

NATUFIAN OCCUPATION IN THE WADI EL HASA SOUTHERN JORDAN

by

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Introduction

With Garrod's research at the cave of Shukbah in 1928 came recognition of the Natufian as a discrete cultural tradition in Levantine prehistory.¹ But it was not until almost 1960 that Natufian settlements were discovered eastward beyond the hills of the Mediterranean vegetation zone of Palestine in the southern Levant. The excavation of Beidha, near Petra in southern Jordan, expanded knowledge of the range of Natufian settlement distribution eastward across the Jordan Valley to the edge of the Jordanian Plateau.² Since then, Natufian settlements have been discovered in a variety of environments in Jordan. Archaeological surveys during the last decade have identified evidence of Natufian occupation in the Azraq Basin in the east,³ in the Black Desert in the northeast,⁴ in the Pella area on the east slopes of the Jordan Valley,⁵ in the Ras en Naqb area in the south,⁶ and now in the Wadi el Hasa drainage in the south.⁷

In 1979 Dr. Burton MacDonald of St. Francis Xavier University, Canada initiated a three season survey project in the Wadi el Hasa drainage system in southern Jordan. More than 1000 sites were recorded during three seasons of work along the southern bank of the Wadi el Hasa, but only two of these clearly date to the Natufian. Both (WHS sites 895... Tabaqa... and 1021 were found during the third season of the project. They are located

near the eastern end of the drainage system. Tabaqa, due to its large size and the diversity of artefacts present, will be the main focus of this paper.

Tabaqa lies along the east side of the Wadi Ahmar three-quarters of a kilometre from its junction with the Wadi el Hasa (Fig. 1). The Wadi Ahmar, one of the larger southern tributaries of the Wadi el Hasa, lies some thirteen kilometres west of the desert highway town of Al Hasa. The settlement of Tabaqa is situated on what appears to be a remnant terrace of the Wadi Ahmar and artefacts are exposed in a series of erosional gulleys in the terrace (Pl. XVI: 1). The location, at an elevation of 705.00 m., has a restricted view of the surroundings. Jebel el Kutuf rises over 200.00 m. immediately to the south and to the west; on the other side of the Wadi Ahmar, there is an escarpment of comparable height. Along the north and east side of the site a small hill encloses the area and inhibits the view as well as access to the Wadi el Hasa. The terrain in the vicinity of the site is rocky with the exception of the terrace and the *wadi* beds.

Few artefacts were visible on the top of the terrace but numerous artefacts were washing out of the sides of the small erosional gulleys that dissect the site. The presence of large numbers of microliths, mainly lunates, clearly indicated that the site dated to the Natufian. The extent of the scatter of artefacts is approximately

¹ D. A. E. Garrod, A New Mesolithic Industry: the Natufian of Palestine, *Journal of the Royal Anthropological Institute*, 62, (1932) p. 257-270.

² D. Kirkbride, The Excavation of a Neolithic Village at Seyl Aqlat, Beidha near Petra, *PEQ*, 92 (1960) p. 136-145.

³ A. N. Garrard and N. P. Stanley-Price, A Survey of Prehistoric Sites in the Azraq Basin, *Paleorient*, 3 (1975) p. 109-126.

⁴ A. Betts, A Natufian site in the Black Desert,

Eastern Jordan, *Paleorient*, 8 (1982) p. 79-82.

⁵ A. McNicoll, et. al., Preliminary Report on the University of Sydney's fifth season of excavation at Pella in Jordan, *ADAJ*, in press.

⁶ D. O. Henry, The Prehistory of Southern Jordan and Relationships with the Levant, *Journal of Field Archaeology*, 9:4, (1982) p. 417-444.

⁷ B. MacDonald, et.al., The Wadi el Hasa Survey 1982: A Preliminary Report, *ADAJ*, 1983.

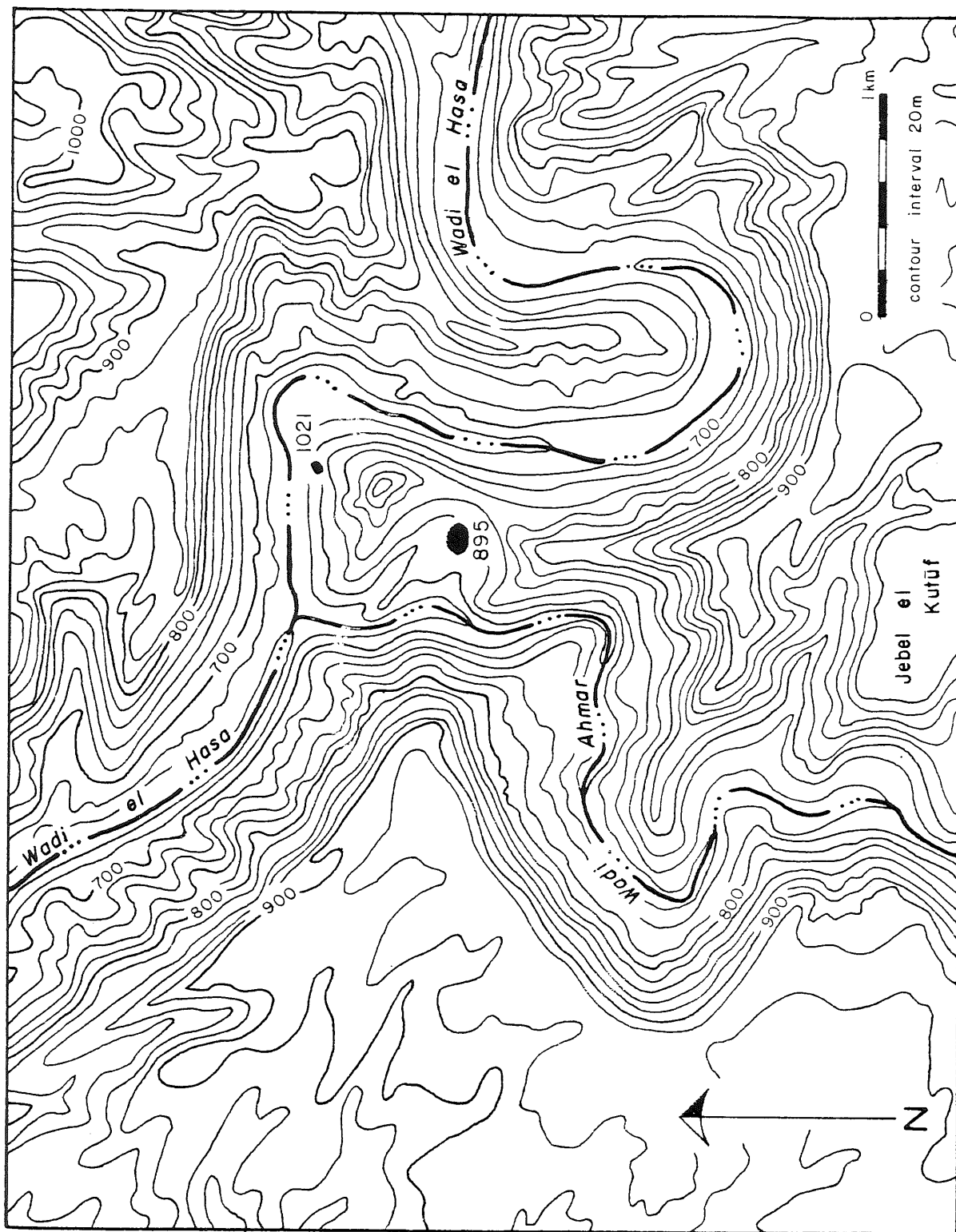


Fig. 1: Topographic Map of the Tabaqa area

50.00 m. x 100.00 m. or over 5,000 square metres in area. However, determination of the actual extent of the settlement or even the size of the *in situ* deposits must await the excavation phase of our research at the site. Nevertheless, the extent and quantity of material suggests a settlement comparable in size to known Natufian base camps,⁸ and hence deserves special attention

Material Remains

Chippedstone material

A large sample of chippedstone from Tabaga was recovered during the survey. However, the sample obtained is not suitable for interpreting comparative frequencies of debitage or tool classes due to the subjective nature of the collection technique. The biases in the collection method have made the material quantifiably unreliable. Despite this, the quantity of each artefact class recovered will be presented and some observations will then be made regarding particular classes of artefacts. Table 1 lists the various chipped stone artefact classes collected. It accurately reflects the bias of the collection method which focused on blades, tools, and cores.

Table 1: Quantity of Each Artefact Class Recovered at Tabaga

Flakes	31
Blades/Bladelets	296
Crested elements	2
Core tablets	2
Microburins	3
(Tools)	(169)
Total	356
Unidentifiable debitage	22

Technology

Some observations can be made simply on the presence of particular classes of artefacts in Table 1. Both crested elements and core tablets appear to have been used in the production and rejuvenation of cores. In addition, the presence of three

microburins suggests the technique was used in snapping bladelets during the production of microlithic tools. How frequent was the use of the technique remains unknown.

Some morphological features were recorded on the blades collected. These observations provide insight into the nature of the blade production technology used. Crushed and punctiform platforms are the most common types present (Table 2). Plain platforms were slightly less frequent, and cortical platforms even less common. The longitudinal shape of the blades is generally either flat or incurving (Table 3). Twisted and outcurving blades are rare.

Table 2: Platform Type of Blades and Bladelets at Tabaga

	N	%
Plain	32	19.28
Dihedral	2	1.20
Multiple facet	2	1.20
Crushed	70	42.17
Punctiform	48	28.92
Cortical	12	7.23
Total	166	100.00

Table 3: Longitudinal Profile of Blades and Bladelets at Tabaga

	N	%
Incurving	144	56.69
Flat	102	40.16
Twisted	7	2.76
Outcurving	1	0.39
Total	254	100.00

Blade cores dominate the sample of cores collected (Table 4). Only one flake core was recovered. Of the blade cores, single platform types with blades detached from one face are the most common type (Fig. 3:q). Single platform pyramidal cores were also frequent (Fig. 3:r). A smaller

⁸ O. Bar-Yosef, The Epipaleolithic complexes in the southern Levant, in *Prehistoire du Levant*, eds. J. Cauvin and P. Sanlaville, *Colloques Internationaux du CNRS*, No. 598, Paris, 1981, p.

401; D. O. Henry, Adaptive Evolution within the Epipaleolithic of the Near East, *Advances in World Prehistory*, 2, (1983) p. 99-160.

number of multiplatform cores was collected.

Table 4: Core Types at Tabaqa

	<i>n</i>	<i>N</i>
Single Platform Blade Core		13
Pyramidal	4	
subpyramidal	2	
one face	7	
Opposed Platform Blade core		3
same face	2	
opposite face	1	
Ninety Degree Platform Blade Core		2
same face	1	
opposed and one face	1	
Flake core		1
Unidentifiable Fragments		1
Total		22

The nature of the lithic technology is similar to the technology described for Palestinian Natufian sites.⁹ One clear difference is that most of the cores recovered at Tabaqa tend to be single platform rather than multiplatform.¹⁰

Tools

Over one hundred and fifty tools were collected at the site (Table 5). Of the types collected, endscrapers on retouched blades (Fig. 2:e,f,g,k), lunates (Fig. 3:c-m), notches (Fig. 2:a-d), and retouched pieces are the most prevalent. Burins (Fig. 2:h), truncations, denticulates, and perforators (Fig. 2:i,j) all are more rare. Very few triangles (Fig. 3: n) or trapezes (Fig. 3:o,p) were found and no rectangles, sickle blades or massive tools were recovered.

Lunates were by far the most abundant class of backed bladelets in the sample. The size range of the seven complete lunates clusters closely around the means of the length and the width of the sample: 2.49 cm for the length and 0.70 cm

for the width (Fig. 4). The mean width of the twenty-two broken lunates recovered, 0.718 cm., is similar to that for the complete lunates. It should be mentioned, however, that the sample size is very small and may not be representative of the site as a whole.

Bifacial retouch and interior retouch were the two most common forms of backing used in the manufacture of the Lunates (Table 6). Alternating retouch was used on the remainder of the lunate sample. None of the lunates had abrupt retouch and it occurred only on a few artefacts from other classes of backed bladelets. The common occurrence of interior retouch on lunates at Tabaqa is in contrast to its low frequency at Palestinian Natufian sites.¹¹

The range of tool types observed at Tabaqa falls within the parametres of the Natufian. In particular, the apparent abundance of notches, lunates, and retouched pieces, and the absence of sickle blades at Tabaqa is quite similar to the assemblages from two other Natufian sites in southern Jordan: Beidha¹² and Wadi Judayid.¹³ However, without a controlled sample from Tabaqa these observations must be regarded as very tentative.

Table 5: Quantities of Tool Types Recovered at Tabaqa

	<i>n</i>	<i>N</i>
Scrapers		33
end scraper on blade	3	
end scraper on retouched blade	24	
circular scraper	2	
double end scraper	1	
end scraper with lateral notch	3	
Burins		3
on natural surface	2	
on straight truncation	1	
Backed Bladelets		49

⁹ D. O. Henry, Examination of artefact variation in the Natufian, in *Eretz Israel*, 13 (1977) IEEJ; *An analysis of settlement patterns and adaptive strategies of the Natufian*, in *Prehistoire du Levant*, eds. J. Cauvin and P. Sanlaville, *Colloques Internationaux du CNRS*, no. 598, p. 421-432.

¹⁰ Henry, 1981, *op. cit.*, p. 422.

¹¹ Henry, 1977, *op. cit.*, p. 235.

¹² D. Kirkbride, Five Seasons at the Prepottery Neolithic Village of Beidha in Jordan, *PEQ*, 98 (1966) p. 8-72.

¹³ Henry, 1982, *op. cit.*, p. 437.

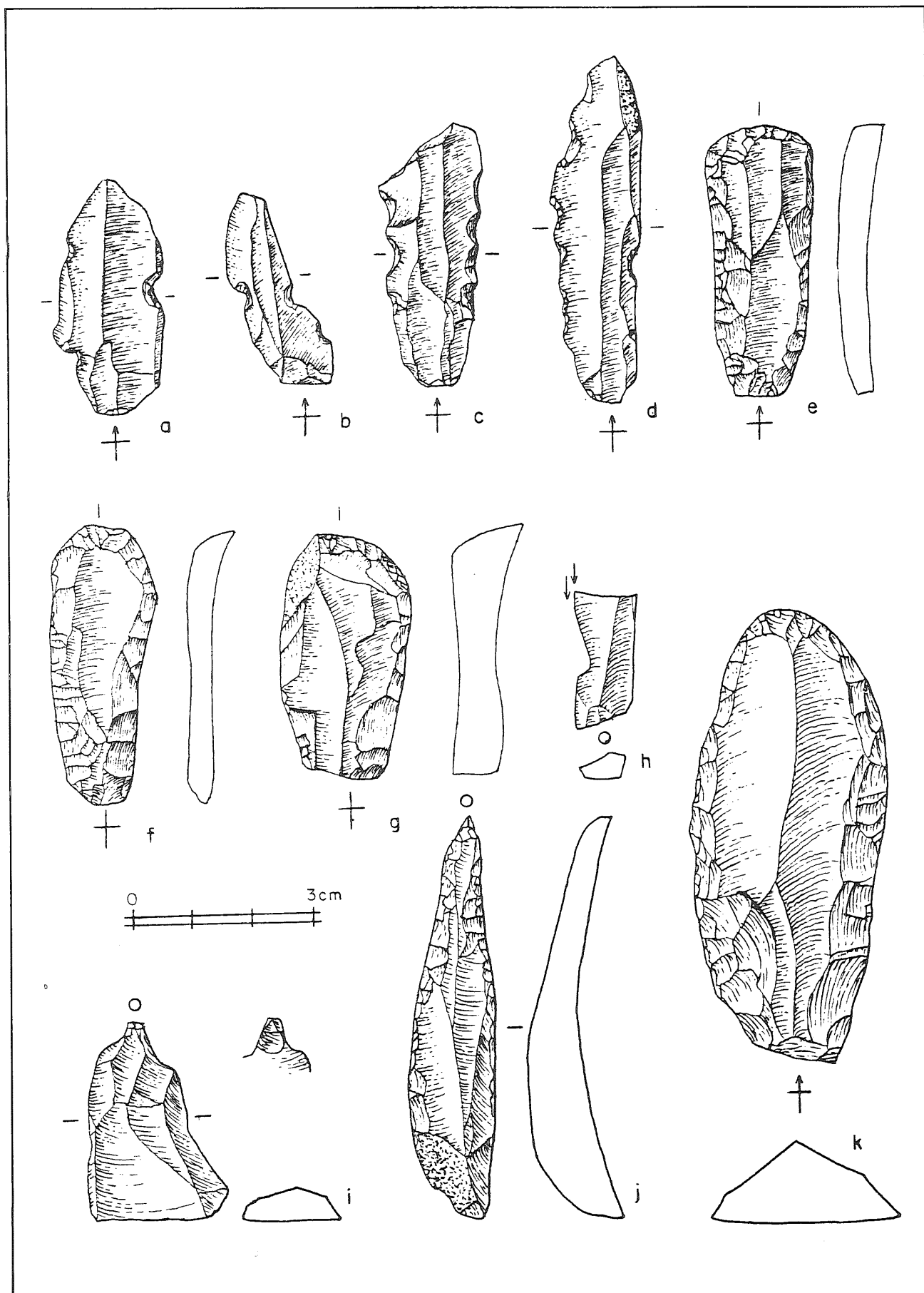


Fig. 2: Chipped-stone artefacts from Tabaqa

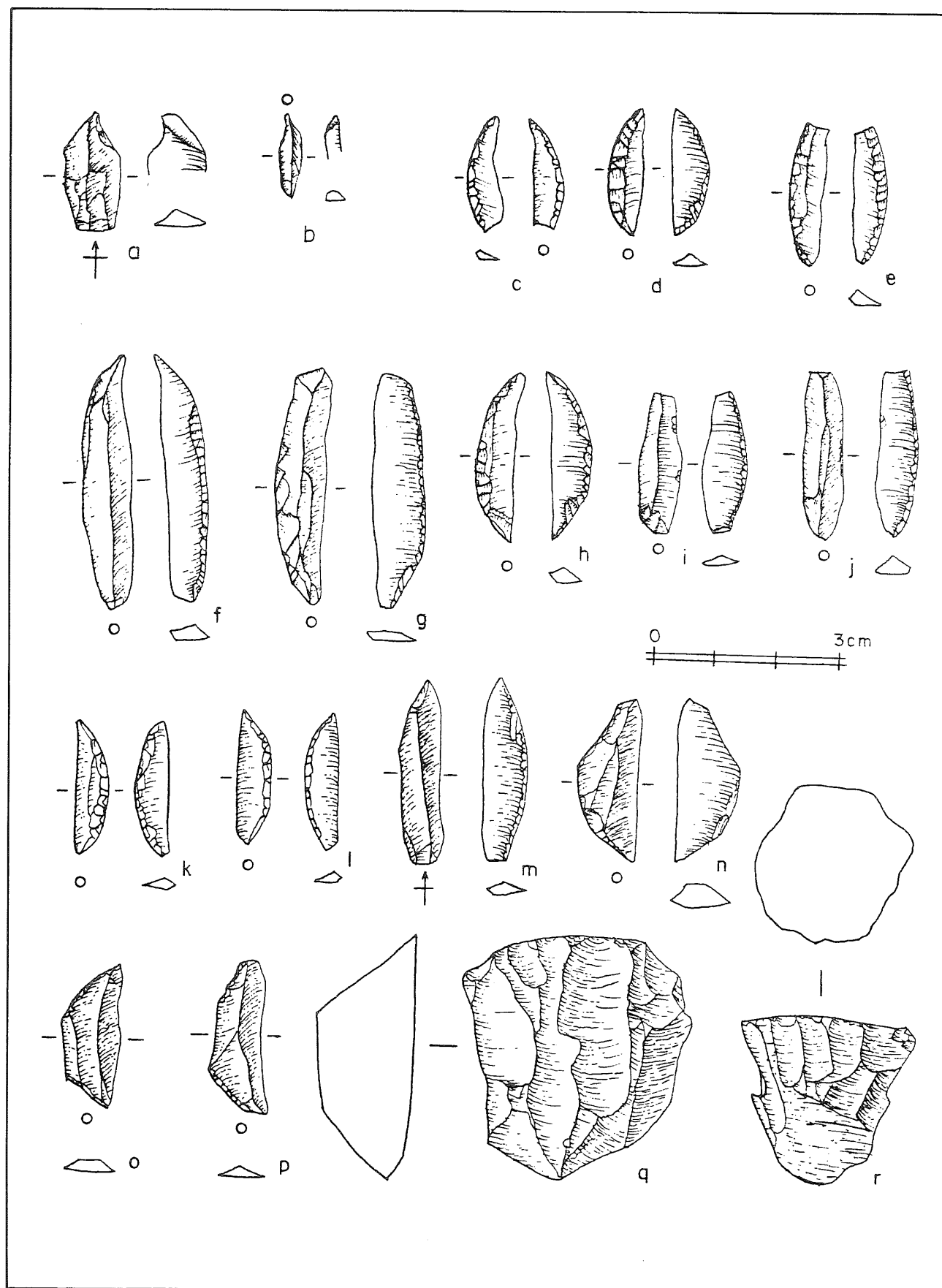


Fig. 3: Chipped-stone artefacts from Tabaqa

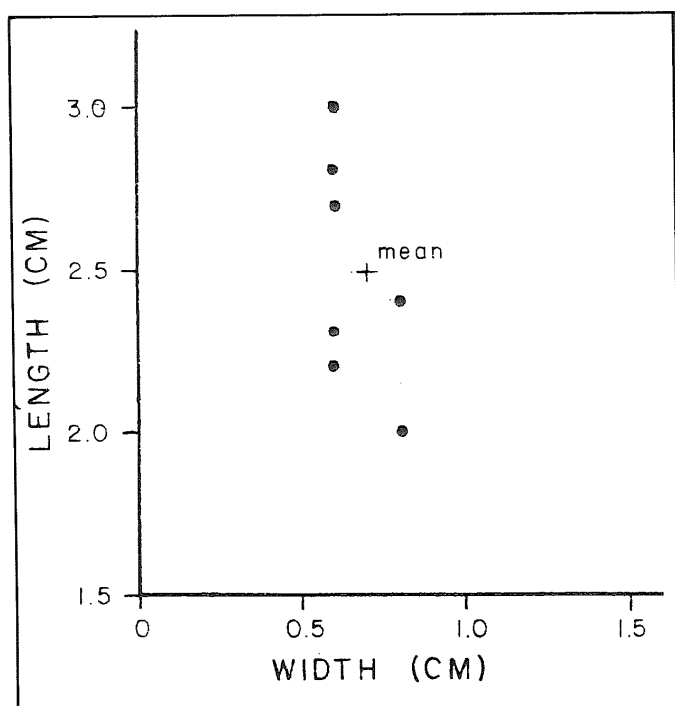


Fig. 4: Size distribution of complete lunates from Tabaga

lunates	29
complete (7)	
broken (22)	
triangles	1
trapezes	2
partially backed piece	6
fragment	7
fragment with truncation	4
Perforators	6
with retouched tip	3
with converging backed edges	3
Truncations	4
straight truncation	1
oblique truncation	3
Multiple Tool	4
Retouched Piece	20
unilateral retouch	3
bilateral retouch	2
alternatively retouched	2
partially retouched	13
Denticulates	9
denticulate	4
denticulate with retouch	5

Notches	33
single notch	2
multiple notch	17
multiple notch with retouch	14
Various	8
Total	169

Table 6: Backing Retouch on Lunates at Tabaga

	N	%
Bifacial (Helwan)	12	41.38
Interior, semisteepest	10	34.48
Alternating, interior & exterior	4	13.79
Alternating, bifacial & unifacial	3	10.34
Total	29	99.99

Non-Chippedstone Artefacts

Groundstone tools, stone beads, bone, and shell were all observed on the surface of the site. Two shell artefacts were collected. The one identifiable fragment was from a cowrie shell. Fragments of three stone beads were also recovered. The beads are finely polished, oval in cross-section, and are made of opal.

The groundstone artefacts included a hand grinder, a fragment of a pestle, and a mortar. The deep mortar had been used to such an extent that a hole was worn in the bottom (Pl. XVI:2). Such extensive use has been observed as Nahal Oren,¹⁴ Hayonim Cave,¹⁵ El-Wad,¹⁶ and Jericho.¹⁷

Discussion

Tabaga can be classified as a Natufian base camp. This is based on the site's large size, the diversity of chipped-stone tool types, the abundance of lunates, and the presence of groundstone tools, beads, and shell.¹⁸ In Jordan, the sites of Wadi Hammeh 27 in the Pella region and Beidha near Petra appear to be of comparable size to Tabaga. In addition, only Hammeh 27 appears to have as diverse an assemblage of non chippedstone artefacts as Tabaga.¹⁹

¹⁴ M. Stekelis and T. Yizraely, Excavations at Nahal Oren: Preliminary Report, *IEJ*, 13 (1963) p. 12.

¹⁵ O. Bar-Yosef and N. Goren, Natufian Remains in Hayonim Cave, *Paleorient*, 1 (1973) p. 41.

¹⁶ D. A. E. Garrod and D. M. A. Bate, *The Stone Age of Mount Carmel*, vol. 1, Oxford, 1937, p. 41.

¹⁷ K. Kenyon, Earliest Jericho, *Antiquity*, 129, (1959) p. 8.

¹⁸ Bar Yosef, 1979, *op. cit.*, p. 174; Bar-Yosef and Goren, *op. cit.*, p. 67; Henry, 1983, *op. cit.*, p. 138.

¹⁹ McNicoll, *et. al.*, *op. cit.*

The frequent use of bifacial retouch in conjunction with the absence of abrupt retouch on the lunates indicates that the site dates to the early phase of the Natufian between ca. 10,000 B.C. and 9,000 B.C.²⁰ This assertion is further supported by the average length of the lunates. The average of this admittedly extremely small sample is 2.49 m. In comparison with other Natufian sites this is a large average length and would place the site within the early Natufian category developed for Palestine.²¹ The similarity in average width of the complete and the broken lunates at the site further supports this result since as lunate length decreases so does width.²² It is possible, however, that the large size is due to collection bias with larger pieces being more visible and therefore over-represented in the sample.

Recent work at the early Natufian site of Wadi Judayid has provided a series of early radiocarbon dates: 10,140±800 B.C. (SMU-805), 10,800±1000 B.C. (SMU-806), and 10,834±659 (SMU-803).²³ These results have led Henry to suggest that the origins of the Natufian are in Jordan and subsequent Natufian expansion was to the west and not to the east as has been argued previously.²⁴ Research at Tabaqa could provide further data to help resolve this problem.

Context Within the Wadi el Hasa

It is remarkable that only one large Natufian site occurs on the southern fringe of the Wadi el Hasa, and in this regard Tabaqa constitutes a unique opportunity to investigate the reasons for the selection of a settlement area. The only other Natufian presence is site 1021, located approximately a half-kilometre from Tabaqa on the south bank of the Wadi el Hasa some 650 metres upstream from the confluences of

the Wadi Ahmar and the Wadi el Hasa (Fig. 1).

The site, lying some 80 metres south of the Wadi el Hasa drainage channel is much smaller in size than Tabaqa. The scatter of artefacts is not dense and only thirty-five lithics were collected. Of these, three backed bladelets and one microburin were recovered. The color, patina, and morphology of the artefacts is very similar to the artefacts recovered at Tabaqa. Therefore, it appears that the site also dates to the Natufian. In addition to the chipped-stone artefacts present at the site, several clusters of stone were observed. These clusters, being exposed by erosion, may represent remnants of architectural features.

The close geographical association of the two Natufian sites is unusual. A research project focussing on both sites would have the opportunity to contrast the nature and time range of occupation at each site. The results could provide valuable insight into changes in Natufian settlement patterns over time.

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²⁰ Henry, 1981, *op. cit.*, p. 424.

²¹ O. Bar-Yosef and F. R. Valla, L'évolution du Natoufien nouvelles suggestions, *Paleorient*, 5 (1979) p. 141-151; F. R. Valla, Les établissements Natoufiens dans le nord d'Israël, in *Préhistoire du Levant*, eds., J. Cauvin and P. Sanlaville, *Colloques Internationaux du CNRS*, no. 598, Paris, 1981, p. 409-419.

²² D. I. Olszewski, The Early Occupation at Tell

Abu Hureyra in the Context of the late Epipaleolithic of the Levant, Unpublished Ph.D. Thesis, University of Arizona, 1984.

²³ Henry, 1983, *op. cit.*

²⁴ D. O. Henry and P. F. Turnbull, Archaeological, faunal and pollen evidence from Natufian and Timnian sites in southern Jordan, *BASOR*, in press.