Chapter 8

BK

Introduction

The BK gully is located in the Side Gorge, approximately 3.2 km from the confluence with the Main Gorge (see fig. 1.1). Excavations were performed during the 1950s and 1960s via numerous trenches throughout the whole outcrop. Most part of the stone and bone material appeared linked to a channel deposit, which led Leakey (1971:198-199) to underline the impossibility of ruling out a single occupation, and to consider the whole deposit as a single archaeological horizon, 1.5 metres thick. Despite the fact that BK presents one of the lowest densities in terms of archaeological remains, with only 5.3 pieces per m³ (Leakey 1971:260), it does present (after FLK Zinj and FLK North Level 1-2) the most important collection of macro-mammals unearthed in Olduvai, with almost 3000 remains, and the greatest number of lithic artefacts in the whole of Bed I and II, with 6801 pieces unearthed just in the 1963 excavation (Leakey 1971:261), from an area that Monahan (1996:96) estimated as measuring 114 m².

A concentration of *Pelorovis oldowayensis* remains linked to clay sediments was found next to the channel deposit where most of the lithic pieces were located. Leakey (1971:199) mentioned 24 individuals of this species, whilst Gentry and Gentry (1978:45) identified a MNI of 14. Louis Leakey (1957) suggested these animals had been hunted massively, with the hominids guiding them to a swampy area where they would have been trapped. Leakey (1971) completed this interpretation stating that the channel deposit contained the remains of a camp set up on the banks of the stream, which would have been rearranged into the channel after the occupation; furthermore, it would have been connected to the processing of the *Pelorovis* carcasses. Over recent years, different alternatives have been proposed contemplating a natural catastrophic death to explain the profusion of *Pelorovis* (Capaldo & Peters 1995). In any case, the human incidence on at least a good part of the fauna in BK is well documented: first by Leakey (1971) and then by Shipman (1989), who have mentioned the presence of bone tools in BK, with several anvils among them. Furthermore, the unique zoo-archaeological study (Monahan 1996), suggests that the hominids had access to size 3-4 animals and, to a lesser extent, to size 1-2 carcasses. In fact, Monahan (1996) thinks hominids were the main accumulation agents in BK.

It is difficult to come to precise conclusions based on the analysis of the lithic industry; the enormous amount of artefacts analysed in the Olduvai monograph (Leakey 1971) is but a small part of the collection (1963 field season), and the museum in Nairobi stores the items mingled with pieces from other previous campaigns; moreover, not all the material from previous years is preserved. Kyara (1999) denounces the fact that, of the total of almost 12,000 pieces catalogued in BK, in Nairobi he could only access 4,615 items. These are most certainly the reasons that have led investigators to perform analyses based on specific categories – for example Sahnouni (1991) as regards polyhedrons and Dies & Dies (1980) with reference to choppers –, specific aspects – like Kyara's (1999) study of raw materials – or a sampling of the whole collection – like Ludwig (1999), who only studied 900 pieces.

We have selected BK as the last site to be studied in Olduvai in terms of its chrono-stratigraphic position; first, because BK is the most recent archaeological assemblage in Bed II. Therefore, studying its main characteristics enables us to close the sequence commenced in DK, the oldest site in Olduvai, and consequently to encounter a sound reference to tackle the technological modifications that occurred throughout over half a million years. In the second place, the over 1.33 my calculated for BK (Manega 1993) enables the assessment of the technical capacities in Olduvai at a time when the existence of relatively complex knapping methods has already been verified in the neighbouring basin of Lake Natron (de la Torre *et al*. 2003).

In view of the contextual problems that arise upon attempting to reconstruct whole technical sequences, it was hardly operative to undertake a comprehensive analysis of the BK collection. Since the goal was to compare knapping methods between sites, not the relationships between the categories of the same assemblage, only some objects were studied, precisely those which allowed us to assess the strategies and technical skills of the hominids that inhabited BK.

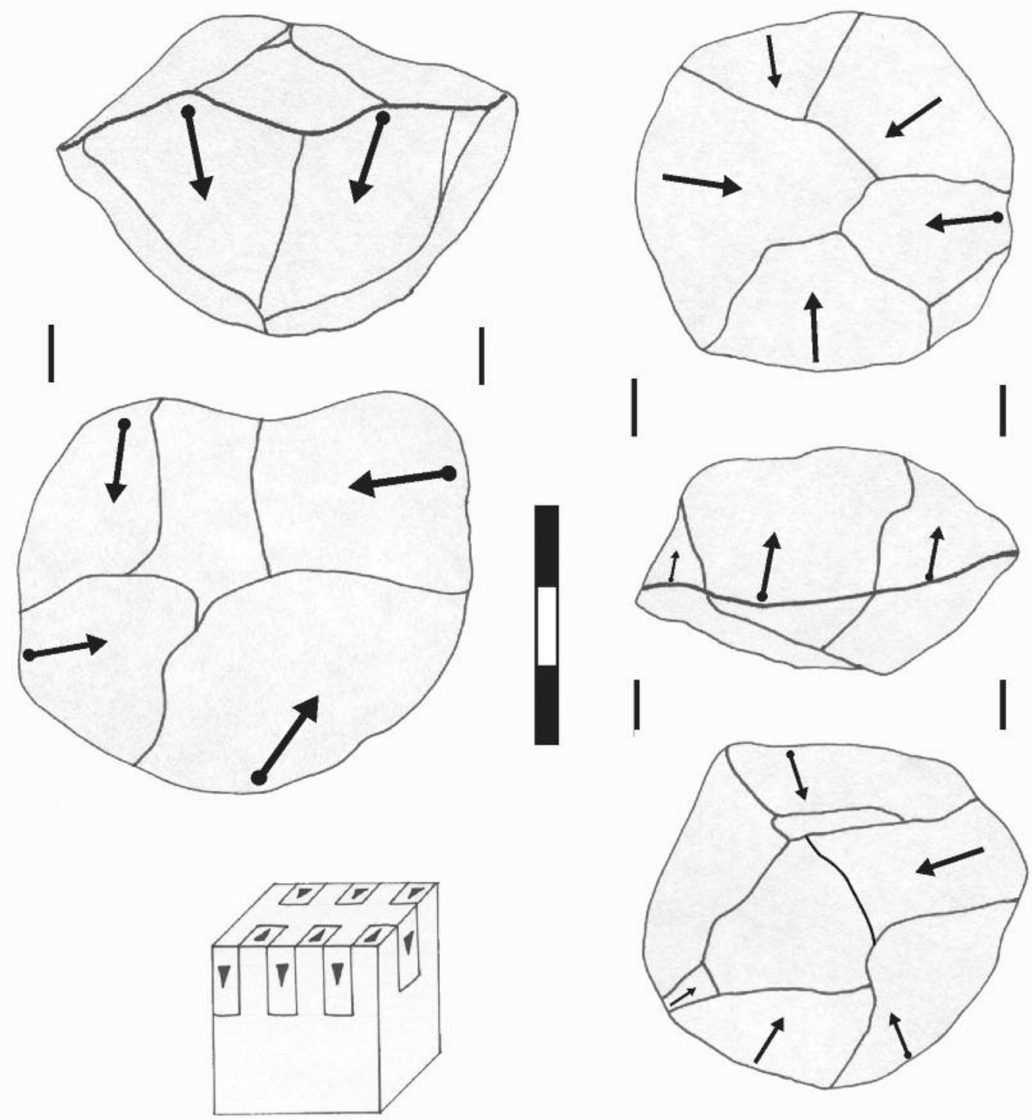

Figure 8.1. Quartz discoid cores from BK. The small size of both examples is quite surprising, since they barely exceed 5 centimetres maximum length.

This is the only case in which a partial analysis of the collection has been performed, therefore there is no call for stopping to consider quantitative issues based on percentages, dimensions or proportions. In fact, this section will only include qualitative aspects with a view to producing a technical definition of the reduction strategies implemented, which will be used to contextualise some of the considerations proposed in the next chapter. Two categories are assessed in the subsequent pages: cores, considered the best exponents of knapping methods present in the site, and bifaces, considered cultural and technical markers.

Cores

BK presents a very high number of cores, which has allowed to identify practically all the systems described previously for the other sites, such as unifacial and bifacial simple, abrupt, multifacial methods, etc. This section will focus on the objects Leakey (1971) classified as discoids, since in previous works (without having first hand knowledge of the materials) we had proposed their similarity to the Peninj technology (de la Torre & Mora 2004). Leakey (1971:210) asserted that in BK there were over 100 examples of this type of cores, which was characterised by bifacial and radial knapping. Upon reexamining the artefacts Leakey classified as discoids, we have observed that many of them are actually un-knapped fragments with natural morphologies similar to discs, whilst others are genuine cores, albeit exploited using different knapping systems. Despite these facts, there are also over a dozen cores that do enable a debate on well-structured knapping methods. Although other works (de la Torre 2005) debate new nuances in terms of the difference between discoid methods and Levallois (see Slimak 1998-1999, 2003; Mourre 2003; Terradas 2003; Lenoir & Turq, 1995; etc), herein we will follow Böeda's (1993) proposal to differentiate both systems, distinguishing them, at the same time, from the bifacial hierarchical centripetal exploitation defined in Peninj (de la Torre *et al*. 2003).

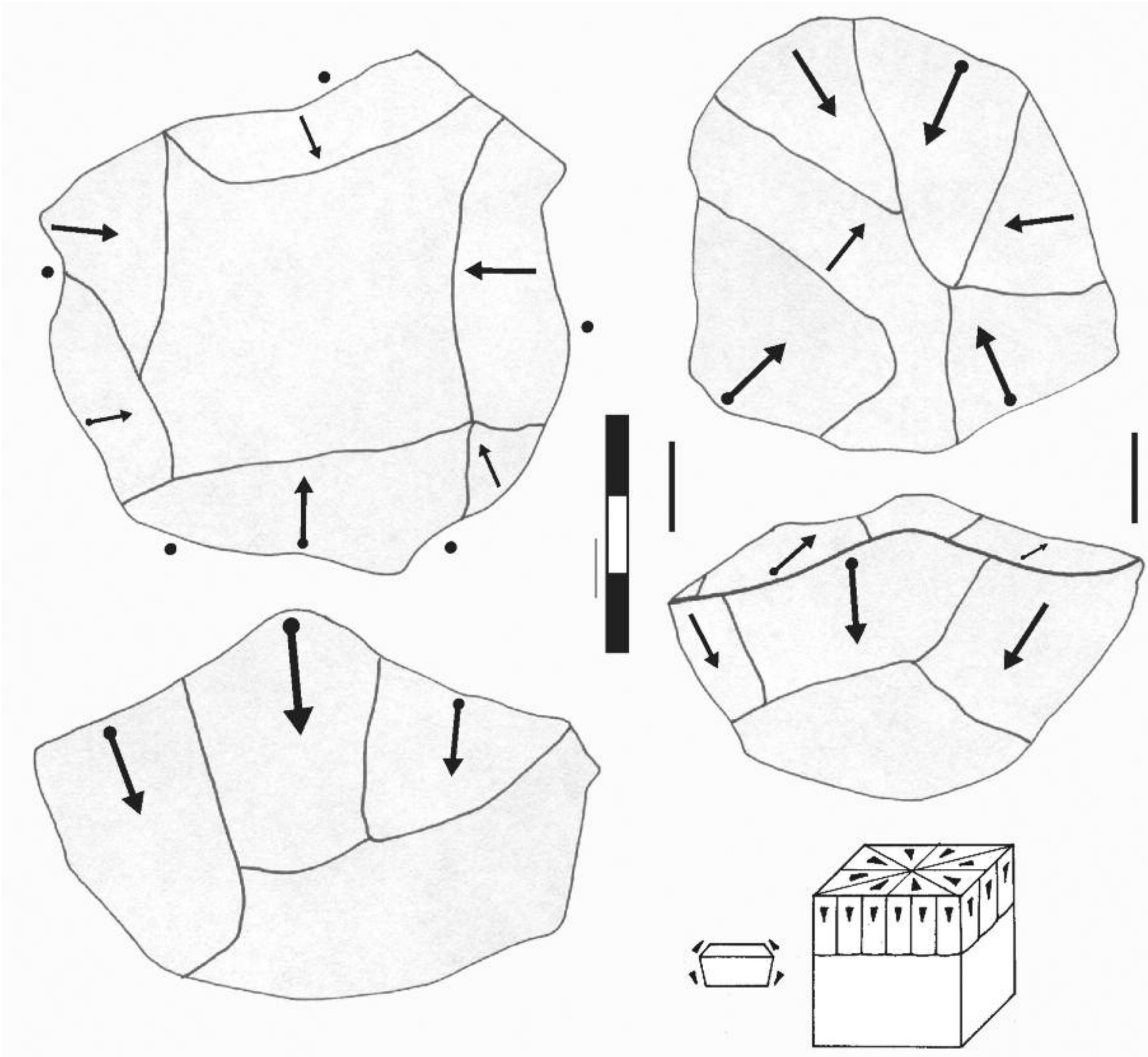

Figure 8.2. Hierarchical bifacial centripetal quartz cores at BK.

The discoid method unquestionably exists in BK. As mentioned in the chapters dedicated to DK and FLK Zinj, cores with bifacial edges and alternate detachments were found in those sites. Nonetheless, the reduction of these pieces was limited to the edge area, implementing a peripheral exploitation that did not penetrate the central volume of the cores and which entailed a swift and unsolvable exhaustion of the cores. In BK, knappers already manage the whole of the cores' surface, using bifacial alternate detachments that exploit the whole of the volume of the pieces. As suggested in figure 8.1, the planes of these cores are not hierarchical, with detachments made in a simple angle with the edge and in which striking is alternate. That is to say, the platform is prepared to strike a flake by using the scar from a previous detachment on the opposite surface. This core management can be included in the consideration of the discoid method *sensu* Böeda (1993), and represents a novel method in the Olduvai sequence.

Something similar occurs with the bifacial hierarchical centripetal system. Although this method had appeared exceptionally in other sites in the sequence, BK presents plentiful cores exploited systematically according to this method (fig. 8.2). Consequently, there are several cores in which one surface is used as the preparation plane for the radial extractions performed on the main surface. Furthermore, this type of cores has appeared in different stages of reduction (fig. 8.3), an aspect that indicates that the method was used systematically, respecting the same knapping structure throughout the different exploitation stages. Although the new proposals (for example Slimak 2003) suggest we should perhaps include this bifacial hierarchical centripetal method in the discoid system, this does not diminish the importance of documenting the fact that such a structured strategy appeared in a 1.3 my site like BK.

In BK, the presence of the Levallois method *sensu estricto* could even be maintained. Some cores present all the characteristics that define this system, such as the hierarchical organisation of the surfaces, the secant angle of the detachments on the preparation plane and the parallel or subparallel scars on the exploitation plane, and percussion performed with a hard hammer. Even the existence of lateral and distal convexities has been verified on the *débitage* surface, an

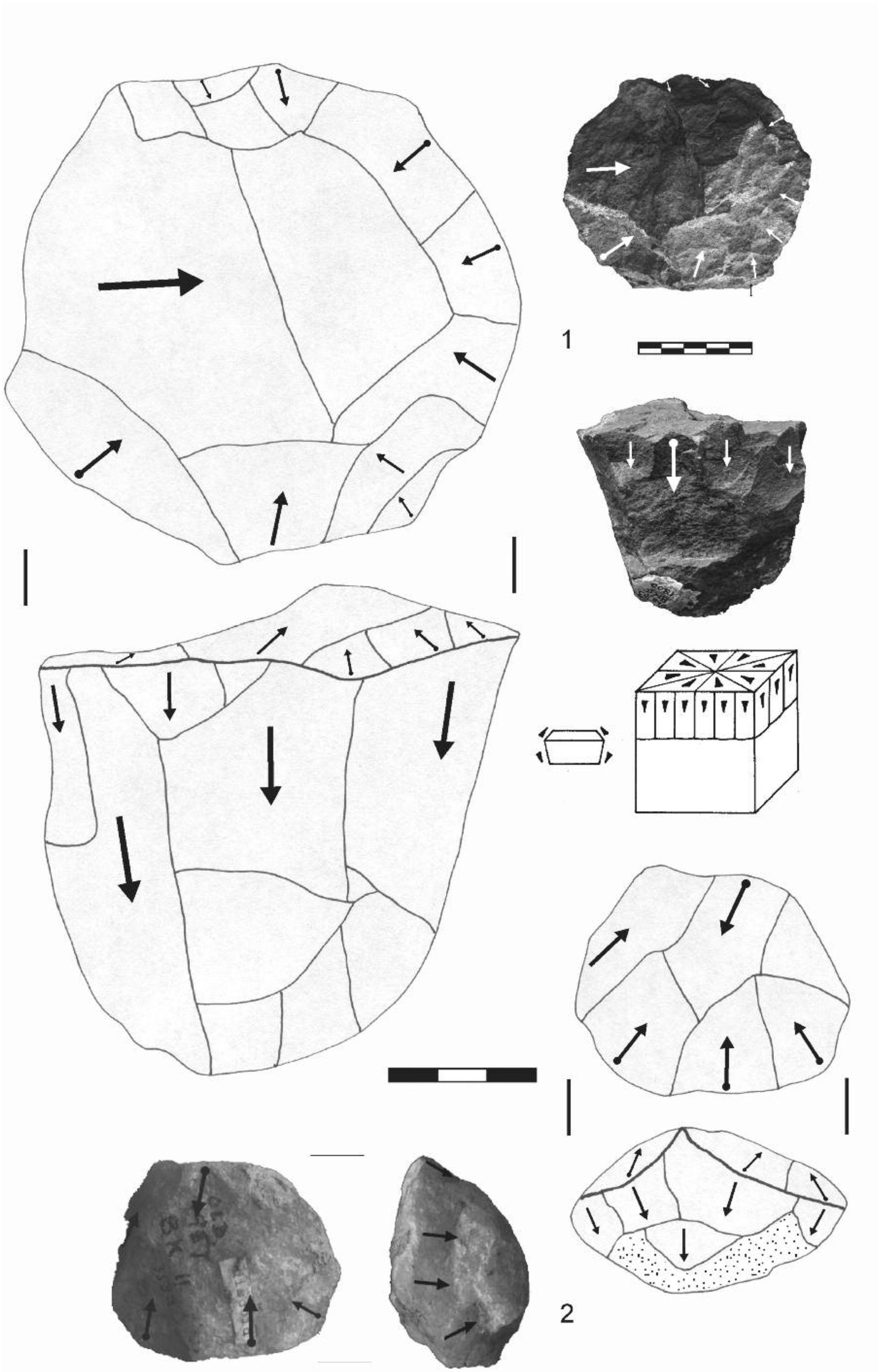

Figure 8.3. Hierarchical bifacial centripetal cores at BK. 1: basalt example in an early reduction stage; 2: exhausted quartz core.

aspect that does not appear in the discoid method, is diffuse in our hierarchical centripetal system and is essential to Levallois (Slimak 2003; Terradas 2003). This type of cores had not been documented in any of the previously studied sites, and supposes a technical Rubicon in the path towards the predetermination of the products.

In all, BK presents *débitage* systems that are, supposedly, typical of the Middle Palaeolithic. The goal is to obtain flakes with an average size ranging between 3-5 centimetres, and this is achieved using well-structured knapping methods which include a predetermination of the flake production. These products are similar, both morphologically and metrically, to the items obtained in the Oldowan, and that was one of the reasons that led Leakey (1971) to consider BK another example of Developed Oldowan B. The other argument Leakey put forward for the cultural assignment was the characterisation of the bifaces, which are described in the following section.

Bifaces

Leakey (1971:204) counted 80 bifaces in BK. Most were considered diminute bifaces, with an average maximum length of 5 centimetres, with many not even exceeding 4 centimetres. The small size of the bifaces, alongside their frequency, was one of the main arguments used to classify BK as Developed Oldowan B and not as Acheulean.

As regards the issue of the items Leakey called diminute bifaces, a good many can be proven to be chunks (fig. 8.4). The few pieces that do present a secondary retouching are flakes with isolated blows or small retouches which only modify the edges of the pieces, without penetrating the surfaces. In all, the diminute bifaces category does not exist, and is in fact completely unrelated to genuine bifaces (fig. 8.5).

Genuine large shaped pieces are a different matter. Opposed to the situation in EF-HR (and in TK to a lesser extent), BK does present genuine bifaces. The pieces from fig. 8.6, 8.7, 8.8 and 8.9 are objects worked bifacially, with detachments that are not limited to the edge but invade the whole surface, and aim to achieve a pointed morphology with two or more symmetrical planes. They all present a moderate size, approximately 10-12 centimetres maximum length and, as Leakey (1971) stated, most are worked on cobble, not on flake. Precisely the cobble blank for these bifaces is another of the arguments Leakey used to assign this industry to the Oldowan and not to the Acheulean. Nonetheless, it is paradoxical to see that, in the case of this so-called BK Oldowan, the objects are genuine bifaces, with the exploitation of the surfaces (not of the edges) and a management that pursues the symmetrical reduction of the volumes of the piece, which does not occur on the simple scrapers (which are enormous, however) from the Acheulean holotype, EF-HR.

Although this chapter underscores the relevance of genuine bifaces on cobbles in BK, large flakes have also appeared in this site, some of which are huge and present retouching (fig. 8.10). These pieces are similar to those of EF-HR in their morphology, and technologically they tell of the knapper's ability to obtain enormous blanks. Furthermore, BK also has enormous cores (fig. 8.11) which were used to obtain large flake blanks; paradoxically these items do not appear in EF-HR. Consequently, it does not seem realistic to continue sustaining a technological or cultural distinction between BK and sites like EF-HR, and perhaps this calls for the consideration of the technical continuity among the assemblages in the upper part of Olduvai Bed II.

Conclusions

The goal of this brief description was, more than to describe an assemblage (BK) or specific categories (bifaces and cores), to verify the existence of certain technical parameters. The systematic documentation of cores exploited using complex knapping methods such as the discoid or the Levallois technique, give way to the assumption that hominids were already aware of those concepts 1.3 my ago. Although this proposal had been presented for other supposedly Oldowan assemblages like Nyabusosi (Texier 1995) or Peninj (de la Torre *et al*. 2003), it is especially significant to underline the fact that it has also been documented in Olduvai, still the most important archaeological complex in Eastern Africa to understand the technical activities carried out during the Lower Pleistocene.

These *débitage* methods must be connected to *façonnage* systems linked to different *chaînes opératoires* in the same site: BK presents strategies for obtaining small-sized flakes (3-5 centimetre flakes) in one same assemblage, in which blocks were also worked to obtain specific morphologies through *façonnage* (i.e., the aforementioned genuine bifaces on core). Furthermore, the production of enormous flakes (most certainly potential blanks for large cutting tools) has also been documented in the same assemblage. This concentration has major implications, since it seems to favour a diversification of knapping activities in the same technological complex.

This leads to a final consideration on the techno-cultural phylogeny applicable to BK. In terms of the investment of raw material, there is probably a profusion of knapping systems linked to the production of small-sized flakes. From this perspective, BK could resemble previous traditions like the Oldowan. Without considering the smallest pieces (since in our opinion they are not even retouched), bifaces are certainly relatively small and regularly use blocks and cobbles as blanks. Yet, they are actually bifaces. This cannot be said of EF-HR. Thus, in BK pieces do undergo systematic *façonnage* processes, which aim to modify the morphology of the blocks completely to create a biconvex section and two more or less symmetric and bifacial surfaces. This differs from the aspects documented in EF-HR, where the goal lays in obtaining forceful edges via the slight modification of the edges of the large flakes. Consequently, as aforementioned, it would be absurd for a site like EF-HR devoid of bifaces to be assigned

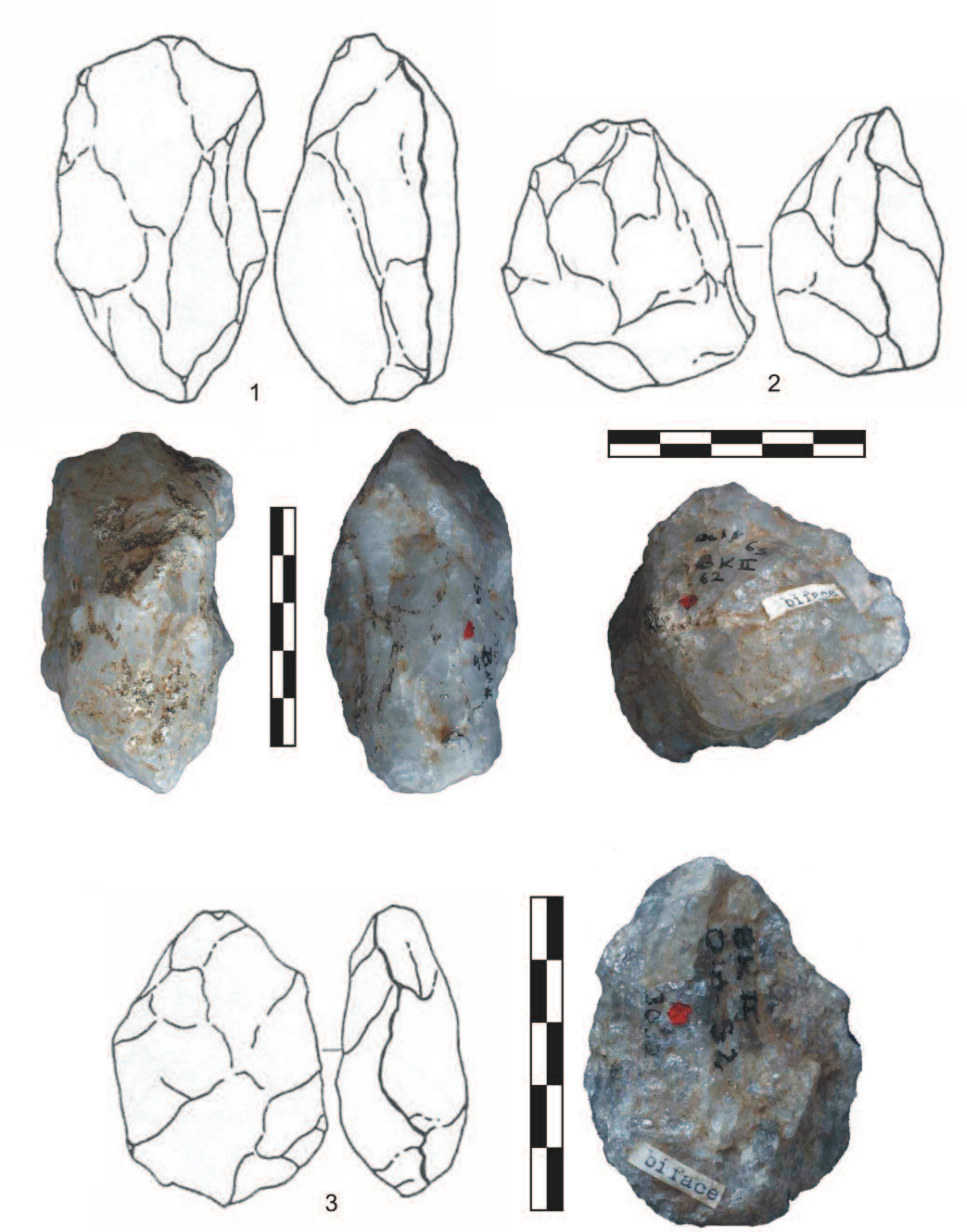

Figure 8.4. Pieces classified as "diminute bifaces" by Leakey (1971:205). In our opinion they are merely fragments, which had not any kind of retouching.

Figure 8.5. Genuine biface alongside the so-called "diminute bifaces," classified herein as chunks.

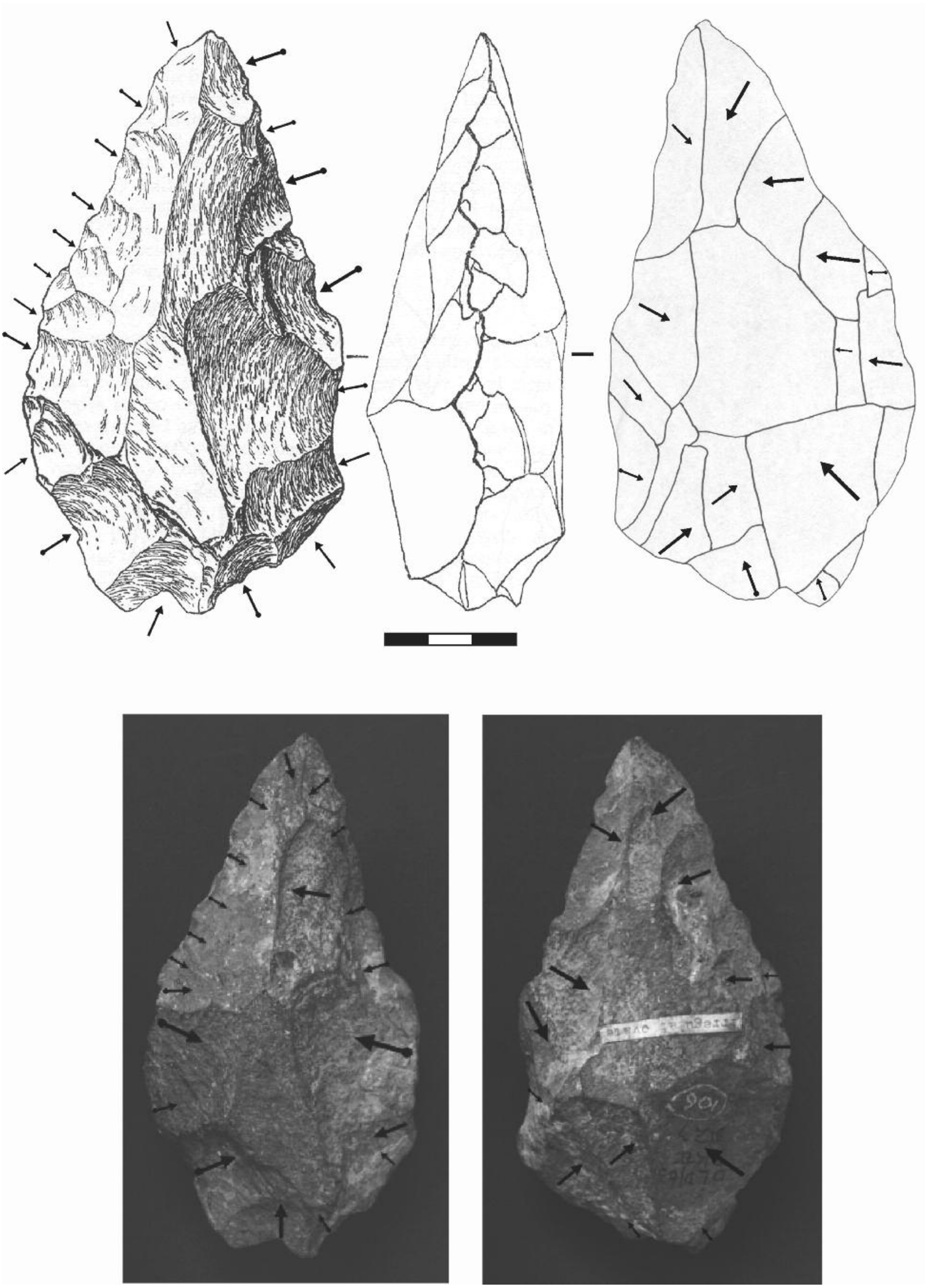

Figure 8.6. Lava biface from BK. Diacritical schemes based on Leakey (1971:206). The blank is indeterminable, since the piece is completely covered by *façonnage* scars. After studying the order of the flake detachments, it becomes clear that a whole surface was worked first, after which the second surface was thinned. Retouching is usually flat, although the angle tends to be simple and even abrupt on the base of the piece, surely an intentional response to create a blunter base opposite the worked point.

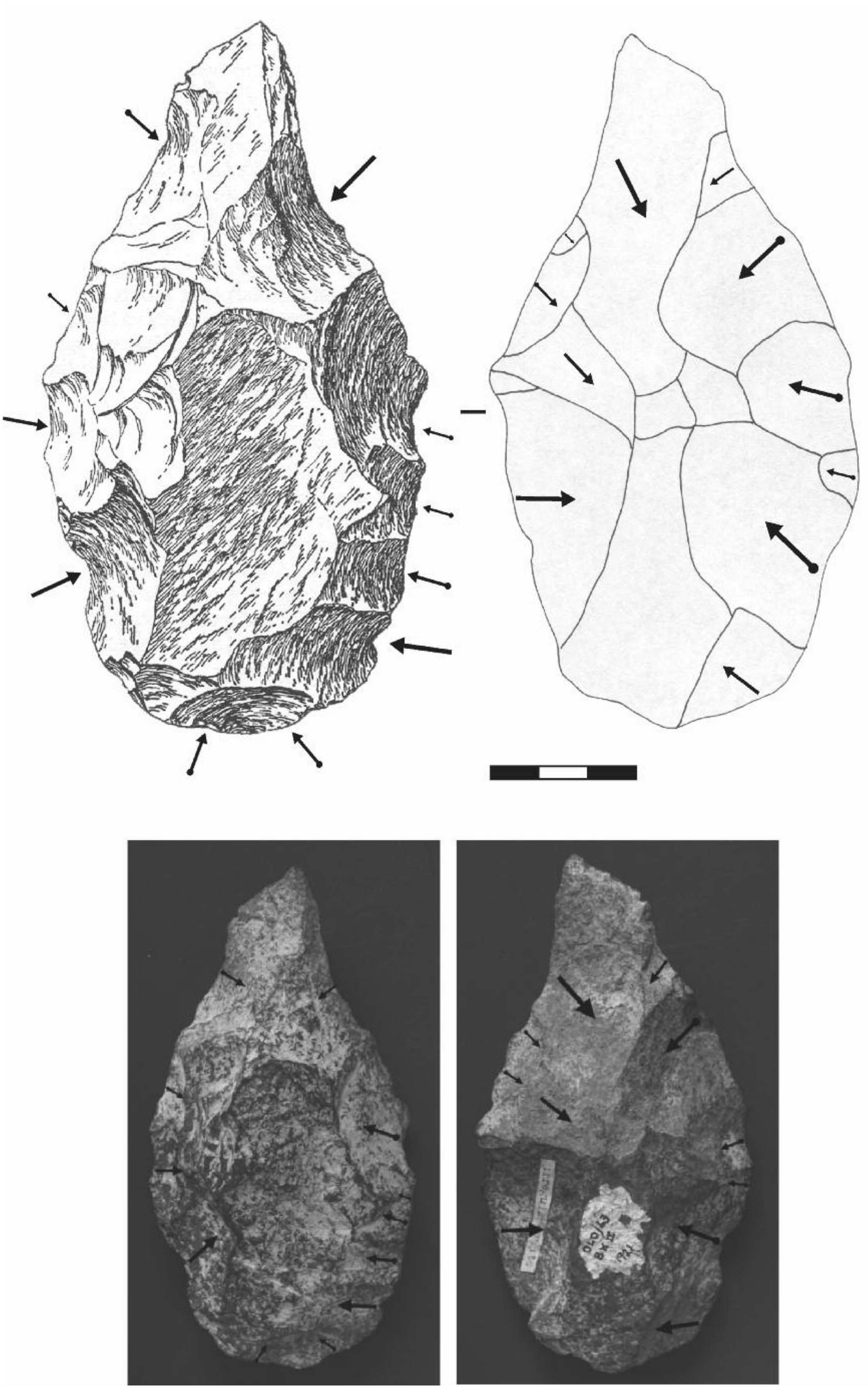

Figure 8.7. Lava biface. Diacritical schemas based on Leakey (1971:206). This piece could probably have been thinned with a soft hammer, since the detachments are very flat and invasive and do not break the edge. This piece presents a high level of symmetry between both surfaces, which is quite uncommon in the examples from older sites.

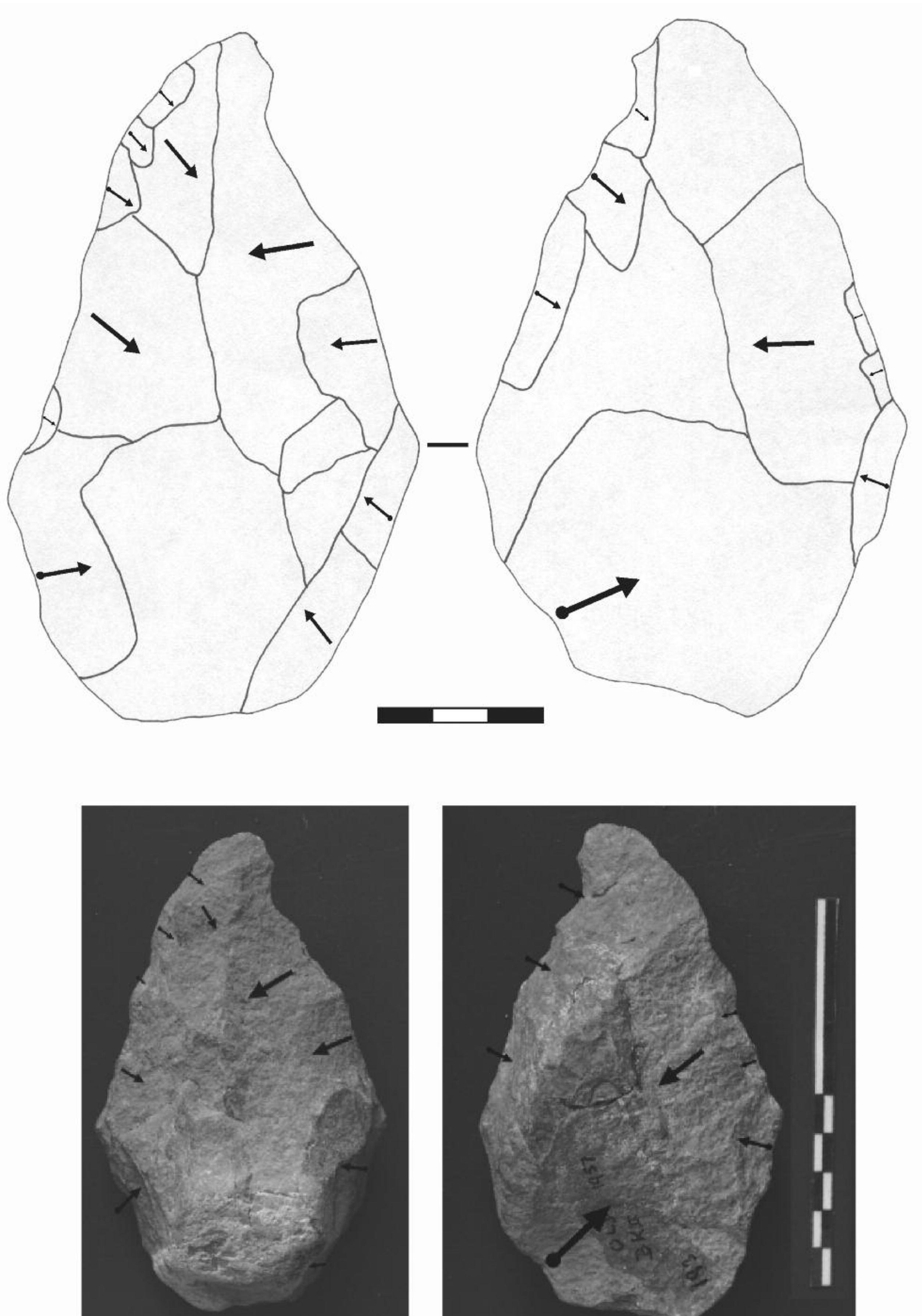

Figure 8.8. Biface on basalt cobble, also presenting a considerable bilateral and bifacial symmetry.

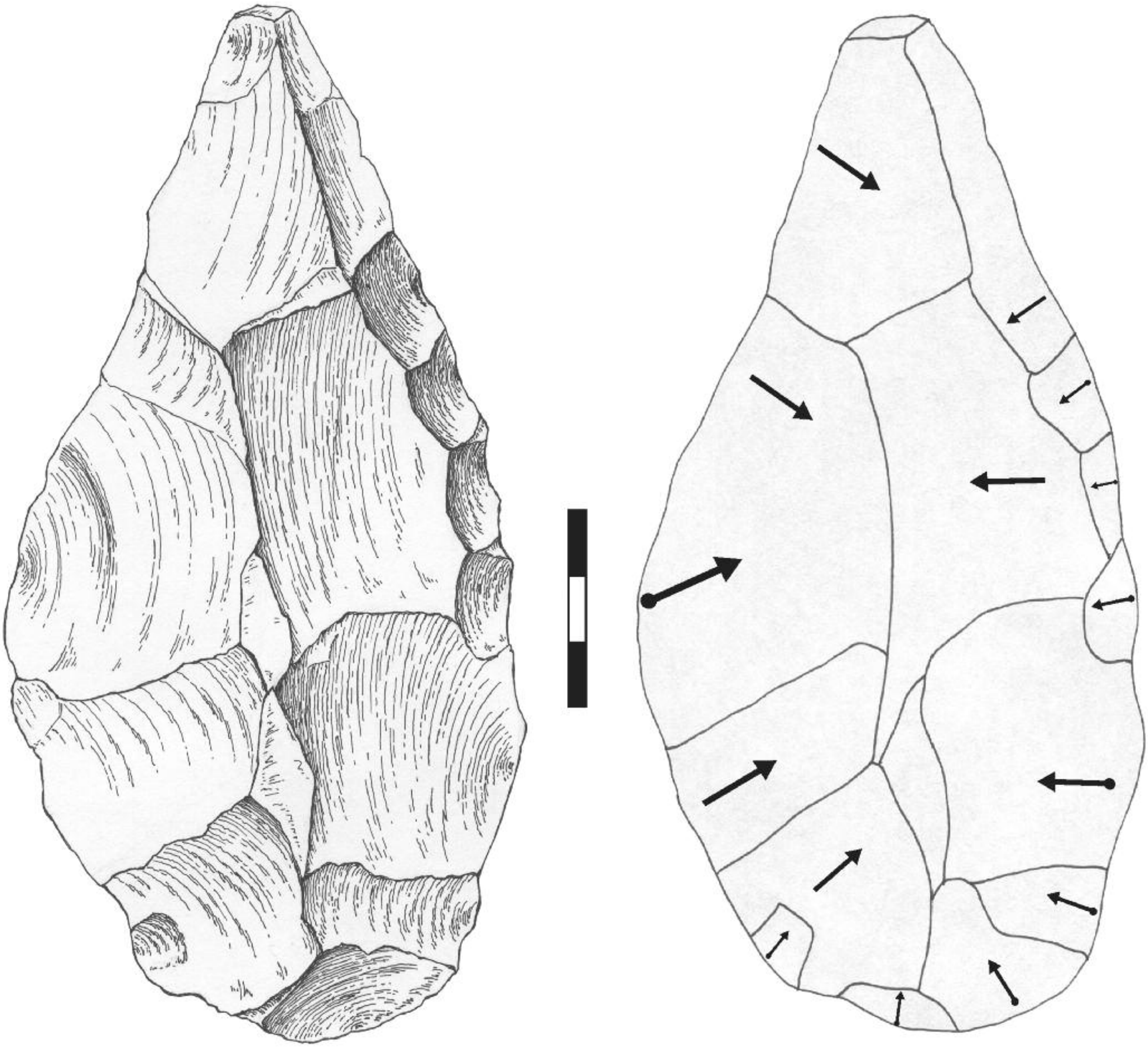

Figure 8.9. Basalt biface (drawing N. Morán).

to the Acheulean (which is precisely defined by the presence of these pieces), whilst BK, where bifacial *façonnage* is recurrent and creates standardised morphologies, were considered Oldowan.

Moreover, in BK the management of enormous blocks of raw material manipulated to obtain large blanks has also been documented; operations were carried out in a manner similar to EF-HR, TK or FC West. In view of these facts, we believe BK is simply another assemblage in the same technical tradition commenced in Olduvai in times of EF-HR. BK hominids had very sophisticated technical skills, which allowed them to obtain flakes using well structured knapping systems, and to manage blocks and flakes to achieve a morphological standardisation of the bifaces. From then on, and during the formation of Beds III and IV, Acheulean technology continued developing and the hominids occupied the now almost inexistent Olduvai Lake and had to adapt to the new environmental conditions. That is, however, a different issue that should be considered in other monographic works. Our analysis concludes here, at the top of Bed II, and requires a global synthesis that develops the most relevant aspects described in this book.

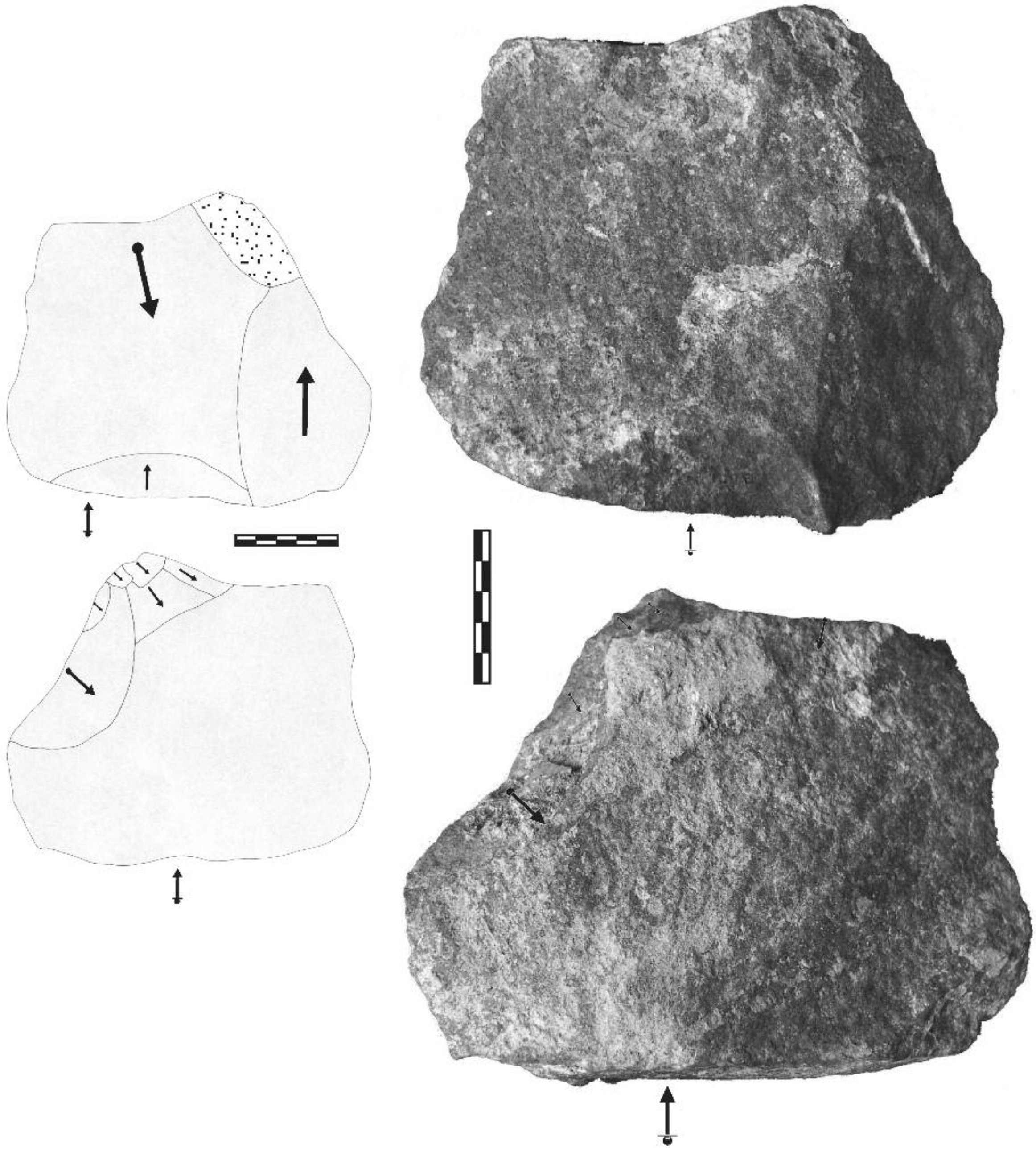

Figure 8.10. Large cutting tool on flake. The flake is over 14 centimetres long and weighs over 2 kilograms. This confirms BK hominids were aware of and used the techniques required to obtain large blanks.

Figure 8.11. Quartz core, most probably used for the detachment of blanks for large cutting tools. This piece measures over 32 centimetres maximum length and weighs over 6900 grams.