



## ON THE LAME A CRETE TECHNIQUE IN THE PALAEOLITHIC

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The major role of the so-called *lame à crête* technique in core reduction strategies in many Upper Palaeolithic industries is generally accepted and does not require any special substantiation (see, for example, Brezillon, 1971; Kozłowski, 1988). In brief, the essence of this technique may be described as follows : a crested ridge was formed on the core either in the course of general decortification or immediately following it. Then, the ridge was removed forming a crested blade, and then serial flaking of blade blanks began. If it was necessary to reshape the flaking surface, as a result of core utilization, such reshaping was sometimes begun again with the creation of a crested ridge. Therefore, the Upper Palaeolithic blade core reduction which aimed at the production of blade blanks was preceded by the *lame à crête* removal at the stage of core preparation.

In the process of studying the Early Upper Palaeolithic assemblages from the Ukrainian Transcarpathians sites, Korolevo II-complex 2 and Korolevo I-complex 1a, the authors paid great attention to problems of primary flaking and to the *lame à crête* technique, in particular (fig. 1-7). To tell the truth, the latter's significance was, at first, over emphasized by us. What we mean is the following : we considered this technique to be limited to the Upper Palaeolithic, and, as a result, we proposed that the existence of the *lame à crête* technique was exclusively found in Upper Palaeolithic industries (Demindenko, Usik, 1991).

Recently, however, several reliable cases of the *lame à crête* technique have become from the industries which preceded the Upper Palaeolithic. Thus, in the lithic assemblages from Boker Tachtit (Near East, Israel), layers 1-3, attributed to the

transitional period from the Middle to Upper Palaeolithic by a sum of their chronological and technico-typological parameters (Marks, 1983, 1988), the *lame à crête* technique is here connected with the Levallois technology in its "bidirectional blade point" aspect. Judging from the refitting results (Volkman, 1983, 1989), two opposite striking platforms and a central crested ridge were formed on cores following the decortification. Then, after removing the crested ridge, the alternate flaking of blades proceeded, which resulted in such a shaping of the flaking surface that a Levallois point with a bidirectional scar pattern and of blade proportions finally was removed from the core (fig. 8). It seems that in the industry at Ain Difla in west-central Jordan (Lindly, Clark, 1987; Marks, 1988, pp. 113-114 and our personal observation of assemblage), the same system of "bidirectional blade point" Levallois with the *lame à crête* technique, as seen at Boker Tachtit, existed. In a Middle Palaeolithic industry, Korolevo I-complex 2b (Ukrainian Transcarpathians), the *lame à crête* technique is also associated with Levallois technology, but in a "convergent flake point" aspect. The core reconstructions (Usik, 1989) have shown that normally the core was shaped by the removal of large blades with the final removal of a Levallois point with a convergent unidirectional scar pattern and flake proportions. This was preceded by the removal of 1-2 lateral "crested" blades (fig. 9-12). This using of a *lame à crête* technique in the Middle Palaeolithic, thus, seems not to be unique and corresponds to following observation : "in the Levallois technique, blanks were obtained from one surface of the core delimited by lateral trimming edges" (Kozłowski, 1988, p. 196).

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Therefore, nowadays the *lame à crête* technique is to be regarded, at least, as known since the Middle Palaeolithic. The ways of core reduction after the removing of crested blades, however, might be different. In the Upper Palaeolithic, the removal of blade blanks, as a rule, began immediately, while in the Levallois "point" industries of the Middle Palaeolithic and of the transitional period to the Upper Palaeolithic usually preliminary shaping of the flaking surface took place through the removal of blades (of various types - convergent, unidirectional or bidirectional), with the subsequent removal of only a single blank, a Levallois point. Along with this, there are some differences in the formation of the crested ridge on cores. Lateral crested edges are characteristic of Levallois-Mousterian industry, while a central crested ridge is characteristic of Upper Palaeolithic technologies and for Transitional industries. These differences can be interpreted as the development of *lame à crête* technique through time.

It should be mentioned that, despite all the differences of technical elements in the use of *lame à crête* technique both in Levallois-Mousterian and Transitional industries rich in points, and in the Upper Palaeolithic technologies, the same functional application of the *lame à crête* technique is characteristic for all these different complexes. In particular, its functional application is the removal from the whole core's working surface of crested blades/blade. And this technical peculiarity was the main condition for the successful subsequent removal of elongated flakes and blades from the flaking surface. Therefore, there was the strong interconnected technological subsequence of flaking : 1) crested blades/blade; 2) elongated flakes and blades; 3) Levallois point. In the Upper Palaeolithic, the first stage of this technological subsequence requires only the crested ridge and, accordingly, the crested blade. The last stage of this technological subsequence, the Levallois point, disappeared and the role of elongated flakes and blades

changed profoundly; from a preparatory role for the final removal of a Levallois point to their role as final, desired products.

In addition, the problems of true identification of *lame à crête* technique should be mentioned. The existence in an assemblage of the flakes of *lames/éclats à crête* type does not always mean the existence of a true *lame à crête* technique in such and industry. For example, such different Middle Palaeolithic sites as Biache-Saint-Vaast (Tuffreau, Somme, 1988) and Rocourt (Cahen, 1984; M. Otte, 1990) in Western Europe and Kabazi II - layer 2 in the Crimea (Chabai, 1992) are good examples. These industries are characterized by a bidirectional strategy of primary flaking and by the production of elongated flakes and blades from both striking platforms. That was the process during which flakes and blades from the lateral edges of the core were removed together with the removal of normal flakes and blades (fig. 13). Morphologically, those kinds of the flakes and blades, from the lateral edges of core, are similar to the typical *lames/éclats à crête*. Technologically, however, they do not correspond to the *lame à crête* technique defined mentioned above. The main reason for this is that their removal is not obligatory for the following production of blanks. Therefore, they should be defined as *lames/éclats débordants* (Boëda, 1990).

In conclusion, it should be noted that the definition and recognition of the *lame à crête* technique in Middle Palaeolithic industries can help to connect them with actual Early Palaeolithic industries. It also helps to establish the development of technological elements through time and to bridge the gaps in understanding of the problems of culturo-genetic connections among different palaeolithic industries.

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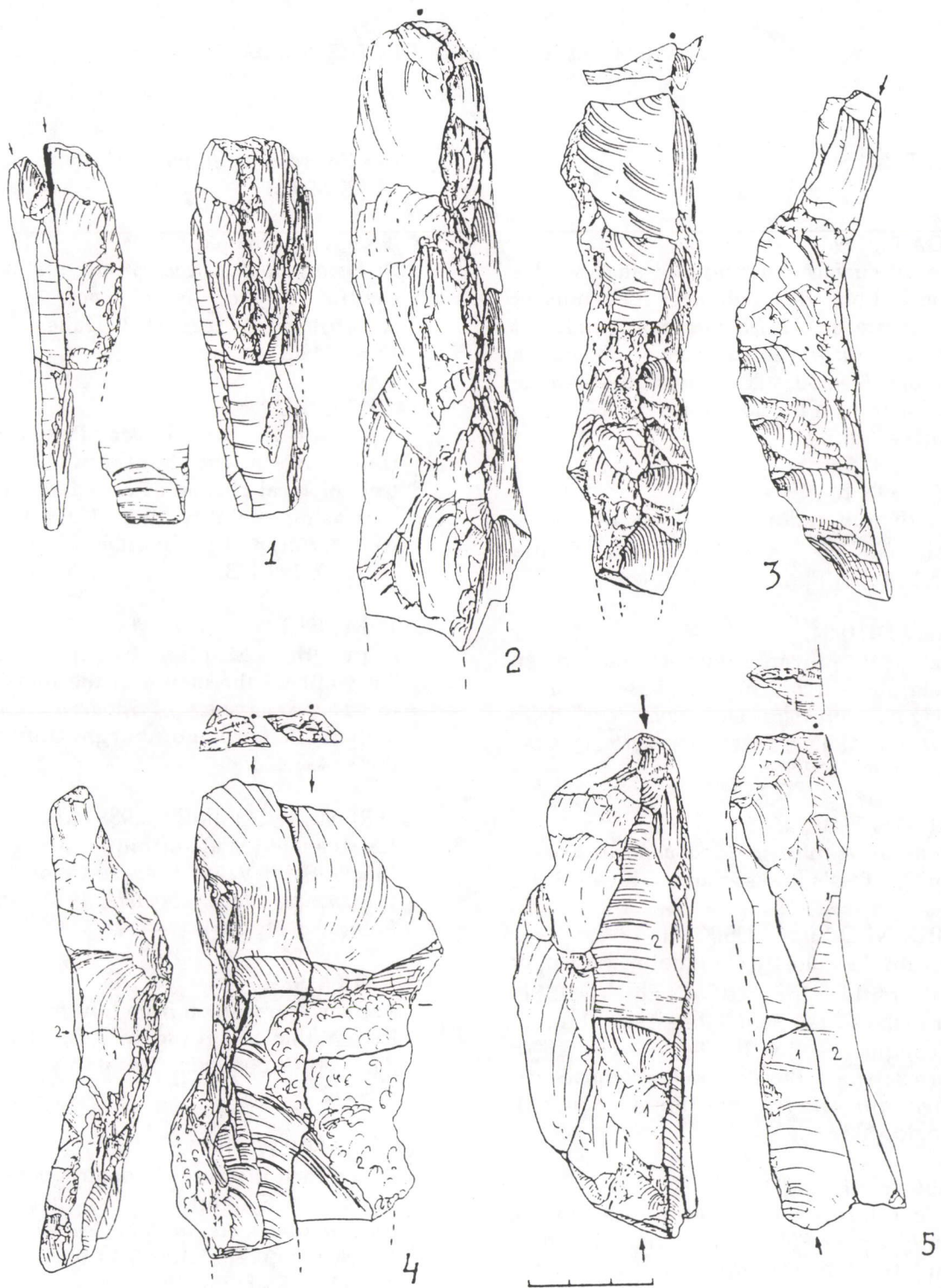


Fig. 1 : Korolevo II-complex 2. Reconstruction of flaking.

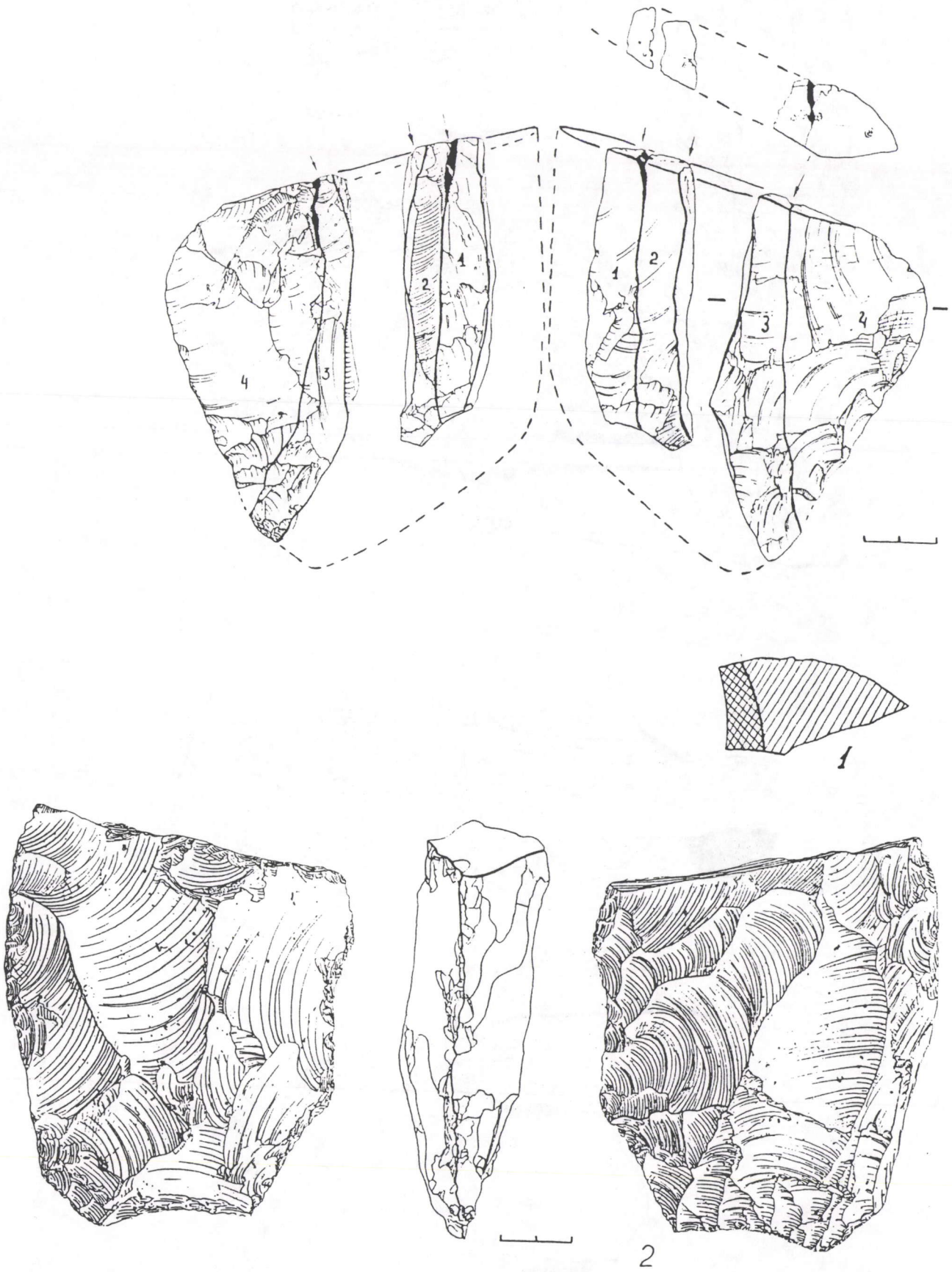


Fig. 2 : Korolevo II-complex 2. Reconstruction of flaking.

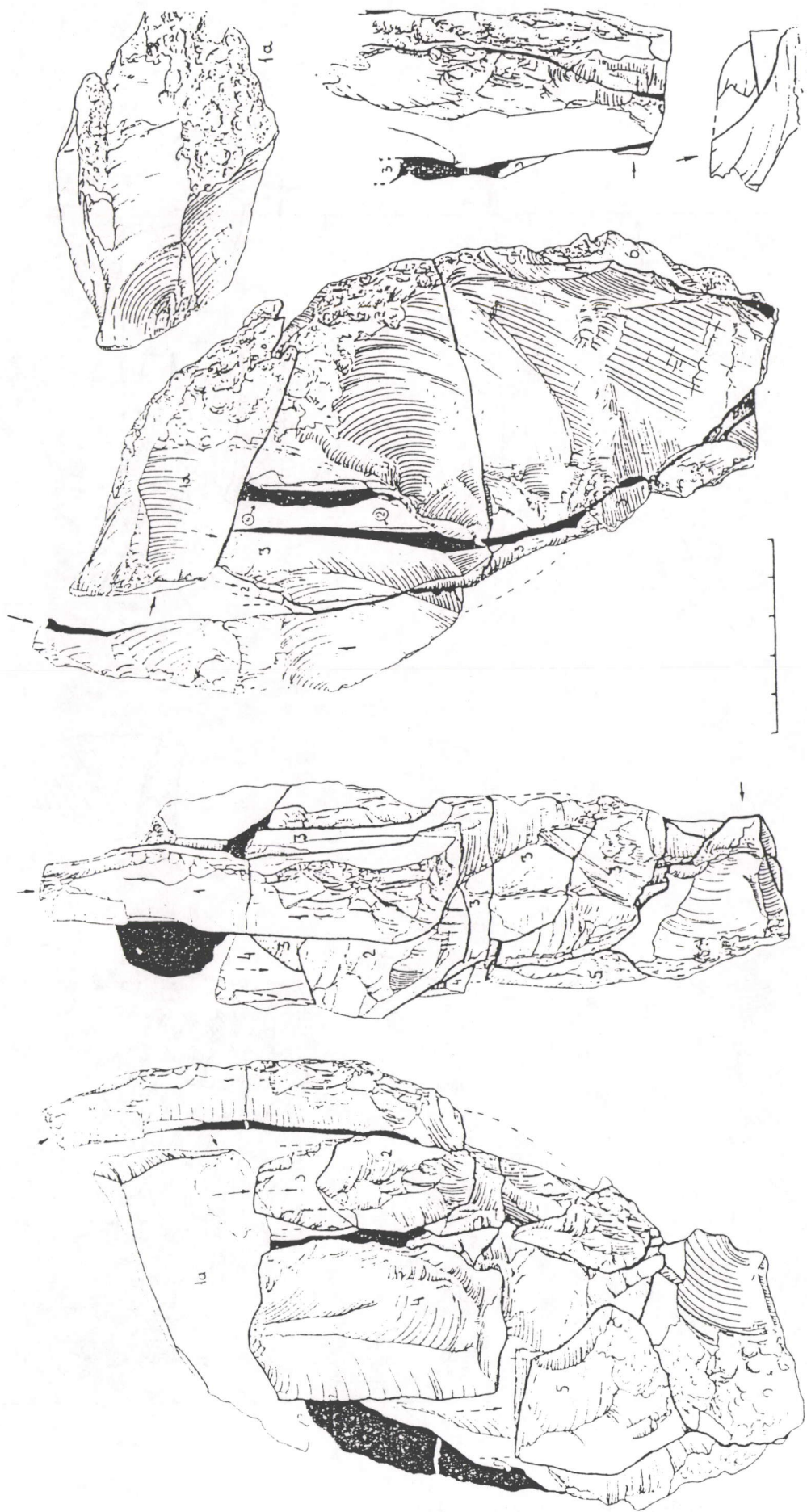


Fig. 3 : Korolevo II-complex 2. Reconstruction of flaking.

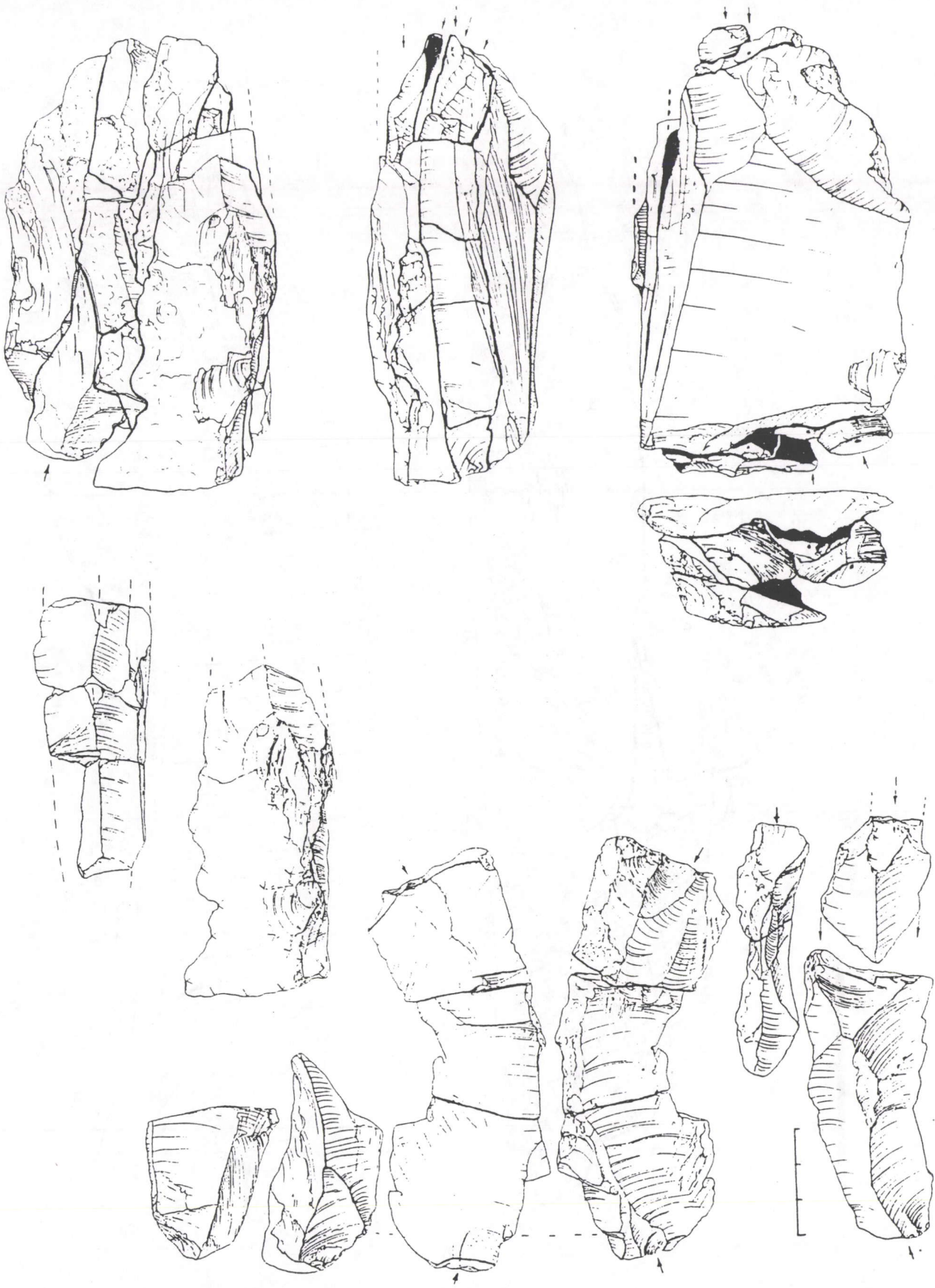


Fig. 4 : Korolevo II-complex 2. Reconstruction of flaking.

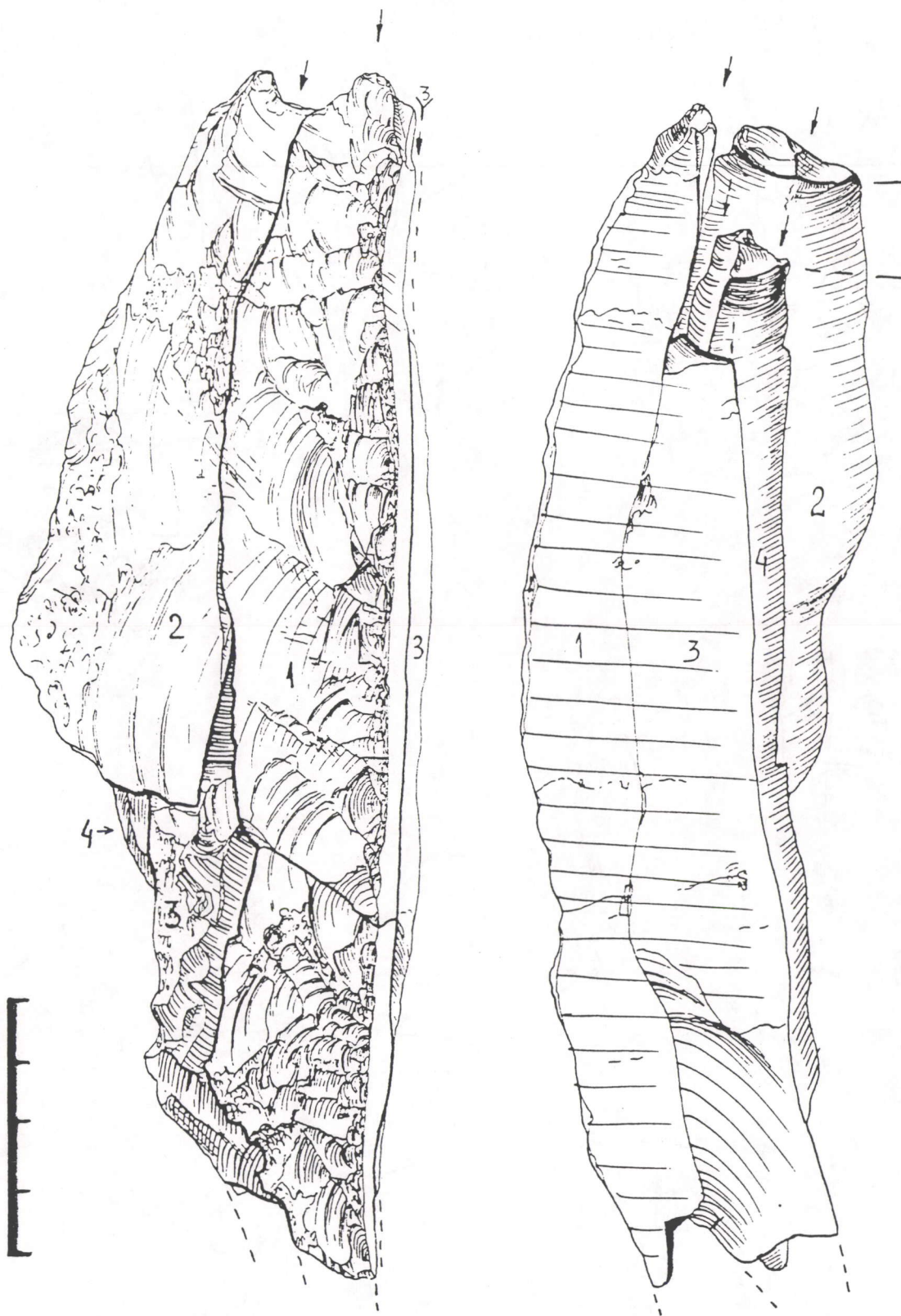


Fig. 5 : Korolevo I-complex 1a. Reconstruction of flaking.

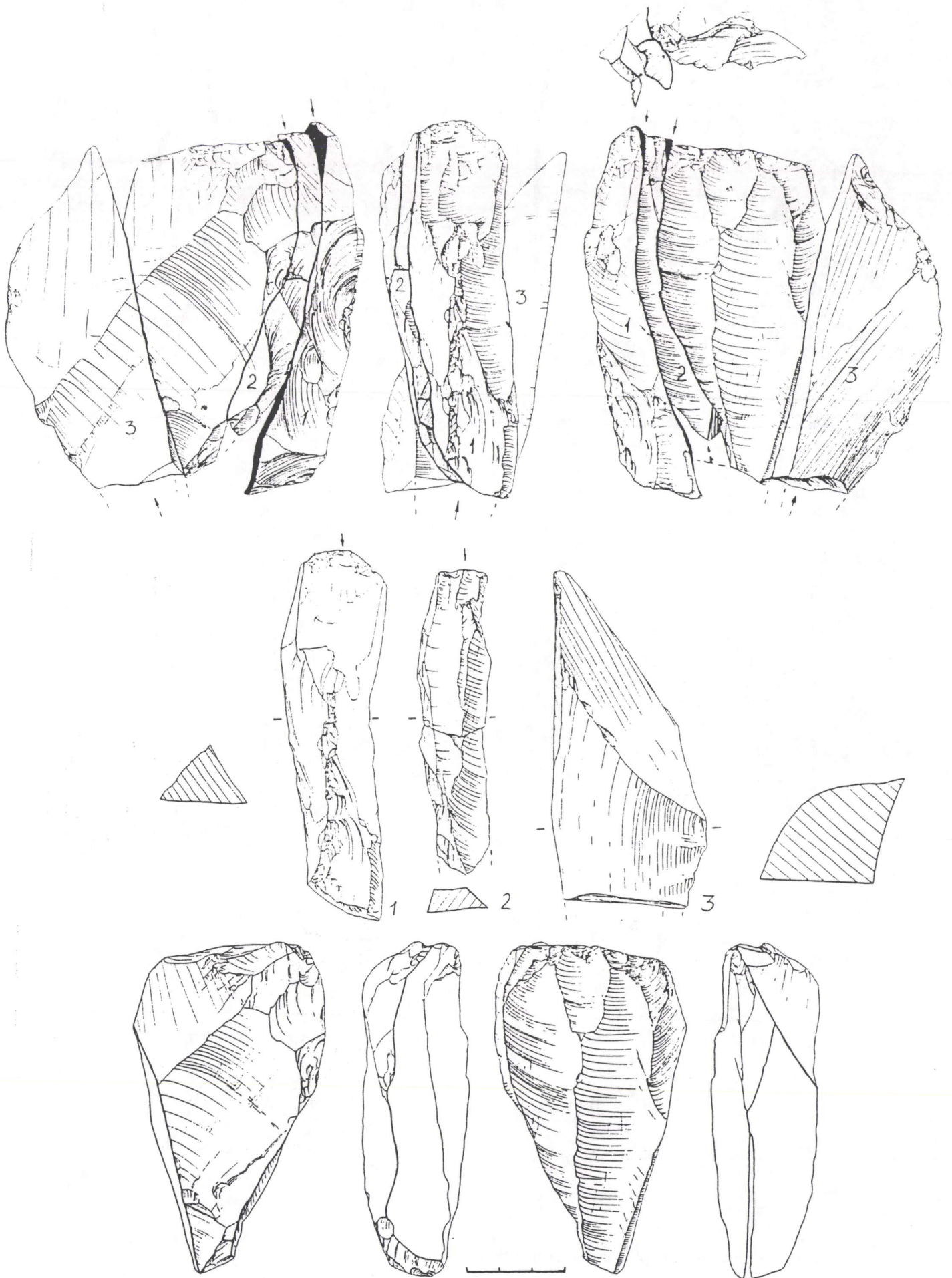


Fig. 6 : Korolevo I-complex 1a. Reconstruction of flaking.

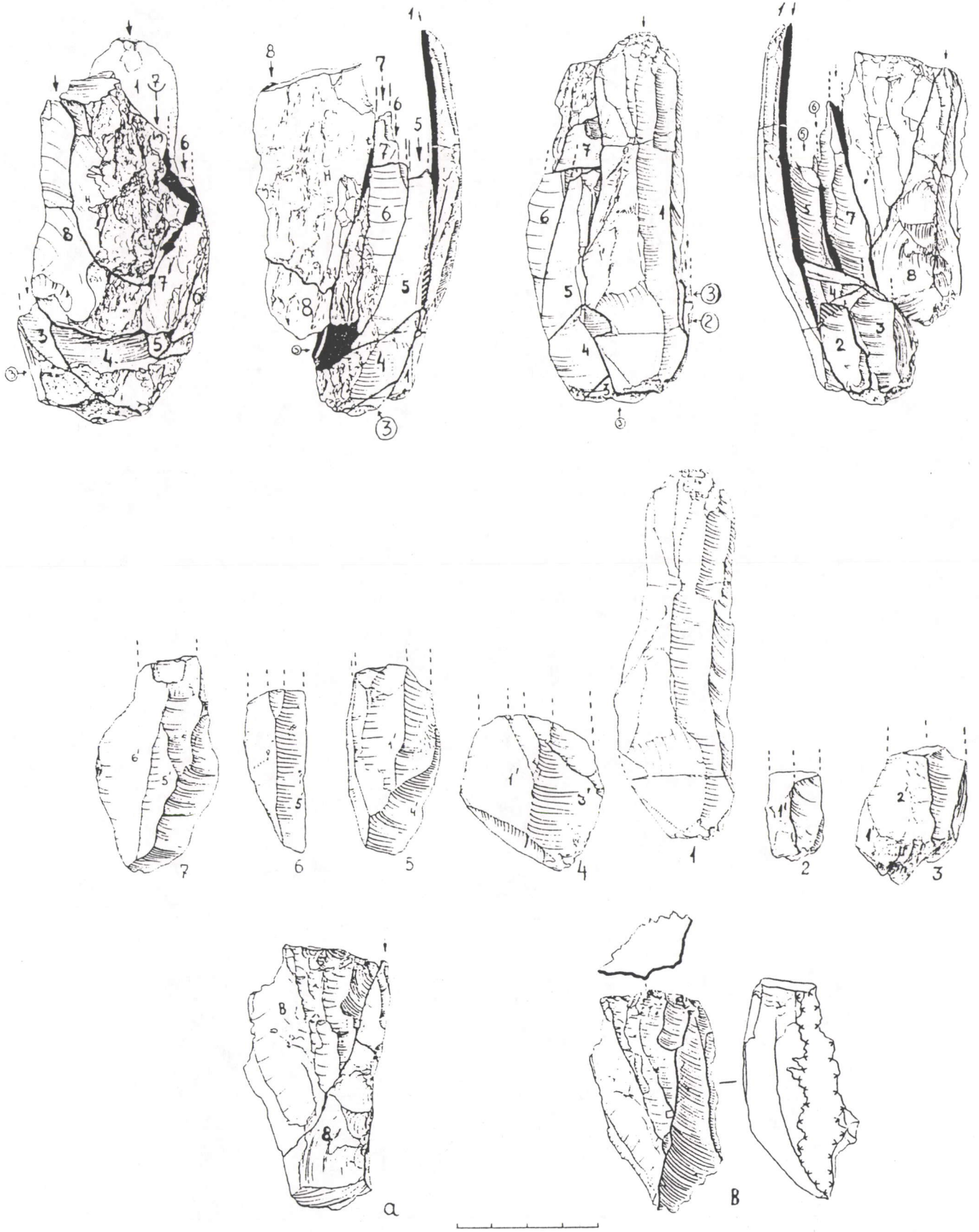


Fig. 7 : Korolevo I-complex 1a. Reconstruction of flaking.

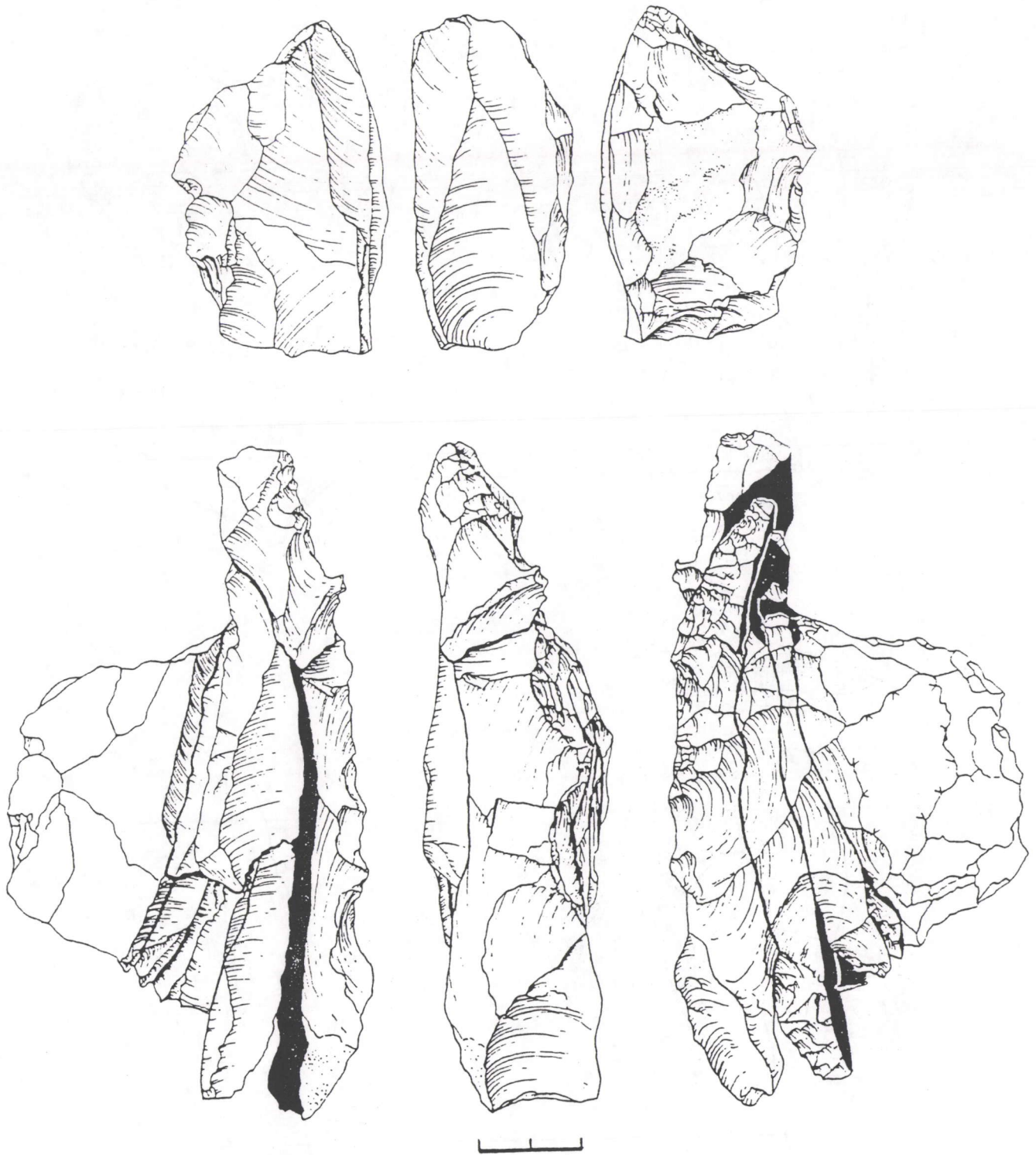


Fig. 8. Boker Tachtit-level I. Reconstruction of flaking (Marks, 1988, fig. 1, on p. 121).

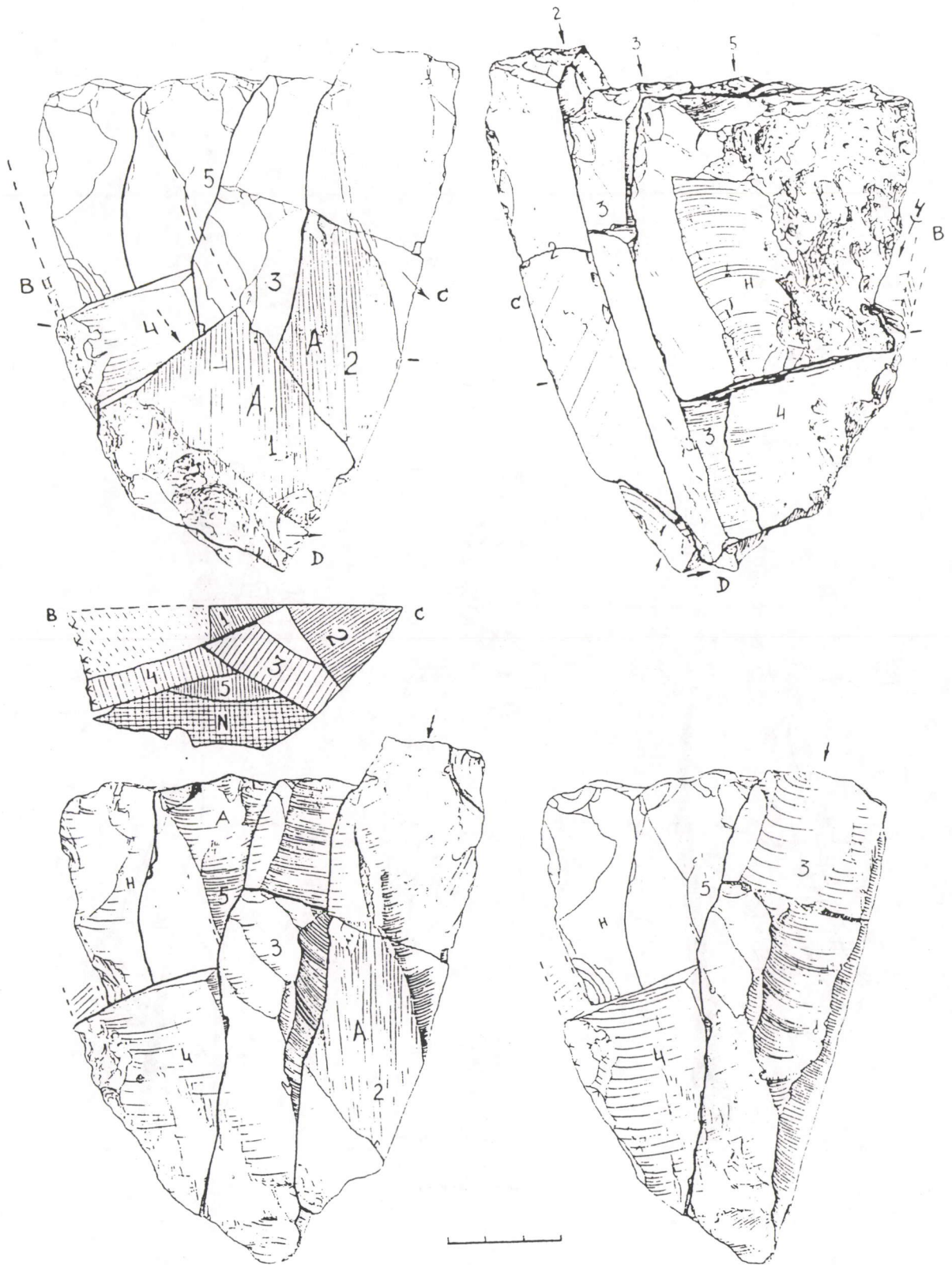


Fig. 9 : Korolevo I-complex 2b. Reconstruction of flaking.

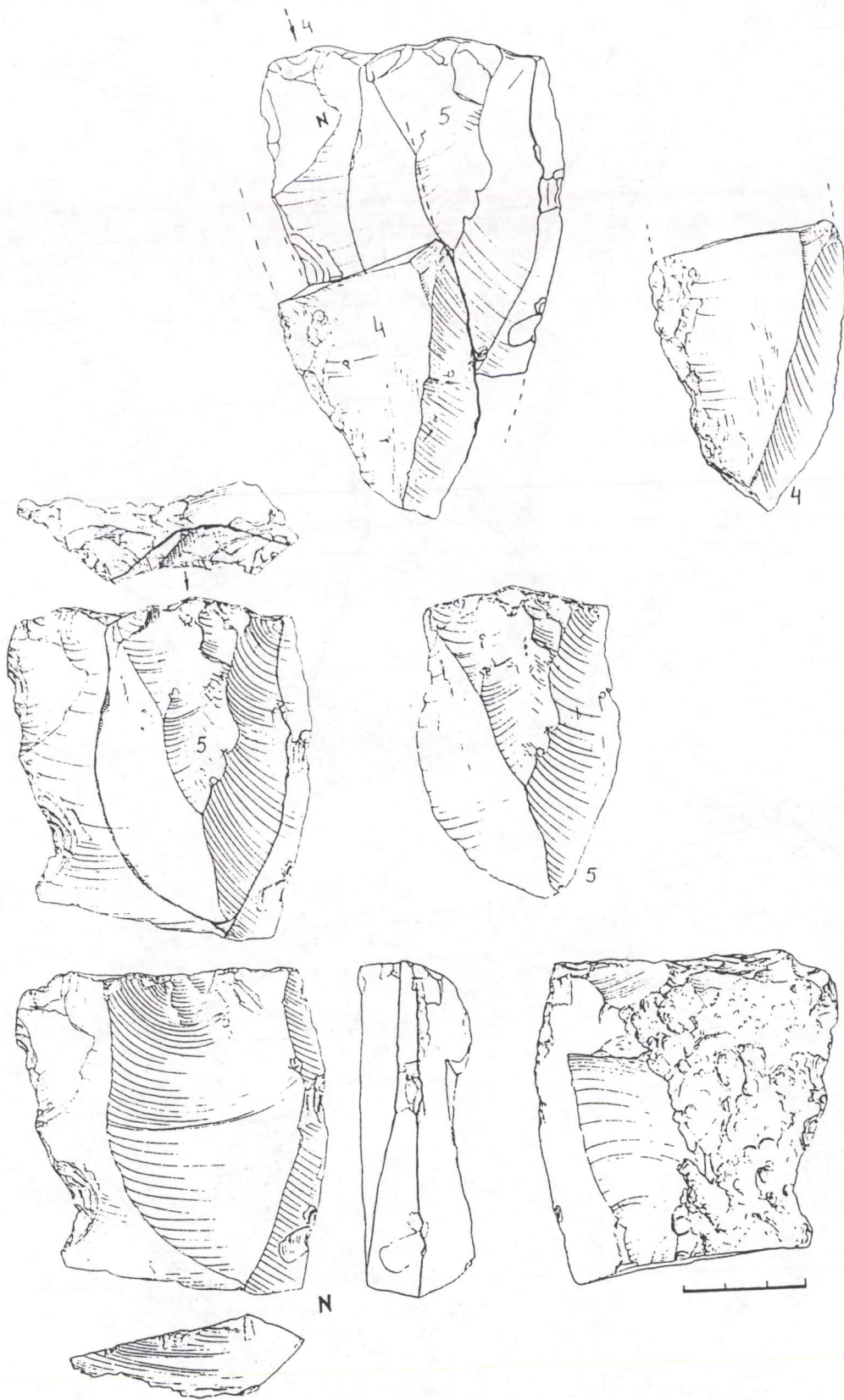


Fig. 10 : Korolevo I-complex 2b. Reconstruction of flaking.

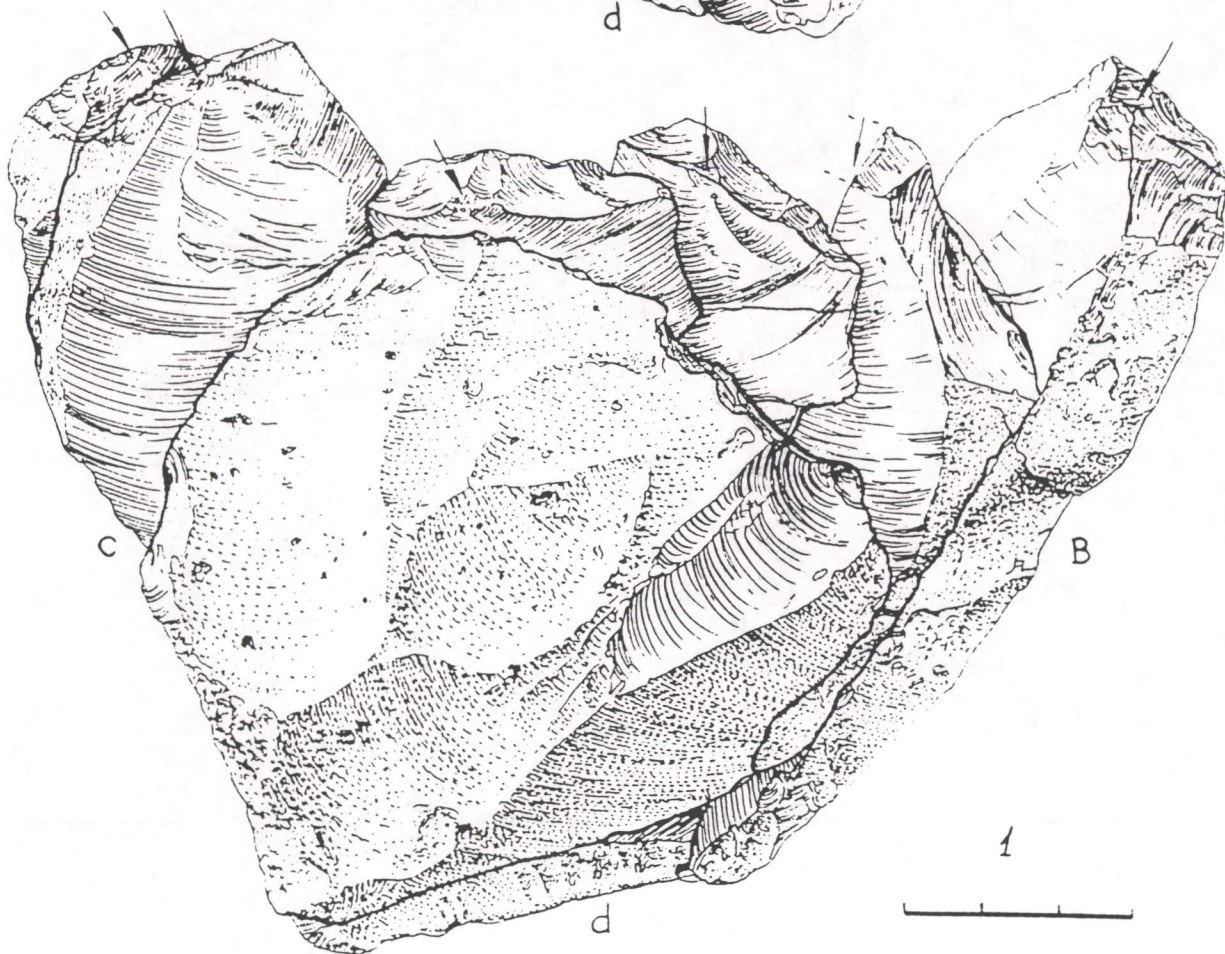
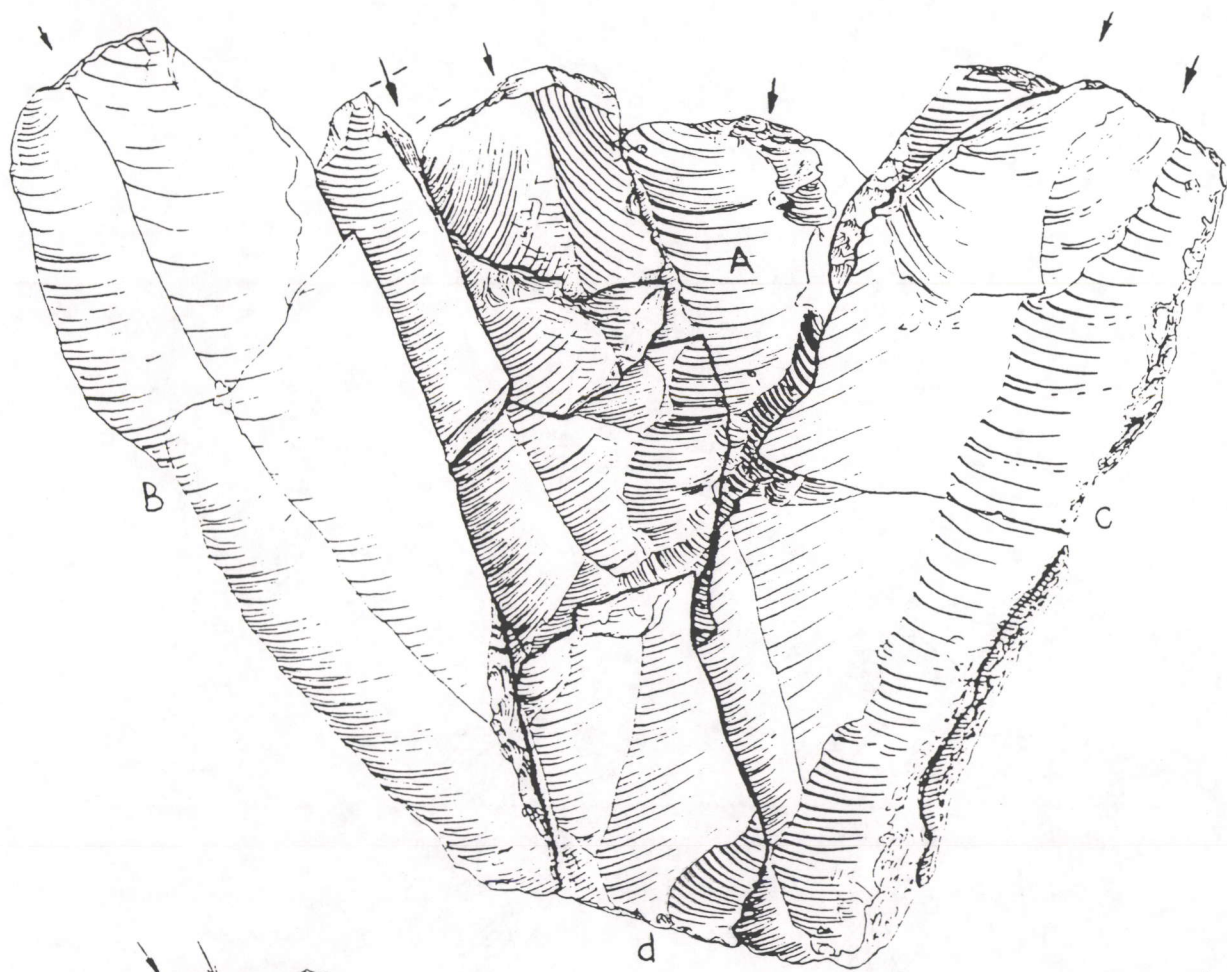


Fig. 11 : Korolevo I-complex 2b. Reconstruction of flaking.

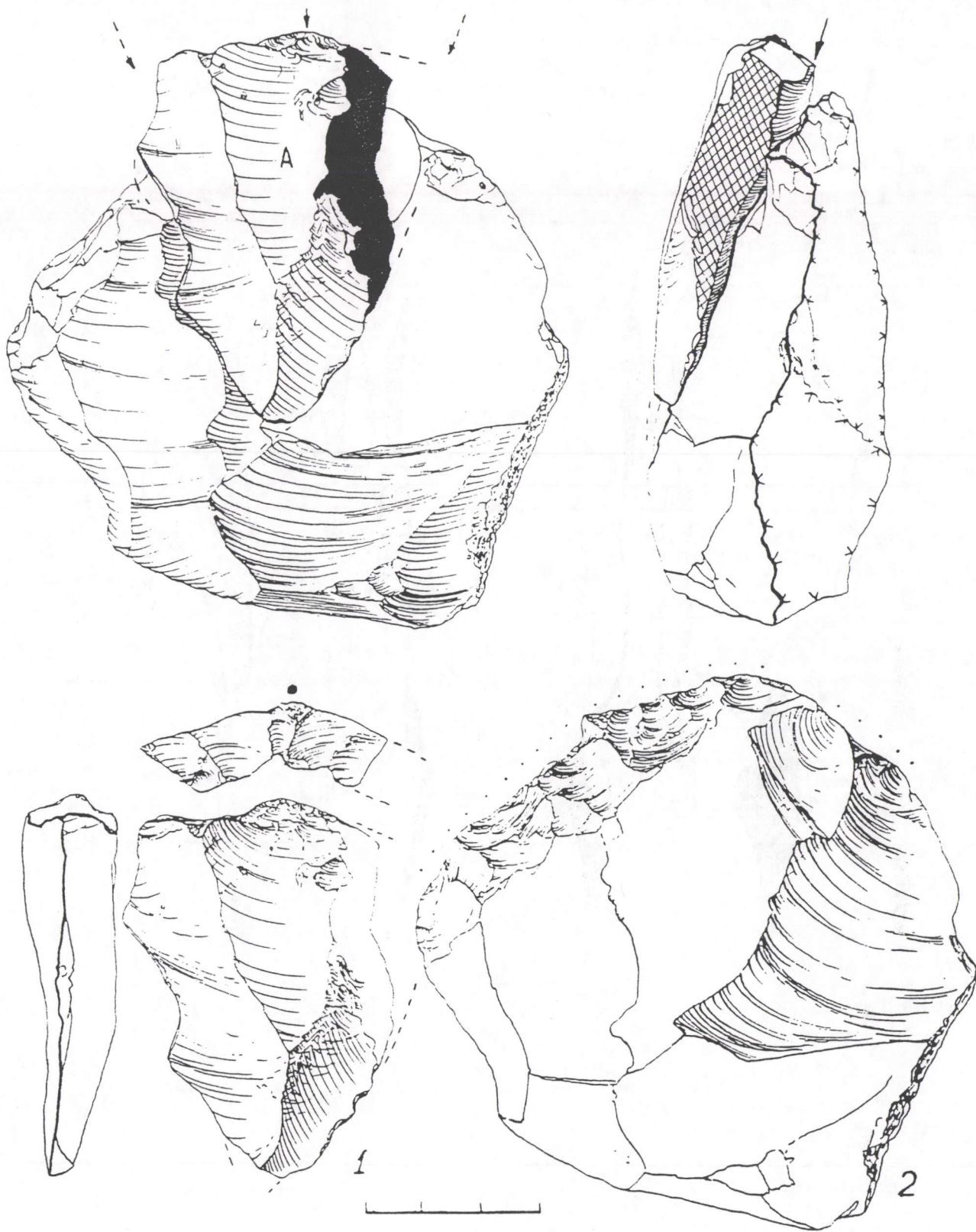


Fig. 12 : Korolevo I-complex 2b. Reconstruction of flaking.

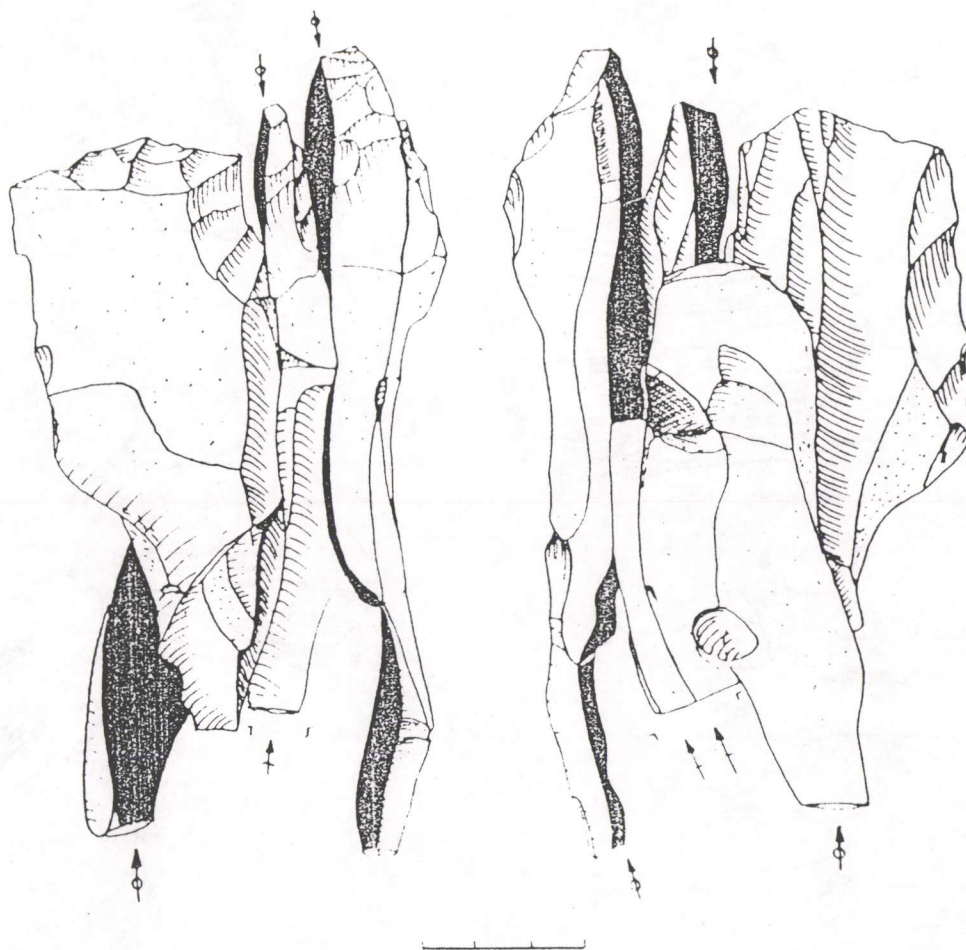


Fig. 13. Rocourt. Reconstruction of flaking (Otte, 1990, fig. 1, on p. 439).