Yabrud Shelter II – A re-consideration of its cultural composition and of its relevance to the Upper-Paleolithic cultural sequence in the Levant

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Since the early investigations in the Skifta Valley made by A. Rust (Rust, 1950), five of the shelters found along the northern flank of the valley (agglomerated to the name of Yabrud site) were thoroughly studied by many scholars; Prof. F. Bordes has been concerned mainly with the cultural evolution in shelter I (Bordes, 1955; 1960; 1962) and Mme. de Sonneville-Bordes worked on the lithic material from shelters II and III (de Sonneville-Bordes, 1956). The other shelters and one additional cave were excavated and studied by Prof. R. Solecki (Solecki, 1966; 1970).

One of the main controversal subjects in the Yabrud sequence was the definition of the Pre-Aurignacian phase found by Rust in layer 15 at Yabrud I, and its correlation with the whole Upper Paleolithic sequence of shelter II. Most of the works referring to Yabrud were concerned with the above subject (e.g., Howell, 1959; Weachter, 1952; Garrod, 1956; 1970; Jelinek, 1975; Bordes, 1977, and others): our point of view in this debate will be presented in the discussion (page 89 on). Except for the work by Rust and the brief summary and discussion published by de Sonneville-Bordes, no further study of the cultural sequence of shelter II, based on a close study of the lithic material, has been published until now. Regarding the fact that both studies were made at least 20 years ago and that since then our knowledge of the Upper Paleolithic of the Levant has increased enormously, we suggest a re-evaluation in this article on the data available from shelter II and its bearing on the whole Levantine Upper Paleolithic cultural sequence. For that purpose a close typological and technological/metric study on the material has been carried out by the author of this article.* We shall also try to give a brief account of the floral and faunal data collected in the studied area and its close vicinities, as well as some concluding radiocarbon dates as a chronological frame for the discussed sequence (Table 2).

Geologic and Geographic setting

The site named Yabrud, agglomerating 6 rock-shelters (I to VI) and one cave, is situated in the Skifta Valley, about 80 km. northeast of Damascus and 10 km. southwest of Nebek village-Syria (Fig. 1). The valley is located in the eastern flank of the Anti-Lebanon mountains, which have elevations over 3,000 meters (Fig. 1, section A-A). Shelter II opens to the southeast at an elevation of over 1,400 meters, in a steep escarpment built of Eocene limestone. We may consider the Yabrud complex as a fertile oasis in the mountain zone, bordering on the east with the syrian steppe and desert zones respectively (Goldberg, 1969). The geographic setting of the Yabrud site-complex is quite unique in the Levant, especially in arid or semi-arid environments (only a few sites are encountered at a similar elevation in the Levantine uplands). Set in the mountainous zone, the climate during the winter is cool and wet, with occasional snow, while during the summer it is warm and dry. The mean temperatures are 5,5° C in Jenuary and 20° C in July. The area is sheltered from rain by the Anti-

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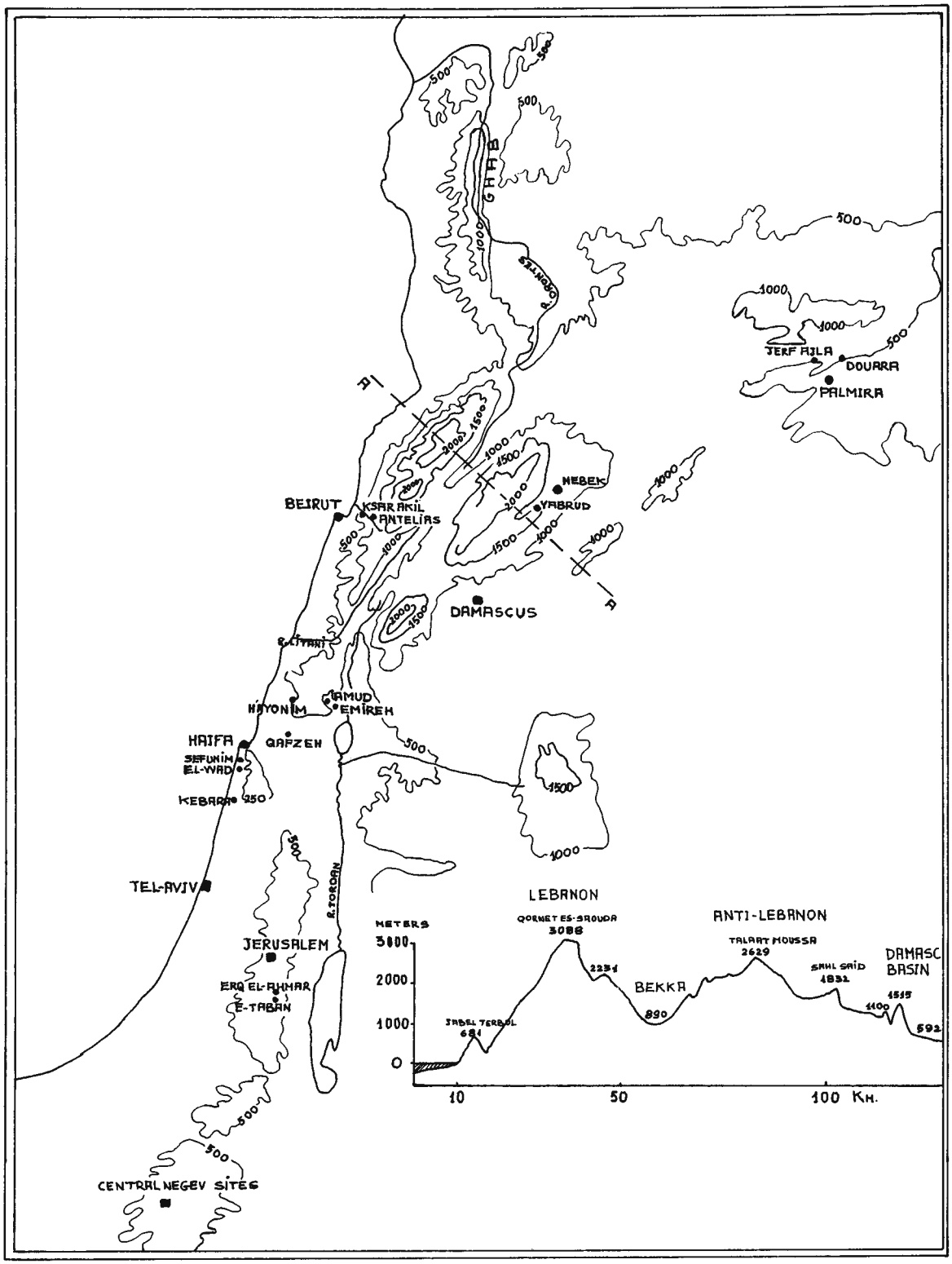

Fig. 1. The Main Upper Paleolithic Site Distribution in the Levant.
Section A–A: The Main NW-SE Elevations in Northern Lebanon (From: Kaiser, 1973).

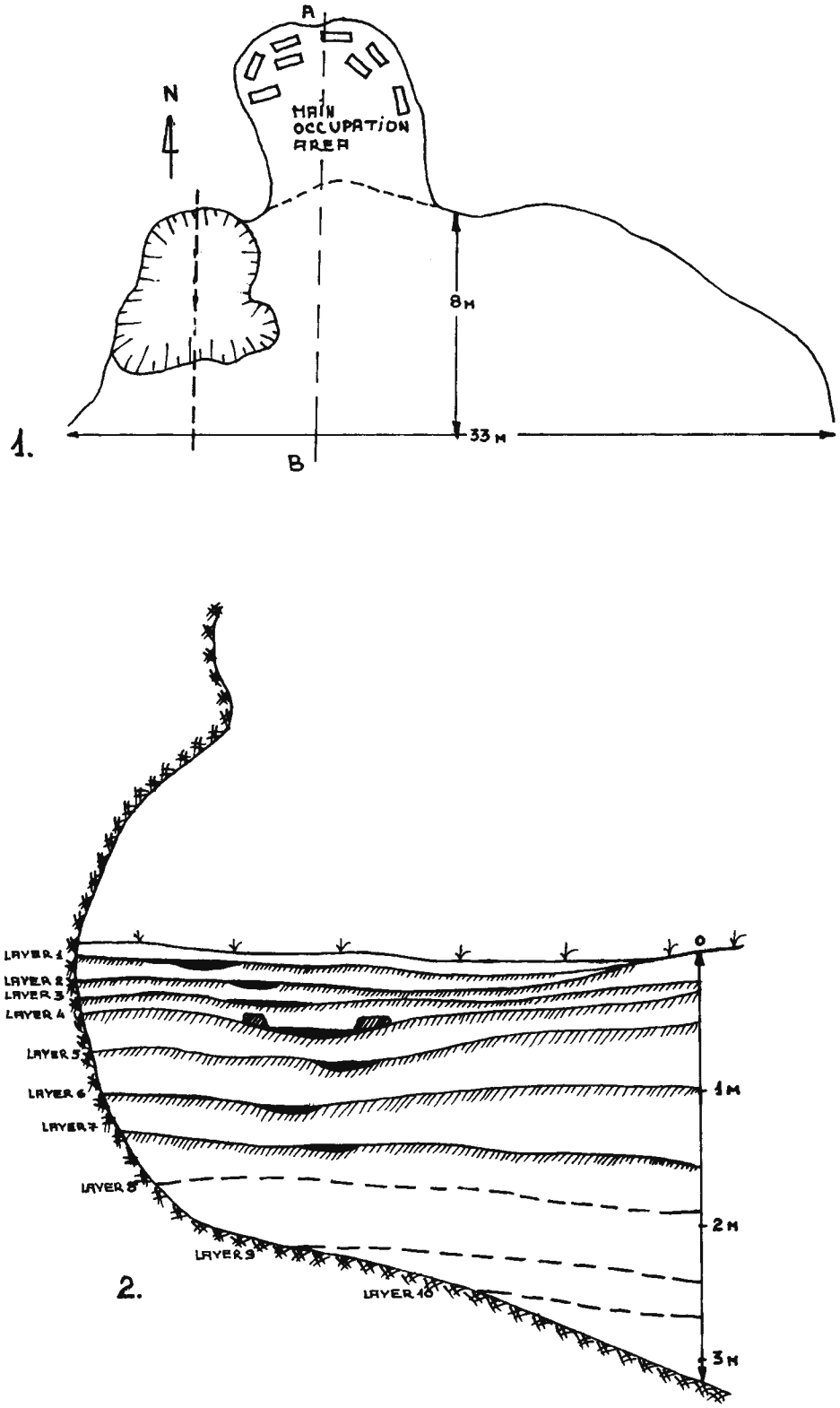

Fig. 2. 1: Plan of Rock-Shelter II (Enlarged from plan in: Solecki, 1966, fig. 22) 2: Section A–B: Crossing through the main Upper Paleolithic Occupation area (after Rust, 1950, Tafel 75).

Lebanon ridge, with a total anual percipitation of 160 mm at Nebek. Two large springs water the valley all year around and the rich vegetation in the oasis is reminiscent of the rich flora that once covered the whole area. The richness of the area in prehistoric times is attested to further by the abundant faunal remains in all the shelters (Solecki, 1966; Lehmann, 1970). With the exeption of Yabrud and the somewhat similar situation of the sites at Wadi-Khareitun in the Judean Desert (Neuville, 1951), all other sites in arrid zones, such as the Negev and Sinai, are open-air (Marks, 1975 a, b; Bar-Yosef et al., 1977). Although most of the Levantine sites in mountainous regions do not exceed 500 meters elevation line, we may compare Yabrud to some of the Levantine sites which are located just short distances up major stream valleys (Ksar-Akil, Sefunim, Antelias, Jiita and Geula in the coastal zone, as well as Wadi-Amud sites facing the Rift Valley zone).

Rock-Shelter II

The shelter faces southwest as a shallow depression eroded in the Eocene limestone. It is 20 meters wide and 12 meters deep (Fig. 2 ; 1). It has the highest elevation of all the shelters in the Skifta Valley. An additional depression opens on the western flank of the shelter, about 5 meters wide and 4 meters deep, with bedrock about 2.5 meters lower than that of the main hall. This was found by Rust levelled and cleaned, presumably during Roman or Byzntine times, and used as a sepulcre; tombs were found cut into the rocky walls of the depression.

The side depression was completely dug by Rust down to bedrock and found to have been the main settlement area in the shelter. The main hall has been tested by an east-west trench bringing out very few remains. The testing carried out by the Columbia Expedition during 1964 and 1965 seasons re-affirmed the above data (Solecki, 1966; 1970). The concluding evidance is that not all of the rock-shelter had been inhabited during Paleolithic times but just a relatively small inner part; it seems that the main chamber had been used only from the Mesolithic age on.

The main deep trench made by Rust, still the only evidance used up till now, shows a section of about 3 meters deep, changing from a rough and stony sediment in the bottom to finer material in the upper layers. Seven ashy horizons could be traced along the section (Fig. 2 ; 2). The archaeological layers from bottom to top, as defined by Rust, are as following:

Layers 10 to 8 – Late Mousterian.
Layers 7 and 6 – Early Aurignacian.
Layers 5 and 4 – Middle Aurignacian.
Layers 3 and 2 – Atlitian.
Layer 1 – Micro–Aurignacian (Atlitian).

In relation to the above sequence, the sedimentological observations show that the rough sediments belong mainly to the Late Mousterian phases and go only a bit into layer 7. These Éboulis are made of limestone blocks of 2 to 10 cm. large, seemingly deriving from the shelter's roof. It was found in a loose position, forming small cavities devoid of matrix in between the stones; from layer 6 on the sediment is much finer. No breccia has been found along the section. The Aurignacian layers could be distinguished by numerous ashy horizons, which were found in each of the layers as well as in between the layers. A built hearth had been excavated in layer 4 only. Another interesting phenomenon was the flint from layer 3; it was covered by a dark patination, numerous pieces had fire-cracking features and ashy matrix was found on many retouched pieces, still clinging to the facetted depressions. All these Point to an intensive use of fire in this layer to an extent not encountered in the rest of the sequence.

The typological study of the whole collection as well as the cumulative graphs and histograms were made according to the London Type List (Hours, 1974 and Fig. 3 in the text).

The Cultural Evolution at the Site (Table 1)

Layers 10–8 (about 1 m. thick)

The three lowest layers in the shelter belong to a Late Levantine Mousterian phase. They were found in a sediment which constitutes of a large amount of Éboulis. Typologically they correspond to the upper layers in shelter I, but just poorer in lithic material than the latter. The habitat in this period was found to be confined to a restricted area at the entrance to the site (Rust, 1950). According to Prof. Weachter Rust's Jung-Mousterian is a Levallois-Mousterian facies, similar to most of the other Levantine assemblages of this period (Weachter, 1952). According to Prof. Bordes only layer 9 produced enough evidance for the definition of the whole cultural assemblage (Bordes, 1955). Bordes points out in layer 9 a medium racloirs index and an abundance of denticulated pieces.

Layer 7 (about 1.5 m. thick)

This is the thickest layer in the whole Upper Paleolithic sequence, which starts here, but with the lowest quantity of lithic material – 116 tools and only 21 waste blanks[1]. Part of the tools were made on blanks deriving from different Mousterian stages, bearing a clear double patina. Technologically, there is a clear dominance of blades over flakes among the tools (83.4 % and 13 % respectively), as well as among waste material (52.9 % and 23.8 % respectively). It is a non-Levallois industry with only 17.4 % Levallois blanks in. Most of the latter are Levallois blades. Smoothe and punctiform platforms are the most frequent (23.4 % and 30.4 % respectively). Straight facetting is common among the Levallois pieces. Most of the waste blanks have smooth platforms (62 %).

Typologically, there is a clear dominiance of Scrapers over Burins (25.8 % and 12 % respectively). This ratio is constant all over the sequence in the shelter. Simple Scrapers are quite numerous (22.4 %), with a high frequency of Scrapers on Retouched blades (12 %) (Fig. 4 ; 1-3). These were made usually on long and narrow blanks. Scrapers on Flakes are quite rare, made usually on large and thin blanks. We could distinguish also an outstanding group of Pointed Scrapers, some of them with only a rough working-edge. There are a few Aurignacian Scrapers (3.4 %). None of the Yabrud II assemblages have a high ferquency of Aurignacian Scrapers. It is the only layer in the sequence where Burins on Truncation dominate over Dihedral types (3.4 % and 1.7 % respectively). Most of the Burins were made on nice blades. Multiple Mixed Burins are common (2.6 %), as well as Transversal types (2.6 %). There is also a unique Multivariant Type.

Truncations (4.3 %) (Fig. 4 ; 4, 13), Notches and Denticulates (13.8 %) are typically retouched. The first group was made on refined blades. Borers (7.7 %) are quite abundant; they were typically retouched and vary in shapes (Fig. 4 ; 10).

Retouched Blades comprise a typical group (12.1 %), made on long and narrow blanks (Fig. 4 ; 12). They bear usually an irregular and partial retouch, sometimes finely denteculated. One blade is somehow strangled. Only two specimens have a continuous refined retouch along both edges. Points make the second largest group of tools (22.3 %). It is composed of some typical Chatelperron types (3.4 %), less typical El-Wad Points (6.9 %) and large Pointed Blades (12 %) (Fig. 4; 5-8). The El-Wad Points were made either on blades or on bladelets. The latter group is composed of finely pointed pieces, sometimes partially retouched along the edges too.

The Cores' assemblage (10 specimens) is dominated by Uni-Directional types and by Bi-Directional Prismatic types. This assemblage reflects clearly the Upper Paleolithic aspect of the whole industry.

[1] We had to consider the fact that Rust did not collect all the waste Material. This is why we prefered not to present a statistical study of the waste assemblages.

Table 1. Tool List – Yabroud Layers 7–1

		Layer – 7			Layer 6			Layer 5			Layer – 4			Layer – 3			Layer – 2			Layer – 1		
Group	Type	No.	%	Group %	No.	%	Group %	No.	%	Group %	No.	%	Group %	No.	%	Group %	No.	%	Group %	No.	%	Group %
A	1	4	3.44		10	5.07		21	4.45		36	7.1		11	3.46		25	3.8		19	2.7	
	2	5	4.31		5	2.53		7	1.48		10	2.0		6	1.88		22	3.3		9	1.3	
	3	1	0.86		2	1.01					7	1.4		2	0.62		2	0.3		1	0.14	
	4							3	0.63		2	0.4		1	0.31		2	0.3				
	5				5	2.53		1	0.21		1	0.2		2	0.62		2	0.3		3	0.4	
	6	14	12.0		2	1.01		10	2.12		31	6.1		17	5.3		36	5.5		10	1.4	
				22.4			19.76			9.52			21.3			17.2			16.3			7.7
	7										1	0.2		1	0.31							
	8													1	0.31							
	9	2	1.72		12	6.09		3	0.63		20	3.9		12	3.7		18	2.7		12	1.7	
	10																					
	11				3	1.52								2	0.62							
	12																					
	13	3	2.58		8	4.06		27	5.73		13	2.5		8	2.5		16	2.4		14	2.0	
	14				1	0.5		9	1.91		3	0.6					1	0.15		4	0.6	
	15																1	0.15				
				3.44			9.13			11.86			3.50			5.03			9.9			4.9
	16				2	1.01								2	0.62		3	0.45		9	1.3	
	17	1	0.86					4	0.84		1	0.2		4	1.25		6	0.9		10	1.4	
	18																					
	19				2	1.01		4	0.84		1	0.2		2	0.62		3	0.45				
	20				5	2.53		12	2.54								35	5.3				
Total		30		25.8	57		28.9	101		21.38	129		24.8	71		22.3	172		26.2	91		13.1
B	1				5	2.53		24	5.09		23	4.5		29	9.1		18	2.7		9	1.3	
	2				3	1.52		1	0.21		6	1.18		11	3.4		13	2.0		6	0.8	
	3	1	0.86		1	0.5		9	1.91		4	0.78		12	3.7		7	1.06		9	1.3	
	4	1	0.86		2	1.01		1	0.21		8	1.57		2	0.62		5	0.7		12	1.7	
				1.72			12.66			13.34			12.98			24.5			14.5			6.3
	5							3	0.63		6	1.18		8	2.5		8	1.2		3	0.4	
	6							6	1.27		3	0.6		3	0.9		14	2.1		1	0.14	
	7				14	7.1		17	3.6		20	3.9		8	2.5		12	1.8		3	0.4	
	8							2	0.42		2	0.4					16	2.4				
	9	2	1.72		2	1.01		1	0.21		1	0.2		1	0.31		3	0.45		2	0.3	
	10	1	0.86					6	1.27		7	1.4		4	1.25		5	0.7		4	0.6	
				3.44			5.06			2.96			2.7			4.4						3.0
	11				5	2.53		7	1.48		4	0.78		4	1.25		1	0.15		9	1.3	
	12	1	0.86		3	1.52					3	0.6		5	1.57		1	0.15		6	0.8	
	13																					
	14	1	0.86																			
	15	2	1.72								1	0.2										
	16				2	1.01		3	0.63		4	0.78		1	0.31		1	0.15		1	0.14	
	17	3	2.58		5	2.53		5	1.06		8	1.57		2	0.62		2	0.3				
Total		14		12.0	42		21.3	85		17.9	100		19.7	90		28.3	106		16.1	65		9.3
C	1	2	1.72		2	1.01					4	0.78		1	0.31		1	0.15		12	1.7	
	2	2	1.72																			
	3	4	3.44		9	4.56		6	1.27		11	2.16		3	0.9		6	0.9		28	4.0	
	4							3	0.63					1	0.31		2	0.3		14	2.0	
	5	1	0.86																	4	0.6	
	6																					
	7				3	1.52					2	0.4								2	0.3	
	Total	9		7.75	14		7.1	9		1.9	17		3.36	5	1.57		9		1.4	60		8.6
D	1																					
	2																					
	3	4	3.44		1	0.5											1	0.15				
	4							1	0.21					3	0.9		2	0.3				
	5																					
	6																1	0.15				
	7													4	1.25					6	0.8	
	8																					
	9																					
	10																					
Total		4		3.44	1	0.5		1		0.21				7		2.2	4		0.6	8		0.8
E	1	1	0.86		3	1.52											1	0.15		1	0.14	
	2	4	3.44		2	1.01		2	0.42		6	1.18		2	0.62		4	0.6		8	1.1	
	3							1	0.21		2	0.4					1	0.15		2	0.3	
	4																					
	5																					
Total		5		4.3	5		2.53	3		0.63	8		1.58	2		0.62	6		0.9	11		1.6
F	1	1	0.86		1	0.5					1	0.2										
	2	2	1.72		5	2.53		18	3.82		7	1.4		13	4.08		26	3.9		30	4.3	
	3	1	0.86		9	4.56		18	3.82		13	2.5		10	3.14		21	3.2		20	2.9	
	4	12	10.3		19	9.67		29	6.15		20	3.9		23	7.2		35	5.3		51	7.3	
	5				1	0.5		1	0.21													
Total		16		13.8	35		17.7	66		14.0	41		8.0	46		14.4	82		12.5	101		14.5
G	1							11	2.33		12	2.4		2	0.62		6	0.9		6	0.8	
	2	1	0.86		5	2.53		2	0.42		3	0.6		5	1.57		1	0.15		2	0.3	
	3				1	0.5																
	4													1	0.31							
	5																			1	0.14	
	6				1	0.5		1	0.21		3	0.6					1	0.15				
	7				2	1.01		2	0.42		1	0.2		3	0.9					2	0.3	
Total		1		0.86	9		4.56	16		3.38	19		3.74	11		3.4	8		1.2	11		1.6
H	1				13	6.59		11	2.33		23	4.5		11	3.4		13	2.0		51	7.3	
	2	4	3.44		6	3.04		49	10.4		24	4.7		12	3.7		69	10.5		70	10.0	
	3	3	2.58		4	2.03		24	5.09		28	5.5		16	5.03		51	7.7		16	2.3	
	4										1	0.2		3	0.9		1	0.15		30	4.3	
	5	1	0.86																			
	6	10	8.62		2	1.01		21	4.45		12	2.4		11	3.4		33	5.0				
	7	14	12.0		7	3.55		22	4.67		37	7.3		4	1.25		26	3.9		21	3.0	
Total		28		24.1	32		16.2	107		26.94	125		24.6	57		18.0	193		29.4	188		27.0
I	1	8	6.89		1	0.5		79	16.7		63	12.4		14	4.4		34	5.2		18		2.6
	2																					
	3																					
	4																3	0.45				
	5	1	0.86		2	1.01		4	0.83		5	0.1		1	0.31		1	0.15				
Total		9		7.75	3		1.51	83		17.54	68		13.4	15		4.7	38		5.8	18		2.6
J	1																					
	18																					
Total														14		4.4	38		5.8	144		20.7
		N=116			N=197			N=471			N=507			N=318			N=656			N=695		

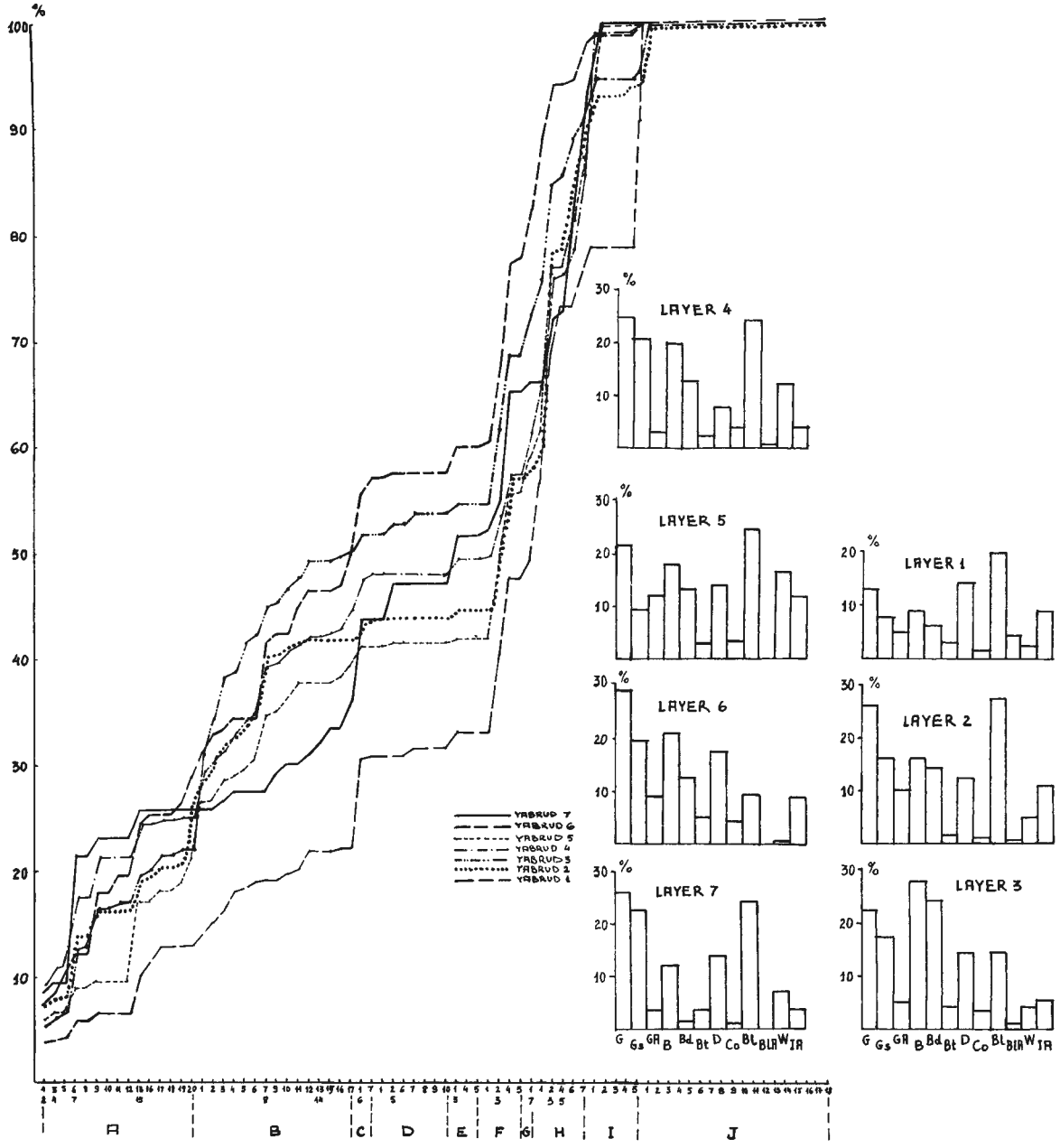

Fig. 3. Cumulative Graphs and Histograms of assemblages in Layers 7 to 1.
Tool Groups Index: G-Total Scrapers; Gs-Simple Scrapers; GA-Aurignacian Scrapers; B-Total Burins; Bd-Dihedral Burins; Bt-Truncated Burins; D-Denticulates; Bl-Total Retouched Blades; BlA-Aurignacian Blades; W-El-Wad points. IA-Aurignacian Index (Aurig. Scrapers + Aurig. Blades).

Beside the lithic material there was found one pointed Bone (Fig. 4 ; 11). A hearth was excavated in the center of the habitat; it was rounded and shallow in shape, its bottom filled with charcoal. It had a diameter of 40 cm.

Layer 6 (about 1 m. thick)

It is richer in its lithic composition than the previous layer, especially in the waste blanks (197 tools and 123 waste blanks). The ratio of blades to flakes reverses in this layer, especially among the tools, where flakes have twice the frequency of blades (46.5% and 24.4% respectively); among the waste both categories equale in number (41.4% and 42.4% respectively). While the blades are long and thin in most cases, the flakes are distinctly irregularly shaped; the pieces are made of redish and bleu flint of bad quality. It is found in large nodules on the plateau above the Skifta valley.

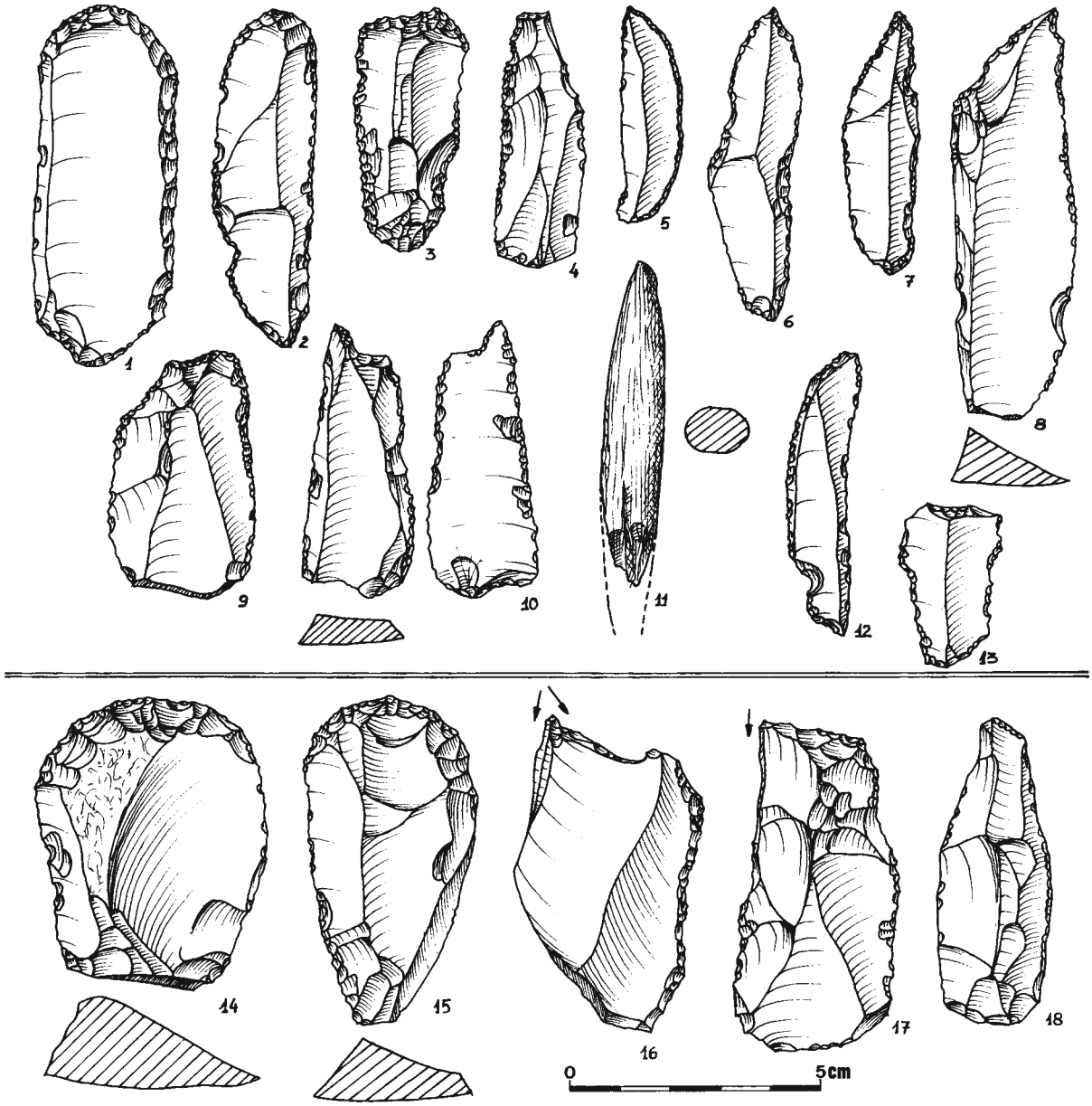

Fig. 4. Layer 7 (Rust, 1950, Tafel 79–80): 1, 2, 3-Scrapers on Blades; 4, 13-Truncated Pieces; 5-Chatelperron Point; 6, 7, 8-Large Points; 9-Retouched Levallois Flake; 10-Borer; 11-Bone Point; 12-Retouched Blade.
Layer 6 (Tafel 81–82): 1, 2-Scrapers on Flakes; 3, 4-Truncated Burins; 5-Retouched Blade.

Levallois technique is still common and even more abundant than in the previous layer. It is used here more among the tools (26.7 % of the tools). Smooth platforms dominate distinctly (31.4 % among the tools and 50.4 % among waste). Facetted platforms are quite rare.

There are also some typological changes from layer 7. Scrapers still dominate over Burins (28.9 % and 21.3 % respectively).Simple Scrapers decrease a bit (19.76 %), produced more on flakes than on blades (Fig. 4 ; 14–15). There are also some typical Pointed, Ogival and Circular forms. The main change is reflected in the increase of Aurignacian Scrapers (9.15 %), most of them carinated (4.06 %). There are some typical Rabots too (2.53 %) and a few atypical Nosed Scrapers. The Burins (Fig. 4 ; 16–17) are more numerous than the Simple Scrapers, the Dihedral types being more abundant than the Truncated types (12.6 % and 5.06 % respectively). Only very few burins are made on nice blades in this layer. Borers (7.1 %) resemble to those of layer 7 in frequency and in morphology. Truncations (2.53 %) were made on large and thick flakes rather than on blades. Points decrease distinctly (1.5 %), the Large Pointed Blades being the most frequent. A similar phenomenon is attested among the Retouched Blades (Fig. 4 ; 18). Combined Tools (4.56 %) increase distinctly and contain a rich variaty of specimens. Notches and Denticulates become more abundant but less typical than in layer 7 (17.7 %).

Among the Cores (10 specimens) the Shapeless type is dominant (4 specimens). There are also two Flat Bipolar Cores and some Prismatic and Pyramidal types too.

A hearth was excavated in this layer too. It is similar in position in the habitat and in shape to the former one. It had a diameter of 35 cm., filled with ashes and charcoal deposit.

Layer 5 (about 60 cm. thick)

It is the first Upper Paleolithic layer to have a rich lithic material (471 tools and 323 waste blanks). Levallois technology appears in a negligable percentage. Blades dominate again among tools and among waste material (57 % and 54.1 % respectively). Punctiform bases are distinctly dominant in both categories, but are more numerous among blades than flakes. Smooth bases are quite frequent among flakes. Bladelets are quite numerous among waste material.

Typologically, there is a small decrease in the frequency of scrapers, but they are still more numerous than the Burins (21.4 % and 18 % respectively). Aurignacian Scrapers are for the first time more numerous than the Simple types (11.86 % and 9.52 % respectively). The Simple Scrapers bear a nice marginal retouch (Fig. 5 ; 3). Those on blades are less typical compared with layer 6 (Fig. 5 ; 1–2). The Aurignacian specimens are nice, with single and double types. The few Nosed Scrapers are still atypical (Fig. 5 ; 4–5). There are some Ratbots too. Among the Burins Dihedral types dominate distinctly over Truncated types (13.34 % and 2.96 % respectively); the first group is more refined than the latter. Morphologically the whole group is richly variable (Fig. 5 ; 7–9). There are only a few Borers (1.9 %) (Abb. 5 ; 14). Multiple Tools continue to be richly variable (3.14 %); Burin/Scraper types are the most common, besides some Burin/Borer specimens (Fig. 4 ; 6). Retouched Blades compose a very large and variable group (24.6 %) but less typical and smaller in dimensions than in the previous layers. Points constitute the largest group of tools (26.9 %), with very typical El-Wad Points (Fig. 5 ; 15–17) and a group of Large Pointed Blades which resembles morphologically very much to the former group (Fig. 5 ; 10–13). No Chatelperron types were recovered in this layer. Two large "Yabrudian" Racloirs were already mantioned by Rust and thought to reflect an archaic influence in the Early Upper Paleolithic at the site.

The Cores are for the first time very abundant too (53 specimens). There are numerous Prismatic Types (22 specimens) and Flat Unipolar and Bipolar Cores (10 specimens all). There are 5 Prismatic, two Levallois and a single Discoidal types.

A fireplace similar to the previous one was excavated. It had a diameter of 40 cm.

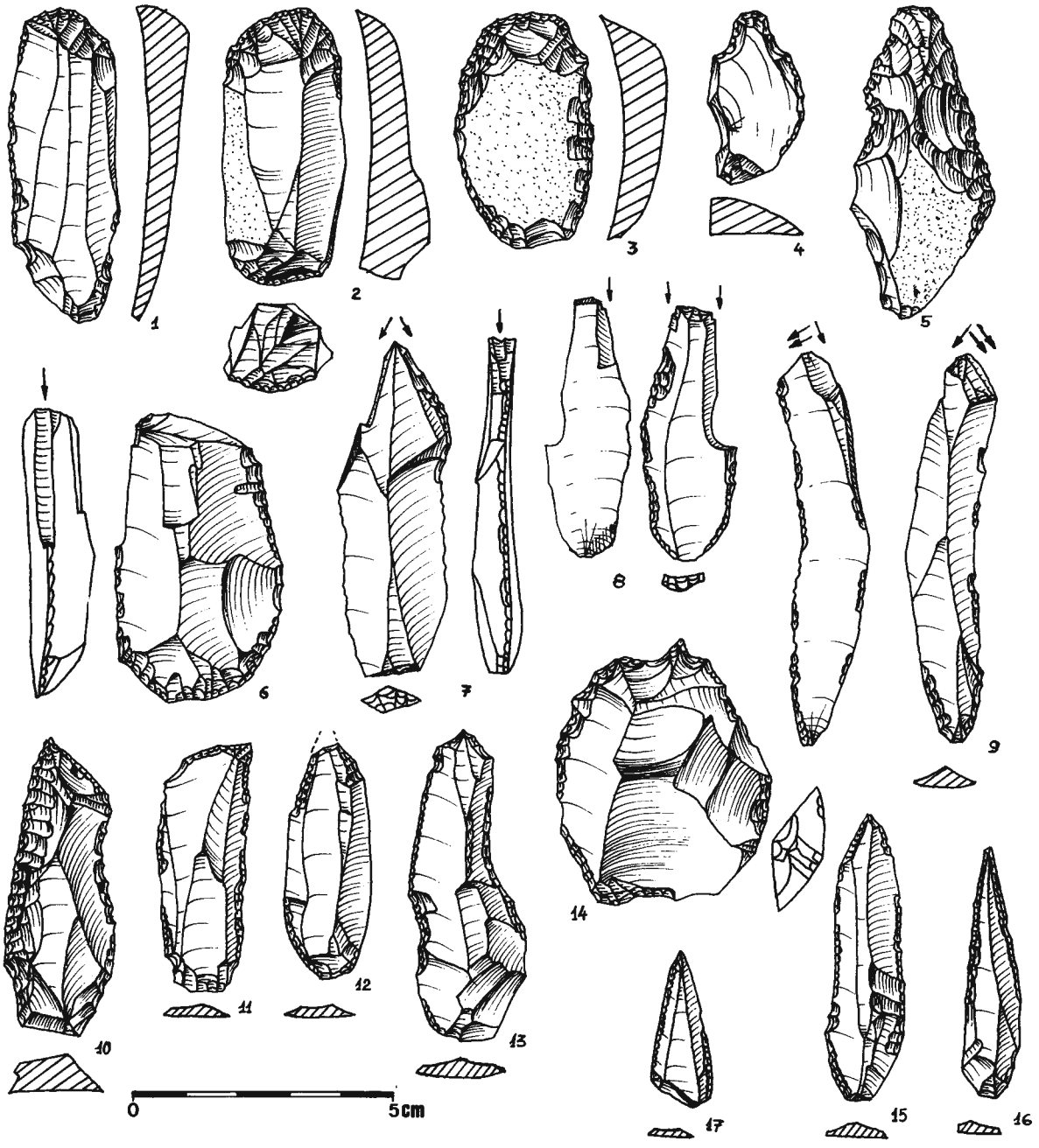

Fig. 5. Layer 5: 1-Scraper on Blade; 2-Double Flat Scraper; 3-Scraper on Flake; 4, 5-Nosed Scrapers; 6-Burin/Scraper; 7, 9-Dihedral Burins; 8-Truncated Burin; 10, 13-Large Pointed Blades; 14-Borer; 15–17-El-Wad Points.

Layer 4 (about 50 cm. thick)

It is a rich assemblage in lithic material (507 tools and 374 waste blanks), as well as in bone tools (5 bi-conical points) and pierced snails (Helicella, Smaragdia, Viridis, Nassa, Gibbulesa and Dentales) (de Sonneville-Bordes, 1956; Rust, 1950, Tafel 86). There are also, for the first time in the site, ocher and bitumen (asphalt)

remains, beside some grindingstones probably used with relation to these materials. Rust suggested the bitumen remains as a bias for handling certain flint tools. There is also a piece of obsidian in the collection. The flint in general is very colorful, with red, violate, brown and yellow shades dominating.

Technologically, blades are dominant among tools (66.2 %) and among waste material (51.3 %). Bladelets make a distinct group as waste production (37.4 %). Levallois technique is almost negligable. Punctiform bases dominate more among blades than among flakes. Smooth platforms are frequent too, appearing in similiar numbers in both categories.

Scrapers (24.8 %) and Burins (19.7 %) are the largest tool groups in this assemblage. Among the former there are still double-patinated specimens. Scrapers on Flakes are typical, made usually on regular short and wide blanks (Fig. 6 ; 5–6). Scrapers on Blades were finely retouched on both edges (Fig. 6 ; 1–2). There are some nice Double Flat Scrapers on Blades (Fig. 6 ; 4, 9) and one with typical Aurignacian retouch (Fig. 6 ; 3). There is a Distinct decrease in the frequency of Aurignacian Scrapers (3.7 %), most of them not typically made (Fig. 6 ; 8, 10–11). Burins were made either on thick blanks or on nice slim blades (Fig. 6 ; 12, 17–18). The ratio between the Dihedral and the Truncated Burins is similar to the previous layer (13 % and 2.7 % respectively). We distinguished also a nice group of Burins on Straight/Oblique Truncations (Fig. 6 ; 15) and a nice Beaked specimen on a large blade (Fig. 7 ; 19)

Borers are very typical (3.36 %), with finely exantuated working-tips; some are massive-looking specimens (Fig. 7 ; 20). Most of the tools in this category were made on blades (Fig. 6 ; 13). Truncated tools (1.57 %) were nicely retouched. Among these there is a group of Concave Truncated Blades, already mantioned by Rust (Fig. 7 ; 21–23). These were encountered also in layer 7 of this shelter as well as in the "Pre-Aurignacian" layers in shelter I. Composite Tools (3.74 %) are dominated by the Scraper/Burin class (Fig. 6 ; 14, 16). Notches and Denticulates (8 %) were made mostely on blades (Fig. 7 ; 24); the Denticulates are particularly typical. Retouched Pieces comprise the largest group (24.6 %). It is composed of a distinct group of Retouched Flakes made on irregular blanks, bearing fine marginal retouch. Blades are finely retouched too (Fig. 7 ; 25–27). No Aurignacian retouch could be detected. One blade is roughly strangled. El-Wad Points (12.4 %) comprise both specimens made on large blades and on fine blades or bladelets (Fig. 7 ; 28–30). In both categories the retouch is very typical. Pointed Blades are usually long and wide, with an edge retouch and some nibbling at the point.

Cores are quite abundant (35 specimens), mainly with Pyramidal (6 specimens) and Prismatic types (8 specimens). The rest of the assemblage consists of Flat Unipolar Cores (3 specimens) and a still distinct group of Discoidal (3 specimens) and Levallois Cores (4 specimens).

It is the only layer to contain a large stone-built hearth (Rust, 1950; Tafel 75). It was a circular instalation built of limestone blocks all around, in a diameter of 1 meter. The inside was filled up with charcoal, especially in its central part. At the entrance to the living area the remains of a low wall were excavated too; these remains may have belonged to an ancient wind-break.

Layer 3 (about 30 cm. thick)

This layer has quite a large industry (337 tools and 116 waste blanks). Bladelets dominate among the material (69.9 %). Among the tools blades are more numerous than flakes (54.9 % and 34.2 % respectively), with wery few Levallois blanks in both categories. There is also a distinct group of Retouched Bladelets (10.8 %). Punctiform bases dominate in this assemblage both among tools and waste material. There is also an outstanding percentage of broken flakes. Rust noted also a large Double Pointed Bone and another broken Pointed Bone (Rust, 1950; Tafel 87).

It is the first and only layer where Burins outnumber Scrapers (28.3 % and 22.3 % respectively). Scrapers on Flakes are typical, usually made on short and refined blanks (Fig. 8 ; 4, 7). The Retouched type is the most frequent. Some have a pair of notches at the base. Scrapers on Blades are typical too (Fig. 8 ; 1–2); most of them have a marginal retouch, and two bare a typical Aurignacian retouch on both edges (Fig. 8 ; 3). There is

only a single Double Flat Scraper in the assemblage (Fig. 8 ; 5). Aurignacian Scrapers have here a reduced frequency (5.03 %), with only a few typical Steep Scrapers (Fig. 8 ; 6, 11). For the first time we encounter nice Nosed Scrapers, some of them quite thick (Fig. 8 ; 8). There are also two Double Carinated specimens. Two specimens are of the "Ksar-Akil Scraper" type. Both of them were made on blades. A less typical scraper of the same kind was made on a flake.

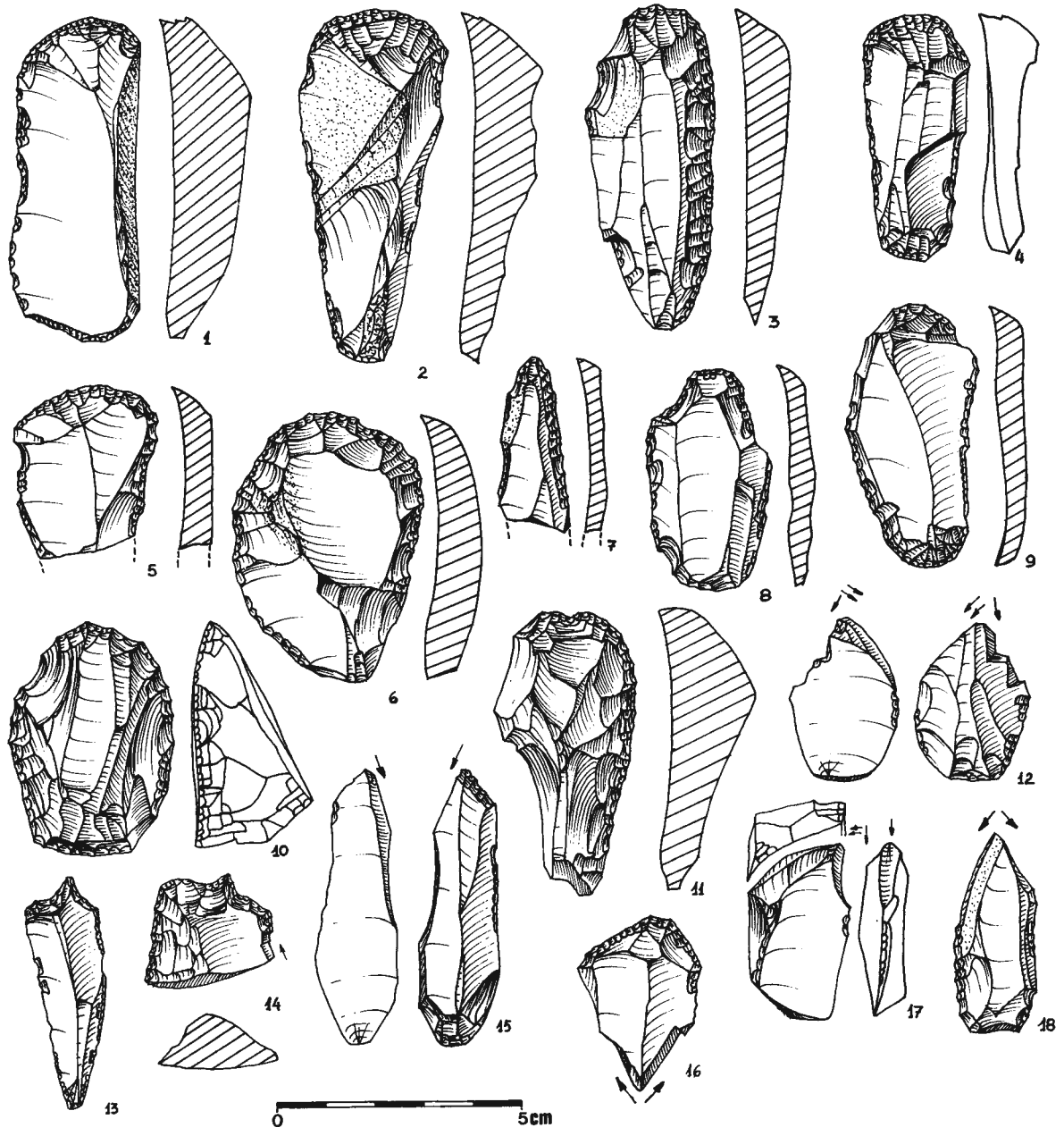

Fig. 6. Layer 4: 1, 2-Scrapers on Blades; 3-Scraper with Aurignacian Retouch; Double Flat Scraper; 5,6-Scrapers on Flakes; 7-Pointed Scraper; 8, 10-Flat Nosed Scraper; 10-Double Carinated Scraper; 11-Carinated Scraper; 12, 17, 18-Dihedral Burins; 13-Borer; 14-Burin/Borer; 15-Truncated Burin; 16-Scraper/Burin.

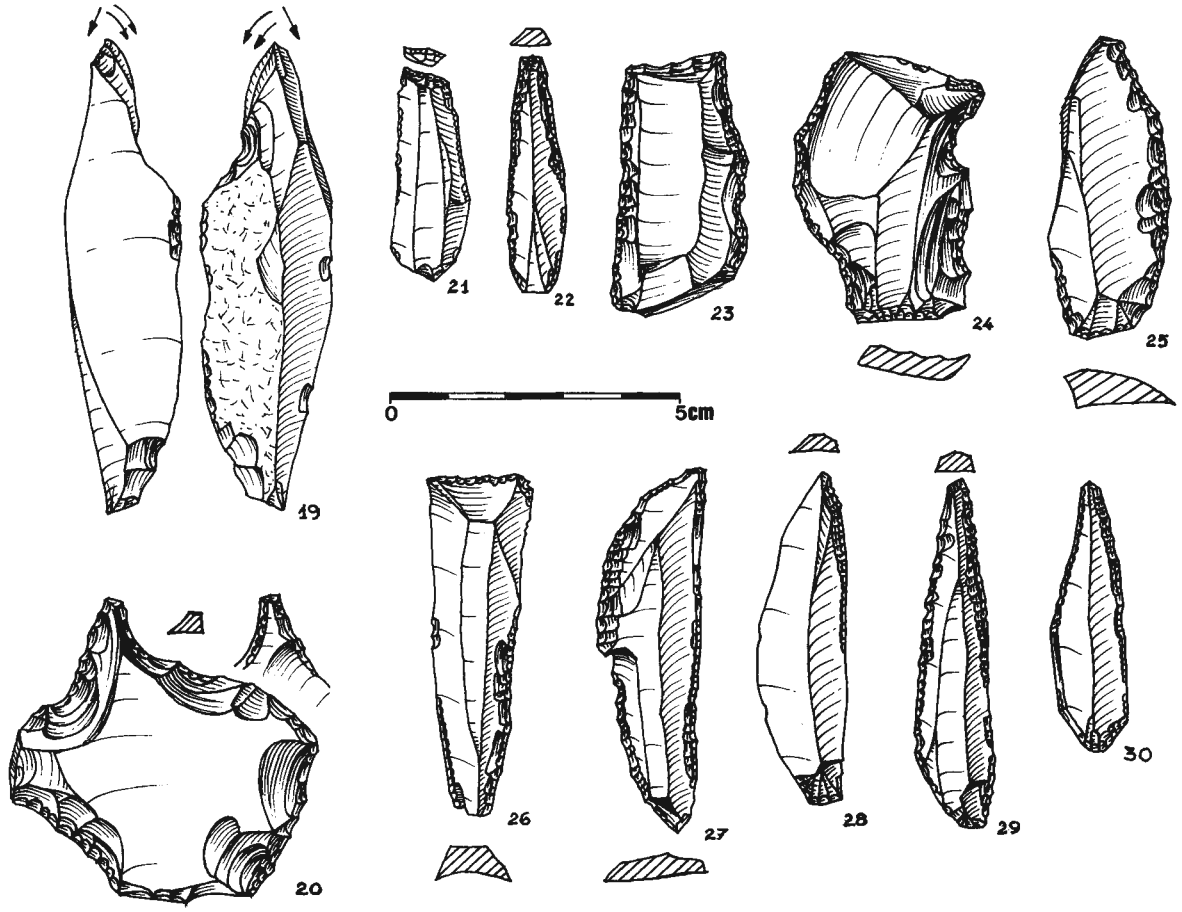

Fig. 7. Layer 4 (Continue): 19-Beaked Burin; 20-Large Borer; 21–23-Truncations; 24-Denticulated Piece; 25, 27-Large Pointed Blades; 26-Retouched Blade; 28–30-El-Wad Points.

Among Burins (28.3 %) the ratio of Dihedral to Truncated types is still constant (24.5 % and 4.4 % respectively). Dihedral Burins were made mostely on thick blanks and produced by short spalls (Fig. 9 ; 13, 15–16). Truncated Burins were made usually on refined blanks, using frequently fine blades (Fig. 8 ; 9–10 · 9; 12, 14). Oblique and concave truncations dominate. There are also some typical double specimens (Fig. 9 ; 20). We could distinguish further, following Rust's observations, a restricted but typical group of Beaked Burins.

Truncated Tools (0.62 %) are very rare (Fig. 9 ; 22). There were found also some Backed Pieces (2.2 %). Notches and Denticulates (14.4 %) appear here in their maximum frequency; notches were mostly made on flakes, while denticulates were frequently made on large blades with clearly deep depressions. Retouched Blades are still numerous (14.6 %), three specimens bearing typical Aurignacian retouch (Fig. 9 ; 23). All the rest were plainly retouched, sometimes changing to fine denticulations (Fig. 9 ; 24–25). El-Wad Points are typical but diminish in number quite abruptly compared with the previous layer (4.4 %). There are also some Chatelperron Points, some of them still on large blades and irregularly retouched (Fig. 9 ; 17–18, 26). Among the miscelenia we have a typical Emireh Point nicely retouched on both edges (Fig. 9 ; 21).

Among the Cores (31 specimens) the Prismatic type is dominant (13 specimens), beside Flat Unipolar and Bipolar Cores (8 specimens). There are also some Globular and Pyramidal Cores (3 specimens of each).

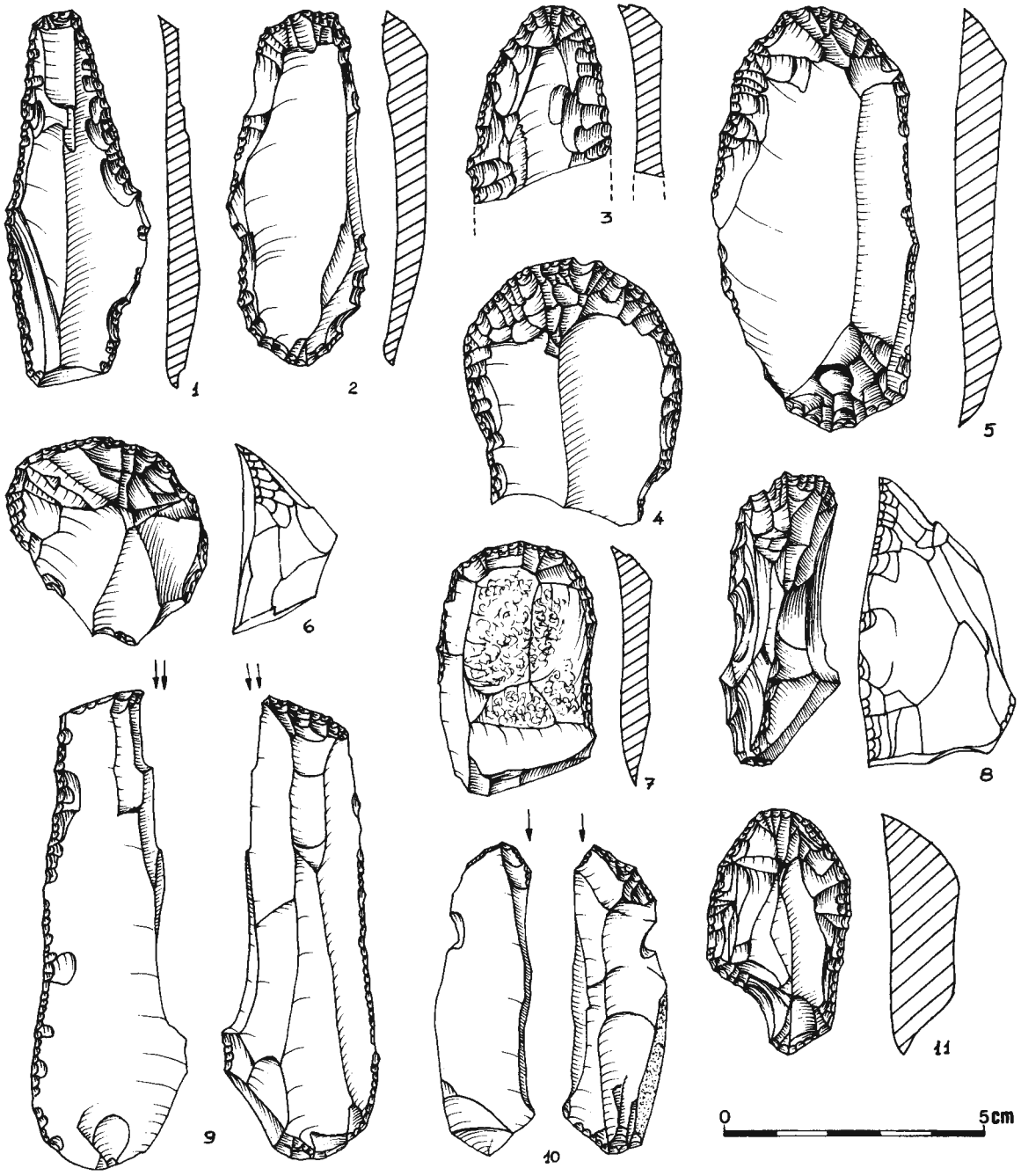

Fig. 8. Layer 3: 1, 2-Scrapers on Blades; 3-Scraper with Aurignacian Retouch; 4, 7-Scrapers on Flakes; 5-Double Flat Scraper; 6, 11-Carinated Scrapers; 8-Narrow Thick Nosed Scraper; 9, 10-Truncated Burins.

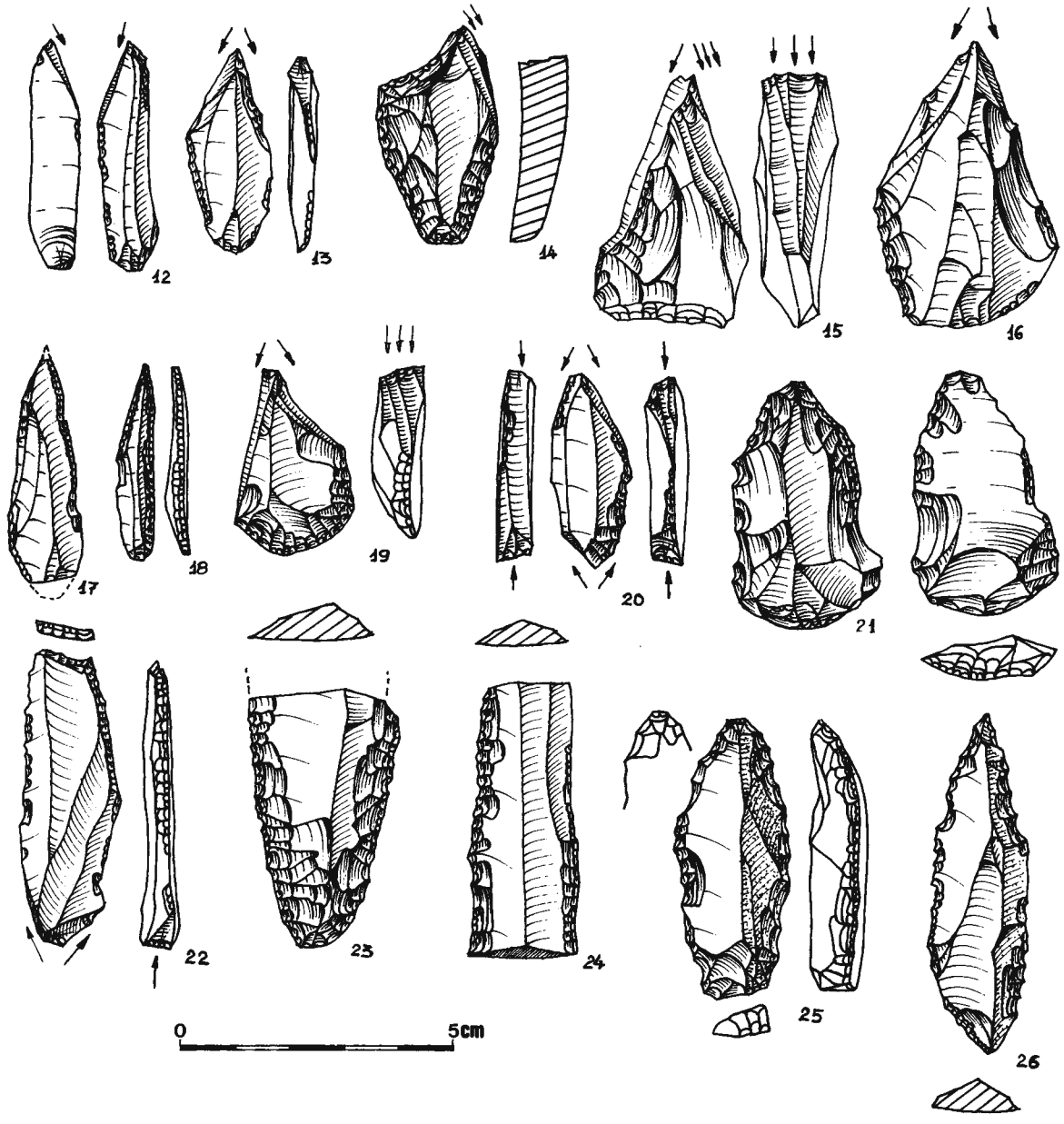

Fig. 9. Layer 3 (Continue): 12, 13, 16-Dihedral Burins; 14-Scraper/Burin; 15-Burin/Truncation; 20-Double Dihedral Burin; 17, 18-El-Wad Points; 21-Emireh Point; 22-Burin/Borer; 23-Aurignacian Blade; 24-Retouched Simple Blade; 25, 26-Large Pointed Blades.

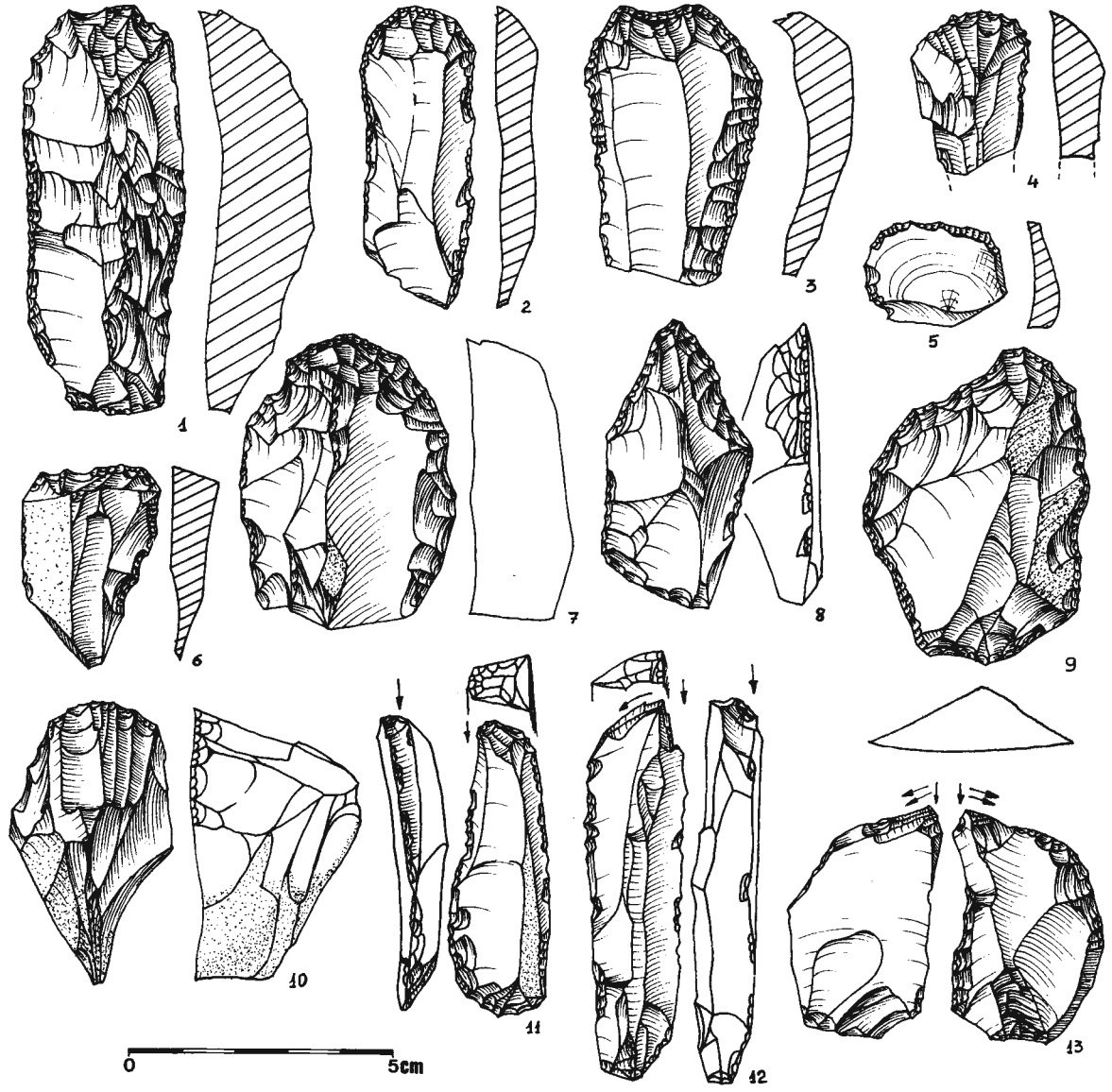

Fig. 10. Layer 2: 1, 2-Scrapers on Blades; 3-Scraper with Aurignacian Retouch; 4, 5-Ksar-Akil Scrapers; 6-Scraper on Flake; 7, 10-Carinated Scrapers; 8-Nosed Scraper; 9-Double Flat Scraper; 11-Truncated Burin; 12-Beaked Burin; 13-Dihedral Burin.

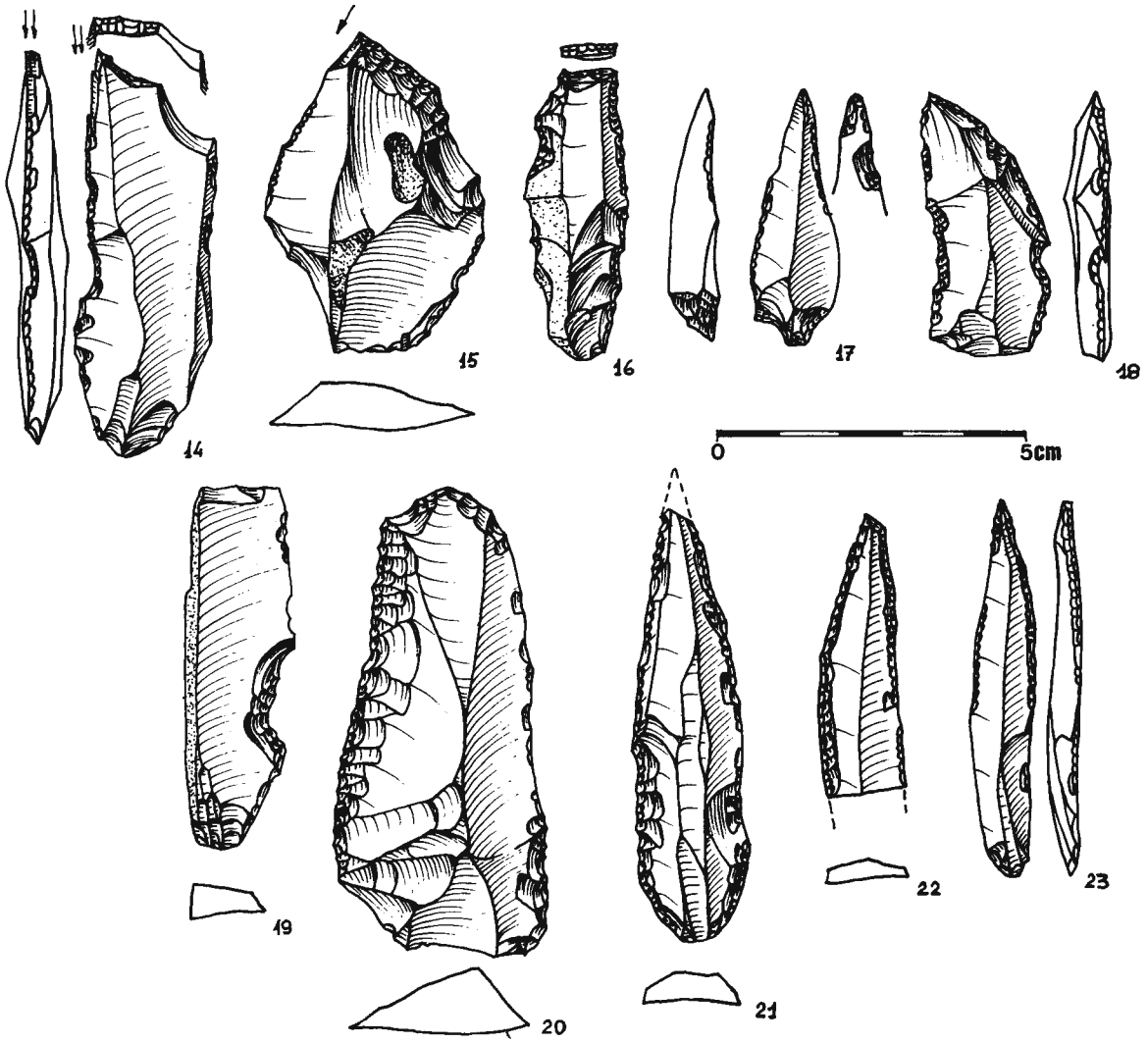

Fig. 11. Layer 2 (Continue): 16-Truncation; 17-Borer; 18-Denticulated Pointed Flake; 19-Notch; 20-Aurignacian Blade; 21–23-El-Wad Points.

Like in the previous layers, a hearth was excavated here too; it was a shallow depression with a diameter of 30 cm.. As already mantioned in the introduction, the flint in this layer has particular features – a very dark patination and intensive fire cracking signs or many blanks (tools and waste). All these point for an intensive use of fire and heat in this period of settlement in the shelter.

Layer 2 (about 20 cm. thick)

This layer contains a very abundant industry (656 tools and 305 waste blanks). The flint used here is deriving from large nodules and slates; this row material is abundantly found east of Nebek valley. It produced large blanks for the tool manufacturing, bearing usually a whitish patina. All these features distinguish this industry from the previous ones in the shelter. Rust suggested to correlate this industry with the one found in layer 6 on morphological grounds, calling both "Yabrudian style industries". According to the data collected by us for both layers it is hard to maintain this hypothesis.

Technologically, it is a non-Levallois industry, with a distinct majority of blades (65.4 % among tools and 62 % among waste material). There is a large number of thick blocks[2], especially among the tools (22.7 %). Flakes have a low frequency in both categories. Punctiform bases are dominant, especially among the blades. Among the tools there are also numerous smooth based blades. There is still a distinct number of facetted bases among the tools. Bladelets are more frequent here than in the previous layers.

Scrapers dominate over Burins (26.2 % and 16.1 % respectively), after the eruption in the previous layer. The specimens on blades dominate distinctly; they were made on long and narrow blades with at least one edge finely retouched (Fig. 10 ; 1–2). Some bear fine denticulation. Only one scraper has a typical Aurignacian retouch (Fig. 10 ; 3). One is "Strangled-like" on one edge. There is a distinct group of Scrapers on Blades without retouch on the edges, usually manufactured on irregular blanks. Scrapers on Flakes were usually nicely retouched (Fig. 10 ; 6, 9). There is one Double Mixed Scraper on a thick blank. Aurignacian Scrapers are quite numerous (9.9 %), most of them made on thick blanks with a large scraping-edge (Fig. 10 ; 7, 10). Some are slightly denticulated. The Flat Nosed Scrapers are finely retouched (Fig. 10 ; 8); three are tick and less typical. There is a nice Double Steep Scraper. We distinguished three "Ksar-Akil Scrapers", two of them typically made; the third is a bit wider than usual. In all three the scraping-edge is finely denticulated (Fig. 10 ; 4–5).

Among the Burins there is an increase in the ratio of Dihedral to Truncated types (14.5 % and 1.45 % respectively). Carinated Burins (Fig. 10 ; 13) and Beaked Burins (Fig. 10 ; 12) appear also in moderate frequencies. Most of the burins were made on thick and elongated blanks. Dihedral specimens were found on finer blades and flakes (Fig. 11 ; 14–15). There are also two Double Mixed specimens.

Borers have a minor frequency (1.4 %); they are quite typical in morphology, mostly made on flakes. Truncations are rare too (0,9 %); with atypical specimens, most of them on large blades (Fig. 11 ; 16). Notches and Denticulates are still numerons (12.5 %); the denticulates are found more on blades than of flakes (Fig. 11 ; 18–19). Composite Tools (1.2 %) are typical but quite rare (Fig. 10 ; 11). One specimen is composed of a fine Nosed Scraper and a Borer (Fig. 11 ; 17).

Retouched Blades compose the largest group, with a maximum frequency in the whole sequence (27.4 %). They are usually finely retouches on one or both edges or by typical Aurignacian retouch (Fig. 11 ; 20). There is a group of slim blades going to bladelets. We found still some roughly Large Pointed Blades. El-Wad Points increase a bit in this layer (5.2 %), forming a nice and typical group (Fig. 11 ; 21–23); only a few were made on real bladelets.

A hearth was excavated in this layer too. It had a diameter of ca. 30 cm..

Layer 1 (about 10 cm. thick)

It is the uppermost layer in the sequence, only 10 cm. below the recent surface. This last has gone through levelling works in connection with the periods of habitation of Palmyra region during Greek and Roman epochs. These instalations caused the mixture of Neolithic and Roman sherds, together with "Mesolithic" (Epi-Paleolithic and Natufian) flint. Part of this material is encountered in layers 8,5 and 3 in shelter III.

The flint in use is very colorful and quite small in size of the blanks production. It gave the name to the industry, respectively called "Micro-Aurignacian" by Rust. However, the lamellar index is still high like in most of the sequence. There is a distinct group of re-used Aurignacian and Mousterian specimens; Rust himself could distinguish between pieces clearly deriving from layer 3, in the same shelter, according to its special patination. He stresses also the fine lamellar retouch attested on the tools.

It is the most abundant industry in the shelter (695 tools Fig. 12). Scrapers are still more numerous than Burins (13.1 %) and 9.3 % respectively). The ratio between Simple Scrapers and Aurignacian Scrapers differs from all the other layers – the difference in frequency between both groups diminishes distinctly (7.7 % and

[2] We use the definiton suggested by Movius and Brooks (1971).

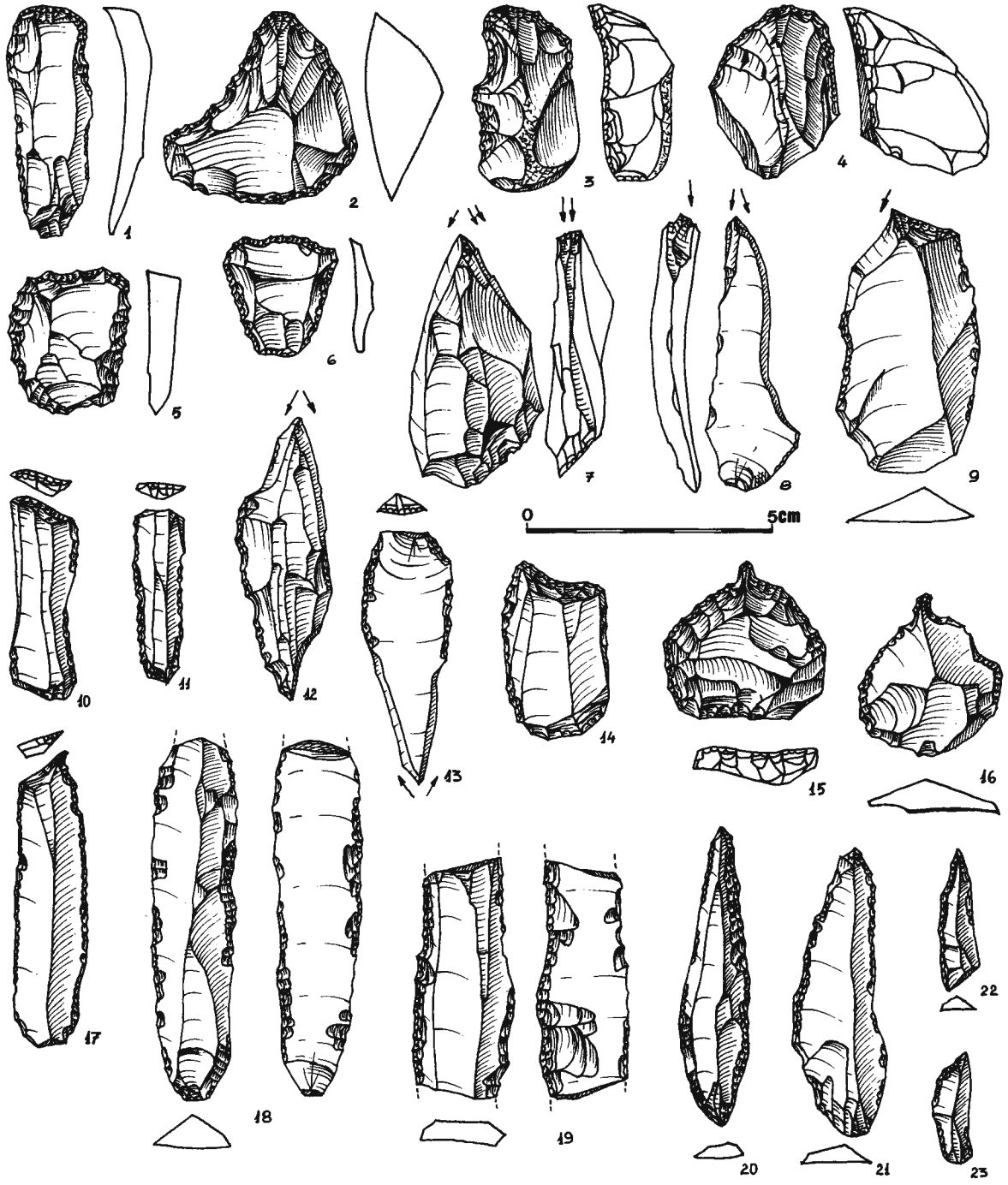

Fig. 12. Layer 1: 1-Scraper on Blade; 2, 3-Nosed Scrapers; 4-Carinated Scraper; 5, 6-Ksar-Akil Scrapers; 7, 8-Dihedral Burins; 9-Truncated Burin; 10, 11, 14-Truncations; 12-Burin/Borer; 13-Burin/Truncation; 15–17-Borers; 18, 19-Retouched Blades; 20, 21-El-Wad Points; 22, 23-Retouched Bladelets.

4.9% respectively). Denticulates and Retouched Blades are the two largest groups of tools (14.5% and 19.7% respectively). It is the only layer where a distinct number of Aurignacian Blades is found (4.3%). Borers increase abruptly (4.3%). There are also some typical El-Wad Points, although in low frequency (2.6%). Retouched Bladelets compose a large group (20.7%); they increase abruptly in this layer after quite a low appearance in the previous ones.

The hearth found in this layer is similar to the previous ones, with a similar position in the shelter.

The Environmental Reconstruction of Southwest Syria during the Recent Würm.

The climatic evidances based on the palynological analysis of this region lie on the study of the Damascus basin on the one hand, and on that of the northwestern Golan on the other. In the first (A. Leroi-Gourhan, 1973; a; b) the Recent Würm, with a starting radiocarbon date of Ca. 33,000 B. C., is found to be very cold and dry. In the other region (Weinstein, 1976) the Main Würm was found to be colder and less humid than the Early Würm in the same zone. These data are certified by pollen spectrum enriched by *Cedrus*, followed by a high level of Irano-Turanian vegetation.

From adjacent regions we have until now a brief account concerning Douara Cave and its vicinities, around the Palmyra Oasis (Suzuki and Takai, 1970; 1973, Ch. IV), and another work on the Ghab region of the northwestern part of Syria (Niklewski and Van Zeist, 1970). The former region indicates a dry period for the end of the Upper Paleolithic sequence in the site (Layers B and A). A similar account is given also for the Ghab valley; the pollen spectrum in the latter indicates the developement of several very dry and cold phases within the late Würm, with a few humid oscillations in between, marking a more pluvial climate. We may add to this the results of the pollen analysis from the Avdat region, Central Negev, indicating the reconstruction of a developed mediterranean woodland during the initial Upper Paleolithic settlement. It is changing to open savannah with scattered trees in the latest phase of the Upper Paleolithic period (Horowitz, 1977).

Lacustrine beds are found to be poorly developed in the interior basins of Syria in the Late Pleistocene period (Butzer, 1975). This evidence adds to the fact that the western Syrian plateau, right behind the Anti-Lebanon ridge, is protected from percipitation, making the whole region a semi-arid one.

As for temperature reconstruction, most of the scholars concerned with the subject (Kaiser, 1966; 1973; Messerli, 1966; Butzer, 1958; 1975 and Klaer, 1960) agree that there was a distinct lowering of the snow-line in the mountainous regions of the Levant and Asia Minor. It is thought to have lowered about 500–7000 meters, causing a decrease of about 4–6° C for the Late Würm; still today Yabrus and Jerf-Ajla (Palmyra region) have the coolest climate of all the east-mediterranean prehistoric sites. In both, the minimum normal daily temperatures are around 0° C. Extreme temperatures in Jenuary drop sometimes down to −7° C (Farrand, 1974; 1977).

The faunal evidence deriving from Yabrud II and from the lowermost layers in shelter III (Layers 8–6) (Lehmann, 1970) correlates well to the facts presented above. The remains contain both the Syrian wild ass (*Equus hemionus* sp.), Ibex (*Capra ibex*) and Gazella (*Gazella* sp.). This fauna indicates in general both high elevation and an open grassy landscape. At Douara Cave, which is still further into the Syrian desert plateau, layers B and A contain remains of *Dama, Gazella, Camelus* sp. and a modified number of carnivors (e. g., *Mariones* and *Vulpes*). This wide faunal spectrum again points out an open grassland environment on a high altitude. We may add to this Tchernov's interpretation of the microfauna from Umm-Qatafa (judean desert) which indicates a progressive dessication in the Levantine upland regions bordering the desert fringe (Tchrnov, 1968).

Summing up these data (see also: Marks, 1975 a), the southwestern region of Syria appears to have been cooler and drier than today, suggesting the reconstruction of an open grassland and scattered trees, with Gazella and Wild ass roaming on the plateau, while Dama and Capra are confined more to the tree-covered mountainous zone, namely, the eastern slopes of the Anti-Lebanon ridge.

Discussion

Rust, followed by de Sonneville-Bordes, suggested for the sequence of Yabrud II a "Cycle of Evolution" system rather than a linear evolution from one layer to the other. This theory was based more on the morphology of the assemblages than on proper typological features. It derived also from the hypothesis that each of the layers was completely abandoned, leaving its place to a new "cultural wave". This last theory of "invasions" has been also adopted by F. Bordes while trying to explain the place of the "Pre-Aurignacian" assemblage in shelter I (Bordes, 1960).

The scheme suggested by the above scholars was based on two main points:

1. The "Pre-Aurignacian" of shelter I is more strongly connected to layer 7 of shelter II than the latter is to the rest of the Upper Paleolithic sequence.
2. Each of the layers in shelter II has some cultural affinities with the sequence of shelter I. The outlay of these "connections" is as follows:
   1st cycle: Layers 7,5 and 4 – developing from the "Pre-Aurignacian".
   2nd cycle: Layers 6 and 2 show "Yabrudian" influence.
   3rd cycle: Layers 3 and 1 – have a common origin with the main Aurignacian of Western Europe.

Disputing the scheme proposed above, we shall point out the following data (see graphs and histograms in Fig. 3):

1. Comparing layers 7,5 and 4, the Index Gs/GA is reversed in layer 5 when compared to the two others. The Index Bd/Bt is reversed in layer 7 compared to the others. The indeces of Borers, Truncated Pieces and Denticulates (all named "Specialized Tools" in this paper) differ from one layer to another; only the frequencies of Scrapers, Burins and Points are similar in the three layers. Their cumulative graphs are distinctly different.
2. Layers 6 and 2 show distinct similarity in the frequencies of Scrapers and Burins, but differ completely as to the other groups of tools; their cumulative graphs are quite different.
3. Layers 3 and 1 show the greatest dissimilarity in the whole sequence. It is clear that the affinities suggested by Rust for both were based only on the general morphology of the material.
4. We may stress that if any similarity in frequency distribution is looked for, it should beclaimed for layers 5 and 2 on the one hand, and for layers 7 and 1 on the other. The two former assemblages show similarity in most of the indeces of tools, except for the reversed index of Gs/GA in layer 5, and the higher frequency of El-Wad Points in the same layer. Between layers 7 and 1 the similarities are also quite clear, except for the reversed index of Bd/Bt in layer 7, as well as the high frequency of retouched bladelets in layer 1.

Considering the above data it is clear that the hypothesis put forward by Rust and asserted by de Sonneville-Bordes cannot be accepted; it is hard to perceive any typological affinities between the assemblages in the shelter. However, we could point out some general trends visible in the study of the whole sequence.

1. The index of Scrapers (IG) is the highest in all the layers, showing a stable frequency mainly due to the index of the Simple Scrapers (IGs).
2. The index of Aurignacian Scrapers (GA) is moderate, sometimes quite low, in all the layers.
3. Simple Scrapers are more abundant than Aurignacian Scrapers, except for layer 5 where the ratio reverses.
4. The index of Burins is usually quite high (IB) and stable too. Dihedral Burins (Bd) distinctly dominate over Truncated Burins (Bt), except for layer 7 where this ratio is slightly reversed.
5. The index of Scrapers (IG) is higher than the index of Burins (IB), except for layer 3 where it reverses.
6. Notches and Denticulates (ID) appear in medium but stable frequency along the sequence.
7. Retouched Blades (Bl) have a high frequency; in layer 2 it increases distinctly.

8. El-Wad Points and Large Retouched Points (W) decrease gradually from layer 3 on. It is interesting to note that they are more abundant when Aurignacian Scrapers are abundant too.
9. Retouced Bladelets increase distinctly from layer 3 on.
10. Borers and Truncated Pieces are frequent at the bottom and top of the cultural sequence. They are quite rare in the middle layers.
11. The graphic distribution of all these layers point to closer similarities between layers 5, 4, 3 and 2 than to layers 7, 6 and 1.

The intensity of hearths used in all the layers and their position, one over the other, together with quite a large quantity of lithic material in all of the layers, the existance of bone-tools, shells and obsidian fragments in layer 4, all make Yabrud II and intensive settlement, and may be a "base-camp" site, during the Upper Paleolithic period in Syria (see: Issac, 1971; Nir and Bar-Yosef, 1976, pp. 91-95).

We tried to show above that altough there are differences between the assemblages in the shelter, we can not ignore some clear affinities also. A possible alternative for these typological and morphological variations could be change in funtionality of the tools from one stage to the following.

We would like to take this opertunity to make a short reference to the problems concerning the aspects of the "Pre Aurignacian" as part of the Levantine Upper Paleolithic cultural complex. It is obvious by now that we are dealing with more than one group of tools in different geographical zones. We shall refere here to the following assemblages: 1. The Tabun E assemblage-Mt. Carmel; 2. The assemblage From Abri-Zoumoffen-Lebanese coast; 3. Layer 15 at Yabrud I-Syrian Anti-Lebanon ridge; 4. The Haua-Fteah assemblage-Cyrenaica.

The first three assemblages were found in stratigraphic relation either with Late Acheulean or with Yabrudian strata, while in Haua Fteah case certainly none of these cultures were encountered. However, in all the cases the "Pre-Aurignacian" preceades typical Mousterian layers. On typological ground we may stress the high frequency of Blades, either retouched or non-retouched, of Dihedral Burins and very low percentages of other Upper Paleolithic tools in all of the assemblages enumerated above. Very few Middle Paleolithic tool-types are encountered, though Levallois technique is manifested, mainly by Levallois cores. However, all the scholars concerned stress the fact that most of the blanks were detached by soft hammer, bearing punctiform bases, and that the blade-cores are dominant. (Garrod, 1970; Garrod and Kirkbride, 1961; McBurney, 1967). These typological and technological traditions may have slightly influenced the preceeding Mousterian and Yabrudian assemblages, according to Garrod and Rust, although nothing was found to foreshow the arrival or developement of these new blade industries.

As for the similarities between the above and some known Levantine Aurignacian assemblages, and Yabrud in particular, we might say that both groups are technologically close to each other. This is not the case, however, when comparing their type-lists; most of the types which define the Aurignacian as such, like Carinated Scrapers, Truncated Burins, Aurignacian Blades and different Pointed Pieces, are lacking or make rare appearance in most of the discussed assemblages. We share F. Bordes' opinion that only Yabrud I/15 is comparable, viewing its typological features (Bordes, 1977. See also Fig. 3 in the text for reference).

Coming to the cultural interpretation of the "Pre Aurignacian" we refer again to the main scholars concerned; according to Garrod, based on the data from Tabun and Abri-Zoumoffen, it may have been a new cultural penetration, designated as "makers of Blade Tools", into the Yabrudian habitation of these sites and "... That the makers of the Flake Tools and the makers of the Blade Tools did from time to time come together in a common habitation, at least during the later stages of the Yabrudian" (Garrod, 1970; p. 228). McBurney comprehends the same culture at Haua Fteah as "... Elements of a generalized and wide-spread continuum or complex of numerous small loosely intercommunicating social units, maintaining a separate existance only from other large-scale cultural entities". As for Rust and de Sonneville-Bordes, the "Pre Aurignacian" at Yabrud is a clearly independant cultural entity introduced abruptly during a relatively short period, in between the Yabrudian settlements in the site. We cannot agree with their opinion that layer 7 in shelter II shares more "Pre Aurignacian"affinities than the rest of the Paleolithic layers, although we accept the fact that the "Pre Auri-

gnacian" at Yabrud has some basic similarities to the Upper Paleolithic assemblages in the same site, as has been recently suggested also by F. Bordes: "... Seul Jabroud présente des traits (Carénés, lames massives retouchées) que l'on puisse qualifier de Pré-Aurignacien" (Bordes, 1977; p. 53).

The lack of radiocarbon dates for the appearance and developement span of the "Pre Aurignacian" complex precludes any clear answer as to whether we are dealing with different centers of similar cultural activities existing at the same epoch all over the Levant or if they indicate similar typological and technological adaptations of the Yabrudian or latest Acheulean in different geographical zones. We have to keep in mind an additional occurance of a mixed Yabrudian/Amudian assemblage discovered by Turville-Petre in Zuttiyeh (Turville-Petre, 1927). In any case we do not agree with F. Bordes that only a short period separated the "Pre Aurignacian" from the time Upper Paleolithic cultures appeared in the Levant. Considering that there was a period of at least 6,000–7,000 years separating the end of the Mousterian and the beginning of the main Upper Paleolithic cultural developement (see Table 1 in the text and also Henry and Servello, 1974), and if we still add to that even a short Mousterian or Yabrudian occurences, we are still in a range of some 10,000 to 15,000 years before we get to a proper Upper Paleolithic industry.

The comparison of the Yabrud II sequence to other Levantine Aurignacian assemblages involves the following sites: Ksar-Akil and Antelias (Lebanon)[3]; El-Wad, Kebara, Rakefet and Sefunim (Mt. Carmel)[4]; Erq el-Ahmar and E-Taban (Judian Desert)[5] (Table 2).

Yabrud II layer 7 seems to belong to the beginning of the "Second Transitional Stage" at Ksar-Akil rockshelter (K. A. phase Bii). This stage is signified by a high lamellar frequency, containing mainly Retouched Blades and Large Points on Blades. El-Wad Points are typical but not very numerous. End Scrapers are very abundant and typically manufactured. Burins are quite rare. According to an analysis made by Copeland (Copeland, 1975), the assemblages from E-Taban B and from Erq el-Ahmar F should be put a bit earlier and considered as a "Transitional Stage" without Chanfrains. Layer 7 at Yabrud II may be considered a bit later due to the clear manifestation of typical Aurignacian Scrapers.

Yabrud II layer 6 is related by most of the scholars to the main Aurignacian stage with the rest of the Yabrud sequence (Sonneville-Bordes, 1956; Copeland, 1975). According to our study of the material we tend to relate thi assemblage to a secondary cultural phase within the K. A. Bii sequence, with some more "Aurignacian" affinities than in layer 7. Burins and Aurignacian Scrapers are quite numerous. There is an abrupt disappearance of the El-Wad Points. This layer differs from the others in its morphological features too; no other assemblage available in this study could be related to this layer; it has some affinities with Kebara E.

Kebara E, Erq el-Ahmar D-E and Antelias IV present similar typological and morphological features; they seem to fit into the first stage of the "Levantine Aurignacian B" at Ksar-Akil. In this stage Scrapers outnumber Burins, and Simple Scrapers dominate distinctly over Aurignacian Scrapers. Burins are more abundant in Antelias than in the two other assemblages. El-Wad Points are numerous in all three assemblages. It is interesting to note that there is a closer typological similarity among the Antelias assemblages than each of them and the Kebara or Erq el-Ahmar assemblages. We already noted the affinities between Kebara E and Yaybrud II/7–6.

Yabrud II layers 5 and 4 group solely into another sub-stage of the "Levantine Aurignacian B". El-Wad Points and Burins have similar frequencies as in the previous group. Aurignacian Scrapers, Large Points and Retouched Blades are more abundant in this complex. In layer 5 we get even a ratio of GA>Gs.

Yabrud II layers 3 and 2 and Rakefet IV seem to form another cultural unit. Burins dominate distinctly over Scrapers, and El-Wad Points are completely absent. In contrast, Retouched Blades (plain and Aurignacian) are quite numerous.

[3] The histograms presented for this site were extrapolated from percentages presented by Copeland and Hours (1974).

[4] See for reference: Ronen (1968; 1971) and Stekelis (1961).

[5] For detailed statistics concerning these sites and others see a previous article by the autor of this paper (Ziffer, 1976).

Table 2. Comparison of the Yabrud II sequence to other Levantine Aurignacian assemblages

Levantine Sequence	Ksar-Akil		Antelias	Yabrud II		Kebara		Rakefet		El-Wad	Sefunim	Erq Ahmar E-Taban
	Layer	Date (B.P.)		Layer	Date	Layer	Date	Layer	Date			
K.A. Phase A	23–21											Taban B Ahmar F
K.A. Phase Bi	20–18											
K.A. Phase Bii	17–15			7 6								
Levantine Aurignacian A	14–12	Ca. 36,600										
Levantine Aurignacian Bi	11–10		IV			E	33,350~					Ahmar D
Levantine Aurignacian Bii	9–8	Ca. 32,000		5,4								
		Ca. 28,500		3,2				IV	33,800~			
			III, II					III	33,800~		10	
		Ca. 27,000 Ca. 26,000				D2		II	18,000~ 15,000~	E-D1		
Levantine Aurignacian C	7 6	Ca. 26,000		1		D1				C	8	Ahmar B

Rakefet III, Sefunim 10, Antelias III and II re-assemble into an homogenious cultural phase. Simple Scrapers still dominante over Aurignacian types, and Burins are distinctly abundant. Retouched Blades are numerous in all three assemblages, with a clear increase in the Aurignacian Blades' frequency. El-Wad Points diminish until their final disappearance in layer D2 at El-Wad and Kebara assemblages correlate more closely than Rakefet II. None of the Yabrud II layers relates to this stage.

Yabrud II layer 1, Kebara D1, Sefunim 8, Erq el-Ahmar B and El-Wad C contain a more evolved phase than the previous one. There is a re-dominance of Simple Scrapers over Aurignacian Scrapers, together with a high frequency of Burins. El-Wad Points are still apparant in minor frequency. Although it is differenciated from the previous group, only in Kebara D1 and in Erq el-Ahmar B there is a clear rupture with the rest of the sequence in both sites. Only in Yabrud II layer 1 and in Erq el-Ahmar B a distinct group of Retouched Bladelets have been isolated. This fact enabled us to study both assemblages according to the newly available data from the upper sequence in the Ksar-Akil site (Tixier, 1970; and by personal communication, 1976). The sequence suggested by Tixier corresponds largely to layers 8 to 5 of the old excavations (Ewing, 1949; Copeland, 1975). Layer 7 of Tixier's division corresponds to Erq el-Ahmar B and Yabrud layer 1. On the other hand, if we ignore the abundance of Retouched Bladelets found in these layers (going up to 70%), we get for them cumulative graphs similar to these of Sefunim 8 or to Antelias III and II, namely an Aurignacian facies.

Concluding the above data, we suggest to put Kebara D1 and Sefunim 8 in a somewhat earlier phase than Erq el-Ahmar B and the above discussed Ksar-Akil sequence. The latter group was clearly developing toward the Levantine Epi-Paleolithic cultures, the same phase which was attributed by Garrod to the "Atlitian" culture. It is obvious by the data presented above that Garrod's "Atlitian" phase has been enriched with new typological evidance and should be thoroughly re-evaluated.

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