Demidenko Y.E., Otte M. & Noiret P. (dir.) - *Siuren I rock-shelter. From Late Middle Paleolithic and Early Upper Paleolithic to Epi-Paleolithic in Crimea.*
Liège, ERAUL 129, 2012, p. 281-285.

13 - UNITS E-A: LITHIC ARTIFACTS

Yuri E. DEMIDENKO

The lithic assemblages of Units E, D, C and A are small, ranging from only a single find in Unit C, 7-8 artifacts in Units E and D and 82 artifacts in Unit A. Thus, none of these four archaeological units exceeds 100 flints. Considering such scarcity, we first describe all finds in each unit with a maximum representation of core and tool illustrations and then discuss the technological and typological characteristics of each unit, as well as their industrial similarities and differences.

Unit E: Artifacts

The lithic assemblage of Unit E comprises 7 pieces: 2 cores, 4 flakes and 1 chip.

Cores

These are represented by 1 bladelet "advanced carinated" core and 1 bladelet narrow flaked core/"carinated burin".

The bladelet "advanced carinated" core (fig. 1:1) has a single-platform and is volumetric with a pyramidal shape. By its metric proportions (platform width 4.2 cm greater than maximum length of platform scars 2.9 cm), this piece would easily fit into the carinated end-scraper category. However, the irregularity of the platform edges, sometime appearing "denticulate-like", contradicts such an attribution and instead supports classification as a bladelet core. The pyramidal shape of the core additionally places it in the "advanced carinated" category. Its other morphological and metric features are as follows. Platform type and angle: plain right. Platform abrasion: present. Platform morphology in plane and removal scars on flaking surface: offset with twisted scars. Condition of flaking surface: regular and partially hinged. Metrics: 2.9 cm long, 4.2 cm wide, 3.5 cm thick. Platform width and thickness: 4.2 and 3.5 cm, the same as the core's overall width and thickness. Such platform size indicates removal of a core tablet with flake proportions for possible rejuvenation. Reason for core abandonment: no obvious reason, although partial hinged character of the flaking surface may have been a factor. The blank type is a gray flint nodule/chunk. This piece, by its main morphological characteristics and metric proportions, is very similar to the bladelet "advanced carinated" core from level Fb1-Fb2.

The bladelet narrow flaked core/"carinated burin" has a single-platform (fig. 1:2). Platform type and angle: plain acute. Platform abrasion: present. Platform morphology in plane and removal scars on flaking surface: offset with twisted scars. Condition of flaking surface: regular. Metrics: 3.2 cm long, 1.3 cm wide, 2.2 cm thick. Platform width and thickness: 0.8 and 2.0 cm. Such platform size indicates removal of a core tablet with bladelet proportions for possible rejuvenation. Platform scars maximum length: 2.8 cm. Reason for core abandonment: no obvious reason. The blank type is a burnt gray flint nodule/chunk. At the same time, reduction of this core is also the same as that used for making carinated burins. Only the greater width of the platform/"multifaceted verge" of 1.3 cm formally puts it into the core category. On the other hand, from the point of view of broad typological definitions, this piece should also be included in the carinated pieces category.

Flakes

All 4 flakes are small broken and non-cortical (length-1.5-2.4 cm, width-1.2-3.5 cm, thickness-0.3-0.7 cm) on gray flints: 2 distal and 2 longitudinally fragmented. Their morphological features are not described, as they would to be too subjective for such fragmented "non-expressive" flakes.

A single chip is a non-cortical piece on a gray flint.

Unit D: artifacts

Lithic assemblage of this Unit D accounts 8 flint items: 2 cores, 5 flakes and 1 bladelet.

Cores

These are represented by 1 blade core and 1 bladelet core. The blade core (fig. 1:3) has a bidirectional double-platform and is non-volumetric and rectangular. Platform types and angles: both crudely-faceted acute. Platform abrasion: weakly represented on both platforms. Platform morphology in plane and removal scars on flaking surface: both straight with no twisted scars. Condition of flaking surface: regular. Metrics: length

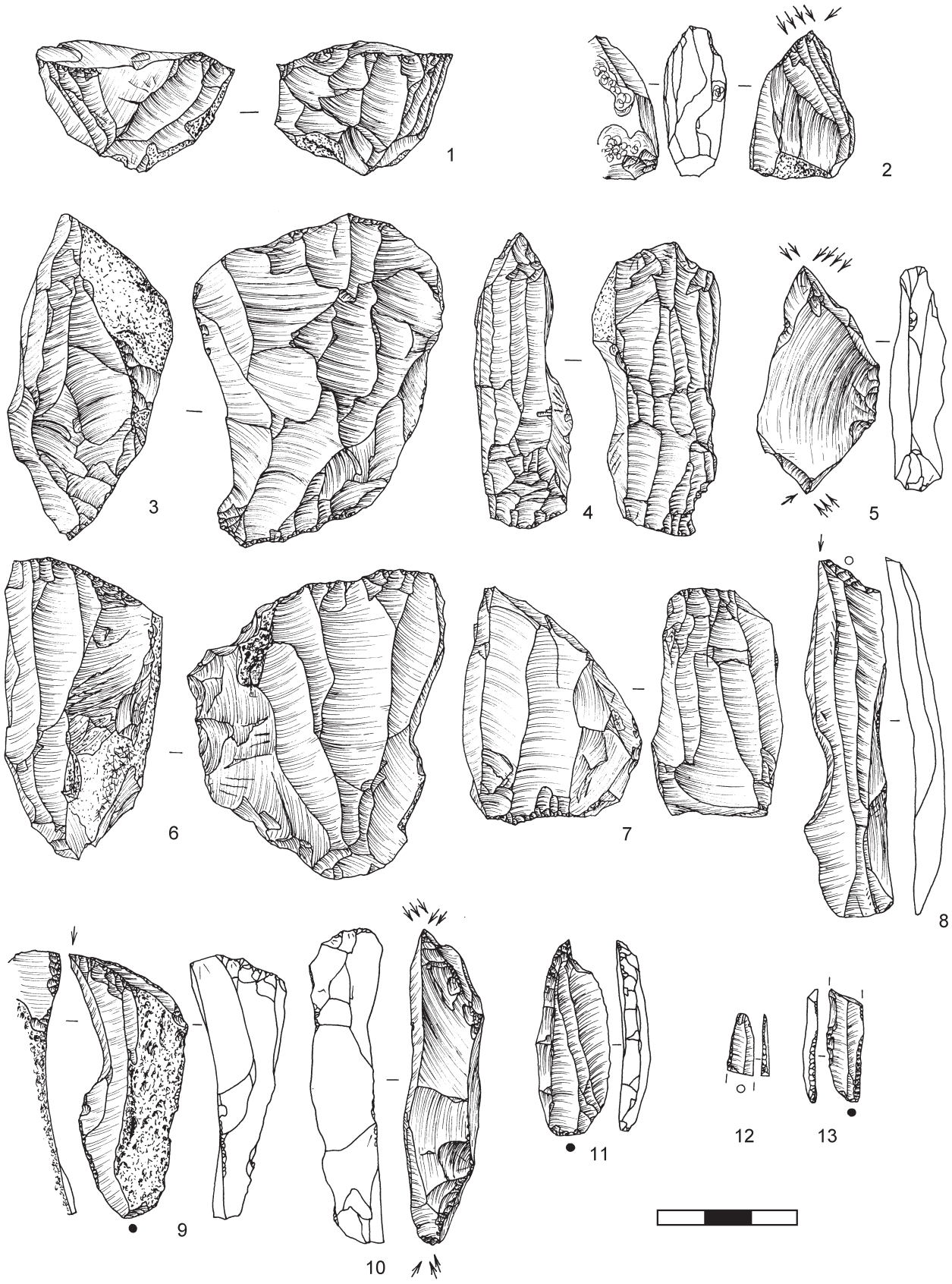

Figure 1 - Siuren I. Units E through A. Flint Artifacts – Cores and Tools. 1, "advanced carinated" bladelet core (Unit E); 2, narrow flaked bladelet core/"carinated burin" (Unit E); 3, double-platform bidirectional rectangular blade core (Unit D); 4, double-platform bidirectional sub-cylindrical bladelet core (Unit D); 5, double carinated (busked) burin (Unit C); 6, single-platform narrow flaked blade core (Unit A, sub-level Aa); 7, double-platform bidirectional-adjacent sub-cylindrical blade/bladelet core (Unit A, sub-level Aa); 8, burin on oblique straight truncation (Unit A, sub-level Aa); 9, burin on oblique convex truncation (Unit A, sub-level Ab3); 10, double dihedral symmetrical burin (Unit A, sub-level Ab2); 11, perforator (Unit A, sub-level Aa); 12, backed microblade (Unit A, sub-level Aa); 13, backed bladelet (Unit A, sub-level Aa).

6.6 cm, width 5.2 cm, thickness 3.2 cm. First platform width and thickness 4.2 and 2.0 cm. Second platform width and thickness 2.9 and 1.2 cm. Reason for core abandonment: no obvious reason.

The bladelet core (fig. 1:4) is also a double-platform bidirectional one, but of volumetric character and sub-cylindrical. Platform types and angles: 1 plain semi-acute and 1 crudely-faceted acute. Platform abrasion: weakly represented for 1st platform and absent for 2nd platform. Platform morphology in plane and removal scars on flaking surface: both semicircular with no twisted scars. Condition of flaking surface: mainly regular and partially hinged for the removal scars from the 1st platform. Metrics: length - 6.5 cm, width - 2.9 cm, thickness - 2.0 cm. First platform width and thickness - 1.7 and 1.9 cm. Second platform width and thickness - 2.3 and 0.9 cm. Reason for core abandonment: last removals hinged from the 1st platform and obvious exhaustion (minimal thickness) of the 2nd platform.

Flakes

These include 2 complete and 3 broken (1 proximal, 1 medial and 1 distal fragments) flakes. Their morphological features are as follows: 1 unidirectional, 1 unidirectional-crossed, 1 bidirectional and 2 unidentifiable scar patterns; 2 expanding and 3 unidentifiable shapes; 2 "off-axis" and 3 unidentifiable axis of removal direction; 1 flat, 3 incurvate medial and 1 unidentifiable profiles; 5 unidentifiable distal ends; 3 triangular, 1 irregular and 1 unidentifiable profiles at midpoint; 4 non-cortical and 1 partially cortical with non-significant amount of central cortex; 1 dihedral (0.9 x 0.2 cm) butt (semi-lipped, semi-acute angle, with no abrasion), 2 crushed and 2 missing butts. Two complete flakes are 3.0 and 2.6 cm long, 2.1 and 2.0 cm wide, both 0.3 cm thick. Three broken flakes have metric data in such ranges: length - 2.6-4.2 cm, width - 2.7-3.1 cm, thickness - 0.6-1.1 cm. Four flakes are made on gray flints and another is on black flint.

The single bladelet is complete and non-cortical on gray flint with a bidirectional scar pattern, parallel shape, "off-axis" removal direction, incurvate medial profile, feathering distal end, trapezoidal profile at midpoint, punctiform butt with no abrasion. It is 3.5 cm long, 0.9 cm wide, 0.3 cm thick.

Unit C: artifacts

The single flint piece from Unit C is a double carinated (buskoid) burin (fig. 1:5) on a gray flint partially cortical blade with insignificant lateral cortex. It is 4.9 cm long, 2.4 cm wide, 0.8 cm thick. The burin's two terminations are formed on the blade's proximal and distal ends in the same manner: by removing a series of burin facets (no less than 5 with total maximum width of 0.7 and 0.9 cm) from a negative of one burin facet each. Because of such termination of the burin at both ends of the blade, the blade's original length was greater than 4.9 cm. It is also worth noting the presence of a small lateral dorsal notch at the end of most of the burin facet scars originating from the burin termination at the proximal end of the blank: a feature of a busked burin.

Unit A: artifacts

The lithic assemblage of Unit A is composed of flint artifacts (n=82) from four sub-levels: Aa, Ab1, Ab2 and Ab3. It has the following structure:

Core-like pieces	2	2.4%	4.2%
Core Maintenance Products	1	1.2%	2.1%
Debitage	37	45.1%	77.1%
Tools	8	9.8%	16.6%
Debris	34	41.5%	-

Core-like pieces

These are composed of 1 blade core and 1 blade/bladelet core, both of which were recovered from uppermost sub-level Aa.

The blade core (fig. 1:6) is a single-platform narrow flaked one of non-volumetric character on a large flake of brown flint. Platform type and angle: plain semi-acute. Platform abrasion: present. Platform morphology in plane and removal scars of flaking surface: semicircular with no twisted scars. Condition of flaking surface: regular. Metrics: length - 6.8 cm, width - 3.9 cm, thickness - 5.3 cm. Platform width and thickness: 3.3 and 4.1 cm. Platform negatives' maximum length - 6.4 cm. The core's undersurface is also characterized by the presence of a unilateral crested ridge. Reason for core abandonment: no obvious reason.

The blade/bladelet core (fig. 1:7) is a double-platform one of sub-cylindrical shape and volumetric character with two bidirectional-adjacent flaking surfaces. Platform types and angles: 1st plain acute and 2nd crudely-faceted right. Platform abrasion: present on both platforms. Platform morphology in plane and removal scars on flaking surfaces: 1st semicircular with no twisted scars and 2nd straight with no twisted scars. Condition of flaking surface: both regular, although the 1st is partially hinged. Metrics: length-5.4 cm, width-2.5 cm, thickness-4.0 cm. First platform width and thickness-1.8 and 5.0 cm. Such platform size indicates removal of a core tablet with blade proportions for possible rejuvenation. Second platform width and thickness-1.8 and 2.0 cm. Platform negatives' maximum length: the same as core length-5.4 cm. Reason for core abandonment: no obvious reason. The blank type is a gray flint nodule/chunk.

The core maintenance product is a core trimming element which is a complete non-cortical flake with transversal placement of a unilaterally wholly treated crested ridge on a gray flint. It has a crushed butt, 2.3 cm long, 3.4 cm wide and 0.9 cm thick.

Debitage

This category is composed of 12 flakes (32.5%), 7 blades (18.9%), 11 bladelets (29.7%) and 7 microblades (18.9%).

Flakes are subdivided into 8 complete and 4 broken ones (1 proximal, 1 distal and 2 longitudinally fragmented). One is on a black flint, while the rest are on gray flints. Their morphological features are as follows. Scar patterns: 7 unidirectional, 1

unidirectional-crossed, 1 bidirectional, 1 cortical, 1 lateral and 1 unidentifiable. Shape: 2 parallel, 2 converging, 3 expanding, 1 irregular and 4 unidentifiable. Axis ofremoval directtion: 3 "on-axis", 5 "off-axis" and 4 unidentifiable. Profile: 1 flat, 4 incurvate medial, 6 twisted and 1 unidentifiable. Profiles at midpoint: 7 feathering, 3 hinged and 2 unidentifiable distal ends; 1 flat, 2 triangular, 4 trapezoidal, 1 lateral steep, 1 crescent, 2 irregular and 1 unidentifiable. Cortex: 6 non-cortical, 1 wholly cortical, 2 partially cortical with significant amount of distal cortex and 3 partially cortical with non-significant amount of proximal (2) and lateral (1) cortex. Butt: 2 plain (1.7 and 1.2 cm x 0.6 and 0.3 cm) (both semi-lipped, semi-acute angles, with abrasion), 1 linear (0.5 x 0.1 cm) (semi-lipped, semi-acute angle, with no abrasion), 1 dihedral (1.0 x 0.2 cm) (semi-lipped, semi-acute angle, with abrasion), 1 crudely-faceted (1.2 x 0.6 cm) (semi-lipped, right angle, with no abrasion), 6 crushed and 1 missing. Eight complete flakes are in the following ranges: length - 1.1-5.1 cm, width - 1.2-3.8 cm (2 with shortened, transversal proportions), thickness - 0.1-1.1 cm.

Blades are represented by 2 complete and 5 broken pieces: 1 proximal, 2 medial and 2 distal fragments. Five are on gray flints and 2 more on brown flints. Morphologically, blades have the following features: 5 unidirectional, 1 unidirectional-crossed and 1 bidirectional scar patterns; 1 parallel, 2 converging, 1 irregular and 3 unidentifiable shapes; 3 "on-axis", 1 "off-axis" and 3 unidentifiable axis of removal directions; 2 flat, 2 incurvate medial, 2 twisted and 1 unidentifiable general profiles; 3 feathering, 1 hinged and 4 unidentifiable distal ends; 4 triangular and 3 trapezoidal profiles at midpoint; 5 non-cortical and 2 partially cortical with non-significant amount of lateral cortex; 2 linear (both 0.3 x 0.1 cm) butts with abrasion, 1 crushed and 4 missing butts. Two complete blades are 6.1 and 4.0 cm long, 1.5 and 1.2 cm wide, 0.5 and 0.3 cm thick, respectively. Five broken blades are in the following ranges: length - 2.6-4.2 cm, width - 1.3-1.5 cm for 3 pieces, 1.6 cm for 1 piece and 2.2 cm for the last 5th piece; thickness - 0.3-0.5 cm.

Bladelets include 1 complete and 10 broken pieces: 4 proximal, 2 medial and 4 distal fragments. All are on gray flints. Morphologically, they are as follows: 10 unidirectional and 1 dorsal-plain scar patterns; 2 converging, 2 irregular and 7 unidentifiable shapes; 3 "off-axis" and 8 unidentifiable axis of removal directions; 1 incurvate medial, 3 twisted and 7 unidentifiable general profiles; 4 feathering, 1 hinged and 6 unidentifiable distal ends; 1 flat, 5 triangular, 4 multifaceted and 1 unidentifiable profiles at midpoint; 9 non-cortical and 2 partially cortical with non-significant amount of lateral cortex; 3 linear (0.5 - 0.3 x 0.1 cm) butts (all semi-lipped, semi-acute angles, with abrasion), 2 crushed and 6 missing butts. The sole complete bladelet is 2.0 cm long, 0.8 cm wide and 0.2 cm thick. Ten broken bladelets in the following ranges: length - 0.7-2.5 cm, width - 0.7-0.9 cm for 5 pieces and 1.0 - 1.1 cm for other 5 pieces; thickness - 0.1-0.3 cm.

Microblades are represented by 1 complete and 6 broken specimens: 1 proximal, 4 medial and 1 distal fragments. All are non-cortical on gray flints. Their morphological features are as follows: 7 unidirectional scar patterns; 2 converging and 5 unidentifiable shapes; 2 "off-axis" and 5 unidentifiable axis of removal directions; 2 flat, 3 twisted and 2 unidentifiable general profiles; 1 feathering and 6 unidentifiable distal ends; 5 triangular and 2 trapezoidal profiles at midpoint; 1 punctiform butt with no abrasion, 1 crushed and 5 missing butts. The single complete microblade is 1.8 cm long, 0.5 cm wide and 0.1 cm thick. Six broken microblades in the following ranges: length - 0.7-2.4 cm, width - 0.3-0.6 cm, thickness - 0.1-0.2 cm.

Tools

The eight tools include 3 burins, 1 perforator, 2 retouched pieces and 2 non-geometric microliths.

Burins are represented by 2 pieces on truncation and 1 double dihedral item. The first burin on truncation is from sub-level Aa (fig. 1:8) and is oblique straight where the truncation was made by scalar retouch at the proximal end from which one burin spall was struck. The blank is a complete non-cortical blade on a gray flint with a bidirectional scar pattern, parallel shape, "on-axis" removal direction, incurvate medial general profile, feathering distal end, multifaceted profile at midpoint and unidentifiable as retouched proximal end. It is 7.7 cm long, 1.7 cm wide and 0.7 cm thick. The second burin on truncation is oblique convex from sub-level Ab3 (fig. 1:9). Its termination is formed by slight scalar retouch at the distal end from which one wide burin spall was detached. The blank is a complete partially cortical blade with a significant amount of lateral cortex on a brown flint. Morphologically, it has a bidirectional scar pattern, expanding shape, "off-axis" removal direction, incurvate medial general profile, overpassed distal end, trapezoidal profile at midpoint and linear (0.4 x 0.1 cm) butt (semi-lipped, semi-acute angle, with abrasion). It is 5.8 cm long, 2.4 cm wide and 1.3 cm thick. The third burin is a double dihedral symmetric burin from sub-level Ab2 (fig. 1:10) on a complete non-cortical crested blade on gray flint. The burin's terminations are formed by two burin facets at the proximal and distal ends of the blade. The blade is a crested blade with unilateral wholly crested treatment and with an incurvate medial general profile. It is 6.7 cm long, 1.5 cm wide and 1.3 cm thick.

The *perforator* is a single dorsal one from sub-level Aa (fig. 1:11) formed by steep scalar dorsal retouch at the distal end of a complete secondary crested blade. It has a unidirectional scar pattern, converging shape, "on-axis" removal direction, twisted general profile, unidentifiable as retouched distal end, multifaceted profile at midpoint and plain (0.6 x 0.2 cm) butt (lipped, acute angle, with abrasion). It is 4.2 cm long, 1.6 cm wide, 0.5 cm thick and made on gray flint.

The *retouched pieces* are represented by a blade with irregular partial lateral dorsal retouch from sub-level Ab1 and a flake with irregular discontinuous lateral dorsal retouch from sub-level Ab2. The blade is a partially cortical distal fragment with a significant amount of lateral cortex. It has a bidirectional scar pattern, irregular shape, "off-axis" removal direction, incurvate medial general profile, feathering distal end and triangular profile at midpoint. It is 9.0 cm long, 2.1 cm wide, 0.8 cm thick and was made on gray flint. The flake is partially cortical and complete with an insignificant amount of distal + lateral cortex and a unidirectional scar pattern, ovoid shape, "off-axis"

removal direction, incurvate medial general profile, feathering distal end, triangular profile at midpoint and plain (1.8 x 0.7 cm) butt (semi-lipped, semi-acute angle, with abrasion).

Non-geometric microliths include 2 unilaterally backed microblade and bladelet with fine very thin abrupt dorsal retouch from sub-level Aa made on gray flints (fig. 1:12-13). The microblade (fig. 1:12) is a non-cortical distal fragment with a unidirectional scar pattern, converging shape, flat general profile, feathering distal end and triangular profile at midpoint. It is 1.2 cm long, 0.5 cm wide, 0.2 cm thick. The bladelet (fig. 1:13) is a non-cortical proximal fragment with a unidirectional scar pattern, incurvate medial general profile, triangular profile at midpoint and punctiform butt with abrasion. It is 2.3 cm long, 0.7 cm wide, 0.2 cm thick.

Debris

These include 29 chips (35.4%), 2 uncharacteristic debitage pieces (2.4%) and 3 chunks (3.7%). All are made on gray flints. Debris with cortex is rare: 5 chips and 2 chunks, while both uncharacteristic debitage pieces are non-cortical.

Techno-typological characteristics and specificities of the assemblages from Units E-A

Unit E

There are only two indicative pieces in Unit E: a bladelet "advanced carinated" core and a bladelet narrow flaked core/"carinated burin". These pieces are very similar to the carinated cores and burins from Unit F that clearly show the direct techno-typological affinity between the assemblages from Units E and F, and therefore the Aurignacian character of the Unit E lithics.

Unit D

There are three indicative forms in Unit D: 2 blade and bladelet double-platform bidirectional cores and one complete non-cortical bidirectional bladelet. Needless to say the double-platform bidirectional cores with blade removal from two opposite striking platforms on one flaking surface are not typical of the core-like pieces from Units F and E (only one such core was observed among 23 pre-cores and cores), while all Unit D 2 cores are of this type. Moreover, the single bladelet also has a bidirectional scar pattern that is in good correspondence with primary reduction of the bladelet core. Taking into consideration the fact that these pieces differ from those in Units F and E and the absence of any Aurignacian-like forms in Unit D, we suggest an industrial attribution for the Unit D lithics different from the Aurignacian. In this regard, we propose a general Gravettian attribution, because bidirectional core reduction is the most characteristic for the Gravettian technocomplex in the European Upper Paleolithic.

Unit C

The single find of the unit is surely of an Aurignacian type: the double carinated (buskoid) burin and, accordingly, Unit C must be considered as Aurignacian and close to Units F and E, which also contain carinated and busked burins. Some caution is needed here because of the only one artifact forms the basis for such a conclusion. Therefore, for further analysis of the entire Siuren I archaeological sequence and context, the Unit C find has been excluded.

Unit A

Lithics of Unit A are more abundant than those from Units E, D and C, but, unfortunately, this does not facilitate its industrial attribution. The two cores are neither Aurignacian bladelet "carinated" ones or of any double-platform bidirectional type with a single flaking surface. At the same time, it is worth noting the presence of a large blade narrow flaked core with a unilateral crested ridge at its undersurface: a core type that is completely different from all core-like pieces from Units H through D. Debitage shows the dominance of blades and bladelets/microblades over flakes: 2.1:1 proportion, with a considerable number of bladelets and microblades (48.9%) among all debitage pieces. Morphological features of debitage understood through attribute analysis does not reveal any clear patterns of differences. Tools do not contain any Aurignacian types. However, tool types very typical of other Upper Paleolithic technocomplexes with unifacial tools treatment traditions (e.g. Gravettian) are also absent, although presence of three burins on elongated blades (5.8-7.7 cm) and two unilaterally backed bladelets *sensu lato* is notable and would not contradict known common Gravettian/Epi-Gravettian industrial features.

Thus, the assemblages from upper cultural deposits at Siuren I (archaeological Units E-A) definitely leave a twofold impression of their industrial attributions. On one hand, lithics from Units E and C are clearly of Aurignacian nature with cores and tool types very similar to characteristic pieces in Unit F. On the other hand, lithics from Units D and A show no "Aurignacian influence", having only "non-Aurignacian" cores and tool types. Their industrial attribution seems to be possible only with comparisons to artifacts from the 1920s excavations Upper layer, although a Gravettian/Epigravettian attribution is the most likely.

On the whole, archaeological comparisons between the 1990s excavations Units E-A and the 1920s Upper layer assemblages are needed for to understand their complete industrial characteristics.