Lithic Industry from Barikot: Trenches BKG 11 and 12[1*]

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Abstract

The archaeological site of Bir-kot-ghwaṇḍai on the Swat River, near the present settlement of Barikot in the Pakistan province of Khyber Pakhtunkhwa, is a major excavation project led by the Italian Archaeological Mission since 1978. This study presents a collection of lithic tools from trenches BKG 11 and 12 (2011-2020), focusing on their adaptation to locally available lithic resources. The analysis highlights strategic tool usage and tries to discuss the 'archaic' technological traits in lithic production, contextualizing these findings within the broader and somehow still fuzzy picture of the early regional lithic industries.

Keywords: Pakistan, Swat Valley, Barikot, Lithic Technology.

1. Introduction

Bir-kot-ghwaṇḍai is an extended multiphase site on the left bank of the Swat River, in the vicinity of the modern-day village of Barikot (lat. 34°41' north; long. 72°12' east) in Khyber Pakhtunkhwa, Pakistan. Since 1978, the site has been the focus of multiple campaigns, first led by G. Stacul, then by P. Callieri and now by L.M. Olivieri, the present Director of the ISMEO/Ca' Foscari University of Venice Italian Archaeological Mission in Pakistan. The lithics from the protohistoric and early historic periods of Barikot and nearby areas have been only preliminarily studied and reported (after digs at Ghalegay, Loebanr, Aligrama, studies by G. Stacul). This paper presents a collection of lithic tools coming from trench BKG 11 (4 seasons of excavation between 2011 and 2013) and trench BKG 12 (excavated in 2014 and 2020, by M. Vidale and R. Micheli). It will present and discuss the strategic adaptation of distinct kinds of tools and cores to the variability of natural lithotypes available in the beds of the Swat and Kandak rivers. Further, it will discuss some distinctive,

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apparent archaic technological traits in lithics' production and use emerging from the ongoing analysis in the broader light of the evidence of early lithic industries of the region.

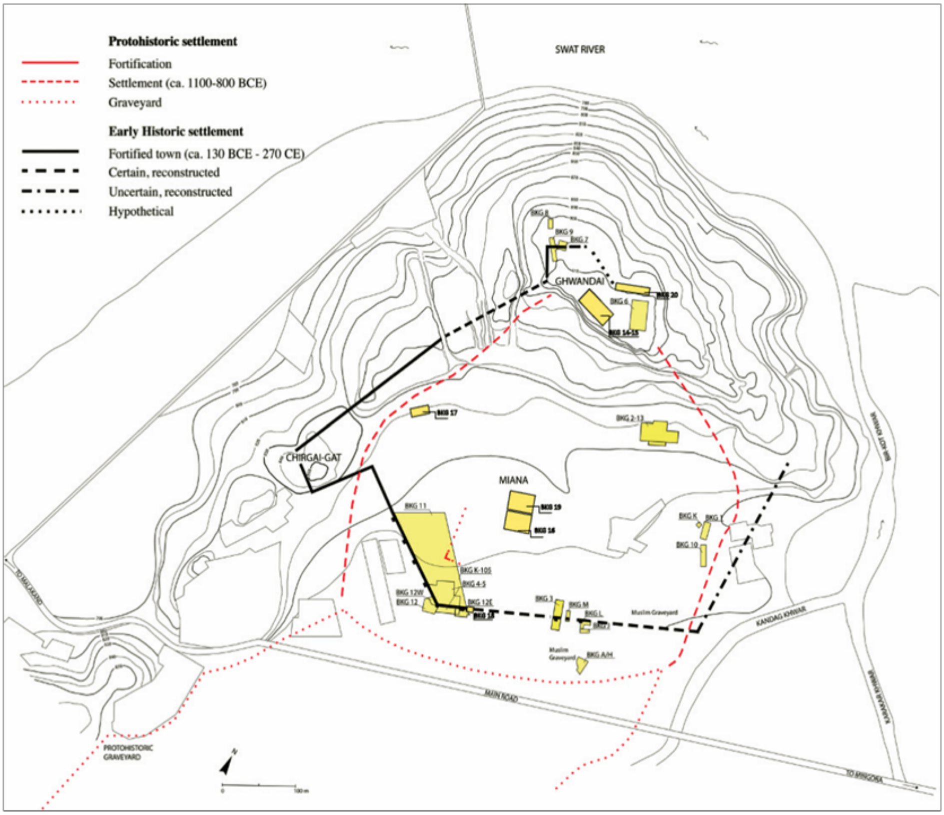

Fig. 1 - Map of the site from the recent report. In yellow are some of the recent excavated trenches (after Olivieri et al. 2022: 69, fig. 2).

Context of Discovery

Bir-kot-ghwaṇḍai (from here referred as BKG) covers an area of c. 15 ha including a crescent-shaped hill, the *ghwaṇḍai*, bound on the north by the Swat River and on the south by the Kandak and Karakar streams. It is principally known for the Early Historic fortified settlement (Callieri 2007; Callieri, Filigenzi, Stacul 1990; Callieri et al. 1992; 2000; Iori et al. 2015; Iori, Olivieri 2019; Olivieri 2003; 2014; 2016; Olivieri, Iori 2020). Despite some interruptions, the archaeological investigations at BKG started in the '80s continued until today. Several excavations campaigns provided evidence of a complex and multi-stratified occupation from the 2nd millennium BCE until the 15th century CE (Olivieri et al. 2019).

The abundant archaeological materials and the impressive architectural features brought to light at BKG confirmed the great importance of the site in the region, located in a strategic position dominating the ancient routes leading to the Swat valley and to Buner and controlling the movement and circulation of men and goods.

During the 2014-2016 campaigns, a significant gap was identified in the stratigraphic sequence within the areas excavated along the Indo-Greek fortification in Macro-phase 3a3. This gap is due to a substantial negative interface represented by a large, deep artificial cut. The cut, excavated in antiquity for the foundation of the urban defenses, destroyed a significant portion of the original stratigraphy (Olivieri 2021). Several trenches were opened in the lower area of the site, in the plain corresponding to the urban center bordered by an imposing defensive wall. In the field campaigns carried out between 2014 and 2020, the late Bronze/early Iron Age layers of the chronological horizon labeled by G. Stacul (1969; 1987) as Period V were reached in Trenches BKG 11 K-105 and BKG 12 W. The operation allowed the study of an unbroken archaeological sequence stretching from the latest moment of local settlement in late Kushan times (second half of the 3rd century CE) to an Achaemenid early urban phase (mid-5th century BCE).

Further down, Trench BKG 11 K brought to light a series of layers witnessing a period of local abandonment (c. 1000-600 BCE) (Olivieri et al. 2019: Table 1), deposited, in turn, onto the imposing ruins of a large boundary wall made of mudbricks dressed with regular courses of large river cobbles. Recent AMS 14C dates place the abandonment phase of this early Iron Age defensive wall between c. 1000 and 900 cal BCE (Olivieri et al. 2019: 5, tab. 1).

According to Vidale and Micheli (2023: 652), digs along the southern side of the Indo-Greek wall (Trench BKG 12) close to its south-west bastion, brought to light a long sequence: from a limited portion of a late Bronze/early Iron age settlement (Phase 1b; radiocarbon dated between the 12th and the 11th centuries cal BCE), with part of a building with two adjoining rooms, to the erection and destruction of a pre-Indo-Greek defensive wall in mudbrick. In fact, the excavators speak of

"[...] *an earlier late Bronze age horizon, only partially excavated along the slope, possibly datable after a single radiocarbon date within* *the 13th century cal BCE (Phase 1a). Below the latter, earlier settlement layers (preliminarily labeled Phase 0) exposed along the lower part of the slope, distinguished by evidence of wooden architecture and mudbricks constructions and a large round pit, containing stone tools very close to those found by Giorgio Stacul in Period IV contexts in areas A-H and J-M in the same site in the late '70s"* (Vidale and Micheli 2023: 656).

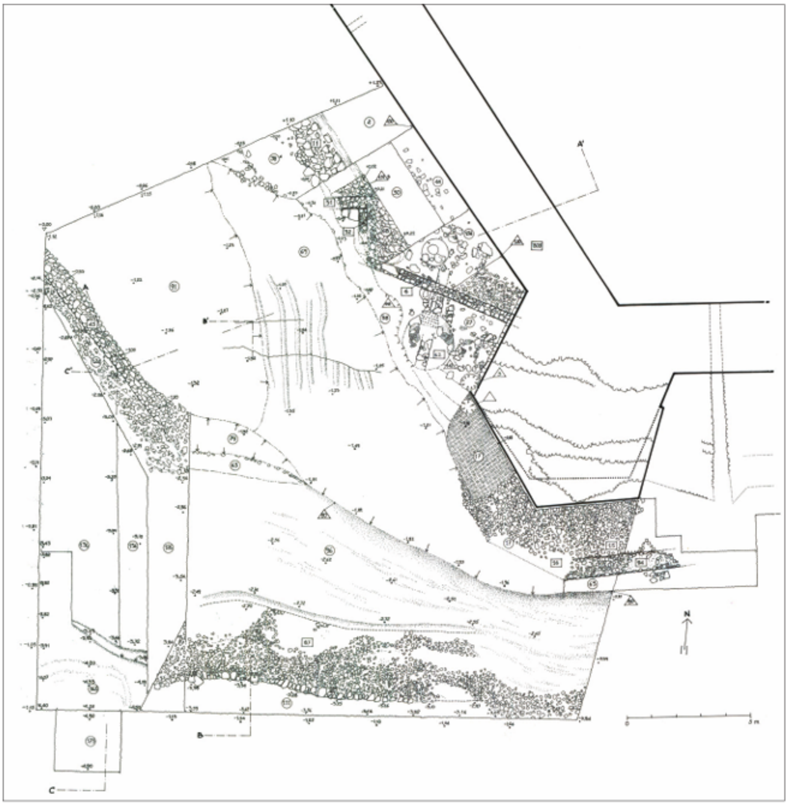

Fig. 2 - Bir-kot-ghwandai, Trench BKG 12 W. General map of the 2014-2016 excavations. The structures discussed in this article are mmediately to the west of the bastion, outside the Indo-Greek wall (after Vidale and Micheli 2023: 653, fig. 1).

The materials presented below were found in a stratum in the lower part of the cited slope. Their position in the stratigraphic record is then synchronic also based on the evidence of the coherent late Bronze Age ceramic materials. Although their apparent "archaism" leaves open the possibility of a secondary use and deposition.

The collection is composed of 43 tools, as a first approach the tools were briefly described, measured and the support was identified by their natural lithotype. All the information are compiled in Table 1 and the criteria are discussed in the following paragraph.

Terminology and Methodology

In cases where lithological identification was doubtful or absent, the acronym ND (i.e., Not Determined) was assigned. The measurements are reported as height (defined as the maximum measurement of the artefact, recorded with calibers between the two opposite ends of the artifact oriented in frontal view), width (the second maximum measurement recorded between the left and right opposite ends, always in frontal view) and, when possible, thickness (intended as the maximum distance measured between the ventral and back surfaces). In the case of pebble-based tools where the thickness is preserved, this latter is the distance between two opposite cortical ends. For tools with multiple surfaces modified by technical actions, they are identified based on their location on the blank (top = upper; base = lower; front = anterior; rear = posterior; right and left or perimeter in the case of oval or elliptical artifacts), always in frontal view. For knapped artifacts, the reduced surfaces will be referred to as "edges".

So far, the class of tools discussed in this article has been scarcely studied and even less interpreted functionally. The tools' description is based on the hypothetical reconstruction of the original blank. The term "pebble" refers to blanks of various forms, spherical, oval, or elliptical. Artifacts roughly shaped from a larger fractured rock were attributed to blanks assimilated to large "flakes"; whereas the term "slabs" refers to planar-section blanks, sometimes polygonal in contour, resulting from intentional or natural fracturing of lithic blocks, typically following large continuous diaclastic planes.

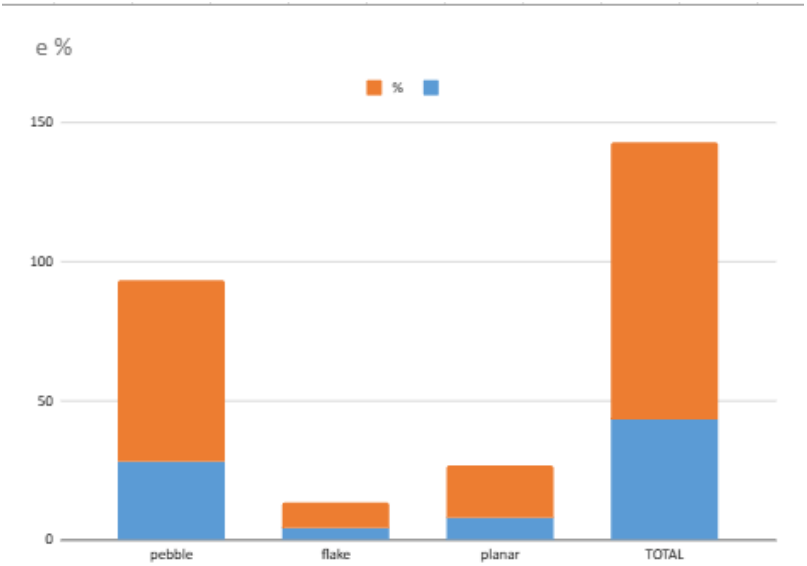

Fig. 3 - Histogram showing the incidence in the lithic assemblages of Trenches BKG 11 and 12 of the different categories of blanks. In blue the numerical number of the artifacts, in orange the expressed percentage.

2. The Materials

Lithotypes

The short following list shows that each lithic material, part of this collection, with varying hardness and texture, was chosen based on specific functional requirements, ranging from strength and resistance to abrasive polishing processes.

Granite (igneous rock; Mohs hardness of 6–7,) counts 8 pieces of the collection. Being a coarse-grained plutonic rock rich in quartz and feldspar, it is durable and abrasion resistant, which makes it ideal for intensive applications like grinding and percussion. Diorite (igneous rock; Mohs 7, 4 pieces), also a hard, durable igneous rock, served well for making cutting and percussion tools. Basalt (igneous rock; Mohs 6), counting 3 pieces of the collection, is a dark-colored effusive igneous rock. Having an amorphous structure, it was used for making cutting and light-hammering tools, despite its low silica content. Similarly, gneiss (metamorphic rock; Mohs 7) sums up with 5 pieces. Red porphyry amounts only to 1 piece.

In contrast, the much softer phyllite (metamorphic rock; Mohs 3-4, 4 pieces), distinguished by its fine-grained texture and workability, was evidently used for light hammering and smoothing tools. Chlorite schist (2 pieces), a soft metamorphic rock (Mohs 2.5), was used for making discoid objects, possibly also used as tools. Other soft metamorphic rocks, amounting to a total of 11 pieces, include green mica schist (1 pieces), and granitoid phyllite (1 pieces), apparently ideal for creating softer tools with smooth surfaces. Siltstone (sedimentary rock; Mohs 5-7,1 piece) due to its hardness similar to quartz was used to make a cutting tool. Black steatite (metamorphic rock; Mohs 1-1.5, 1 piece) was exclusively used for making a bead.

Most of the blanks are compatible with the lithologies present in the Jambil and Saidu Units (Olivieri 2003). Still nowadays, pebbles of the described materials are easily found on the surfaces of active beds of the Swat and Kandak rivers, and across residual terraces near Barikot, transported by floods affecting the valley during the Tertiary period (Stacul 1987). A few blanks do not seem to belong to these geological units; in first place basalt, a magmatic rock not available locally. Possibly, the basalt blanks may have originated from geological formations belonging to the Kalam Group, as argued by Kojima (1956: 96-134), who identified basaltic outcrops in the area between the northwestern Karakorum, the eastern Hindukush range, and the Upper Swat valley (Stacul 1985: 5; Kojima 1956: 93-134). However, also basalt blanks could have been naturally transported downstream and collected along the banks of the Swat River near the Barikot settlement.

"Pebble" Tools

Pebble-based artifacts are the predominant category of the assemblage, accounting for 28 pieces. Several tools, such as L03 (Fig. 5), L16 and L17 (Fig. 6), and L34 (Fig. 7), were produced through knapping to reduce the mass of the pebble and create functional surfaces. Knapping, whose traces are visible in L03 (see its sharp edges, top and left), bifacially worked, was likely used for cutting and scraping activities in L17, knapping completely altered the morphology of the blank, resulting in an amygdaloid form. The less extensive knapping observed in L16 and L36 (Fig. 8) may suggest a more generic use or perhaps a preliminary stage in preparation. In both cases, it is also possible to ascribe modifications to reuse. For example, L16 shows the detachment of the cortical blade with signs of platform preparation. In L36, an ovoid flake was extracted from the main striking platform.

In some cases, the alteration of the original blank is due to usewear, commonly seen in many of the artifacts, such as L07 (Fig. 9), L14 (Fig. 10), L23 and L29 (Fig. 11), which were used for grinding. The continuous smoothing along the right edge of L23 and the smoothing of the anterior and posterior surfaces of L29 indicate processes that systematically altered the morphology by flattening the surfaces. Other tools, among which L01 (Fig. 10), L07 (Fig. 9), L08 (Fig. 10), L11 (Fig. 6), L15 (Fig. 12), L22 (Fig. 10), and L33 (Fig. 13), show the effects of repeated strong impacts, typical of tools used as pestles or hammers for crushing hard materials. Tools like L01, L08, L14, L22, and L38 (Fig. 10) are similarly identified as pestles/hammers, with impact areas on both basal and top surfaces. These tools were likely used for both crushing and grinding activities. L11 shows signs of wear indicating prolonged and intense use, suggesting its primary function as a pestle.

Artifacts such as L21 (Fig. 8), L28 (Fig. 9), and L42 (Fig. 14) are associated with grinding or continuous abrasion. For example, L21, that is a fragment of a saddle quern, a grinding tool, was made from an elongated river pebble, chipped in the middle to give it a functional shape. The signs of abrasion wear altering the morphology of the original blank, were obtained by repeated use suggesting it was used for grinding grains or other materials. L28 exhibits two cup-shaped indentations produced by non-perforating drilling, likely to accommodate the insertion of a cylindrical body.

Some artifacts, such as L20 (Fig. 13) and L13 (Fig. 13), although different, may have been multifunctional or adapted for new uses. L20, made of diorite, shows discontinuous wear from repeated impacts along its diameter, signs of smoothing, and a fracture on the blank following an impact on the top edge. This impact created a surface seemingly adapted for a cutting blow. The combination of these features suggests that it may have been used in multiple contexts. L13, a pestle on a pebble, shows fractures caused by repeated impacts of varying intensity; the right edge and the tip exhibit more consistent and continuous impact traces, indicating its use as a hammer, particularly on the right edge where the tool may have struck a harder object, possibly a chisel or metal tip.

Some artifacts seem to have been created for specific functions. For instance, L27 (Fig. 4), identified as a weight, features symmetrical grooves on the edges, possibly for the passage of a rope or the insertion of a wooden component, suggesting its use in balancing or weighing contexts. L35 (Fig. 13), also identified as a weight, has a hexagonal shape, produced through abrasion followed by smoothing.

"Flake" Tools

All the following artifacts, consisting in 4 tools of the assemblage, derive from roughly reduced cores. Knapping was used both for mass reduction and for rough shaping of the functional edges, likely performed with small hammerstones rather than pressure flaking. However, it cannot be excluded that these edges were worn down during use. In the case of the basalt tools (L02, L05, Fig. 5), the knapping allowed the shaping of the front surface while leaving the back surface mostly cortical. The tools show clear signs of use and specific functionality; L02 and L05 were probably used for cutting or butchering activities, as indicated by the retouches present on the edges (the upper edge for L02, the right edge for L06). L06, which may have been a small hammer shows light and repeated impacts, suggesting its use in tasks requiring the direct application of force on a specific point. The same may apply to L18 (Fig. 7), given its triangular shape.

In two artifacts, L02 and L05, the presence of cortex on one side is observed. The presence of cortex may suggest an intentional effort to preserve part of the original pebble's natural surface, possibly to retain some material for future work. Particularly notable is artifact L05 in the frontal view, where the percussion that caused the removal of the top portion of the original blank can be clearly appreciated.

"Planar" Tools

Nineteen percent of the assemblage consists of artifacts made from lithic blanks of the "slab" type. This category includes items made from rocks recognized for their tendency to fracture into tabular fragments, typically due to internal diaclastic planes. Knapping is immediately noticeable in many of the artifacts described here. Tools such as L04 (Fig. 7), L19 (Fig. 12), L26 and L31 (Fig. 7) show the use of knapping to reduce the mass of the blank and create functional edges. The bifacial knapping observed in L31, made of green siltstone, suggests a sharp impact tool, with a right edge functionalized for cutting and a rhomboid section. The left edge shows a stepped retouch (upward) likely added to functionalize the edge after wear on the right side.

Some artifacts have highly polished surfaces. In particular, L19, made of green mica schist, features a completely smoothed front surface. Given the artifact's morphology, the smoothing may be due to a previous phase of use. This could be suggested by the intensive knapping on the opposite surface and other visible knapping on the basal edge. Heavily smoothed surfaces are also present in L37 (Fig. 8), made of phyllite. L43 (Fig. 15) is a large, unique object made from a large rectangular plane that features two biconical perforations at its ends, possibly for suspension or attachment to other objects. L09 (Fig.12) shows traces of abrasion from non-perforating drilling on both surfaces, with a hemispherical profile. This suggests intensive use, possibly for perforation or preparation of surfaces for further work.

Artifacts L04 (Fig. 7), L09 (Fig. 12), and L26 (Fig.7) show mass reduction along their edges through knapping, with the knapping apparently proceeding clockwise (in L04 and L26). In L09, the edges appear to have been rough-hewn not so much to reduce their mass, but to define the morphological shape of the tool. The result of these processes, in all three cases, is a discoid form.

3. Discussion

The previous chapters discussed the lithic assemblage from trenches BKG11 and BKG 12W highlighting their common features. Some similarities can be observed with lithic artifacts from various contexts in the Middle Swat Valley. Heavy-duty lithic artifacts are often merely mentioned and poorly characterized in excavation reports, without a dedicated literature. Regarding the pestles, the comparisons from Aligrama,[2] show a similar cylindrical shape (e.g., L08, Fig. 10; L11, Fig. 6) or parallelepipedal form. The wear traces also display signs of abrasion located on the basal and top surfaces. The same can be said for grinders (e.g., L12, Fig. 11), which are generally ovoid or spherical in shape (Stacul and Tusa 1977: 209, figs. 46 and 67). Saddle quern grindstones

[2] Due to the lack of archaeological drawings, with the permission of the Director of the Italian Mission, L.M. Olivieri, comparisons here proposed are based on photographs taken during the inventory work conducted during the 2018 Mission at the Aligrama site. In particular, the artifacts mentioned are part of the unedited collection from trench A and trench H; ranging from a chronological span that encompasses from Period IV to VI (Iori 2018: 1-7).

(L21, Fig. 8; L42, Fig. 14) are a type documented in various contexts (e.g., Aligrama: fig. 22, Stacul and Tusa 1977: 209, figs. 46 and 67; Kalako-deray, Stacul 1997: 117 fig. 10a-e), whose more or less pronounced shape depends on the blank used and the continuity of use. The saddle-shaped form is not the only type recorded in the Middle Valley assemblage; it is accompanied by another type of grinding stone with an elliptical shape (L28; Fig. 8) or polygonal (Kalako-deray, Stacul 1995: fig. h), featuring a central cup depression made by abrasion.

Hammerstones are generally ovoid or spherical (e.g., L01; Fig. 10) and exhibit impact wear on the basal surface. However, heavy-duty lithic artifacts leave little room for speculation, showing no signs of typological evolution. The morphology of the blank is altered by use, visible through wear traces rather than through deliberate processes aimed at functionalizing the blank. Most artifacts are significantly modified by grinding, except for some pebbles with smoothed and/or flattened surfaces (e.g., L15, Fig. 12; L23, L24 and L29, Fig. 11). A large, flat artifact (L43, Fig. 15) also appears in the Aligrama context (Stacul and Tusa 1997: 210, figs 47-51). All these objects feature two biconical perforations at the lateral ends. Stacul does not provide a clear explanation for these artifacts (for Aligrama see Stacul and Tusa 1977). They are described as irregular in shape (some elliptical, others rectangular), and it is hypothesized that they were used for ritual practices (Stacul and Tusa 1977: 164). It is possible to speculate that the holes may have had cords passing through the holes, presenting themselves as suspended platforms.

Artifacts produced by knapping, due to this technique, exhibit more technological features and required a more in-depth study. Medium-sized artifacts (with an average length of 10 cm), most of which display a thick and irregular section, make up this assemblage (Stacul 1987: 88). Artifacts such as L01 (Fig. 10), L05 (Fig. 5), and L19 (Fig. 12) were derived from a bifacially worked blank, with an irregular shape tending towards oval. They can be compared to an artifact from Period III at Ghalegay (Stacul 1987: 47 fig. 15, h) and mainly to artifacts from Period IV at Barikot (Stacul 1987: 92, fig. c). In general, they could be ascribed to a broad category of bifacial artifacts with an irregular section and a predominantly cortical backside (Stacul 1987: 88), originating from the sites of Barikot and Loenbar 3 (Stacul 1987: 90, fig. 35).

Both L02 and L05, as already noted, preserve a major cortical back, although bifacially worked. These are instruments made from cortical flakes detached from the back. As noted by Micheli "*The pebble* *tools fall within the typological range of Soan industry [..] especially they can be ascribed to the second group proposed by the author [...] the second features some artifacts produced by unifacial or bifacial flaking of smaller pebbles of basalt and siltstone* [...]" (Micheli 2006: 45-46, 4.1-2; fig. 4, 5.1-2; fig. 5). The technology is coherent also to recent finds in the Indian subcontinent, in the quest to outline the characteristics of Soan industry "*Two types of lithic reduction sequences have been observed: (i) shaping of cobble involving whole cobbles or primarily split or fractured cobbles; and (ii) splitting of cobble obliquely*" (Bain and Bezbaruah 2021: 10, 11.1-2, 11.8-9, 11.11-13) of which L02 and L05 are a representation.

L31 (Fig. 7) finds a comparison with an artifact from Period III at Ghalegay, which Stacul defines as a *pièce écaillée* (Stacul 1987: 47-48, fig. 15g). The similarity lies in the two functional, convex edges and the similar retouch along the functional edge. L31 can also be correlated with examples already interpreted as Soanian (Micheli 2006: 46, 5.3, fig. 5) but differently from other artifacts, displays less cortex in its surfaces. The instrument displays a trace of diaclastic plane left untouched by the flaking process, which can be considered as a cortex as it is the negative of its natural detachment.

L16 (Fig. 6) is a rather particular case; the wear traces along the perimeter suggest its use as a grinder/hammer, while the removals on the front surface could suggest the possible attempt to detach flakes. In particular, a clear laminar removal on the front surface allows the speculation of exploitation of a damaged tool. Nonetheless, the inability to examine the flake further limits the argument to the realm of hypothesis.

L17 (Fig. 6) is interpreted as a core artifact. Based on the evident removals along its surfaces, the amygdaloid shape could associate the artifact with that presented by Vidale and Micheli (2023: 658, fig. 4), interpreted as a hand axe. Numerous discoid artifacts with central depressions, in various shapes and sizes, are abundant in the published archaeological record. L04 (Fig. 6), L09 (Fig. 12), and L26 (Fig. 7) belong to this category, finding comparisons in Period IV artifacts from Barikot (Stacul 1987: 95, fig. f) and Aligrama (Stacul and Tusa 1975: 318, fig. 19j). Their function remains speculative, with Stacul proposing Marshall's hypothesis, identifying them as "mace heads", and suggesting that the typological variety of the central hole is due to different stages of working (Stacul 1987: 94). In the writer's opinion, by considering their shape they could also be interpreted as digging sticks heads. Vidale and

Olivieri identify these objects, when featuring a single cup depression,[3] as the door pivots. Some of these objects, such as L04 and L26, do not have holes or surface depressions. These artifacts could be lids for vessels; therefore, a comparable knapped artifact in this collection, L34 (Fig. 7), could also be interpreted as such. These three discoidal artifacts can be ascribed in the same Soanian typological range. As L04 and L26, fall to a typological range of [...] centripetally flaked flat cobbles [...] (Soni 2013: 12, fig. 13). L09 instead is different because of its semi-spherical depressions in both faces, which is also a typology attested in the Soanian record (Soni et al. 2017) but also attested in the Middle Swat valley, specifically in the context of Kalako-deray, Aligrama and Ghalegay (for references see the section above).

"Archaic Tradition, Paleolithic Artifacts, or Technological Adaptability?"

Having considered the discussion, four key aspects emerged as important features to underline concerning the lithic assemblage.

First, the consistent use of siltstone and basalt as primary blanks for cutting tools in the Middle Swat Valley (Period I to IV) suggests a strong correlation between available raw materials and technological choices. The amorphous structure of basalt and the planar cleavage of siltstone likely lent themselves to the flaking techniques observed. As previously noted in the "blank lithotypes" section and other publications (Stacul 1978; Micheli 2006; Vidale and Micheli 2023), the scarcity of chert or any siliceous rock in the Middle Swat Valley complicates typo-technological interpretations. This limited raw material availability can indeed be speculated as a primary reason for the apparent archaic connotation of the tools. This aligns with findings in the Upper Yarkun Valley in northern Pakistan (Gillard et al. 2002: 27-28), where recent lithic industries exhibiting "archaic features" were discovered, characterized by coarsely trimmed cobbles or chips and a lack of core reduction processes for producing flakes (Gillard et al. 2002: 28-32). These characteristics, though dated to a later period (8000-3000 BP and contemporary with the Neolithic), highlight how environmental or behavioral factors at high altitudes might have delayed the introduction of technological innovations. Despite this, traces of a bladelet lithic industry

[3] Personal communication and discussion happened during the preliminary phases of the study.

on available blanks are visible in Period IV contexts (Stacul 1987: 90-93; fig. 35-38), indicating some degree of technological adaptation.

Second, from a technological and typological perspective, all the proposed correlations firmly ascribe the flake lithic tools of this assemblage to the Soanian and Acheulian traditions. This places them within a broad Lower to Middle Paleolithic range. The presence of heavy-duty tools, which typically exhibit less technological evolution compared to knapped artifacts, is consistent with known Soanian typologies. The pebble tools (L02, L05) and discoidal artifacts (L04, L09, L26) align well with the Soanian industry, a tradition rich in cobble tools found across the Siwaliks and in Central Asia. The handaxes, particularly L17, show clear similarities to those ascribed to the Middle Paleolithic (Vidale and Micheli 2023: 658, fig. 4) and earlier Paleolithic times in Pakistan (Salim 1990: 347, 353, fig.2). L17, the pink quartzite handaxe and the handaxe from Goradai-kadandao feature an almond/amygdaloid shape, small flakes have been detached from the outer part to trim the edges, meanwhile the body presents scars and negatives of larger detached flakes. This could be attributed to the use of the hand axes as cores. Thus, even if L17 does not have functionalized margin, it can be ascribed into this macro category of hand axes. The striking resemblance between Soanian and Acheulian handaxes, showcasing common morphological and flaking characteristics, further strengthens the association between these two traditions (Misra 2001; Agrawal and Kharakwal 2002; Pappu 2002).

Third, the Soanian tradition continues to be a largely debated topic. Its cultural sequence and chronology remain under active discussion (Soni and Soni 2013; Pal 2018), with recent research often concentrating on sites in India (e.g., Siwalik Hills and Northwest Sub-Himalaya), resulting in limited contemporary updates and correlations for Pakistani contexts. This ongoing debate is highlighted by the fact that the Soanian lithic industry, despite being considered a technological facies of the Lower Paleolithic, has never been precisely dated and may encompass later cultural periods, including the Neolithic. New archaeological work in Chitral (Samad et al. 2012) emphasizes that historical and archaeological knowledge of the region is still very limited. This scarcity of systematic exploration underscores the critical need for continued research in Pakistan to contribute to a more complete understanding of the Soanian tradition and its chronological and cultural nuances.

Fourth, it is important to notice that heavy-duty lithic tools are a class of materials that clearly has a strong impact in the presented collection (22 artefacts). Technologically speaking, although documented in the archaeological record of the Middle Swat Valley, to this day they lack a systematic study. A better characterization of said artifacts, taking in account for the multiple contexts, in particular Aligrama, Kalakoderay, Barikot and Loenbar III, could offer better insight allowing for the construction of a chrono-typological sequence, linked to the already presented cultural phases of the Middle Swat Valley (Iori 2018: 1-7).

4. Conclusions

In conclusion, the analysis of this assemblage shares a common challenge with artifacts examined in other regional studies (Gillard et al. 2002; Micheli 2006; Vidale and Micheli 2023). In particular the association between L17 from this collection, the pink quartzite hand-axe (Vidale and Micheli 2023) and the basalt handaxe from Goradai-kandao it is not to be taken lightly; although the secondary context of deposition of Goradai-Kandao handaxe does not allow a precise attribution to the lower Paleolithic, the fact that two hand-axes were found in Bronze Age horizons of BKG, seems to lead in a hypothetical direction supporting of Paleolithic tools reused in a modern context. The fact that these artifacts were not recovered in the same layer as the pink granite handaxe, but within a stratum formed along an artificial cut that intersected a larger pit, means that a precise geo-chronological framework remains elusive, leaving their exact temporal placement open to speculation. Nevertheless, this collection offers valuable insights and significantly contributes to the broader archaeological narrative of the region. While they may not provide definitive answers regarding exact dating or a clear choice between an “archaic tradition”, “Paleolithic artifacts”, or “technological adaptability” as mutually exclusive explanations, as they serve as essential data points. Nevertheless, this collection offers valuable insights and contributes to the broader archaeological narrative. While they may not provide definitive answers, they serve as essential data points, enabling us to piece together a more comprehensive understanding of the past.

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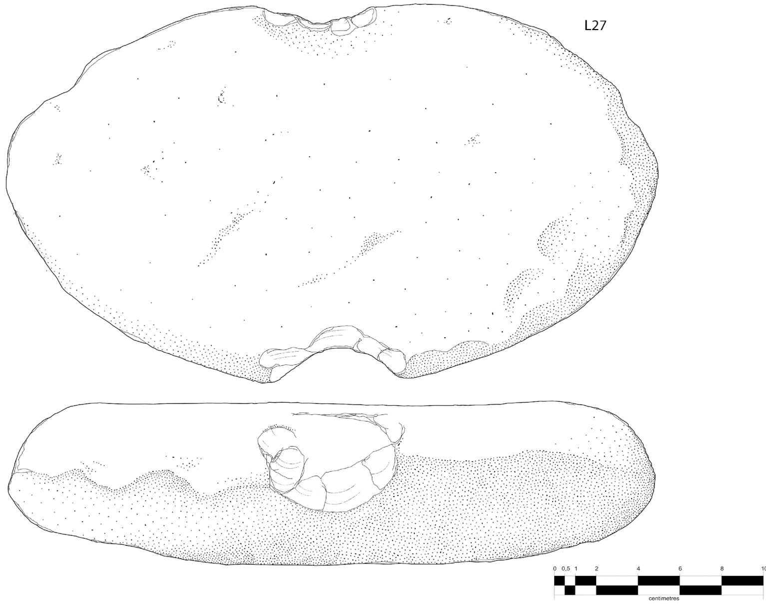

Fig. 4 - Drawings of L27: a weight, 2 scokets on the right and left sides.

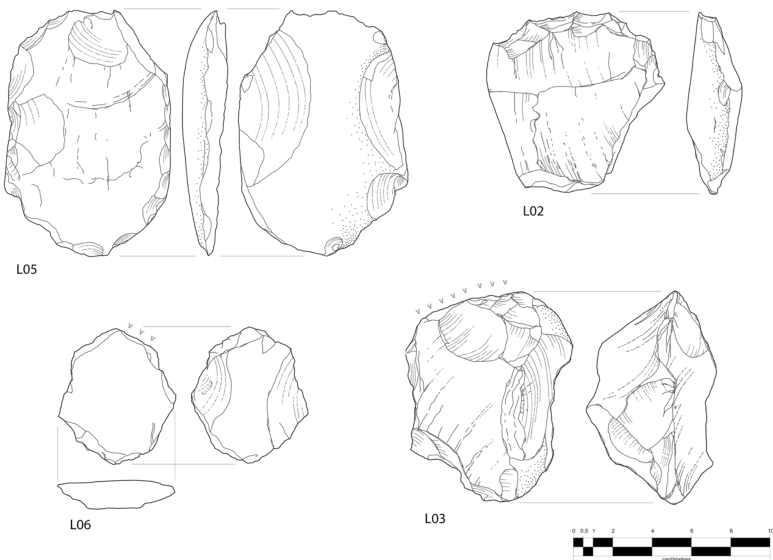

Fig. 5 - Drawings of L05, L02, L.06 and L03.

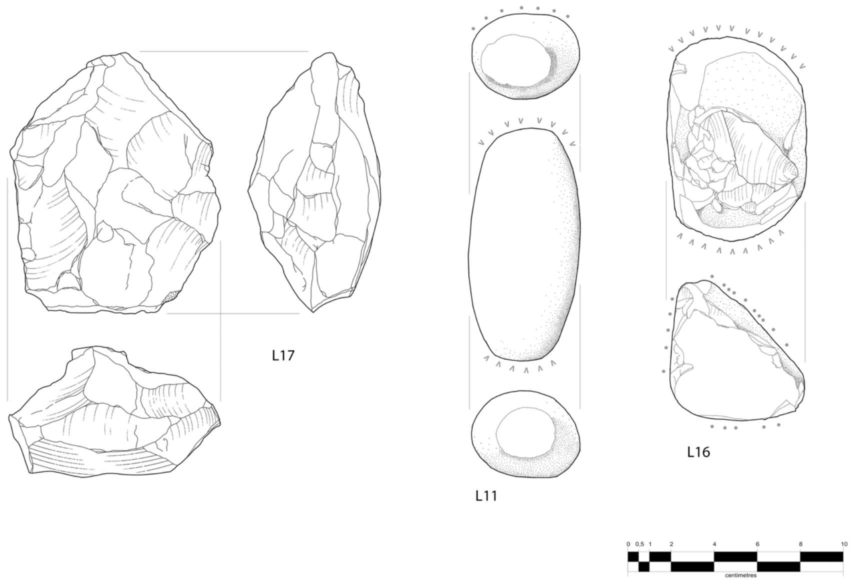

Fig. 6 - Drawings of L17, L11 and L16.

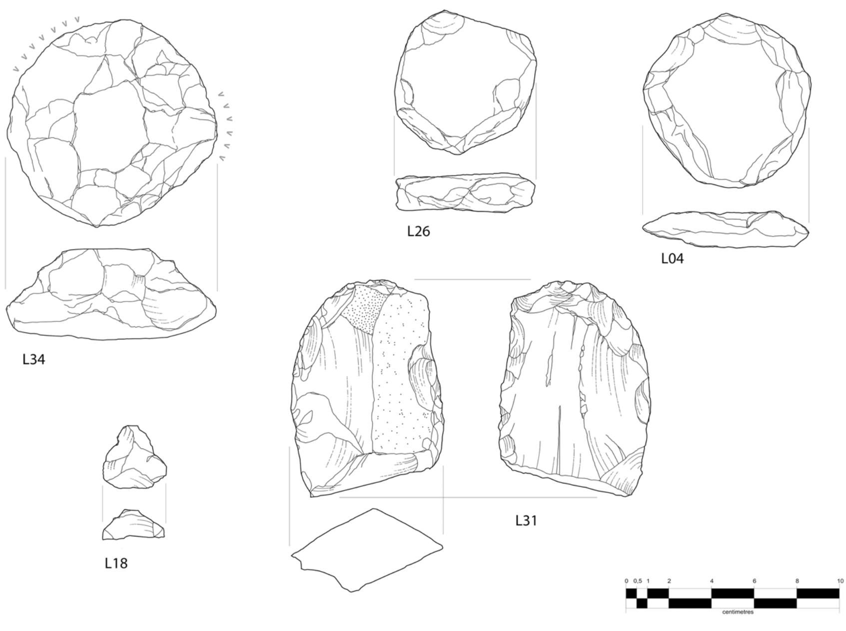

Fig. 7 - Drawings of L34, L26, L04, L18 and L.31.

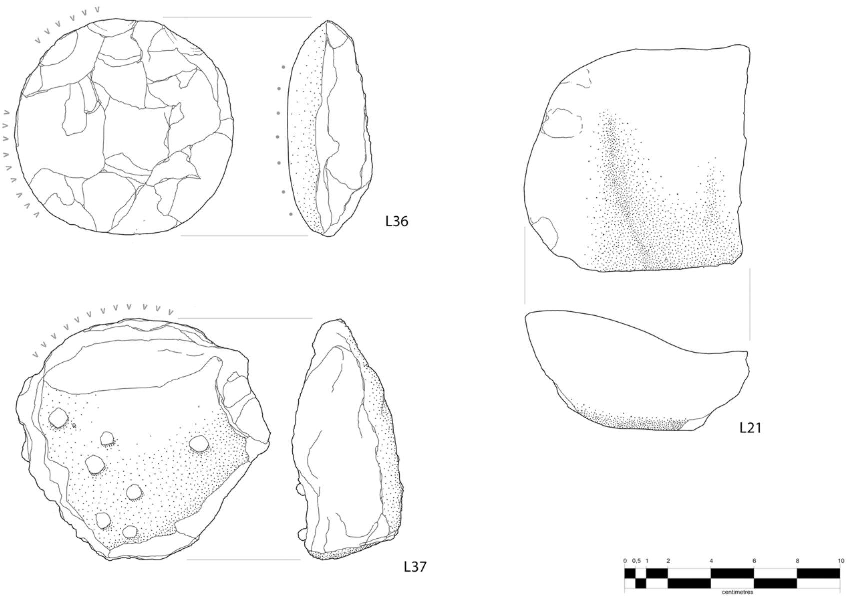

Fig. 8 - Drawings of L36, L21 and L37.

Fig. 9 - Drawings of L07 and L28.

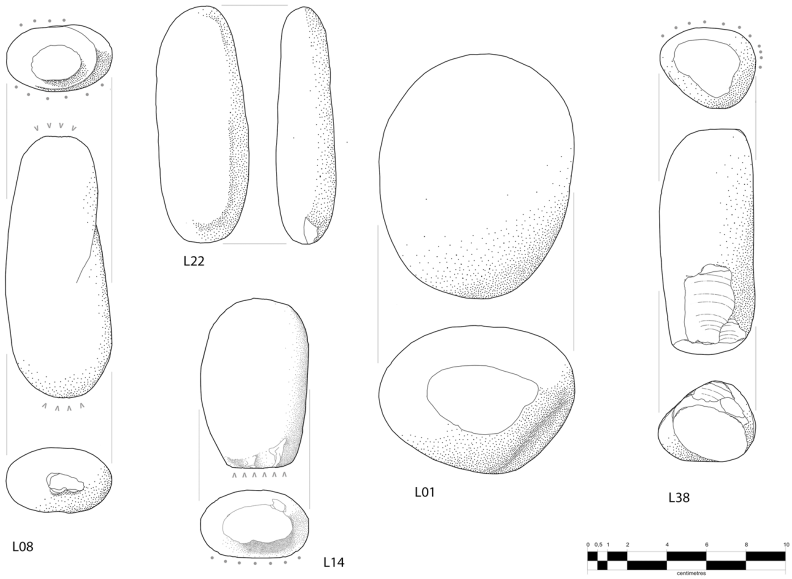

Fig. 10 - Drawings of L08, L22, L14, L.01, L38.

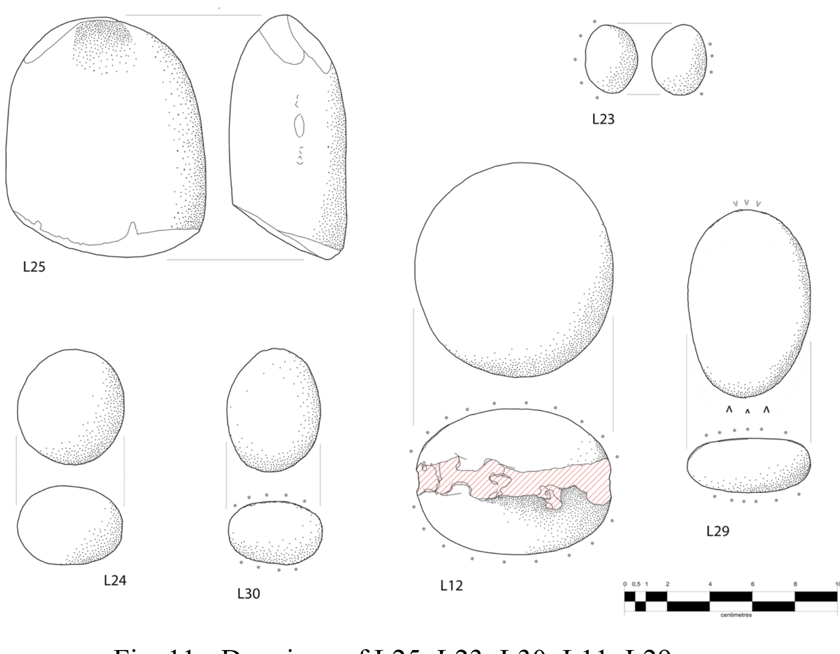

Fig. 11 - Drawings of L25; L23; L30; L11; L29.

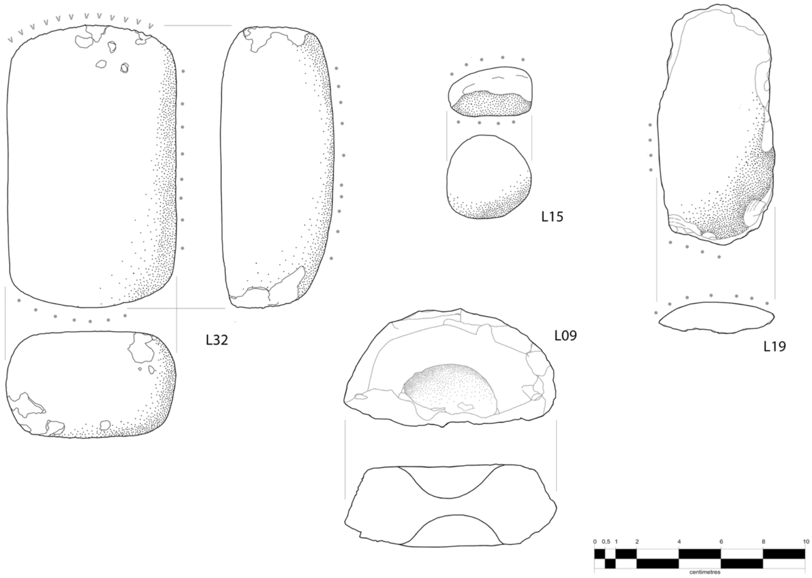

Fig. 12 - Drawings of L32, L15, L19 and L09.

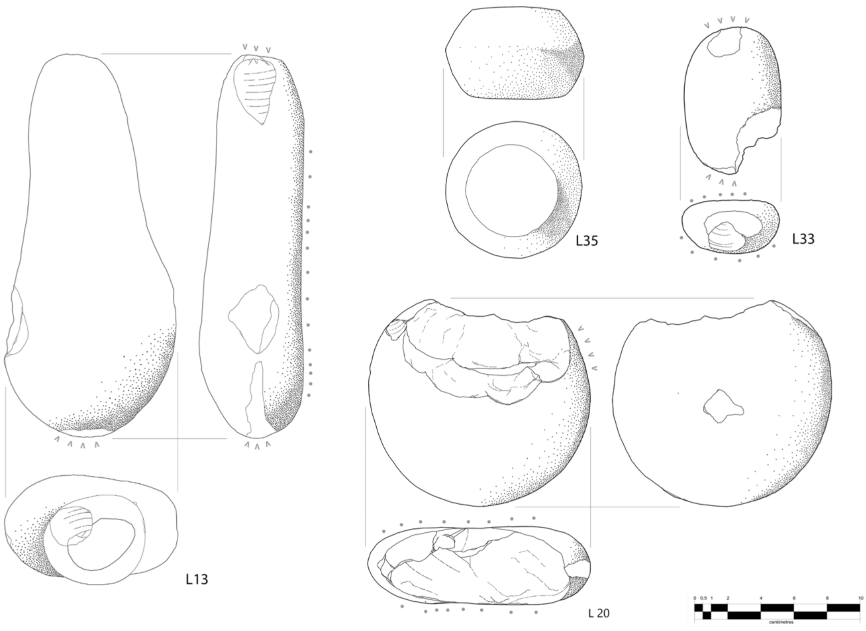

Fig. 13 - Drawings of L15, L35, L33 and L20.

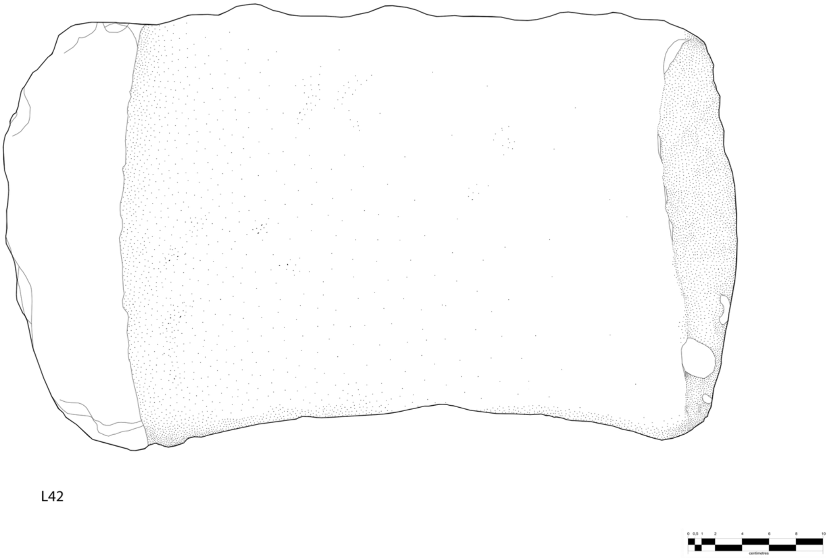

Fig. 14 - L42 mortar, circular wear traces on basal and upper surfaces.

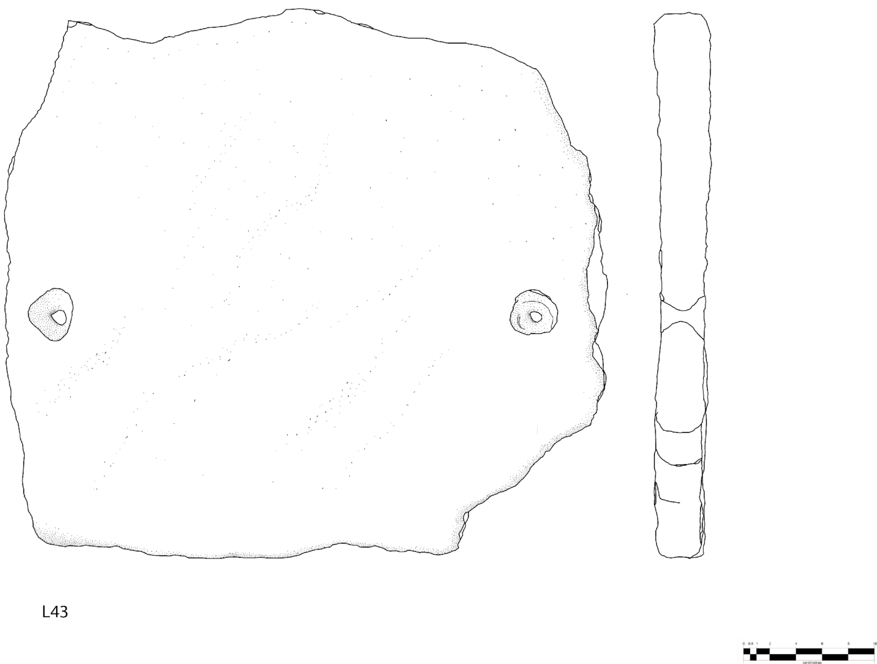

Fig. 15 - L43 Plate with biconical holes, drilled at the lateral ends.

N.	SUPPORT				LITHOTYPE	INCLUSIONS	DIMENSION (mm)	DESCRIPTION
	PEBBLE	FLAKE	SLAB	BEADS				
N.	x				GREEN DIORITE	/	123x98x75	percussor, hammering on the basal surface
		x			BLACK BASALT	/	95x92x29	chopping tool, flaked, unifacial, retouch on the distal margin
N.	x				BLACK BASALT	/	105x83x64	chopping tool, flaked, bifacial, abrasion marks on the distal margin
			x		CHLORITE SCHIST	/	81x71x11	discoid, flaked along the margins
L05		x			BLACK BASALT	/	132x83x22	cutting tool bifacially worked, retouch on the left margin
L06		x			SCISTO	COARSE-GRAINED MICA	69x60x14	flaked, bifacial, traces of slight abrasion on the distal margin
L07	x				DARK GREEN DIORITE	/	121x119x29	grinding stone, smoothed, wear along the diameter
L08	x				GRANITE	/	102x49x38	pestle, smoothed on one side, impact wear on distal and basal surfaces
L09			x		GREEN CHLORITE SHIST	/	107x57x39	discoid, flaked along the margins,double non-perforating

					drill-hole on both sides
L10	x	GREEN INTRUSIVE ROCK	/	63x57x27	percussor,polish on anterior and posterior faces, abrasion on basal surface
L11	x	PINK GRANITE	/	127x51x33	pestle, smoothed on both sides,wear from repeated impacts on basal and distal surfaces
L12	x	PINK GRANITE	/	105x97x71	pestle, polished along basal and distal surfaces, traces of abrasion along the entire diameter
L13	x	ND	ND	90x200x57	percussor, polished on anterior face, tracesd of impact wear on basal, distal and left surfaces
L14	x	GRANITE	/	90x56x35	pestle, polished, wear from repeated impacts on basal surface
L15	x	GRANITE	/	19x20x12	small polished pebble
L16	x	DIORITE	/	92x62x62	hammerstone, laminar detachement, light impacts along the entire diameter
L17	x	RED PORPHYRY	/	119x96x60	hand-axe bifacial with

						dihidral platform
L18		x	RED QUARZITE	/	nd	notched tool?
L19		x	GREEN MICA SCHIST	/	112x54x14	polished along the anterior surface
L20	x		DIORITE	/	123x117x43	pestle, polished on anterior and posterior surfaces, traces of discontinuos wear from repeated impacts along the diameter, High force impact on the upper edge.
L21		x	PHYLLITE	/	100x119x55	fragment of grinding slab, abrasion on the anterior surface
L22	x		DIORITIC GNEISS	/	108x45x28	pestle, polished on anterior face, abrasion on basal surface
L23	x		DIORITIC GNEISS	/	32x25	small pebble, polished on right side
L24	x		DIORITIC GNEISS	/	53x49x32	small pebble, polished on right side
L25	x		DIORITIC GNEISS	/	111x92x54	polished, abrasion wear on distal upper and lower ends
L26		x	PHYLLITE	/	68x37	disk knapped along the edges
L27	x		GRANITOID PHYLLITE	/	316x185x80	weight, 2 scokets on the

						right and left sides
L28	x		PINK GRANITE	/	322x203x47	mortar, non passing holes on basal ad upper surfaces
L29	x		GREEN METAMORPHIC ROCK	/	86x57x24	polished frontal and dorsal surfaces
L30	x		GNEISS	/	nd	polished frontal and dorsal surfaces
L31		x	GREEN SILTSTONE	/	101x69x38	side scraper, bifacial
L32	x		GRANITE	/	132x78x50	pestle, Impact wear on basal and top surfaces, polishing on front and rear faces.
L33	x		ND	ND	67x45x24	pestle, impact wears on basal and upper distal ends
L34	x		PINK GRANITE	/	102x101x44	bifacial, trapezoidal cross-section, impact wear on the top surface and right edge.
L35	x		GRANITE	/	72X53	weight, hexagonal section
L36	x		GRANITE	/	103x104x39	unifacial, with traces of discontinuous impact wear along the diameter, and a smoothed rear face.

L37		x		PHYLLITE	GRANATI	110x115x49	percussor, with traces of impact wear on the top edge.
L38	x			ND	ND	111x44x40	pestle, smoothed on the posterior and right faces, impact wear on the basal and top surfaces.
L39			x	CHLORITE	/	13x8x7	cilindrical bead
L40			x	CHLORITE	/	24x9x9	barell shaped bead
L41			x	BLACK STEATITE	/	11x9x5	quadrilobed bead broken during drilling.
L42	x			ND	/	532x312	mortar, circular wear traces on basal and upper surfaces
L43		x		PHYLLITE	GRANATI	450x400x40	plate with biconical holes, drilled at the lateral ends.

Tab. 1 - Catalogue of the collection from BKG.