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THE MOUSTERIAN COMPLEX SORGEIDY¹⁾

SUMMARY — *The paper brings the characteristics of Sorgeidy — a new and most expressive Transcarpathian Palaeolithic site with denticulated Mousterian.*

According to the stratigraphic position of the finds, the morphological, technical-typological characteristics of the stone artifacts of Sorgeidy are directly correlated with the Ith complex of Korolevo covering the horizons of the initial period of the Upper Palaeolithic. The Sorgeidy materials document the survival of Mousterian traditions following the appearance of the first complexes of the initial Upper Palaeolithic stages at the Korolevo site, demonstrating the development in the Transcarpathian region — the uneven and non-unilinear development of the Palaeolithic industries.

KEY WORDS: USSR — Transcarpathia — Middle Palaeolithic — Denticulated Mousterian.

One of the unique features of Korolevo is at the first glance the extraordinary alternation of the Mousterian and Upper Palaeolithic industries. This appears in Korolevo repeatedly, at various places, but in a uniform stratigraphic situation: artifacts of the I cultural-chronological complex (denticulated Mousterian) were situated above the III fossil soil of the regional section (Brörup + Odderade? + Popperinge?); below this soil was situated a horizon containing industries of the initial stage of Upper Palaeolithic (cultural-chronological complex II Korolevo II, and complex II' and I-a Korolevo I). Any kind of redeposition of the artifacts in all these cases can be ruled out. None the less, Gladilin's view that we have to do here with facts reflecting the

uneven development in the Palaeolithic, expressed by the Mousterian and Upper Palaeolithic industries, is far from being accepted by all Soviet scholars of the Palaeolithic. These doubts had their definite foundations. The collection of artifacts from the Ith Korolevo complex (Mousterian) is not numerous, although it contains all the necessary technical-typological characters needed for their attribution to Lower Palaeolithic (See paper by L. B. Kulakovskaya (Soldatenko) in this issue). During explorations in the surrounding of Korolevo collections of artifacts identical with Korolevo complex I have been gathered. They appeared in the same stratigraphic conditions — at the lower part of loam above fossil soil III (Soldatenko, 1982).

Not long ago the author has succeeded to find a rich collection of similar artifacts in the vicinity of Korolevo, at the foot of the hill Sorgeidy (Sitliviy, 1987). At present it is the most numerous and most significant collection of special importance for the cultural-chronological attribution of Korolevo complex I.

¹⁾ Some uninhabited places (fields, hills, etc.) in the western part of Soviet Transcarpathia, adjoining the Hungarian border, have Hungarian names. They appear in this publication in double transliteration. Sorgeidy, e.g. is the result of transliteration from Hungarian Szárhegy = "Dry Hill" into Russian (cyrillic) alphabet, and from Russian to latin alphabet, according to the English spelling.

The Sorgeidy site consists of an elongated 40 m wide terrace running from north to south, adjoining the foot of a hill of the same name and separated from the village of Korolevo by a deep ancient ravine. As a result of agricultural trenching of the whole terrace numerous stone artifacts (more than 2 thousand of them) and scattered ceramic fragments had been brought to the surface.

Archaeological trenches were opened at various places of the site. The following stratigraphy has been found (Fig. 1):

- 0.00—0.10 — contemporary sod;
- 0.10—0.20 — loess-loam, light-brown (analogous to layer 2 of the Korolevo section);
- 0.20—0.55 — loess-loam, whitish with small iron and manganese concretions (analogous to layer 3 of Korolevo);
- 0.55—0.80 — brown fossil soil (analogous to III^d fossil soil of Korolevo — Brörup + Odderade? + Popperinge?);
- 0.80—1.00 — upper horizon of dark-brown fossil soil (analogous to layer 7 of Korolevo; top horizon of the IVth fossil soil — Riss-Wurm);
- 1.00—1.80 — lower horizon of fossil soil (analogous to layer 8 of Korolevo; lower horizon of the IVth fossil soil — Riss-Wurm);
- 1.80—2.00 — weathered rock crust.

In the undisturbed sections of the site we have managed to determine, that the ceramics and not patinated andesite artifacts and smoke-quartz came from layer 2 and from the upper part of layer 3; patinated andesite implements can be largely attributed to the lower part of layer 3 — i.e. to the dividing line between loam and fossil soil. The isolated artifacts made of quartzite and andesite were discovered in two preserved fossil soils: in layers 4 and 8.

The fact that the finds come from different

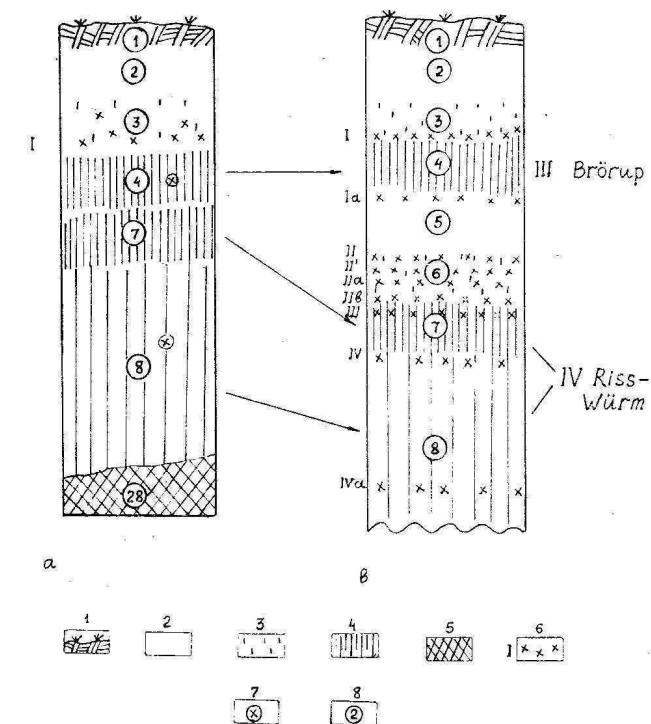


FIGURE 1. The correlation of geological sections Sorgeidy and Korolevo: a — Sorgeidy, b — Korolevo; 1 — recent soil, 2 — loam, 3 — manganese loam, 4 — fossil soil, 5 — weathered crust, 6 — Mousterian layer, 7 — isolated finds, 8 — lithological layers.

periods can be documented by technical-typological features. The artifacts coming from the upper part of the Sorgeidy section, and several scores of finds that appeared on the surface are knife-like blades, disk-shaped end-scrapers, ground axes and coiled ceramics. Most of ceramic finds, in view of Professor E. A. Balagura, are Hallstattian, the rest — Neolithic. Similar finds were discovered in analogous conditions in Korolevo and also in Rokosovo.

Most finds (almost 2 thousand artifacts), collected on the surface are of more archaic features than the previous ones, and have Mousterian character. These finds are identical to those attributed to the lower part of loam layer (layer 3).

In line with the stratigraphic facts and technical-typological characters of the assemblage one of the important chronological guides was the degree of preservation of their surface. The method of relative dating — obsidian or hydration-rind dating relatively later stone age periods of various regions are successful (Biró, 1982; Hole, Heizer, 1977). This method in its elementary (visually-metric) form was used in the abundant collections of andesite or obsidian artifacts in various Upper and Lower Palaeolithic Korolevo complexes. Based on stratigraphy, artifact typology, degree of patination and weathering of volcanic rocks a cultural-chronological scale has been established for the Palaeolithic in Transcarpathia, and standard samples have been obtained for various palaeolithic complexes of the region (Gladilin, 1985; Sitliviy, 1986). Numerous surface finds of Sorgeidy were processed in a similar way, and we obtained a "pure" complex of Mousterian implements — cultural-chronological complex I, and remains — in smaller quantity — of other two Palaeolithic complexes (the surface of these artifacts has been more weathered compared with the main complex).

COMPLEX I

This complex comprises 1992 finds: precores 9/0.4, cores 106/5.3, postcores (processed cores) 28/1.4, core-shaped fragments 7/0.3, flakes 873/43.8, blades 50/2.5, fragments 155/7.7, waste 445/22.3, tools 319/16.

As raw material local black andesite was used — 99%, the rest was made of quartzite, flint, obsidian. The surface of the andesite artifacts was covered with transparent grey patina, and with sporadic small moon-shaped porous traces of corrosion.

Technique. A significant collection of core-shaped artifacts have been gathered. The different degree of their utilization served as criterion to differentiate the precores in the initial phase of working (Gladilin, 1976, p. 43), cores, and postcores — maximally worked cores. The latter represent the final stage of utilization of the core on the level of its full exploitation. These artifacts have microlithic parameters — 3—4 cm. The dimensions of the cores and of precores are medium-sized — few exceed 5 cm. The technical-typological characteristic of the industry is given by V. N. Gladilin's classification (Gladilin, 1976).

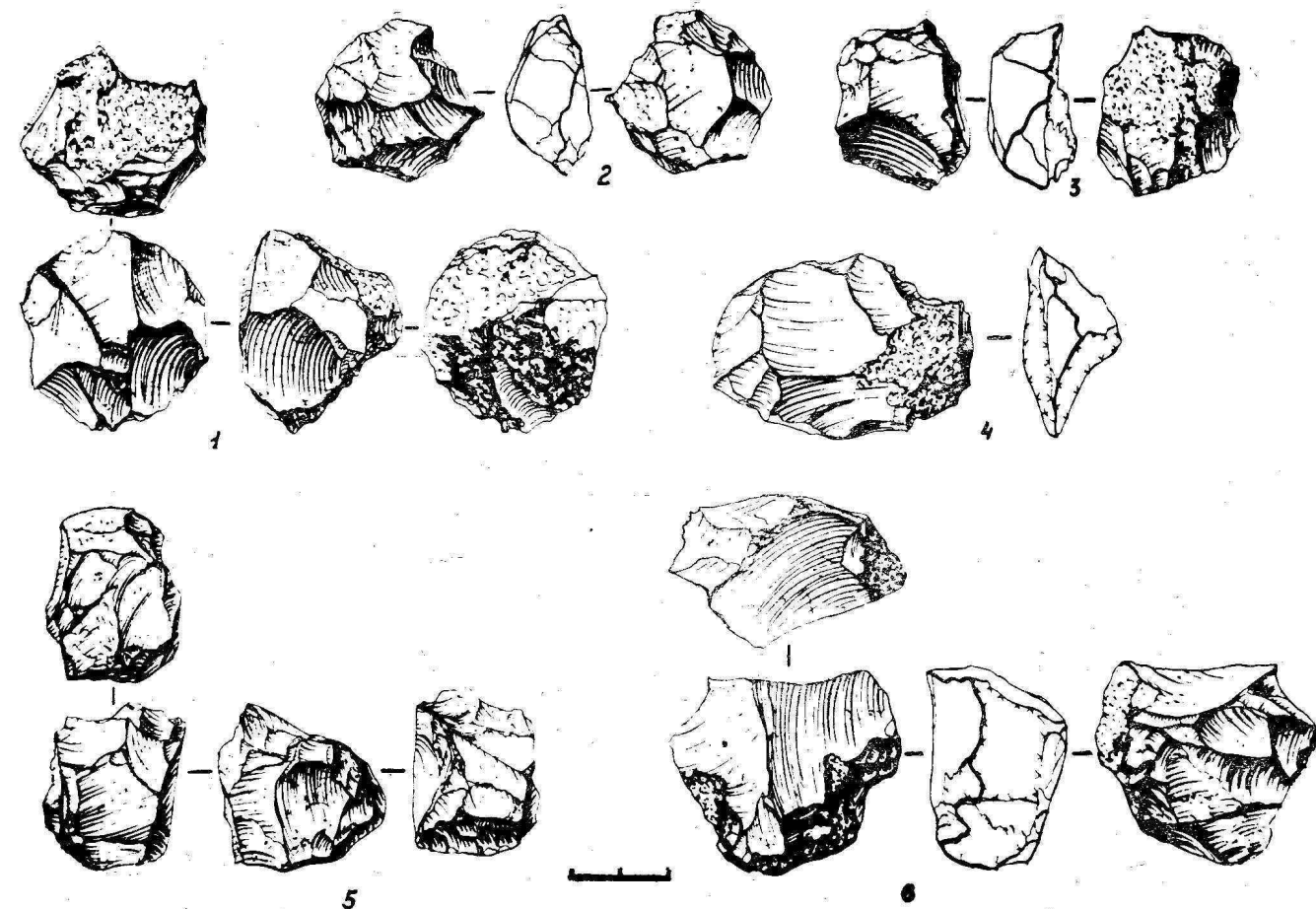


FIGURE 2. Sorgeidy, I complex. Cores.

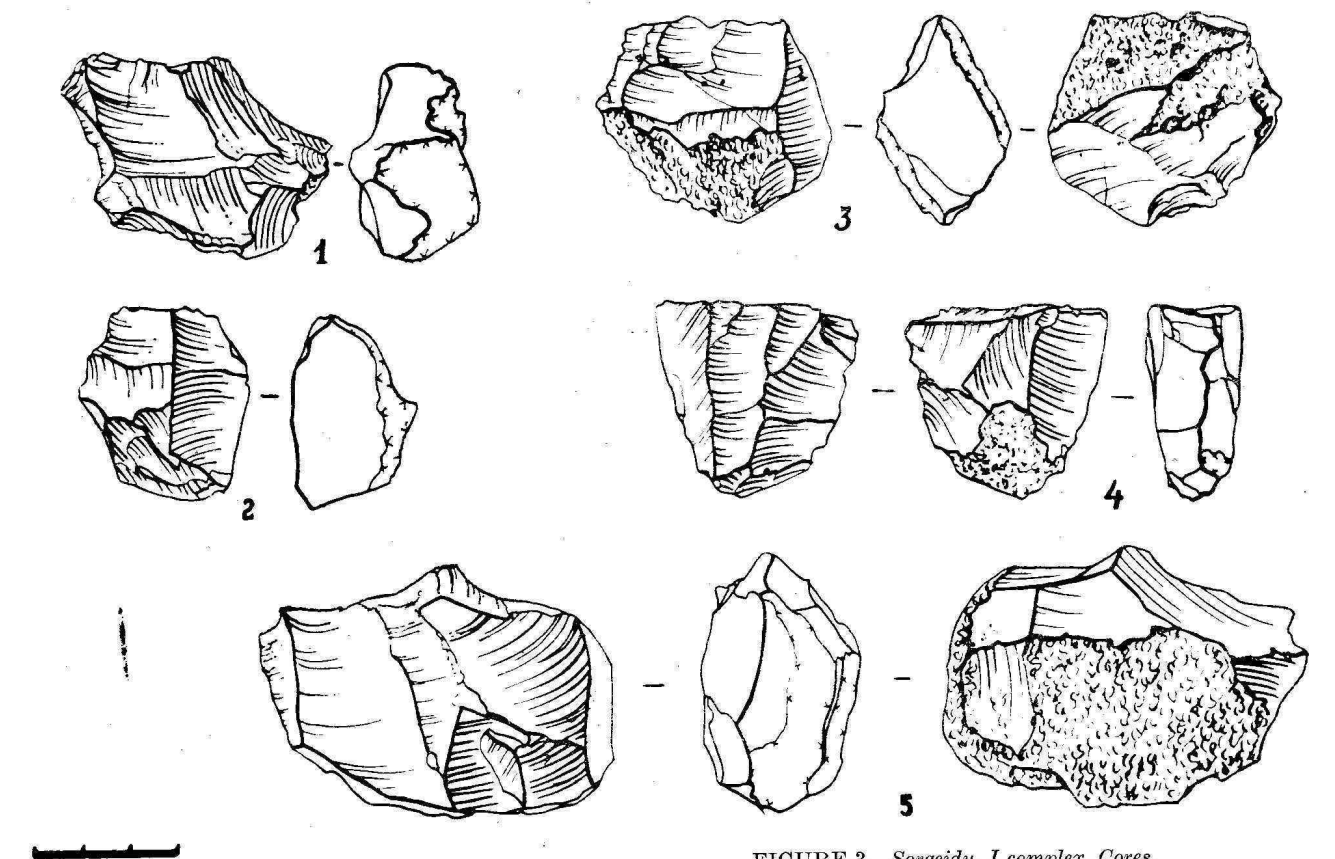


FIGURE 3. Sorgeidy, I complex. Cores.

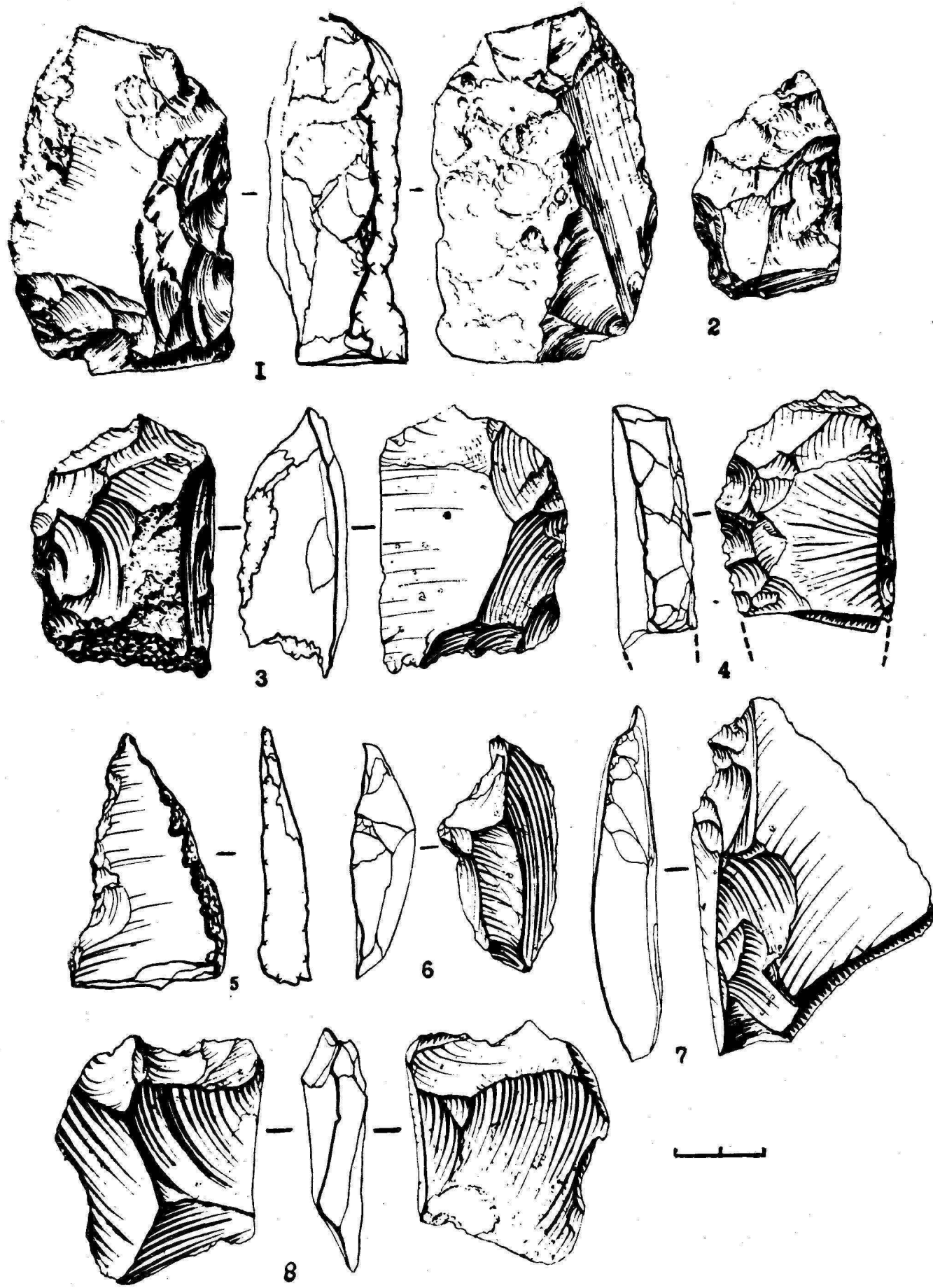


FIGURE 4. *Sorgeidy, I complex. Tools.*

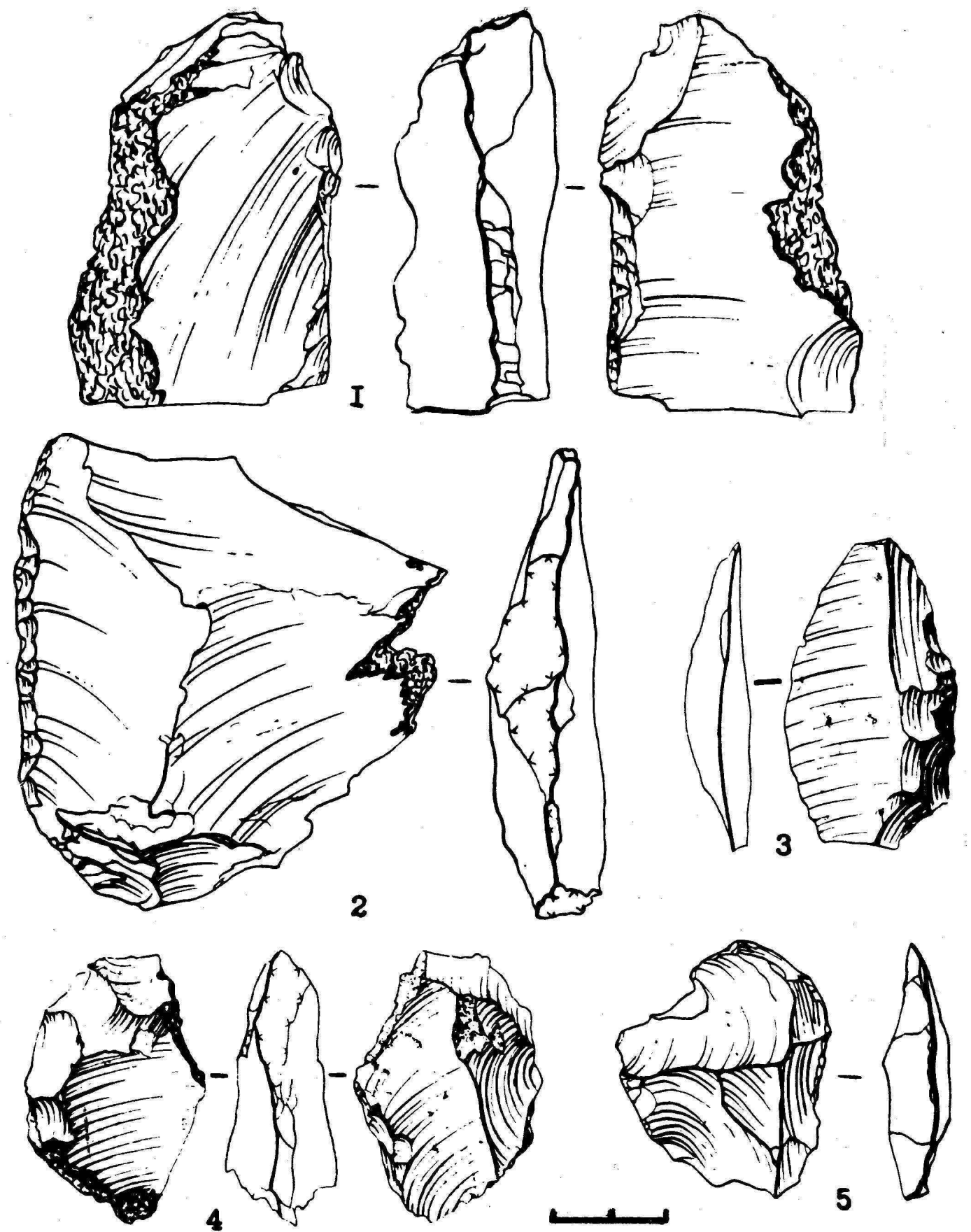


FIGURE 5. *Sorgeidy, I complex. Tools.*

Among cores prevail primitive ones (63 pcs.): systemless (of cubical and spheric outlines, but also square ones, oval, triangular and amorphous) 39 pcs. (Figs. 2:5, 6, 3:1). radial (disks 22 pcs.) and radially-bifacial (the disk-type cores have mostly oval or square shape 2 pcs.) (Fig. 2:1). The share of cores with parallel flaking — protoprismatic ones — is much smaller (19 pcs.) (Figs. 3:2—5): unidirectional 11, bidirectional 2, transversal 2, bi-transversal 1, and the rest are unidentifiable. The cores of parallel flaking are of flat profile and are of quadrangular shape in their majority; we find also occasional sub-cylindrical cores, reminding of Upper Palaeolithic cores. The collection includes also 4 Levalloisian cores: 2 tortoise-shaped and 2 Victoria-West (Figs. 2:4). They are atypical and are not characteristic of this complex. The other cores are fragmented — 20 pcs. The pre-cores and cores in their majority are systemless and radial — 7. Significant in the group of post-cores are the so-called "microdisks": radial and radially-bifacial — 9 pcs. (Fig. 2:2—3).

Division of flakes (similar to cores): primitive flakes 542, protoprismatic 110, Levalloisian 3, indefinable 218, primitive blades 20 and protoprismatic ones 30.

The following technical indices have been obtained:

Index of primitive technique, (expressed in % of the share of primitive retouched and non-retouched flakes with regards to all definable flakes and blades.) — 79.3

Index of protoprismatic technique, (expressed in % — the share of retouched and non-retouched protoprismatic flakes with regards to all definable flakes and blades.) — 19.6

Index of Levalloisian technique (I L) — 0.5

I lam — 4.5

I Fs — 0.7

I F — 11.3

Length coefficient of the flakes (after Bourgon) — 97.3
Massivity coefficient of flakes (after N. K. Anisutkin) — 29.7

In general primary flaking was done quite negligently, and consequently most flakes resulted short and of irregular geometrical shapes, and are often fragmented. The technique of primary flaking can be characterized as primitive, non blade-like, non-Levalloisian, non-faceted.

Typology. There are 319 tools (16%). There is no need to add that a great deal of tools with secondary working (more than 100 items) are very difficult to classify. Many of them (28) are bifacial or partly bifacial coarse chopped, more frequently they were chopped from one side only. They represent something midway between core-like artifacts and blanks for tools: possibly for side scrapers, knives, denticulated (Figs. 4:1, 2), chisel-like tools. The other group of artifacts represents flakes, more often primitive ones, with shallow and irregular traces of use, in the form of pearly retouch — 45 pcs (Fig. 5:5). The not-too-expressive character of the secondary working and the absence of any accommodation made it impossible to attach them to the group

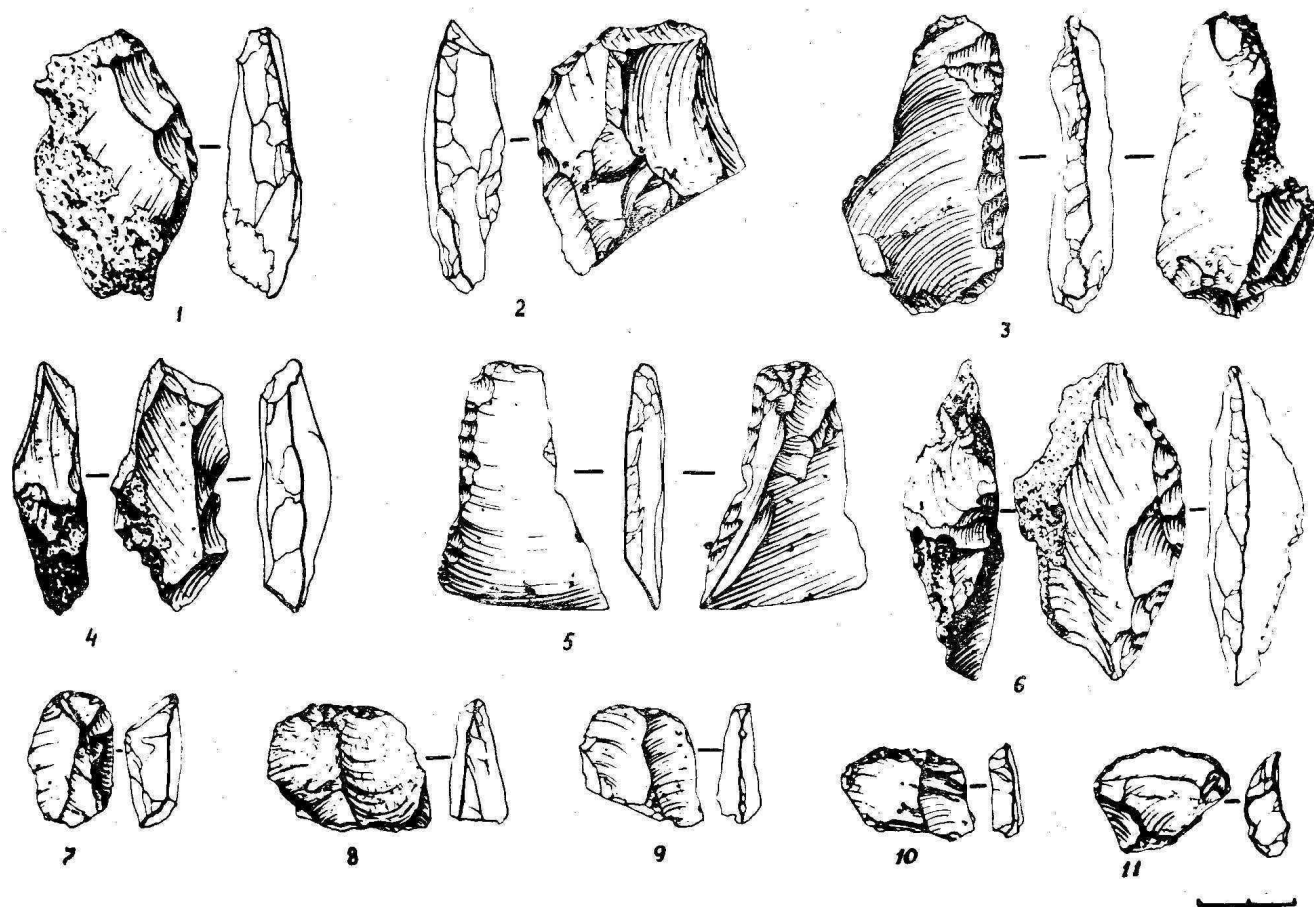


FIGURE 6. *Sorgeidy, I complex. Tools.*

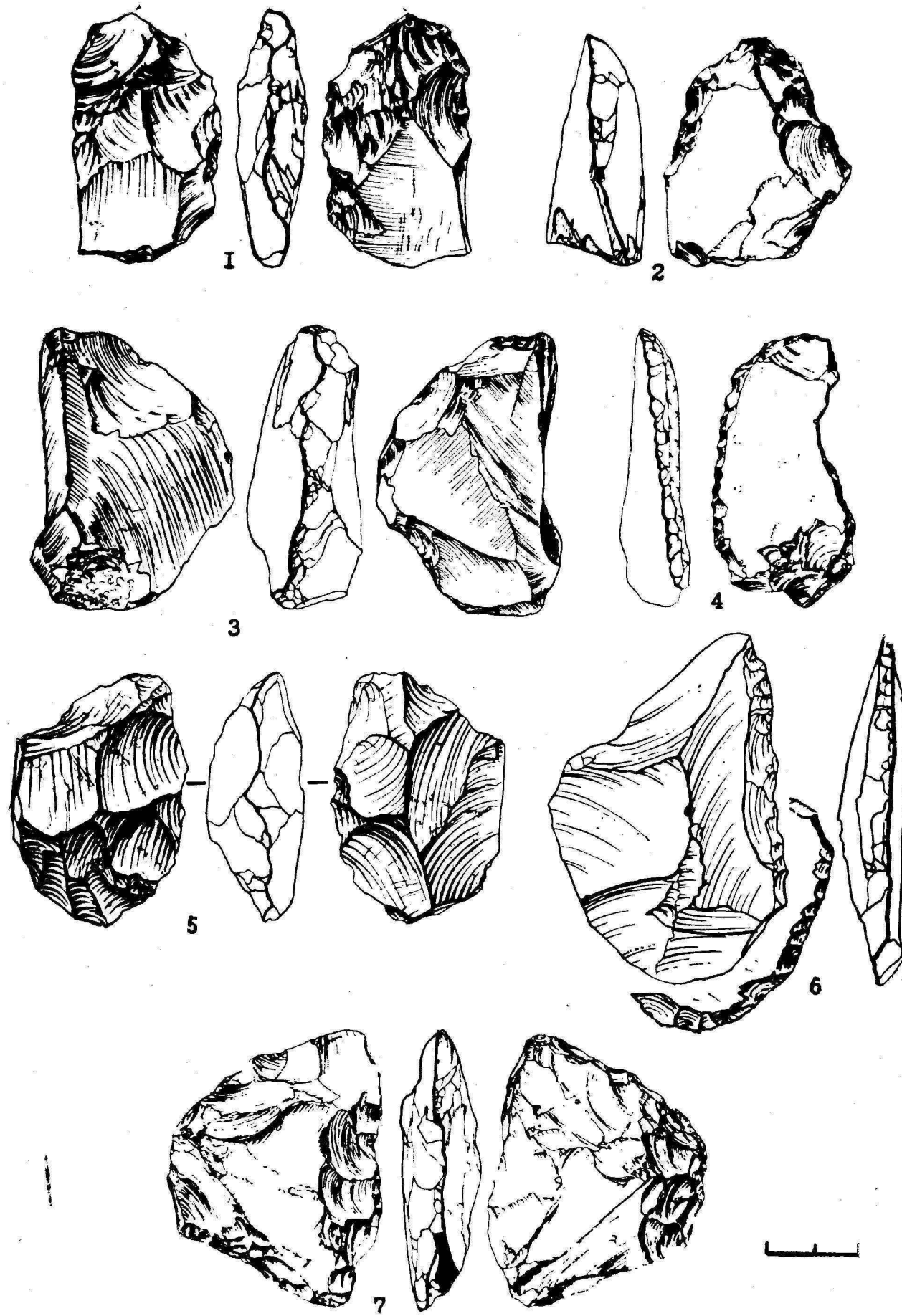


FIGURE 7. *Sorgeidy, I complex. Tools.*

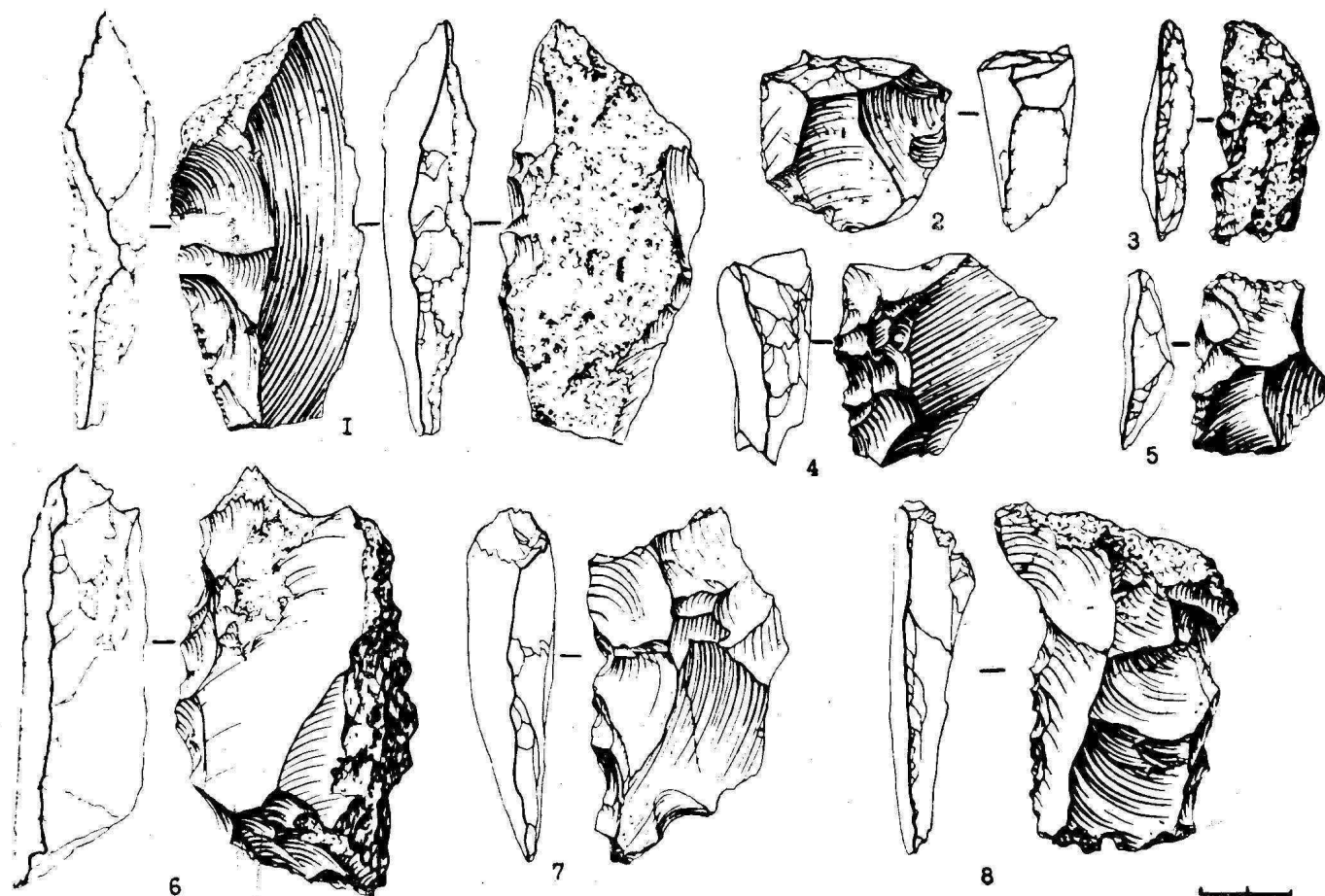


FIGURE 8. Sargeidy, I complex. Tools.

knives or rezchiks. All the above mentioned artifacts, as well as the doubtful or unidentifiable (fragmented ones), have been exempted from the calculations.

The rest of the tools (176 pcs) are typologically evident (Table 1). The proportion of knives, side scrapers, denticulated and notched artifacts in this group is roughly the same.

Knives (52 pcs) — simple (with single cutting edge) with convex (19), straight (5), sinuous (2), angular (1) working edge (Figs. 5:1-4; 6:1, 3, 6), and also more complicated and developed with several cutting edges or with longer working edge: bow-shaped (5), trapeziform (3), basally-arched, double-convex, double-concave, convexly-concave, triangular, oblique-angular, crescent-shaped, semi-oval — by one implement of each type (Figs. 4:3; 6:2, 5; 7:1, 2, 4-7). There is retouch both from the dorsal and ventral side, or alternately from the one and the other. Some developed knives have been worked fully or partly from two sides. For accommodation of the tools was used the cortex of the flakes, or artificial backs — flake negatifs or fractures. In other cases the back was retouched or blunted, or the side opposite to the cutting edge was prepared. Most typical of this group of artifacts is the simple knife with dorsally or ventrally convex edges and with natural or artificial back.

Side-scrapers (15 pcs). Prevail simple (single-edge) side-scrapers with convex (5), concave (1),

TABLE 1. Sargeidy, complex I. List of typologically characteristic tools

| | pcs | % |
|----------------------------------|-----|------|
| Choppers | 2 | 1.1 |
| Chopping-tool | 1 | 0.5 |
| Axes | 2 | 1.1 |
| Knives | 52 | 29.5 |
| Side-scrapers | 15 | 8.5 |
| Denticulates | 51 | 29 |
| Draw-knives | 11 | 6.2 |
| Points | 5 | 2.8 |
| Tips | 8 | 4.5 |
| Racettes | 9 | 5.1 |
| Chisel-like implements | 14 | 7.9 |
| End-scrapers | 5 | 2.8 |
| Perforator | 1 | 0.5 |

straight (1), sinuous (1) working edges, but there are also sporadic developed types: bow-shaped (2), basally-convex, crescent-shaped (Figs. 7:3), the rest are undefinable. The working of the edge and the accommodation parts are analogous to those of the knives.

Denticulated flakes (51 pcs) — similarly as the knives denticulated flakes occupy a leading position in the collection. In the group prevail simple, single-edge tools with convex (12), straight (8), sinuous (6), concave (6), angular (1) edge (Figs. 4:5; 6:4;

8:1, 3-8; 9:1, 3). The developed denticulated flakes are represented by unique samples: bow-shaped, triangular, oblique-angular, oval (Fig. 4:4), crescent-shaped, laurelleaved (Fig. 9:2), circularly sinuous arched. The rest of the tools of this category (9) are fragmented. The shaping of the working edge and of the accommodation parts is analogous to that of side scrapers and knives. The bifacial and partly-bifacial artifacts are rare. Chopping was used quite often. Well perceptible is the slipshod character of the secondary working of the denticulate tools. Typical representative of the denticulate artifacts is the convex single edge tool with natural or artificial non-retouched back.

Notched artifacts (draw-knives) complement the group of denticulated tools with 11 pieces. Among them: with longitudinal notch (the notch is on the longer side of the blank — 4) (Fig. 4:7), with a beak-like projection on the longitudinal side of the flake (Fig. 4:6), and on its terminal part (Fig. 4:8). The rest of the tools are undefinable.

Chisel-like artifacts — they represent a clear-cut series of 14 items (Fig. 10). They comprise: tools with a single working edge (convex 7, concave 2, straight 1), and with two working edges situated on two opposite narrow sides of a blank — biterminal ones (4 pcs). It cannot escape our attention that

the chisel-like artifacts were more often worked from both sides than was the case with knives (7 out of 14 artifacts). The complimentary trimming resulted in thinning or in blunting of the basal part, or in cutting off the longitudinal lateral edges, reminding thus in miniature the working of the rather distinctive cleavers of Korolevo (Fig. 10:7).

Tips, points (in total 5 and 8 pcs.) They are not characterized by repeated features of production or constant form. They are conventionally divided into Tayacian and Mousterian. The first group is characterized by coarse working and amorphous outlines. The finishing of these tools is uneven, dented and has sub-triangular or rhomboid outlines (Figs. 11:1, 2, 4-6). Sporadically they appear with beak-shaped edges: two of them remind of Durutuy type (Ketraru, Anisyutkin, 1967). Expressive is a Quinson-point (Fig. 11:3). More perfect is the second group of artifacts, represented by triangular, oblique-angular, laurelleaved, willowleaved and rhomboid points and tips (Figs. 9:4; 11:7, 8.) Most of these tools were worked from the ventral side, in the rest of cases — partly from two sides. The tips, as a rule, have sharpened base.

Small Mousterian end-scrapers form quite a representative group of tools (9 pcs). They are made on small splinters or scales. Their working edge

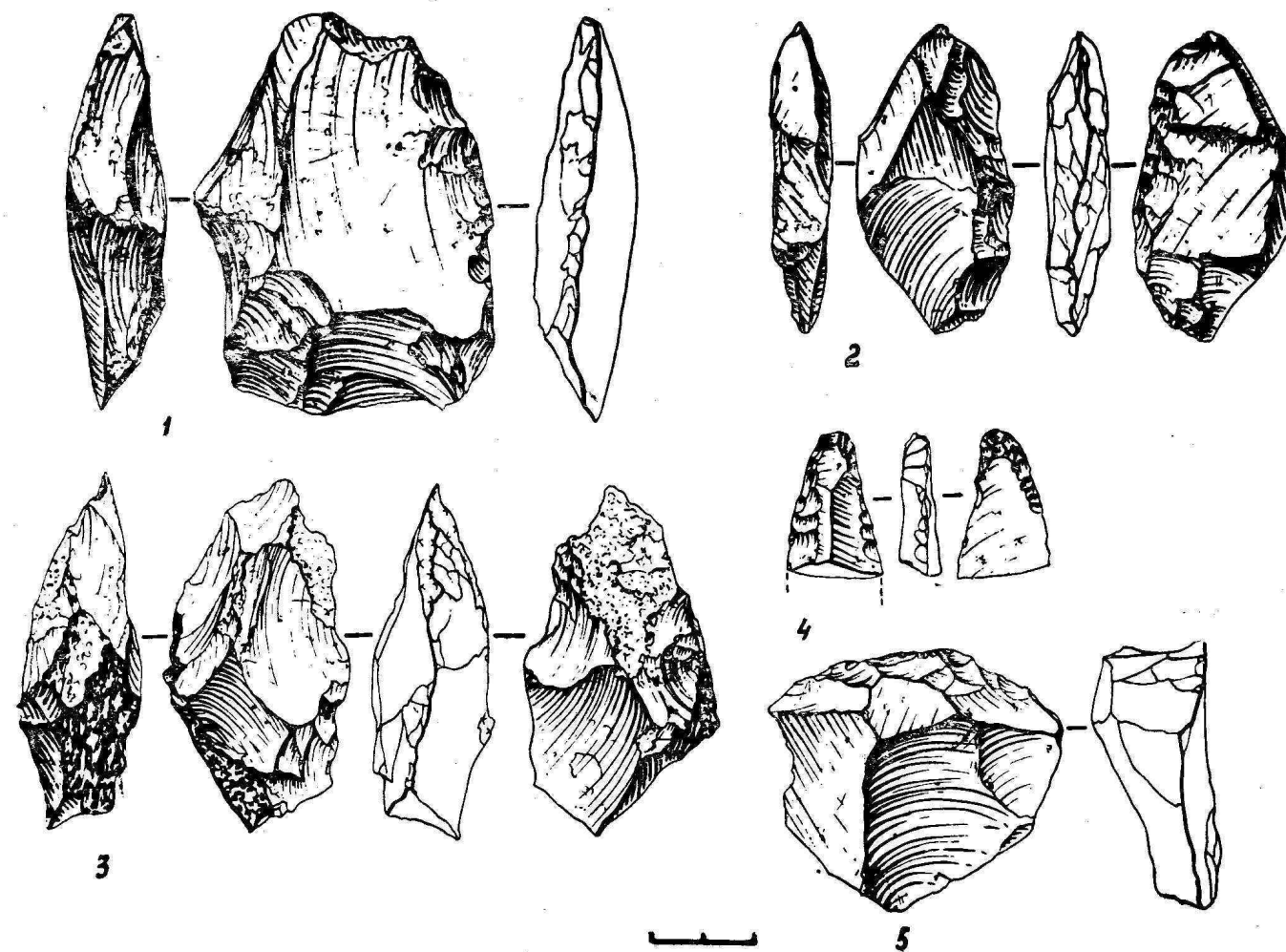


FIGURE 9. Sargeidy, I complex. Tools.

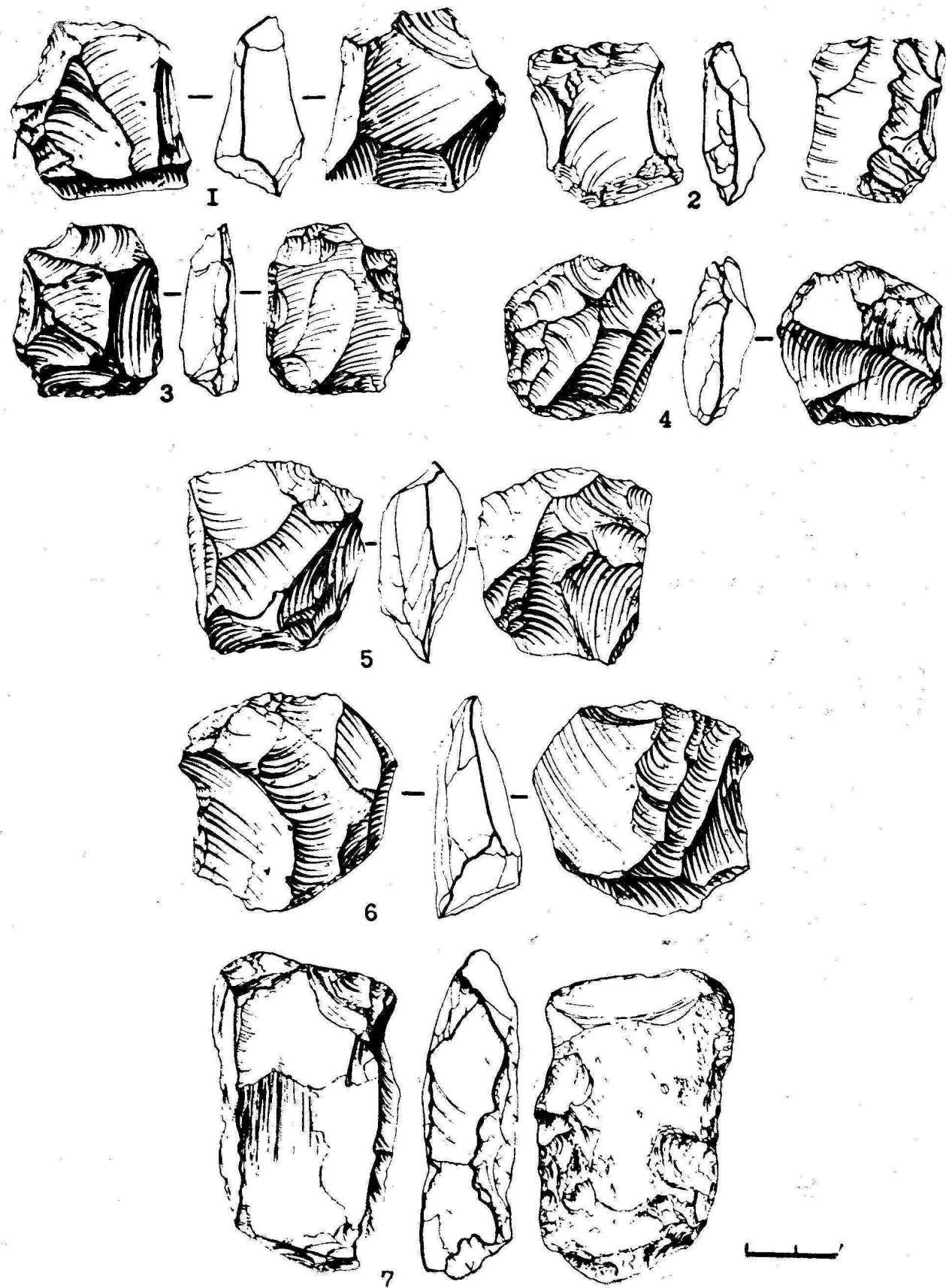


FIGURE 10. *Sargeidy, I complex. Tools.*

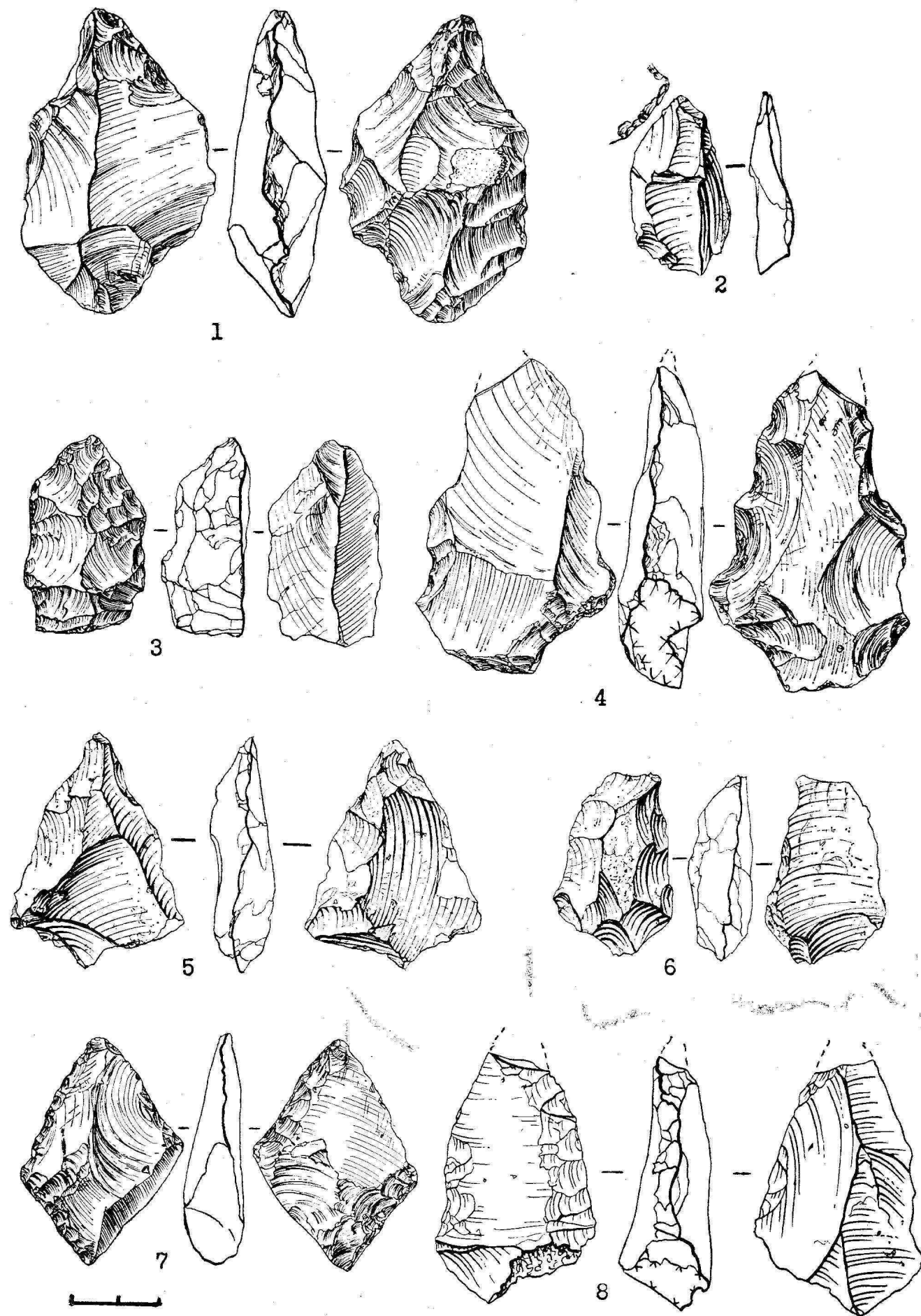


FIGURE 11. *Sargeidy, I complex. Tools.* ▶

is convex and covered with small pearly retouch (Figs. 6:7—11).

End-scrapers (5 pcs), atypical, made on flakes (Fig. 6:2).

The other tools are rare: two choppers on quartzite pebbles (Figs. 12:1), two coarsely chopped axes, one chopping tool, a large flake with traces of chopping (Figs. 12:2) and a borer.

The Sorgeidy collection of tools is characterized by typical Mousterian forms: side scrapers, knives, and denticulated-notched artifacts, in small number also points and tips. The collection is dominated by denticulated-notched artifacts, and by scrapers, knives, appearing roughly in the same proportion. Most typical are the knives and denticulated tools with a single edge, most frequently convex (simple): dorsal, ventral, alternative, with alternative, natural or artificial non-retouched back (wide flake, possible

fracture). The specific character of the complex is given by the various developed, complicated with several edges, knives and denticulated tools — triangular, oblique-angular, oval, crescent-shaped, etc. (often bifacial and partly bifacial) and also characteristic chisel-like implements, Mousterian, small end-scrapers and Tayacian points.

To the specific character of the industry has contributed also the intentional fragmentation. The share of fragmented implements amounts to 40%. The uniform degree of conservation of both fractured and worked surface of the artifacts well documents that they are of the same age. Such a high proportion of fragmentation has not been recorded in other Korolevo horizons, although the same raw material was used in all of them. It would be more logical to assume that a considerable proportion of the artifacts broke during the coarse, careless primary

and secondary working, and some of the tools were fragmented during their finalizing.

As to its technical-typological characteristics the 1st complex of Sorgeidy can be unequivocally identified as Mousterian, belonging to the groups of denticulated industries in its specific manifestation. We can see certain similarities with these finds in the south-east, in Mersina (Moldavia) (the difference consists mainly in the microparameters of the latter), and in the west — with the finds of the so-called "Alpine Mousterian". Direct analogies appear so far only in Transcarpathia — complex I from Korolevo, Cherna X, Khizha. The individuality of these complexes allow to determine the specific Mousterian Cherna Culture (Soldatenko, 1982, Kulakovskaya, 1989)). Between Sorgeidy and the finds of Cherna Culture there are resemblance in the stratigraphic position of the finds and also in the degree of their preservation, suggesting that they are contemporaries. Identical features appear also in their technical and typological indices (Table 2). Some not too important statistical differences between Sorgeidy and other sites of the Cherna Culture can be explained in our view by the incongruity of the compared collections.

At present the Complex I at Sorgeidy, is the most expressive and representative of the denticulated Mousterian sites in Transcarpathia. The finds in has yielded are identical with those found in complex I in Korolevo, directly covering the complexes of the initial period of the Upper Palaeolithic. Unfortunately the few andesite and quartzite artifacts in Sorgeidy, laying below the main complex and correlated by the degree of preservation of the andesite surface with finds from complexes I-a, II-a and III of Korolevo, they cannot be identified unequivocally either as Mousterian or as artifacts from the initial phase of the Upper Palaeolithic. But Sorgeidy I complex is nevertheless a further proof of the survival of Mousterian traditions following the appearance of the first complexes of the initial stages of the Upper Palaeolithic. The known early finds of this phenomenon represent the natural way of development, illustrating the uneven, non-unilinear development of the Palaeolithic societies. Thus on the level of the present knowledge the genesis of the Palaeolithic industries (Late Oldowan — Acheulian — Mousterian — initial stage of the Upper Palaeolithic) in the region of the Vihorlat-Gutin Mountain Range culminates in the extraordinarily undeveloped archaic denticulated Mousterian.

TABLE 2. Technical-typological indices of the denticulated Mousterian of Transcarpathia

| Number of artifacts | Korolevo | Cherna | Sorgeidy |
|-------------------------------|----------|--------|----------|
| | 400 | 300 | 1992 |
| I L | 2 | 3 | 0.5 |
| I of protoprismatic technique | 20 | 22 | 19.6 |
| I of primitive technique | 78 | 74 | 79 |
| I lam | 8 | 10 | 4.5 |
| I Fs | 2 | 6 | 0.7 |
| I F | 6 | 25 | 11.3 |
| I bifacial working | — | — | 3.5 |
| I side-scrapers, knives | 38 | 34 | 37.3 |
| I denticulated-notched | 54 | 52 | 35.2 |
| I Upper Palaeolithic tools | 3 | 4 | 11 |

Three other sites, yielding analogous finds, have been discovered in the vicinity of Sorgeidy. One of them — Sorgeidy I-a — is stratified. Denticulated andesite artifacts were collected by the author also in the area of the known early-Acheulian-Mousterian sites Rokossovo and Maliy Rakovets in Transcarpathia. All this proves the widespread extension of the denticulated Mousterian complexes in the Brörup period in the Vihorlat-Gutin Mountain Range.

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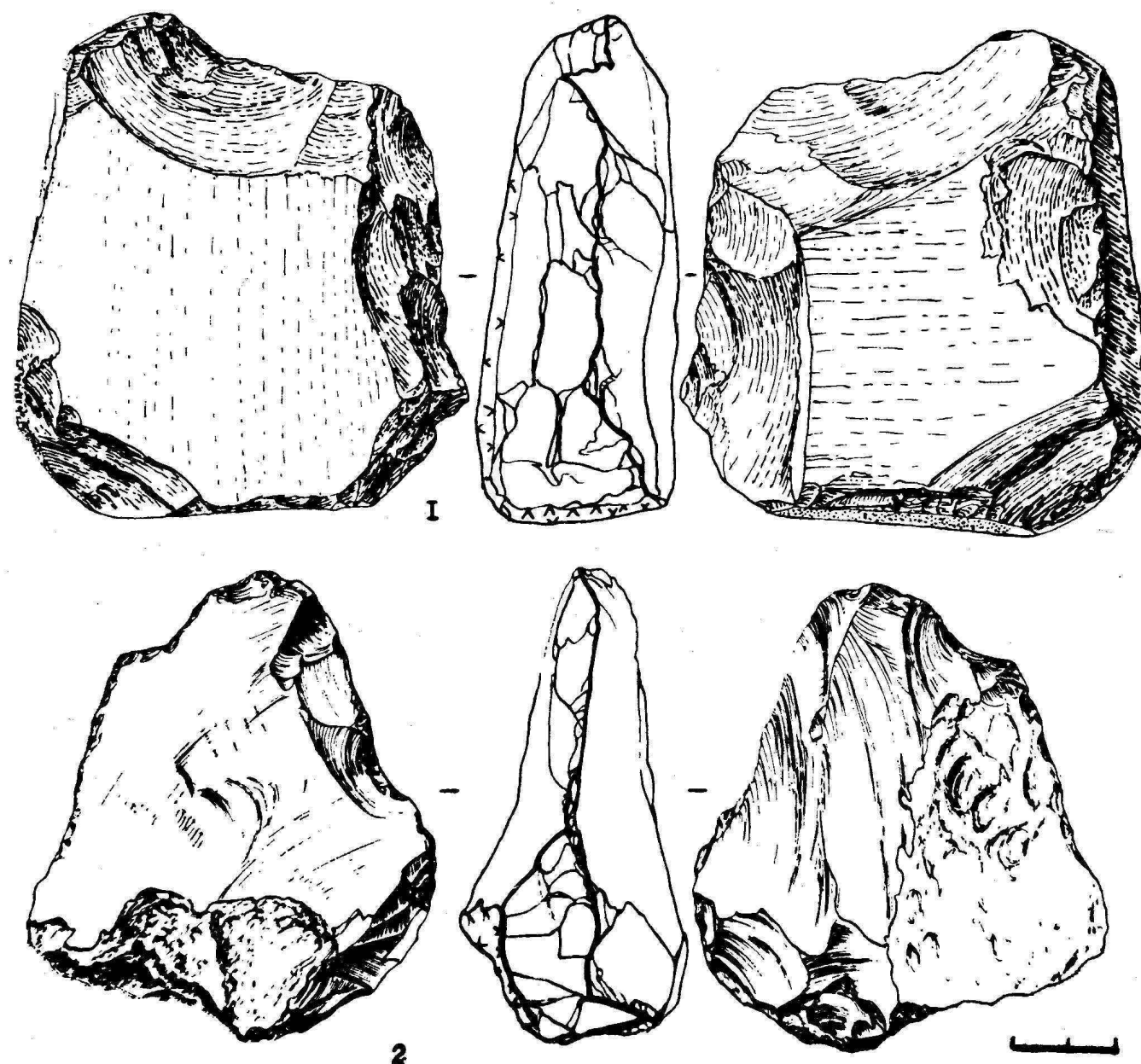


FIGURE 12. Sorgeidy, I complex. Tools.