

Typological and technological analysis of the Körös Culture stone assemblages of Méhtelek-Nádas and Tiszacsege (North-East Hungary)

A preliminary report

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Preface

The site of Méhtelek-Nádas (county Szabolcs-Szatmár-Bereg) is located in North-Eastern Hungary, between the rivers Szamos and Túr, close to the Roumanian border. It lies on the top of a low elevation, on the first gravel terrace of the river Túr, south of the village of Méhtelek (Fig. 1).

The site was discovered about twenty years ago during the construction of the flood barrier along the Roumanian border and excavated in 1973 by Drs. N. Kalicz and J. Makkay (KALICZ-MAKKAY 1976.). The extent of the settlement was estimated to be about 6400 square meters (KALICZ-MAKKAY 1976.14.), only 40% of which were investigated during the rescue excavation. Eight pits in total were recognized and excavated. They produced characteristic Early Neolithic Körös Culture artifacts including a rich chipped, polished and ground stone assemblage. The lithic collection from Méhtelek-Nádas is one of the richest Early Neolithic assemblages from the Great Hungarian Plain¹.

Three radiocarbon dates have been obtained from the charcoal collected from two Early Neolithic pits. They all fall into the first half of the 7th millennium BP. They are: Bln-1331: 6835±60 BP (Pit 1-3/α), Bln-1332: 6655±60 BP and GrN-6897: 6625±50 BP (Pit 4-5/α) (KALICZ-MAKKAY 1976.23.).

On the other hand the site of Tiszacsege-Homokbánya (county Hajdú-Bihar), near the river Tisza (Fig. 1), gave a more restricted number of stone artifacts. They were recovered from a 'pit-house' structure (MAKKAY pers. comm. 1993.) only partly excavated by Drs. N. Kalicz and J. Makkay, who dated it to a transitional period between the Körös Culture and

the early Alföld Linear Pottery Culture (ALPC), on the basis of the pottery typology (KALICZ-MAKKAY 1977.165.)

The Méhtelek-Nádas lithic assemblage

As mentioned above, the assemblage of this site consists of a high number of chipped stone artifacts, mainly obtained from obsidian and limnic quartzite, several polished stone tools and a few fragments of grinding stones. The chipped stones were previously examined by J. CHAPMAN (1986.31-52.) who wished to focus on two well-defined questions, namely, the existence of a possible specialized activity at the site and the variability between the obsidian and non-obsidian assemblages. These specific aims caused less space to be given to the illustration of the typology of the tool-kit and the technology of tool preparation. A re-examination of the sample, also including the polished and ground stone tools, was undertaken with the intention of concentrating on the above topics, considering that this is, at present, the only available Hungarian Körös Culture site with a sufficient number of pieces for the range of such an examination. The chipped stone assemblage was analysed following the typological list of LAPLACE (1964.) for the retouched pieces and the typometrical method of BAGOLINI (1968.) for the blanks. The results will be illustrated in detail in a complete study now in preparation. The whole assemblage is composed of 1710 specimens, 1676 of which are from pits and 34 from the flood barrier area.

¹ The re-examination and study of the lithic assemblages from the sites of Méhtelek-Nádas and Tiszacsege-Homokbánya was carried out in 1993 thanks to a Hungarian Ministry of Culture Scholarship at the Academy of Sciences, Institute of Archaeology in Budapest. I would like to thank Dr J. Makkay for allowing me to study the lithic materials from these sites and for kindly encouraging and helping me during the study. Thanks are also due to E. Bácskay, K.T. Bíró and V.T. Dobosi for their help in the raw material identifications and for the many reprints and books they provided me. I am also grateful to Professors J.K. Kozłowski and P. Biagi for useful discussion and advice, and to my friend B.A. Voytek who corrected the English version of the manuscript.

Their distribution in the structures was as follows:

Structure	Total Össz.	Obsidian: N. Obszidián: Szám	(%) (%)	Non obs.: N. Nem obs.: N.	(%) (%)
Pit 1-3/α	415	291	(70,1)	124	(29,9)
Pit 4-5/α	330	228	(69,1)	102	(30,9)
Pit 6/α	50	27	(54,0)	23	(46,0)
Pit 7/α	130	73	(56,2)	57	(43,8)
Pit II	25	20	(80,0)	5	(20,0)
Pit III	651	331	(50,8)	320	(49,2)
Pit IV	75	40	(53,3)	35	(46,7)
Dam trench 6	34	19	(55,9)	15	(44,1)
Totals Összesen	1710	1029	(60,2)	681	(39,8)

Table 1 Distribution of the chipped stone artifacts
1. tábla A pattintott kőszközök megoszlása

There is some difference in the total number of pieces counted by CHAPMAN (1986. Tab. 3) from the various structures and the collection actually in Budapest, ranging between a minimum of 1 to a maximum of 46 artifacts (as in the case of pit III).

The artifacts have been subdivided into the following categories: retouched pieces, and unretouched pieces and cores. The maximum length, width and thickness of the unretouched (blanks) complete pieces have been recorded and plotted separately for the obsidian (OB) and non-obsidian (NO) artifacts, with the intention of building up diagrams and histograms of the lithotechnic and lithometric distribution, according to Bagolini's system (BAGOLINI 1968.).

As shown in Fig. 2, the main values are those of the flat microliths, represented by bladelets and flakelets. The scatterplots of the obsidian and non-obsidian elements and the relative histograms are very similar, suggesting an identical production system. The cores are also similar from a typological point of view. They are almost all small in size, and subconical with one striking platform (Fig. 3: 12, 13, 16). They all look very worn. Only one pyramidal obsidian specimen from pit 1-3/α, is exceptional for its size and for the regularity of its preparation (Fig. 3: 17); it does not seem to be a worn and discarded piece. Some cores of limnic quartzite are worn out for re-use as hammers.

As already observed by CHAPMAN (1986.) a considerable core reduction activity is testified at the site. There are several technical pieces connected with this activity such as core trimming flakes, striking platforms rejuvenation flakes, decortication flakes, and core-tip rejuvenation flakes. In addition, most of the blanks, unretouched flakes and blades, often of an irregular shape or 'outrépassé' (TIXIER-INIZAN-

ROCHE 1980.95.), should be considered as having been discarded during the core reduction process.

There are in total 173 retouched pieces and instruments. They represent a small percentage (10%) of the total assemblage. Almost 75% of them are from obsidian; the rest are chipped from other raw materials, mainly limnic quartzite. The tool-kit is characterized by endscrapers (Fig. 3: 1-2), truncations (Fig. 3: 3-5), trapezoidal geometrics (Fig. 3: 6-9) (obtained without the microburin technique) and bladelets with a simple retouch (Fig. 3: 10) In a few cases slight polish can be observed along the edges of retouched and unretouched artifacts, but it does not seem always to be a true sickle gloss (Fig. 3: 3, 11).

As mentioned above, the most common raw material from Méhtelek is obsidian. Neutron activation analysis of 34 samples of obsidian has indicated the utilization of the Carpathian 1 source of the Tokaj-Prešov Mountains (slovakian side) (Williams THORPE 1978.). Obsidian is followed by the limnic quartzite of various colours from the Tokaj Mountains. A very low percentage of obsidian of the Carpathian 2 variety (Erdőbénye type) is also present. The obsidian seems to have been collected in small corticated nodules, two of which were recovered intact from pit 7/α. The identification of the raw material was conducted with the aid of the Lithotheca, the raw material collection of the Hungarian National Museum in Budapest (BÍRÓ-DOBOSI 1991.) and with the help of K.T. Bíró and V.T. Dobosi. The groups of raw materials so far identified are considerably less numerous than those of CHAPMAN (1986.32-33.). Other raw materials utilized at Méhtelek, but represented in very small quantities are radiolarite of Carpathian origin, and „Banat” flint. They testify to the existence of long-distance exchange of goods. A small flakelet from pit 1-3/α is manufactured from red radiolarite, absolutely identical to that of the Szentgál-Tűzköveshegy source north of Lake Balaton (BÍRÓ-REGENYE 1991.). It can be considered the first imported find that indicates contacts with Transdanubia.

The polished stone tools are represented by some complete axes or adzes of small size, and butt or cutting-edge fragments of bigger specimens (Fig. 4). Some of them show resharpening attempts and in one case it has been possible to refit a flake (Fig. 4: 3). A considerable number of flakes indicate the preparation and the resharpening of the tools at the site. The polished tool was first shaped, probably from a pebble, with a flaking technique to obtain the shape and then polished with abrasive rocks. The raw materials utilized are very fine grained, homogeneous and relatively soft rocks, not yet identified. In any case the assemblage seems to reflect more a domestic wood-working activity rather than woodland clearance. Some fragments of fine grained rock (sandstone) with flattened or saddled surfaces are probably connected with edged tools preparation

(Fig. 4: 9). Only one large quern, stored in the Museum of Nyíregyháza, comes from the site (from pit III/a), and is probably related to a food processing activity.

The Tiszacsege lithic assemblage

As mentioned above, the structure excavated at Tiszacsege-Homokbánya, on the left bank of the river Tisza (Fig. 1), gave a more restricted number of stone artifacts. The finds have been dated to a transitional period between the Körös Culture and the Early ALPC (KALICZ-MAKKAY 1977.165., MAKKAY 1987.). The stone assemblage consists of 86 chipped artifacts in total, among which are 7 cores. The site yielded neither polished nor ground stone tools. There are only 12 retouched pieces, represented by one burin, some endscraper, one truncation and fragments of simple-retouched blades and bladelets (Fig. 5: 1-13). The cores are very worn and of subconical type (Fig. 5: 14-17). Except for a fragment and a core of limnic quartzite (Fig. 5: 17), two pieces of Middle Jurassic, Szentgál type radiolarite, one of which is a small core (Fig. 5: 14), and two unidentified pieces, all the other artifacts are chipped from obsidian from the Carpathian 1 source (THORPE-WARREN-NANDRIS 1984.). The lengths, widths and thickness of the 39 entire and unretouched obsidian artifacts have been plotted with the same system used for the Méhteleg assemblage (BAGOLINI 1968.). Even though the sample is too small to be significant, we can observe a general similarity to that which came from Méhteleg (Fig. 6).

Conclusion

Even though the chronology of the two assemblages is not identical, since Tiszacsege is slightly more recent than Méhteleg, and the number of artifacts and the composition of the two collections are very different, it is interesting to compare them. The first result to be noted is that both sites gave a relatively high number of stone artifacts, considering the general poverty of the Körös sites. The raw material preferred is obsidian, whose primary source lies in the Tokaj Mountains, some 70 kilometres from Méhteleg and far fewer from Tiszacsege (Fig. 1). We can argue that it was easily supplied from the source by boat along the Tisza river. The presence of Middle Jurassic radiolarite of the Szentgál type at both settlements, indicates Transdanubian contacts. The chipping activity was carried out at the sites, as the cores and the waste indicate, with a high production of narrow and flat blades and bladelets. At Méhteleg the tool-kit is represented by endscrapers with straight front, truncated blades and bladelets, isosceles trapezes with backed retouch, and blades and bladelets with simple retouch. The few retouched elements from Tiszacsege consist of very similar endscrapers and a few fragments of blades and bladelets with simple retouch which is similar from both a technological and typological point of view. Finally, two new sites in Slavkovce and Zaluzani (Prešov and Michalovce) in eastern Slovakia, representing probably the oldest Linear Pottery Culture, yielded chipped assemblages very similar to those from Méhteleg (J.K. Kozłowski pers. comm. 1993.), mainly on obsidian.

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A Körös kultúra Méhtelek-nádasi és tiszacsegei (Északkelet-Magyarország) lelőhelyeiről származó kőeszközök tipológiai és technológiai elemzése

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A Méhtelek-Nádason előkerült korai neolitikus kőeszköz együttes újabb vizsgálatát tipológiai és technológiai szempontból végeztem el. Ez lehetőséget adott arra, hogy a Körös kultúra alapvető eszközkészletét meghatározhassam. A pattintott kőeszközök – amelyek anyaga a Tokaj-hegységből származó obszidián vagy limnokvarcit – pengevakarókból, csonkolt eszközökből, egyszerűen retusált pengékből és ugyanilyen, kisméretű pengékből, kaparókból, valamint trapéz alakú, geometrikus pengékből áll. Néhány gödörből csiszolt kőeszközök

is előkerültek. Ezek legtöbbje kisméretű balta vagy nagyobb eszköz töredéke. Ez utóbbi példa arra is, hogy az egyes eszközöket a további használat érdekében pattintással megújítottak, újraéleztek.

Előkerült még néhány – aprószemcsés kőzetből vagy homokkőből készített – őrlőkő töredéke is.

A dolgozatban végül összehasonlítom a fenti kőeszköz együttest a Tiszacsege-Homokbányából származó korai AVK-hoz tartozó gödör anyagával, bár ez utóbbiból csak néhány kőeszköz került napvilágra.

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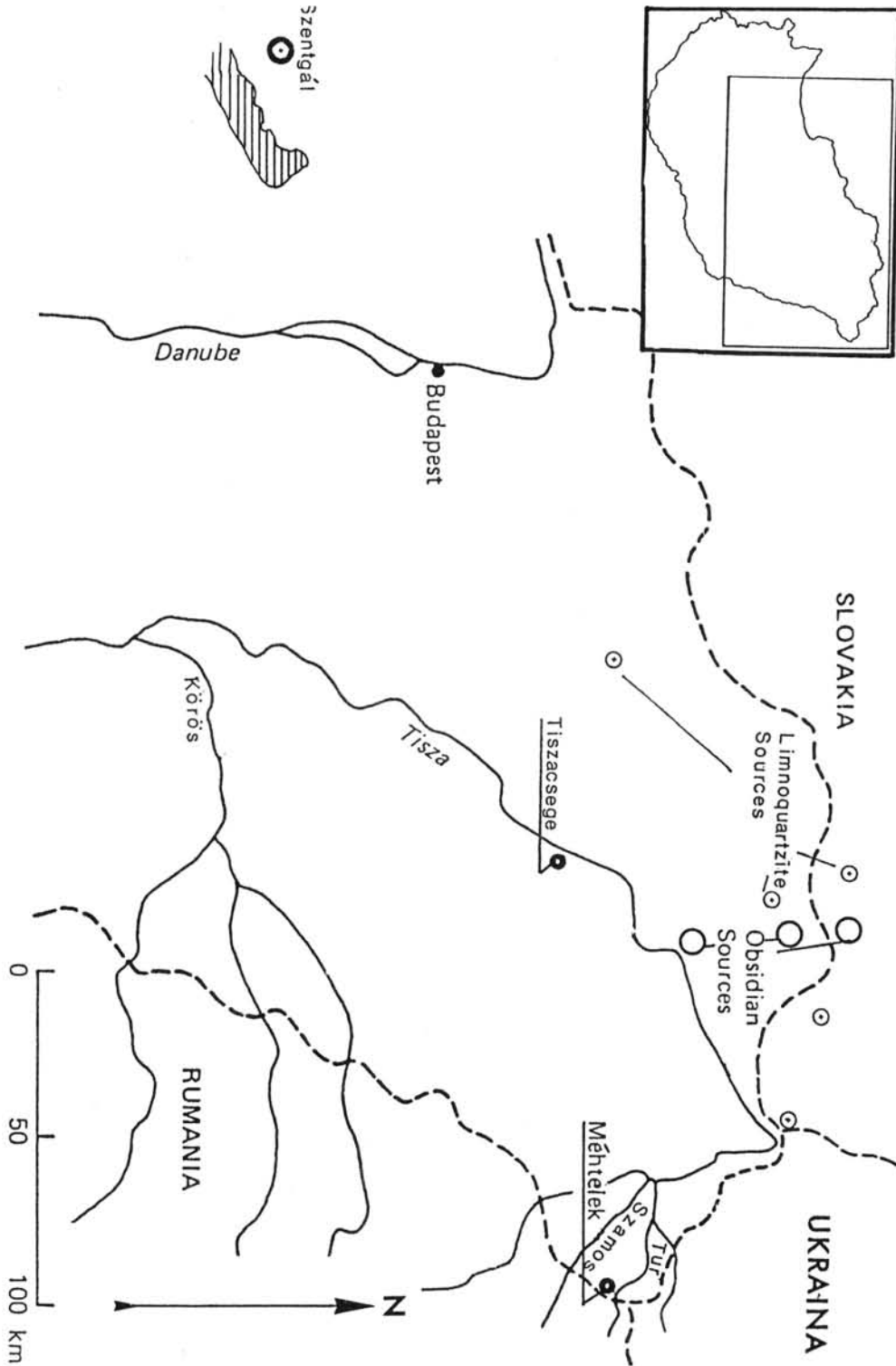


Fig. 1 Location of the sites
1. kép A lelőhelyek

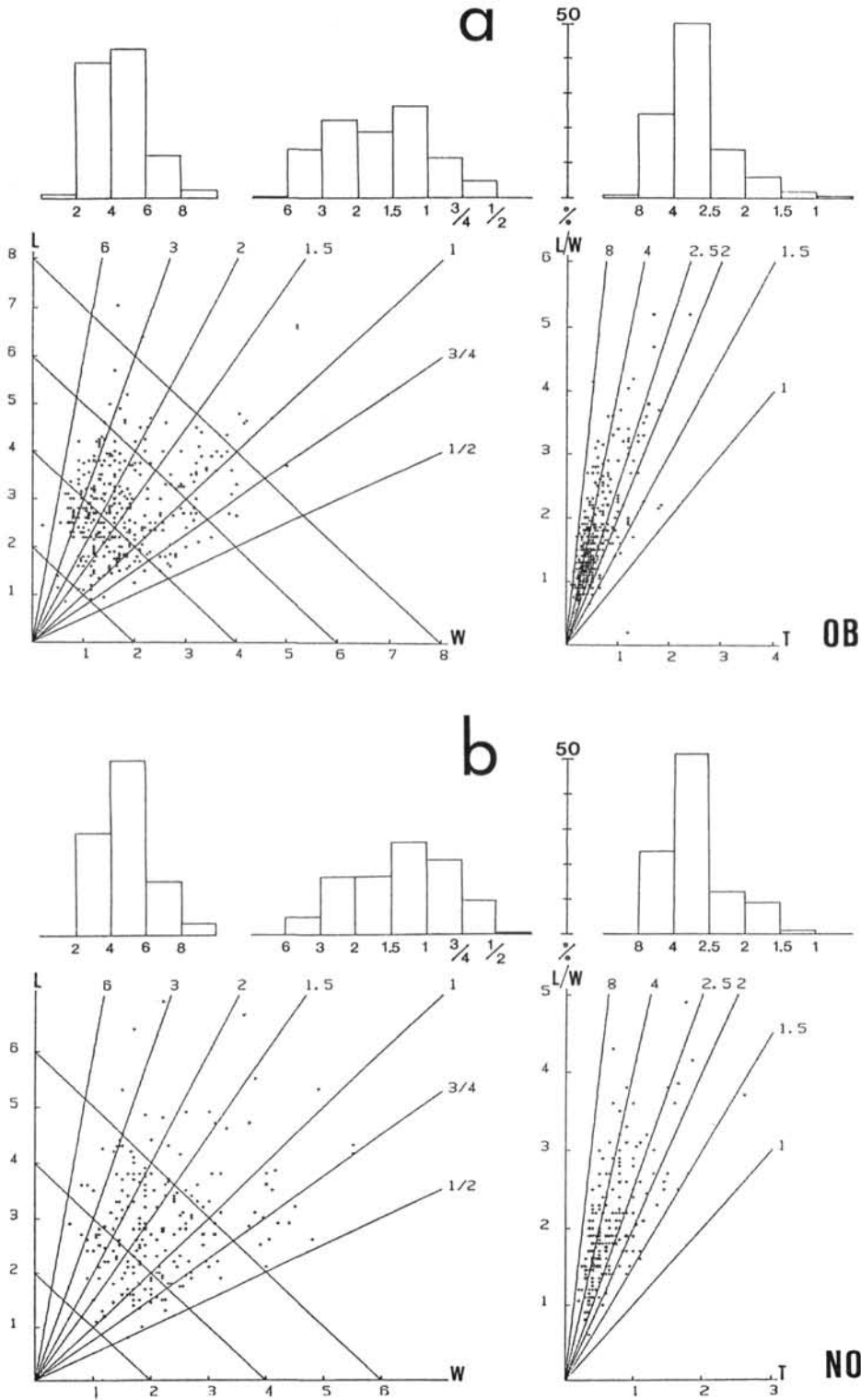


Fig. 2 Méhtelek: histograms and scatterplots of length-width and length/width-thickness of the unretouched pieces. a: Obsidian (OB) b: Non obsidian (NO)

2. kép Méhtelek: a retusálatlan darabok gyakorisága és szóródása hosszúság-szélesség, valamint hosszúság/szélesség-vastagság alapján. a: Obszidián (OB) b: Nem obszidián (NO)

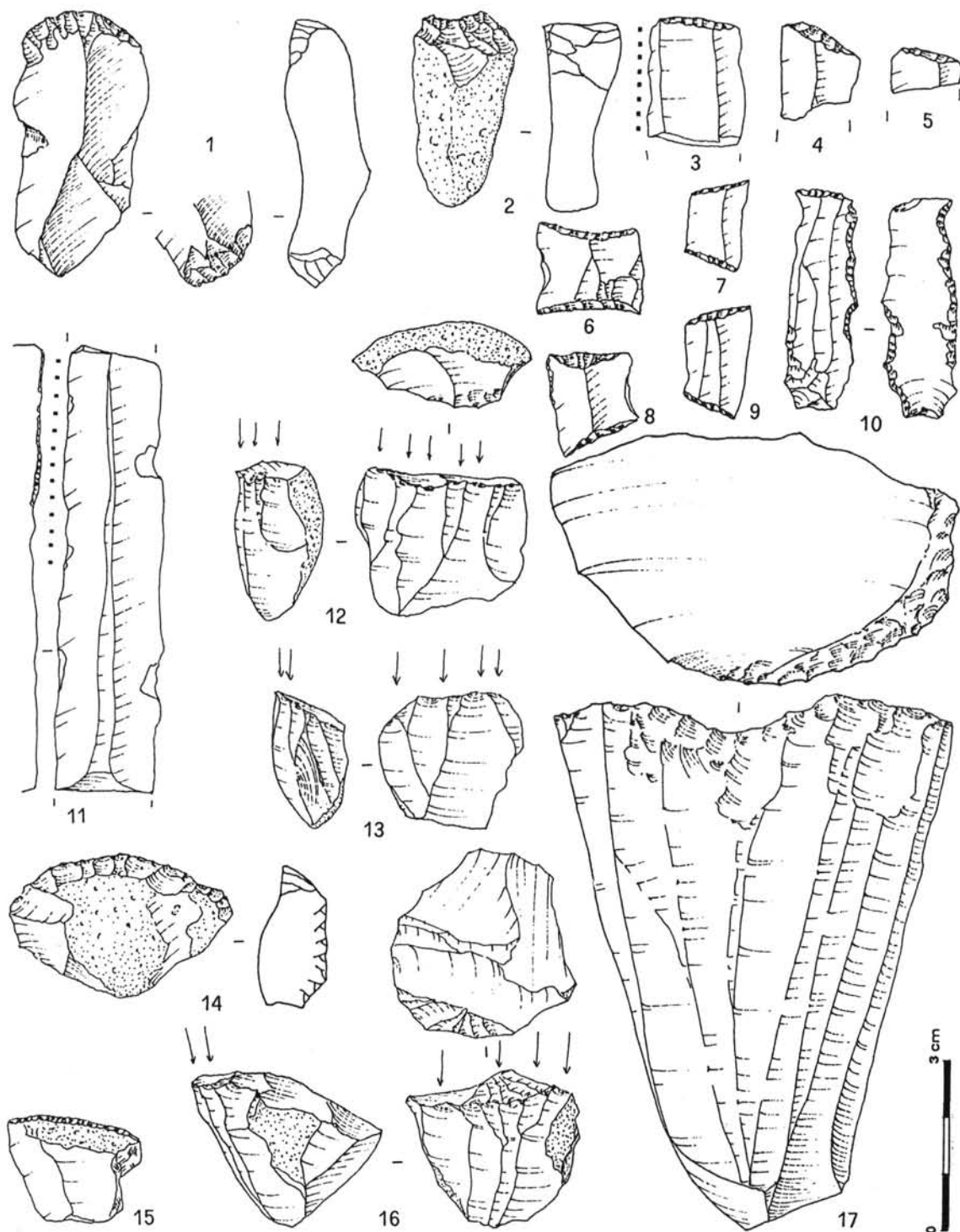


Fig. 3 Méhtekek: retouched pieces. 1-2: Endscrapers 3-5: Truncations 6-9: Geometrics 10-11: Retouched blades 12-13: Cores 14-15: Scrapers 16-17: Cores (NO: 1, 3, 7, 16 OB: 2, 4-6, 8-10, 12-15, 17 „Banat flint”: 11) (2: from pit III, 6: from pit IV, 3-5, 7, 12, 15, 17: from pit 1-3/ α , 1, 10, 11, 14, 16: from pit 4-5/ α , 13: from pit 6/ α , 9: from pit 7/ α , 8: from 6-dam trench)
3. kép Méhtekek: retusált darabok. 1-2: Pengevakaró 3-5: Csonkított 6-9: Geometrikus 10-11: Retusált penge 12, 13, 16, 17: Magkő 14-15: Vakaró (NO: 1, 3, 7, 16 OB: 2, 4-6, 8-10, 12-15, 17 „Bánáti kova”: 11) (2: III. gödör 6: IV. gödör 3-5, 7, 12, 15, 17: 1-3/ α . gödör 1, 10, 11, 14, 16: 4-5/ α . gödör 13: 6/ α . gödör 9: 7/ α . gödör 8: a 6-os gátárból)

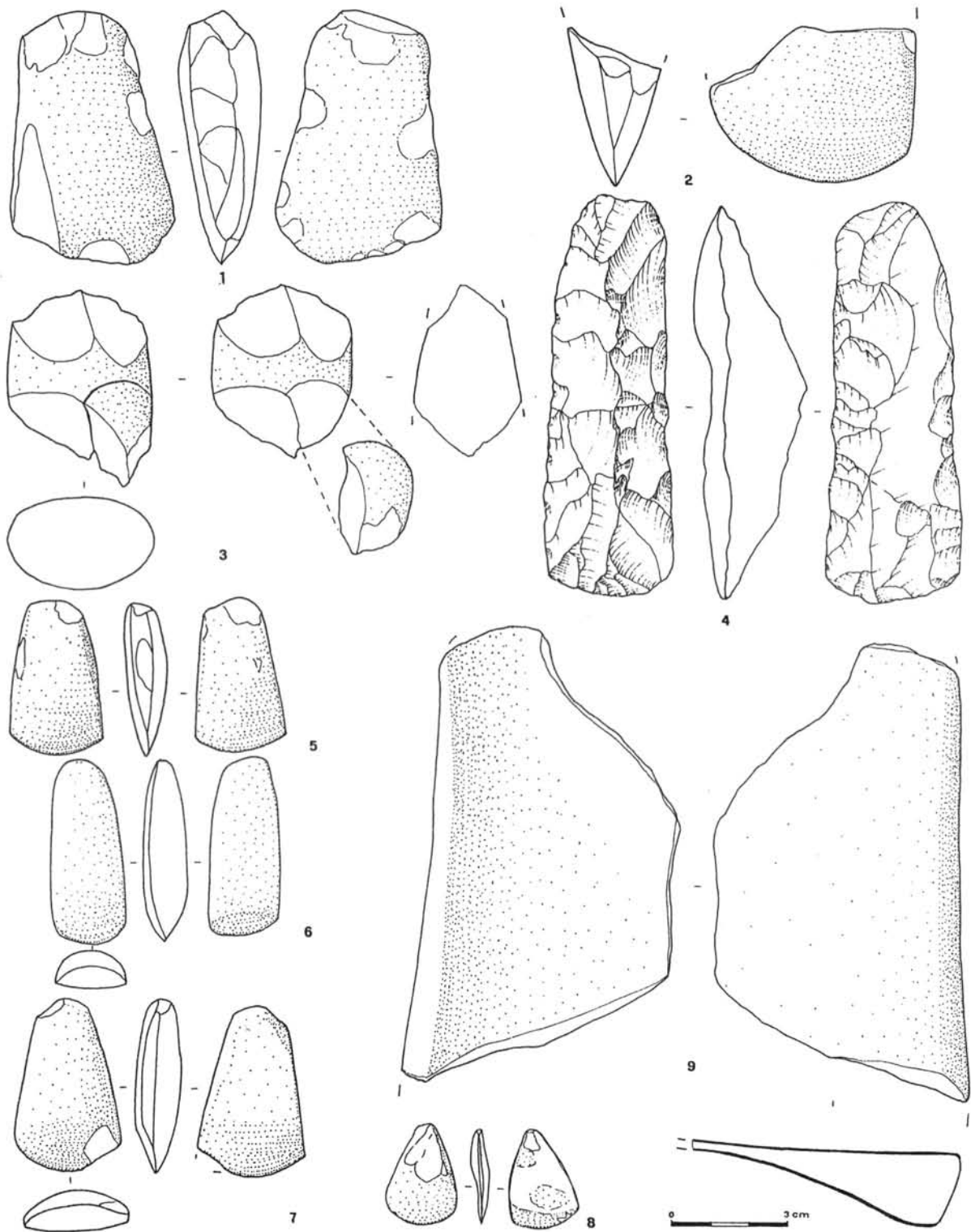


Fig. 4 Méhtekek. 1-8: Edge tools 9: Worked sandstone (6, 8: from pit III, 2, 3, 7: from pit 1-3/α, 9: from pit 4-5/α, 1: from pit 7/α, 5: from dam trench 6, 4: from the surface)

4. kép Méhtekek. 1-8: Vágóéles eszköz 9: Megmunkált homokkő (6, 8: III. gödör 2, 3, 7: 1-3/α. gödör 9: 4-5/α. gödör 1: 7/α. gödör 5: a 6-os gátárokból 4: a felszínről)

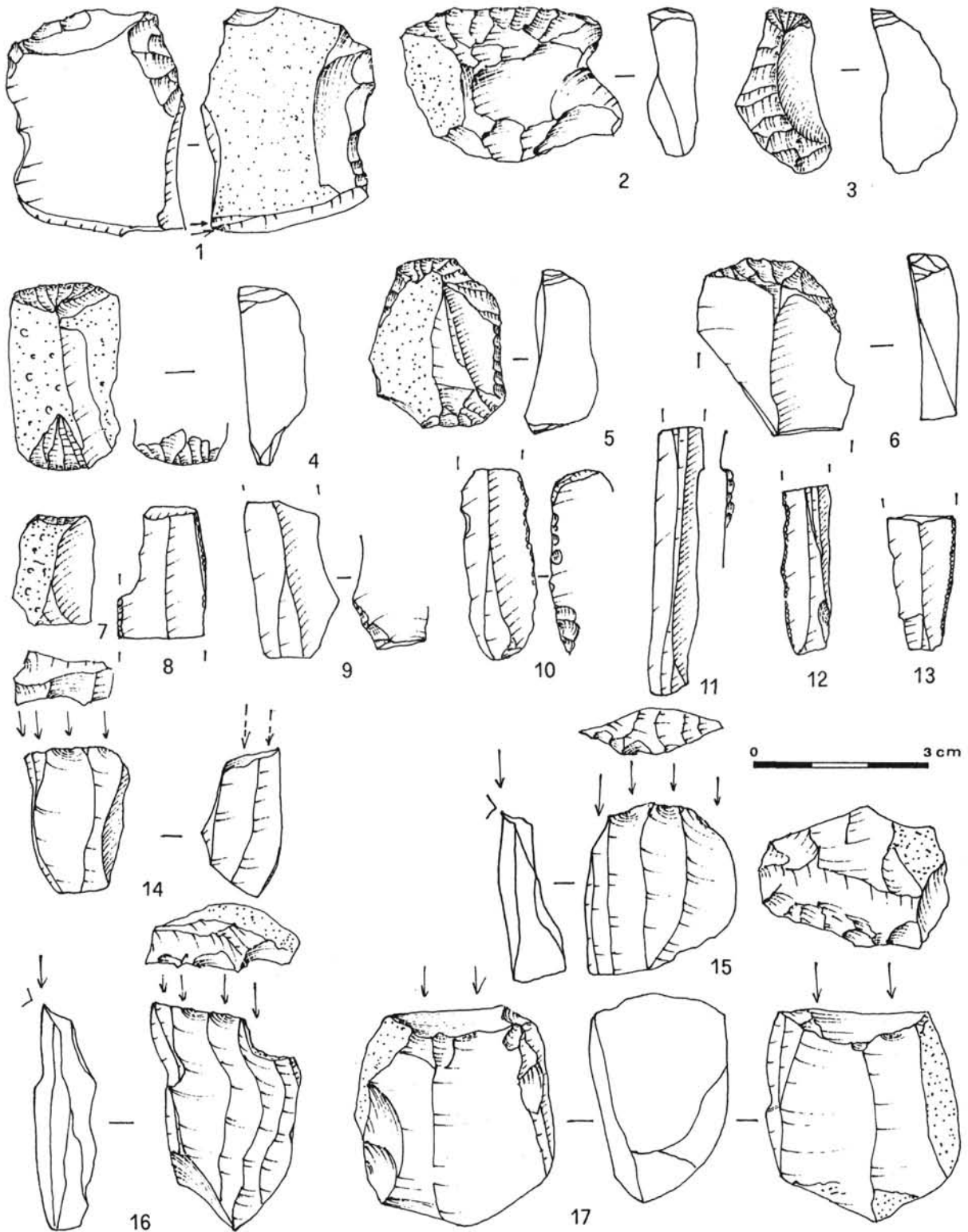


Fig. 5 Tiszacsege: retouched pieces. 1: Burin 2-6: Endscrapers 7: Truncation 8-13: Retouched blades 14-17: Cores (NO: 1, 14, 17 OB: 2-13, 15-16)

5. kép Tiszacsege: retusált darabok. 1: Árvéső 2-6: Pengevakaró 7: Csonkított 8-13: Retusált penge 14-17: Magkő (NO: 1, 14, 17 OB: 2-13, 15-16)

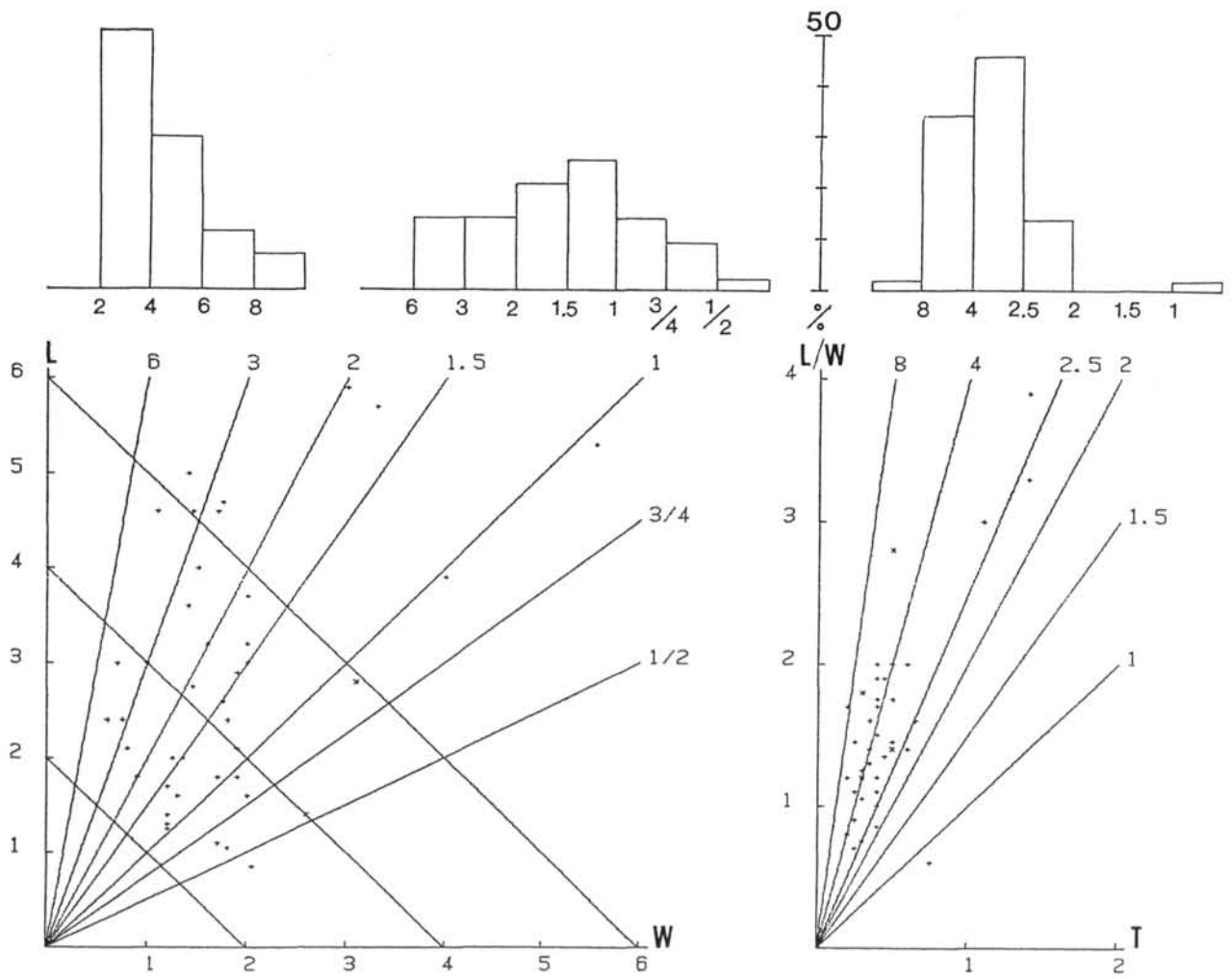


Fig. 6 Tiszacsege: histograms and scatterplots of length-width and length/width-thickness of the untouched pieces

6. kép Tiszacsege: retusálatlan darabok gyakorisága és szóródása: hosszúság-szélesség és hosszúság/szélesség-vastagság szerint