

PAOLO BIAGI and BARBARA A. VOYTEK

THE CHIPPED STONE ASSEMBLAGES FROM ARMA DELL'AQUILA (FINALE LIGURE, SAVONA)

RIASSUNTO – L'industria litica scheggiata raccolta durante gli scavi di C. Richard nell'Arma dell'Aquila consiste di un numero molto limitato di reperti provenienti sia dagli orizzonti Neolitici sia da quelli Paleolitici dell'Epigravettiano antico e dell'Aurignaziano. Gli stessi sono stati prodotti con materiali di diversa provenienza ad indicare una notevole variabilità dell'approvvigionamento litico a seconda dei vari momenti di abitato. Sull'industria è stata condotta sia l'analisi tipologica, sia quella traceologica, anche per cercare di riconoscere la produzione locale o meno dei prodotti e interpretare le attività svolte dagli abitanti nei diversi periodi.

ABSTRACT – The chipped stone assemblage from the excavations carried out by C. Richard at Arma dell'Aquila consists of a small number of artefacts retrieved from both the Neolithic and Upper Palaeolithic (Early Epigravettian and Aurignacian) layers. The artefacts were obtained from several raw material sources, which varied according to the different occupation periods. The industry has been studied from both typological and traceological points of view, in order to interpret the local or non-local manufacture of the chipped stone tools, and understand the activities carried out throughout the different periods during which the site was settled.

Parole chiave – Industrie litiche scheggiate, Provenienza della materia prima, Tipologia, Tracce d'uso, Funzione

Keywords – Chipped stone assemblages, Raw material provenance, Typology, Traceology, Function

1. INTRODUCTION

The chipped stone assemblage retrieved by C. Richard from the deposit of Arma dell'Aquila consists of 78 specimens, among which are 31 retouched tools, 1 rejuvenation blade, 1 plunging blade, 1 burin spall and 1 subconical core. They are obtained mainly from flint, though other raw materials were also employed to produce artefacts during both the Neolithic and Upper Palaeolithic periods (Table 1). Some of the chipped stone implements are reported, and in some cases also drawn, in C. Richard's fieldnote book. Just a few artefacts described by the aforementioned author are no longer in the stores of Finale Museum, and their stratigraphic location is uncertain.

2. THE NEOLITHIC ASSEMBLAGES

The data available from the chipped stones recovered by C. Richard's excavations are very limited. However, they are of great interest (Table 1 and 2), like those regarding the provenance of the raw materials employed for making tools. For instance they show that Lessini Hills, Verona flint was already utilised by the Aquila cave inhabitants of layer 6. This fact reinforces a view already expressed regarding the circulation of this type of high-quality flint not only across the Po Plain (BARFIELD, 1993) but also toward the north-westermost Apennine chain already around the end of the 7th millennium BP (BENEDETTI *et al.*, 1994-1995), while it rejects other opinions regarding the utilization of Lombard flint sources (Selcifero Lombardo), the outcrops of which are not known to have ever been under Late Mesolithic hunter-gatherers control as suggested in a recent paper (BINDER *et al.*, 2008: 53). It is nevertheless well known that resources control does not fit at all into the economic strategy of hunter-gatherer societies (ROWLEY-CONWY, 2001: 40; BIAGI *et al.*, 2007: 140). The utilisation of both south French flint and hyaline quartz is also important to widen the radius of the exogenous materials employed for making tools. In particular rock crystal (LEITNER *et al.*, 2015) is known to have been imported during the Neolithic down to the Po Valley sites (BAGOLINI and BIAGI, 1985: 376).

Cultural aspect	Flint generic	Lessini flint	Marche flint	Ciotti flint	French flint	Radiolarite	Rock crystal	Quartzite	Calcedony	Limestone	Total	%
Bronze Age?	1	0	0	0	0	0	0	0	0	0	1	1.28
SMP Culture	6	2	0	0	1	0	1	1	0	0	11	14.10
IW Culture	11	1	0	0	0	3	0	0	1	0	16	20.51
Epigravettian	21	0	1	1	3	5	0	0	0	2	33	42.31
Aurignacian	11	0	0	0	0	5	0	1	0	0	17	21.80
TOT	50	3	1	1	4	13	1	2	1	2	78	100.00

Table 1 – Arma dell’Aquila: lithic raw material types and their distribution in the main occupation units.

The middle Neolithic Square-Mouthed Pottery Culture assemblage consists of 11 artefacts obtained from 5 different raw materials. The presence of 2 sickle blades, with sickle gloss parallel to the side (MAZZUCCO *et al.*, 2017), shows that agriculture was practised in the surroundings of the cave during this period (Fig. 1, nn. 1 and 2; Fig. 2, n. 1; Fig. 3, n. 1).

The Impressed Ware assemblage is represented by 16 artefacts. During this period bladelet technology was widely employed (Fig. 1, nn. 3, 5-8). Among the tools are 1 long end scraper with medium soft traces of utilisation along the front (Fig. 1, n. 6), 1 characteristic straight perforator obtained from a bladelet by alternate retouch at the working edge, used for boring hard material (Fig. 1, n. 3; Fig. 2, n. 5), 1 notched bladelet (Fig. 1, n. 7), 1 flakelet with cut medium hardness substance traces along one side (Fig. 1, n. 9), 1 notched flakelet with cut hard traces (Fig. 1, n. 10), and 1 retouched burin spall used for cutting hard material (RICHARD, 1942: Tav. XI, n. 10; Fig. 1, n. 5). Apart from the aforementioned tools, the Impressed Ware assemblage includes one rejuvenation blade that shows that at least some of the artefacts were produced within the site, and 1 imported flakelet obtained from Lessini Hills, Verona flint (Fig. 1, n. 9).

One rectangular long end scraper obtained from a 7 mm thick flake of pinkish grey colour comes from cut II below layer 6. This raw material, whose source of provenance is unknown, finds a parallel only in another side scraper from the Aurignacian layer 9 (Table 2: 27-S; RCGE-43441). This unique tool shows traces of abrasion along both sides. It is reported and drawn in C. Richard’s daybook, who recovered it on October 6, 1942 during the cleaning of the excavation trench wall (Fig. 1, n. 33; Fig. 2, n. 9).

3. THE PALAEOOLITHIC ASSEMBLAGES

The assemblages are subdivided into two main groups: those from layer 8, attributed to the beginning of the Epigravettian period (BROCHIER, 2016; LENGYEL and WILCZYŃSKI, 2017) also on the basis of a radiocarbon date (GrN-17485: 20,430+480/-450 BP), and those from layers 9, radiocarbon-dated to 39,900+5100/-3100 BP (GrN-17486) and 10, to be referred to the beginning of the Aurignacian. The occupation of the cave during the beginning of the Epigravettian is confirmed also by the AMS date obtained from a lion tooth from a Neolithic context (BON and STEFANI, 2018: 196) that yielded an almost identical result (GrA-51010: 20,460±80 BP).

The Early Epigravettian assemblage from layer 8, otherwise called by C. Richard “*1st Palaeolithic fireplace*”, is composed of 33 artefacts. The retouched implements are represented by 1 marginal backed point used for boring medium hard material (Fig. 1, n. 22), 2 deep backed points, one of which shows a complementary retouch and a removed base, made from characteristic Ciotti flint (Fig. 1, n. 20; Fig. 2, n. 7) (NEGRINO *et al.*, 2006), the second, obtained by bilateral abrupt retouch, is hafted and used to bore medium soft material (RICHARD, 1942: Tav. X, n. 11; Fig. 1, n. 16), 5 backed bladelets, all obtained by abrupt deep retouch (RICHARD, 1942: Tav. X, n. 5; Fig. 1, nn. 13-15, 28: this latter from layer 10!), 1 of which with bore medium traces at the proximal edge (Fig. 1, n. 12), 1 marginal side scraper (Fig. 1, n. 24), 3 deep side scrapers (RICHARD, 1942: Tav. X, n. 8; Fig. 1, nn. 17 and 23), 1 of which hafted and employed for cutting wood (RICHARD, 1942: Tav. X, n. 6; Fig. 1, n. 19), and 1 deep side-transversal scraper with impact fracture at the distal edge (Fig. 1, n. 11; Fig. 2, n. 3), 2 straight, deep bilateral points, 1 of which is made of red radiolarite (RICHARD, 1942: Tav. X, n. 1; Fig. 1, n. 25), the other of Marche flint (Fig. 1, n. 26), and 1 bilaterally retouched blade (RICHARD, 1942: Tav. X, n. 7; Fig. 1, n. 18; Fig. 2, n. 6). One unretouched flint flakelet was used for cutting wood (Fig. 1, n. 21; Fig. 3, n. 2). In addition, 1 plunging blade comes from Layer 8.

The Aurignacian Layers 9 and 10 yielded a very poor assemblage consisting of only 17 artefacts. The retouched tools are represented by 2 retouched blades, one of which is crested (RICHARD, 1942: Tav. X, n. 9; Fig. 1, n. 31; Fig. 1, n. 30), 2 marginal side scrapers, 1 of which made from red radiolarite, the other from flint

Layers ("fireplaces")	Suggested attribution	Typology (Laplace, 1964)	Dimensions (mm)	Raw material	Colour	Traceology	Figure	Notes/Bibliography	Inventory numbers
Layer 3	Bronze Age?	ee	11x11x3	flint	10YR5/3, brown				
Layer 5	Neolithic SMP	L	52x18x7	flint (Lessini Hills?)	2.5Y6/6, olive yellow with white spots		2, n. 4	12 August 1938	
Layer 5	Neolithic SMP	e	18x20x6	flint	burnt			1 October 1942	
Layer 5	Neolithic SMP	ll	22x11x2	flint	2.5YR3/1, very dark grey			1942	
Layer 5	Neolithic SMP	fl	(14)x7.5x2	flint	10YR4/1, dark grey	Sickle	1, n. 2		
Layer 5	Neolithic SMP	L	73x12x2.5	flint (Lessini Hills?)	10YR5/1, grey	Sickle - haft	1, n. 1; 2, n. 1; 3, n. 1	Richard, 1942: Tav. XI, n. 6	176-S; RCGE-43590
Layer 5	Neolithic SMP	L1 sen [Smd]/Sma dext	33.5x11x5.5	flint	2.5Y2.5/1, black		1, n. 4	Richard, 1942: Tav. XI, n. 4	
Layer 5	Neolithic SMP	ll	26.5x12x3	quartzite	10YR4/3, brown			Richard, 1942: Tav. XI, n. 10	986?
I cut below Layer 5	Neolithic SMP	fl	(8)x10x2	flint	burnt				
III-IV cut below Layer 5	Neolithic SMP	e	23x23x3	French flint	10YR4/2, dark greyish brown				
IV cut below Layer 5	Neolithic SMP	ee	13x9x3	hyaline quartz	transparent			30 September 1942, daybook	
III cut below Layer 5	Neolithic SMP	f LD2 med [Apd sen]	(10)x7x3	flint	2.5YR4/3, reddish brown			28 September 1942	
Layer 6	Neolithic IW	f LD2 [Apd dext]	(22)x12x4	flint	burnt			13 October 1942	
Layer 6	Neolithic IW	f D1 med [Amd dext]	(29)x11x3.5	flint	10YR7/2, light grey		1, n. 7	2/3 October 1942, daybook	
Layer 6	Neolithic IW	Burin spall/Sma	26x8x3	flint	10YR4/6, dark yellowish brown	Cut hard	1, n. 5	3 October 1942, Richard, 1942: Tav. XI, n. 13, daybook	172-S; RCGE-43586
Layer 6	Neolithic IW	D1 lat [Amd dext]	27x30x4	flint 50% corticated	10YR5/3, brown	Cut hard	1, n.10	3 October 1942, daybook	173-S; RCGE-43587
Layer 6	Neolithic IW	f L1 bil [Smd]	(45.5)x13x3	flint	burnt			Richard, 1942: Tav. XI, n. 5	178-S; RCGE-43592
Layer 6	Neolithic IW	fl	(57)x19x3.5	flint	2.5Y4/1, dark grey			Richard, 1942: Tav. XI, n. 11	180-S; RCGE-43594
Layer 6	Neolithic IW	E	33x17x4	flint (Lessini Hills)	2.5Y7/3, pale yellow	Cut medium	1, n. 9	3 October 1942, daybook	170-S; RCGE-43584
Layer 6, Burial foetus 2	Neolithic IW	Bc2 dist [Apd+Api]	31x12x3.5	flint	N3/, very dark grey	Bore medium - haft	1, n. 3; 2, n. 5	9 August 1938	
II cut below Layer 6	Neolithic IW?	G1/-SEd bil	26x18x7	flint	7.5YR6/2, pinkish grey	Abraded long sides	1, n. 33; 2, n. 9	6/13? October 1942, wall cleaning, daybook	
III cut below Layer 6	Neolithic IW	fE	(38)x21x4	corticated flint	10YR7/3, very pale brown			5 October 1942	
III cut below Layer 6	Neolithic IW	fL	(26)x8x6	flint	2.5Y7/3, pale yellow	rejuvenation blade		5 October 1942	
III cut below Layer 6	Neolithic IW	ee	14x14x2	radiolarite	2.5YR2.5/4, dark reddish brown			5 October 1942	
III cut below Layer 6	Neolithic IW	ee	9x11x1	radiolarite	2.5YR2.5/4, dark reddish brown			5 October 1942	
V-VI cut below Layer 6	Neolithic IW	f G1/-smd bil	(19)x13x5	radiolarite	N3/, very dark grey	Scrape medium soft	1, n. 6	9 October 1942	
Layer 5-7	Neolithic IW	Subconical bladelet core	37x15x12	flint	2.5Y4/1, dark grey		1, n. 8	10 October 1942, daybook	1-S; RCGE-43415
Small hearth below Layer 7	Neolithic IW?	fe	(23)x13.5x6	corticated calcedony	10YR5/3, brown				
II cut below Layer 7	Palaeolithic Epigravettian?	PD2 dext [Apb/Smd sen dist]/=Smiprox	28x3.5x2	spotted flint (Ciotti)	7.5YR5/1, grey		1, n. 20; 2, n. 7	10 October 1942, daybook	
I cut below Layer 7?	Palaeolithic Epigravettian?	R2 lat-tra [Spd]	36x21x10	flint	2.5Y4/1, dark grey	Impact fracture dist	1, n. 11; 2, n. 3	5 November 1942, daybook	
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f LD2 [Apd sen]	(23)x7x3.5	flint	2.5Y3/1, very dark grey		1, n. 15	1938	26-S; RCGE-43440
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f LD2 [Apd sen]	(15)x5x2.5	flint	2.5Y5/4, light olive brown		1, n. 14	23 October 1942, daybook	25-S; RCGE-43439
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f LD2 [Apd dext]/=Smi prox	(26)x8x3.5	flint	5Y5/2, olive grey	Bore medium	1, n. 12	12 October 1942, daybook	21-S; RCGE-43435
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	R2 lat [Spd dext]	32x16x3.5	flint	7.5YR5/4, brown	Cut wood - haft	1, n. 19	1938, Richard, 1942: Tav. X, n. 6, daybook	23-S; RCGE-43437
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	LD2 [Apd sen]	50x13x5	flint	10YR3/2, very dark greyish brown		1, n. 13	23 October 1942, daybook	22-S; RCGE-43436
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f PD2 bil [Apd]	(48)x11x6.5	flint	5Y4/1, dark grey	Bore medium soft - haft	1, n. 16; 3, n. 2	1938, Richard, 1942: Tav. X, n. 11	19-S; RCGE-43433
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f L2 [Spd bil]	(39)x16x4.5	flint	5Y6/3, pale olive		1, n. 18	1938, Richard, 1942: Tav. X, n. 7	33-S; RCGE-43447

Table 2 – Arma dell’Aquila: characteristics of the chipped stone artefacts, their cultural attribution and provenance.

Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	P2 [Spd bil]	82x17x9	radiolarite	2.5YR3/2, dusky red		1, n. 25	Richard, 1942: Tav. X, n. 1	35-S; RCGE-43449
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f P2 [Spd bil]	(76)x23x11	flint (Marche scaglia)	7.5YR5/4, brown		1, n. 26	23 October 1942, daybook	36-S; RCGE-43450
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	E	20x30x6.5	flint	2.5Y4/2, dark greyish brown	Cut wood	1, n. 21; 2, n. 2, 3, n. 3	1938?	38-S; RCGE-43452
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	f R2 lat [Spd dext]	(50)x20x5	radiolarite	5YR3/3, dark reddish brown		1, n. 17	1938, Richard, 1942: Tav. X, n. 8	30-S; RCGE-43444
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	E	24x37x4	flint (French?)	2.5Y4/4, olive brown			1938	7-S; RCGE-43421
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	fL	(36)x12x3	flint (French?)	10YR5/8, yellowish brown		2, n. 8	1938, Richard, 1942: Tav. X, n. 2	6-S; RCGE-43420
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	L	30x14x4.5	flint	10YR7/2, light grey			1938	5-S; RCGE-43419
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	L	29x9x5	flint	2.5Y7/3, pale yellow			1938, Richard, 1942: Tav. X, n. 4	2-S; RCGE-43416
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	E	35x38x12	flint	10YR7/3, very pale brown			1938	13-S; RCGE-43427
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	E	18x33x5	flint	10YR7/3, very pale brown				
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	fil	(14)x12x2.5	flint	7.5YR5/1, grey			1938	14-S; RCGE-43428
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	L	30x9x4.5	radiolarite	7.5YR3/1, dark brown			23 October 1942	4-S; RCGE-43418
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	L	41x20x6	siliceous limestone	10YR7/2, light grey			1938, Richard, 1942: Tav. X, n. 12	8-S; RCGE-43422
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	fe	(19)x16x5	flint corticated	10YR5/3, brown			1938	15-S; RCGE-43429
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	fee	(16)x10x3	flint	burnt			23-29 October 1942	
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	fe	(19.5)x17x5.5	flint	10YR5/2, greyish brown			1938	18-S; RCGE-43432
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	L	27x10x8	flint	10YR7/1, light grey	Plunging blade		1938	40-S; RCGE-43454
Layer 10 (3 Pal. Fireplace)	Palaeolithic Epigravettian?	LD2 [Apd dext]	27x6x4	flint	10YR3/3, dark brown		1, n. 28	Richard, 1942: Tav. X, n. 5	24-S; RCGE-43438
Layer 8 (1 Pal. Fireplace)	Palaeolithic Epigravettian	E	13x23x3	flint	10YR5/2, greyish brown				
I cut below Layer 8	Palaeolithic Epigravettian	f PD1 [Amd dext]/.Ami sen	(27)x10x3.5	radiolarite	2.5YR3/2, dark red	Bore medium	1, n. 22	23-24 October 1942, daybook	20-S; RCGE-43434
I cut below Layer 8	Palaeolithic Epigravettian	f R2 lat [Spd dext]	(36)x21x7	flint	2.5Y5/1, grey		1, n. 23	23-24 October 1942	28-S; RCGE-43442
I cut below Layer 8	Palaeolithic Epigravettian	L	30x10x9	flint	N2.5/, black			23-24 October 1942	3-S; RCGE-43417
I cut below Layer 8	Palaeolithic Epigravettian	E	32x38x10	siliceous limestone	7.5YR6/2, pinkish grey			23-24 October 1942, daybook	11-S; RCGE-43425
II cut below Layer 8	Palaeolithic Epigravettian?	R1 lat [Smd sen]	36x18x3	radiolarite	2.5YR3/2, dusky red		1, n. 24	26 October 1942	29-S; RCGE-43443
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	L1 prox [Smd dext] Crested blade	60x10x9	flint	2.5YR4/3, reddish brown		1, n. 31	1938, Richard, 1942: Tav. X, n. 9	16-S; RCGE-43430
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	f R2 lat [Spd dext prox]	(51)x25x9	radiolarite	2.5YR3/3, dark reddish brown		1, n. 32	1938, Richard, 1942: Tav. X, n. 10	37-S; RCGE-43451
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	f L1 [Smd bil]	(29)x8x3	radiolarite	2.5Y2.5/1, black		1, n. 30	Richard, 1942: Tav. X, n. 3	32-S; RCGE-43446
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	f R2 lat [Spd dext]	(27)x16x6	radiolarite	2.5YR4/3, reddish brown		1, n. 29		
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	R1 tra [Smd]	25x42x6	radiolarite	2.5YR, dark red			1938	27-S; RCGE-43441
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	f R1 lat [Smd sen]	(30)x13x4	flint	5Y6/1, grey		1, n. 27	1938	31-S; RCGE-43445
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	L	25.5x10x3	flint 10% corticated	10YR7/1, light grey				
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	E	39x35x9.5	quartzite	2.5Y5/1, grey			1938	9-S; RCGE-43423
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	E	37x42x9	flint 5% corticated	10YR5/3, brown			1938	
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	fE	(23)x13x5	flint	SGY7/1, light greenish grey				39-S; RCGE-43453
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	fe	(23)x20x7	radiolarite	5YR3/3, dark reddish brown				34-S; RCGE-43448
Layer 9 (2 Pal. Fireplace)	Palaeolithic Aurignacian	ee	15x22x4.5	flint	SGY6/1, greenish grey				13-S; RCGE-43427
Layer 10 (3 Pal. Fireplace)	Palaeolithic Aurignacian	fi prox	(31)x15x5.5	flint 50% corticated	10YR7/2, light grey			30 October 1942	
Layer 10 (3 Pal. Fireplace)	Palaeolithic Aurignacian	ee	11.5x6.5x3	flint	burnt				
Layer 10 (3 Pal. Fireplace)	Palaeolithic Aurignacian	fee	(10)x11x2.5	flint	10YR7/2, light grey				
II cut below Layer 10	Palaeolithic Aurignacian	fe	(26.5)x15x3	flint 10% corticated	10YR4/1, dark grey			31 October/2 November 1942	
III cut below Layer 10	Palaeolithic Aurignacian	E	35x20x12	flint 25% corticated	2.5Y3/1, very dark grey; 10YR5/4			2 November 1942	

Table 2 – end

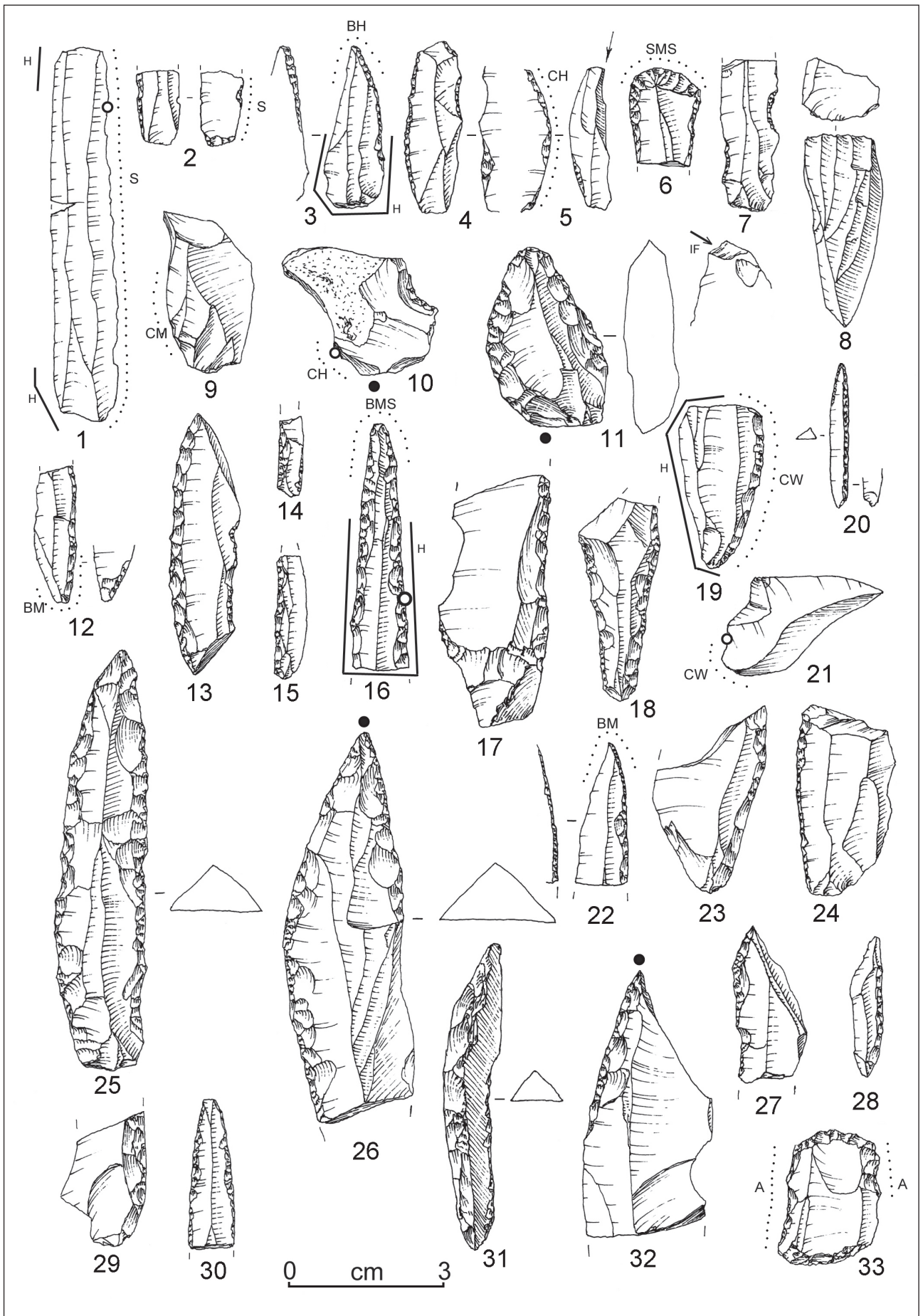


Fig. 1 – Arma dell’Aquila: Sickle blades from layer 5 (nn. 1 and 2), Retouched bladelet from layer 5 (n. 4), Straight borer from layer 6 (n. 3), Burin spall from layer 6 (n. 5), Long end scraper from cut II below layer 6 (n. 6), Notched bladelet from layer 6 (n. 7), Subconical

bladelet core from layers 5-7 (n. 8), Flakelet from layer 6 (n. 9), Notched flakelet from layer 6 (n. 10), Side scraper from cut I below layer 7 (n. 11), Backed bladelets from layer 8 (nn. 12-14 and 15), Backed point from layer 8 (n. 16), Side scrapers from layer 8 (nn. 17 and 19), Bilaterally retouched bladelet from layer 8 (n. 18), backed point from cut II below layer 7 (n. 20), Unretouched flakelet from layer 8 (n. 21), Backed point from cut I below layer 8 (n. 22), Side scraper from cut I below layer 8 (n. 23), Side scraper from cut II below layer 8 (n. 24), Straight points from layer 8 (nn. 25 and 26), Side scraper from layer 9 (n. 27), Backed bladelet from layer 10 (n. 28), Side scraper from layer 9 (n. 29), Retouched bladelet from layer 9 (n. 30), Crested blade from layer 9 (n. 31), Side scraper from layer 9 (n. 32), End scraper from II cut below layer 6 (n. 33). Symbols: H = Hafting, S = Sickle, BM = Bore Medium, BMS = Bore Medium Soft, BH = Bore Hard, CM = Cut Medium, CH = Cut Hard, CW = Cut Wood, SMS = Scrape Medium Soft, IF = Impact Fracture, A = Abrasion, Dot = Percussion bulb, Small circle = Photographs of use-wears, see Fig. 3 (drawings by P. Biagi, inking by G. Almerigogna).

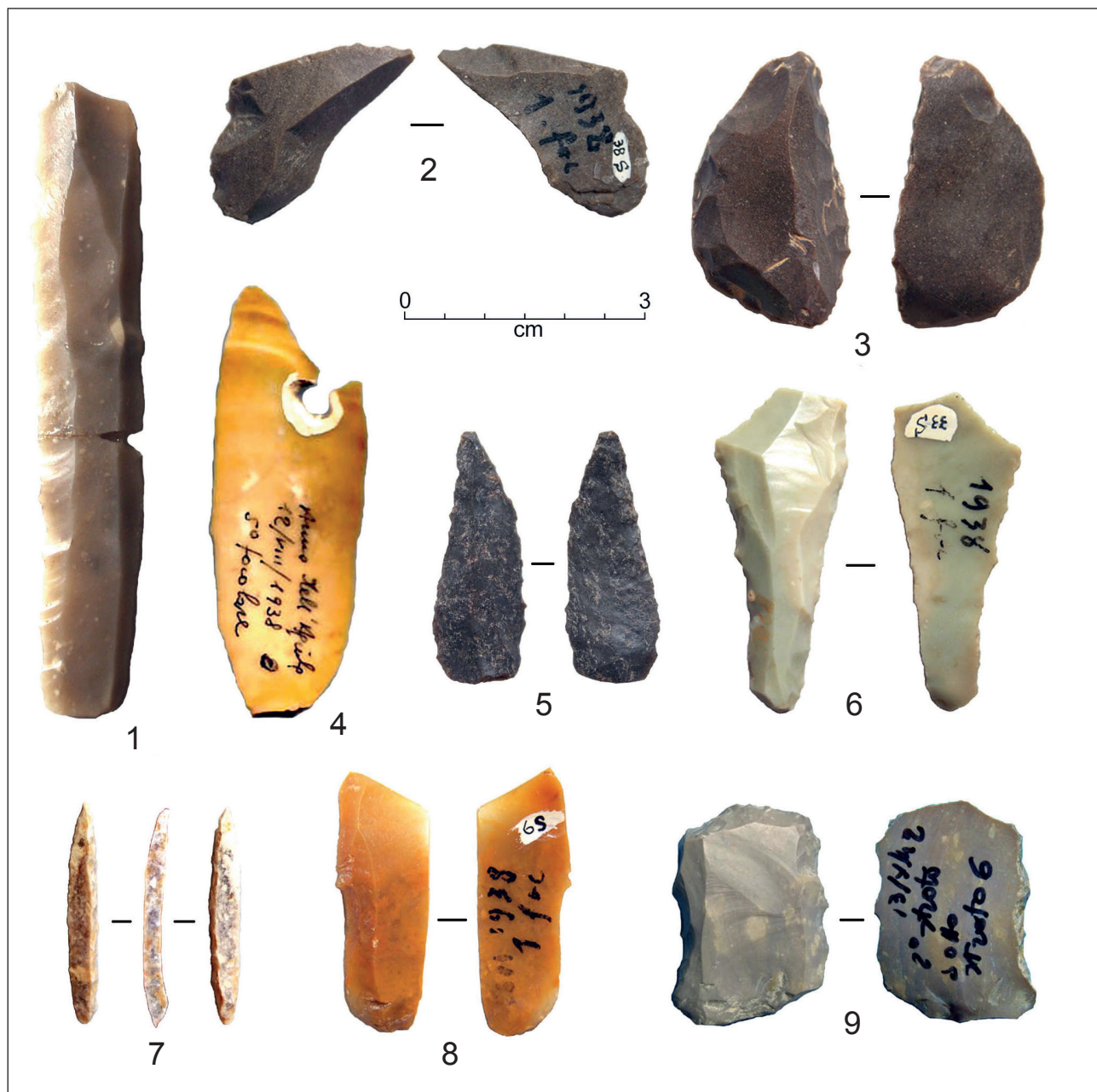


Fig. 2 – Arma dell’Aquila: Sickle blade fom layer 5 (n. 1), Unretouched flakelet from layer 8 (n. 2), Side scraper from cut I below layer 7 (n. 3), Unretouched bladelet from layer 5 (n. 4), Straight borer from layer 6 (n. 5), Retouched bladelet from layer 8 (n. 6), Backed point from cut II below layer 7 (n. 7), Unretouched bladelet from layer 8 (n. 8), End scraper from cut II below layer 6 (n. 9) (photographs by E. Starnini).

(Fig. 1, n. 27), and 2 deep side scrapers knapped both from red radiolarite (Fig. 1, nn. 29 and 32; Fig. 2, n. 10). The presence of one crested blade suggests that also during this period some of the tools were produced inside the cave.

4. DISCUSSION

The Aquila Neolithic layers yielded an interesting assemblage represented by a few characteristic lithic implements. Regarding the Square-Mouthed Pottery layers the presence of a long sickle blade with gloss all along one side is remarkable (Fig. 1, n. 1; Fig. 2, n. 1). It shows close parallels with a few specimens retrieved from the Square-Mouthed Pottery Culture horizons excavated by L. Bernabò Brea at the Arene Candide cave (STARNINI and VOYTEK, 1997: Fig. 18).

The Impressed Ware assemblage, though somewhat more rich in finds, yielded a few characteristic types among which is 1 straight perforator obtained from a bladelet by alternate abrupt retouch (Fig. 1, n. 3; Fig. 2, n. 5). Though not identical to the specimens from the Impressed Ware layers from the Arene Candide (see STARNINI and VOYTEK, 1997: 354, 355: F28-F24) that are all obtained by abrupt direct bilateral retouch, this tool characterises the earliest Neolithic assemblages of most central-eastern Europe (KOZŁOWSKI and KOZŁOWSKI, 1987). Of major interest are a notched bladelet (Fig. 1, n. 7), once again similar to a specimen from the Arene Candide Impressed Ware layers (STARNINI and VOYTEK, 1997: 353, F15), and 1 subconical bladelet core (Fig. 1, n. 8). This latter shows that the detachment of bladelet blanks took place inside the cave.

It is important to point out that during this period the relationships between the Po Valley and the north-eastern Alpine fringe were already active, as shown by the presence of flint artefacts from the Lessinian, Verona sources at Aquila cave.

The richest assemblages from the cave come from the early Epigravettian layer 8. It has been radiocarbon-dated to the middle of the 21st millennium BP, a period of maximum cold of which little is known in the region and northern Italy in general (MUSSI, 2001: Fig. 2.1; RUGGERI and WHALLON, 2010). In this respect we have to point out that the neighbouring Arene Candide Cave was sporadically settled during the same period (CARDINI and TASCHINI, 1994: 73–76) as a radiocarbon date from layer 9 of P deposit, very similar to those obtained from Arma dell’Aquila, shows (R-2541: 20,470±320 BP: BIETTI e MOLARI, 1994: Table 1). However we know that it undoubtedly was more intensively settled ca 3-5 millennia before, during milder climate conditions (RELLINI *et al.*, 2013: 4). The same OIS2 cold period is represented at Mochi Rock Shelter Unit B, though this complex, excavated many years ago and never radiocarbon dated, is very poor in lithics (DOUKA *et al.*, 2012: 289).

Arma dell’Aquila layers 9 and 10, the uppermost of which was dated to the beginning/first half of the 40th millennium BP, yielded a very scarce lithic assemblage, probably suggesting that the early Upper Palaeolithic Aurignacian hunters settled in the cave for short periods.

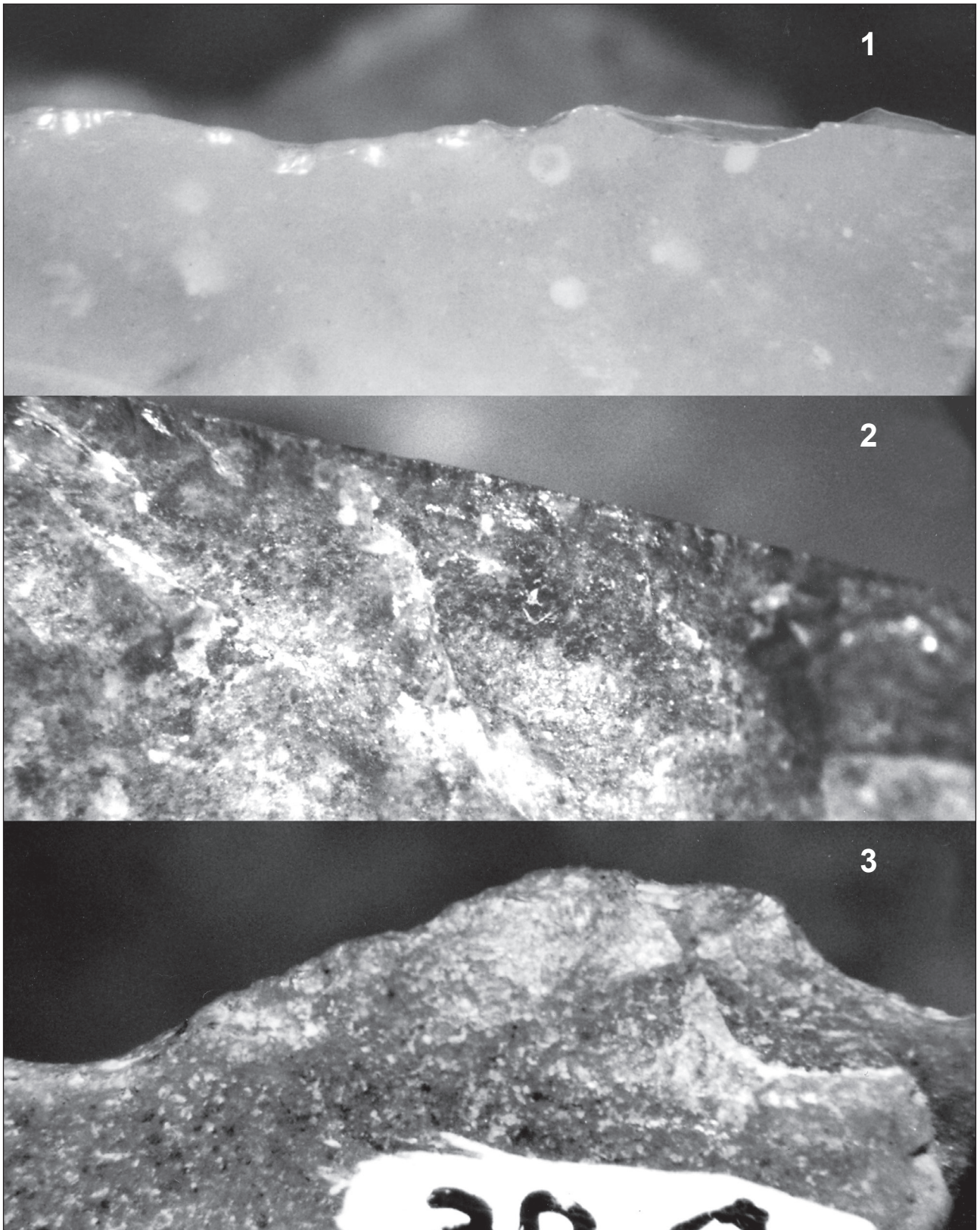


Fig. 3 – Arma dell’Aquila: traces of wear: Sickle blade from layer 5 (n. 1: Fig. 1, n. 1), Unretouched flakelet with cut wood traces (n. 2: Fig. 1, n. 21), Flakelet used to cut hard (n. 3: Fig. 1, n. 10) (photographs by B.A. Voytek).

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