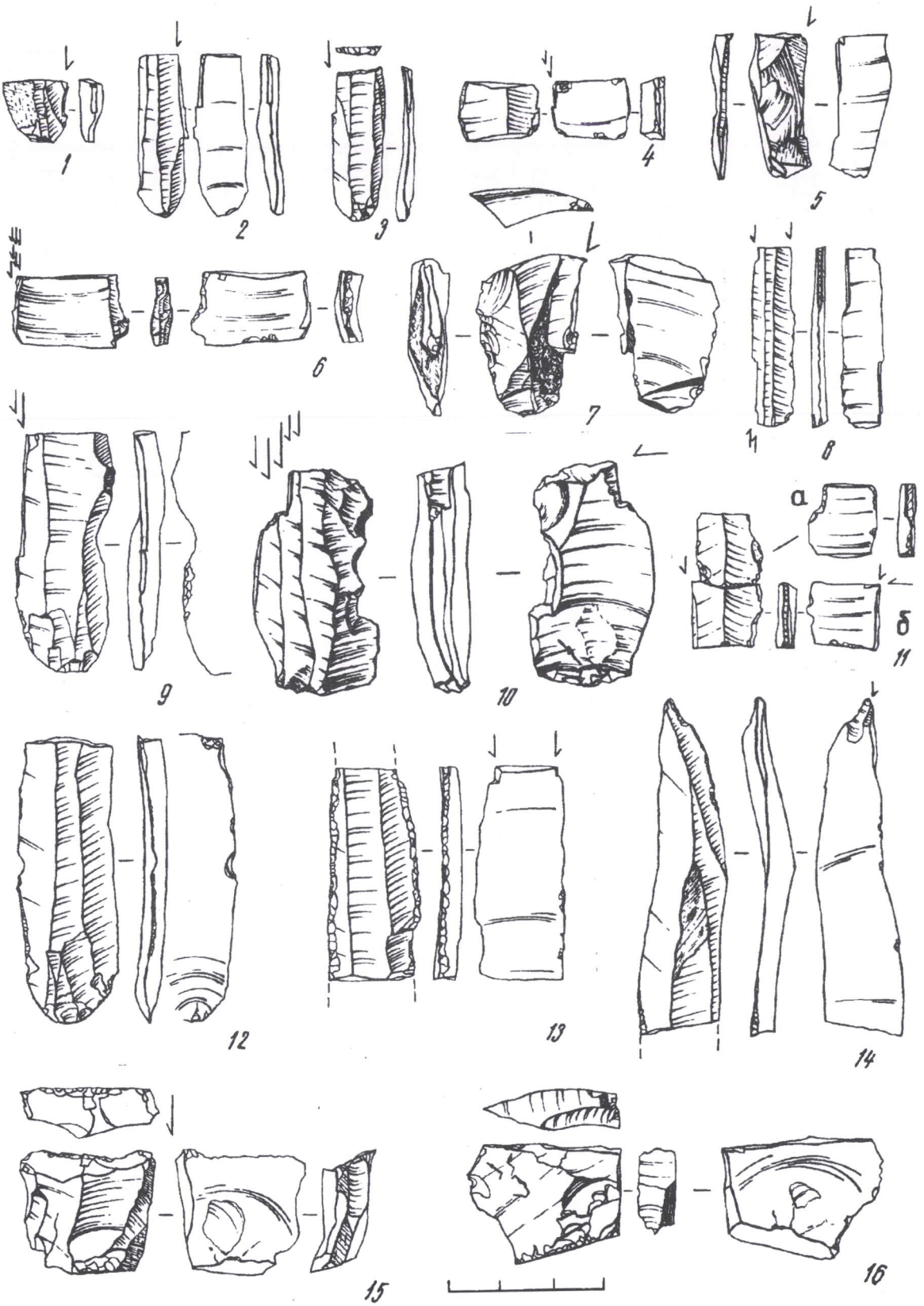

Fig.13. The Parch culture. Flint inventory of Parch 1 site. 1-12, 15, 16 - burins, 13, 14 - pieces with burin spall.

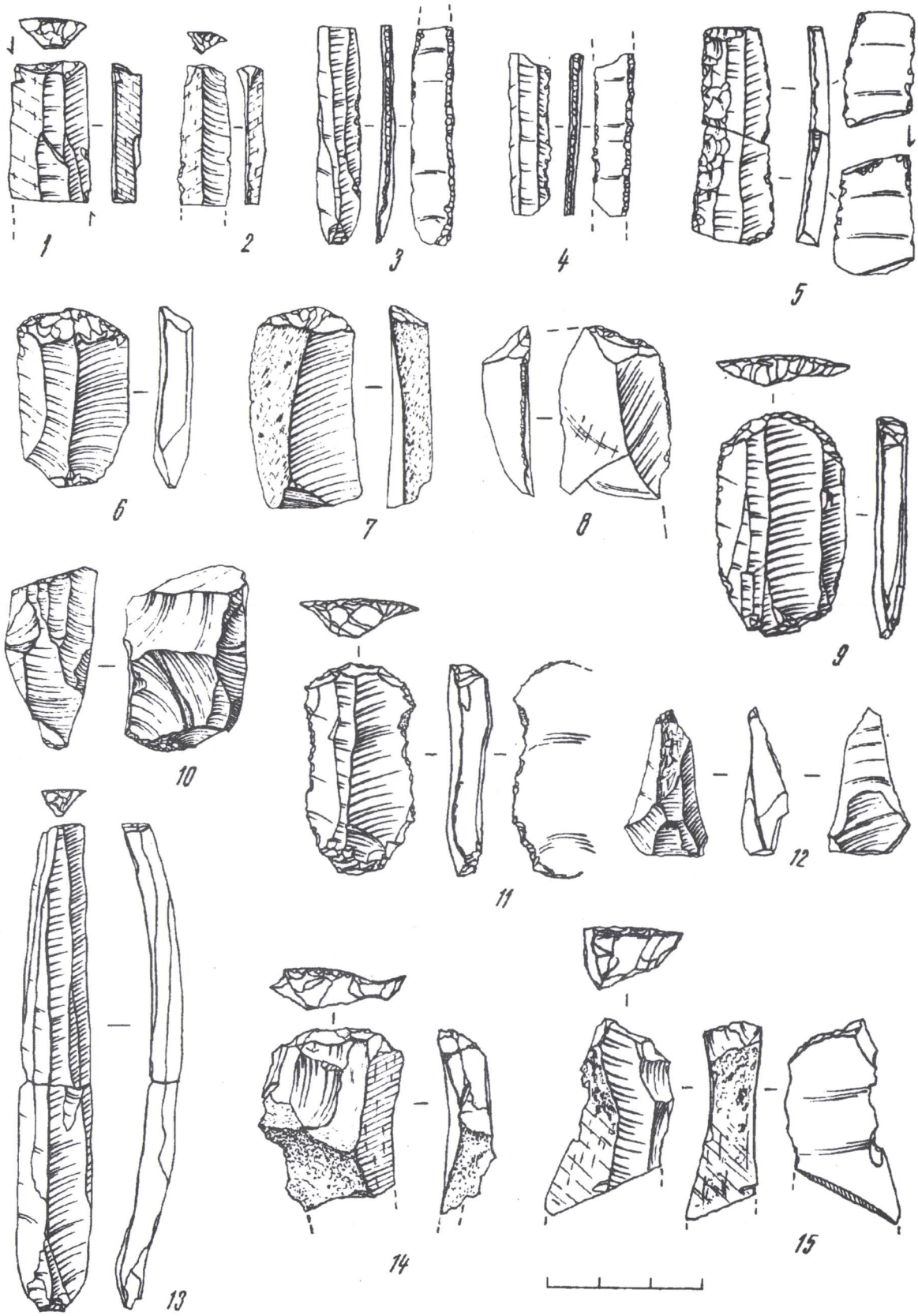

Fig.14. The Parch culture. Flint inventory of Parch 1 site. 1, 2, 6-9, 11-15 - scrapers and, 3-5 - inserts, 10 - core turned into the end scraper

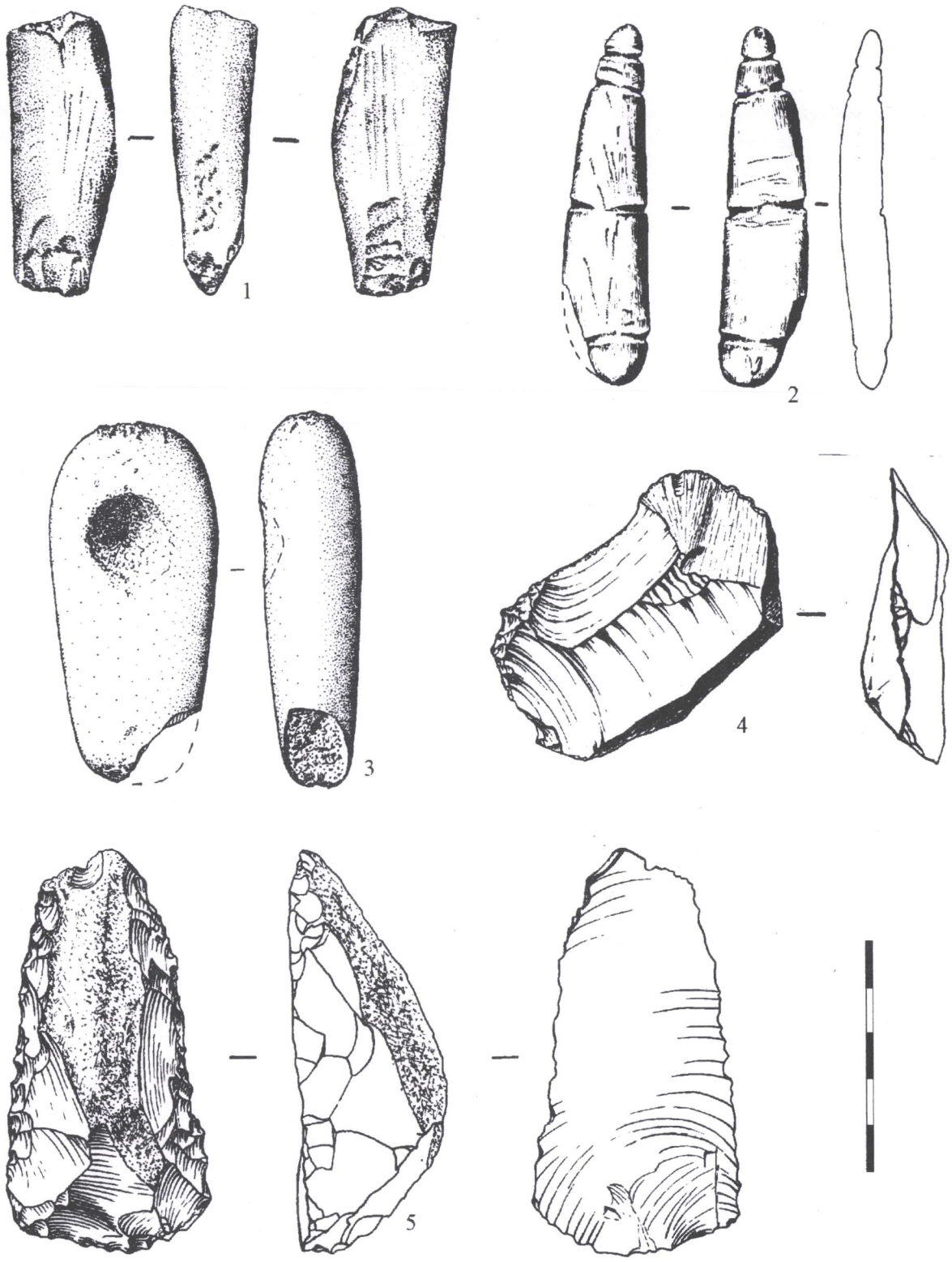

Fig.15. The Parch culture. Parch 3 (1, 3), Parch 1 (2, 4, 5) sites. 1 - fragment cutting (?) tool, 2 - sandstone wand with cross circular cuts, 3 - pebble with a pocked-out round shallow hole, 4 - barbed tools, 5 - side scraper. 1, 2 - sandstone, 3 - quartzite sandstone, 4,5 - flint.

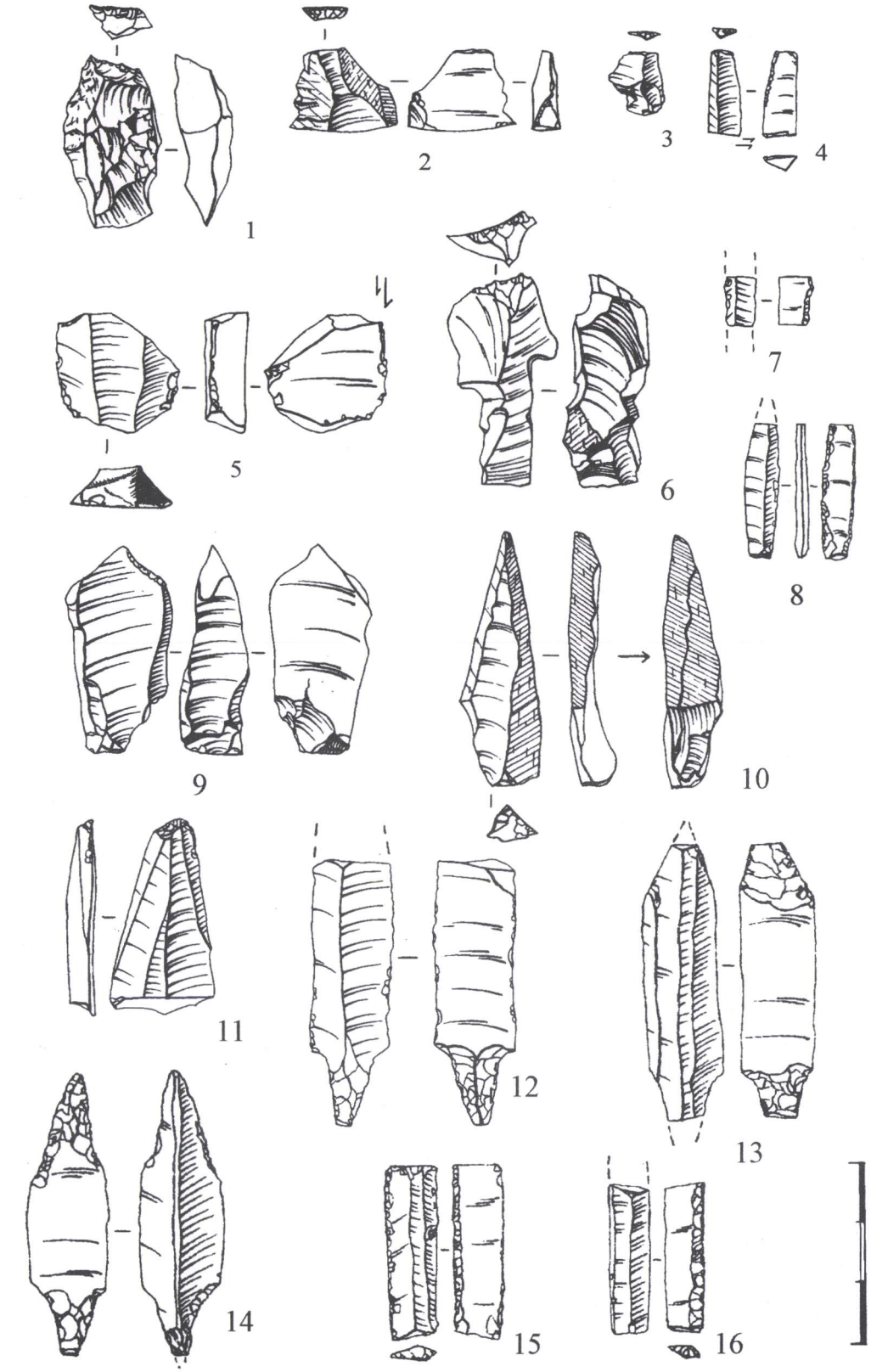

Fig.16. The Parch culture. Parch 2 (1-12), Pizhma 2 (13, 15, 16), Adz'va 1 (14) sites. Flint inventory. 1-4, 6, 9 - pieces with truncated or retouched ends, 5 - blade segment with retouch and burin spalls, 7, 8, 15, 16 - backed blades, 10, 11 - microscrapers, 12-14 - arrow heads.

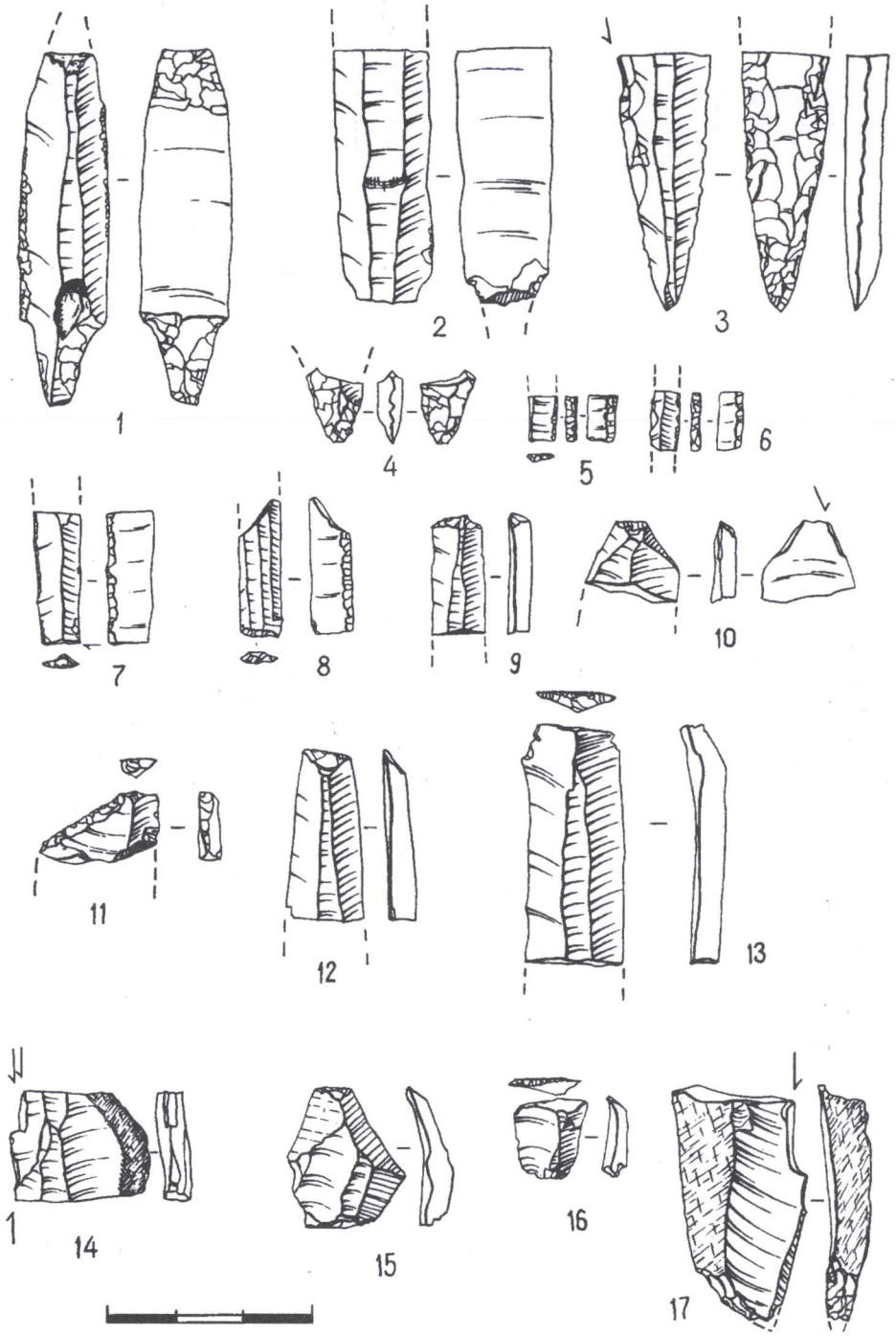

Fig.17. The Parch culture. Flint inventory of Parch 3 sites. 1-4 - fragments of arrow heads, 5-8 - fragments of inserts-rectangular, 9-12, 15, 16 microscrapers and pieces with truncated ends, 14, 17 - burins.

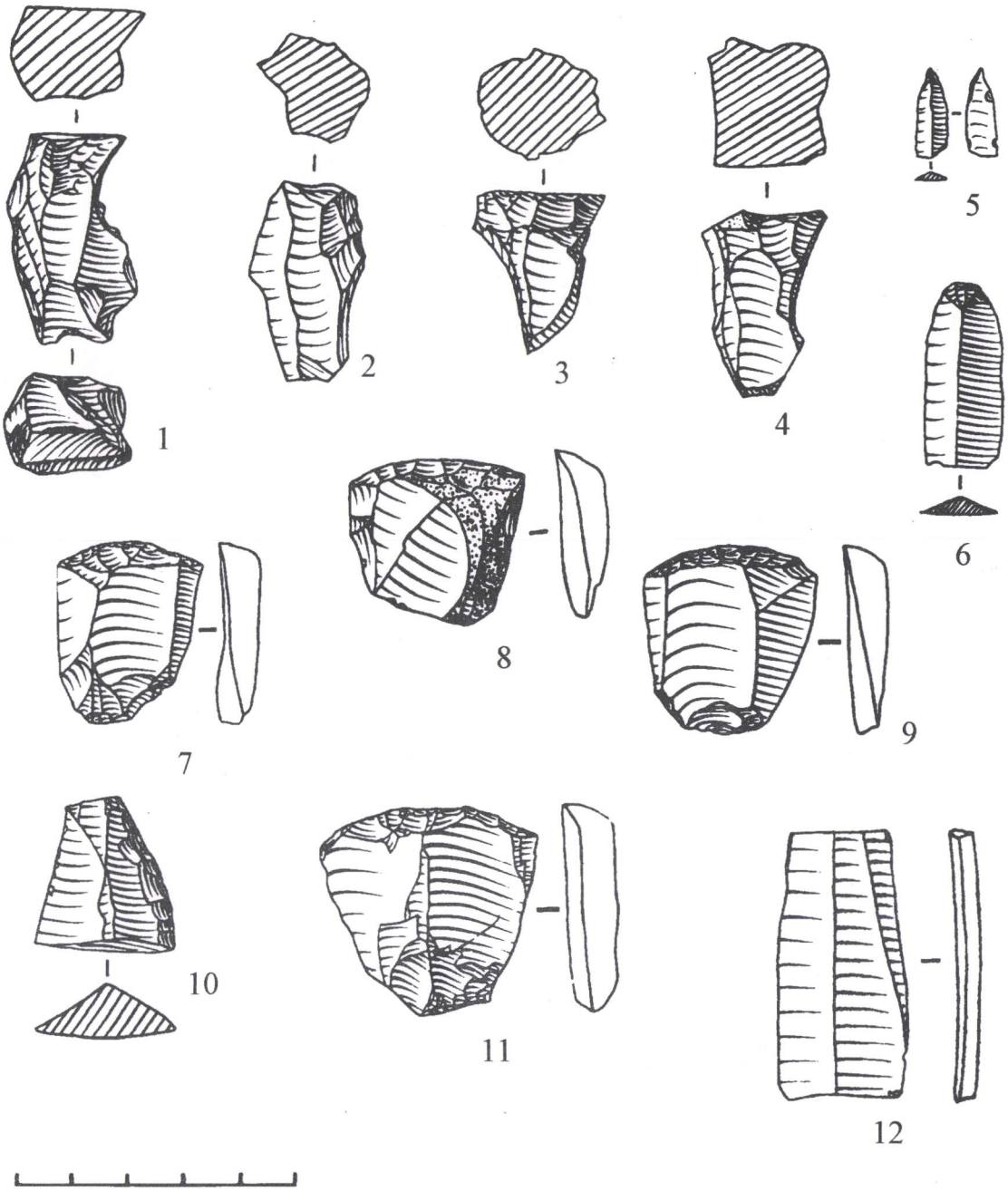

Fig.18. The Parch culture. Flint inventory of Topyd-Nyur 5 sites. 1-4 - cores, 5 - point, 7-9, 11 - end scraper, 6, 12 - blades, 10 - retouched blade (fragment). According V.I. Kanivets.

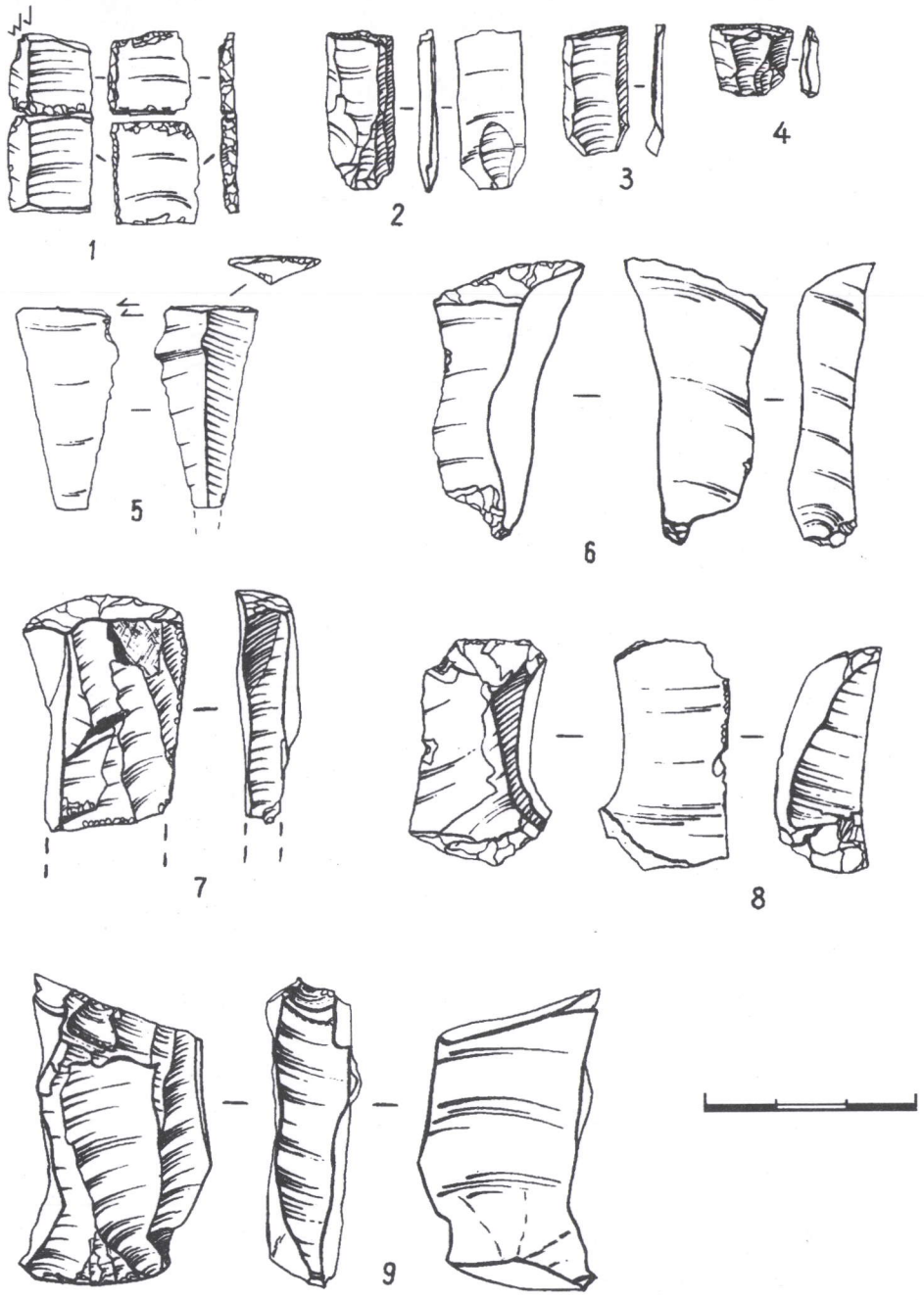

Fig.19. The Parch culture. Flint inventory of Topyd-Nyur 5 sites. 1 - backed, 2-4 - pieces with truncated ends, 5 - blade with burin spalls, 6-8 - end scrapers, 9 - flake with splited edge.

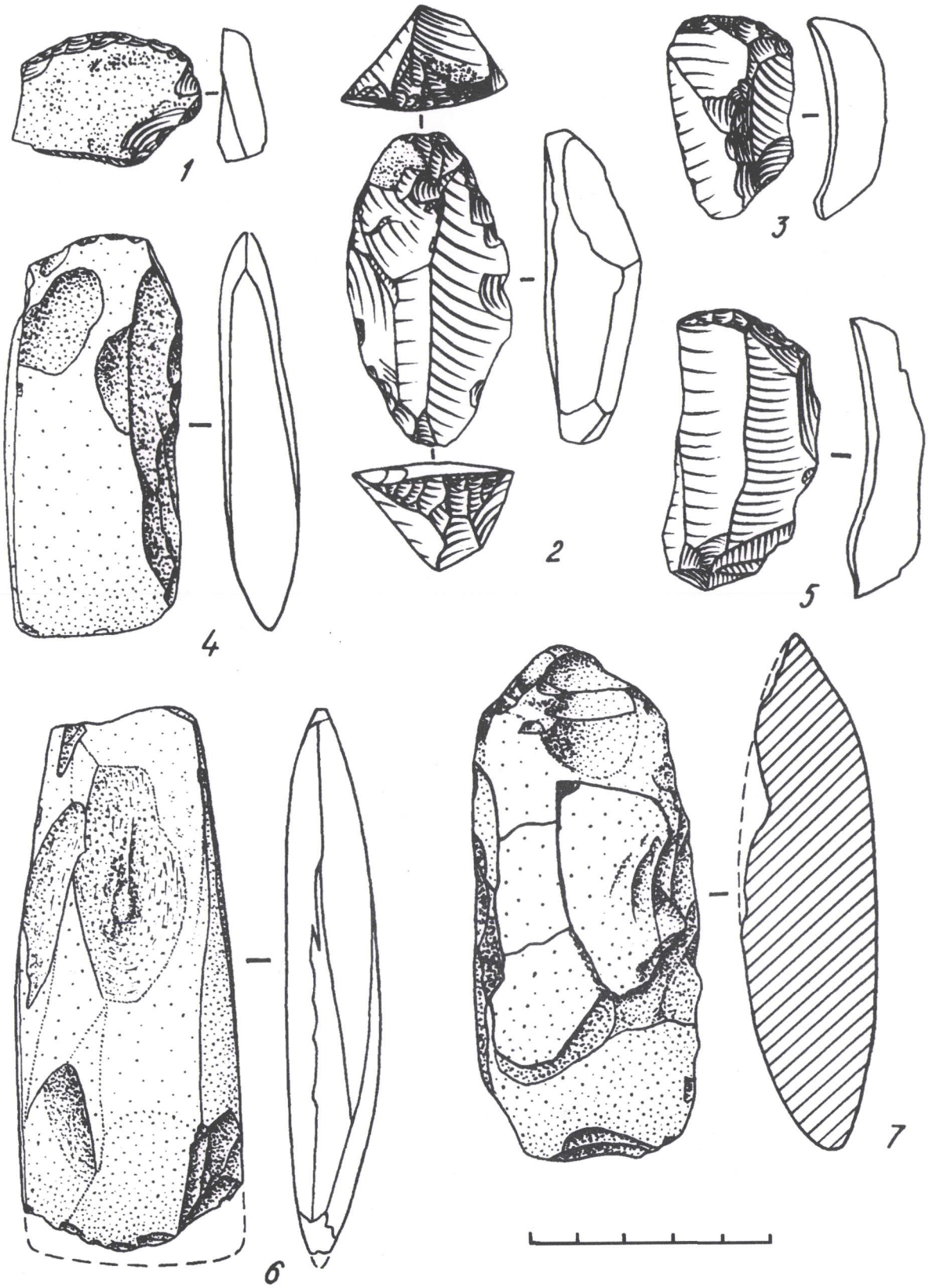

Fig.20. The Parch culture. Topyd-Nyur 5 (1-3, 5, 7), Topyd-Nyur 2 (4, 6) sites. 1, 3, 5 - end scrapers, 2 - retoucher, 4, 6, 7 - cutting tools. 1-3, 5 -flint, 4, 6, 7 - silicious shale. According V.I. Kanivets.

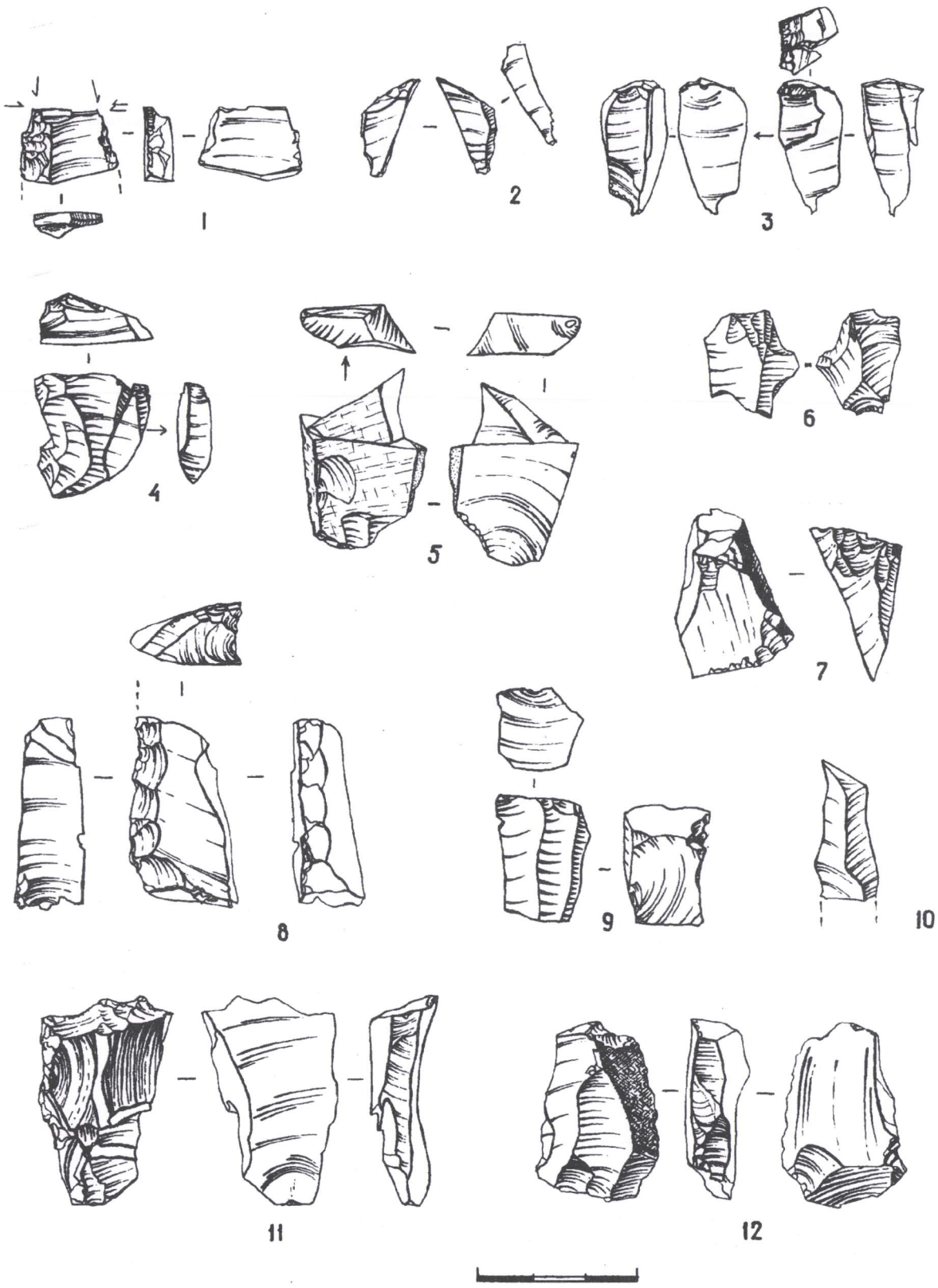

Fig.21. The Parch culture. Flint inventory of Topyd-Nyur 7a site. 1 - fragment of tool with burin spall, 2, 11, 12 - end scrapers, 3, 5, 8 - splited tools, 6, 7, 9 - cores, 10 - fragment of blade.

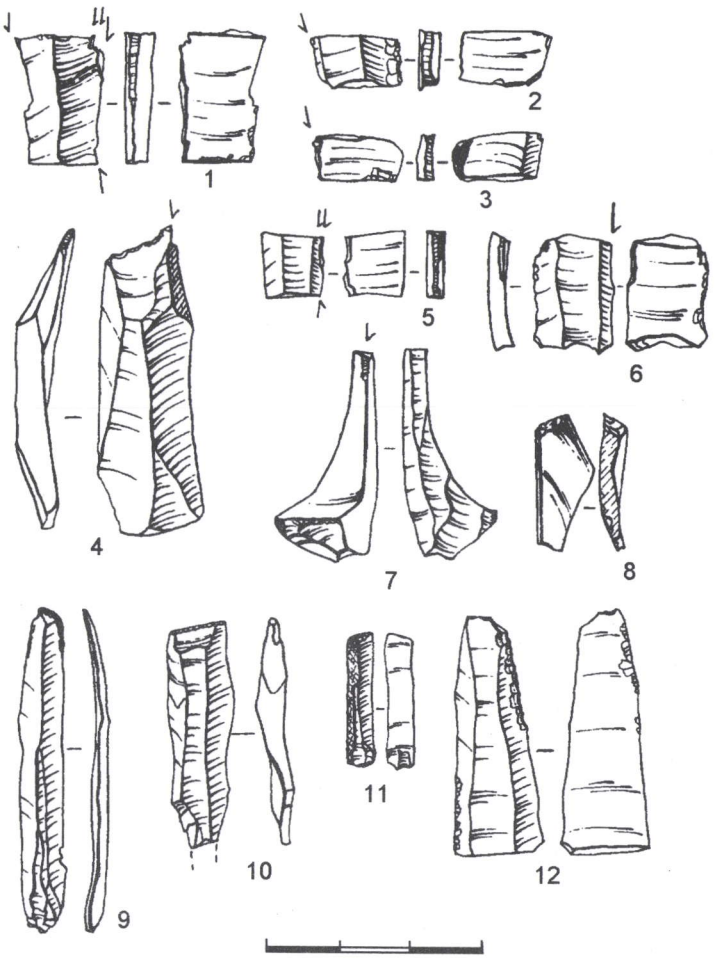

Fig.22. The Parch culture. Flint inventory of Topyd-Nyur 7a site. 1-6 - burins, 8-11 - pieces with truncated or retouched ends, 12 - retouched blade.

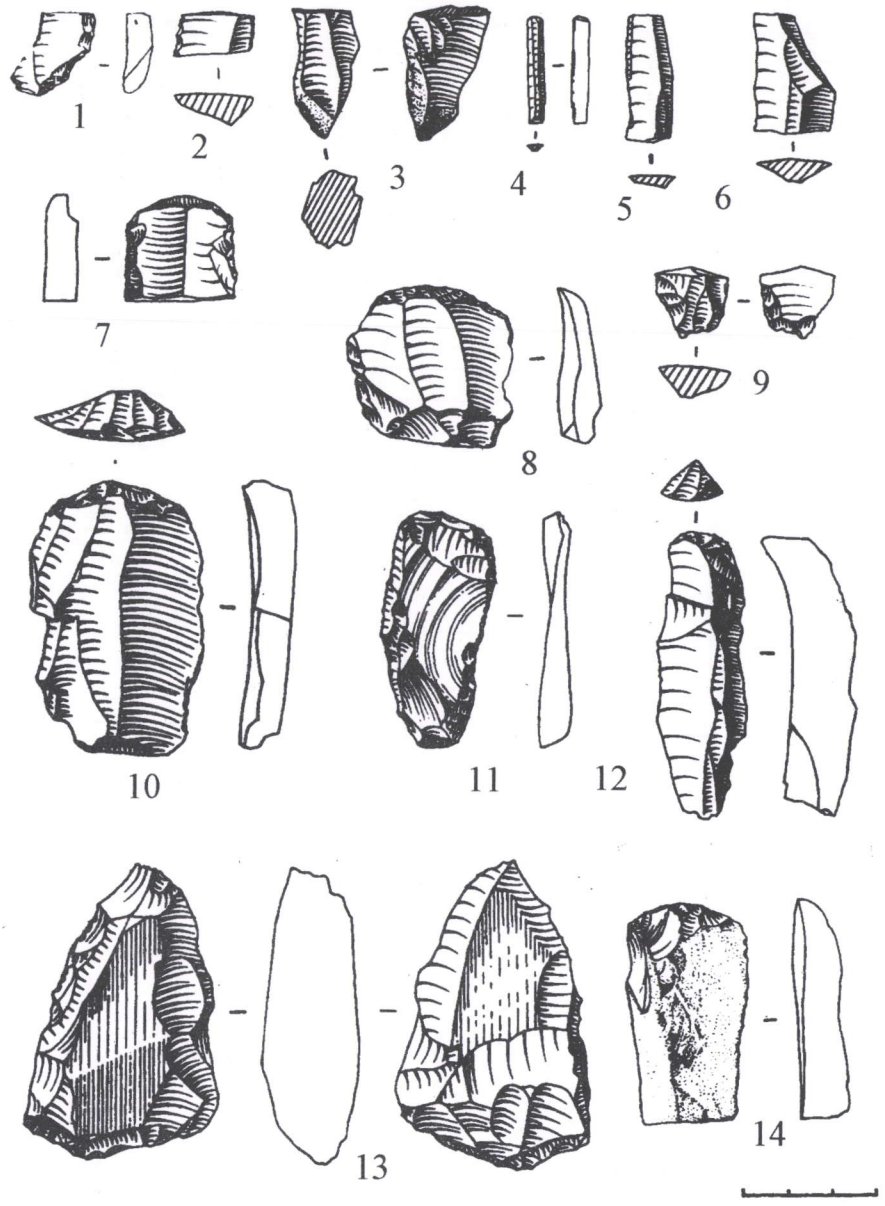

Fig.23. The Parch culture. Chertas 2 site. 1, 2, 4, 5, 9 - fragments of retouched blades, 3 - core, 6 - fragment of blade, 7, 8, 10-12, 14 - end scrapers, 13 - cutting tool. 1-12, 14 - flint, 13 - silicious shale.

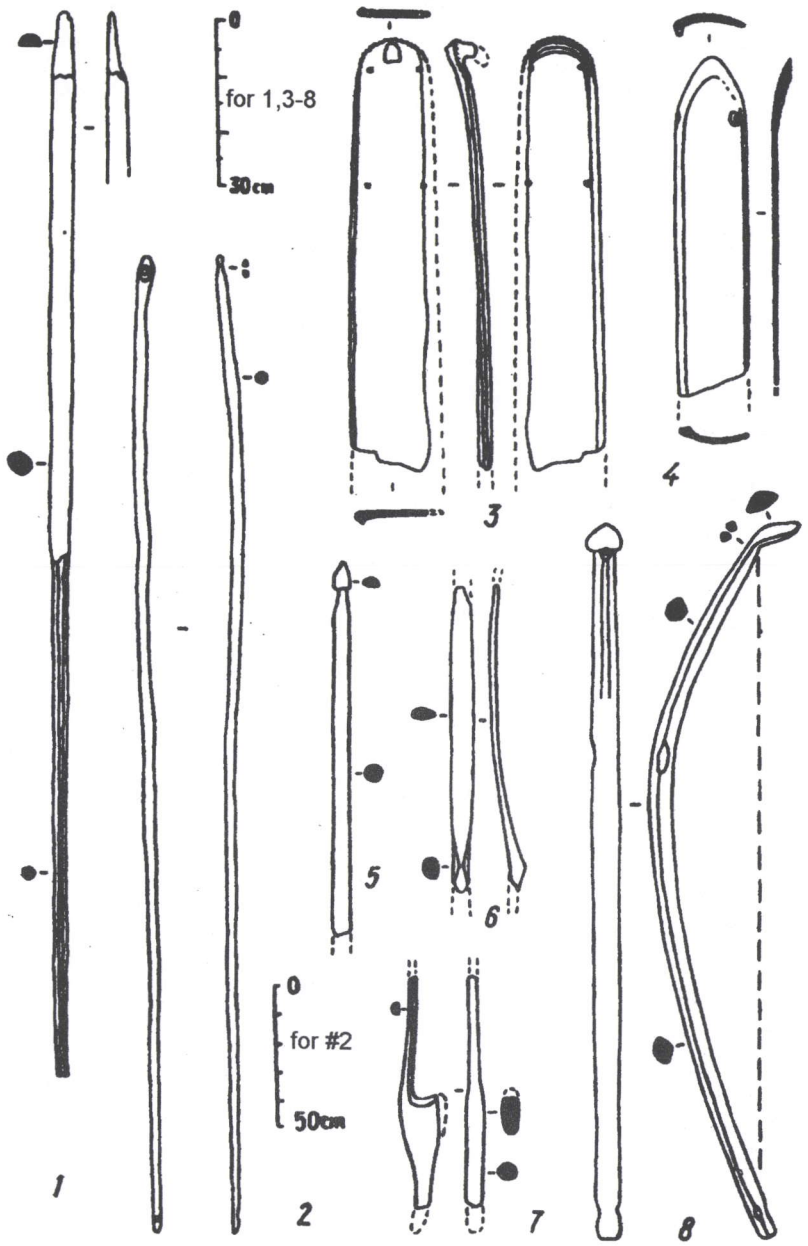

Fig.24. Vis 1 peatbog. Wood artifacts. 1 - spear, 2, 5, 6, 8 - bows, 3, 4 - sled runners, 7 - projective club. According G.M.Burov.

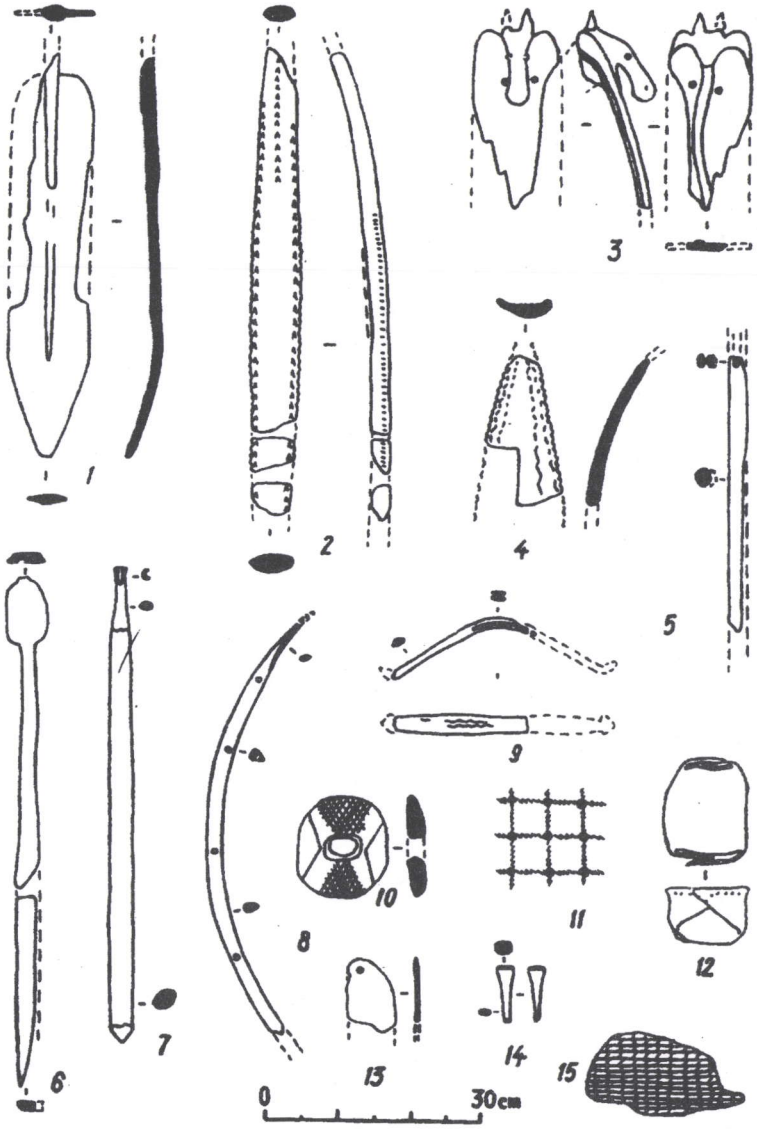

Fig.25. Vis 1 peatbog. Wood (1-9, 14, 15), grass (11), birchbark (12), bark (13) artifacts. 1 - a paddle, 2 - not clear item, 3, 4 - ski, 5, 7 - wand with grooves, 6 - a little spade, 8 - a hoop, 9 - a spokeshave , 10 - disk, 11 - net (fragment), 12 - box, 13 - a net float, 14 - arrow head, 15 - a mat(?).

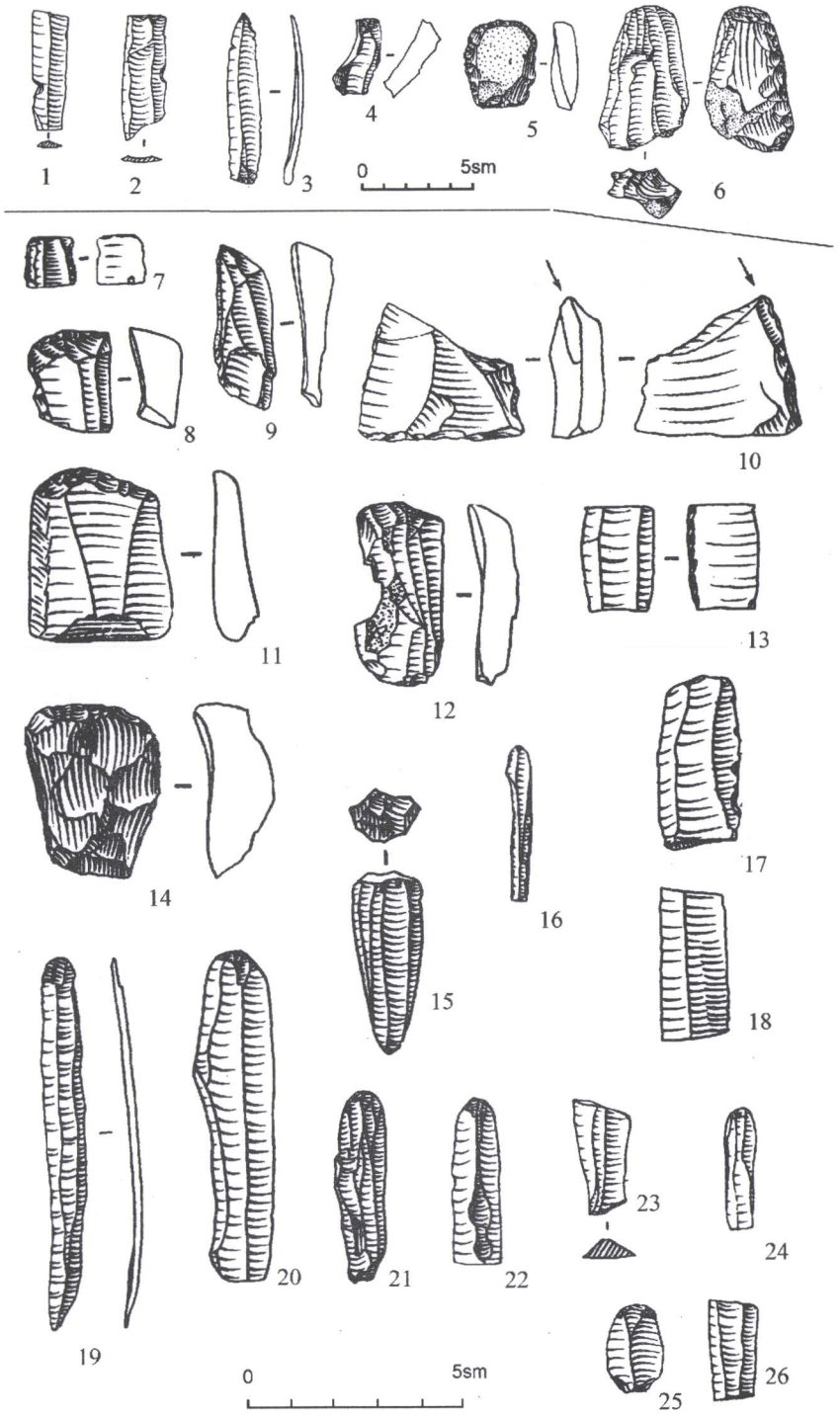

Fig.26. Vis 1 peatbog. Flint inventory. 1, 2, 16, 18, 19, 24 - blades, 3, 9 - points, 4 - core trimming flake, 5, 8, 11, 12, 14 - end scrapers, 6, 15 - cores, 7, 13, 17, 25 - fragments of retouched blades.

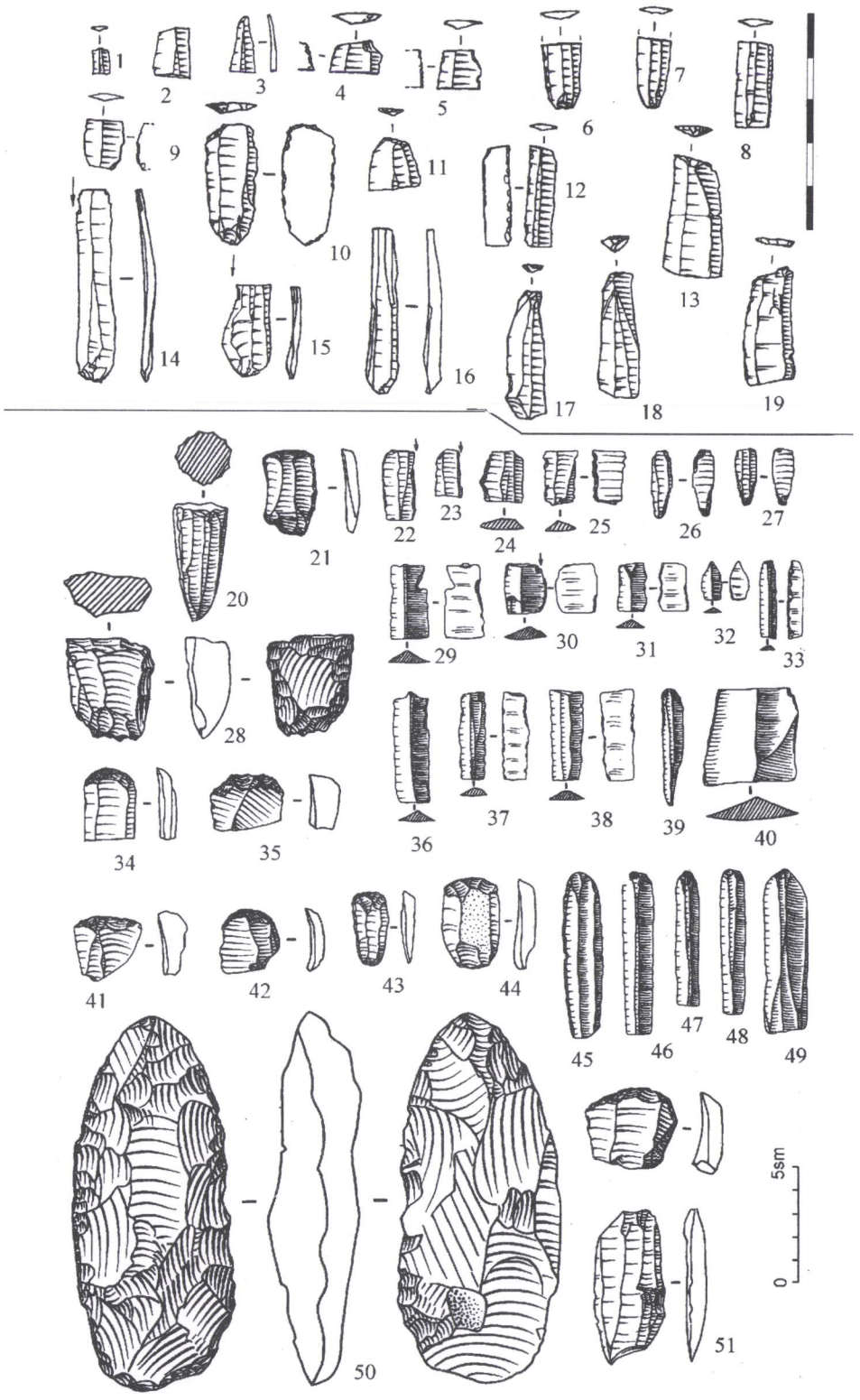

Fig.27. En'ty 3a (1-19) and Turun-Nyur 1 (20-52) sites. 1-3, 6-8, 16, 46-49 - blades, 4, 5, 9, 24, 25, 29-33, 36-40, 45 - retouched blades, 10-13 - blades with truncated ends, 14, 15, 22, 23 - burins, 20 - core, 21, 34, 35, 41-44, 51 - end scrapers, 26, 27, 32 - points, 28 - precore , 50 - cutting tool, 52 - core trimming flake.