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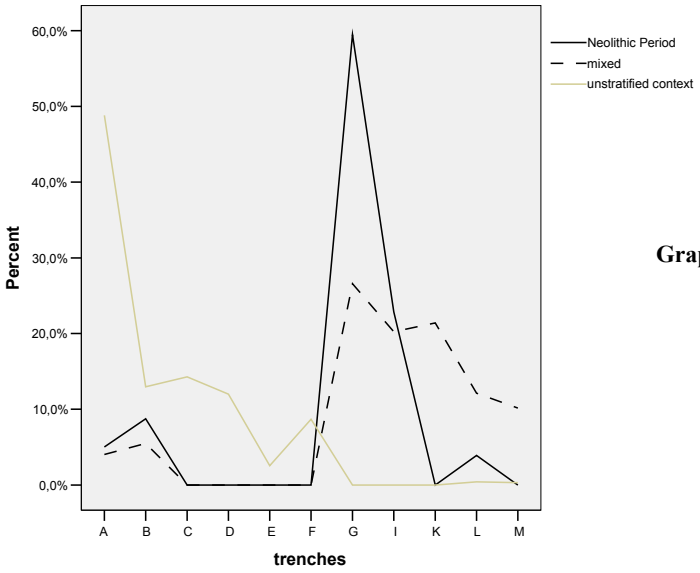
LITHIC ASSEMBLAGES FROM ARUCHLO I (GEORGIA)

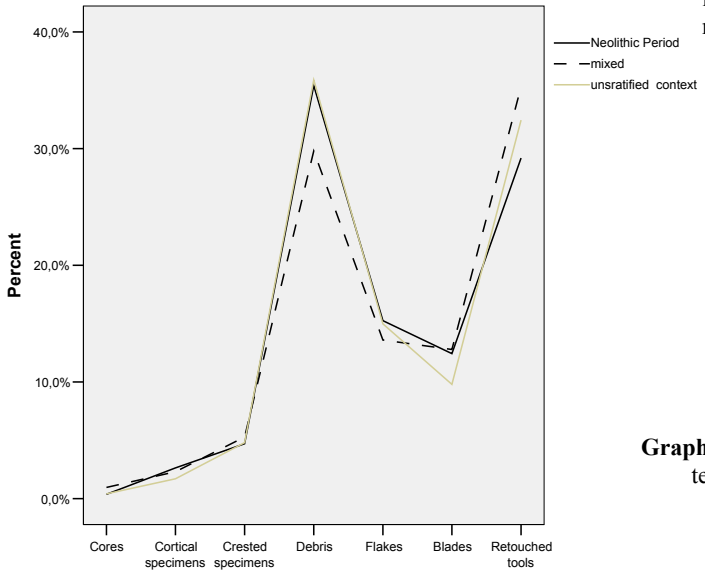
In frame of the German-Georgian archeological research led by Prof. Sven Hansen, Deutsches Archäologisches Institut Eurasien – Abteilung at Neolithic settlement Aruchlo I, Georgia a total number of 4582 items have been recorded and analyzed. (Gatsov. P. Nedelcheva in print). The entire collection consists of obsidian pieces which come from trenches labeled from A to M. It should be pointed that single items from chert in shape of debris, flakes and blades have been found, too. The former come from the Neolithic period (7specimen) and from mix and unstratified context 53 specimen as well.

In this report some of the results of obsidian artifacts processing will be presented.



Graph. 1. Distribution of obsidian artifacts by trenches

Obsidian finds have been processed in terms of following major technological categories: cores, cortical specimen, crested specimen, flakes > 15mm, blade and blade fragments, typological tools; including burin spalls, debris, which include flake fragments, undetermined fragment and pieces (shatter).



Graph. 2. Distribution of obsidian technological categories

The above mentioned major technological categories are presented very irregularity. At this stage of research it is unclear whether or not this due to some intra-site phenomenon's. The frequency of retouched tools and debris are prevailing, following by flakes and blades, while the crested and cortical specimen in small quantity as well has appeared, while the quantity of cores is very low.

It is very likely that the core preparation and reduction off the excavated area has been undertaken. It should be stressed the relatively high frequency of flakes, which reaches almost 15 percent in respect of entire collection. Simultaneously the high frequency of debris probably was linked with tool manufacturing and tool usage in term of the settlement.

Cores classification is based on such criteria as: the number of platforms, shape, degree of reduction, type of obtained blank

Cortical specimen: cortex-coded statements about the spreading of cortex: totally cortical, > 50 %, < 50 %.

Crested specimen: crested blades and certain particular types as such as tablets, retrimming flakes, etc.

Flake. For the flake processing the following techno-typological criteria were used: dorsal pattern: dorsal scar directions: unidirectional, opposite direction, multidirectional

Butt: coded 8 platform types including broken (proximal part is not preserved) and undermined ones.

Dimensions: length, width and thickness of given specimen

Flakes:

Dorsal pattern

	obsidian
Unidirectional	309
Opposite direction	8
Multidirectional	343
Total	660

Butt

	obsidian
Natural	38
Prepared by single blow	350
Dihedral	36
Linear	146
Broken	4
Undetermined	35
Splintered	4
Flat (with bird form)	47
Total	660

Mean values of flake length, width and thickness

	N	Min	Max	Mean	Std. Deviation
L	479	12	72	29,78	9,141
W	657	10	56	25,60	7,892
T	671	2	17	6,97	2,497

The above presented flake specimen display relatively small dimensions, which mean values of length and width are bellow 30mm, while the values of thickness is relatively high – ca. 7mm.

Blades and blade fragments.

The different criteria used fore blade and blade fragments are as following: shape-parallel, convergent, divergent and irregular sides; cross section-triangular, trapezoidal, multifaceted and irregular; butt-as for flakes; fragments-which part is preserved: distal, mesial, proximal, and entire; mode of detachment – when it was possible different modes of reduction have been distinguished; percussion point-visible and invisible; profile-straight, convex, twisted; dimensions-as for flakes.

Shape/Section

Shape	Section			Total
	Triangular	Trapezoidal	Multifaceted	
Parallel sides	18	45	8	71
Convergent sides	36	46	44	126
Divergent sides	11	14	24	49
Irregular sides	60	95	96	251
Total	125	200	172	497

Blades are characterized by weak prevailing of specimen with irregular sides and trapezoidal cross section; the number of regular specimen – with parallel sides is low, while the quantity of convergent and divergent specimen put together is 35,2 % in respect of all blades and blade fragments under study. As a whole this category is featured by more or less heterogenic character in respect of the blade shape and section.

Dorsal pattern

	Fr.	Percent
Unidirectional	475	95,6
Opposite directions	22	4,4
Total	497	100,0

Almost all blades display parallel scars on their dorsal pattern revealing unidirectional exploitation of blade cores.

Butt

	Fr.	Percent
Natural	19	3,8
Prepared by single blow	72	14,5
Dihedral	2	,4
Linear	93	18,7
Broken	301	60,6
Undetermined	3	,6
Flat (with bird form)	7	1,4
Total	497	100,0

Fragment/Profile

Fragment	Profile		Total
	Straight	Convex	
Distal	45	26	71
Mesial	216	23	239
Proximal	143	18	161
Intact	15	11	26
Total	419	78	497

Very low frequency of entire specimen with slightly convex profiles and clear domination of proximal and mesial blade fragments.

As far retouched blades and blade fragments are concerned they display values of widths between 17 mm and 23 mm; respectively most of the thickness values are between 4 mm and 6 mm

There are no differences in mean values of width and thickness for unretouched and retouched blades and fragments, which dues to the fact that blade marginal retouches did not changes abruptly the blank body.

In the same time the unretouched and retouched blade specimen are featured by low level of standardization. In case of Aruchlo I the obsidian blade industry was towards

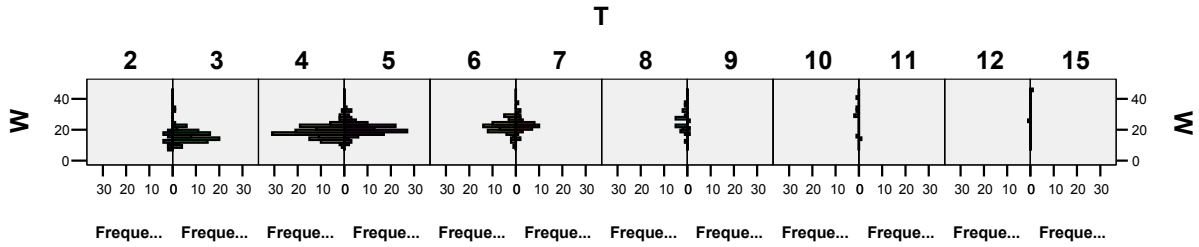
blades, which come from different stage of core reduction and they display different type of cross section – for example the frequency of blade specimen with triangular cross section reaches 25,2 %

The trapezes should be related to the high ones – e.g. specimen which height is bigger than width (Fig. 1: 4, 7-9).

The very high frequency of the tool fragments' could be explain with the fragility of the obsidian, e.g. obsidian tools have been easily broken by usage.

At this stage of research it should be pointed out some of the main features of Aruchlo I industry' – very high frequency of typological tools, high frequency of flakes, low level of blade standardization, appearance of burins, micro tools.

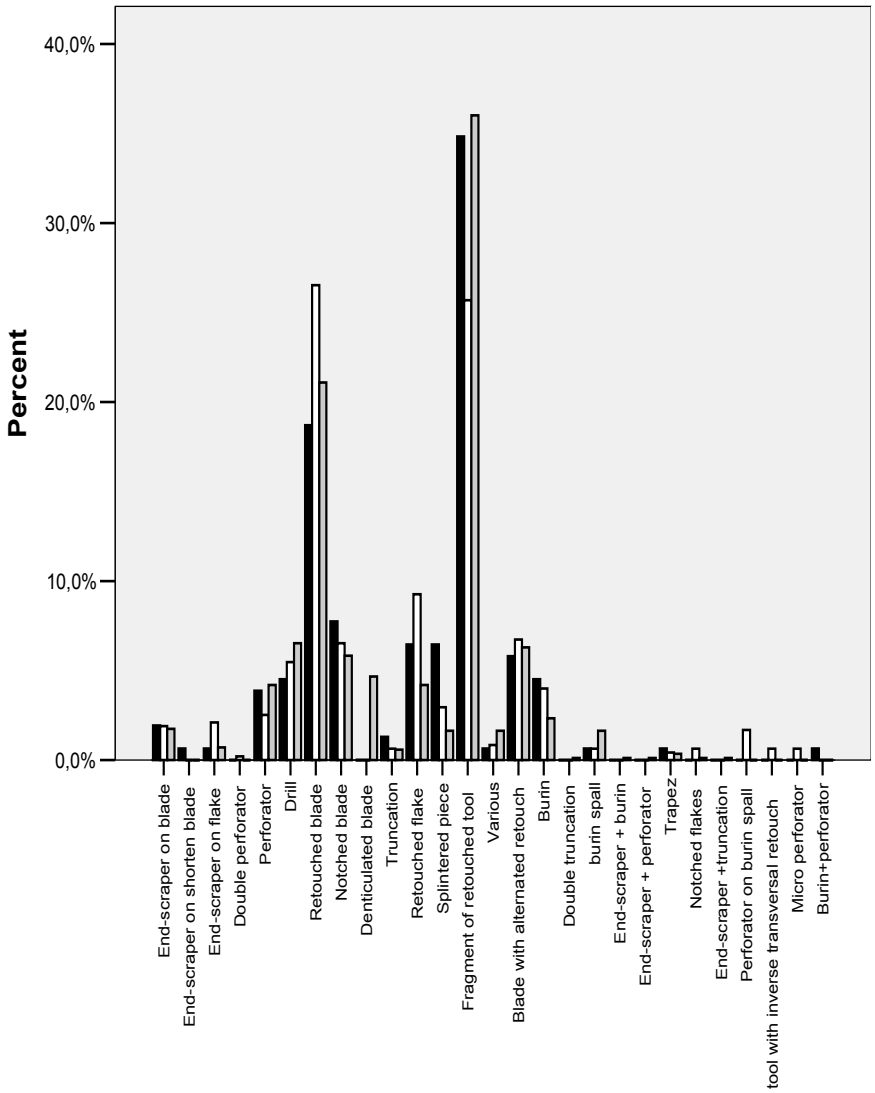
Aruchlo I. Mean values of width and thickness of obsidian unretouched blades



Most of the blades and blade fragments have widths between 18mm and 22 mm, while the values of thickness are between 3mm and 6 mm.

Retouched tools

For the porpoises of tool classification a typological list has been used, to which the following types were related: end-scraper on blade (Fig. 3:4), end-scraper on shorten blade, end-scraper on flake, perforator, double perforator, drill (with alternated retouch), retouched blade, blade with alternated retouch, notched blade, denticulated blade, truncation, double truncation, retouched flake (Fig. 2:6), splintered piece, burin, burin spall, end-scraper + burin, end-scraper + perforator, end-scraper + truncation, perforator on burin spall, blade with inverse transversal retouch, micro perforator, fragment of retouched tool, various.



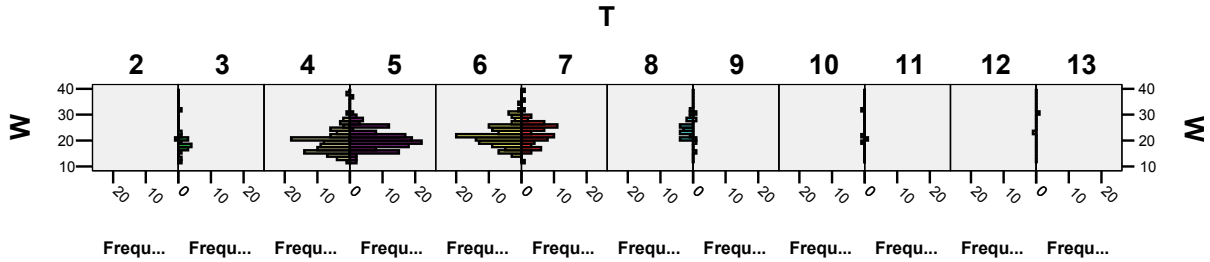
As a whole the typological tools are featured by clear prevailing of retouched blades (Fig. 1: 1, 10-12; Fig. 2: 2, 5; Fig. 4: 1) – these are entire pieces or fragments with irregular marginal continuous or partial retouches on one or the two edges and specimen with alternated retouches, blades with retouched notches and denticulated ones.

It should be stressed the appearance of perforators and drills (with alternated retouches) (Fig. 1: 2, 3, 6; Fig. 2: 1, 3, 4; Fig. 3: 1-3, 6, 7; Fig. 4: 2-6) among the typological tools analyzed. As a rule these are specimen, which working parts were formed by semi steep irregular retouches. Single items of these tools are presented by specimen – up to 23mm length and can be considered as micro-perforators (Fig. 3: 5, 8).

The other feature worth noticing is the presence of burin and burin spalls (Fig. 1: 5, 13). All burins can be related to the single ones on broken blades (Chelidze/ Gogelia 2004; S. Hansen et al. 2006).

In case of lithic assemblages from Aruchlo I this phenomenon deserved a special attention. In other region – such as Eastern Balkan the burins are not common during the Early Neolithic period (Gatsov 2001).

Mean values of width and thickness of retouched blades.



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DESCRIPTION OF THE FIGURES

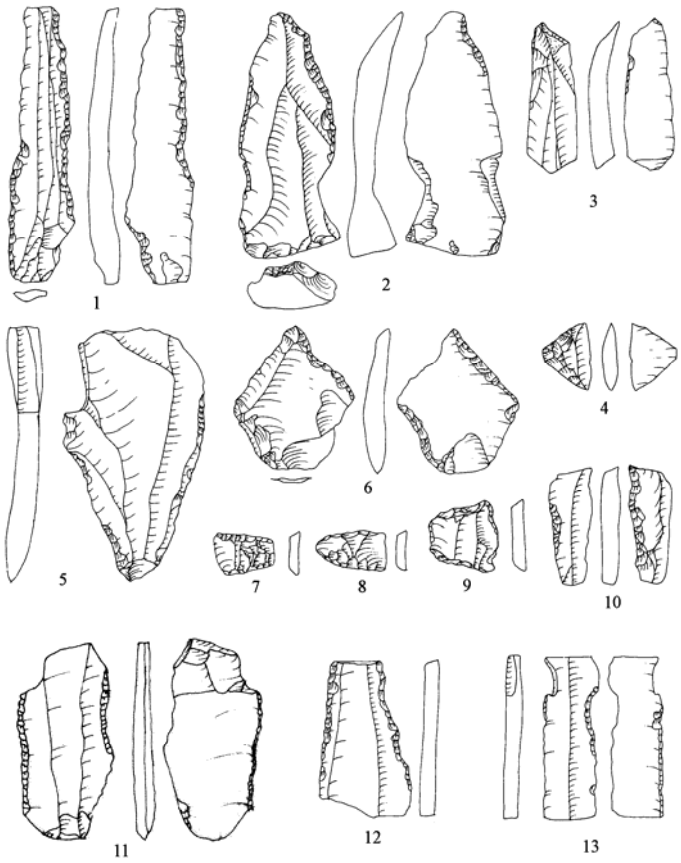
Figure 1: 1, 10-12 – retouched blades; 2, 3, 6 – drills; 4, 7-9 – trapezes; 5-combined tool (burin + perforator); 13-burin (1, 3-5, 10, 12, 13 – Neolithic period; 2, 6, 7-9, 11-mixed context)

Figure 2: 1, 3, 4 – drills; 2, 5 – retouched blades; 6-retouched flake (1-6 – mixed context)

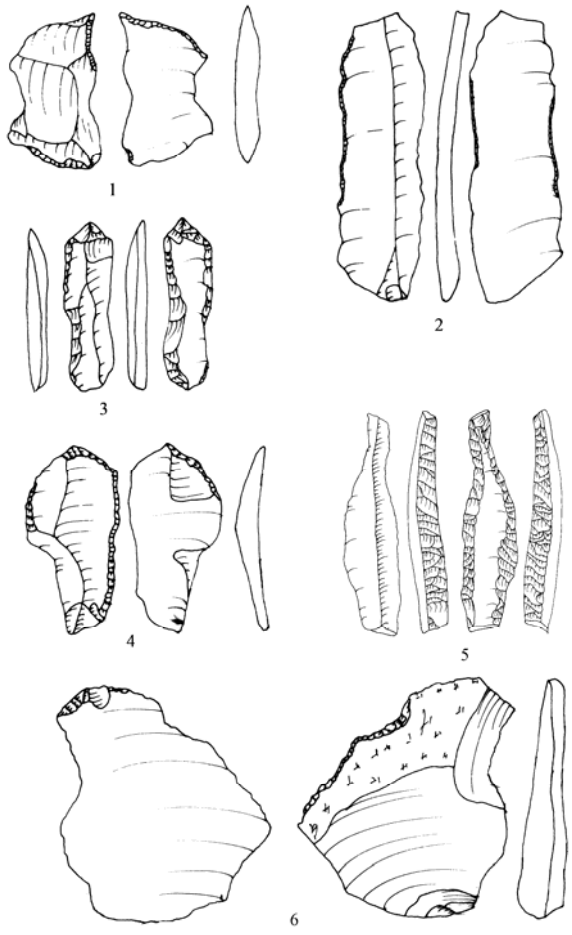
Figure 3: 1-3, 6, 7 – drills; 4- end-scraper on blade; 5, 8 – micro perforatotrs; (1, 2, 5, 8, 6 – mixed context; 3, 4, 7 – Neolithic period

Figure 4: 1-retouched blade; 2-6 – drills (1-6 – mixed context)

Aruchlo I



Aruchlo II



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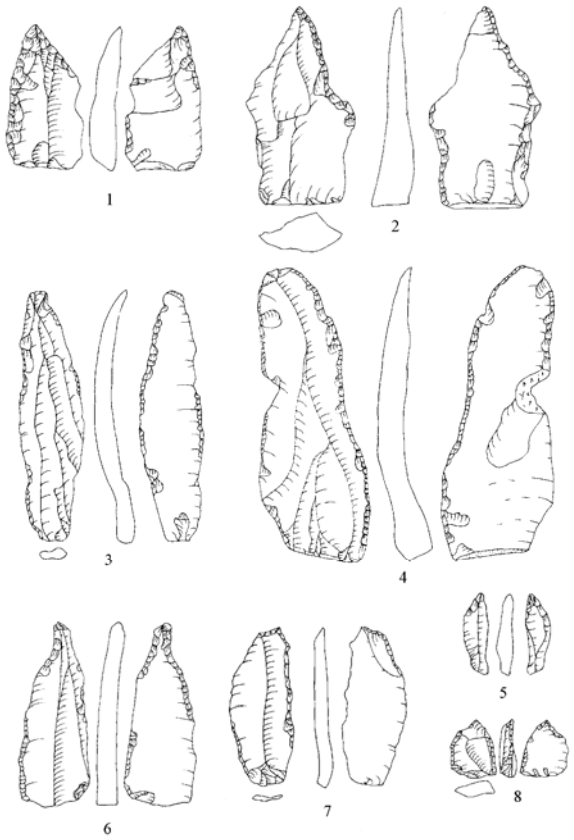

Aruchlo IV