
New implements and specialization of traditional industries in the Eneolithic of Bulgaria

Part 1 : Hide-working tools

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RÉSUMÉ

A l'Énéolithique (Chalcolithique) bulgare, la fabrication de grandes lames standardisées fournit de nouveaux supports à divers types d'outils, permettant une optimisation et une homogénéisation des formes. Cet article discute de l'usure d'armatures d'instruments utilisées à différents stades du travail des peaux et propose des reconstitutions de montages dans divers types de manches et sur des tréteaux. Des exemples ethnographiques de semblables outils étaient courants jusqu'à une période récente. Nous pensons que ces outils répondent à une spécialisation du travail des peaux, qui s'inscrit dans les transformations économiques ayant apporté une nouvelle prospérité à l'Énéolithique.

ABSTRACT

In the Eneolithic (Chalcolithic) of Bulgaria, production of a new large standardized blade blank supplies inserts for various kinds of tools, providing new possibilities for uniform, optimum shape. Here the author discusses use-wear on inserts used in various phases of skin-working and reconstructs their mounting in various kinds of hafts or in a frame against which the skin is worked. Ethnographic examples of similar tools have been in use until recently. The author thinks these tools are a response to specialization in working of skin, which is part of the economic changes bringing about a new prosperity in the Eneolithic.

Introduction (Parts 1 and 2)

The significant achievements of ancient agricultural civilizations of the European Balkan-

Danube region are apparent in different spheres of material and spiritual life, and are undoubtedly based on a highly-developed economic structure in which production implements play an integral

role. However, in some ways the tool industries of that time represent a continuation of traditions from earlier periods of the Stone Age. This apparent similarity consists in continuing use of the same kinds of raw material: flint, stone, horn, bone, clay. Copper, the new raw material discovered in the Eneolithic, was used only for some types of tools and weapons. A careful technical, typological and functional study of the stone implements allowed us to define their specific features and their major differences from earlier tools. First, in the Eneolithic of many European civilizations there were major improvements in the technical and technological modes of flint knapping, because of a full knowledge of the physical properties of flint which allowed flint-working techniques to reach their full potential. Notably, at this time a new type of blade having optimum technical qualities for blanks was produced (fig. 1). These large blades (10-15 cm long, 2-3.5 cm wide) have an almost straight profile, flat, straight edges, and a large

cutting edge surface. These blanks, with their standard dimensions and form, differ radically from those produced during the Neolithic, which showed less standardisation and were of irregular shapes. This perfecting of flint tool form is what allowed them to compete successfully with copper tools for many functions.

In the Eneolithic of southeastern Europe this large blade type became the principal semi-finished item in those areas where outcrops of high-quality flint were present (Tripolye-Cucuteni of the Middle period, Kodzhadermen, Gumelnita, Karanovo V-VI a.o.) (Skakun, 1987, 1989). Grand Pressigny and Spiemen represent an analogous situation in Western Europe. New types of implements appear in Bulgarian Neolithic sites which are related to the production of these new blank types, in particular new types of implements for skin-working and wood-working (see chapter on woodworking for the description of these implements).

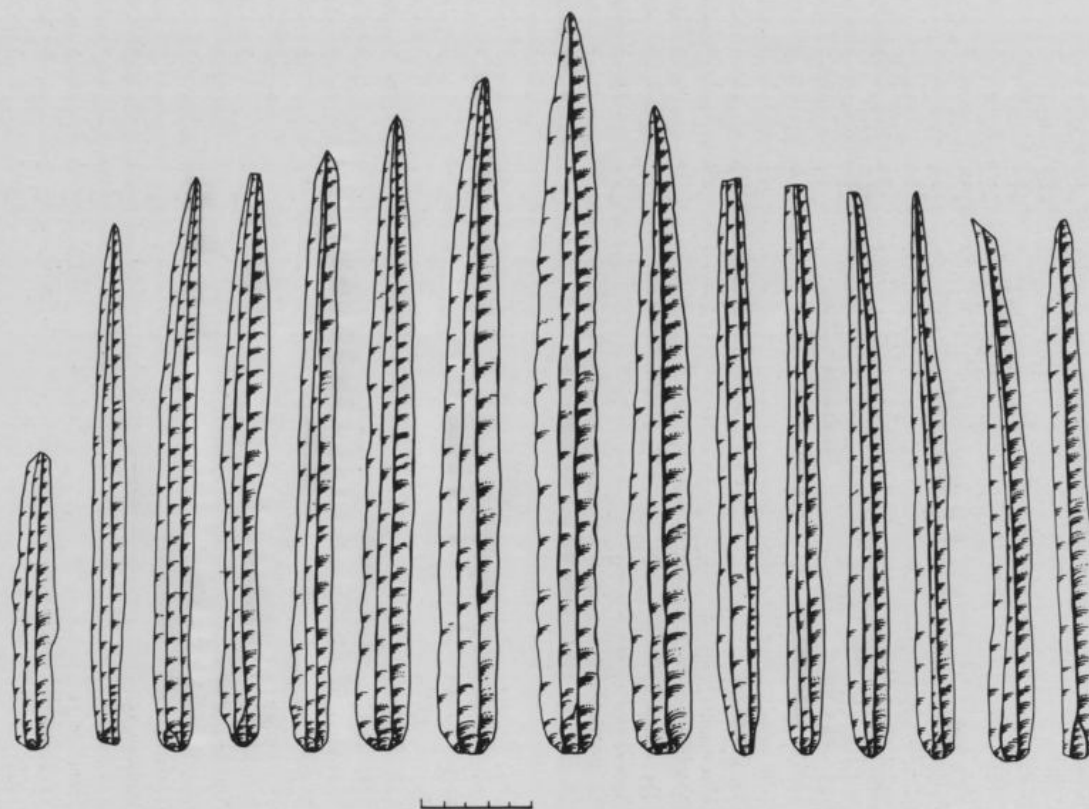


Fig. 1. The Eneolithic flint blades.

Part 1 : Skin and leather-working tools

The implements for working of skin and leather discovered in the course of our research include inserts of endscrapers-shavers for skins and inserts mounted in frames used to work leather, which will be described below.

The blanks for the skin-working tools are usually the middle parts of large and very large unretouched blades of standard dimensions (3-4.5 x 2-3 cm). It can be seen with the naked eye that many tools are extremely use-worn. The working parts and lateral edges are heavily blunted, and their ends are rounded as a result of use. The working edges are worn equally along their full length, indicating the force was applied evenly, which is possible only when inserts are hafted in a handle used with both hands. In profile, the working edge of inserts is even, rounded, and worn towards the ventral surface. Characteristic luster and striations in the form of short, deep lines directed across the blade are visible on these edges. Such use-wear is typical of skin-working tools, and its intensity and the relief of its linear

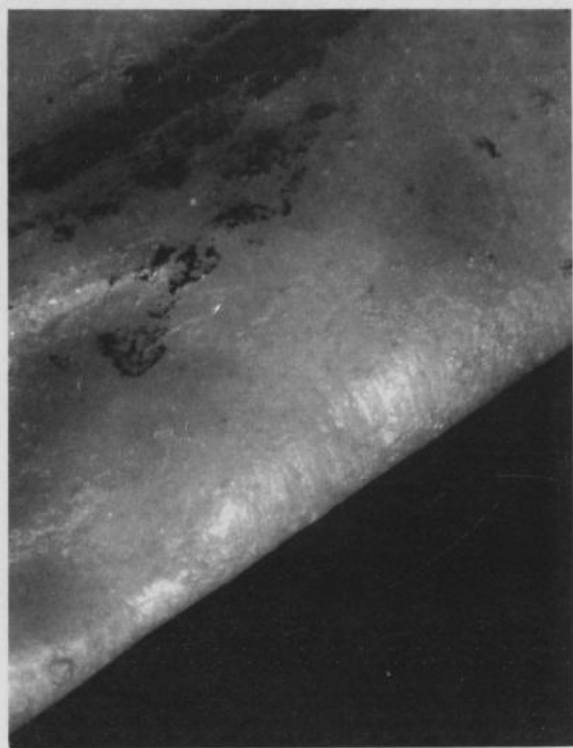


Fig. 2. Microphoto of the working part of endscrapper-shaver for skins.

features indicate the skin-working was carried out on a hard support or frame (fig. 2).

Different possible modes of the tools' use were tested, and a reconstruction was made on the basis of these observations. The experimentally reconstructed endscrapers-shavers are tools with a curved wooden handle of 35-40 cm in length. The flint insert was fitted into a slot made in the center of the concave part of the handle (fig. 3). Work with such tools was carried out most successfully on a special device, a well-planed log whose upper end was attached to a trestle and whose lower end rested on the ground. The experimenter placed a skin on the upper end of this log and worked it by pressing down on the tool and by moving the shaver with both hands away from himself (fig. 4). The tools were highly effective when used on large, flat areas of skins from which the dry pieces of fat had been carefully scraped beforehand, and the upper layer of hide scratched or abraded slightly. A skin of 6 000 cm² was thus dressed in four hours. The finished leather was not much different from a modern one in quality and appearance. It was not advantageous to dress small skins in this way because their size hinders the working motion of the tool. Inserts which fully matched the original archaeological ones in size and appearance were the most practical. The inserts having a less regular shape, a curved contour or a high edge angle were not found to be efficient, because they hampered the direction of the tool's working motion, often fell out of the slot, and sometimes tore the skin. Inserts made from blades which were thinner and smaller than the Eneolithic ones did not withstand a large load and quickly broke, and only part of the cutting edge of tools larger than the originals contacted the worked material. The wear pattern and the degree of wear produced on experimental implements are like those on the archeological ones. The experiments showed that the handle shape of the endscrapper-shaver and its working motion on the frame required inserts of a specific type, of a particular standard shape and dimension.



Fig. 3. Reconstruction of endscrapper-shaver for skins.



Fig. 4. Work using the endscraper-shaver.



Fig. 5. The furrier from Nagornoye village in the Odessa oblast (USSR).

Until the present time, furriers from some villages in the Odessa region (USSR) dressed skins in a way similar to the process described above : First the raw material was worked using modern techniques, then spread out and dried. Second, it was scraped with a metal tool made of an old scythe. This tool has a curved shape, and the working edge is sharpened in a particular way. The furrier worked on an inclined frame (fig. 5). The wares of village furriers are in popular demand among the inhabitants today (Skakun, Semenov, 1990).

One more group of flint inserts used in leather-dressing was defined in our study. The blanks for them were also the middle parts of unretouched blades of standard dimensions (3-4.5 x 2.5-3 cm). A band of luster is visible along the lateral working edge ; the lip of the working edge is so greatly abraded that it is almost flat in section. The edge surface is covered with striations perpendicular to it along its full length. Such use-wear is typical of leather-dressing implements, but its degree of intensity is such that long before the last stages of its formation this tool could not have still functioned for scraping (fig. 6). The investigations have established some differences between inserts of

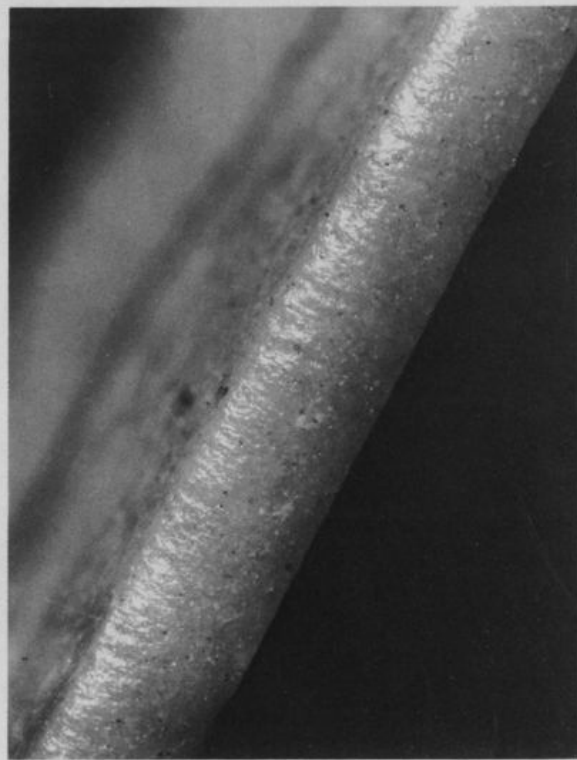


Fig. 6. Microphoto of the insert of leather-working device.

such tool types : some of them have both extremities which are straight and sharp, and others have one rounded end and one straight, sharp end. This shows that the first inserts were hafted in the middle of a composite working edge, where they were closely contiguous to one another, whereas the latter type, worn on one end, were hafted at one of the extremities of the working edge. In analysing the character of macro- and microtraces, we decided that such portions of blades perhaps constituted the working part of a special device used for finishing skins by kneading and scraping them as well as for removing the hair, for making leather. Use-wear analysis observations were explained by the experiments carried out. A wooden frame having a slot on the upperside, into which the inserts were glued using a fruit-based adhesive material, was fixed in the ground at a sloping

angle. It is absolutely necessary that the working edge of such a device be straight and even, if successful hide-working is to take place without injuries. The inserts must match closely and fit together without spaces between them, be well-aligned and make up a level edge. The arrangement of the working edge was feasible because of the regularity and standardization of insert dimensions. It was established through experimentation that the most effective length of working edge was 10-15 cm, *i. e.* requiring 2-3 inserts (fig. 7). The experimenter passed the hide over the flint inset cutting edge and moved it from left to right and backwards as each area was worked (fig. 8). In the first moments of work small damage scars formed on the insert edges due to pressure. Later on, the scar edges were smoothed by friction, and the working edge was worn even along its full length ; its extremity became evenly rounded in cross-section. The experiments showed that this leather-working device was very efficient. This treatment produces a high-quality shammy-type leather when used on pre-worked hide, and works the entire

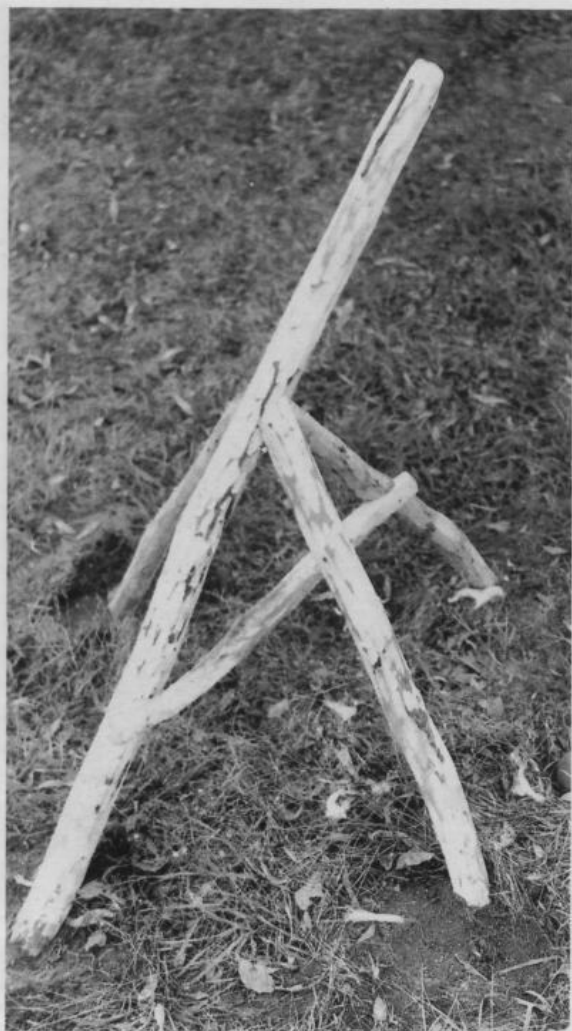


Fig. 7. Reconstruction of leather-working device.



Fig. 8. Work on the leather-working device.

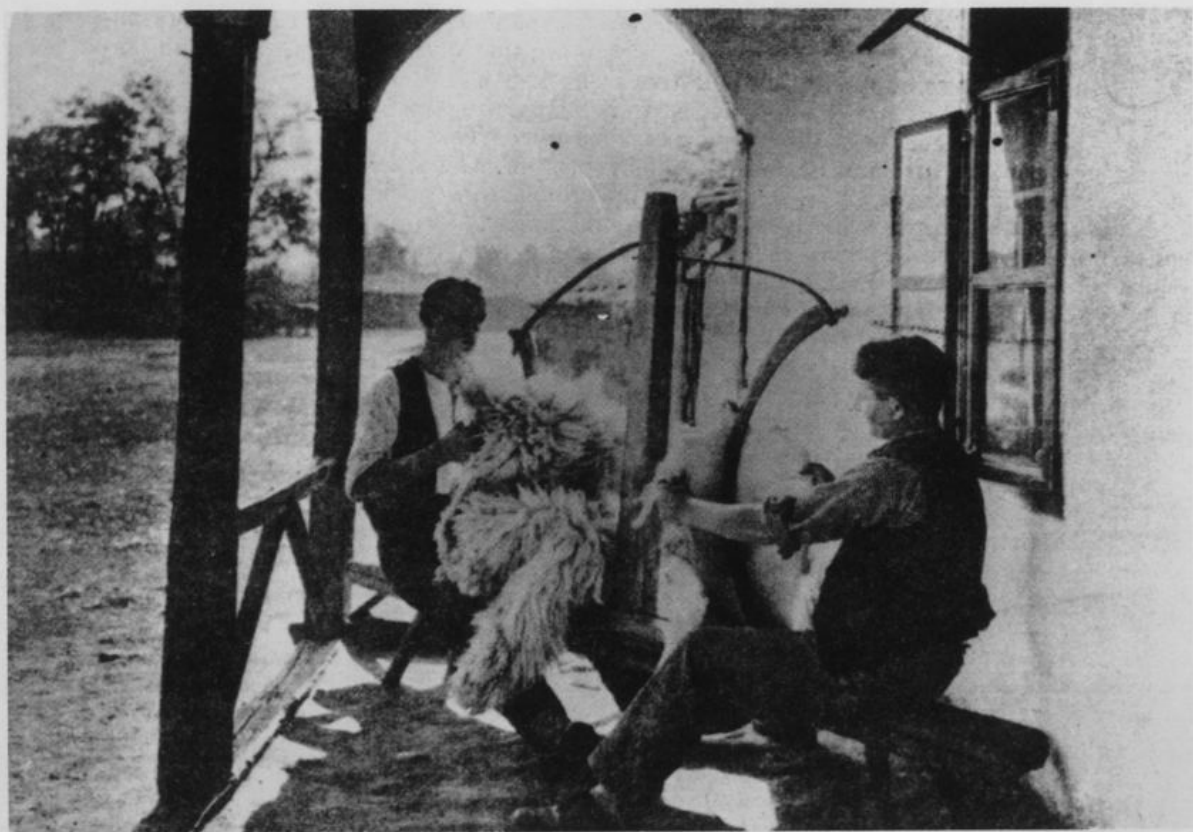


Fig. 9. The leather-working device, « kositza », XIXth century, Bulgaria. By V. Vokarelsky.

surface evenly. It is essential that the skins be stretched in all directions, and kneaded. The cutting edge was used for a fairly long time because the last procedure did not require the same sharpness of the edge as the earlier ones. This explains the highly-developed use-wear on the excavated tools. After the completion of the experiments we succeeded in finding ethnographic parallels for this device. As early as the middle of this century, the same constructed leather-working device, called « kositza », was widely used in Bulgarian villages. A metal strip served as the working part. The work was carried out using the same method as on the device we reconstructed (fig. 9).

The finishing of skins, their stretching and kneading, was accomplished by means of the

above-described endscrapers-shavers and the leather-working device. But end-scrappers were used for the first stages of working (the removal of hide strips, fluffing of the flesh side of a hide). These tools, which form a characteristic group, also have standard dimensions and shapes. The blanks for them were either the thick and slightly curved upper parts of blades or lower parts adjacent to the striking platform and having a length of 5-10 cm. Implements of these precise dimensions were most useful for this work.

(See general conclusions concerning these tools and bibliography at the end of Skakun's article in the chapter on woodworking tools).

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