Ein Miri and the Geometric Kebaran of the Northern Levant

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Abstract – This article presents the findings made by Wolfgang Taute in 1974 whilst searching for an early Neolithic settlement-site at Ein Miri (Upper Galilee, Israel). Although he did not succeed in locating an in-situ early Neolithic settlement, he did uncover a small Epipalaeolithic assemblage from below a disturbed surface-layer which can be attributed to the Geometric Kebaran, an industry represented by only a few sites in the Mediterranean Levant. The small sample of heavily fragmented animal bones (mainly wild goat and fallow deer without gazelle) reflects a forested mediterranean environment as it would be expected at that time in the mountaineous Galilee.

Keywords – Israel, Ein Miri, Epipalaeolithic, Geometric Kebaran, Neolithic.

Zusammenfassung – Es werden die Funde von Sondagen vorgelegt, die 1974 von Wolfgang Taute auf der Suche nach einer frühneolithischen Siedlung in Ein Miri (Obergaliläa, Israel) durchgeführt wurden. Statt der nach den Oberflächenfunden erhofften neolithischen Schichten fand er unter dem Pflughorizont mit vermischten neolithisch-epipaläolithischen Funden jedoch ein kleines Steingeräteinventar, das aufgrund seiner Mikrolithformen zweifelsfrei dem Geometrischen Kebarien zugeordnet werden kann, das in der mediterranen Region der Levante nur durch vergleichsweise wenige Fundstellen vertreten ist. Die wenigen stark fragmentierten Tierknochen (darunter überwiegend Wildziege und Damhirsch; Gazelle konnte nicht nachgewiesen werden) reflektieren ein mediterranes Waldbiotop, wie es im galiläischen Bergland in dieser Zeit zu erwarten ist.

Schlüsselwörter – Israel, Ein Miri, Epipaläolithikum, Geometrisches Kebarien, Neolithikum.

Preliminary remarks

When in 1972 the late Wolfgang Taute came to Israel with the intention of locating a stratified early Neolithic site with preservation of organic materials for further excavation, it was M.W. Prausnitz who suggested test excavations at two sites in Northern Israel. In 1974 he tested the two sites, Khirbet Kharruba (first described by PRAUSNITZ [1959, 166-169]) and Ein Miri, a site nearby within an old olive garden well known to collectors of Neolithic flint artifacts. Unfortunately his work did not reveal the wanted results: the finds at Khirbet Kharruba dated from the later "Byblos Néolithique Moyen" and at Ein Miri he uncovered a small Geometric Kebaran assemblage in situ below the soil containing mixed Neolithic and Epipalaeolithic artifacts. It is this latter site which is the main subject of this article.

After having been drawn and recorded the finds were returned by Wolfgang Taute together with a short report to the Department of Antiquities in 1977. A planned publication had not been realised by his sudden death in 1995.

The description and analysis of the finds is based on this report, his notes and drawings which were amongst the documents handed to Daniel Schyle on behalf of the publication of several other sites excavated by Wolfgang Taute in Southern Israel.

Topography of the site

The site is located in the Eastern Upper Galilee about 10 km due northwest of Zefat at the foot of the high plateau between Maroun and Baram (Fig. 1).

The olive garden, in which the test excavations took place, is on the right bank of Nahal Miri, just before its junction with Nahal Dishon, about 1 km south-southeast from Kibbutz Bar´am and 2 km southeast from the Lebanese border at an elevation of about 560 m a.s.l. (Fig. 2). The site is protected by steep slopes on either side of the valley rising up to 150 m above the valley floor. A number of springs are located near the junction of Nahal Miri and the Dishon Valley. Today the area receives 600-800 mm of annual rainfall, mainly in winter, and belongs to the Mediterranean vegetation and climatic zone.

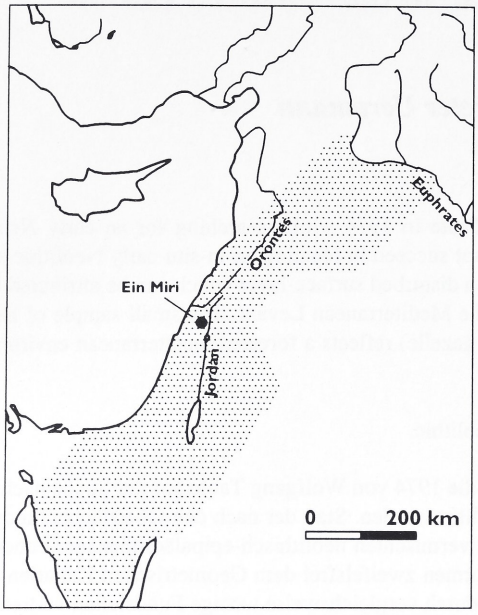

Fig. 1 The location of Ein Miri inmidst the presently known distribution of Geometric Kebaran sites.

The test excavations

Four test square metres (A-D) were dug in the vicinity of a ruined stone building inside the olive garden. In test pit B only few mixed neolithic/epipalaeolithic flints were found below the soil; test pits C and D reached bedrock immediately below the soil with some unstratified artifacts. It was in test pit A, immediately near the ruin, where epipalaeolithic artifacts and animal bones were recovered from dark brown sediments containing numerous limestone-fragments and an erratic basalt-block overlying the local limestone bedrock (Fig. 3). The test squares were dug using artificial spits of varying depths between 10 and 25 cm. From the distribution of the test pits, of which only one contained a substantial number of epipalaeolithic artifacts, and the topographic situation we may conclude that the size of the epipalaeolithic occupation probably did not exceed 150-200 sqm.

Lithic artifacts

Two different raw materials were used for the bulk of the artifacts. A dark, greyish brown flint with elongated, light grey taches and slightly translucent was used predominantly for the epipalaeolithic artifacts as well as for the neolithic arrowheads and crested blades (Fig. 4., 1-5; 7-8). Most of the neolithic artifacts are made from a light grey, opaque flint which was also used for some epipalaeolithic tools, i.e. the burin and one of the burin spalls (Fig. 5, 2; 4, 7). Only a few artifacts were made from other materials.

The description of the artifacts is divided according to their provenance. The mixed artifact assemblages from the surface will be described first, then the epipalaeolithic assemblage from the lower part of test pit A will be dealt with.

Mixed Neolithic and Epipalaeolithic artifacts

From the surface of the olive garden 12 artifacts, mainly tools and tool fragments were unsystematically collected. These include a disk shaped core, 2 broken backed bladelets, 3 burins, 3 endscrapers, the tang fragment of an arrowhead, a retouched flake and a fragment of a flaked and polished flint axe.

The finds from test pits B, C, and D are summarised in tables 1-3. Worth noting are a pressure flaked Amuq point (Fig. 8, 4) and a small triangular flaked and polished flint axe (Fig. 8, 6) from test pit B and two arrowhead fragments (Fig. 8, 3; 5), two backed bladelet fragments (Fig. 8, 1) and a transversal arrowhead (Fig. 8, 2) from test pit C and D.

A total of 1.658 artifacts were recovered from test pit A (table 3). It is evident that, as in the other test pits, the artifacts from the surface and the soil display mixed neolithic and epipalaeolithic types, the neolithic (arrowheads, sickle blades) being more numerous than the epipalaeolithic specimens (burin, backed bladelet).

The arrowhead-fragments (Fig. 4, 1-5) belong to the broad definition of "Amuq-" or "Oval-"points as given by Gopher (1985, 58). This type appears in Syria as early as 9 600 b.p. and reaches its peak in the Northern and Central Levant at about 7 900 b.p. (GOPHER 1985, Fig. IV.8). The other neolithic artifacts from the disturbed topmost layer and the sur- face of pit A include two crested blade fragments (Fig. 4, 7-8), a flake from a polished axe (Fig. 4, 6) and a denticulated sickle element without lustre (Fig. 4, 9). Housed in the Museum at Sasa are several other surface collected finds from Ein Miri (Fig. 9, 1-11).[1]

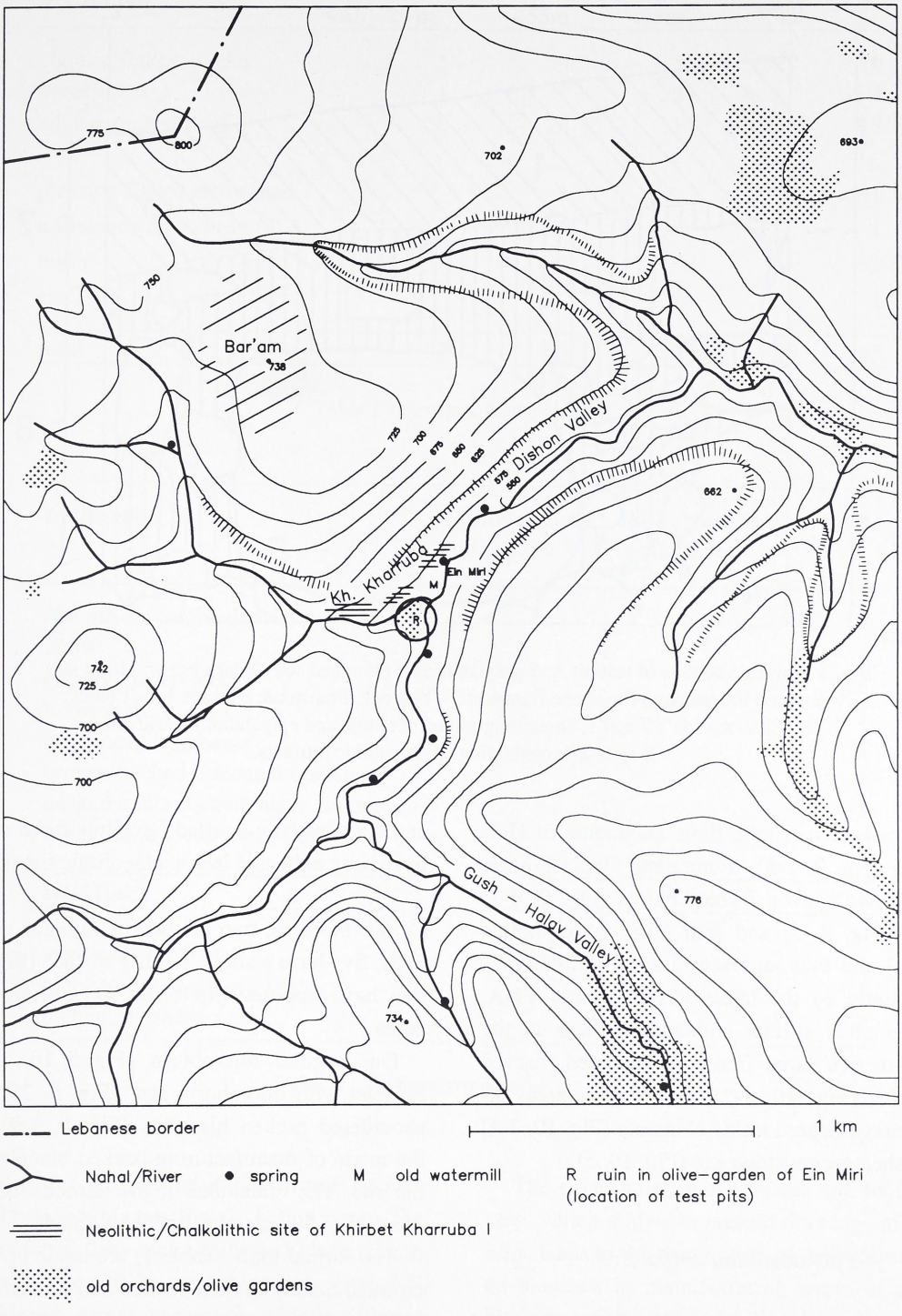

Fig. 2 Map of the surroundings of Ein Miri.

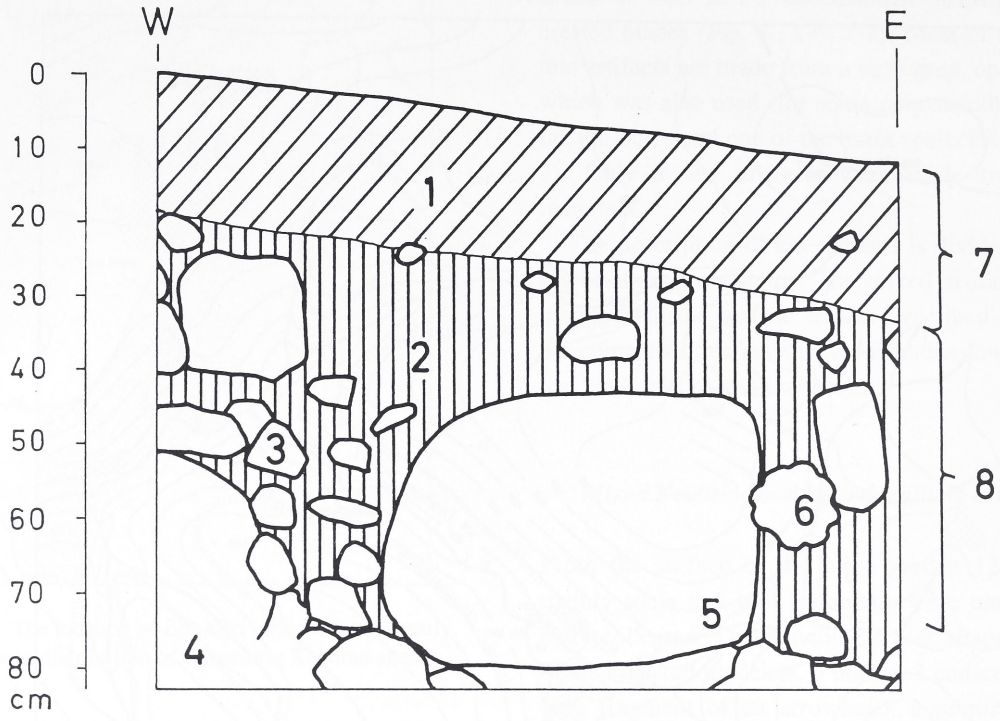

Fig. 3 Northern section of test pit A: **1** greyish brown ploughed soil; **2** dark brown virgin soil, weathered limestone; **3** limestone fragments; **4** bedrock, limestone; **5** erratic basalt block; **6** "Elias-mellon"; **7** spit 1, containing mixed neolithic and epipaleolithic artifacts; **8** spits 2-4, containing epipaleolithic artifacts.

The arrowheads include three fragments of Helwan points (Fig. 9, 1-3), a complete Haparsa-point (Fig. 9, 4), two broken Byblos points (Fig. 9, 6-7) one small (Fig. 9, 5) and four large Amuq-points (Fig. 9, 11) and thus represent a spectrum of types from the Early to the latest PPNB / early PNA. Among the other surface-collected artifacts in the Museum are two large finely denticulated, lustred sickle blades (Fig. 10, 1-2), two denticulated, bifacially worked lustred sickle elements (Fig. 10, 3-4) and a polished groundstone axe (Fig. 10, 5).

Epipalaeolithic artifacts

The epipalaeolithic assemblage from below the surface layer is obviously free from neolithic intrusions and contains only a rolled Levallois-flake which may have been collected in epipalaeolithic times.

Of the 14 cores, two are prismatic blade cores (Fig. 6, 8), five have a single flaking surface (Fig. 6, 3; 9), two have opposed platforms and six are irregular cores.

One regular microburin (Fig. 5, 10), a backed bladelet with microburin scar (Fig. 5, 23) and nine shouldered broken bladelets (Fig. 5, 1-9) illustrate the mode of manufacturing backed bladelets used at the site. The remainder of the unmodified debitage consists of 803 chunks, flakes and blades.[2]

The formal tools (Table 1) are made up of 38 microliths, mainly broken backed and truncated backed bladelets or trapeze/rectangles (Fig. 5, 11-48) versus 10 non-microlithic tools, including two endscrapers

[1] These two plates of neolithic artifacts of different types without captions were among the finished plates from the documents left by Wolfgang Taute to which no artifact count from neither Ein Miri nor Khirbet Kharruba could be related. Thus, these pieces did certainly not result from his activities at the two sites. From a single sheet of paper in the same envelope as the drawings of the neolithic finds from Ein Miri on which is noted, *"Collected finds, Museum Sasa, Ein Miri"*, I have concluded that these artifacts represent the collection of finds from the Museum.

[2] Unfortunately, chunks, flakes and blades were not counted separately.

artifacts	surface and soil, -.25 m	-.25m to -.55m	-.55m to -.65m	-.65m to -.75m	total
chunks, flakes, blades	5	36	18	17	**76**
cores	1	1	2		**4**
edge damaged pieces	6	25	31	16	**78**
pressure flaked arrowhead		1			**1**
unfinished arrowhead (?)		1			**1**
burin		2			**2**
axe			1		**1**
total	**12**	**66**	**52**	**33**	**163**

Table 1 Artifacts from test pit B.

artifacts	C, surface and soil, -.25 m	D, surface and soil, -.25m	total
chunks, flakes, blades	71	17	**88**
cores	1		**1**
edge damaged pieces	5	20	**25**
burin spall	1		**1**
arrowhead fragments	2		**2**
broken backed truncated bladelet	1		**1**
backed and truncated blade fragment	1		**1**
triangle/transverse arrowhead		1	**1**
total flints			**112**
medieval sherds	5	2	**7**
prehistoric red slipped sherds	2		**2**
prehistoric sherd	1	1	**2**

Table 2 Artifacts from test pits C and D.

(Fig. 6, 5), three burins (Fig. 6, 2; 6), two laterally retouched massive blades (Fig. 7, 1-2), a borer (Fig. 5, 49), a notched flake and a truncated blade (Fig. 6, 4). The remainder of the assemblage consists of 50 pieces with use- or partial retouch, a blade with partial lustre on the ventral side (Fig. 5, 50) and the mentioned intrusive Levallois-flake (Fig. 7, 3).

The assemblage can undoubtedly be attributed to the Geometric Kebaran, since geometric microliths are solely represented by trapeze/rectangles and their fragments, and make up more than 3/4 of the microliths.

The small number of artifacts and tools respectively, which allows to present drawings of all microliths, leads to the recognition of the broken shouldered bladelets as manufacturing waste of the backed bladelet-group, corresponding to microburins in other epipalaeolithic entities as e.g. the Mushabian. The special Geometric Kebaran backed bladelet segmenting technique by simple breaking the backed bladelets after retouching has been recognised earlier (HENRY 1982), but so far the number of the specific waste products has never been given separately in the type-lists. These pieces may either have been lumped together with the broken straight backed

artifacts	surface	soil to -.25m	sum	-.25 to -.35m	-.35 to -.50m	-.50 to -.70m	sum below soil	total
unret. blades, flakes, chunks	118	559	**677**	309	394	100	**803**	**1.480**
cores	1	12	**13**	8	5	2	**15**	**28**
crested blades		3	**3**					**3**
shouldered br. bladelets				2	6	1	**9**	**9**
microburins						1	**1**	**1**
burin-spalls		1	**1**		3		**3**	**4**
sum debitage	**119**	**575**	**694**	**319**	**408**	**104**	**831**	**1.525**
ret. fragments	4		**4**					**4**
arrowheads		5	**5**					**5**
sickle-blades		2	**2**					**2**
flake from polished axe		1	**1**					**1**
regularly ret. pieces		18	**18**		1	1	**2**	**20**
endscraper		1	**1**	1	1		**2**	**3**
burins		1	**1**	1	1	1	**3**	**4**
borer						1	**1**	**1**
notched flake						1	**1**	**1**
truncated blade					1		**1**	**1**
broken backed bladelet with microburin scar				1			**1**	**1**
br.backed bladelets		1	**1**	5	7		**12**	**13**
trapeze / rectangles				3	2		**5**	**5**
br.trunc. bckd. bladel.				5	10	2	**17**	**17**
obliquely trnc. bladel.					1	1	**2**	**2**
truncated bladelet				1			**1**	**1**
sum formal tools	**4**	**29**	**33**	**17**	**24**	**7**	**48**	**81**
blades/flakes with use- or partial retouch				37	13		**50**	**50**
blade with lustre					1		**1**	**1**
rolled levallois-flake					1		**1**	**1**
sum tools	**4**	**29**	**33**	**53**	**39**	**8**	**101**	**133**
total artifacts								**1.658**

Table 3 Artifact counts from test pit A.

	n	av.length	av.width	av.L/W	max.L/W	min.L/W
compl.tr./rect.	5	2.37	.72	3.26	4.25	2.37
br.tr./rect.	14	1.13	.65	1.74	2.5	.78
br.bckd.bladel.	12	1.31	.59	2.29	4.5	.75

Table 4 Metric attributes of trapeze/rectangles and backed bladlets.

bladelets or "varia" in most site reports or otherwise are a specific characteristic of Ein Miri. If the broken shouldered bladelets and the single microburin are set into relation to the number of microliths, as it is usually done with microburins, this would result in a microburin index (microburins/microliths) of .27, which is at the lower end of the Mushabian/Ramonian range of values (GORING-MORRIS 1987).

Table 4 refers to some metric attributes of the trapeze-rectangles. It is quite obvious that, at least in the case of this admittedly small sample, most of the broken truncated backed bladelets can definitely be regarded as discarded fragments. Only three of them have a length/width-ratio higher than the minimum value obtained for the complete specimens and their average length is beyond the range of most other complete trapeze/rectangle samples of the Geometric Kebaran (cf. VALLA 1989).

The same may be inferred for the broken backed bladelets, of which only four have L/W-ratios higher than the minimum value for the complete trapeze-rectangles. In general, the backed bladelets and trapeze/rectangles from Ein Miri are at the lower end of the size distribution of most assemblages from Negev and Sinai and larger than at the nearby northern sites of Hayonim and Haon (cf. BAR-YOSEF 1976; GORING-MORRIS 1987; VALLA 1989).

Whether trapeze/rectangle width can be used as chronological marker is still open to question: the initial assumption of a general width increase through time (by BAR-YOSEF 1970 and followed later by VALLA 1989) is in contradiction with data from the arid Southern Levant. Most southern assemblages display rather wide trapeze/rectangles, which should be late in the postulated sequence, although the Geometric Kebaran is believed to have largely retreated already from the south at that time (GORING-MORRIS & BELFER-COHEN 1998).

The high percentage of discarded fragments and waste products of the Geometric Kebaran method of segmenting backed bladelets indicates that (at least in the excavated part of the site) the repair of combined tools (projectiles or knifes) was an important activity. The single lustred blade may also point to an exploitation of unknown plant resources.

So the range of activities represented by the finds from Ein Miri is so far restricted mainly to hunting. The distribution of species among the animal bones found (see H.-P. UERPMANN below), reflects the location of the site in the mountainous area of Israel.

(D. S.)

Animal bones

Amongst the bone material recovered from test pit A1 were several larger and numerous smaller fragments – some of which have been identified. The test pit was dug using artificial spits. However, as various fragments, apparently from the same animal, were found at various depths these spits will in the following not be further distinguished. On the other hand, smaller fragments of bone which could be refitted were indeed only found within any one spit.

Unfortunately, due to the poor preservation of the material, a thorough quantitative analysis of the bones is not possible. The surface of the bones is to a greater extent either weathered or, more often, damaged by the roots of plants. The bone fragments, which are the result of a primary smashing of the bone in order to gain the bone-marrow also underwent a further splintering by the weight of the overlaying sediments. Consequently, the average size of the fragments is extremely small. One half of the first cervical vertebra from a fallow deer, measuring 74 mm at its longest point and weighing 22 g is indeed the largest of the bone finds. Only one piece

animal species	weight of bones	minimum number
fallow deer, *Dama mesopotamica*	78 g	16
roe deer, *Capreolus capreolus*	8 g	2
wild goat, *Capra aegagrus*	89 g	17
wild boar, *Sus scrofa*	39 g	2
tortoise, *Chelonia*	3 g	(6)

Table 5 Animal species identified at Ein Miri.

is heavier, the distal end of a humerus from a wild boar reconstructed from two bone fragments weighs 30 g. The heaviest find, from a wild goat, reconstructed by refitting of four separate fragments weighs 17 g.

The average weight of an animal bone fragment from the test excavations at Ein Miri is just 0,9 g. Only around one tenth could be assigned to its species. Nevertheless, a further tenth has been recognised as belonging to medium-sized ungulates (as shown in the list of identified species). Owing to the poor quality of the material it appears not useful to compare the numbers of determined and undetermined bones, especially concerning the fact that smaller undetermined fragments could well be splinters from larger bones already determined and included in the count. Thus, the weight of animal bone material from identified and unidentified species does deliver a more reliable result: Of the 541 g of animal bone recovered 217 g was assigned to a specific species, a further 94 g belongs with sufficient certainty to the species listed, and 227 g comprising small splinters of bone does not indicate further species. Only 5 fragments, with a combined weight of 3 g, are from small animals, otherwise not represented by exactly determinable fragments. The size of these small animal bones suggests they are from hare or fox. Apart from 6 fragments of otherwise not closer identifiable tortoiseshell the remains of smaller animals are absent. This absence also applies to game the size of red deer and aurochs.

As previously mentioned for the comparison of the amount of determinable and undeterminable bones, the number of bone fragments for setting the different animal species into relation is not very reliable either. Whilst the bones of fallow deer are mostly complete, those of goat are often pieced together from several fragments. More than twenty pieces of tooth and lower jaw are probably from one single mandible. This can however not be confirmed as too many pieces are missing. In several other cases it is very likely that various fragments do in fact originate from the same bone, which of course cannot be confirmed either. This also applies to seven metatarsus fragments from a roe deer. Therefore, in the list of identified species (Table 5) the weight of the bones is again used only as a fundamental basis for specifying the quantity. The second column lists a minimum number of bones. This number only applies when all fragments of the same category of bone do indeed belong to the same individual bone.

It is to be noted that the very fragmentary material from the most highly represented species cannot be identified on the subspecies level. Solely on the basis of present day knowledge of the Late Pleistocene distribution of wild goat and Mesopotamian fallow deer is it possible to assign them to these species. The next related species – the Nubian ibex or the European fallow deer – cannot be ruled out morphologicaly, especially since only very few measurements could be taken. For example the width at the *processi coronarii* from the ulna of a fallow deer measures 20 mm. A heavily worn molar from the lower jaw of a wild goat is 26 mm long and 9 mm wide; the proximal width of the end of the first phalanx of wild goat measures 16 mm. The widest point of the humerus of a wild boar already mentioned measures approximately 47 mm, the trochlea is 36.5 mm wide.

As far as this small complex allows for a generalised classification it is in better accordance with similar contemporaneous finds from Lebanon than from the other parts of Israel. Whilst the faunal assemblages from the western slopes of Lebanon and Ein Miri are dominated by wild goat and fallow deer, and remains of roe deer are still more frequent than that of ga-

zelle, at all other sites known in Israel the gazelle is the most numerous animal found. This applies to sites on the western slope of Mt. Carmel as well as for the site of Hayonim (BAR-YOSEF & TSCHERNOV 1966) and Ein Gev I (DAVIS 1974) 20 and 35 km due Southeast, respectively. Even though the absence of gazelle at Ein Miri cannot yet be confirmed owing of the small amount of material available, it would seem apparent that the gazelle did not play such an important role here as at other Israeli sites. This is without a doubt due to its location in the narrow Dishon-Valley in the midst of the Galilean Mountains. The proportion of Gazelle, fallow deer, wild goat and roe deer which vary from one Epipalaeolithic site of the Levant to another do in general appear to reflect the respective land form and the Late Pleistocene vegetation to be expected in this area. The Lebanon, like the mountainous region of Galilee, even today receiving higher amounts of rainfall may well have been more heavily wooded than the surrounding plains and coastal regions or the Jordan Valley along which the Israeli Epipalaeolithic sites are to be found. Therefore, the frequency of gazelle remains at these sites is dependant on the proportion of steppe in the surrounding area. On the other hand the amount of wild goat remains depends entirely on the expansion of rocky areas in the vicinity of the Epipalaeolithic sites. Consequently, there is no reason for assuming an existence of a specific animal husbandry of one or another species of animal in the Near Eastern Late Palaeolithic as an early stage of domestication.[3]

(H.-P. U.)

Ein Miri and the Geometric Kebaran

The Geometric Kebaran is the most widespread Epipalaeolithic industry of the Levant with a site distribution reaching from Syria (Nahr el Homr) in the North as far south as Southern Sinai (Wadi Sayakh) and to the east in the Azraq oasis of Jordan, comprising a variety of different environments (Fig. 1, cf. SCHYLE 1996; GORING-MORRIS & BELFER-COHEN 1998).

In the Northern Levant the number of Geometric Kebaran sites is rather restricted (HOURS et al. 1994; SCHYLE 1996; CAUVIN et al. 1998; GORING-MORRIS & BELFER-COHEN 1998). In Syria, clusters of sites are found around the oasis of El Kowm, Palmyra and at Jayroud. Similar clusters occur around Beirut, at Mount Carmel, the Israeli coastal plain and around Wadi Fazael in the Jordan valley. For the most part they are a reflection of focused research activities and probably are not fully representative of the overall Geometric Kebaran site distribution, since surveying in the Northern Levant is often difficult due to vegetation cover and modern settlement.

In the arid south the clustering of sites is at least partially believed to represent the accurate distribution of sites; vegetation cover and modern settlement is widely lacking and intensive surveying revealed areas definitely devoid of sites (GORING-MORRIS 1987).

In contrast to its wide distribution the lithic assemblages of the Geometric Kebaran share a remarkable monotony in quality and quantity of the different tool-types. Microliths, and especially trapeze/rectangles and their fragments, are always the dominant tools comprising usually more than 2/3 of the assemblages. Ein Miri fits well into these overall criteria.

Only rare exceptions to these general features exist; they include several single or small groups of tra- peze/rectangle assemblages with additional typological and technological characteristics.

Still outstanding are the assemblages of Jabrud III, layers 5 and 3, originally designated "Spät-Capsien" and "Falitien" by Alfred Rust (1950), whereas the intermediate layer 4 ("spätes Nebekien") without any trapeze/rectangles may be well incorporated typologically into the later Kebaran with a predominance of small obliquely truncated backed bladelets (SCHYLE 1996).

The "Falitien" of Jabrud III, layer 3 is still unique by the high number of large backed pointed blades, the so called "Falita-points" and its "parallelograms" occurring together with moderate frequencies of trapeze/rectangles. Similar assemblages have not been found elsewhere, but the stratigraphic position above a later Kebaran layer indicates that it should belong to a similar time range like the Geometric Kebaran.

[3] For a detailed discussion of this problem see Uerpmann 1979.

The small assemblage of Jabrud, layer 5, with its large microburins, so called "Qalkhan points" and large symmetric triangles may be linked with a number of other Syrian and Jordanian assemblages exhibiting similar features, including Wadi el Jilat 6, middle (GARRARD et al. 1986), Gebel Qalkha J406b, J407, J405 (HENRY 1982), Sabra 3, Adh Dhaman 4 (SCHYLE & UERPMANN 1988), the lower epipalaeolithic levels of Umm el Tlel, El Kowm 1, Aarida South and probably Ain Juwal (CAUVIN 1981) and should be separated from the 'mainstream' Geometric Kebaran as a different typological and chronological entity. These assemblages have been labeled "Qalkhan" by Henry (1982) or "Early Geometric Kebaran" by Cauvin et al. (1998) and probably are contemporaneous with a late Kebaran as indicated by the stratigraphies of Jabrud and Wadi el Jilat 6 and the radiocarbon dates of Umm el Tlel.

To this group of sites further may belong the assemblages of Hofith, Khiriath Arieh 1 (BAR-YOSEF 1970) and Shunera 1 (GORING-MORRIS 1987) with large asymmetric trapezes and, at least at Shunera 1, considerable numbers of microburins.

Another set of assemblages closely related to the Geometric Kebaran by a clear predominance of trapeze/rectangles differ from most other Geometric Kebaran sites by higher frequencies of microburins and microburin scars at the ends of the trapeze/rectangles. These assemblages have been included as "Qerenian" into the Mushabian on the basis of the frequent microburins (GORING-MORRIS 1987), but typologically clearly belong to the Geometric Kebaran. They have been interpreted as a result of social interaction between Geometric Kebaran and 'classic' Mushabian groups.

A large number of assemblages remains, which – according to the few radiocarbon dates obtained so far – belongs to the period between about 14 500 and 12 500 b.p. (SCHYLE 1996; GORING-MORRIS & BELFER-COHEN 1998). These assemblages are typologically homogenous regardless of whether they have been recovered from sites in the Mediterranean Northern or the arid Southern Levant. Slight differences in the dimensions of the trapeze/rectangles can be found between the south and the north; most assemblages from the arid southern areas having larger trapeze/rectangles than the few assemblages with available metric data in the north (cf. BAR-YOSEF 1976; GORING-MORRIS 1987; VALLA 1989).

Other differences exist in the non-lithic features found at a few sites. In the Northern Levant, as in the previous Kebaran (Ein Gev 1: BAR-YOSEF 1970) and the late Upper Palaeolithic (Ohalo: NADEL & HERSHKOVITZ 1991), a few sites are known where the occupation seems to have lasted for more than a short stop during the hunt, indicated by burials (at Neve David: KAUFMAN & RONEN 1987), architecture (Ein Gev III, Haon, Kharaneh 4, Neve David?) and ground stone tools (at Neve David, Ein Gev III, Haon, Wadi Jilat 8). These sites also yielded seemingly slightly more balanced tool assemblages with fewer microliths than the small sites in the arid regions (for a detailed discussion of functional variability of the Geometric Kebaran cf. SCHYLE 1996).

Especially Neve David and the earlier Kebaran and Late Palaeolithic ("Masraqan") sites of Ein Gev 1 and Ohalo are excellent examples that subsistence strategies including the use of plant resources and patterned settlement-mobility did not originate in the Natufian. They were used sporadically during the whole Terminal Pleistocene at specifically favoured locations in the Central Levant, like the shores of the see of Galilee and the Huleh lake or at Mount Carmel and probably in the oasis of Azraq as well. Considering the small number and size of most excavations at earlier epipalaeolithic sites in the Northern Levant, the number of these more complex sites may be even larger than presently known.

It is also in this core area where the few Early Natufian sites like Mallaha and Hayonim are found which display all characteristics said to be specifically Natufian (dense and in some cases probably year round site occupation, storage facilities, a varied bone industry, art/ritual, architecture, burials, ground stone tools and ornaments). Thus, the Natufian way of life seems to be the consequent culmination of a long lasting terminal pleistocene tradition of locating complex and more intensively occupied ('aggregation') sites in the environmentally favoured areas of the Levant.

Conclusions

Ein Miri adds another typical assemblage to the still scanty Geometric Kebaran record in the Mediterranean Northern Levant. Its location in the mountainous area of Northern Israel (in fact it is the northernmost Israeli site) fills a gap in the Geometric Kebaran site distribution between Israel and Lebanon.

Although the last 25 years of research focussing mainly on the arid areas of the Levant have contributed much to our understanding of the earlier Levantine epipalaeolithic settlement patterns, the data from the Mediterranean Levant have not been significantly increased. Single outstanding discoveries like Neve David have widened the spectrum of known site types, but due to the still limited number of modern large scale excavations in the Mediterranean area it is at present neither possible to reconstruct settlement patterns within that area nor to estimate the relationship of the Northern and Southern sites on a sufficiently solid data base.

Due to this and the limited excavation and sample size, one may only speculate about the relations of Ein Miri to the nearest other known sites in Lebanon (ca. 80 km distance to Abri Bergy) or at Mount Carmel (ca. 30 km distance to Hayonim and 60 km to Neve David).

(D. S.)

Note

We thank Lee Clare for the correction/translation of the manuscript.

Fig. 4 to 10 with artifacts and References on the following pages.

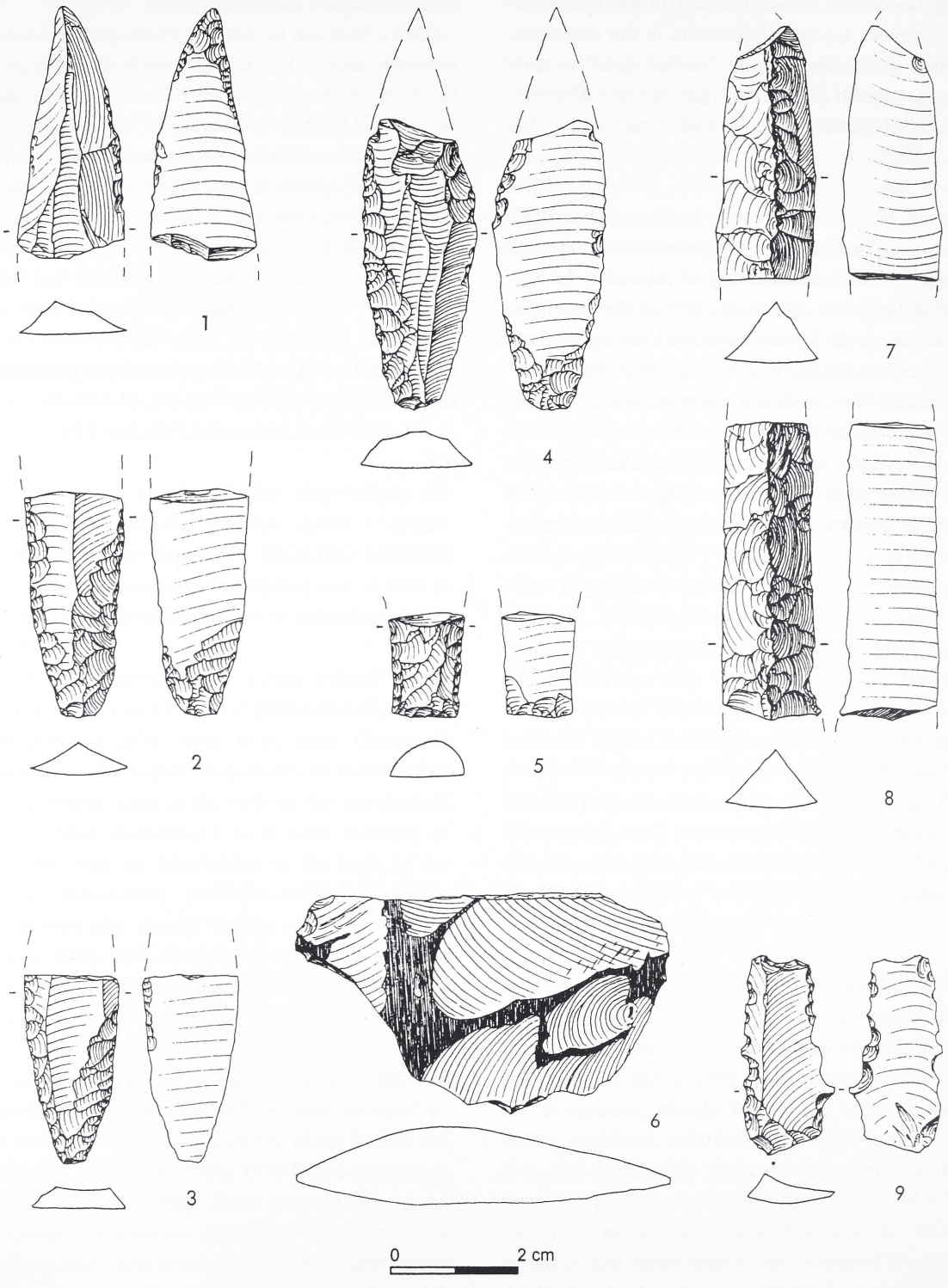

Fig. 4 Neolithic artifacts: **1-5** arrowhead-fragments; **6** flake from a polished axe; **7-8** crested blades; **9** denticulated sickle-element.

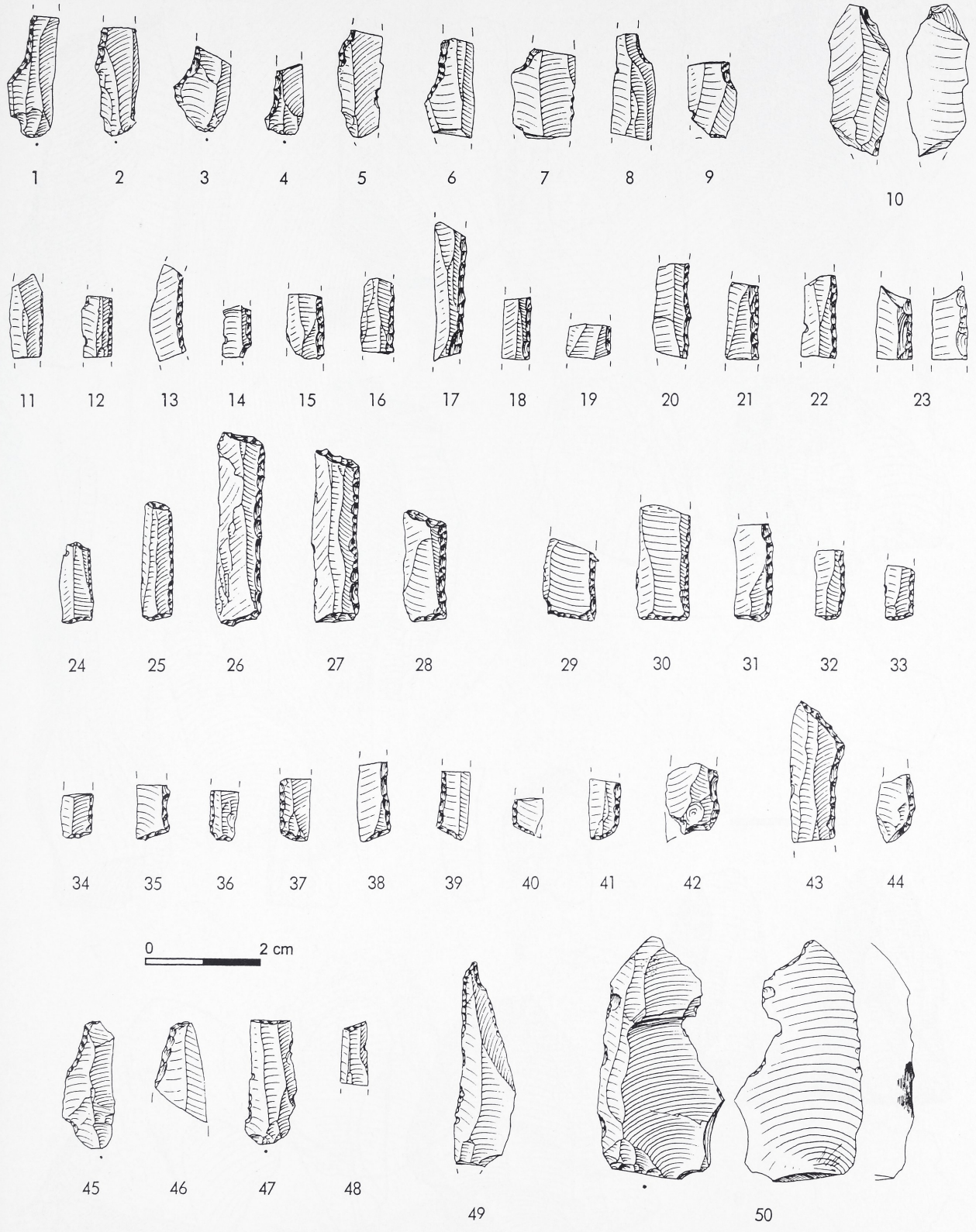

Fig. 5 Epipaleolithic artifacts: **1-9** broken shouldered bladelets; **10** microburin; **11-22** broken backed bladelets; **23** broken backed bladelet with 'piquant trièdre' and inverse retouch; **24-28** trapeze/rectangles; **29-44** broken truncated backed bladelets; **45-48** truncated bladelets; **49** borer; **50** lustred blade.

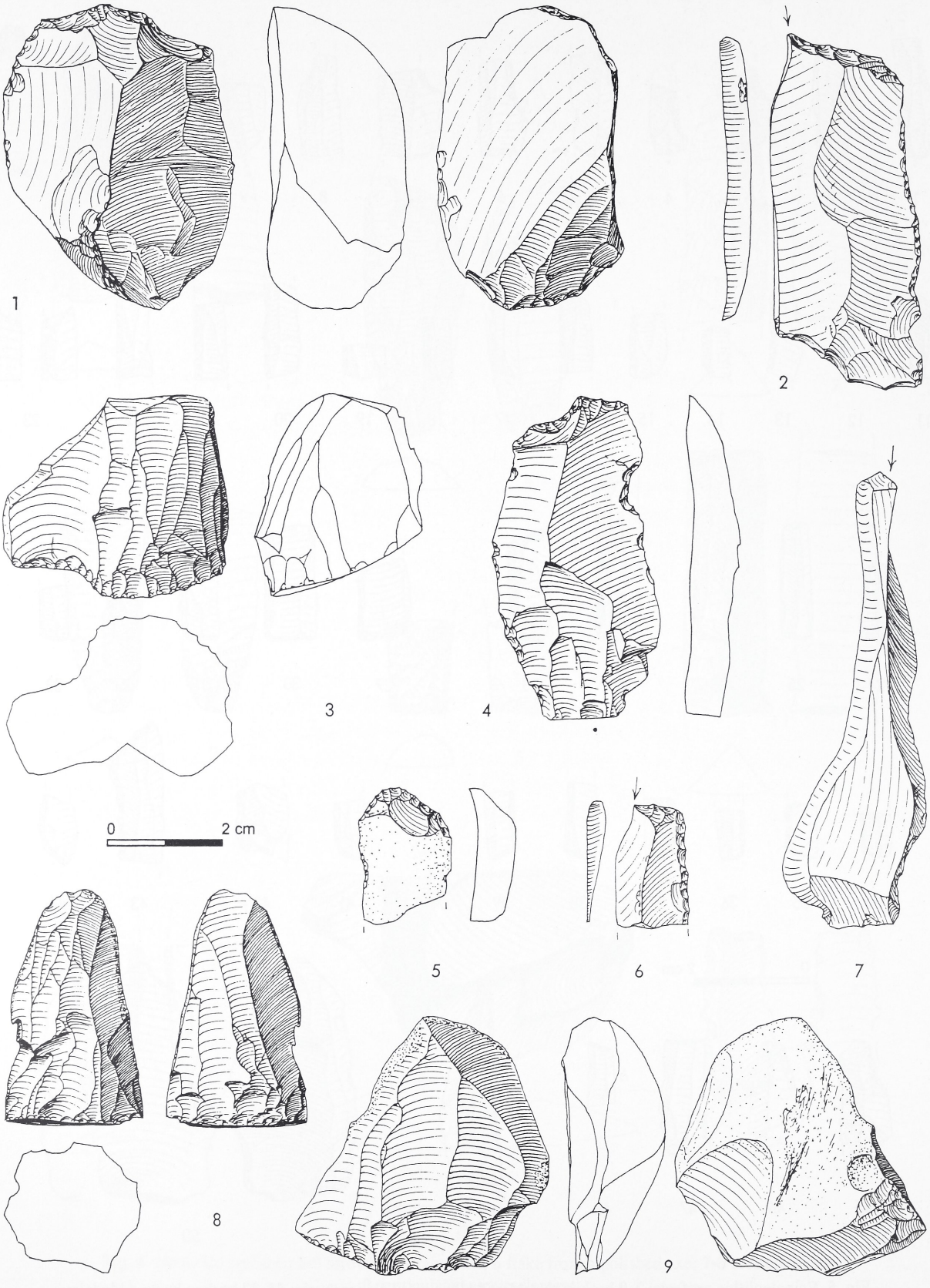

Fig. 6 Epipaleolithic artifacts: **1**; **3**; **8**; **9** cores; **2**; **6** burins; **4** retouched and truncated blade; **5** endscraper; **7** burin-spall.

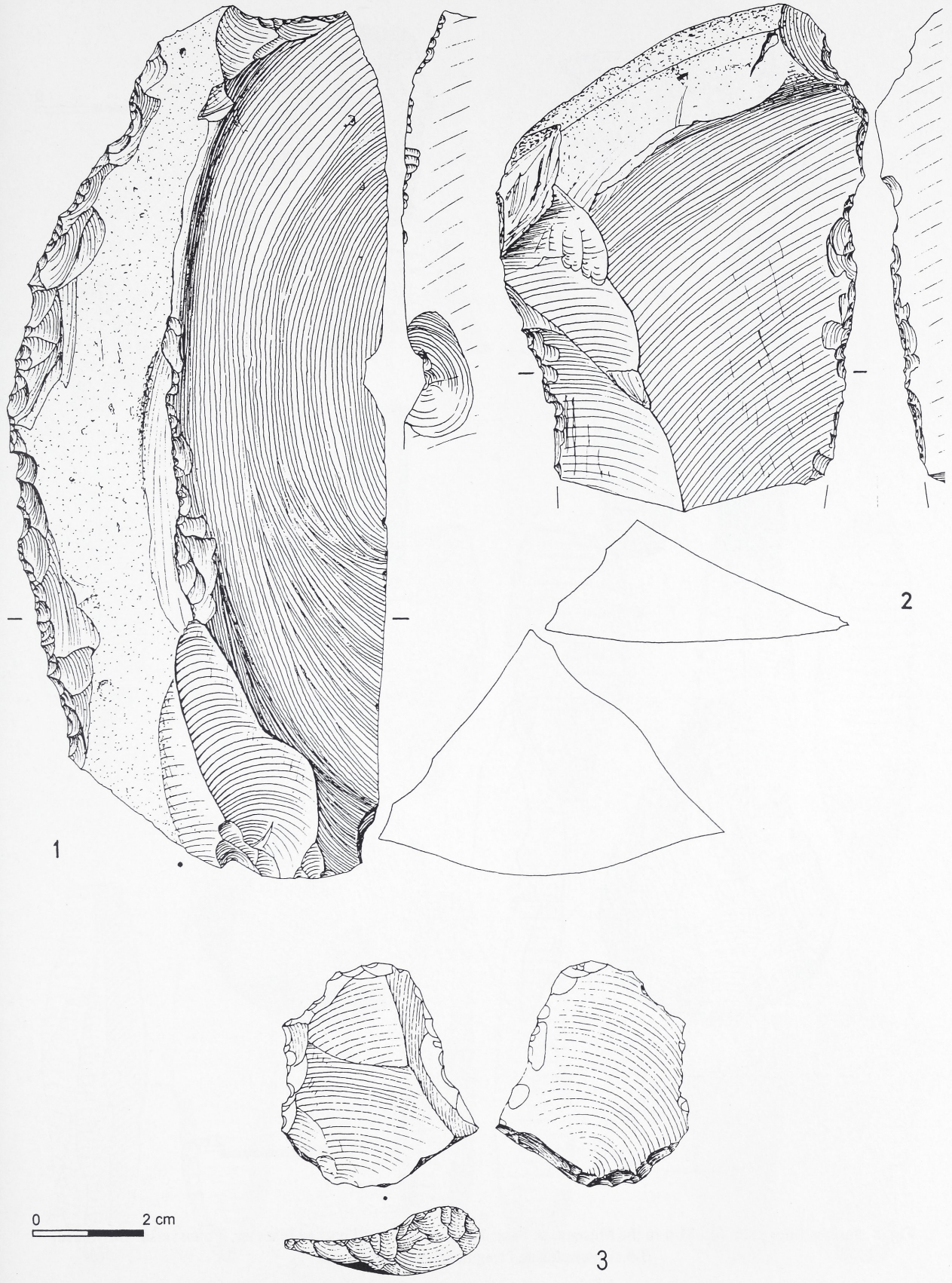

Fig. 7 Epipaleolithic artifacts: **1-2** retouched pieces; **3** rolled Levallois-flake.

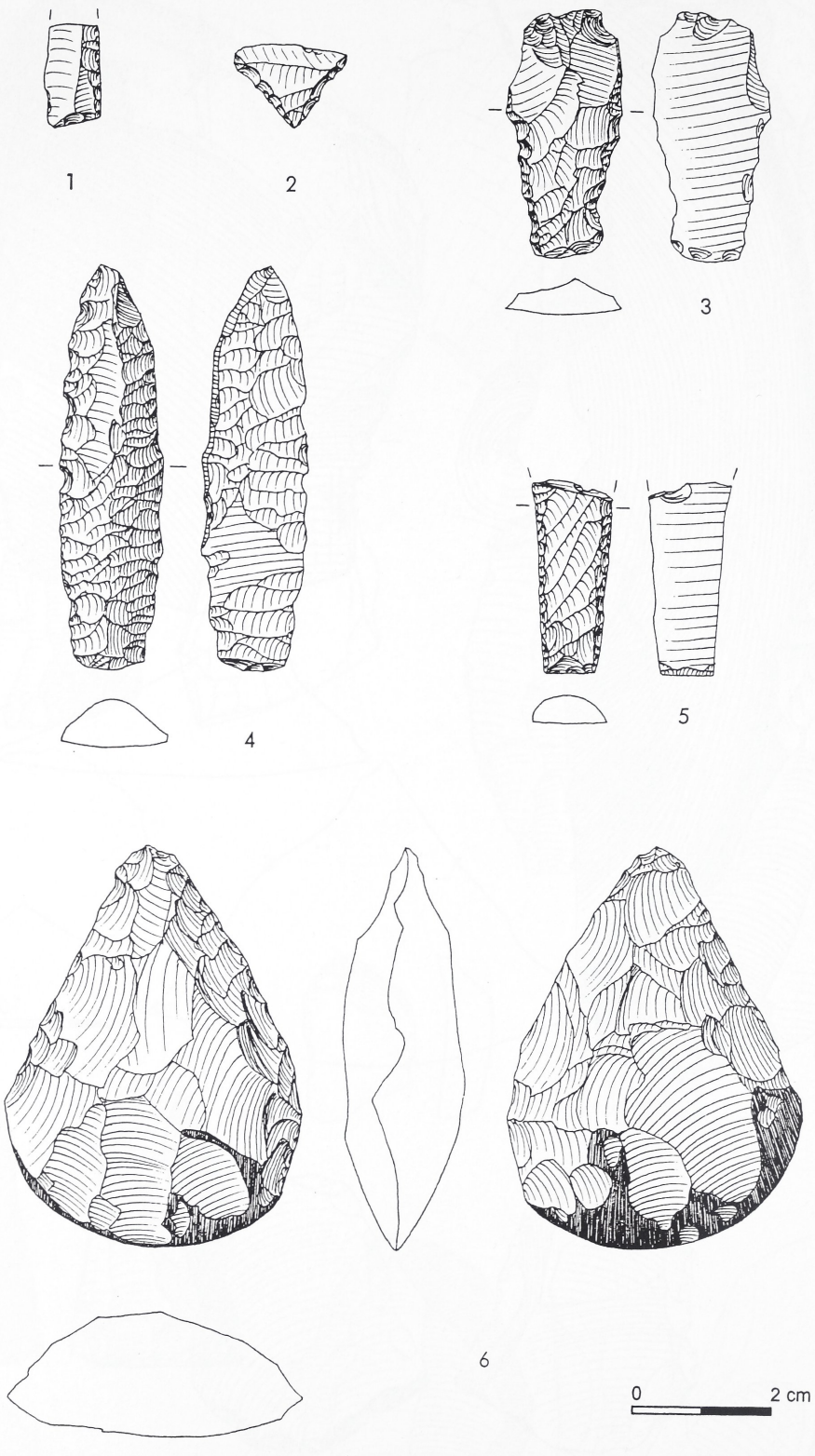

Fig. 8 Surface finds from Ein Miri in the Museum of Sasa: **1** broken truncated backed bladelet; **2** transversal arrowhead; **3-5** arrowheads and fragments; **6** polished axe.

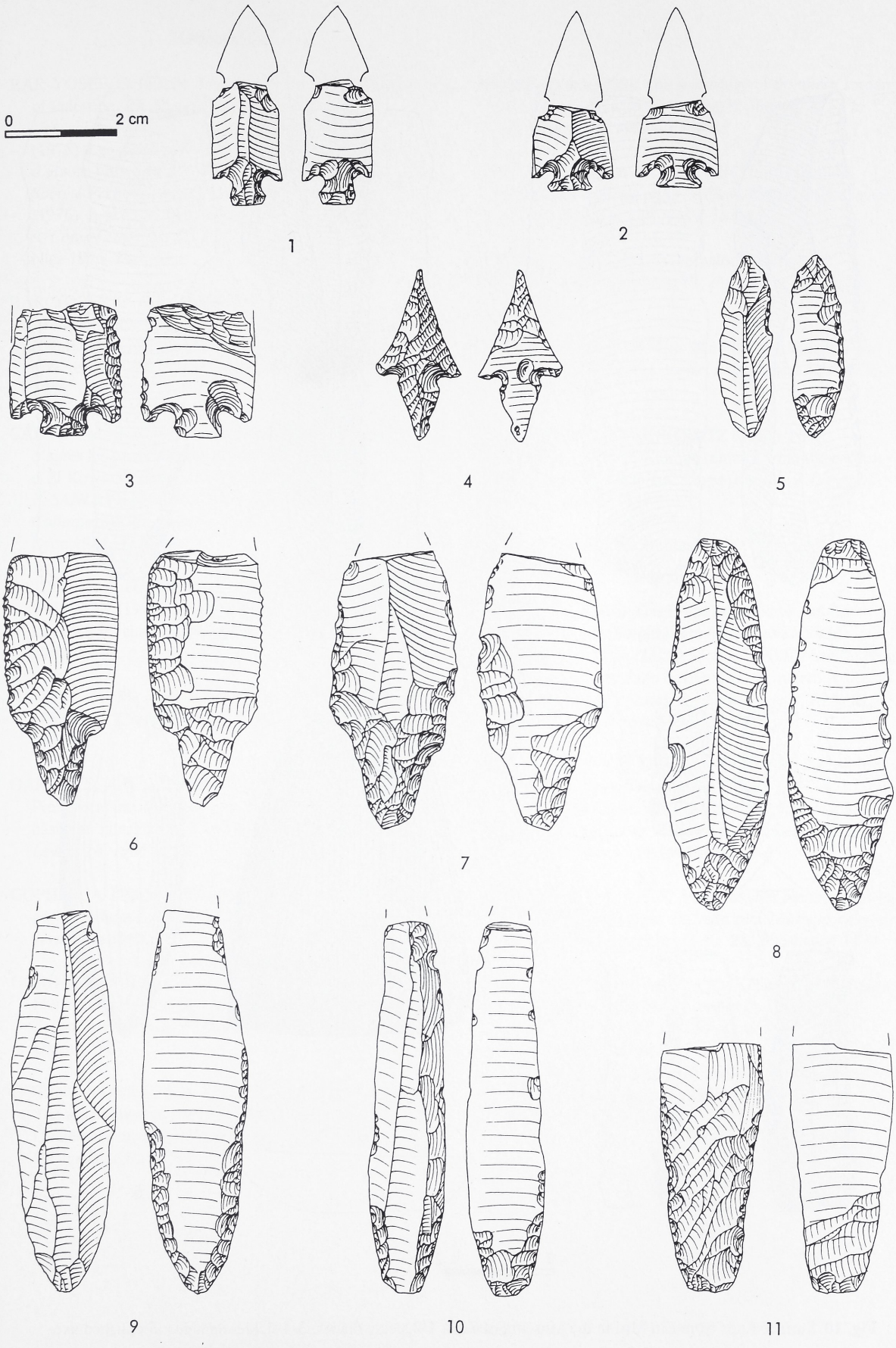

Fig. 9 Surface finds from Ein Miri in the Museum of Sasa: arrowheads and fragments.

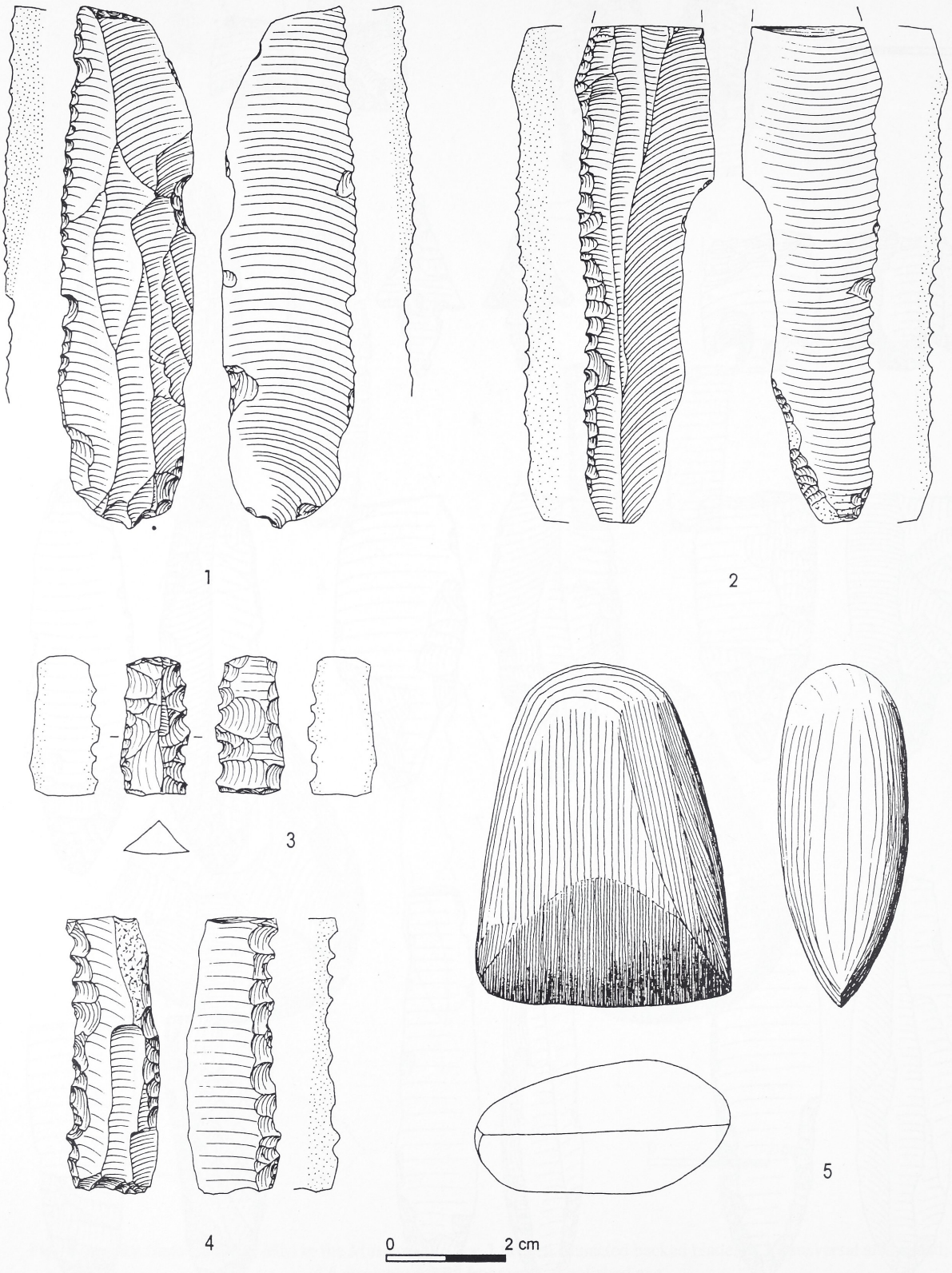

Fig. 10 Surface finds from Ein Miri in the Museum of Sasa: **1-2** sickle blades; **3-4** sickle-elements; **5** polished axe.

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