

## SIUREN-I (CRIMEA) IN THE CONTEXT OF A EUROPEAN AURIGNACIAN

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The paper is dedicated to the memory of  
*Ladislav ("Laci") Banasz (1932-2000)* -  
our friend, great person and Paleolithic archaeologist

### Introduction

The Crimean peninsula (northern Black Sea region at the south-east edge of Europe) is quite famous in prehistoric studies because of its numerous Paleolithic sites first investigated over 100 years ago. In contrast to many well-known deeply stratified Middle Paleolithic sites with abundant artifacts, fauna and even some human (Neanderthal) remains (Chabai *et al.* 1995; 2000; Marks, Chabai 1998), the Crimean Upper Paleolithic has been rather poorly represented until now.

Since its first excavations by the pioneer of Crimean Stone Age archaeology, K.S. Merejkowski, in 1879-1880 and then by G.A. Bonch-Osmolowski in 1926-1929, the Siuren-I rock-shelter (south-western Crimea) remains a key site for Upper Paleolithic studies of the region. In the course of the 1920s excavations at Siuren-I, three cultural layers with numerous artifacts and fauna remains were defined. While Bonch-Osmolowski recognized several horizons for each cultural layer on the basis of the thickness of the deposits and the presence of hearth/ashy lenses of different depths, he combined all finds from each cultural layer, excavated by several "artificial levels", both because of his strong belief in both the rather homogeneous character of the artifacts and in the rapid deposition of sediments. Artifacts of the three cultural layers from the 1920s excavations at Siuren-I were identified as Upper Paleolithic. They were interpreted as either representing three stages of the rock-shelter's occupation by bearers of the Aurignacian tradition (Lower and Middle Aurignacian, Upper Aurignacian - Gravettian type) with straight analogies in the West - Western and Central Europe (Bonch-Osmolowski 1934) or as non-Aurignacian, the entire cultural-chronological sequence of the Crimean Upper Paleolithic development with the closest analogies in the East - the Trans-Caucasian region (Imeretia, Georgia) (Vekilova 1957).

After Vekilova's publication of the Siuren-I data from 1879-1880 and 1926-1929, Bonch-Osmolowski's Aurignacian industrial interpretation of the site's archaeo-

logical context and its connection to the European Aurignacian was basically lost in the former Soviet Paleolithic archaeology. This occurred because of the idea of radical differences between the Eastern European Upper Paleolithic and the rest of Europe. Therefore, there developed either ideas of distinct successive developmental stages named in each region according to names of local territories; on a higher interpretative level, of individual sites grouped under the terms of Aurignacian, Solutrean and Magdalenian periods (e.g. Efimenko 1953; 1956; Boriskowski 1953; 1963; Chernysh 1959; 1985); then the so-called "cultural revolution" concept led to determination of many local cultures within Early, Middle and Late periods of Upper Paleolithic (e.g. Rogachev, Anikovich 1984). Even in the early 1990s, when first attempts at industrial correlation of the Upper Paleolithic industries of Eastern Europe with the European Upper Paleolithic were attempted, the situation did not change radically. This is best illustrated by Anikovich's descriptions of the Siuren-I Lower and Middle layers artifacts of the 1920s excavations, where he did not classify even a single tool as Aurignacian and related these assemblages only very generally to the "Aurignacoid route" of Upper Paleolithic development (Anikovich 1992: 224, 242). Moreover, he further connected the Siuren-I Lower and Middle layer artifacts chronologically (sic!) "*to the maximum cold of the Upper Valdai (ca. 20,000 - 18,000 BP)*" and that is why he concluded "*that the Middle-Upper Paleolithic transition occurred in the Crimea much later than in most of Europe*" (Anikovich 1992: 223-225). Among Western specialists, only American archaeologists R. Klein and then his student J.F. Hoffecker supported Vekilova's non-Aurignacian industrial understanding of the Siuren-I materials (Klein 1965; Hoffecker 1988).

On the other hand, European archaeologists, following Bonch-Osmolowski's interpretation, always considered the 1920s excavations Siuren-I Lower and Middle layers artifacts as Aurignacian (e.g. Peyrony 1948; Delporte 1963a; 1963b; Broglio, Laplace 1966; Laplace 1970). Especially important Aurignacian analyses for

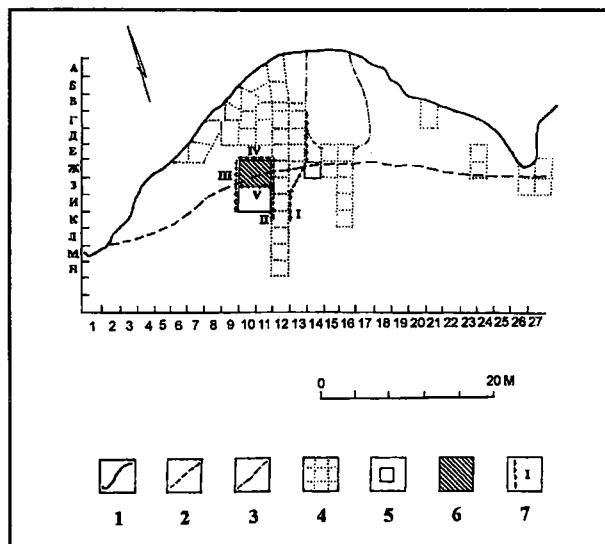


Figure 1 : Siuren-I. Map of the excavations at the rock-shelter. 1 - rock-shelter's back-wall. 2 - drip-line. 3 - Merejkowski's excavation area. 4 - Bonch-Osmolowski's excavation areas. 5 - Tarasov's 1981-1982 excavation area of Upper layer. 6 - 1995 - 1997 excavation area. 7 - the site's main stratigraphical profiles of 1994 - 1997 investigations.

these Siuren-I materials as relating to European Aurignacian with numerous "lamelles Dufour" were made by those specialists who, in addition to awareness of Bonch-Osmolowski's (1934) and Vekilova's (1957) publications, also personally studied part of the Siuren-I artifacts stored in St.-Petersburg: J.K. Kozlowski - "Aurignacian of Krems facies"/"Aurignacian of Krems-Dufour type" (Kozlowski 1965; Kozlowski, Kozlowski 1975; 1979), J. Hahn - "Dufourlamellen - Aurignacien" (Hahn 1970; 1977), L. Banesz - "Kremsien Aurignac" (Banesz 1993).

The above-represented opposing Aurignacian and non-Aurignacian interpretations of the Siuren-I materials meant that a re-study of the existing Siuren-I collections from the 1879-1880 and 1920s excavations would only lead to supporting one of these points of view with no needed additional information on more precise stratigraphical and chronological data, among others. Moreover, the presence of serial Middle Paleolithic artifacts in the 1920s Siuren-I Lower layer additionally pointed out the importance of the site. Absence of new detailed all-around integrated data on the site and their new understanding would have made it impossible to develop any serious ideas on the nature of the Middle-Upper Paleolithic transition in the Crimea. All in all, the real necessity of new excavations at Siuren-I became obvious.

### New excavations at Siuren-I rock shelter in the 1990s

New field investigations at Siuren-I were realized in 1994-1997 in the frames of a joint Ukrainian -Belgian project on Crimean Paleolithic research. The excavations were conducted in the western part of the rock-shelter (12 sq. m) near Bonch-Osmolowski's excavation squares

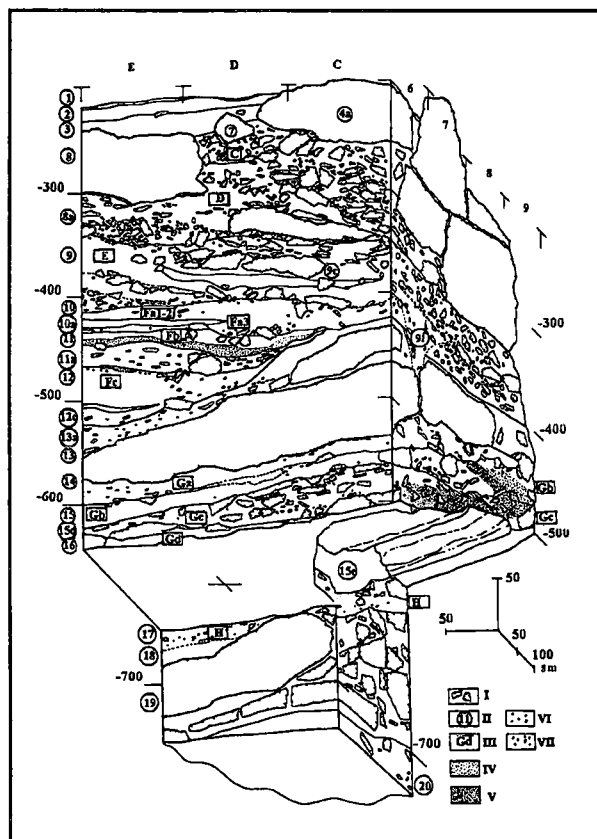


Figure 2 : Siuren-I. Stratigraphical profiles # III, IV, VI, VII of 1995 - 1996 excavations. I - limestone blocks and slabs. II - numbers of lithological strata. III - archaeological Units and levels. IV - ashy lenses. V - hearths / fireplaces. VI - flint artifacts. VII - charcoal.

where the richest concentration of Lower and Middle layers artifacts was found (fig. 1). A new system based on site stratigraphy was used for labeling the archaeological sequence that was also then correlated with that of Bonch-Osmolowski (Demidenko *et al.* 1998: 374-377). In particular, the 1920s Middle layer corresponds to archaeological Unit "F" (4 levels - "Fa1-Fa2", "Fa3", "Fb1-Fb2", "Fc") associated with lithological strata 10-10a-11-11a-12-12a-12b-12c-13a, while the 1920s Lower layer corresponds to archaeological Unit "G" (4 levels - "Ga", "Gb1-Gb2", "Gc1-Gc2", "Gd") connected to lithological strata 14-14a-15-15a-15b-15c-15d (fig. 2). The current lowermost archaeological Unit "H" (lithological strata 17) was not recognized during the 1920s investigations, but based on its artifacts, this Unit "H" with just a single level is quite comparable to finds of the 1920s Lower layer/the 1990s Unit "G". Sediments with the named three archaeological Units are geologically subdivided by two horizons of huge limestone blocks - evidences of rock falls from the rock-shelter's roof - lithological strata 13 and 15e. Taking into consideration all detailed data on stratigraphy and artifact characteristics, it is reasonable to combine into two find complexes artifacts of the 1920s Lower layer/the 1990s Units "H" - "G" and the 1920s Middle layer/the 1990s Units "F". Their chronological and industrial data

and then archaeological interpretations will be represented below.

### **Chronological data for the Siuren-I cultural bearing sediments with the 1920s lower layer / The 1990s units "H"- "G" and the 1920s middle layer/The 1990s unit "F"**

Three AMS dates on bone samples were obtained for the following archaeological levels: "Fb1-Fb2" - 29 950 ± 700 BP (OxA-5155), "Ga" 28450 ± 600 BP (OxA-5154), "H" - 28200 ± 440 BP (OxA-8249) (Pettitt 1998: 331; personal communication 1999). Although these dates do not correspond precisely with the stratigraphic position of the archaeological levels, all three dates are principally statistically identical within the chronological range between 31000-27 000 BP for the whole sequence of the rock-shelter's sediments with the 1990s archaeological Units "F"- "G"- "H"/the 1920s Middle and Upper layers. Geochronologically, it is the time period of Arcy and Maisières Interstadials of Last Glacial- 31500-27000 years ago.

Data on fauna and microfauna on the 1990s Units "F"- "G"- "H" (López Bayón 1998; A.K. Markova personal communication 1999) testify to both the absence of any specific cold-loving species and rather temperate climatic conditions for these Siuren-I cultural bearing deposits. This is not in contradiction with the above-made chronological conclusion based on absolute dates. Moreover, the fauna lists for the 1995-1996 excavations for hunted ungulate species, with the exception of 2 identifiable bones for one *Sus scrofa* individual in level "Fb1-Fb2", for the 1990s Units "F"- "G"- "H" are almost identical (López Bayón 1998) by the species representation: a dominance of *Saiga tatarica*, a varying presence of *Equus sp.*, *Bos sp.*, *Cervus elaphus*, *Cervus sp.* and a single occurrence of *Cervus megaceros*. The co-occurrence of *Cervus elaphus* and *Saiga tatarica* also indicates forest-steppe landscapes around Siuren-I at that time. Such a landscape is notable as it is known for the Crimean foothills for the time period of Arcy and Maisières Interstadials of the Last Glacial and not known for preceding and subsequent periods, stadials of the Würm Interpleniglacial with their cold and arid steppe landscapes (Gerasimenko 1999: 138-139).

Thus, for the Siuren-I analysis, culture-bearing sediments in total thickness up to 3 meters can be reasonably considered a geologically rapid rate of deposition - no more than 2000-4000 years - that is in correspondence with opinions of geologists who have studied the rock-shelter's stratigraphy on the basis of the 1920s investigations (Gromov 1948; Ivanova 1969; 1983).

### **General industrial characteristics of the Siuren-I artifacts complexes from the 1920s lower layer / The 1990s units "H"- "G" and the 1920s middle layer/The 1990s unit "F"**

On the basis of data recovered during new research at Siuren-I rock-shelter in 1994-1997, and taking into consideration all published and partially unpublished materi-

als of the site's previous excavations conducted in 1879-1880 by Merejkowski and in 1926-1929 by Bonch-Osmolowski, it is now possible to state that the Siuren-I artifact complexes *do* represent two different true European Aurignacian industries and one more find complex of Crimean Micoquian Tradition industry (Demidenko *et al.* 1998; Demidenko 1998; 1999; 2000; 2001).

The latter of these complexes - the Middle Paleolithic one - is stratigraphically related to deposits of the 1920s Lower layer/the 1990s Units "H"- "G". Rare Micoquian artifacts (5 cores and 40 tools of the 1920s Lower layer and 20 tools and 23 retouch flakes of the 1990s hearth/ashy levels of Units "H"- "G") were recovered along with much more numerous Upper Paleolithic artifacts in one and the same archaeological levels there. Such a stratigraphical co-occurrence of Middle and the Upper Paleolithic pieces at Siuren-I is explained now (Demidenko 2000) by "alternative visits" of the rock-shelter at ca. 30000 BP by both the Crimean Micoquian Neanderthals ("very ephemeral" frequent occupations) and Aurignacian *Homo sapiens* (frequent occupations with "intensive short-term camp" features). Under certain sedimentation processes and their rates, rich Upper Paleolithic levels "absorbed" rare Middle Paleolithic artifacts creating the known archaeological sequence with only Upper Paleolithic levels containing some Middle Paleolithic items, instead of the assumed actual interstratification of Middle and Upper Paleolithic levels there.

Two of the three complexes have clearly Aurignacian industrial characteristics. They represent two different sub-types of the European Aurignacian of Krems-Dufour types industries - Early and Late.

*Early Aurignacian of Krems-Dufour type industry at Siuren-I the 1920s Lower layer/the 1990s Units "H"- "G"* : Lithic artifacts of this find complex are best represented by about 15500 pieces (including about 80 core-like pieces and about 800 tools) from the 1920s excavations and 5348 pieces (including 27 core-like pieces and 425 tools) from the 1990s excavations. In total, about 21000 flints recovered from the rock-shelter's different areas in about 100 sq. m. Aside from the artifacts of XXth century investigations, we should also mention here the Lower layer's 1137 flints (7 cores and 111 tools, including such typologically characteristic tool types as 5 carinated end-scrapers, 18 Dufour bladelets with alternate retouch and 1 scaled tool) from the XIXth century excavations conducted by K.S. Merejkowski (Vekilova 1957: 284-286). Although data and flint frequencies of this collection is of incomplete character, it is worth noting that the part of the rock-shelter (ca. 60 sq. m) near its back-wall contains only Upper Paleolithic/Aurignacian pieces and not a single Middle Paleolithic artifact. General techno-typological characteristics of this Aurignacian finds complex are as follows.

#### *Technology :*

Primary flaking processes were mainly directed toward bladelet and, to a lesser extent, microblade production

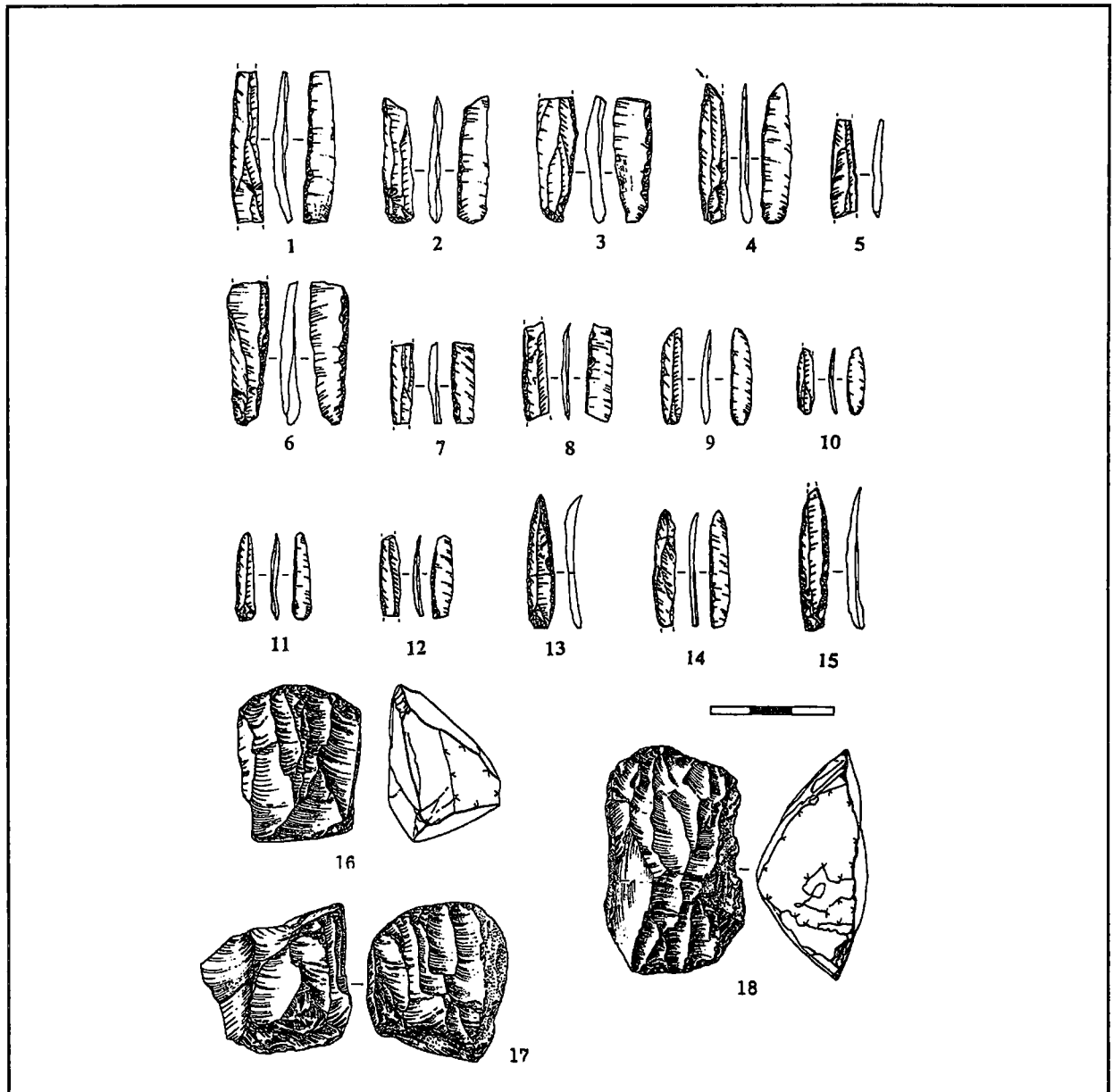


Figure 3 : Siuren-I. Flint artifacts of Early Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1 - 15 - "non-geometric microliths", 16 - 18 - bladelet "carinated" cores (1 - 16 - Unit "H", 17 - level "Gd", 18 - level "Gc1-Gc2").

(together 40.3-51.1% of the 1990s all debitage pieces, including tool blanks and core maintenance products) with such main morphological features as "on-axis" orientation and flat/incurvate and twisted general profiles. This bladelet and microblade production was associated with reduction of blade/bladelet and bladelet cores, which included the so-called "carinated" types (fig. 3: 16-18; 4: 25-26). The amount of blades is about half as much in comparison with bladelets and microblades.

*Typology.*

The tool-kit structure is interconnected with the technological characteristics of the industry. "Non-geometric microliths" (microblades and bladelets) compose about 40% of all the 1920s tools and from 58.9% to 67.6% of all the 1990s tools. The most typical among them are Aurignacian types with flat and semi-steep micro-scalar

and/or micro-stepped retouch. These are alternative (55.3% in the 1920s Lower layer and 63.2-72% in the 1990s levels of Units "H"- "G") and ventral (3% in the 1920s Lower layer and 7-8.7% in the 1990s levels of Units "H"- "G") "lamelles Dufour" of "Dufour sub-type" (fig. 3: 1-4, 6-12, 14; 4: 1-4, 6-13, 16-21, 23-24), as well as "Krems points" (fig. 3: 13,15; 4: 5, 14-15) with alternative and dorsal bilateral retouch (present in the 1920s Lower layer and in the 1990s Unit "H" (7%), levels "Gc1-Gc2" (2.5%) and "Ga" (11.1%)). Indicative Upper Paleolithic tool types are composed of the following categories in decreasing order of frequency: *burins*- a dominance of angle (fig. 5: 2, 4) and on truncation/lateral retouch (fig. 5: 9) types and a subordinate position of dihedral type that remarkably occurs only at the top of the 1990s Unit "G" archaeological sequence-levels "Gb1-

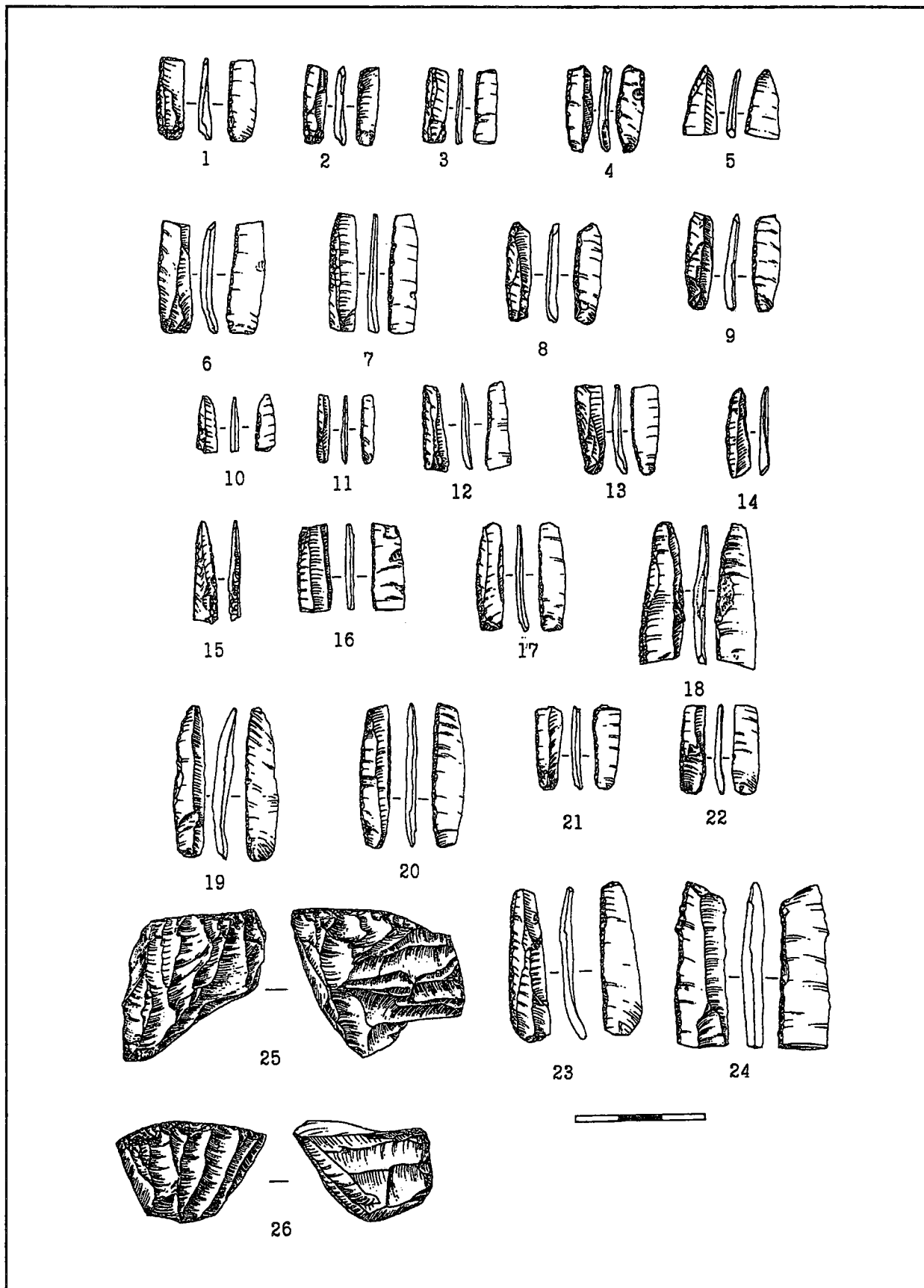


Figure 4 : Siuren-I. Flint artifacts of Early Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1 - 24 - "non-geometric microliths", 25 - 26 - bladelet "carinated" cores (1 - 9, 15 - 18, 23, 25 - 26 - level "Gc1-Gc2", 10 - 13 - level "Gb1-Gb2", 14 - level "Ga", 19 - 22, 24 - level "Gd").

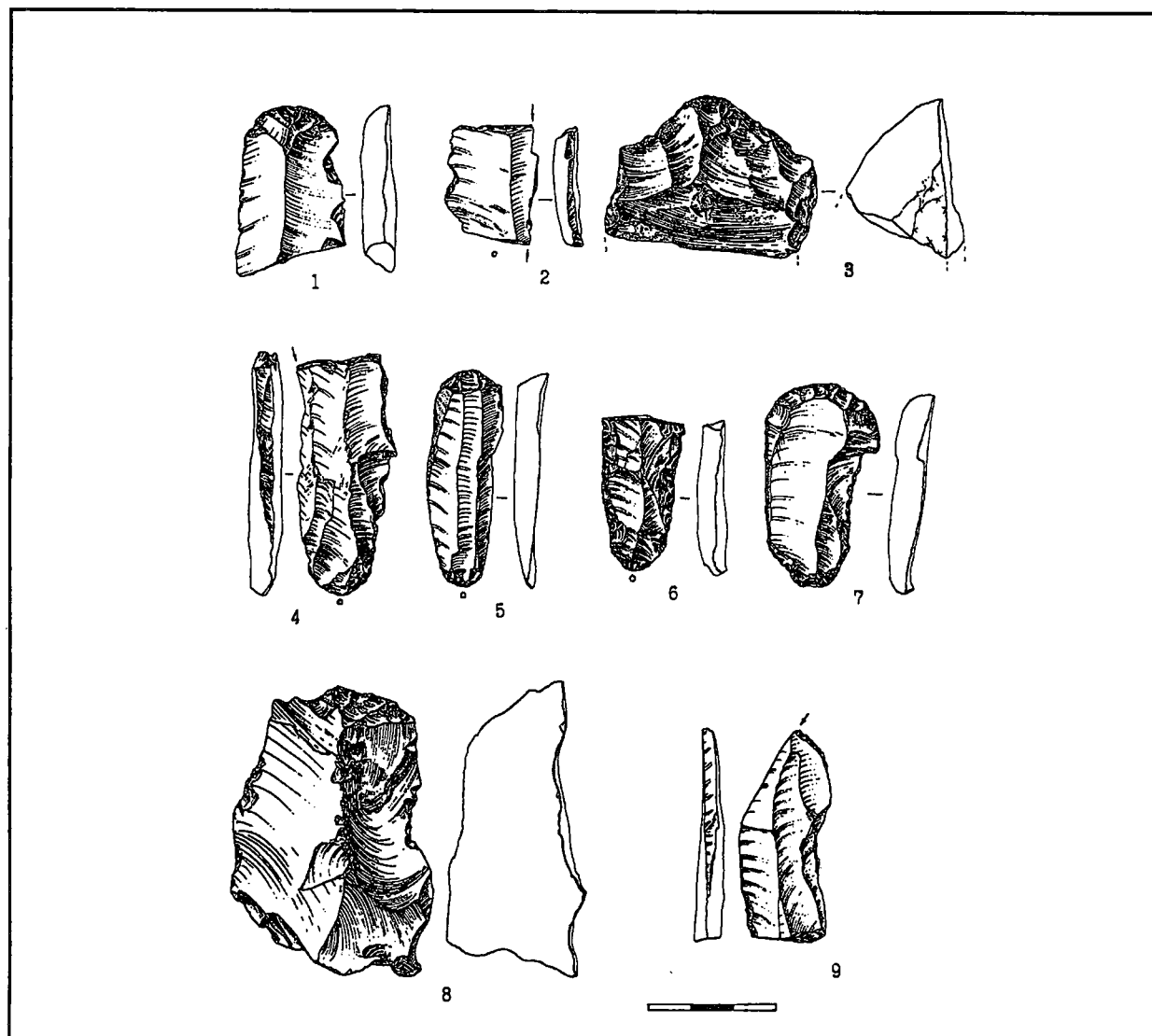


Figure 5 : Siuren-I. Flint artifacts of Early Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1, 5, 7 - simple flat end-scrapers on blades, 2, 4 - angle burins, 3, 8 - thick shouldered end-scrapers, 6 - bilaterally retouched blade with "Aurignacian-like retouch", 9 - burin on truncation (1 - level "Ga", 2 - 3 - level "Gb1-Gb2", 4 - 6 - level "Gc1-Gc2", 7 - level "Gd", 8 - 9 - Unit "H").

Gb2" and "Ga"; notable as well is the complete absence of carinated types among the 1990s Units "H"-"G" burins and just a single one among the 1920s Lower layer burins; *end-scrapers* are not numerous but include typical Aurignacian carinated and thick shouldered/nosed (fig. 5: 3, 8) ones and serial simple flat ones (fig. 5: 1, 5, 7) mostly made on unretouched blades; *scaled tools*; *truncations*; *retouched blades* with just the single occurrence of pieces with "Aurignacian-like retouch" (fig. 5: 6) ; *perforators*.

The flint artifacts are also accompanied by bone tools - 5 points and 45 awls of the 1920s Lower layer and 1 point and 5 awls of the 1990s levels "Gc1-Gc2" and "Gb1-Gb2", as well as by personal adornment pieces - 8 shell beads of *Aporrhais pespelecani* marine mollusks and one shell bead of river mollusk *Taeodoxus fluviatilis* recovered during excavations of both the 1920s Lower layer and the 1990s level "Gc1-Gc2".

Summing up all stratigraphical, chronological

and archaeological data for the Siuren-I Crimean Micoquian Tradition and Early Aurignacian of Krems-Dufour type industries, it is possible to connect them geochronologically to Arcy Interstadial *ca.* 31 500-30 000 years ago.

*Late Aurignacian of Krems-Dufour type industry at Siuren-I the 1920s Middle layer/the 1990s Units "F" :*

The main set of lithic artifacts for this find complex is composed of about 5632 pieces (including 51 core-like pieces and 189 tools) obtained during the 1920s excavations and 7575 pieces (including 23 core-like pieces and 182 tools) recovered during the 1990s investigations. It is altogether not much more than 13000 flints from the rock-shelter's different areas in almost 110 sq. m. Merejkowski's Upper layer collection (1517 flints and among them 6 core-like pieces and 89 tools) is of heterogeneous industrial character representing a mixture of

lithics industrially analogous to the 1920s Upper (mostly Epi-Gravettian flints) and Middle (Late Aurignacian flints) layers. Therefore, involvement of these XIXth century finds for a serious techno-typological analysis of the Late Aurignacian industry is not worth doing. At the same time, we should not forget the spatial aspect here - a distribution of the Late Aurignacian levels in the rock-shelter's inner part near its back-wall (ca. 60 sq. m) too. The find complex is characterized by the following main traits.

#### Technology :

Primary flaking processes were based on reduction of both bladelet "regular" and Aurignacian "carinated" (mainly single-platform) cores (fig. 7: 1-8) and carinated tools (end-scrapers and notably burins) as well (fig. 10: 1-6, 8, 10), that resulted in pronounced microblade production - 50.3% in level "Fb1-Fb2" and 45.7% for the whole Unit "F" debitage (including tool blanks and core maintenance products). The received microblades are basically with "off-axis" orientation often approaching even *déjeté* removal direction and twisted general profile. The number of bladelets, on the other hand, is about three times less in comparison with microblades, while blades play a minor role in debitage - their quantity is almost three times less than bladelets and almost nine times less than microblades in level "Fb1-Fb2".

#### Typology:

Interconnection of technology and typology is clearly expressed by tool-kit structure. "Non-geometric microliths" (47.4% of level "Fb1-Fb2" tools and 42.3% of the whole Unit "F" tools) are represented by microblades and just a few bladelets with marginal retouch of specific abrasion secondary treatment. A leading position among them is occupied by Aurignacian "*lamelles Dufour*" of "*Roc de Combe sub-type*" with ventral (34.7% and 33.8% for "microliths" of level "Fb1-Fb2" and the whole Unit "F", respectively) and alternate (11.1% and 11.7% for "microliths" of level "Fb1-Fb2" and the whole Unit "F", respectively) retouch placement (fig. 6: 1-19), as well as by "*lamelles pseudo-Dufour*" (fig. 6: 20-32) with dorsal lateral and bilateral retouch (together 43.0% and 42.8% for "microliths" of level "Fb1-Fb2" and the whole Unit "F", respectively). On the other hand, specific "*Krems points*" are completely absent here. Aurignacian tool types also include carinated and flat/thick shouldered end-scrapers (30% of all Unit "F" end-scrapers) (fig. 8: 1-3, 7-9) and carinated burins (fig. 8: 4-6) including some busked ones (fig. 8: 10) and specific bladelet narrow flaked cores/"carinated burins" (28% of all Unit "F" identifiable burin verges) (fig. 7: 6-8). Regarding common composition of Indicative Upper Paleolithic tool types, it is needed to underline about the same quantitative representation of end-scrapers (fig. 9: 1-4) and burins, a clear dominance of dihedral (fig. 9: 5-9) and carinated types over angle (fig. 9: 10) and on truncation/lateral retouch (fig. 9: 11-12) types in burin structure, presence of a few perforators and truncations, as well as a total lack of scaled tools and retouched blades.

The flint industry is supplemented by some bone

tools - 3 points and 1 awl of the 1920s Middle layer, and 2 points and 3 awls of the 1990s level "Fb1-Fb2", and a single personal adornment piece - a pendant of a canine tooth of the 1990s level "Fb1-Fb2".

All stratigraphical, chronological and archaeological data on the Siuren-I Late Aurignacian of Krems-Dufour type industry allow us to place its geochronological relation either to the end of Arcy Interstadial (ca. 30000 years ago) or to Maisieres Interstadial (ca. 29300-27000 years ago) where the latter possibility seems to be the more likely one.

### Siuren-I Aurignacian of Krems-Dufour type complexes industrial variability

Industrial characteristics of the Siuren-I Aurignacian finds complexes for the 1920s Lower layer/the 1990s Units "H"- "G" and for the 1920s Middle layer/the 1990s Unit "F" aside from common Aurignacian traits vary on a number of techno-typological features.

Technologically, the clearest differences are seen through frequency and morphology of microdebitage - bladelets (width-0.7-1.1 cm) and microblades (width-0.2-0.6 cm). The find complexes of the 1920s Lower layer/the 1990s Units "H"- "G" are characterized either by prevalence of bladelets over microblades or their nearly equal representation, their morphological features varying to roughly the same ratio of twisted and flat/incurvate general profiles with a dominance of "on-axis" forms. The finds complexes of the 1920s Middle layer/the 1990s Unit "F", on the other hand, do show a great prevalence of microblades over bladelets with the most typical for them twisted general profile and "off-axis" orientation often approaching even *déjeté* form in morphology. Accordingly, cores and carinated tools of these two finds complexes are characterized either by straight/convex and twisted flaking surfaces and fronts (the 1920s Lower layer/the 1990s Units "H"- "G") or by a sharp predominance of twisted flaking surfaces and fronts (the 1920s Middle layer/the 1990s Unit "F"). The microdebitage structure and methods of its reduction do predetermine significant differences between "non-geometric microliths" and carinated tools for these finds complexes. The 1990s Units "H"- "G" "microliths" (a mean width-0.8 cm, a mean length-2.5 cm) are composed of bladelets (36.7%) and microblades (63.3%), as well as their carinated typical and thick shouldered/nosed end-scrapers do constitute 31.3% of all end-scrapers, while carinated burins are totally absent. On the contrary, the 1990s Unit "F" "microliths" (a mean width-0.6 cm, a mean length-1.8 cm) are represented by only 9.1% of bladelets and 90.9% of microblades; carinated typical and thick shouldered end-scrapers do account 20% of all end-scrapers, while portion of all carinated burin verges reach 28%. These data could also be added by some more typological indications. General "microliths" structure of the 1990s Units "H"- "G" tool-kits does demonstrate a do-minance of pieces with micro-scalar and/or micro-stepped retouch: 68.6% of alternative "*lamelles Dufour*" and 7.6% of ventral "*lamelles Dufour*", 2.6% of "*Krems points*", 15.2% of

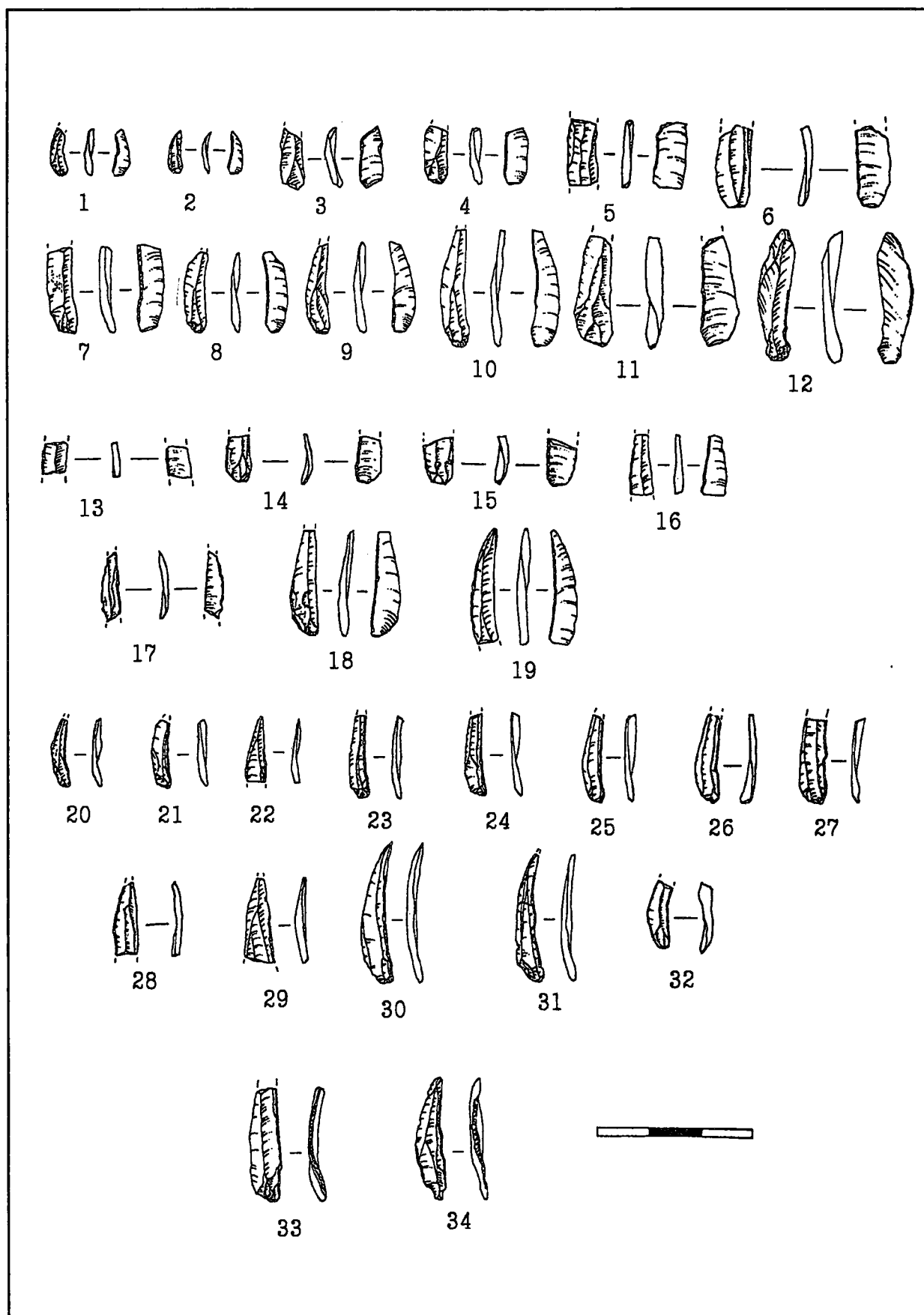


Figure 6 : Siuren-I. Flint artifacts of Late Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1 - 34 - "non-geometric microliths" (1 - 11, 13 - 26, 28 - 34 - level "Fb1-Fb2", 12 - level "Fa1-Fa2", 27 - level "Fa3").

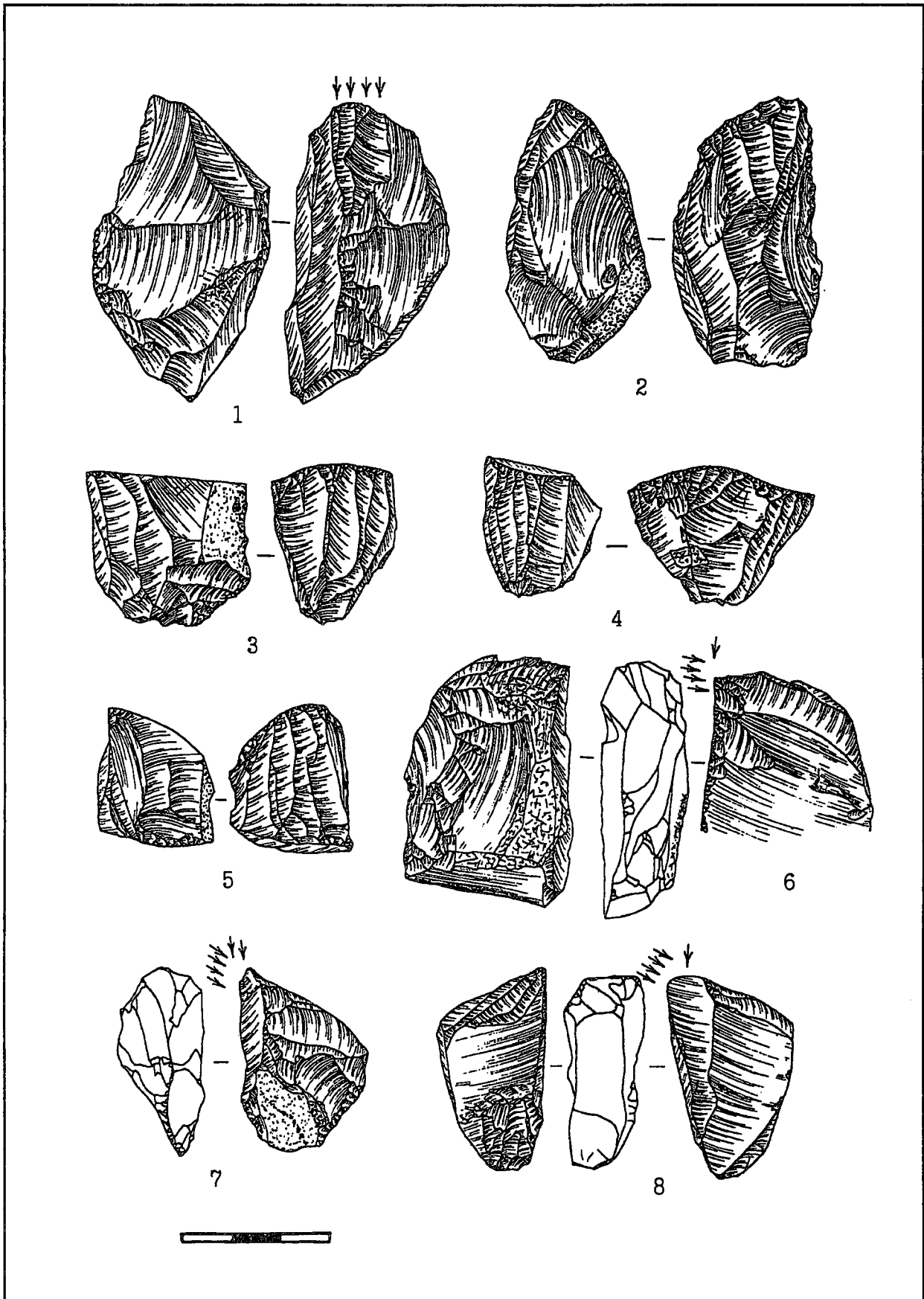


Figure 7 : Siuren-I. Flint artifacts of Late Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1 - bladelet pre-core / "carinated burin", 2 - 5 - bladelet "carinated" cores, 6 - 8 - bladelet narrow flaked cores / "carinated burins" (1 - 2 - level "Fa3", 3 - 8 - level "Fb1-Fb2").

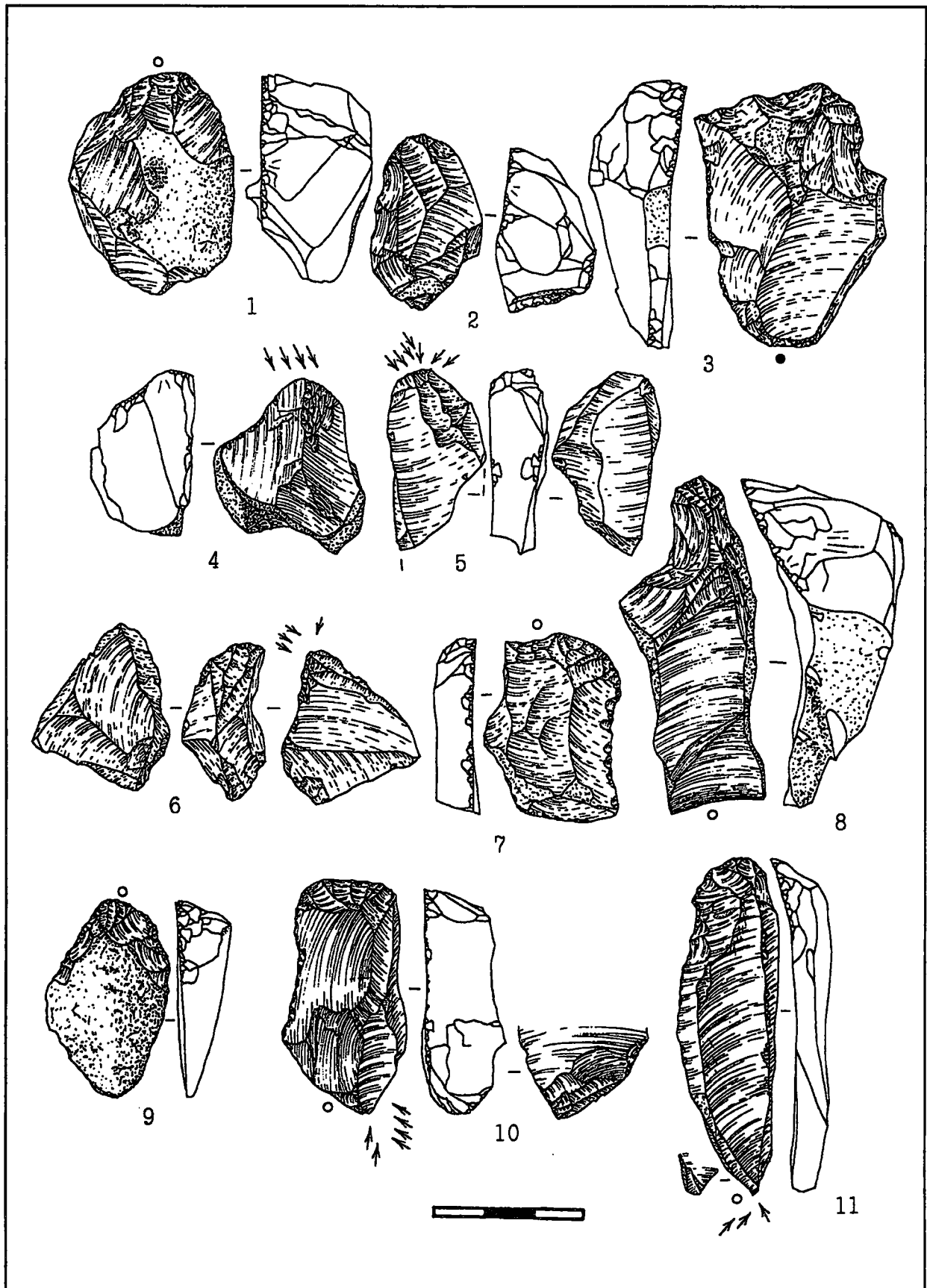


Figure 8 : Siuren-I. Flint artifacts of Late Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1 - 2 - carinated end-scrapers, 3, 8 - thick shouldered end-scrapers, 4 - 6 - carinated burins, 7, 9 - flat shouldered end-scrapers, 10 - simple flat end-scrapers / carinated burin of busque type, 11 - simple flat end-scrapers / dihedral asymmetrical burin (1 - 2, 4, 8 - 11 - level "Fb1-Fb2", 3, 6 - 7 - level "Fa1-Fa2", 5 - level "Fa3").

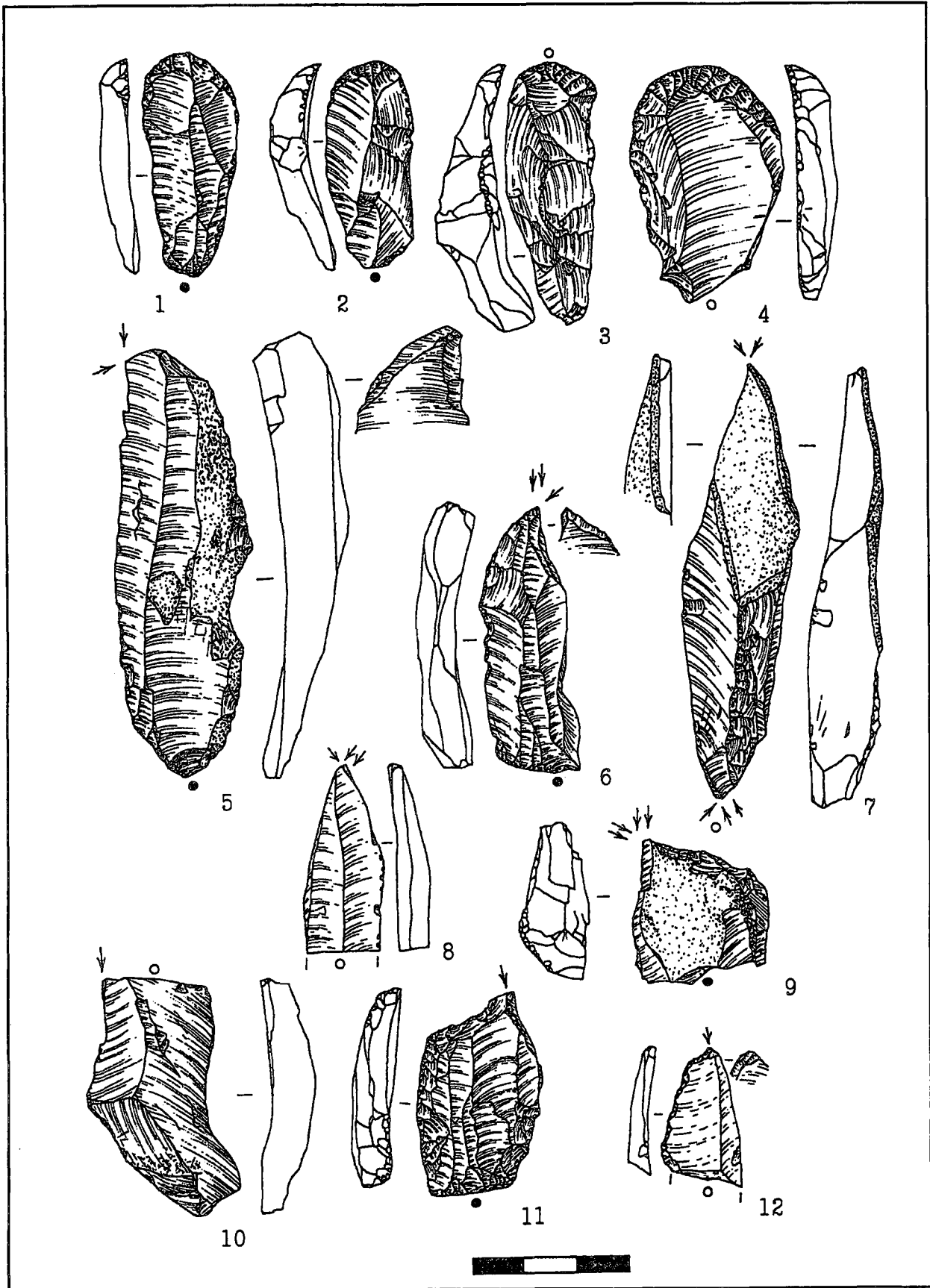


Figure 9 : Siuren-I. Flint artifacts of Late Aurignacian of Krems-Dufour type industry from the 1990s excavations: 1 - 4 simple flat end-scrapers, 5 - 6 - dihedral asymmetrical burins, 7 - double dihedral symmetrical burin, 8 - dihedral symmetrical burin, 9 - dihedral angle burin, 10 - angle burin, 11 - 12 - burins on truncation (1 - 7, 9 - 11 - level "Fb1-Fb2", 8 - level "Fa3", 12 - level "Fa1-Fa2").

dorsal lateral and bilateral "*lamelles pseudo-Dufour*" (fig. 3: 5), added by just 0.7% of microblades with thin backed laterals (fig. 4 : 22). Moreover, such indicative Aurignacian types as flat shouldered/nosed end-scrapers do not occur here. A quite different "microliths" structure is traced for the 1990s Unit "F" tool-kits. There are 11.7% of alternative "*lamelles Dufour*" and 33.8% of ventral "*lamelles Dufour*", absent "*Krems points*", 42.8% of dorsal lateral and bilateral "*lamelles pseudo-Dufour*" with mainly marginal abrasion retouch, while microblades with thin backed laterals (fig. 6: 33-34) are still of a stable minor number-3.9%. Aurignacian flat shouldered end-scrapers do appear here-10% of all end-scrapers. Also, it is notable the striking difference in burin composition where there is a dominance of angle and on truncation/on lateral retouch types in the early complex, while these types are in a subordinate position in comparison to dihedral and carinated types in the late complex. Finally, serial scaled tools and retouched blades are represented in the 1920s Lower layer/1990s Units "H"- "G" tool-kits that are not known in the 1920s Middle layer/the 1990s Unit "F" tool-kits at all.

All in all, aside from general Aurignacian of Krems-Dufour attribution of the 1920s Lower layer/the 1990s Units "H"- "G" and of the 1920s Middle layer/the 1990s Unit "F" finds complexes, there is a number of different techno-typological indications between them discussed above that do mean and strengthen their belonging to two different sub-types of this Aurignacian industries type (Demidenko *et al.* 1998: 395-402; Demidenko 1998; 1999; 2001). After such the conclusion, it is of course needed to look how these Crimean Siuren-I Aurignacian complexes coincide with a European Aurignacian.

### Siuren-I Aurignacian and a European Aurignacian

*Find complexes of the 1920s Lower layer/the 1990s Units "H"- "G" :*

According to such indicative archaeological data as serial bladelet "carinated" cores; not numerous but typical carinated end-scrapers; absence or singleness of carinated burins with usually a subordinate position of dihedral type in burins structure; typicalness among "non-geometric microliths" of elongated "on-axis" and flat/incurvate in general profile alternative "*lamelles Dufour*" with micro-scalar and/or micro-stepped retouch often classified as "*Dufour sub-type*" in a Western European Aurignacian (Demars, Laurent 1989: 102-103) and of specific "*Krems/Font-Yves points*"; presence of "simple" set of bone points and awls, along with a chronological factor (Interpleniglacial time period from the end of Hengelo Interstadial and Les Cottés Interphasial to Arcy Interstadial inclusive-ca. 36500-30000 years ago), it is reasonable to distinguish numerous Early Aurignacian of Krems-Dufour type industries complexes in Europe and, namely, the discussing Siuren-I Aurignacian complex does belong to it.

These Aurignacian complexes are known throughout Europe from the Iberian peninsula in the west

to Crimea in the east. In Western Europe, they basically occur in the so-called "Mediterranean belt" of Spain, France and Italy and are usually named there as "*Aurignacian O*", "*Protoaurignacian/Archaic or Primitive Aurignacian with Dufour bladelets*". The most well-known sites with such Aurignacian archaeological levels are the following: La Vina, level XIIIinf in Asturia, Cueva Morin, levels 9-8b-8a in Cantabria, Abric Romani, level A and L'Arbreda, level BE 111 in Catalonia (SPAIN); Gatzarria, levels Cj2-Cj1 in Basses-Pyrenees, Dufour, La Ferrassie, layer E' and Le Piage, level K in Perigord, Tournal, levels GF-F in Western Languedoc, La Laouza, level 2B1 and l'Esquicho-Grapaou, levels SLC1b-SLC1a in Eastern Languedoc, Rainaude, level 10 in Western Provence (FRANCE); Riparo Mochi, layer G in Liguria, Tagliente, levels 25a-c and Fumane, levels A3-A1, D6-D3 in Verona province (ITALY). In Central Europe the analyzing Aurignacian complexes are known on materials of site Krems-Hundssteig (AUSTRIA) and sites Tincova, Cosava, levels I-II, Romanesti-Dumbravita-I, levels II-III, Romanesti-Dumbravita-II in Banat (ROMANIA).

Striking industrial similarity of the above-named Aurignacian complexes and their spatial distribution in the frames of European southern geographical belt indicate a Pan-European status for the Early Aurignacian of Krems-Dufour type industry.

*Find complexes of the 1920s Middle layer/the 1990s Units "F":*

There is well-known a series of Aurignacian II-IV complexes dated to Interpleniglacial time period from Arcy Interstadial to Maisières Interstadial inclusive (ca. 30000-27000 years ago) in Western Europe. Industrially, these Aurignacian complexes are characterized by a serial carinated, thick/flat shouldered/nosed end-scrapers; a dominance of dihedral and carinated (including busked ones) types among burins; a common significance among "non-geometric microliths", if they occur, quite narrow "off-axis" and twisted in general profile microblades with ventral ("*lamelles Dufour*") and dorsal ("*lamelles pseudo-Dufour*") marginal abrasion retouch often classified as "*Roc de Combe sub-type*" in a Western European Aurignacian (Demars, Laurent 1989: 102-103); presence of a "simple" set of bone points and awls.

Among the most known of these Aurignacian complexes we can mention materials of sites Roc de Combe, levels 6-5, Abri Pataud, level 8 and Le Flageolet, levels IX-VIII in Perigord (FRANCE); Cova Beneito, levels B8-B9 in Valencia (SPAIN). In Central Europe, these Aurignacian complexes might belong to the widely-known find complex of Gura Pulawska-II (POLAND) with its numerous carinated typical end-scrapers and shortened "*lamelles pseudo-Dufour*" with dorsal lateral and bilateral marginal abrasion retouch, single but only dihedral burins.

The Siuren-I Late Aurignacian is namely connected to these Aurignacian complexes. As is the case with the Siuren-I Early Aurignacian and the European Early Aurignacian of Krems-Dufour type industry, this Late Aurignacian of Krems-Dufour type industry is again

of a Pan-European status reflecting through its flint treatment traditions, high likely, a facial manifestation of a Late European Aurignacian with a specialized economical activity.

## Conclusions

To briefly sum up the above-represented data on both the Siuren-I Aurignacian materials and their interrelations with industrially similar and even analogues Aurignacian complexes throughout Western and Central Europe, we make the following main conclusions.

The Siuren-I find complexes of the 1920s Lower layer/the 1990s Units "H"- "G" and the 1920s Middle layer/the 1990s Unit "F" have, without question, Aurignacian *sensu stricto* industrial and chronological indications first substantiated by Bonch-Osmolowski as far back as the mid-1930s. Now, on the basis of much more detailed data, we must once and for all declare the return of these Crimean assemblages into "a European Aurignacian family" forever leaving aside any uncertain and strange-looking "Aurignacoid-like" industrial attributions.

Aside from statements on a general Aurignacian character of the Siuren-I Aurignacian complexes, their industrial affiliation to European industries of the Aurignacian of Krems-Dufour type is certain. Moreover, these Siuren-I assemblages are quite different within the framework of the Aurignacian of Krems-Dufour type and should be separated into two sub-types: European Early and Late Aurignacian of Krems-Dufour type industries with the above-described main techno-typological traits and chronological time periods.

The spread of the Aurignacian of Krems-Dufour type industries into Eastern Europe, as indicated by the Crimean Siuren-I materials, raises an important subject on involvement of Eastern European territories into research on a Pan-European Aurignacian.

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