

About Character of Hunting Implements in the Sites of the Kostenki-Streletskaya Culture

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1. General information

The Kostenki-Streletskaya Late Palaeolithic culture was discovered by A. N. Rogachev who was the first to prove the peculiar character of Eastern European sites with triangular projectile points bifacially worked, if compared to the Central European Szeletian and the Western European Solutrian. According to general characteristics, such as the Mousterian-like forms of implements and bifacial leafpoints formed, this culture belongs to the same way of development as the Szeletian.

2. Geographical distribution

Until these last years almost all the sites of the Streletskaya culture had been found in the Kostenski-Borshevo sector of the Don river basin. The Sungir' site (Kl'azma river basin) was the only exception. Now we know other sites of this culture: Birjuch'ya Balka (Severskij Donetz river basin) which was discovered by A. E. Matukhin in 1988, and Garchi (Kama river basin) which was discovered by P.J. Pavlov in 1989.

3. Chronology and Cultural phases

The rather clear stratigraphy of the Kostenki-Borshevo sector surface layers including Late Palaeolithic sites makes it possible to state their relative chronology. The oldest sites of Kostenki (1st chronological group) are located in humic deposits (so-called low humic bed) overlaid by a bed of nonhumic loam with volcanic ash lenses. Their radiocarbon age is older than 35000 B.P. Presently, the deposits involved can be incorporated within the Hengelo/Podgraden Interstadial. Younger sites (2nd chronological group) are located in humic deposits (so-called upper humic bed) overlying loam with volcanic ash lenses. Now we have a lot of radiocarbon dates for these sites: between

32000–25000 B.P. So, these deposits can be incorporated within the Paudorf Interstadial. Horizons of the 3rd chronological group are located in brown loesslike loam above the humic beds. Kostenki-Streletskaya sites date back to the 1st (Kostenki 12, horizon III; Kostenki 6) and to the 2nd, (Kostenki 12, horizon Ia; Kostenki 11, horizon Y; Kostenki 1, horizon Y) chronological groups. The stratigraphic position of the 5th cultural horizon of Kostenki 1 is not quite clear, because the relation between the humic deposits and the volcanic ash lenses is not established. Considering both conditions of the cultural level (Briansk soil) and the radiocarbon dates (GrN-5446: 24430 ± 400; GrN-5425: 25500 ± 200), the Sungir' site is considered as the youngest site of the Kostenki-Streletskaya Culture. The stratigraphical position and the geological age of Birjuch'ya Balka and Garchi are still unclear.

The sites of the Streletskaya Culture can be divided into three phases according to their stratigraphical position and to their typological characteristics.

1st phase (early) — the sites of the low humic bed: Kostenki 12, horizon III; Kostenki 6.

2nd phase (developed) — the sites of the upper humic bed: Kostenki 11, horizon Y; Kostenki 12, horizon Ia and Kostenki 1, horizon Y — according to the typological characteristics. Birjuch'ya Balka and Garchi belong to this phase according to their typological characteristics.

3rd phase (final) — only the site of Sungir'.

The progressive evolution of the culture from one phase to another means a gradual reduction of Mousterian elements and an increase of those of the Upper Palaeolithic.

4. Projectile points of the Streletskaya Culture

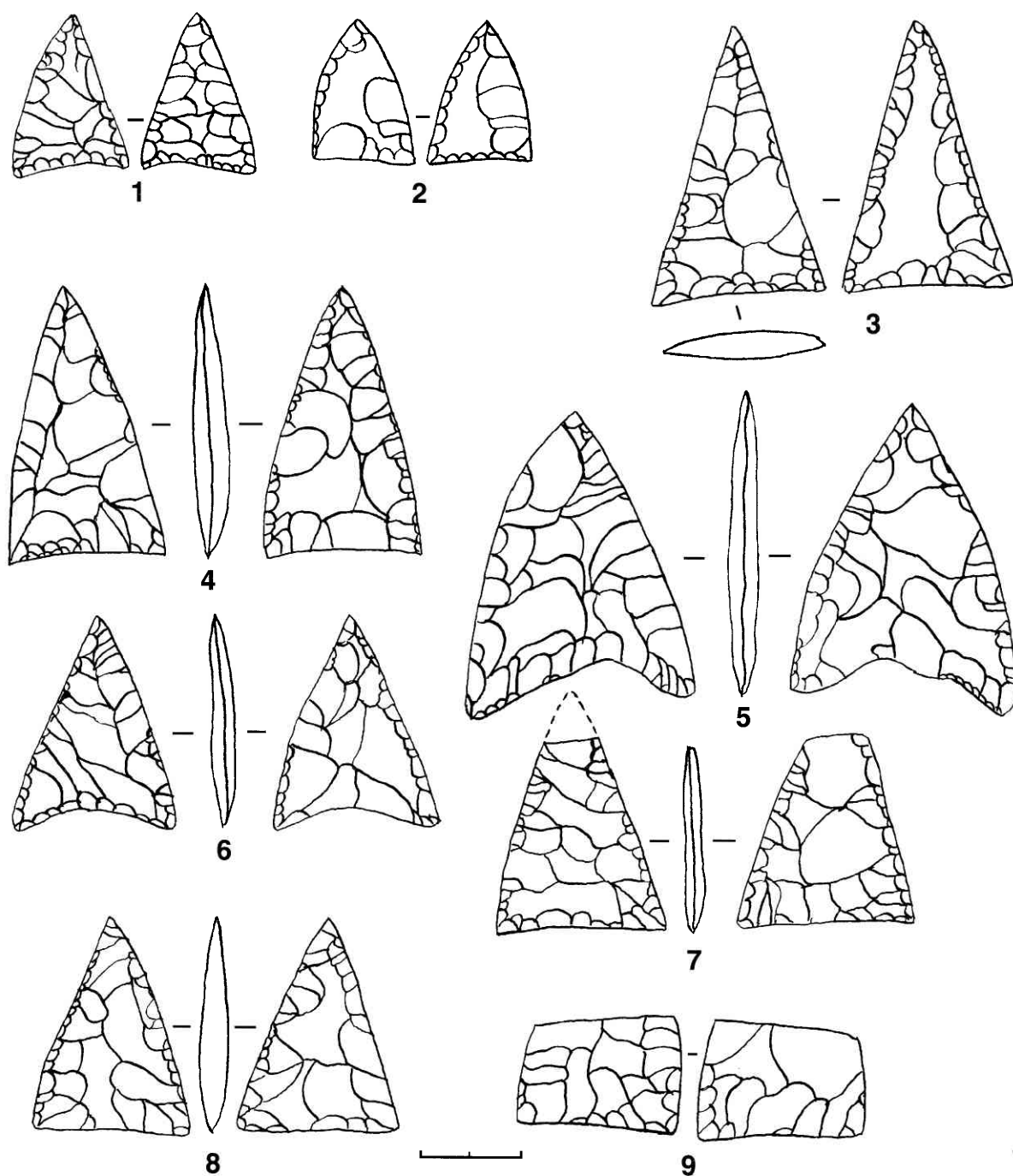


Fig. 1 — Triangular projectile points. 1 et 7: Birjuch'ya Balka; 2, 4 et 5: Kostenki 1, horizon V; 3: Kostenki 11, horizon III; 6: Kostenki 6; 8: Kostenki 12, horizon III; 9: Sungir'.

The Kostenki-Streletskaya Culture provides interesting material on people's hunting implements of the initial period of the Late Palaeolithic. These are largely represented by various flint projectile points; there are also other kinds of hunting implements in the Sungir' site. Relative periodicity statement of the Streletskaya sites makes it possible to notice certain changes concerning hunting implements along the time.

In the Streletskaya culture, there are four main types of projectile points: 1. Triangular concave-based projectile points (fig. 1); 2. "Poplar-leaf" shaped points (fig. 2:3); 3. Large elongated points with slightly convex uneven base (fig. 2:1-2); 4. Elongated narrow round-based points (fig. 2:4-6).

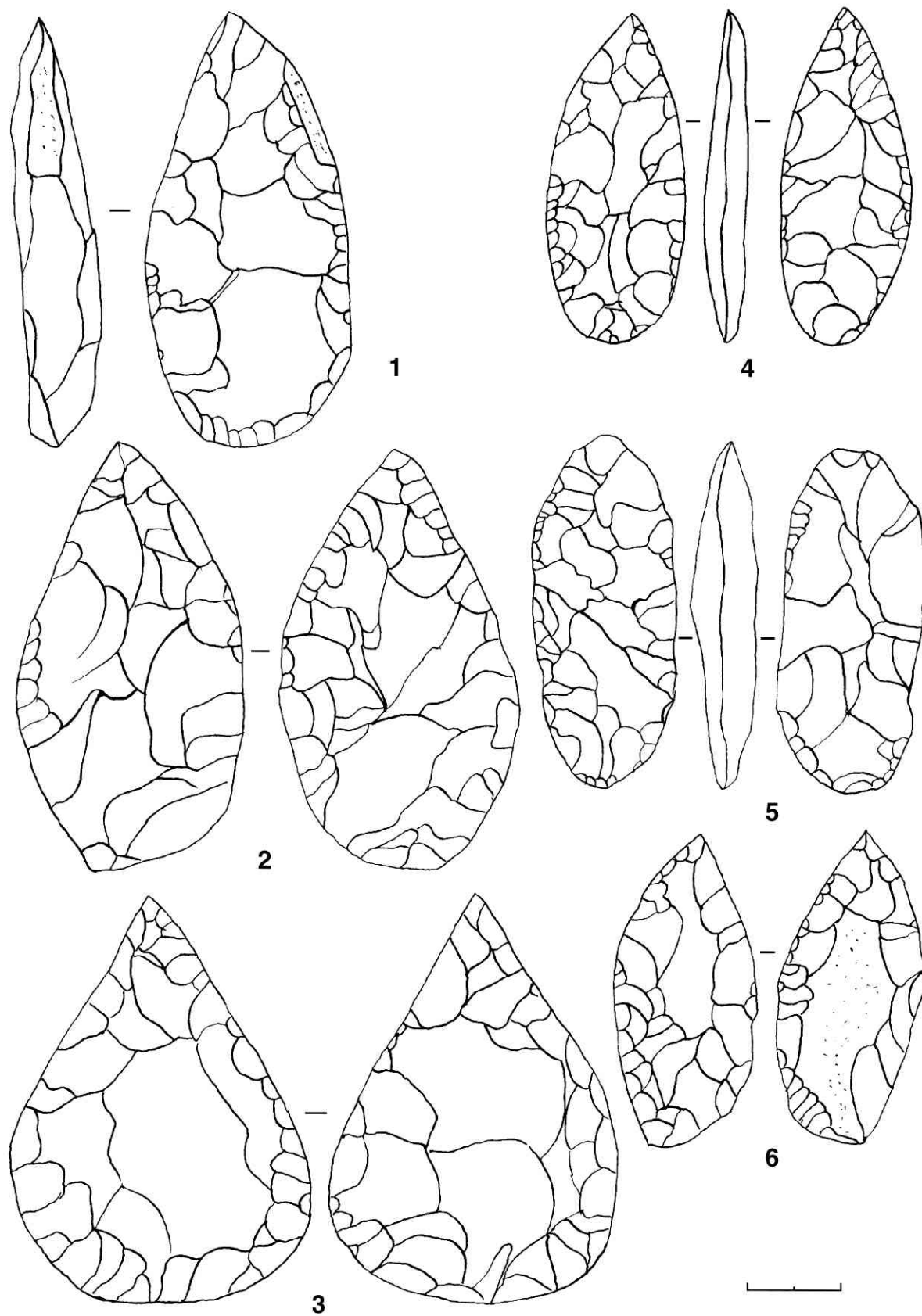


Fig. 2 — Bifacial Leaf-points of Streletskaia Culture. 1 et 5: Biruch'ya Balka; 2, 3, et 6: Kostenki 12, horizon III; 4: Sungir'.

Triangular concave-based projectile points are one of the most specific types of the Kostenki-Streletskaya Culture. Their common features are as follow: prolongation index is, as a rule, less than 1.5 cm; maximum width coincides with the base; the edges and the base are normally asymmetrical about the long axis; the ends of the base (aileron) are never turned up. Six principal subtypes of the triangular points concerned are distinguished:

- a) Average size (2.5 cm × 3.5 cm) a slightly concave base, slightly convex edges. These occur during the whole period of the existence of Streletskaya Culture: in Kostenki 12, horizon III; Kostenki 1, horizon Y; Birjuch'ya Balka, Garchi, Sungir' (fig. 1:7–9).
- b) Average size (3 cm × 3.5–4 cm) concave-based, almost straight edges forming produced *aileron*s at the base. Found in the sites of the early phase (Kostenki 12, horizon III; Kostenki 6; fig. 1:6) and at the beginning of the developed phase (Kostenki 1, horizon Y).
- c) Larger size than average (3 cm × 5 cm), a slightly concave base, slightly convex edges forming produced angles at the base. Found in Kostenki 1, horizon Y (fig. 1:4), Kostenki 11, horizon Y and Birjuch'ya Balka (developed phase).
- d) Larger size than average and large size (up to 4 cm × 6 cm), a sharply concave, asymmetrical base, slightly convex edges forming produced *aileron*s at the base. Encountered in Kostenki 1, horizon Y (fig. 1:5) and Kostenki 11, horizon Y (developed phase).
- e) Small size (2 cm × 2.5 cm) edges and a base are rather diverse in outline. Encountered in Kostenki 1, horizon Y (fig. 1:2) and in Birjuch'ya Balka (fig. 1:1)—developed phase.
- f) Elongated projectile points with almost straight base and edges. These occur at the end of the developed phase (Birjuch'ya Balka) and in Sungir' (final phase). On the territory of the Kostenki-Borshevo sector, a similar point has been found in a still younger Kostenki 11, horizon III site which is not referred to the Kostenki-Streletskaya Culture.

A larger portion of the points described was probably used to supply throwing implements with. The “e-subtype” deserves special mention with its points corresponding so much to the arrowheads of the later period that it is difficult to regard them otherwise. In my opinion, the presence of the “e-subtype” proves that the bow

and arrows were invented in the early period of the Upper Palaeolithic.

It is interesting to see the development of this type during all periods of the existence of the Streletskaya Culture. There are only two subtypes in the early and in the final phases. All 6 subtypes are known in the developed phase. This situation corresponds to the quantitative distributions of the projectile points in the sites of Kostenki-Streletskaya Culture.

A second type of projectile points met in the Kostenki-Streletskaya Culture sites is large (6 cm × 8.5 cm) and is called “poplar-leaf” shaped point. These points occur in the early (Kostenki 12, horizon III; fig. 2:3) and developed phases (Kostenki 1, horizon Y; Birjuch'ya Balka). A third type also presents large, but elongated points (5 cm × 9 cm). They also occur in the early and developed phases: Kostenki 12, horizon III (fig. 2:2), Kostenki 1, horizon Y and Birjuch'ya Balka (fig. 2:1). Second and third types, compared to the triangular ones, differ not only in size, but also by having been treated more roughly. They might have served as light spear-heads. A fourth type presents elongated, round-based (on the best pieces) points distinguishable during all periods of the Kostenki-Streletskaya Culture: from the early phase (fig. 2:6) till the final one (fig. 2:4).

5. Quantitative distribution

The diagram (fig. 3) shows that the percentage of the projectile points of the early period of the Streletskaya Culture is about 10%. In the developed phase, it increases till 20–24%, and at the final phase it falls down to only 1%. A new kind of hunting implements appears at the same time in the Sungir' site, which was unknown in the earlier Kostenki-Streletskaya: light and heavy spears made of a straightened mammoth tusk. It is a compound implement, its striking point is provided with numerous glued flint chips rows. The row of chips starts within 1–2 cm from the end of the spear covering up to 42 cm of the shaft. One of the light spears bears a bone disc which might have had a cult meaning. O.N. Bader (1977) succeeded in proving that in the twin burial, where these unique light spears and spears had been found, there were wooden light spears also provided with rows of flint chips. The decrease of the percentage of projectile points in Sungir' may

early phase		developped phase		final phase	
157	55	149	~ 600	1870	implements, total
14	5	36	~ 120	18	bifacial projectile points, total

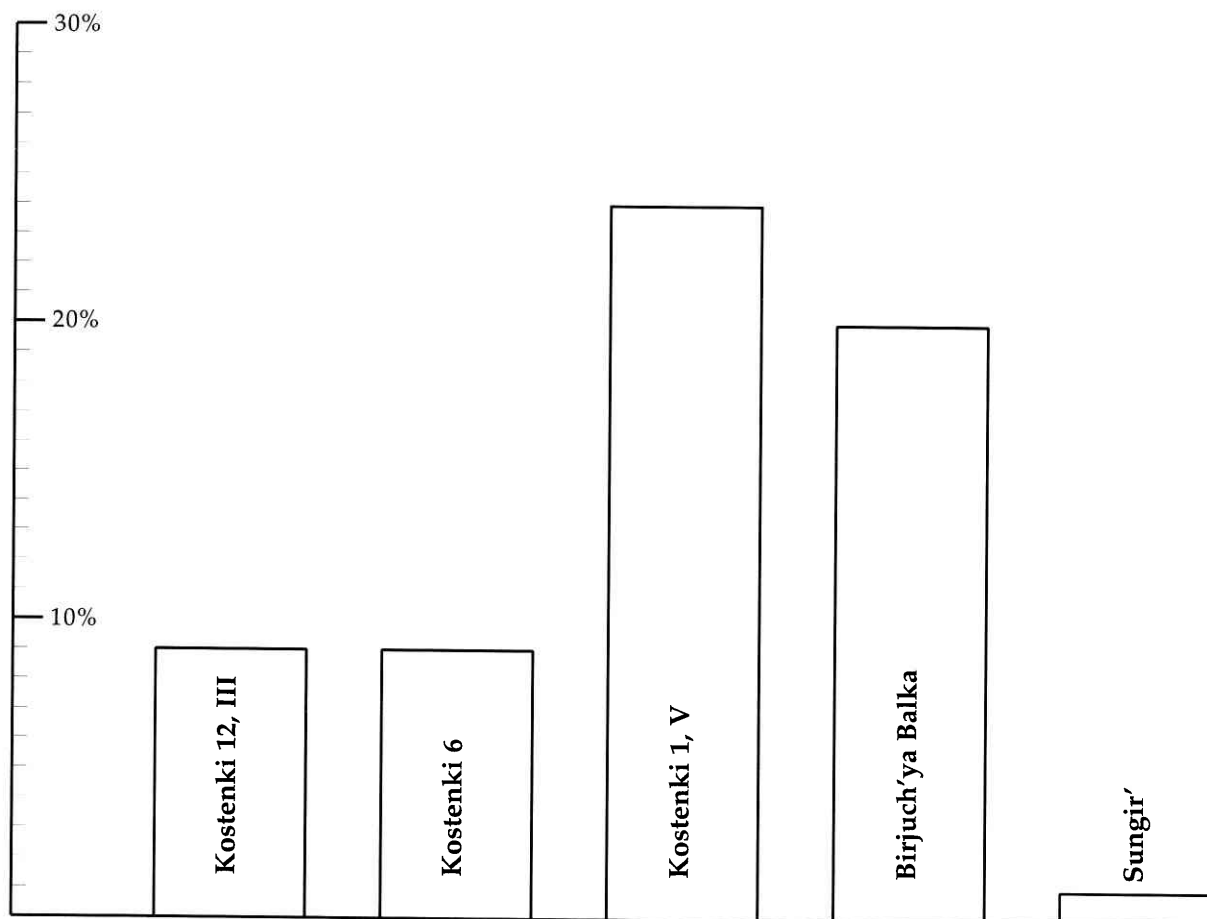


Fig. 3 — Percentage of the bifacial projectile points in the main sites of the Kostenki-Streletskaya Culture.

be connected with the appearance of this new hunting weapon.

We do not know the further destiny of the Streletskaya Culture. But in my opinion, it developed at last into the traditions of the Anosvsko-Tel'manskaya Culture (Kostenki 8, horizon I; Kostenki 11, horizon III) where the triangular projectile points were found, although in another typological context.

6. Conclusion

Thus, during the early and developed phases of the Streletskaya Culture, throwing weapons

with various kinds of flint projectile points, such as the light spears and probably even the bow and arrows, had a great importance. In the final phase represented by the Sungir' site, the role of such weapons markedly reduced. During that period, a new kind of hunting weapon appeared: solid and light tusks or wooden spears provided with flint chips. These changes in the composition of the hunting weapons may be connected with changes in the principal object of hunting, when, in Sungir', during the early and developed phases of the Streletskaya Culture the horse absolutely dominated the faunal composition though its percentage

was still rather high, that of the reindeer became predominant and that of the mammoth increased considerably.

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