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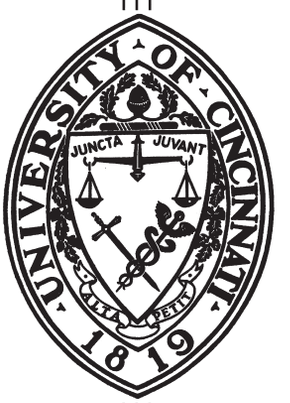

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INHALT – CONTENTS

Teil A: Troia − Aktuelle Ausgrabungen und Umfeld

1. Troia, Vorbericht

2. Troia, Architektur, Funde und Befunde

3. Troia, Naturwissenschaftliche Untersuchungen

4. Troas und Anatolien

Teil B: Weitere Forschungen

4. Anhang

The Early Bronze Age Lithic Industry in Yenibademli Höyük (Gökçeada/Imbros)

Halime Hüryılmaz, Ivan Gatsov and Petranka Nedelcheva

Abstract

In this paper the first results of the analyses of chipped stone artefacts from Yenibademli Höyük, Gökçeada/Imbros are presented. The settlement dates to the Early Bronze Age II period. The lithic data include more than 1000 stone artefacts, which belong to the categories of cores, cortical specimen, crested specimen, *debris,* flakes, blades and retouched tools. All raw material varieties were undergone pethrographical analyses. This way 5 raw material varieties have been distinguished, which were used in stone production. These are the following: flint, andezit, limestone, claystone and obsidian. At this stage of research the Lithic assemblages processed reveal *ad hoc* an orientated chipped stone production connected with flake acquiring and tool manufacturing in this Early Bronze Age settlement.

Zusammenfassung

In diesem Artikel werden die ersten Ergebnisse der Analysen geschlagener Steinartefakte von Yenibademli Höyük, Gökçeada/Imbros präsentiert. Die Siedlung datiert in die II. Periode der Frühen Bronzezeit. Die Datenbank umfasst mehr als 1000 Steinartefakte, die zu den Kategorien Kerne, Abschläge, Randabschläge, spitze Abschläge, Abfall, Klingen und retuschierte Werkzeuge gehören. Alle Sorten des Rohmaterials wurden petrographischen Analysen unterzogen. Auf diese Weise wurden 5 Arten erkannt, die in der Steinproduktion verwendet wurden. Das sind Flint, Andesit, Kalkstein, Kreide und Obsidian. Zum Zeitpunkt der Untersuchung zeigten die untersuchten Stein-Ensembles eine Produktion von gleich gerichteten Abschlägen, verbunden mit dem Sammeln von Abschlägen und mit Werkzeugherstellung in dieser Siedlung der Frühen Bronzezeit.

I. General Remarks

Yenibademli Höyük situated in the Gökçeada (Imbros) district of Çanakkale is named after the village lying 1.5 km to the northeast. Today's Kale village, which has been mentioned as Kastro during the ancient period, has been identified by the paleogeographers[1] to the right of the asphalt road leading to the island centre (Çınarlı/which is the ancient Gökçeada). This höyük rises in the lower part of Büyükdere valley which developed from the east of a Rias-type bay during prehistoric periods. The Büyükdere (Ilissos), which flows 250 m to the west of the höyük – surrounded with alluvion fill – drains in the Aegean Sea near Kale village. The höyük which is a flat tell in the Büyükdere valley, that is considered as the cereal silo of Gökçeada, covers an aerea of 120 x 130 m and reaches 18 m over sea level. The archaeological excavations started at the höyük in 1996 which comprises two terraces and a flat peak. The investigations continued with other scientific disciplines.[2] Up to now the evidence obtained from these works have shown that this settlement site has been inhabited, to a wider range, during the Early Bronze Age II, in other words during the Troy I period, and again – after a certain interval – has been a place of activities during the Late Bronze Age.[3]

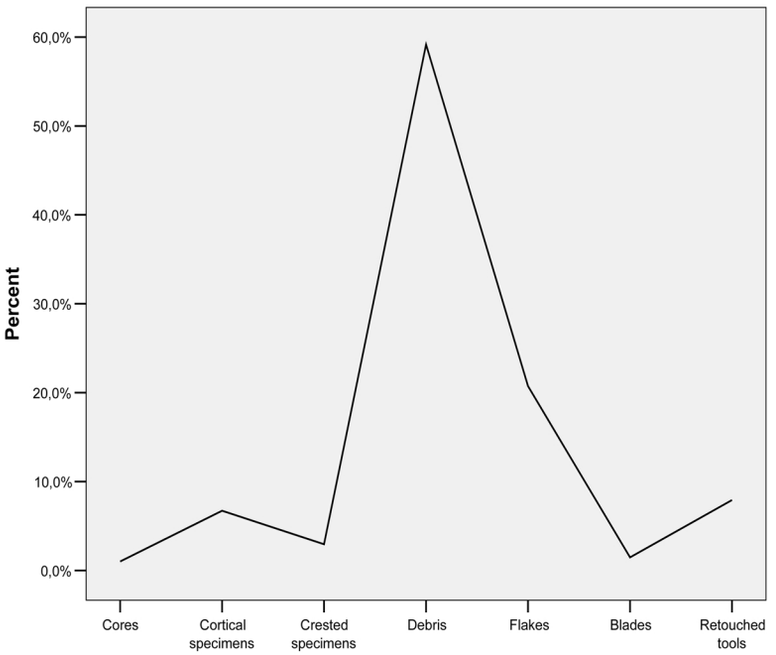
The Early Bronze Age II architectural remains, which are represented by seven strata, show affinity or parallelism to the structures extracted in the neighbour islands (Poliochni/Lemnos and Thermi on Lesbos) as well as the architectural plan. These various finding assemblages encountered in the buildings of this period (which have been used for workshops and residence purposes) are of high importance – regarding the several industry branches developed during the first half of the Bronze Age in Gökçeada – and regarding the systematic excavations by which they were extracted.[4]

The data acquired from the lithic findings of Yenibademli Höyük are presented in this article. The finds date to the Early Bronze Age II and were collected from different trenches. H. H.

II. Stone Industry

A. Chipped stone artefacts

The data base includes 1086 chipped stone artefacts, which relate to the categories of cores, cortical specimen, crested specimen, *debris*, flakes, blades and retouched tools.



Graph 1 The general structure of chipped stone material of the EBA Yenibademli settlement.

The entire profile of the chipped stone collection from this Early Bronze Age site reveals clearly that *debris* specimen and flakes are dominating, followed by retouched tools and cortical specimen, while the frequency of the crested ones is very low. The percentage of cores and blades do not exceed 1%.

In addition, the above presented categories have been separated by areas, the distribution of which is presented below.

	Areas											Total
	E10	E9	F10	G10	G7	G8	H10	H7	H8	H8*	H9	
Cores	0	1	0	1	0	0	0	3	4	1	1	11
Cortical specimens	3	0	5	20	4	6	6	9	11	4	5	73
Crested specimens	0	1	1	10	0	0	4	2	11	2	0	31
Debris	29	14	33	231	26	41	46	49	111	24	38	642
Flakes	6	2	16	53	11	21	22	25	45	3	22	226
Blades	0	1	1	5	0	2	1	1	4	0	1	16
Retouched tools	0	2	8	27	4	8	13	4	9	6	6	87
Total	38	21	64	347	45	78	92	93	195	40	73	1086

Table 1 Distribution of technological categories by areas.

During the excavation process five strata have been distinguished by Professor Dr. Halıme Hüryılmaz. The entire material has been categorized according to the information of the excavator. This way the chipped stone artefacts of five layers have been numbered from I to V. Some pieces are without exact stratigraphical position and therefore were labelled as layers II to IV, while a number of artefatcs could not either be linked with any of these strata.

On the other hand, for more than two thirds of the artefacts it could not be determined which relevant stratum they belong to. That is why this specimen is described as "without horizon". The former are followed by specimen of layers I to V.

The distribution of the different categories by areas present a defined irregularity in the allocation of the artefacts. The stone material of area G10 and H8 and the probably contaminated material of area H7, H10, H9 show up in the different categories (s. preceeding sentence) while in the rest of the areas their quantity listed is insignificant. The frequency of specimen diminishes between layers II to IV and almost tends towards zero.

	I	II	III	IV	V	II / IV	without horizon	Total
Cores	5	0	0	1	2	0	3	11
Cortical specimens	6	2	2	2	1	1	59	73
Crested specimens	2	1	0	1	1	0	27	32
Debris	57	21	3	15	2	6	538	642
Flakes	19	6	3	3	2	0	192	225
Blades	1	0	0	0	0	0	15	16
Retouched tools	22	17	17	7	2	2	19	86
Total	112	47	25	29	10	9	853	1085

Table 2 Distribution of technological categories by layers.

Reminding that the excavation is still in progress and only a part of the settlement has been investigated, it is still too early for some more or less defined conclusions about the reason for this unequal distribution by areas and horizons of the chipped stone material.

In the beginning of our investigation the entire collection was separated into 13 different raw material varieties. All of these have been distinguished according to their color, texture, knapping ability, surface, luster and inclusions. Later on there were done several pethrographical analyses by Professor Dr. Hasan Bayhan, Professor Dr. Erkan Aydar, and Dr. Erdal Şen. Within the 13 samples they have distinguished 5 raw material varieties, which are used in stone production. These are the following raw material types: flint, andezit, limestone, claystone, and obsidian. With the exception of one specimen of obsidian the above quoted types of raw material such as andezit, limestone, claystone are from local origin. The analysis of the flint raw material is not yet completed so it is still impossible to tell whether or not this type of raw material is from local origin or from abroard.

The raw material samples are listed as 5 raw material varieties by their individual number as they were distinguished by the above mentioned specialists.

	I	II	III	IV	V	II / IV	without horizon	Total
Flint	47	22	10	9	4	2	406	500
Andezit	53	20	11	18	6	3	343	454
Limestone	10	4	4	2	0	4	96	120
Claystone	2	1	0	0	0	0	7	10
Obsidian	0	0	0	0	0	0	1	1
Total	112	47	25	29	10	9	853	1085

Table 3 Distribution of raw material samples by layers.

Almost all chipped stone artefacts were made of flint and andezit which appear in similar quantity, while the quantity of limestone and claystone artefacts is insignificant.

	Flint	Andezit	Limestone	Claystone	Obsidian	Total
Cores	7	3	1	0	0	11
Cortical specimens	39	29	4	1	0	73
Crested specimens	15	12	5	0	0	32
Debris	293	264	77	7	1	642
Flakes	104	97	23	1	0	225
Blades	6	9	0	1	0	16
Retouched tools	36	40	10	0	0	86
Total	500	454	120	10	1	1085

Table 4 Distribution of technological groups by raw material samples.

More than half of the entire collection consists of *debris* followed by flake specimen; together these both categories represent more than two thirds of the whole number of artefacts. The artefact distribution reveals – typical for this region and for the Bronze Age period – a non pre-planed non-structural production, based mostly on *ad hoc* core knapping and tool manufacturing, which presumably took place in the settlement.

Cores

This category includes a single specimen of precore, single and multidirectional specimen (Plate 3: 3), flake and concretion with trace of detaching and core fragments as well. Their distribution by the excavation units is given further down.

	I	IV	V	without horizon	Total
Unidirectional	1	0	0	0	1
Multidirectional	1	0	0	0	1
Flake with traces of exploitation	1	1	1	0	3
Concretion with traces of exploitation	1	0	0	0	1
Core fragment	0	0	0	3	3
Precore	1	0	0	0	1
Core with changed orientation	1	0	1	0	2
Total	6	1	2	3	12

Table 5 Distribution of core types by layers.

One flint micro core (26 x 24 x 17 mm) with unidirectional scars for bladelets belongs to the first stratum. The back side is unprepared and covered by cortex. An andezit core with multidirectional scars for flakes in its final stage of exploitation was also recorded, on the back side of which one finds traces of cortex. The excavators informed us that these cores have been found between the structures of the stratum. One flint core with changed orientation was also detected, the specimen has a relatively small size (30 x 29 x 23 mm), the core is in a final stage of exploitation and all its sides were used for receiving flakes.

It is worth to be noticed that there are flakes and concretion with traces of exploitation and precore from among the material from the first layer. Unfortunately it is not clear to which structure of the first layer they belong to. In layer IV just one flint flake with traces of exploitation was found under the floor of a structure. Two core specimen are recorded in layer V, the first one is a flint micro core with changed orientation (27 x 26 x 20 mm); four flakes in their final stage of exploitation; all the flaking surface is used. The second specimen is a flake with traces of exploitation at relatively big size (77 x 58 x 50 mm), and traces of cortex on its back side. The above mentioned specimen are not connected to some architectural structure in this stratum.

Cortical specimen

The total number of cortical specimen and flakes with more than 50% consist of almost one third of all cortical flakes what suggests that core preparation was done on spot (Plate 2: 1, 2, 5).

	I	II	III	IV	V	II / IV	without horizon	Total
Totally cortical	1	0	0	0	0	0	10	11
More than 50% cortex	1	1	1	2	0	0	18	23
Less than 50% cortex	4	1	1	0	1	1	31	39
Total	6	2	2	2	1	1	59	73

Table 6 Distribution of cortical flakes by layers.

	Flint	Andezit	Limestone	Claystone	Total
Totally cortical	6	4	0	1	11
More than 50% cortex	11	11	1	0	23
Less than 50% cortex	22	14	3	0	39
Total	39	29	4	1	73

Table 7 Distribution of cortical flakes by raw material samples.

Crested specimen

This category includes: 1-side crested flake, 2-side crested flake, 1-side crested blade, 2-side crested blade, tablet, lame outre passé, plunging, secondary crested flake, the distribution of which is presented here.

	I	II	IV	V	without horizon	Total
1-side crested flake	1	1	1	0	16	19
2-side crested flake	1	0	0	1	3	5
1-side crested blade	0	0	0	0	1	1
2-side crested blade	0	0	0	0	1	1
Tablet	0	0	0	0	1	1
Lame outre passe	0	0	0	0	1	1
Plunging	0	0	0	0	3	3
Secondary crested flake	0	0	0	0	1	1
Total	2	1	1	1	27	32

Table 8 Distribution of crested specimen by layers.

	Flint	Andezit	Limestone	Total
1-side crested flake	6	9	4	19
2-side crested flake	2	2	1	5
1-side crested blade	0	1	0	1
2-side crested blade	1	0	0	1
Tablet	1	0	0	1
Lame outre passe	1	0	0	1
Plunging	3	0	0	3
Secondary crested flake	1	0	0	1
Total	15	12	5	32

Table 9 Distribution of crested specimen by raw material samples.

The above presented table includes flake and blade crested specimen (Plate 1:5) connected with the core sides and the back preparation. Single items of tablet, plunging linked with core rejuvenation, flattering the core platform and flaking surface has been recorded as well.

The presence of cortical and crested specimen with a size of a few centimeters long suggest the presence of relatively small cores with a length of around 10–12 cm.

Allmost all crested specimen are derived from cores, from flint, and andezit which apparently have better knapping abilities.

Debris

The most numerous categories consist of flake fragments (butts are missing) and undetermined fragments.

	I	II	III	IV	V	II / IV	without horizon	Total
Flake fragment	53	15	1	12	2	6	438	527
Small flake	0	0	0	0	0	0	1	1
Undetermined fragment	4	6	2	3	0	0	99	114
Total	57	21	3	15	2	6	538	642

Table 10 Distribution of *debris* types by layers.

	Flint	Andezit	Limestone	Claystone	Obsidian	Total
Flake fragment	239	218	64	5	1	527
Small flake	0	1	0	0	0	1
Undetermined fragment	54	45	13	2	0	114
Total	293	264	77	7	1	642

Table 11 Distribution of *debris* types by raw material samples.

This category is characterized by a total predominance of flake fragments. Chips from retouching and flakes smaller than 10 mm are missing.

Flakes

Specimen without cortex on their dorsal pattern are included in this category.

	I	II	III	IV	V	without horizon	Total
Flint	6	4	1	0	1	92	104
Andezit	12	2	2	3	1	77	97
Limestones	1	0	0	0	0	22	23
Claystone	0	0	0	0	0	1	1
Total	19	6	3	3	2	192	225

Table 12 Distribution of flakes by layers and raw materials samples.

Most of the specimen listed in this category are “without horizon”, which makes it impossible to formulate some more or less detailed observation. Nevertheless all flakes come from an Early Bronze Age context and undoubtedly are related to the settlement in question.

	Frequency	%
Unidirectional	42	18,7
Multidirectional	183	81,3
Total	225	100,0

Table 13 Distribution of flakes with dorsal pattern.

The specimen with multidirectional scars on their dorsal patterns are dominant. The former are associated with core preparation and levelling of the flaking surface.

	Pressure	Punch	Hard hammer stone	Total
Natural	0	1	14	15
Prepared by single blow	1	3	112	116
Dihedral	1	1	46	48
Linear	0	0	22	22
Undetermined	0	0	2	2
Splintered	0	0	2	2
Flat (with bird form)	0	0	20	20
Total	2	5	218	225

Table 14 Cross table of flakes butt and detachment

Most of the flake butts are related to the prepared ones what suggests that they were knapped from cores with prepared platforms, followed by dihedral ones, liner and flat in bird form. The flake detachment was realized mostly by direct percussion and hard hammer stone.

Within this research, the estimation of the mean value of cortical, crested and ordinary specimen length, width and thickness has been considered.

	Minimum	Maximum	Mean	Std. Deviation
L	19	94	40,61	14,25
W	14	77	34,08	13,54
T	4	27	10,99	4,79

Table 15 Mean value and standard deviation of cortical specimen's length, width, and thickness.

	Minimum	Maximum	Mean	Std. Deviation
L	23	104	41,04	16,29
W	14	68	31,53	12,11
T	6	30	12,69	5,65

Table 16 Mean value and standard deviation of crested specimen's length, width, and thickness.

	Minimum	Maximum	Mean	Std. Deviation
L	17	74	35,26	10,36
W	14	74	30,84	9,73
T	3	25	9,34	3,56

Table 17 Mean value and standard deviation of flake length, width, and thickness.

The high value of standard deviation displays a lack of standardization in the production of flakes, cortical and crested specimen. The presence of specimen with relatively low size and significant thickness is remarkable. It is very likely that this is due to the combination of applying direct percussion with hard hammer stone and the bad quality of the raw material varieties. An additional reason was the *ad hoc* demanding within the house production (Plate 2: 4,10; Plate 3: 2, 4).

Blades

The quantity of unretouched blades is insignificant and ranges under 1% towards the entire amount of artefacts. There is only one blade specimen with a certain stratigraphical position, which belongs to the first layer. The blades in question were found in the settlement but without information which horizon they belong to.

	I	without horizon	Total
Flint	1	5	6
Andezit	0	9	9
Claystone	0	1	1
Total	1	15	16

Table 18 Distribution of blades by layers and raw materials samples.

The specimen display irregular shapes and trapezoidal cross-section and straight profiles; all of them come from an advanced stage of core reduction. Just two pieces are intact, the rest are mesial and proximal fragments with unidirectional scars on their dorsal patterns. Generally the presence of only a few blades does not allow to make detailed conclusions but the only inference is that this is a specimen with a small mean value of width and more considerable thickness. The blade size of the two intact blades is respectively 38 and 42 mm long, the mim. and max. value's width is between 10 mm to 28 mm and the thickness is between 3 mm to 8 mm. The values which are apparently so different – compared with a blade quantity thus small – reveals the hazardous character of their acquiring and/or gathering.

B. Retouched tools

The assemblage of the retouched tools could be characterized by a few groups of secondary modified specimen (Plate1: 1–4, 6–15; Plate 2: 3, 6–9; Plate 3:5; Plate 4: 1–14). The main one is the group of the end-scrapers, which are present in all layers. The andezit was the

	Flint	Andezit	Limestone	Total
End-scraper on flake	3	10	0	13
End-scraper on blade	3	2	0	5
End-scraper on shorten blade	0	1	0	1
Circular and semi-circular end-scraper	2	1	0	3
Fragment of end-scraper	2	2	0	4
Retouched flake	3	4	0	7
Retouch blade	5	5	5	15
Notched blade	0	0	1	1
Denticulate blade	4	4	2	10
Perforator	2	2	0	4
Various	1	2	0	3
Double end-scraper	0	2	0	2
Splintered piece	3	1	1	5
Arrow head	0	2	0	2
Fragment of retouched tool	6	1	1	8
Double perforator	1	0	0	1
Truncation	0	1	0	1
Combined tool	1	0	0	1
Total	36	40	10	86

Table 19 Distribution of retouched tools by raw material samples.

	I	II	III	IV	V	II / IV	Without horizon	Total
End-scraper on flake	6	3	2	1	1	0	0	13
End-scraper on blade	1	3	1	0	0	0	0	5
End-scraper on shorten blade	0	1	0	0	0	0	0	1
Circular and semi-circular end-scraper	1	1	1	0	0	0	0	3
Fragment of end-scraper	2	0	1	0	0	0	1	4
Retouched flake	1	2	2	1	0	1	0	7
Retouch blade	7	3	1	1	0	0	3	15
Notched blade	0	0	1	0	0	0	0	1
Denticulate blade	2	0	2	1	0	1	4	10
Perforator	0	2	1	0	0	0	1	4
Various	1	0	0	0	0	0	2	3
Double end-scraper	0	0	2	0	0	0	0	2
Splintered piece	0	1	1	1	0	0	2	5
Arrow head	0	1	0	1	0	0	0	2
Fragment of retouched tool	0	0	1	1	0	0	6	8
Double perforator	0	0	0	0	1	0	0	1
Truncation	1	0	0	0	0	0	0	1
Combined tool	0	0	1	0	0	0	0	1
Total	22	17	17	7	2	2	19	86

Table 20 Distribution of retouched tools by layers.

preferred raw material for producing end-scrapers. The group is characterized by specimen with relatively small sizes between 50 and 31 mm length, the only exception is a fragment of massive flake end-scraper with a rounded front, from the first layer. Most of the specimen from this group have rounded fronts. It should be noticed that the circular and semi-circular end-scrapers and also the microlithic double end-scraper appear in this very stratum.

The next group is the one of the retouched blades; these are specimen with marginal retouch usually covered on both sides of the blank body. There are blades present with denticulated retouch which is very characteristic for this period. On some specimen traces of usage have been observed. These blades with denticulated retouch or unretouched blades are – to the highest degree – typical for the Bronze Age period.[5]

The group of perforators is represented by specimen made on flakes; one single double perforator has been recorded among the material.

Two arrowheads have been found in layers II and IV. It is interesting to notice that the arrowhead from layer II is coming from an uncontaminated context – from one of the structures. The geologist concludes that both of the arrowheads are made of andezit. One of the arrowheads has a triangular form and a straight base, one of the sides is totally covered with flat invasive retouch, while the other one has a retouch just on the sides.

Another question arises of the low frequency of denticulated tools and polishing specimen which are found in the collection under study.

At this stage of research the above presented observations reveal an orientated chipped stone production connected with flake acquiring and tool manufacturing in this Early Bronze Age settlement. I. G./P. N.

Plate 1: 1, 2 6, 11 – end-scrapers on flake; 4, 10, 12, 13 – retouched blade; 3 – denticulated blade; 5 – two side crested blade; 7 – semi-circular end-scraper; 8, 9, 14 – end-scraper on blade; 11 – truncation; 15 – double perforator (1, 3, 8, 14 – layer II; 2, 5, 9, 10, 13 – layer I; 4, 6, 7, 11 – layer III; 14 – layer II/IV; 15 – layer V.

Plate 2: 1, 2, 5 – cortical flakes; 3, 7 – retouched flakes; 4, 10 – flakes; 6 – denticulated blade; 8, 9 – fragment of retouched tool (1 – layer II; 2 – 4, 6 – layer IV; 5 – layer V; 7 – layer II/ IV; 8 – 10 – without stratigraphy.

Plate. 3: 1 – flake from the levelling of the flaking surface; 2, 4 – flakes; 3 – 3; 5 – end-scraper on massive flake; (1, 2, 5 – without stratigraphy; 3, 4 – layer V).

Plate 4: 1, 12 – end-scraper on flake; 2 – denticulated blade; 3 – retouched flake; 4 – perforator; 5, 7, 10, 11 – retouched blade; 6 – splintered piece; 8 – circular end-scraper; 9 – alternated perforator; 13 – various; 14 – atypical perforator.
(1, 2, 12, 13 – layer I; 3, 6, 8, 9 – layer II; 4 – layer IV; 5, 7, 11, 14 – without stratigraphy; 10 – layer VI).

Notes

[1] Öner 2001, 789.

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[3] Hüryılmaz 2006, 56–70.

[4] Hüryılmaz 2002, 75–81; 86–91.

[5] Gatsov 1998.

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Bibliography

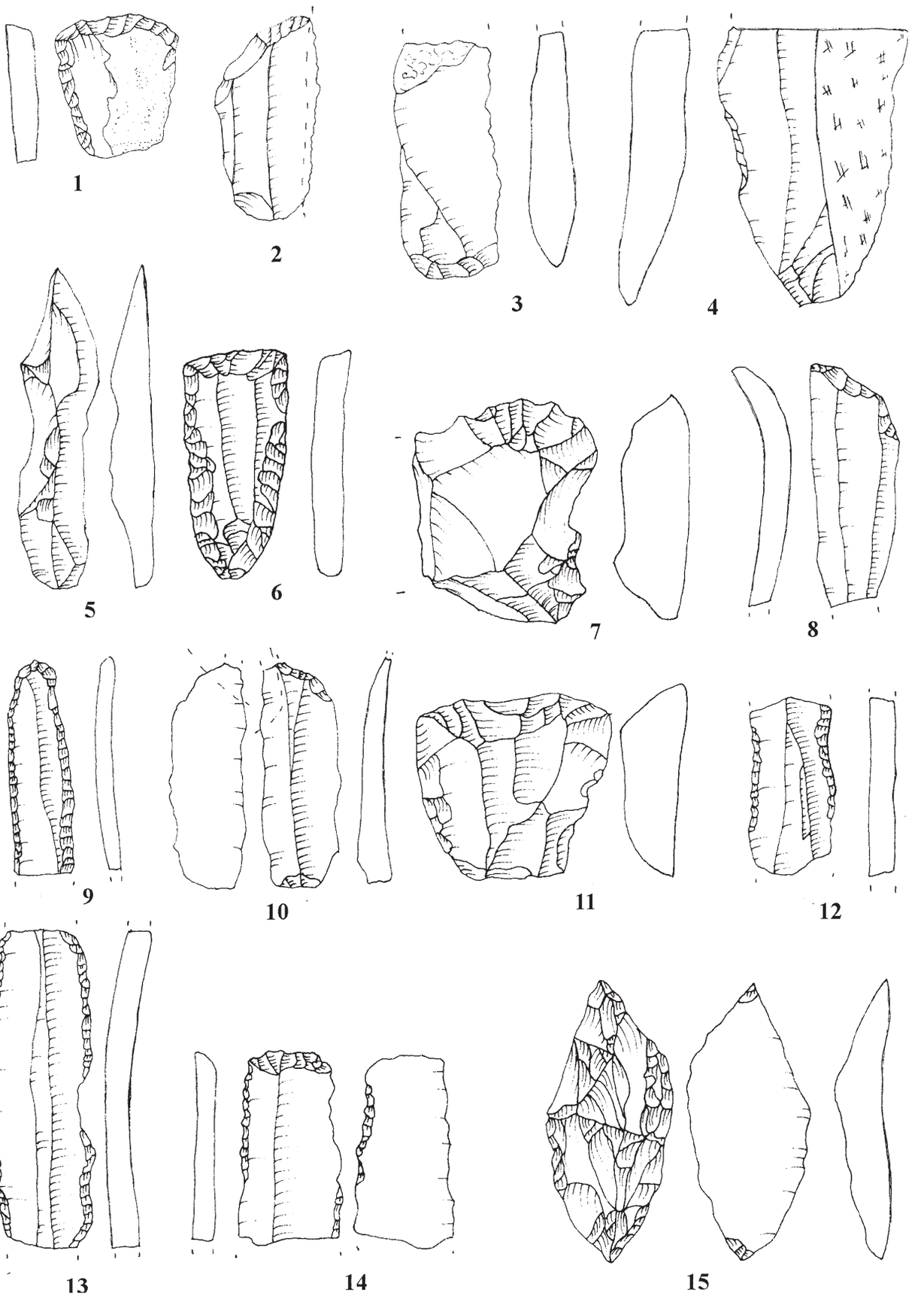
Gatsov, Ivan. 1998. Technical and Typological Analysis of the Chipped Stone Assemblages from Troia, *Studia Troica* 8: 115–140.

Hüryılmaz, Halime. 2002. Gökçeada Arkeolojisi/Archaeology of Gökçeada, in: Öztürk, Bayram (Ed.). *Gökçeada.Yeşil ve Mavinin Özgür Dünyası*. 71–91. İstanbul.

Hüryılmaz, Halime. 2006. *Kuzeydoğu Ege Denizi'nin Rüzgarlı Bahçesi: Gökçeada.* (Ed. B. Uysal). Çanakkale.

Öner, Ertuğ. 2001. Gökçeada Kıyılarında Holosen Deniz Seviyesi ve Kıyı Çizgisi Değişmeleri, in: Özkan, Erdal – Yalçın Yüksel (Eds.). *Türkiye'nin Kıyı ve Deniz Alanları III. Ulusal Konferansı Bildiriler Kitabı.* 779–790. Ankara.

PLATE 1



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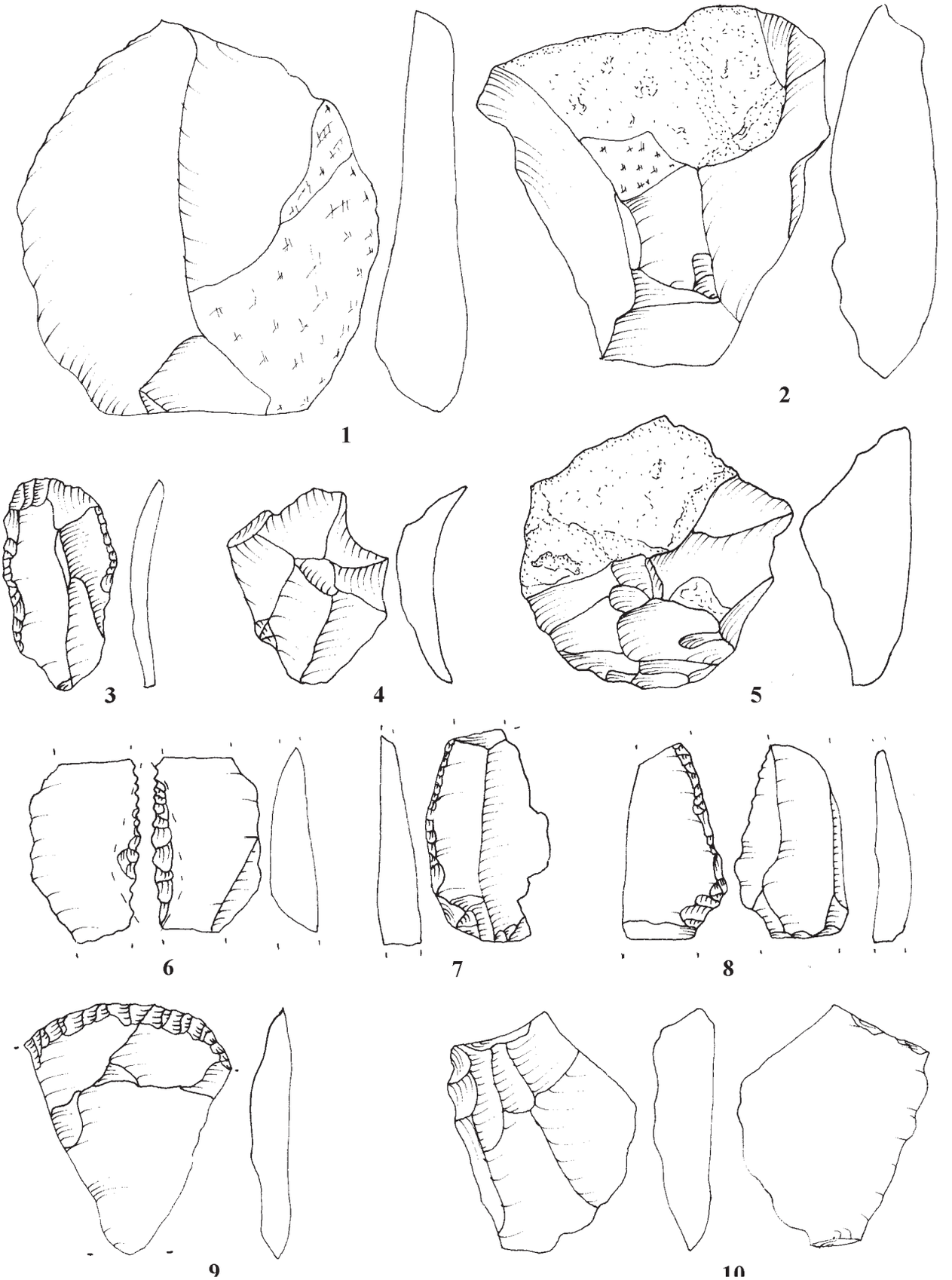

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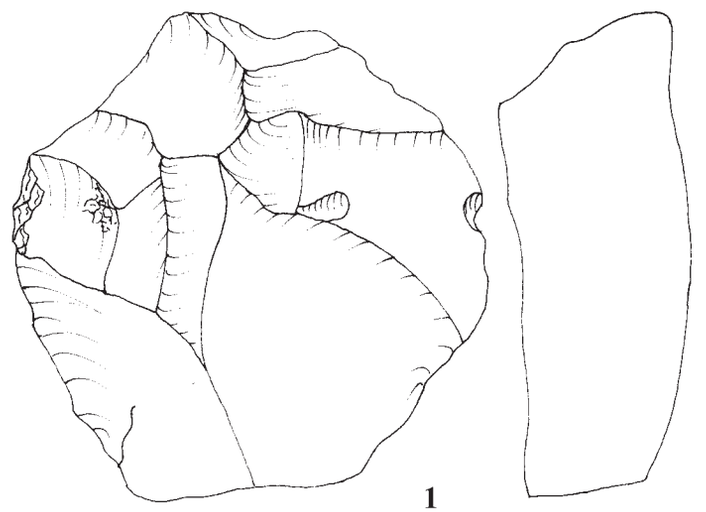

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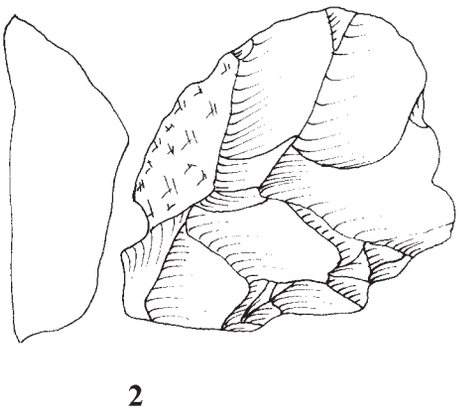

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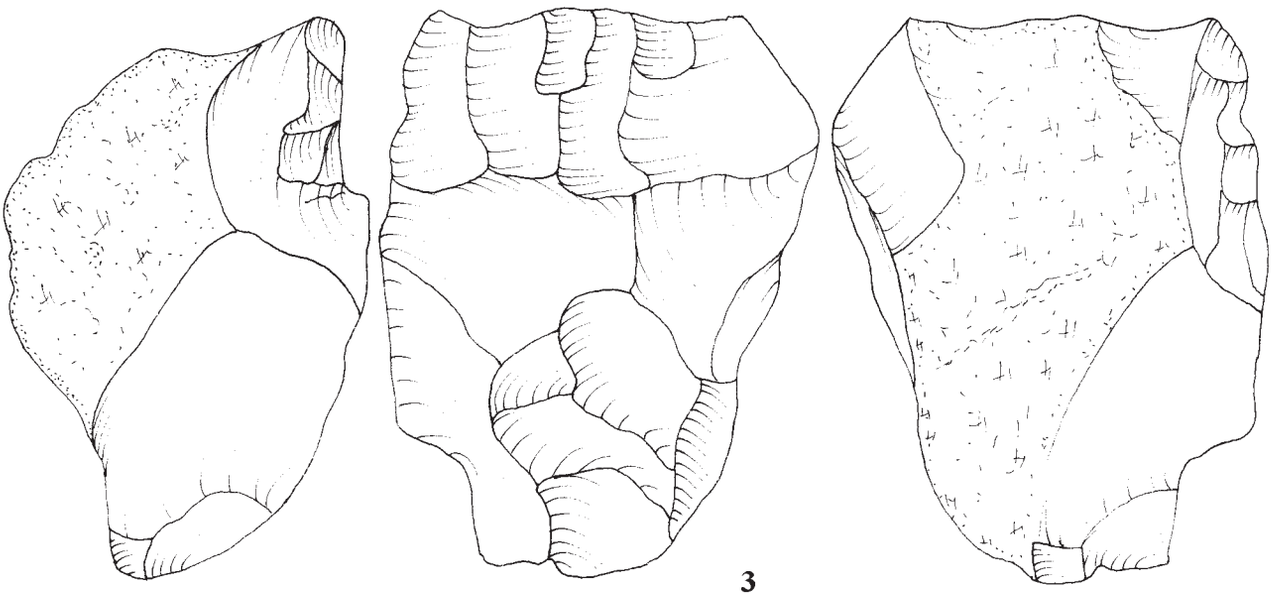

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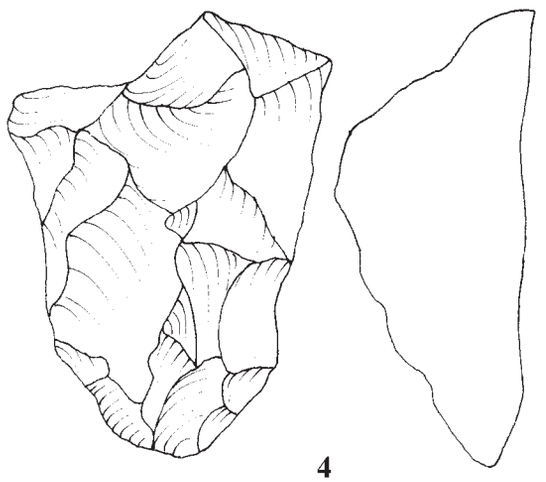

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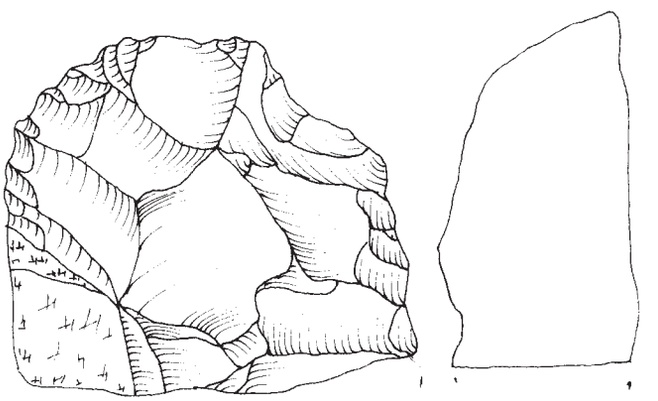

5

PLATE 4