An Acheulian Workshop at Ziarat Pir Shaban on the Rohri Hills, Sindh, Pakistan

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Introduction

The Acheulian site of Ziarat Pir Shaban lies some 750 m southeast of the homynous tomb. It was discovered by one of the writers (M.M.K.) in the summer of 1994 during a field survey in the area. The site is located at the northern edge of a flat terrace in the central-western part of the Rohri Hills, 2.7 km east of the Shrine of Shadee Shaheed in the Sukkur district.

Several Acheulian and Late (Upper) Palaeolithic flint workshops were discovered on this terrace during the August 1994 and February 1995 surveys, covering a surface of some 5 hectares (Fig. 1), while a few Harappan quarry-pits and workshops were also recorded along the borders of the mesa. The surveys were conducted during a programme of archaeological investigations, called "The Joint Rohri Hills Project", carried out by the Department of Archaeology of the Shah Abdul Latif University, Khairpur, Pakistan, and the Department of Historical, Archaeological and Oriental Sciences of the University of Venice (I), in collaboration with the Centro Studi e Ricerche Ligabue (Venice–I), and was directed by two of the writers (M.M.K. and P.B.) (Biagi and Shaikh, 1994).

Whilst the Late (Upper) Palaeolithic workshops almost cover the entire surface of the terrace, the Acheulian sites are concentrated in very well-defined clusters of artefacts, characterized by unretouched flakes, sometimes of large dimension, hand-axe rough-outs, a few and very rare side scrapers.

Site ZPS1

One of the workshops, named site ZPS1, was selected for excavation in March 1995 (Fig. 2). The artefacts distribution covered a surface of some 50 square metres, 12 of which, or more precisely two adjacent strips of 6 metres each, were fully excavated, while the more significant tools from the remaining surface of the workshop were accurately mapped. During the excavation all the material from the archaeological deposit was dry-sieved with two millimetre grids.

Some of the artefacts were found to be horizontally positioned on the site surface, while others, uncovered from a sandy layer some 10 cms thick, were found both in vertical and horizontal positions just above the rough limestone surface of the terrace.

The distribution map of the hammerstones, cores and instruments (Fig. 3), shows that the Acheulian tools are mainly scattered over a well-defined area and that the bifacial rough-outs almost delimit the major concentration of Acheulian artefacts. By contrast, the Late (Upper) Palaeolithic tools lie northeast and northwest of the Acheulian workshop's main cluster of debris.

The presence of conjoining pieces and the fresh aspect of the artefacts indicates that the tools have been recovered still *in situ* or have suffered a minimum shift from their original position.

The surface finds have a brown (10YR 4/3) patina. In general, the Acheulian tools differ from the Late (Upper) Palaeolithic ones in having more opaque surfaces. Those from the sandy layer are of a very pale brown colour (10YR 7/4). The presence of a brown patina on the surface finds seems to have been caused by recent (or very recent) weathering factors.

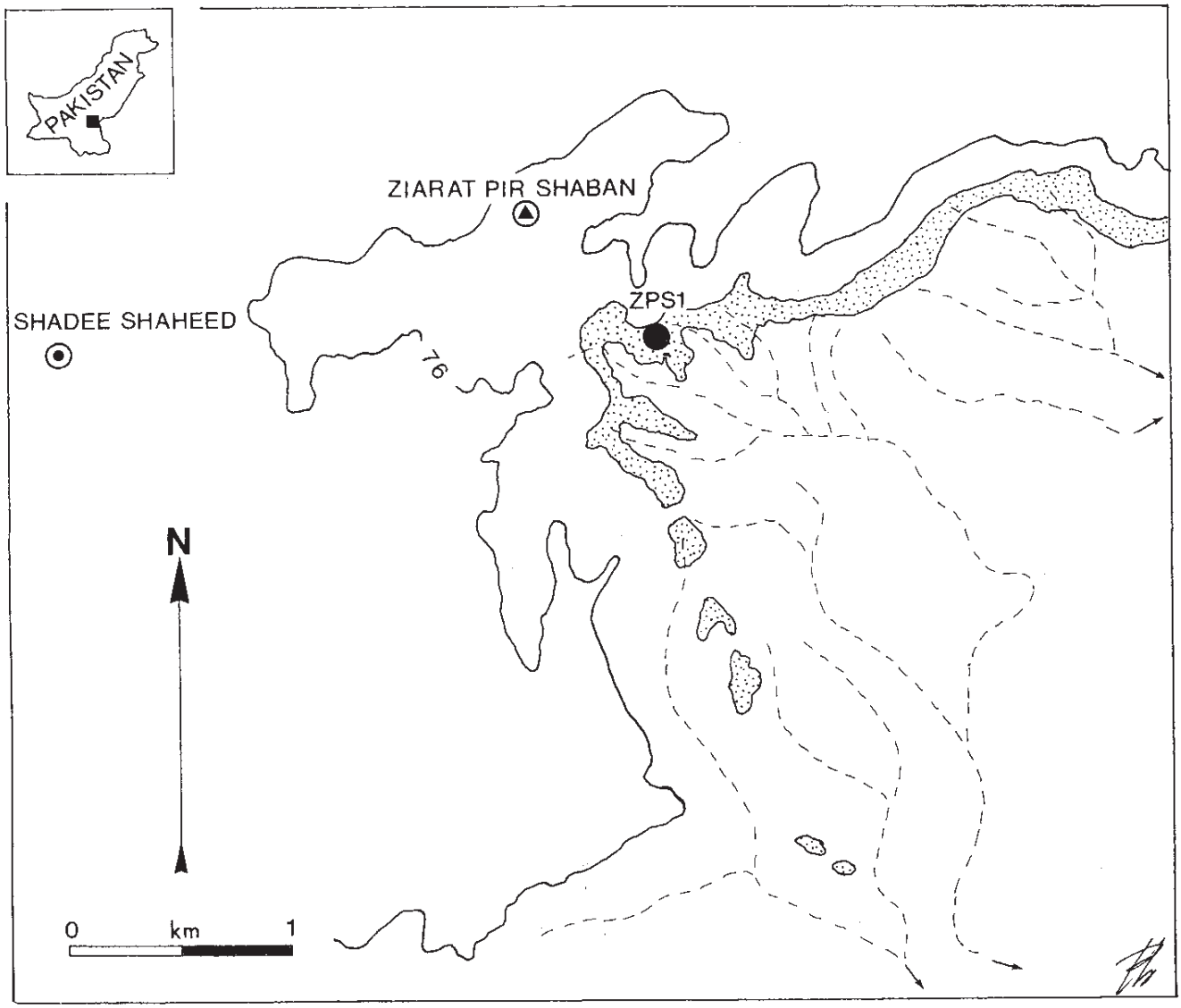

Fig. 1. Location of the Acheulian site ZPS1. The shaded areas indicate the distribution of the Palaeolithic workshops (drawn by P. Biagi).

The Flint Assemblage

The assemblage recovered during excavation comprises 29,047 artefacts, instruments, cores and hammerstones included, weighing 385.99 kg. Table 1 represents the weight/number ratio of the flint tools from the excavated squares.

These data confirm the presence of a Late (Upper) Palaeolithic workshop in squares E6 and E7 (and probably also D6, even though no characteristic tool comes from this square), where the higher percentage of artefacts confirms the manufacture of small-sized artefacts.

Only the artefacts from squares E4 and E6 and E7 have been analysed in greater detail, as shown in Tables 2 to 5.

The high percentage of broken pieces in the pure Acheulian square E4, is probably caused both by the higher number of debris flakes and by the greater age of the artefacts that consequently have been exposed to weathering for a much longer period. The smaller quantity of corticated pieces, can be explained as a result of the manufacturing technique producing larger-sized decortication flakes. The higher percentage of facetted platforms in the Acheulian square E4, most probably is due

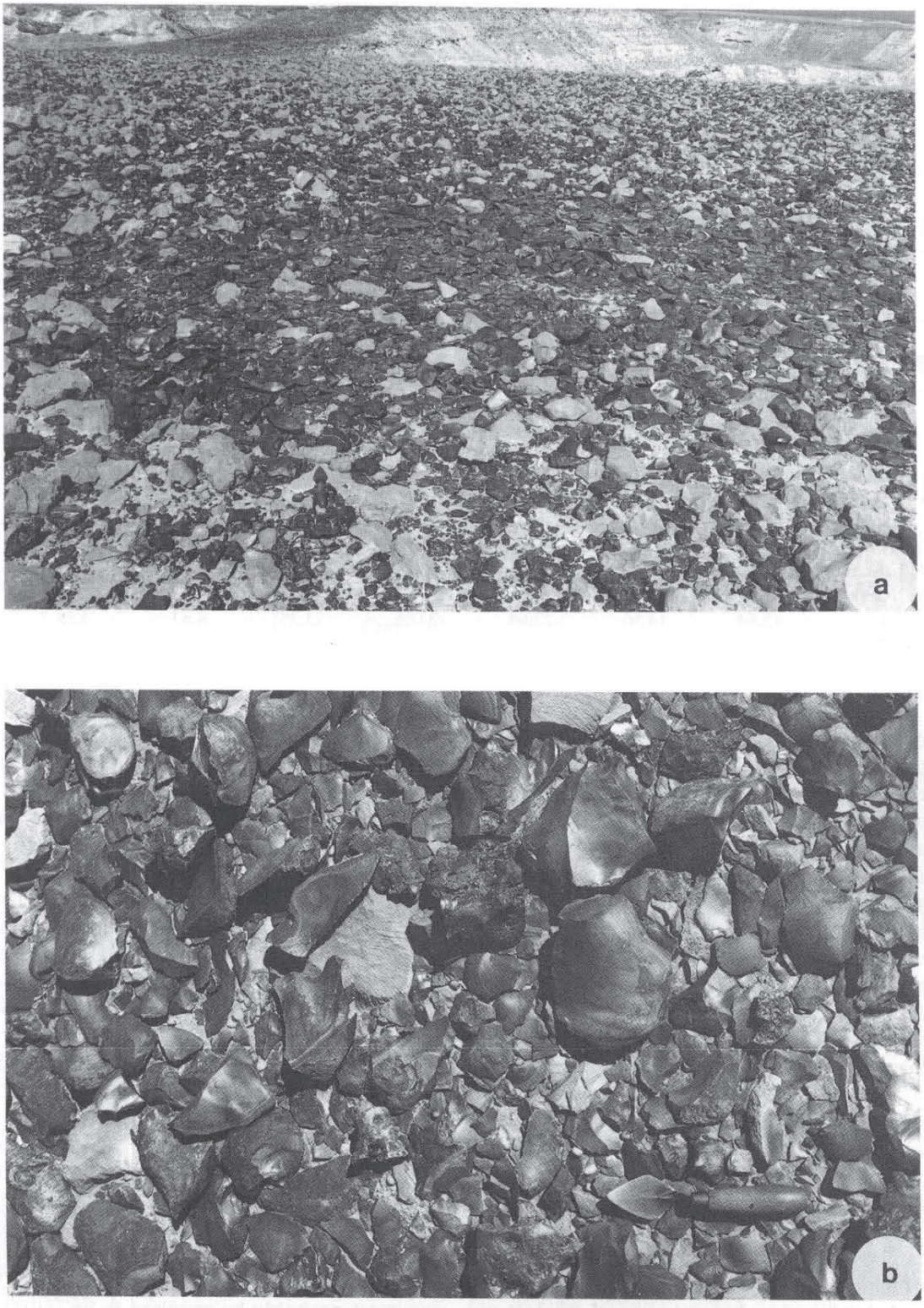

Fig. 2. (a) Site ZPS1 from the southeast; and (b) surface finds on the same site. (photographs by P. Biagi).

Table 1
Weight/number ratio of flint tools from excavated sites

Square	2	3	4	5	6	7
E	11.84	8.50	7.86	21.71	33.57	42.16
D	29.09	8.29	9.86	11.97	34.04	16.17

Table 2

Squares	No. of Artefacts	
	Complete	broken
E4	811	4,984
E6–E7	398	826

Table 3

Squares	% of Corticated Artefacts			
	non	<50%	>50%	>90%
E4	70.56	15.74	5.97	7.73
E6–E7	51.23	20.75	11.60	16.42

Table 4

Squares	% of Platform Types				
	Natural	flat	linear	dihedral	facet
E4	11.00	68.33	12.33	2.00	6.33
E6–E7	10.00	76.09	10.44	1.35	2.02

Table 5

Squares	% of Flaking angles								
	90–95°	96–100°	101–105°	106–110°	111–115°	116–120°	121–125°	126–130°	131–135°
E4	5.68	13.26	25.38	22.35	16.67	9.47	4.55	2.27	0.38
E6–E7	4.83	12.64	14.50	22.68	23.05	13.75	4.83	3.35	0.37

to the retouching of the sides of the bifacial hand-axes. In square E4 the flaking angles concentrate around 100–110°, while in squares E6–E7 the maximum percentage ranges between 105 and 115°. The reason is perhaps to be found in the peculiar operational chain employed in the manufacture of the bifacial tools.

The length/width diagrams of the complete, unretouched artefacts have been developed following Bagolini's method (Bagolini, 1968) (Fig. 4 and Table 6).

The elongation index clearly shows a higher percentage of blades in squares E6–E7, where Late (Upper) Palaeolithic tools are better represented. On the other hand the wide flakes and the very wide flakes are more common in square E4 as a result of the Acheulian chipping activity. In square E4, the high number of flat artefacts probably reflects the final stages of manufacture of the hand-axes characterized by the employment of the flat retouch technique.

The Acheulian workshop yielded 18 bifacial hand-axes, 2 side scrapers, 27 cores and 13 flint hammerstones. The Late (Upper) Palaeolithic tools include two atypical, carenated end-scrapers, 26 blade cores and one hammerstone.

Among the Acheulian hand-axes, four are fractured. The only finished specimen (Fig. 5) was found in two pieces, lying 4 metres apart (Fig. 3:8, 29), and having been broken during the last stages of retouch. It is a bifacial flat-retouched hand-axe of elongated oval-shape with a rounded point, obtained with a soft hammerstone. The other specimens testify to all the stages of reduction from the beginning of the process of manufacture to the first thinnings (Figs. 6 and 7). Their dimensions and weight are listed in Table 7.

The side scrapers have a denticulated retouch. One is on a thick flake (Fig. 8:1), the other on a very patinated flint fragment of plaquette (Fig. 8:2).

The cores are of medium to large size. They are of an irregular shape with flake, or sometimes blade-like flake, detachments (Fig. 8:4). The cores can most probably be ascribed to an initial stage of manufacture of the bifacial tools.

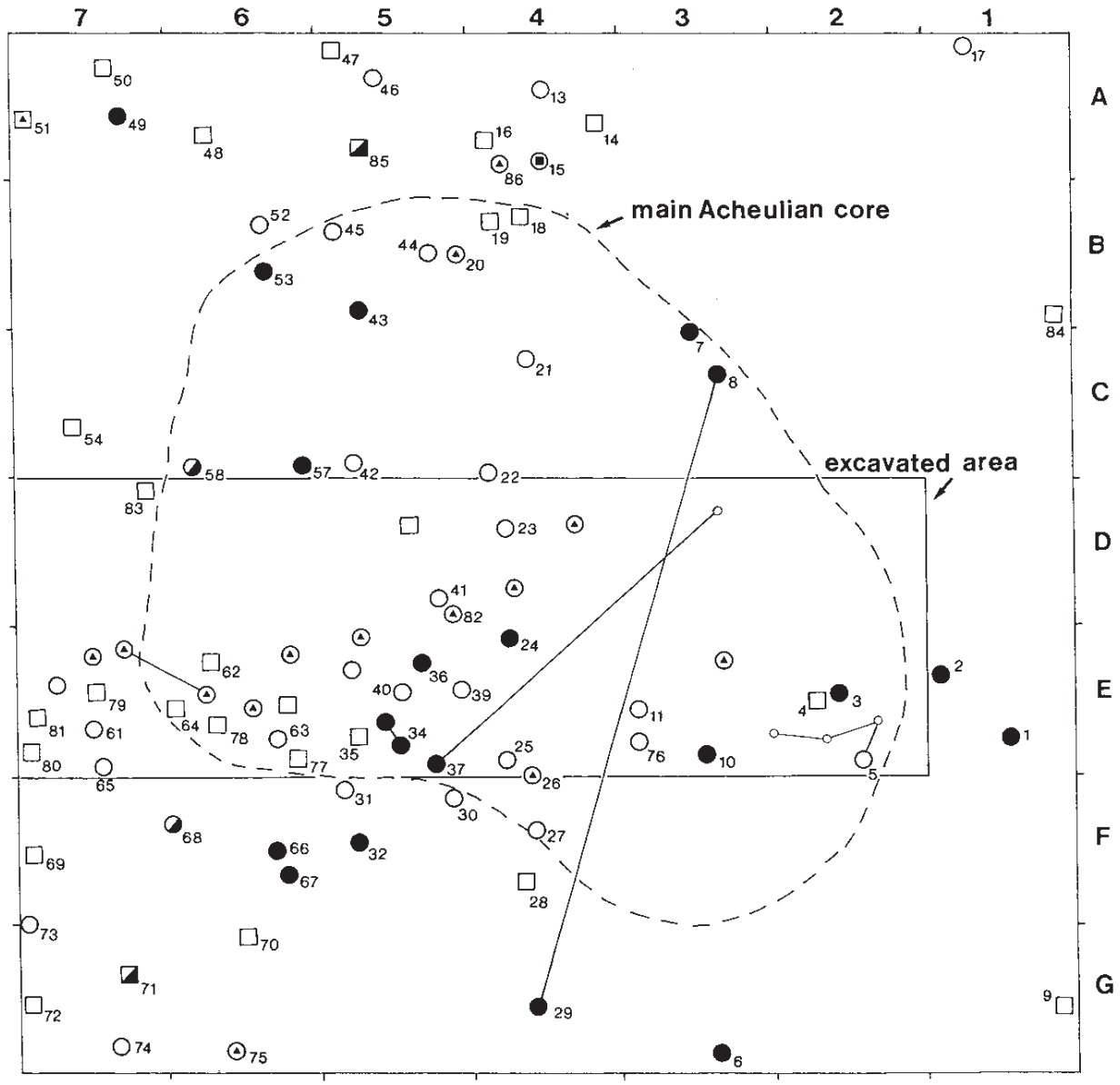

Fig. 3. Site ZPS1: distribution map of the tools.

1. heavily patinated early Palaeolithic core, ◉
2. Acheulian hand-axes, ●
3. Acheulian side scrapers, ◕
4. Acheulian cores, ○
5. Acheulian hammerstones, ⊙
6. Late (Upper) Palaeolithic end-scrapers. ◪
7. Late (Upper) Palaeolithic cores, □
8. Late (Upper) Palaeolithic hammerstone, ▣
9. refitting Acheulian flakes, ○
10. other refittings (drawn by F. Negrino).

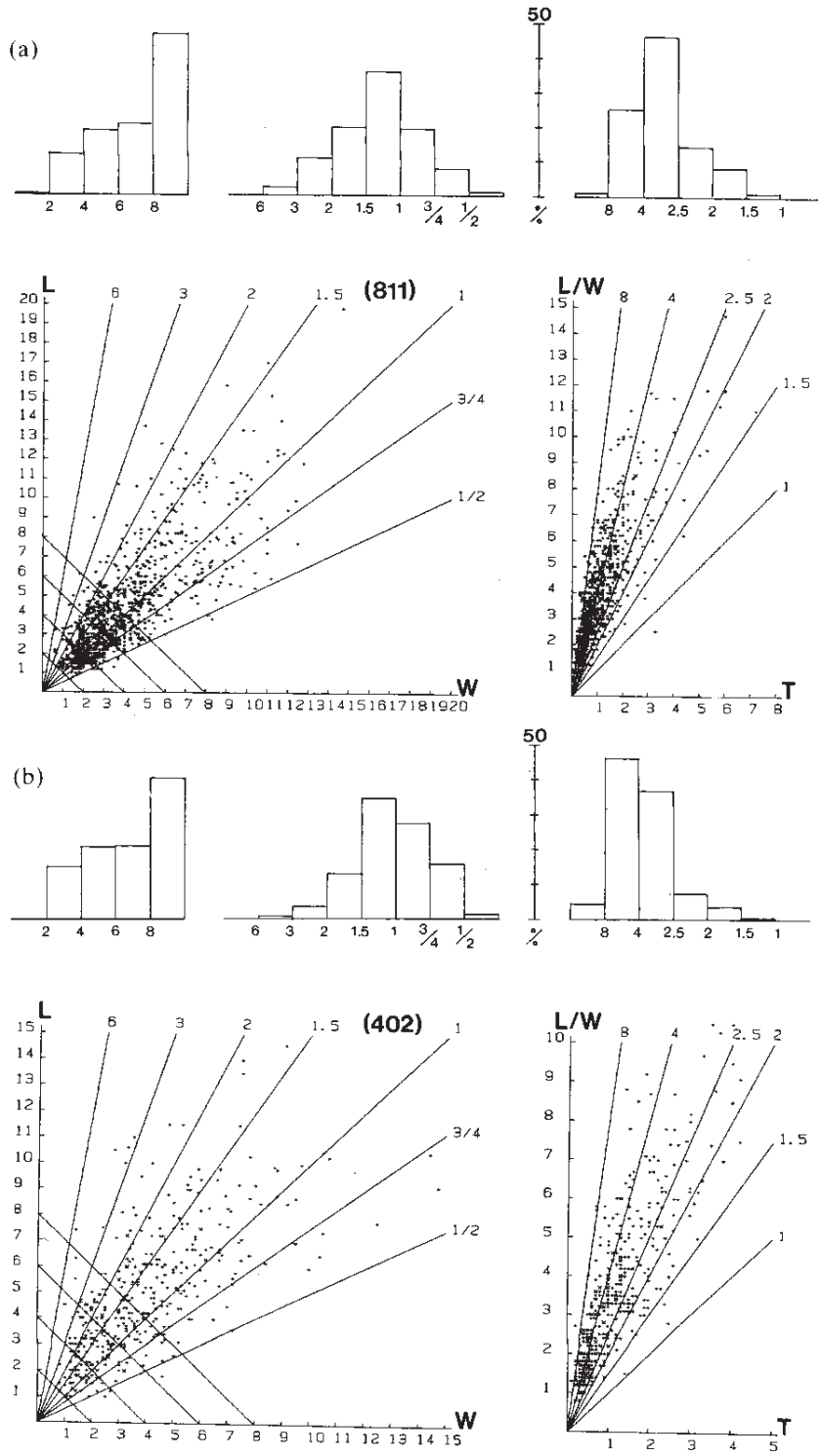

Fig. 4. Length/width and length-width/thickness diagrams of the unretouched, complete artefacts from square E4 (a) and squares E6–E7 (b).

Table 6

Category	Limits	Squares			
		E4		E6–E7	
		n	%	n	%
	Elongation Indexes				
Very narrow blades	>6	0	0.00	0	0.00
Narrow blades	6–3	8	0.99	10	2.49
Blades	3–2	34	4.19	44	10.95
Blade-like flakes	2–1.5	110	13.56	83	20.65
Flakes	1.5–1.0	285	35.14	147	36.57
Wide flakes	1.0–0.75	227	27.99	79	19.65
Very wide flakes	0.75–0.50	134	16.52	33	8.21
Extremely wide flakes	<0.50	13	1.60	6	1.49
	Dimensional Indexes				
Hypermacroliths	>8	335	41.30	194	47.51
Macroliths	8–6	177	21.83	82	20.78
Normoliths	6–4	171	21.11	77	19.16
Microliths	4–2	127	15.66	51	12.19
Hypermicroliths	<2	1	0.12	1	0.25
	Carination Indexes				
Hyperflat	>8	38	4.69	7	1.74
Very flat	8–4	378	46.61	104	25.87
Flat	4–2.5	301	37.11	190	47.26
Thick	2.5–2	62	7.64	60	14.93
Carinated	2–1.5	27	3.33	36	8.96
Very carinated	1.5–1	4	0.49	5	1.24
Hypercarinated	<1	1	0.12	0	0.00

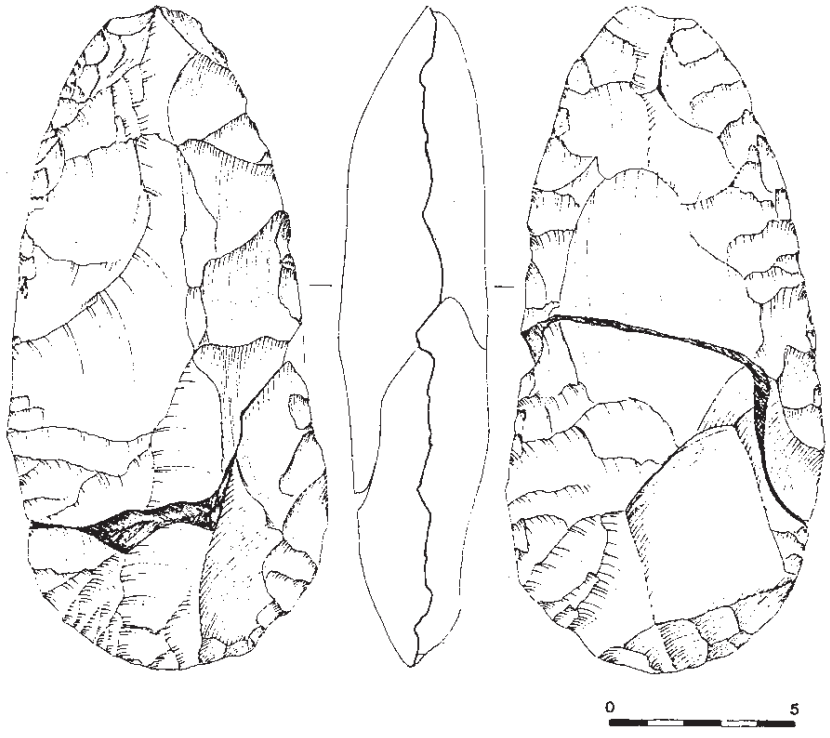

Fig. 5. Site ZPS1. Acheulian, broken finished hand-axe (drawn by F. Negrino and G. Almerigogna).

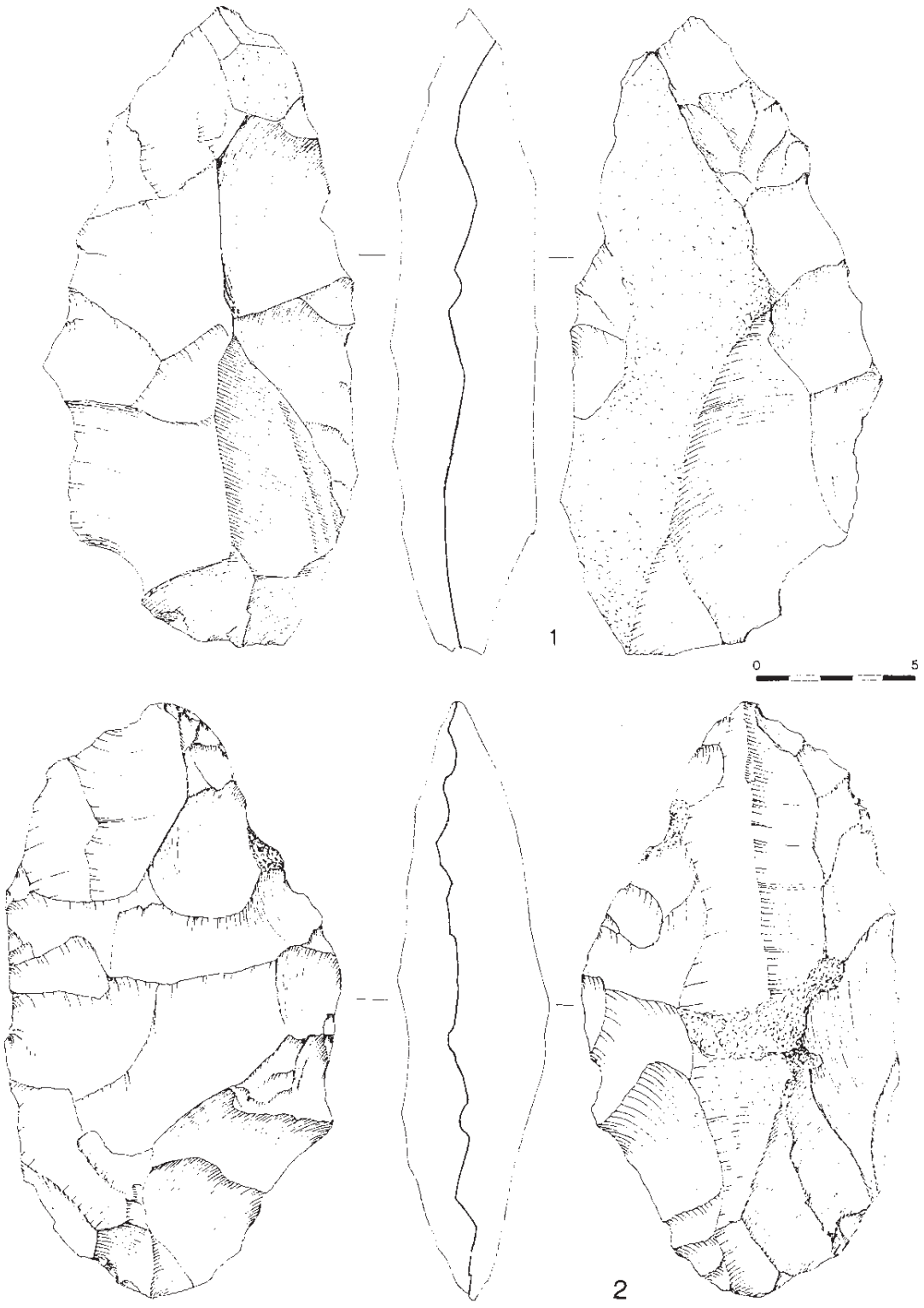

Fig. 6. Site ZPS1. Acheulian, unfinished hand-axes (drawn by F. Negrino and G. Almerigogna).

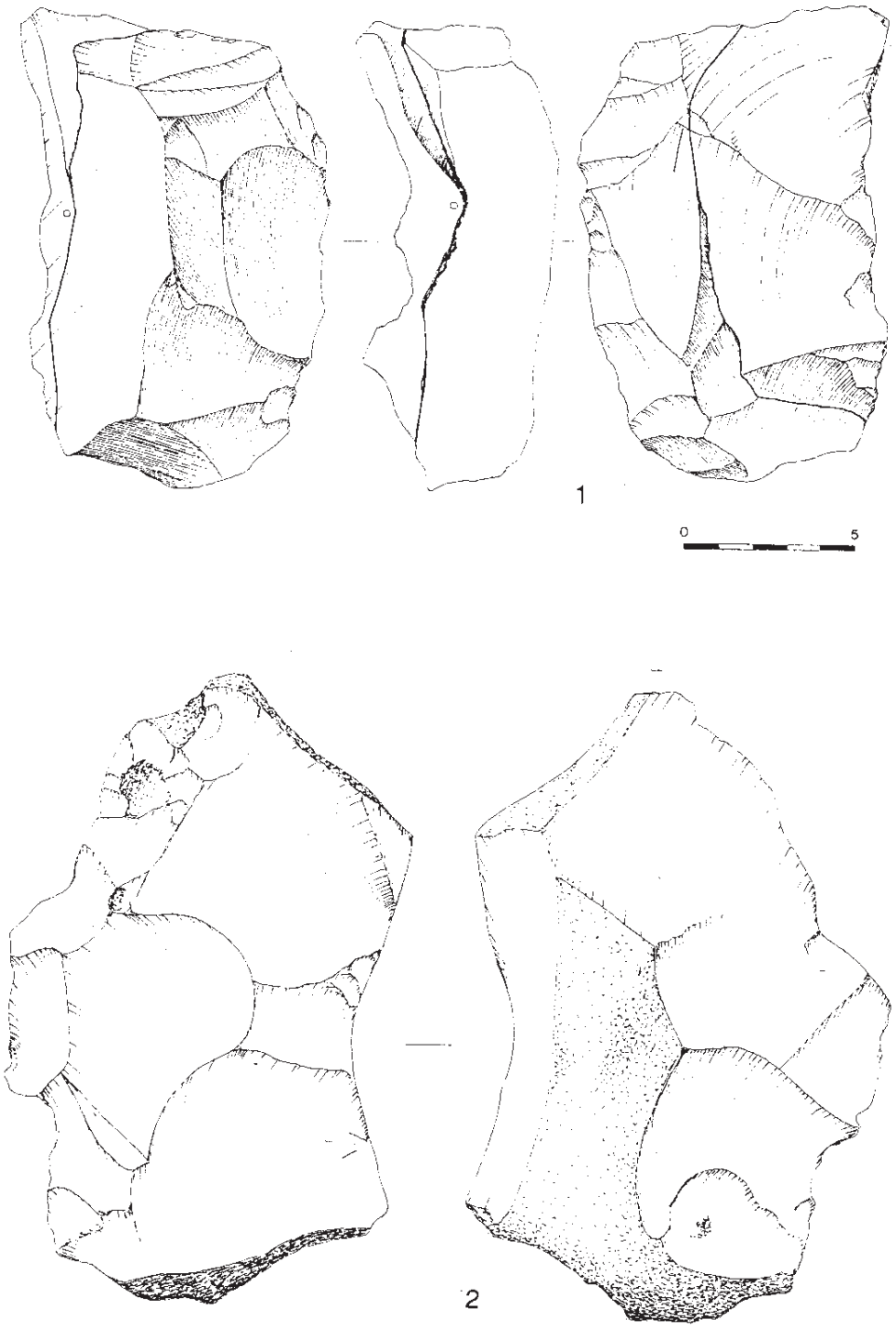

Fig. 7. Site ZPS1. Acheulian, unfinished hand-axes (drawn by F. Negrino and G. Almerigogna).

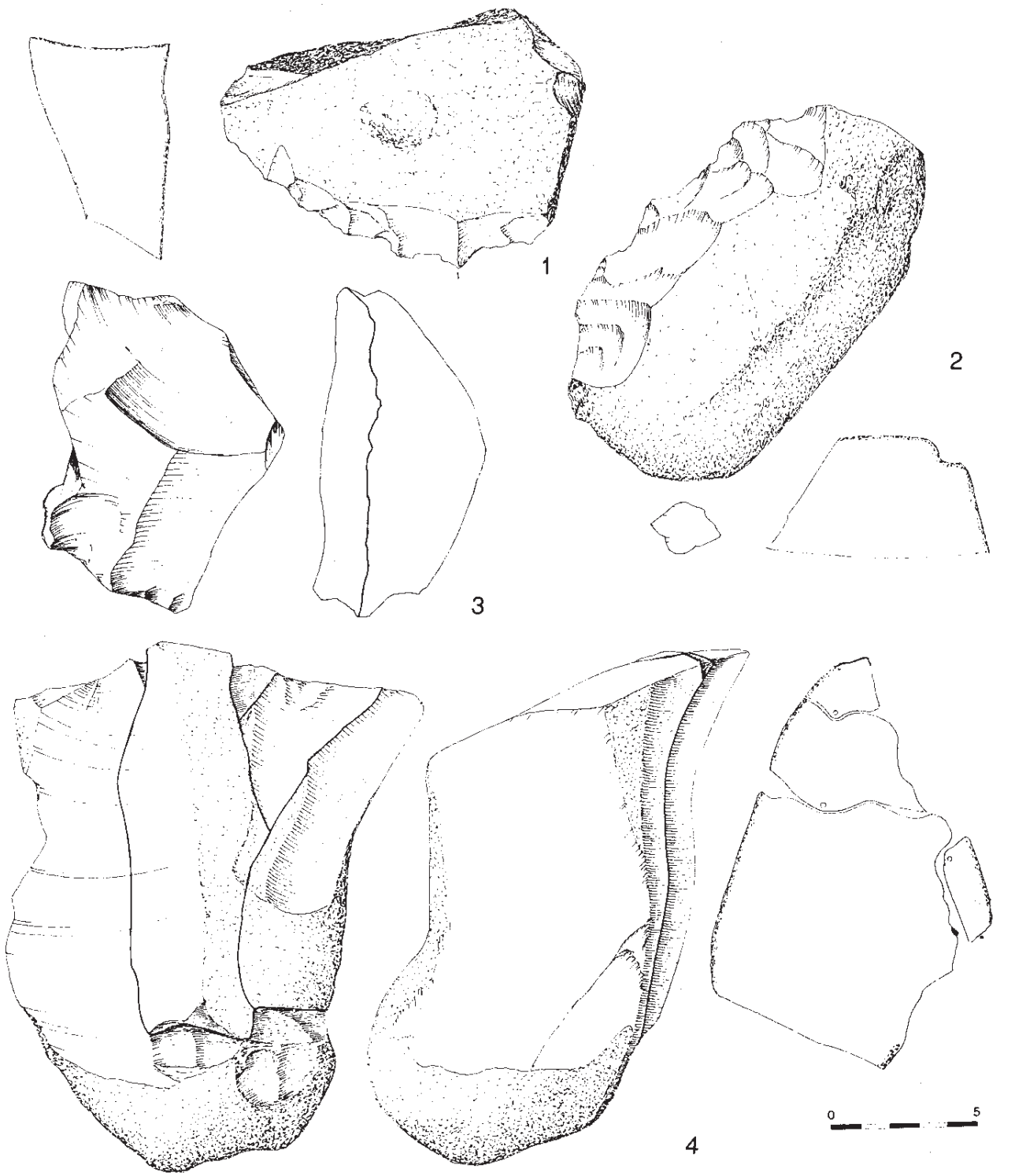

Fig. 8. Site ZPS1. Acheulian, denticulated side scrapers (1 and 2) and cores (3 and 4) (drawn by F. Negrino and G. Almerigogna).

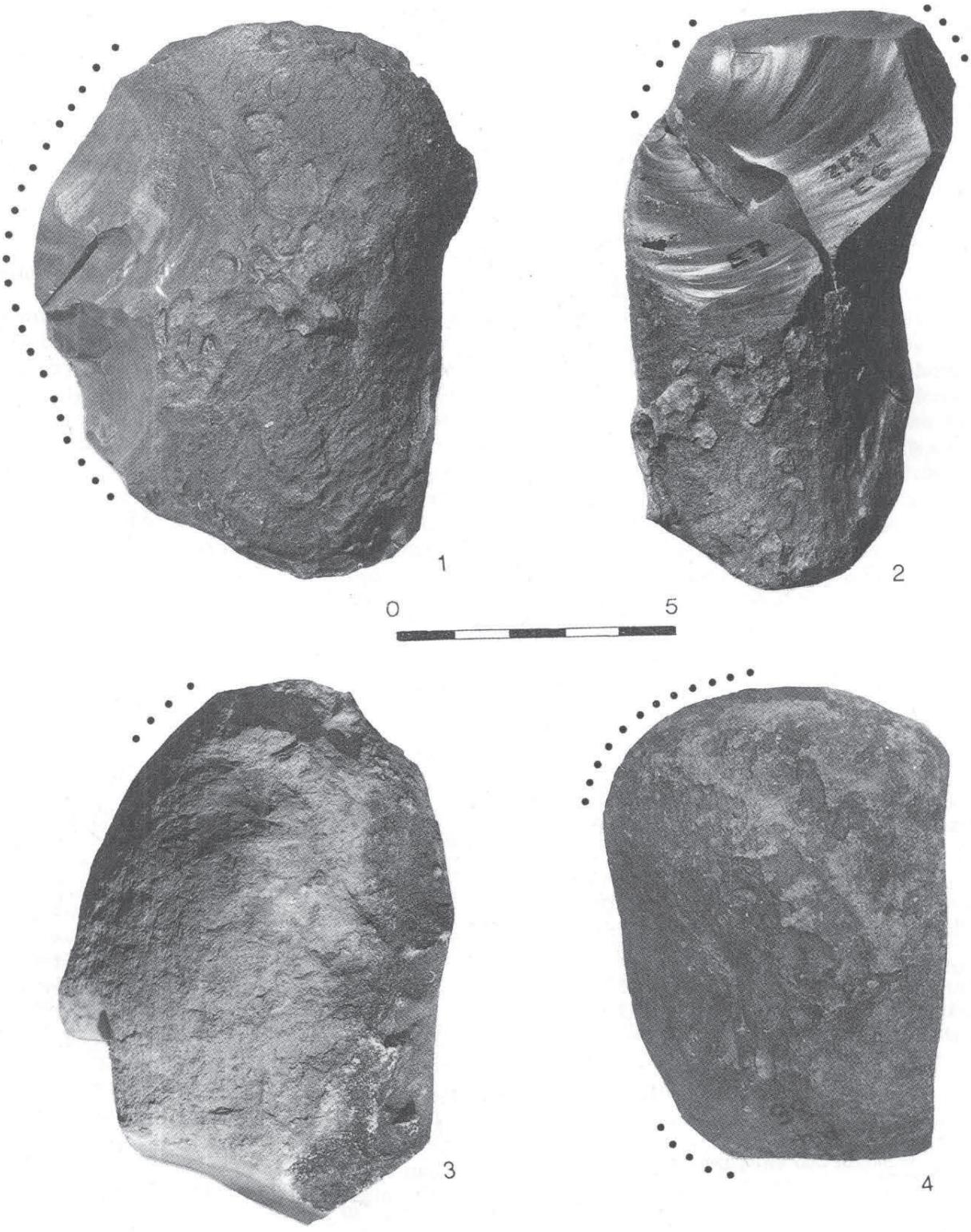

Fig. 9. Site ZPS1. Acheulian hammerstones (photos by P. Biagi).

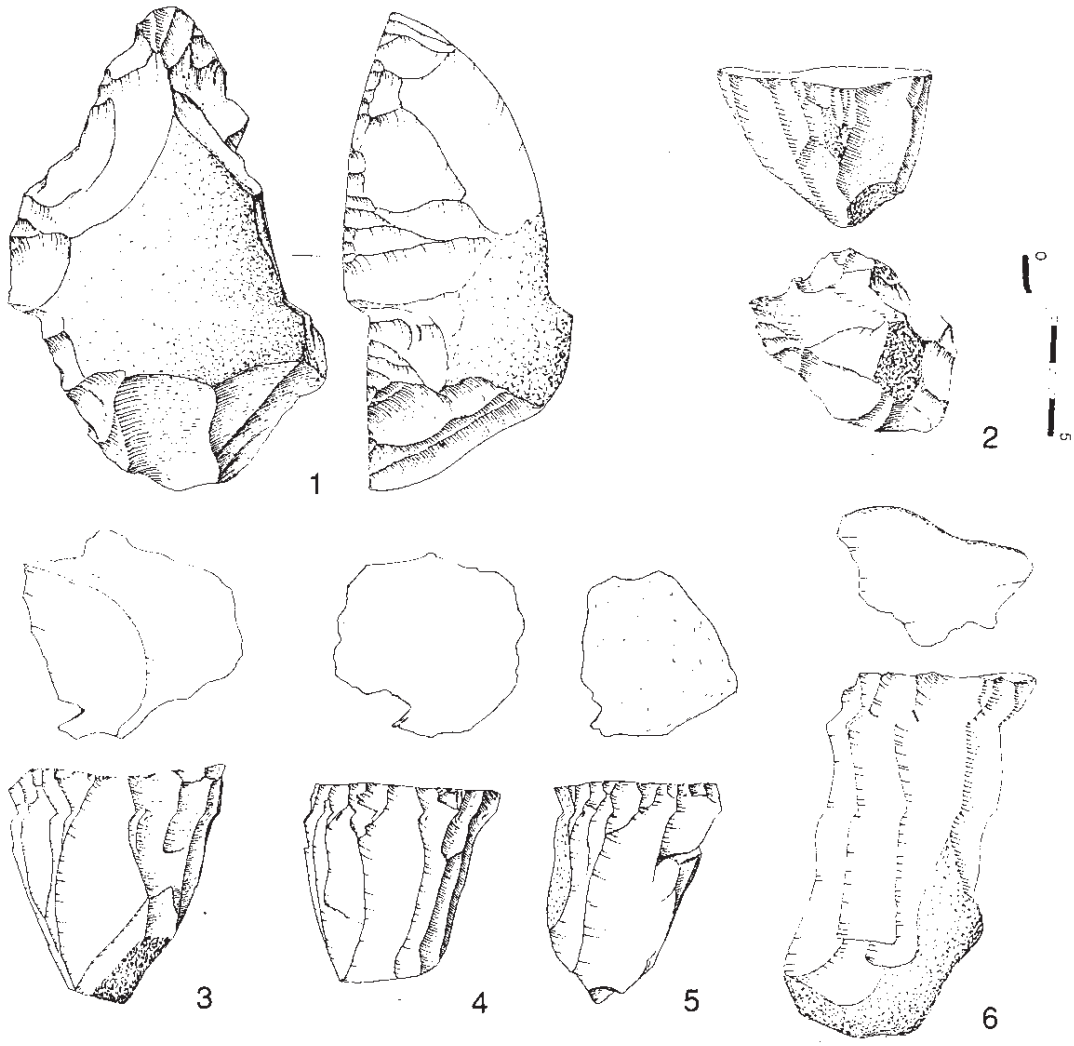

Fig. 10. Site ZPS1. Late (Upper) Palaeolithic end-scrapers (1 and 2) and cores (3–6) (drawn by F. Negrino and G. Almerigogna).

Table 7: Hand-axes

Tool number	1	2	3	6	8+29	32	34	36	37	43	49	57	66	67
Length (mm)	201	189	210	183	176	169	213	175	129	156	105	223	214	125
Width (mm)	102	103	123	113	83	107	111	117	76	85	75	106	109	70
Thickness (mm)	49	43	74	70	40	56	60	52	40	80	53	95	80	38
Weight (gr)	780	820	1980	1220	580	900	1480	980	600	980	430	1500	1780	410

Table 8: Hammerstones

Tool number	20	26	75	82	86	D4	D4	E5	E6	E6	E6+E7
Length (mm)	101	97	83	83	84	98	68	128	72	124	105
Width (mm)	78	87	67	61	65	74	54	84	50	81	65
Thickness (mm)	64	81	55	40	52	50	30	77	42	71	50
Weight (gr)	620	600	420	200	350	420	300	950	300	750	300

There are 13 hammerstones (Fig. 9), two of which are broken. Their dimensions and weight are listed in Table 8.

The Late (Upper) Palaeolithic tools only consist of two end-scrapers (Fig. 10:1,2) and 26 cores mainly of subconical or prismatical shape (Fig. 10: 3–6). eight of which appear also to be end-scrapers.

Only one sub-polyhedric core with opposite detachments (Fig. 8:3; Fig. 3:15) has a heavy patina, characteristic of the Acheulian assemblages.

Considerations

The workshop ZPS1 is the first *in situ* Acheulian site so far excavated in the Rohri Hills. Given the complexity of the period in question in the area under study (Davis, 1984), its age is far from being certain, even though it can undoubtedly be attributed to a final period in the development of the Acheulian Culture in the Indian Subcontinent. At least three well-defined Early Palaeolithic stages have been detected on the hills so far. They have been mainly identified on the basis of their physical state and other characteristics. The two earliest phases are known from sparse tools scattered over the western terrace east of Shadee Shaheed. The most ancient is represented by a few very oelized and heavily patinated flakes and cores resulting from a very simple flaking technique; the middle one includes flakes and cores and instruments among which are side scrapers made by techniques which could accurately be described as characteristic of core preparation. To this horizon most probably can be ascribed one of the hand-axes from Unnar (Biagi and Cremaschi, 1988: Fig. 7:2) as well as one of the cores (Fig. 3:15; Fig. 9:2) collected from site ZPS1. The artefacts of both these periods certainly derive from a palaeosoil that has been later completely eroded by natural agents. The final phase is represented by the *in situ* Acheulian industries of Ziarat Pir Shaban.

The abundant traces of Acheulian sites in the Indian Thar Desert (Misra and Rajaguru, 1989) and in northern Pakistan (Ranov et al., 1992) heavily contrast with what is known for the same period in the Indus Valley region where the few finds are restricted to the Rohri Hills and the hills in the neighbourhoods of Hyderabad (Allchin, 1976; Allchin et al., 1978; Biagi and Cremaschi, 1988). At the present stage of our knowledge it is very difficult to attributc site ZPS1 to a well-defined period in the development of the Acheulian Culture given the absence of stratigraphical sequences in the study region. Nevertheless it is certain that the rich flint outcrops of the Rohri Hills were exploited since Early Palaeolithic times. Site ZPS1 undoubtedly served as a workshop for the manufacture of hand-axes which were later carried to the Acheulian base-camps located elsewhere. The absence of other instruments, apart from the hand-axes, with the exception of two denticulated side scrapers, is highly indicative in this respect.

The characteristics of the Late (Upper) Palaeolithic assemblages have already been described by Allchin (1976; 1979) and Biagi et al. (1994). A very wide distribution of workshops of this period (Fig. 1) is attested along the terraces facing the Shrine of Shadee Shaheed. The Late (Upper) Palaeolithic sites of the Rohri Hills are so far represented only by workshops characterized by a great number of subconical blade cores and rare end-scrapers. The age of these assemblages too is difficult to determine even though the characteristics of the tools mentioned allow them to be attributed to an early stage of the Late (Upper) Palaeolithic period in the Subcontinent.

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