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Editorial

This issue of *Mesolithic Miscellany* is dedicated to Professor Dragoslav Srejović who, sadly, died in November of this year. For many of us, his name will always be associated with the remarkable site of Lepenski Vir in the Iron Gates gorge of the Danube valley. But this was by no means his only major excavation, nor his only foray into Stone Age archaeology. In recognition of his contribution to Mesolithic studies, this issue of the newsletter focuses on the archaeology of the Iron Gates region which he did so much to promote. It begins with an appreciation of his life and work by one of his former students, Ivana Radovanović. This is followed by a short article reporting new AMS radiocarbon dates for the sites of Lepenski Vir and Vlasac, on the Yugoslav side of the river, and Schela Cladovei, on the Romanian side. It is largely due to Professor Srejović's efforts that these dates can be published. Two articles by Elizabeth Dinan dealing with the lithic artifact inventories from the Romanian sites of Băile Herculane and Cuina Turcului complete the volume.

Clive Bonsall

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Dragoslav Srejšović
1931–1996

An appreciation by Ivana Radovanović

Dragoslav Srejšović was one of the most prominent Serbian archaeologists. From the very beginning, his career was closely linked to the Department of Archaeology at the Faculty of Philosophy, University of Belgrade. In his student days, archaeology was still a part of Art History studies, and this fact marked his attitudes and his way of thinking in various ways, both in science and in private life. As an archaeologist he never considered the evidence of material culture, its periodization and chronology as a goal in itself. For him it represented the basis for further research, above all about the meaning of particular culture — archaeology was concerned with human beings, not with catalogues, descriptions and analogues. On the other hand, as an art historian, he was always looking for 'hard' evidence in the context of material remains and in written sources. He never articulated an 'archaeological theory' in his writings, although they were saturated with various ideas which he often left for other scholars to develop further. He talked about these ideas and theoretical concepts much more in the lectures he gave to more than thirty generations of students. His eloquence, broad education and combination of warmth and authority made him one of the most liked lecturers, and until the end of his life his classes were literally packed with students, not only those of archaeology but from other departments too.

As a lecturer in prehistory, after finishing his PhD thesis in 1964, he certainly contributed to the popularity of prehistory among future archaeologists at the University of Belgrade. However, as an explorer he was equally engaged in the studies of Antique archaeology. Thus his publications include important contributions in both fields. As a matter of fact, he did not like to divide fields or periods one from another. He used to say that a good archaeologist will be good in any field of archaeology — that the important thing is to know what one is looking for and then to find a way of doing it. That is why his name is linked with important sites of various periods, from the Mesolithic (Odmuť, Vlasac, Lepenski Vir), Neolithic (Divostin, Grivac,

Medvednjak), Eneolithic and Bronze Age (Bare, Magura, Ljulgaci), Roman period (Romuliana–Gamzigrad, Sarkamen, Doclea), i.e. to surveys, test excavations and systematic research of 67 sites in Serbia and Montenegro. A large number of collaborators were engaged in this work and many young archaeologists were given an opportunity to begin their own research.

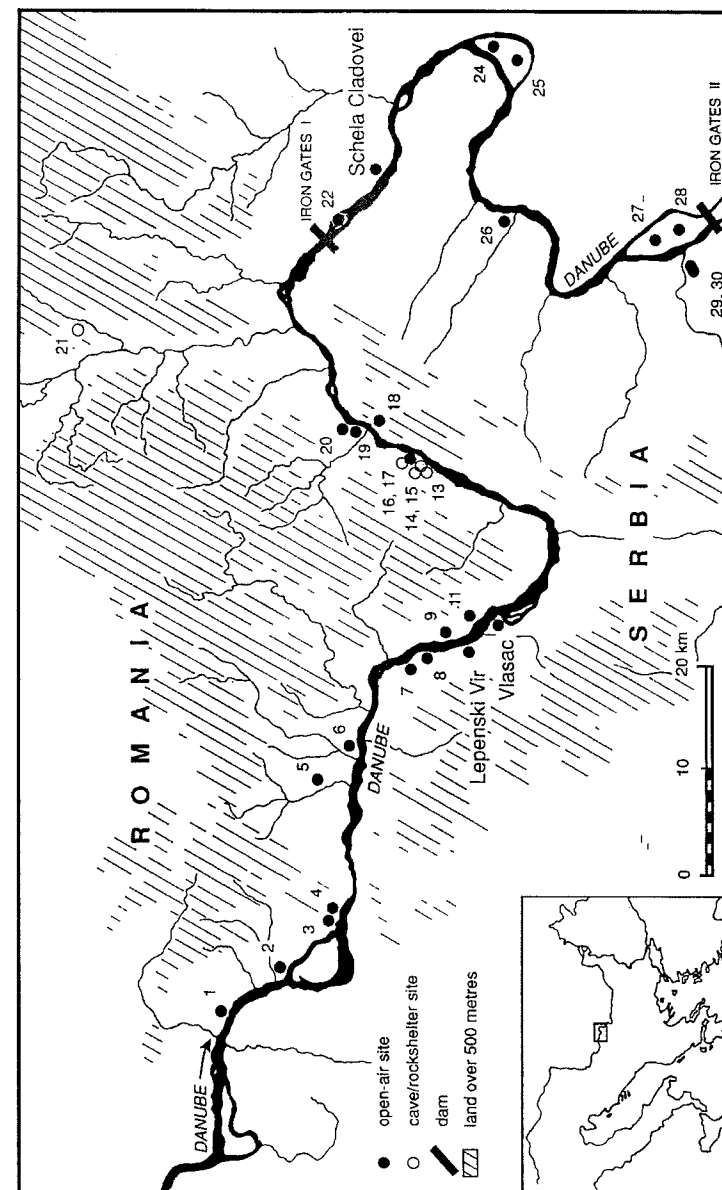
Every archaeologist knows the difficulties of obtaining financial support for projects. Apart from his teaching duties, fieldwork and writing, which consumed a large amount of his energy, Dragoslav Srejšović had a rare strength and patience to organize a large number of new projects and find support for their realization. At the same time he fought for the dignity of Serbian archaeology and, even more fervently, of our University, never doubting what was right or wrong. During his entire life he had to fight for it constantly, succeeding in remaining dignified, respected and morally impeccable. In this way, in turbulent times, he was one of those personalities whose words echoed much further than the boundaries of academic milieu. As a permanent member of the Serbian Academy of Sciences and Arts since 1983, he was even more tenacious in doing so. He used his authority neither as a sword nor a shield — but as a bridge.

Dragoslav Srejšović was a public celebrity, and in this way archaeology in Serbia was seen as a significant matter in public. He used this circumstance in order to defend our archaeology from political and ideological abuses, which many other disciplines could not resist in recent years. He was often equalized with his discoveries of Lepenski Vir and Romuliana, and recently, only several weeks before his death, of Sarkamen. In public, these discoveries were represented as miraculous, but we, his colleagues and collaborators know well the amount of time, energy, perseverance and love he had engaged to reach them. He said once that he has knocked at hundreds of doors and only two or three of them opened for him, and that it is important to know when the knocking is in vain, otherwise not even one door may open. His mind was thus open and the spirit free, and he could never be a dogmatic in any aspect, be it a scientific school or some other domain.

Human dignity would have been his ideology, and his life, both private and professional, was focused on it. He did not adhere to any ideology but he passionately studied them. Archaeology was one way of reaching this goal, in fact his way to understand the present. His death was a shock to all of us, in spite of the fact that we knew about his fight against the disease that lasted almost a year. This last fight was as courageous as all his previous fights and

it seemed that he will again be the winner. It certainly is needless to say that he worked until the last moment, preparing the exhibition and report from Sarkamen. He was a majestic personality, leaving his mark upon our archaeology, our University, the Belgradian artistic and political scene, and the media. In private, he was always genuinely interested in all kinds of problems if approached with them. He was very emotional, either angry or gladdened, but never indifferent. I am sure that many of those who knew him and experienced his charisma will recognize him in this brief memento.

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Opposite Map of the Iron Gates region showing the locations of the principal Mesolithic and Early Neolithic sites: 1 – Pojejena; 2 – Moldova Veche; 3 – Livadița Terrace; 4 – Alibeg; 5 – Gornea; 6 – Liubcova; 7 – Padina; 8 – Stubica; 9 – Ilișova; 10 – Lepenski Vir; 11 – Izlaz; 12 – Vlasac; 13 – Cuina Turcului; 14 – Climente I; 15 – Climente II; 16 – Veterani Cave; 17 – Veterani Terrace; 18 – Hajdučka Vodenica; 19 – Icoana; 20 – Răzvrata; 21 – Peștera Hoților (Băile Herculane); 22 – Ostrovul Banului; 23 – Schela Cladovei; 24 – Ostrovul Corbului (Botul Piscului); 25 – Ostrovul Corbului (Cliuci); 26 – Velesnica; 27 – Ostrovul Mare (km 875); 28 – Ostrovul Mare (km 873); 29 – Kula (Mihajlovac); 30 – Knjepište (Mihajlovac). After Bonsall *et al.*, 1997.

AMS Radiocarbon Determinations on Human Bone from Lepenski Vir, Vlasac and Schela Cladovei

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A number of open-air sites in the Iron Gates region have produced important concentrations of Mesolithic and Neolithic burials. Dating of the burials has always been problematic. Previous attempts at dating have relied on traditional archaeological methods (stratigraphy, typology, association) to achieve a relative chronology. However, these chronological interpretations need to be viewed with a degree of caution. The large numbers of partial skeletons and disarticulated bones suggest that many burials were not in their original positions, and many of the undisturbed graves had no associated artifacts and could not be related stratigraphically to other features. Moreover, soil-forming processes had often erased the outlines of the original grave pits and the former land surfaces from which they originated.

As part of a new research project on the Mesolithic and Early Neolithic of the Iron Gates, AMS ^{14}C dates have been obtained on samples of human bone from three key sites — Lepenski Vir and Vlasac in Serbia, and Schela Cladovei in Romania (Map, sites 10, 12 and 23). The radiocarbon dating was undertaken in conjunction with

Table 1 AMS radiocarbon dates for human bones from Lepensli Vir, Schela Cladovei and Vlasac. The ^{14}C ages are as reported by the laboratory with errors expressed at the \pm one sigma level of confidence. All dates have been calibrated using the CALIB 3.03 program — Macintosh version, 12/03/93 (Stuiver & Reimer 1993). (*n.b.* OxA-5825 was a repeat measurement to check the validity of OxA-5824)

Site	Context	Lab ID	^{14}C age BP	cal BC age range (1 σ)	cal BC age range (2 σ)
Lepenski Vir:	Phase III, skeleton 31a	OxA-5827	7770 \pm 90	6621–6462	6993–6414
	Phase III, skeleton 44	OxA-5830	7590 \pm 90	6463–6267	6552–6189
	Phase III, skeleton 32	OxA-5828	7270 \pm 90	6178–5990	6229–5897
	Phase IIIa, skeleton 88	OxA-5831	7130 \pm 90	6018–5870	6159–5763
	Phase III, skeleton 35	OxA-5829	6910 \pm 90	5840–5667	5954–5593
Schela Cladovei:	Area III, skeleton M52	OxA-4384	8570 \pm 105	7691–7496	7902–7427
	Area III, skeleton M43	OxA-4379	8550 \pm 105	7588–7490	7891–7421
	Area III, skeleton M55	OxA-4385	8510 \pm 105	7577–7443	7855–7308
	Area III, skeleton M49	OxA-4382	8490 \pm 110	7573–7434	7843–7294
	Area III, skeleton M46	OxA-4380	8460 \pm 110	7547–7425	7693–7261
	Area III, skeleton M42	OxA-4378	8415 \pm 100	7535–7319	7579–7103
	Area III, skeleton M48	OxA-4381	8400 \pm 115	7535–7303	7582–7050
	Area III, skeleton M50	OxA-4383	8290 \pm 105	7479–7093	7533–7034
Vlasac:	Phase I, skeleton 72	OxA-5824	10,240 \pm 120	10,317–9749	10,482–9138
		OxA-5825	10,140 \pm 160	10,222–9134	10,452–9043
	Phase I, skeleton 51a	OxA-5822	8760 \pm 110	7949–7585	8027–7537
	Phase III, skeleton 83	OxA-5827	8200 \pm 90	7411–7039	7476–6824
	Phase I, skeleton 54	OxA-5823	8170 \pm 100	7300–7033	7473–6771
	Phase III, skeleton 24	OxA-5826	8000 \pm 100	7039–6655	7252–6562

palaeodietary analyses of a large series of skeletons from the three sites (Bonsall *et al.*, in press).

Schela Cladovei

Previously, only two radiocarbon determinations were available for this site; dates of 8150±80 (GrN-16991) and 7580±90 BP (GrN-16992) were obtained on bulk samples of charcoal from hearths assigned to the 'Schela Cladovei II' phase — the later of two Mesolithic phases recognized by Boroneanţ (1973).

During excavations carried out in 1991–2, human skeletal remains were exposed in an area ca 5 x 5m. These comprised seven articulated skeletons and disarticulated bones from at least another 18 individuals which may be derived from previous burials in the same area. The burials were placed in relation to some form of structure (Boroneanţ *et al.*, in press).

AMS ¹⁴C dates were obtained on single bones from eight individuals. The dates suggest that the burials and, by association, the structure were emplaced ca 8500 BP (7500 cal BC), and relate to Mesolithic occupation of the site.

Vlasac

The Mesolithic occupation of Vlasac was divided by Srejović & Letica (1978) into three main phases, Vlasac I–III. Existing conventional radiocarbon determinations, however, are inconsistent with the stratigraphic interpretation proposed. Charcoal samples from structures assigned to Vlasac II–III gave an apparently coherent series of dates ranging from ca 7440–7935 BP. Of seven dates on samples assigned to Vlasac I, however, two are similar to the dates for Vlasac II–III, but five are significantly *younger*.

Dates were obtained on single bones from five skeletons. The dates for three skeletons assigned by Srejović & Letica (1978) to Vlasac I range from ca 8150 BP to ca 10,250 BP (ca 7150–10,000 cal BC), while two skeletons assigned to Vlasac III gave ages of ca 8200 BP (ca 7200 cal BC) and ca 8000 BP (ca 6850 cal BC). These results indicate that the burials relate to the Mesolithic, and suggest that Mesolithic occupation of the Vlasac terrace began around the Pleistocene/Holocene transition and continued for over 2000 years. It is interesting that the dates for the skeletons assigned to Vlasac III are not significantly different from the latest date for a skeleton assigned to Vlasac I.

Lepenski Vir

At Lepenski Vir, Srejović (1972) identified three phases of Mesolithic occupation (Proto-Lepenski Vir, Lepenski Vir I & II) and two phases of Neolithic occupation (Lepenski Vir IIIa & IIIb). Conventional radiocarbon dates were obtained on bulk charcoal samples from contexts assigned to the Lepenski Vir I and II phases, and these range between 6560±100 BP and 7360±100 BP (Quitta 1972).

Bones from five burials assigned to Lepenski Vir III were submitted for radiocarbon assay. Stable isotope ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) analysis of the 'Lepenski Vir III' skeletons (Bonsall *et al.*, in press) suggests that they fall into two groups characterized by different diets. One group had a dietary regime in which the bulk of the protein was derived from riverine resources; the other group had a diet in which aquatic foods remained important but which included a significant amount of protein derived from terrestrial food sources. OxA-5827 and OxA-5830 date skeletons belonging to the first group, while OxA-5828, OxA-5829 and OxA-5831 date skeletons belonging to the second group; the dates suggest that the two groups relate to different (but consecutive) periods in the occupation of the site. Together, the results of stable isotopic analysis and radiocarbon dating imply that there was a significant change in dietary/subsistence patterns at Lepenski Vir between ca 7300–7600 BP (6100–6350 cal BC). This change may reflect the introduction of stockraising and/or cereal cultivation in the central part of the Iron Gates gorge. If so, then it is interesting that the dates for the second ('Neolithic') group are similar to existing dates for the 'houses' of Lepenski Vir I–II.

General comment

The new AMS dates for Vlasac and Lepenski Vir are rather older than expected on the basis of previous (conventional) radiocarbon determinations from those sites. This raises the question as to whether ¹⁴C determinations on the bones of humans who ingested substantial amounts of non-terrestrial (i.e. aquatic) foods are strictly comparable with dates on material of terrestrial origin (e.g. charcoal). This, and other aspects of the radiocarbon and stable isotopic analyses of the human bone samples from Lepenski Vir, Vlasac and Schela Cladovei are considered in detail by Bonsall *et al.* (in press).

Acknowledgements

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Plant remains from Schela Cladovei, Romania: a preliminary note

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The role of hunting, fishing and stockraising in the Stone Age economy of the Iron Gates is well documented from studies of faunal remains (Bökönyi 1969, 1970, 1974, 1975, 1978a, 1978b, 1992; Bolomey 1973; Clason 1980; Bartosiewicz *et al.*, 1995, in press) and dietary tracing of human bone (Bonsall *et al.*, in press). However, in the major excavations carried out during the 1960s and 1970s at sites such as Lepenski Vir, Padina and Vlasac, there were no systematic attempts at recovery of plant macro-remains. Consequently, little information is available on the use of plant foods by the Mesolithic and Neolithic populations of the region.

In excavations carried out at Schela Cladovei between 1992 and 1996 by Boroneanț and Bonsall, an effort was made to address this problem. Sieving and flotation were used extensively in the excavations. Virtually all of the material excavated from archaeological contexts was processed using a water separation machine equipped with a 1mm mesh to recover small artifacts and faunal remains and stacked 1mm and 300μm meshes to retrieve macrobotanical remains by flotation. The residues from the sieving and

flotation operation were air dried on site, then transferred to clean, labelled polythene bags (the 'flots' were first wrapped in aluminium foil), and transported to the UK for sorting and analysis

A preliminary assessment of some of the charred plant remains from Schela Cladovei has been made by Sarah Mason. These comprised flotation samples recovered in 1994, and residues from flotation samples recovered in 1992 and 1993.

253 flots were recovered in 1994, and an initial assessment was made of the first 25 (*ca* 10%) samples. These came from various grid squares, contexts and levels. Some were coarse flot (>1mm sieve mesh size), others fine flot (300µm–1mm). The bulk of all samples comprised uncharred modern material, largely fine rootlets. These were teased apart, and in some cases sieved (e.g. to 2mm, 1mm, 500µm and 250µm) to aid sorting for charred material. Fine flots in general contained no charred material, or very occasional minute fragments of wood charcoal. Coarse flots usually had some charred material, but this was present in very low frequencies ranging from 1 or 2 to *ca* 25 or so charred items. The bulk of charred material was wood charcoal. Altogether, of the 25 samples nine contained charred material; the richest samples were from Context 6, a pit containing pottery of the Dacian period.

A further examination was then made of all samples from Context 15, thought to be of Mesolithic age. Five of the initial 25 samples were from this context, from two of which charred remains had been recovered. Thirteen more samples from Context 15 were examined. Eight of these were fine flots, of which only one contained charred material other than minute, probably unidentifiable, wood charcoal. The remaining five coarse flot samples all contained charred remains — mostly wood charcoal, but a few fragments of possible parenchyma (i.e. root/tuber or other soft tissue remains), and one or two seeds/fruits in one sample. No domesticated cereal grains, which might have been suggestive of intrusion from more recent contexts, were present in these samples (though at least one had been found in a non-Context 15 flot).

A brief assessment has also been made of the residues from the 1992–1993 samples which come from post-Mesolithic contexts. Most samples contain charred plant remains, the great majority of this being wood charcoal. Many fragments appear to be of *Quercus* (oak), though this was not confirmed. The relative concentration of charred material in the residues compared with the

flots (assuming that the 1992–1993 flots were as poor in charred remains as the 1994 ones) suggests that most charred material remained in the residues. The few other plant remains noted during a quick scan included a small number of seeds; a fragment of cf. *Prunus* endocarp (sloe/plum-type stone); and the very occasional piece which may be parenchyma. The paucity of seeds, including charred grain, is curious in samples thought to date from Neolithic and Iron Age contexts.

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Back Issues . . .

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A preliminary report on the lithic assemblage from the early Holocene level at the Iron Gates site of Băile Herculane

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The site of Peștera Hoților (*The Cave of Thieves*) at the town of Băile Herculane (*The Baths of Hercules*) is located in perhaps the most picturesque locale in all of Romania (Map, page 5, site 21). The site itself is in a rather large and impressive cave, with three large mouths to the east and southeast and three front inner chambers. The cave is on the side of a sheer cliff overlooking the fast-running Cerna River. Immediately below the cave bubble up hot sulphur springs which are tapped today to make Băile Herculane an important spa.

This Iron Gates site is unique for this region in many ways. The site is relatively isolated from the other Iron Gates sites, being the only site on a tributary of the Danube rather than on the Danube itself. Also, its discovery and exploration were not tied to the salvage projects connected to the building of hydroelectric dams which prompted research at the other Iron Gates sites; rather it predates these. Likewise today it is far from the inundated zone along the Danube. Archaeologically the site is unique as well, with numerous levels including Mousterian, 'quartzitic Palaeolithic', one early Holocene (or Mesolithic) level — referred to as Late Epigravettian (Boroneanţ 1996), as well as numerous later levels, including Late Neolithic to Medieval periods. There is no level, however, which would correspond to the 'Schela Cladovei-Lepenski Vir Culture', the reportedly Late Mesolithic level which has caused much controversy (Prinz 1987; Voytek & Tringham 1989; Boroneanţ 1996).

Excavations have been carried out at the site on many different occasions between 1904 and 1972, but the most intensive excavation of the Early Mesolithic level occurred in 1960-1961 under the direction of Alexandru

Păunescu (Mogoșanu 1978). Mogoșanu's publication and that by Nicolăescu-Plopșor and Păunescu (1961) remain the principal sources of information concerning the early Holocene archaeological level at this site. In these sources a complete material inventory is not presented, nor is there a very satisfactory discussion of what was found in the early Holocene level. At least two hearths appear to have been identified, as well as unspecified amounts of floral and faunal materials. Subsistence has been reconstructed as being based on intensive fishing and snail collecting, because of the relatively abundant representation of these items in the faunal collection.

The site has been erroneously reported to have two late Pleistocene/early Holocene levels, approximately contemporary with the two levels at Cuina Turcului. In reality there is only one undated level (Păunescu 1994, pers. comm.), with a remarkably small lithic material assemblage — 107 pieces in all. Although there are no radiocarbon dates, this level appears to belong to the early Holocene on the basis of the lithic assemblage typology which is similar to that of levels I and II at Cuina Turcului (Păunescu 1970a, 1970b, 1978; Dinan, this volume), the faunal remains found in the hearths, the floral (macrobotanical) remains, and the superposition of the level directly on cryoturbated sediments, said to represent the final stadial of the Würm, which was particularly harsh (Nicolăescu-Plopșor & Păunescu 1961).

Faunal remains found in the hearths and used as environmental indicators include the rodents *Microtus nivalis*, and *Microtus subterraneus*, which occupy higher elevations today and thus indicate cooler temperatures when they were at Băile Herculane; and the rodents *Microtus arvalis*, *Chionomys nivalis*, and *Microtus agrestis*, whose presence at Băile Herculane indicates past open landscapes and alpine grasslands. Non-rodent remains include *Ursus arctos*, *Cervus elaphus*, and *Castor fiber*, as well as numerous species of fish (*Cyprinus carpio*, *Aspiu rapas* and, probably, *Thymalus thymalus*), and snails. Moreover, the fauna were found in association with wood charcoal identified as spruce (*Picea* sp.), found usually at altitudes above that of Băile Herculane which today has a West Mediterranean relict forest community. Other tree species identified, including *Alnus* sp. and *Apodemus sylvaticus*, *Cletrionomys glareolus*, and *Sorex araneus*, indicate that forested environments had begun to spread even with the open grassland fauna indicated. The faunal and floral remains all indicate a much cooler environment such as that of the very early Holocene when spruce dominated but more diverse forests were invading (Nicolăescu-Plopșor & Păunescu 1961).

The environmental data is thus consistent with a terminal Pleistocene/early Holocene assignment for the level.

Table 1 Lithic raw materials at Băile Herculane. Total sample 107 pieces. Percentages are rounded to whole numbers. K & K refers to raw material designations presented by Kozłowski & Kozłowski (1982, 1984).

Raw material type	K & K	number	percent	pebble cortex present?
grey radiolarite	B2	62	60	yes
unidentified		19	18	
red radiolarite	B1	9	8	no
unidentified tan flint		8	7	yes
Balkan flint	A11	7	7	no
white chalcedonic flint	A7	1	1	no
grey flint	A1	1	1	yes

The lithic assemblage

Raw materials

Table 1 presents the breakdown of Băile Herculane lithics by raw material categories. Grey radiolarite dominates the assemblage with 58%. Red radiolarite (8%), unidentified tan flint (7%), Balkan (honey; yellow spotted; wax) flint (7%), white chalcedonic flint ('chalcedony') and grey flint make up the remaining raw material types identified in the assemblage. The dominance of grey radiolarite is consistent with the results from Cuina Turcului, and the remainder of raw material choices is similar to, but not identical to those of Cuina Turcului (Dinan, this volume). Additionally, the absence (or

near absence) at Cuina Turcului of quartz which dominates Schela Cladovei-Lepenski Vir Culture sites is common between Băile Herculane and Cuina Turcului.

Sourcing of flints and flint-like materials in this part of the Balkans has proven to be extremely difficult. There are both numerous raw material types found at the different archaeological sites (Voytek 1986) as well as many series of deposits throughout Yugoslavia, Bulgaria, and Romania. Indeed, because of widespread siliceous deposition in the Mesozoic Tethys Sea the Balkans are extremely rich in flint sources (De Wever 1989; Nachev & Nachev 1989; Obradović & Goričan 1989).

Grey and red radiolarites are likely to have ultimate source locations in the Vardar Zone south of Belgrade (Voytek 1986; Obradović & Goričan 1989). Yet three pieces of Băile Herculane grey radiolarite had pebble cortex indicating that the materials were picked up locally from a secondary rather than a primary context. Radiolarites were also exploited from secondary sources in Yugoslav Neolithic sites (Voytek 1986) and it would appear that various streams in the Danube drainage system regularly washed radiolarite pieces from their primary contexts. The materials are of extremely high quality. The grey radiolarites are highly lustrous, opaque, and are frequently light to dark grey (Munsell colours: 5YR6/1, N6, N7, 5YR5/1, 5YR4/1, N3, N4, or N5) although they can be banded or zoned in a number of the previous colours as well as having bands or zones of more tan, more yellow, and more green colours. The red radiolarites are also high quality, opaque, and highly lustrous and the colours are more uniform, being reddish brown (Munsell 5YR4/4 (4/6, 3/2), 10R3/2 (3/4, 2/4, 2/2, 3/6), or 10YR2/2) or 'brick' red (Munsell 5R2/2 (2/1, 3/4, 3/2)).

Unidentified tan flint is a category for all non-distinctive tan flint pieces. The pieces contained in this category cannot be assumed to pertain to the same type or thus source location. This category is based on the realization that many of the raw material types can appear as tan. Grey radiolarites sometimes are partly or wholly tan. Balkan flint can appear tan, and even grey flint can appear tannish.

Balkan flint is a high-quality translucent raw material, often yellowish-brown in colour (10YR5/4 (6/4, 6/2, 5/2, 4/2) and/or 5YR5/2), and with numerous and distinctive white spots, although as above, colour variation occurs and the material is sometimes darker brown, or light tan or cream

coloured, and occurring both with or without spots. It is an exotic material, again not securely sourced but widely believed to come from the Prebalkan Platform of Northeast Bulgaria (Kozłowski & Kozłowski 1982, 1984; Voytek 1986). In Bulgaria the material is known as Madara flint, named after a locality near Šumen, where the material is especially prominent archaeologically (A. Fortier, pers. comm.). There may, however, be more than a single source of this material. In fact, similar-appearing material is widespread in Greece and Albania (C. Perlès, pers. comm.) and at the Romanian Early Neolithic site of Cîrcea, near Craiova, east of the Iron Gates, this material comprised well over 90% of the rather large assemblage and was represented by prepared blade core preparation pieces and discarded cores, demonstrating that regularly-occurring blade production of this (primary source) material occurred on site (Dinan & Nica 1995). Given its abundance and its nature at Cîrcea it is likely that a source location of Balkan flint exists/existed somewhere within the vicinity of Cîrcea. Moreover, although this material is abundantly found archaeologically from primary source locations (*i.e.* absence of pebble cortex), at the Romanian Late Neolithic site of Giurgiu-Malu Roșu (further downstream on the Danube, directly south of Bucharest) the material widely occurs in the form of small river-deposited pebbles. Finally, the above-discussed distribution of Balkan flint largely pertains to its occurrence in Neolithic sites, where it appears to have been particularly favoured and specially treated. Where it occurs in earlier contexts the material is more variable in colour and quality.

Technology and typology

Table 2 presents the general technological structure of the assemblage. The assemblage can be characterized as highly lamellar and with a large percentage of formalized (retouched) tools. Seventy-nine percent of the assemblage is composed of either whole blades or segments of blades. Forty-five pieces are classified as formal tools with 35 of these made on blades, six on flakes, and two on cores.

There are nine cores in the assemblage. Seven of these are bipolar cores and two are blade cores. One blade core was single platform and one appears to have been single platform until late stages in its reduction when it became an opposed platform core. One bipolar core was made into a scraper after being discarded as a core and one blade core was made into a composite burin-scraper after its discard.

Table 2 General structure of the Băile Herculane assemblage. Percentages are rounded to whole numbers. * One bipolar core was made into a scraper. One single platform blade core was reduced on the single platform until the final reduction stage when it became an opposed platform blade core. One single platform blade core was made into a composite scraper-burin after being discarded as a core.

Category	Number	%
All blades and flakes	93	87
Non-bipolar blades:		
whole blades ($L < 2 \times W$)	40	37
blade segments	4	42
Non-bipolar flakes:		
whole flakes	5	5
flake fragments	2	2
Bipolar blades/flakes:	1	1
Cores:		
bipolar*	7	7
single platform blade*	2	2
Unidentified:	5	5

Table 3 Băile Herculane — treatment of raw material types.

Material type	bipolar (blade) cores	blades (flakes)	formal tools	non-formal tools
grey radiolarite	5 (2)	46 (5)	24	38
red radiolarite		7 (1)	7	2
unident. tan flint	1	7	2	6
Balkan flint		7	5	2

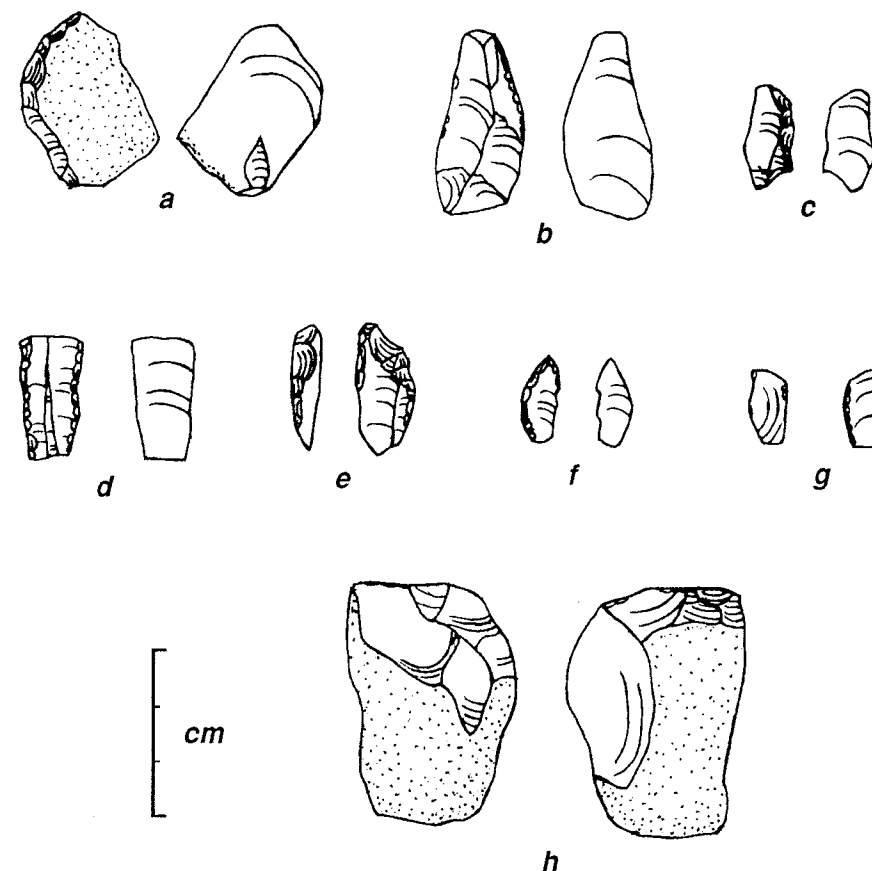


Figure 1 Illustrations of selected pieces: a. retouched decortification flake, grey radiolarite; b. retouched blade, grey radiolarite; c. backed bladelet, red radiolarite; d. multiply retouched blade, Balkan flint; e. 'Azilian Point', Balkan flint; f. backed bladelet, unidentified material (heat altered); g. retouched bladelet, Balkan flint; h. bipolar core, tan flint,

Both blade cores are of grey radiolarite as are five of the seven bipolar cores (Table 3). Forty-six blades and six flakes are of grey radiolarite. Thus it

appears as if blank and tool production of grey radiolarite occurred at the site. Red radiolarite is represented by seven blades and one flake. Unidentified tan flint is represented by seven blades and one bipolar core and Balkan flint is represented only by seven blades. Table 3 indicates some possible significant differences with regard to the treatment of different raw materials. Grey radiolarite is more commonly represented by non-formal tools than by formal tools as is unidentified tan flint. Balkan flint and red radiolarites are both much more represented by formal tools than by non-formal tools. Perhaps this indicates that Balkan flint and red radiolarite were considered to be more important raw materials; neither of these materials is represented in the assemblage by pieces with pebble cortex. These materials perhaps needed to be exploited from primary sources which could help explain their special treatment for use in making formal tools as well as their relatively rare occurrence in the assemblage.

Table 4 lists the types of formal tools identified. Various kinds of scrapers, miscellaneous retouched flakes, and backed blades are the most common retouched pieces. And three pieces are composite (or multi-function) tools. These include one scraper and notch, one scraper and burin, and one notch and perforator. Additionally, six pieces can be considered microliths. These include one 'Azilian Point', two backed bladelets, one retouched bladelet, one trapeze, and one circular endscraper. Because of the high number of microlithic tools in so small an assemblage this assemblage can probably best be described as a microlithic industry, typical both of the Early Mesolithic in general and of the Epigravettian (and/or Epipalaeolithic) of the Balkans.

The small number of pieces in the assemblage from Băile Herculane does not allow any firm conclusions to be made. However despite the numerical insignificance of this assemblage this report makes an important contribution for the following reasons: (1) this is the most complete English-language summary of the much-referred-to Iron Gates site of Băile Herculane, and (2) while not an exhaustive analysis, this is perhaps the most complete description of the lithics from the early Holocene level at Băile Herculane. Finally, our knowledge of lithic raw materials in the Iron Gates area is greatly increased by this report and the report on Cuina Turcului (Dinan, this volume). The widespread use of radiolarites and the use of Balkan flint in limited quantities appears to be a commonality between Pleistocene/Holocene boundary sites in the area.

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Preliminary lithic analysis of the Epigravettian levels from the Iron Gates site of Cuina Turcului

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The Iron Gates gorge area on the Danube River in Romania and Yugoslavia is famous for its controversial set of Late Mesolithic/Early Neolithic sites, particularly that of Lepenski Vir in Yugoslavia, which reportedly yielded a remarkable stratigraphic record filled with trapezoid-shaped houses, engraved boulder sculptures, and a large skeletal population (Srejović 1972). But the less-known and more numerous sites were found on the Romanian shore of the Danube, including the earliest 'Mesolithic' (or Epigravettian) site of Cuina Turcului.

The site of Cuina Turcului was excavated between 1964 and 1969 as a salvage operation due to the building of the Iron Gates I hydroelectric dam — the same salvage operation which caused the excavation of the other sites in the gorge area, including that of Lepenski Vir. The site, located near the now-inundated village of Dubova, is in the central part of the Iron Gates region, in a cluster of other sites including Veterani Terasă, in a gorge known as the Cazane Mare (Map, page 5). The topographic relief in the vicinity of Cuina Turcului is particularly extreme. Two Epigravettian levels were found overlain by Early Neolithic levels, one Late Neolithic level, and one Iron Age level (Păunescu 1970, 1978). Three radiocarbon dates pertain to the Epigravettian levels. For level I there are two dates: 12,650±120 BP and 12,100±120 BP. The radiocarbon date for level 2 is 10,175±200 BP. These dates would suggest placement at the Bölling-Dryas II boundary, the Dryas II-Allerød boundary, and the Dryas III-Preboreal boundary climatic stages, respectively (Cârciumaru 1980; Păunescu 1989).

The site of Cuina Turcului has been linked to the other area sites, especially Băile Herculane and Veterani Terasă (both undated), because of the similar and 'early' appearance of their lithic typologies. These sites are known in the literature by various other names including 'Clisurian' and

'Romanello-Azilian', the latter reflecting the presence in the lithic assemblage of the typological category 'Azilian point', which is a convex-shaped backed bladelet (Boroneanț 1973, 1981; Păunescu 1989). By emphasizing the Azilian point as a *fossile directeur*, Romanian archaeologists have suggested an Italian Azilian origin for the Mesolithic in the Iron Gates. A reported later stage in development is represented by the Iron Gates sites of Veterani Terasă, Icoana, and Râzvrata which are suggested to date to around 10,000–9500 BP, or the Preboreal (Păunescu 1989).

Cuina Turcului in context

The earlier Mesolithic period in Romania is very poorly known. Therefore a fairly detailed report is provided here both for the purpose of providing a much-needed summary for English readers and to put Cuina Turcului in context to aid in interpretation and understanding of its lithic assemblage.

The Epigravettian in Romania

Both the Aurignacian and Gravettian occur in the Romanian archaeological record, with the Gravettian largely postdating the Aurignacian. The Gravettian is divided into various stages; the last one, called the Final Gravettian or the Epigravettian, begins at around 14,000–13,000 BP at the end of the Dryas I or the beginning of the Bölling climatic stage (Păunescu 1989). This Epigravettian stage continues into the Holocene and ends during the Preboreal at around 9000 BP. Simultaneous with the Epigravettian in Romania are the Tardenoisian and Swiderian traditions. The widespread occurrence of microlithic chipped stone tools unifies the three recognized traditions under the heading 'Epipalaeolithic' or 'Mesolithic'. Traditionally, the three have been divided from one another by the presence or absence of certain tool types.

The Epigravettian is the most well-represented stage of the Upper Palaeolithic and Mesolithic and sites of this stage are particularly abundant in Moldavia (northeast Romania), with more than 64 sites (Brudiu 1974). At some Moldavian sites, such as at Bistricioara, the Epigravettian is the most recent level in a multi-Gravettian level site. At others, such as at Ceahlău-Bofu Mare, Ceahlău-Cremenîș I and Ceahlău-Cremenîș II, the Epigravettian is the only level (Brudiu 1974).

Despite the large number of sites, Epigravettian sites appear to be particularly ephemeral, with faunal assemblages particularly small and archaeological features, such as hearths, often absent. At many Epigravettian sites, a lithic scatter is the only cultural evidence. Epigravettian sites are also typically, though not always, in the open air and often are at relatively high altitudes (Păunescu 1989). Site patterns may indicate small, fragmented, and highly mobile populations, and sites are usually reconstructed as temporary hunting camps (Păunescu 1989). Fauna, when it is found, is usually reindeer, horse, bovids, and cervids.

The Epigravettian is characterized by the following lithic typological categories: backed bladelets, truncated backed bladelets, notched bladelets, truncated bladelets, microgravette points, simple endscrapers, double endscrapers, endscrapers on a flake, thumbnail scrapers, dihedral burins, burins on a retouched truncation, perforators, and the pronounced tendency towards microlithization (Păunescu 1989). Lithic raw materials are particularly variable at Moldavian sites. Bone and antler tools are also common in the Epigravettian. They may be pointed, barbed, perforated, and/or grooved, but are apparently usually without incisions or other recognizable artistic modification (except at Cuina Turcului) (Păunescu 1989).

The Swiderian

Three sites in one very localized environment have been labelled Swiderian based on the presence of one tool type: the Swiderian point. These sites, Ceahlău-Scaune, Bardosu-Bicaz Chei, and Bicăjel-Bicaz Chei, all occur at high altitudes (over 1000m) in the Ceahlău region of Moldavia. They are believed to date to the Dryas II–Preboreal boundary, at around 11,000–10,000 BP. Their lithic industry consists of a large number of endscrapers, especially including simple and thumbnail forms, dihedral burins, backed bladelets, truncated backed bladelets, denticulated backed bladelets, notched truncated bladelets, and Swiderian points. They are believed to have been big game hunters living in a periglacial environment (Păunescu 1989). Despite their reconstruction as big game hunters, it is at least curious to note that these three sites are totally devoid of faunal material (Brudiu 1974:64).

Also curious are the lithic industries and their differences between the site of Ceahlău-Scaune and the other two. The lithic industry at Ceahlău-Scaune is particularly large, consisting of around 14,000 pieces. Formalized tools, normally a large percentage in Mesolithic industries, are very scarce among

these 14,000. Flakes predominate and, in fact, the site has been reconstructed as a lithic workshop. Bardosu-Bicaz Chei and Bicăjel-Bicaz Chei, on the other hand, have very small lithic assemblages that are dominated by formalized tools. Lithic raw materials at the three sites also depart both from each other as well as from neighbouring contemporary Epigravettian sites. At Ceahlău-Scaune a dark-grey flint is common. This appearance is not typical for the (usually) blue-black translucent Prut flint, and is suggested by Brudiu (1974:64) to be exotic. At the two small sites a white-spotted flint is common, which Brudiu (1974:64) suggests may be Prut but is also not typical in appearance. If Ceahlău-Scaune is, in fact, a lithic workshop, the dark-grey flint must almost certainly be from a local deposit. It is not logical to assume an exotic source travelling to a remote upland site in large quantities for lithic production to occur. Except for the fact that the dark-grey and white-spotted flint sources are unknown, these three 'Swiderian' sites suggest lithic production sites. They are in remote locations, lithic production occurred, at least in one site, in a large scale, and fauna and other cultural materials are lacking.

A second explanation is that the 'Swiderian' represents Epigravettian specialized hunting camps. These few sites are in a specialized environment, they are contemporary with the Epigravettian, and in the immediate vicinity of Epigravettian sites, and utilizing a lithic industry very similar to that of the Epigravettian but with the addition of one (hunting?) tool — the Swiderian point.

Regardless of whether the three 'Swiderian' sites are specialized hunting camps or specialized lithic production centres, their nature suggests them to be specialized centres of some sort. I would suggest that their assignment into a separate Swiderian culture may be unwarranted. It may be better to consider these sites as specialized Epigravettian sites.

The Tardenoisian

The third Postglacial tradition is the Tardenoisian which begins at the beginning of the Allerød at around 12,000 BP and lasts at least to the end of the Boreal. A single radiocarbon date for the Tardenoisian in Romania comes from the Moldavian site of Erbiceni. The date of 7850±215 BP (GX-9417) is particularly late. It is suggested that the Tardenoisian continues until replacement by incoming Neolithic groups. Păunescu (1990) considers the Tardenoisian tradition as coming from the Epigravettian, especially in

northeast Muntenia and Dobrudja (southeast Romania) where the Tardenoisian is particularly well known (more than 20 sites) and where lithic industries are similar to the last phase of the Epigravettian. He, and others (Price 1993; Dumitrescu & Vulpe 1988) link the Dobrudjan and Moldavian sites with sites in the Ukraine east to the Dnieper into one cultural group known as the Northwest Pontic tradition. Important Tardenoisian sites in Dobrudja include Cuza Vodă, Medgidia, Garvan, Tîrguşor-La Grădina, Straja, Stănişor, Poarta Albă, and Albeşti, in Moldavia include Ripiceni-Izvor, Icuseni, Erbiceni, Băneasa, and Bereşti, in northeast Muntenia include Lapoş, in southeast Transylvania include Cremenea-Sita Buzăului, Merişor, Costanda-Lădăuti, and in extreme northwest Transylvania include Ciumeşti (Păunescu 1989).

Lithic industries are characterized by simple endscrapers, endscrapers on retouched flakes, thumbnail endscrapers, backed bladelets, notched bladelets, bladelets with retouched truncations, strangled backed bladelets with truncation, dihedral burins, burins on a retouched truncation, typical and atypical trapezes, and pyramidal cores including those described as fusiform.

Tardenoisian faunal remains typically include snail and mussel shells, horse, wild boar, bovids, cervids, roe deer, ovicaprids, and hare.

The lithic assemblages from Cuina Turcului

Both lithic assemblages from Cuina Turcului Epigravettian levels were examined in entirety. Level 1 was composed of 1103 pieces and level 2 had 747 pieces. Issues of particular interest to this study included raw material acquisition patterns and evaluating Cuina Turcului as the reported precursor to the Schela Cladovei-Lepenski Vir culture.

Raw materials

Table 1 presents the breakdown of Cuina Turcului lithics in raw material categories. Grey radiolarite dominates both assemblages with 63% (level 1) and 38% (level 2). Balkan (honey; yellow spotted; wax) flint is secondary in importance in both assemblages with 22% (level 1) and 30% (level 2). Chalcedony (white chalcedonic flint), red radiolarite, Banat flint and obsidian are less important in the assemblages.

Table 1 Raw materials from Cuina Turcului. Percentages rounded off to whole numbers. 'K & K type' represents designations according to Kozłowski & Kozłowski (1982).

Raw material type	K & K type	Level 1, # (%)	Level 2, # (%)
grey radiolarite	B2	696 (63)	285 (38)
Balkan flint	A11	241 (22)	225 (30)
unidentified		69 (6)	98 (13)
'chalcedony'	A7	39 (4)	(<1)
red radiolarite	B1	29 (3)	13 (2)
Banat flint		14 (1)	71 (10)
sandstone		(<1)	
unident. siliceous rock		(<1)	11 (1)
obsidian		(<1)	33 (4)
quartz	D	(<1)	(<1)
quartzite	E	(<1)	
quartz crystal			(<1)

There are some significant differences between the two assemblages. Firstly, grey radiolarite declines in importance from 63% to 38% of the assemblage, while Balkan flint, Banat flint and obsidian increase in importance. Balkan flint and obsidian are both exotic high-quality materials and their increase in the assemblage indicates better access to these high-quality materials.

The source locations of grey and red radiolarites and Balkan flint are discussed elsewhere (Dinan, this volume). Banat flint, a medium-quality material, usually tan in colour with black marbling, is believed to come from the western mountain ranges in the northeast Banat of Romania, less than 100km to the northwest of the Iron Gates (I. Bobos, pers. comm.). In later Neolithic assemblages in the Banat area around Timișoara, this material dominates and is frequently found with pebble cortex indicating its collection from secondary sources.

The source location of Iron Gates obsidian is almost certainly the source known as 'Carpathian 1' known only in southeast Slovakia (Thorpe *et al.*

1984). Carpathian 1 obsidian is distinctive in appearance, being transparent and grey rather than black in colour. Carpathian 1 obsidian is circulated widely to the south throughout Hungary and into Romania and Yugoslavia. Its distribution over hundreds of kilometers follows a regular fall-off pattern.

Table 2 General technological structure of Cuina Turcului, levels 1 and 2

Category	Level 1, # (%)	Level 2, # (%)
non-bipolar blades/bladelets	449 (84)	386 (83)
non-bipolar flakes	29 (5)	25 (5)
bipolar blades/flakes	17 (3)	6 (1)
Cores:		
single platform	12 (2)	1 (<1)
bipolar	12 (2)	9 (2)
double opposed platform	4 (<1)	1 (<1)
double non-opposed	3 (<1)	
multiple platform	3 (<1)	1 (<1)
amorphous		1 (<1)
unassigned	4 (<1)	
Unidentified/Other:	7 (1)	41 (9)

Percentages are rounded to whole numbers.

Technology and typology

Much of the analysis of the Cuina Turcului assemblages is based on a sample of the total collection as more data was collected in this sample. The sample from level 1 is 536 pieces (*ca* 50%) and from level 2 is 469 pieces (*ca* 62% of the total number of pieces).

Table 2 presents the general technological structure of the assemblages. Both assemblages can be described as highly lamellar and with a high percentage of formal tools. Non-bipolar blades and bladelets make up 84% of

the assemblage, whereas non-bipolar flakes are 5% and bipolar flakes and blades are 3%. Blade production was the principal technology with 22 of 34 assigned cores being regular parallel-ridged cores used predominantly for blade production. Amorphous and non-parallel ridged cores are unknown with the exception of 12 bipolar cores. Some tool production must have occurred at the site although much it may have occurred off site. Pieces with cortex are relatively rare in the assemblage, at 23%, and acquisition of raw materials seems to have occurred primarily from primary contexts as only 2% of pieces have pebble cortex. Pebble cortex occurs in pieces of grey radiolarite, Balkan flint, and red radiolarite, although in all of these it is rare and in grey radiolarite and Balkan flint, matrix cortex from primary deposits is much more common.

Characteristic pieces for all blade reduction sequence stages have been found for the two most common raw material types grey radiolarite and Balkan flint, indicating that blank production from these two materials did occur at the site and some characteristic pieces are of red radiolarite, chalcedony, and Banat flint as well, suggesting that limited blank manufacture may have occurred of these materials as well. Discarded cores are of grey radiolarite, Balkan flint, and Banat Flint (and one bipolar core of chalcedony) (Table 3). But there are no discarded cores of red radiolarite or obsidian and obsidian is not represented by any characteristic pieces, nor by any pieces with cortex. However, red radiolarite and obsidian are very rare in

Table 3 Cuina Turcului — treatment of raw material types. Percentages of formal tools and presence of cores

Raw material type	Level 1		Level 2	
	% formal tools	cores ?	% formal tools	cores ?
grey radiolarite	11	Y	29	Y
Balkan flint	12	Y	38	Y
red radiolarite	61	N	46	Y (bipolar)
Banat flint	0	Y	14	Y (bipolar)
chalcedony	5	Y (bipolar)	100	N
obsidian	0	N	15	Y

the assemblage with only 29 and 4 pieces, respectively.

In general it appears as if partially worked and, maybe, unworked nodules of several kinds of raw material types entered the site where blank production occurred. Exotics and locals may not have been treated differently from one another. There was some effort at raw material conservation. All cores were discarded thoroughly exhausted, and some cores were further reworked after discard. Three exhausted cores were made into scrapers after discard. Figure 1, no. 4 shows one example of a very small exhausted single-platform blade core, of grey radiolarite, reworked into a scraper. Several exhausted blade cores, after becoming too small for further blade reduction, were used as bipolar cores.

Level two is very similar to level one in the general technological structure of the assemblage. Non-bipolar blades and bladelets make up 83% of the assemblage with non-bipolar flakes at 5% and bipolar flakes and blades at 1%. The number of cores are reduced from level 1 from 7% to 3%, but the relative proportion of bipolar cores remains at 2%. All other cores combined make up less than 1%. One further difference between levels 1 and 2 is the relatively high number under the percentage 'other', which changed from 1% to 9%. This is due to the large number of highly retouched formalized tools in level 2. Their retouch is so extensive as to make categorical assignment impossible. Level 2, in fact, has a very large number of formal (retouched) tools, 31% of the (total, not sampled) assemblage, compared to 12% of level 1's (total, not sampled) assemblage, and 6% of the assemblage is composite, or multi-function tools. Level 1 has only 2% composite tools. Level 1 is much more dominated by unretouched elements with 88% compared to level 2's 69%.

Some lithic production seems to have occurred on site in level 2 although it may have more more limited than in level 1. The two most used raw materials, grey radiolarite and Balkan flint both have representative pieces of each stage in lithic reduction including discarded cores. And both Banat flint and obsidian have pieces from some of the stages other than finished blanks, including one multiple platform core fragment of obsidian. Still, with the very small number of cores (4 non-bipolar cores) and the extremely large percent of finished formalized tools (48%) it is very likely that much of the lithic working occurred off the site, that partially worked cores probably entered the site more commonly than unworked nodules, and that many of the pieces likely entered the site as finished blanks.

Table 4 Cuina Turcului — formal tool types

Level 1	#	Level 2	#
backed blades/bladelets	51	backed blades/bladelets	45
lunates	10	circular end-scrapers	39
backed blades/bladelets		lunates (including Azilian points)	26
with a truncation	10	end-scrapers	17
retouched blades	7	retouched blades/bladelets	13
end-scrapers	5	drills	6
trapezes	3	backed blades with a truncation	5
scrapers on a core ('rabot')	3	backed blades/bladelets with	
		multiply retouched edges	5
Less than 3:		double end-scrapers	4
backed blades with a burin		multiply retouched blades/bladelets	4
backed blades with an end-scaper		all over retouched blades	4
notches		notches with multiply retouched	
backed blades with multiply		edges	3
retouched edges		rectangles	3
all-over retouched blades		retouched flakes	3
backed bladelets with a drill			
multiply retouched bladelets		Less than 3:	
points		convex truncations	
rectangles		double backed bladelets	
retouched flakes		end-scrapers with multiply retouched	
backed flakes		edges	
triangles		fan-shaped end-scrapers	
backed flakes with a truncation		notches	
burins on a break		multiply notched pieces	
drills		multiply notched pieces with multiply	
end-scaper and side-scaper		retouched edges	
end-scaper on a multiply reouched		burins	
backed flake		side-scrapers	
notches with an oblique truncation		backed blades with a burin	
oblique truncations		backed blades with a drill	
side-scaper on a backed flake		backed blades with a gibbosity	
straight truncation on a multiply		burins on a concave truncation with	
retouched flake		multiply retouched edges	
		burins on a break	
		burins on a multiply retouched blade	
		burins on a multiply retouched blade	
		with a notch	

Table 4 (continued) Cuina Turcului — formal tool types

Level 1	#	Level 2	#
		Less than 3:	
		denticulates on multiply retouched	
		blades	
		dihedral burins	
		double burins on a truncation	
		double end-scrapers with a side-scaper	
		double side-scrapers	
		drill and triple end-scaper on a bipolar	
		core	
		end-scrapers with a truncation	
		end-scrapers with a notch	
		denticulate with an end-scaper and a	
		notch	
		Noailles burin	
		nosed endscaper	
		oblique truncation	
		retouched blade with a straight	
		truncation	
		retouched blade with a notch	
		sidescrapers with a burin	
		straight truncation	
		thumbnail endscaper	
		transverse burin with an endscaper	
		trapeze	
		multiply retouched blade with a	
		truncation	
		multiply retouched bipolar core	

The relatively small number of pieces with cortex further supports the idea that unworked nodules were not commonly brought to the site. Only 13% of the pieces have cortex (compared to 23% for level 1), and only two pieces have pebble cortex (these both of grey radiolarite).

Once again, there is no obvious difference in the treatment of local versus exotic raw materials. Table 3 indicates little, if any, different treatment between raw material types also in the percentage of pieces that are formal

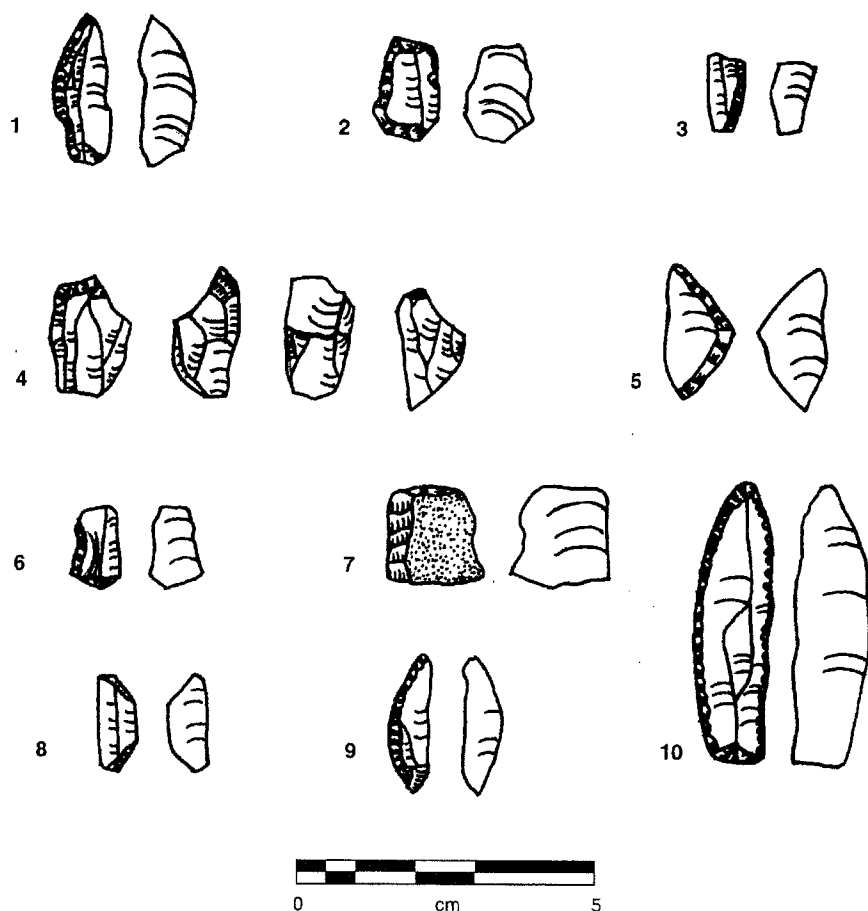


Figure 1 Selected pieces from Cuina Turcului, level 1. Numbers 1–4, grey radiolarite; 1 – backed bladelet; 2 – rectangle 3 – mesial segment of a backed bladelet; 4 – single platform blade core, thoroughly exhausted with edge of striking platform retouched into a scraper ('rabot'). Numbers 5–6, red radiolarite; 5 – triangle; 6 – backed bladelet with a truncation. Number 7, white chalcidonic flint ('chalcidony'), backed and truncated decortification flake. Numbers 8–10, Balkan flint; 8 – trapeze; 9 – backed bladelet; 10 – all over retouched blade.

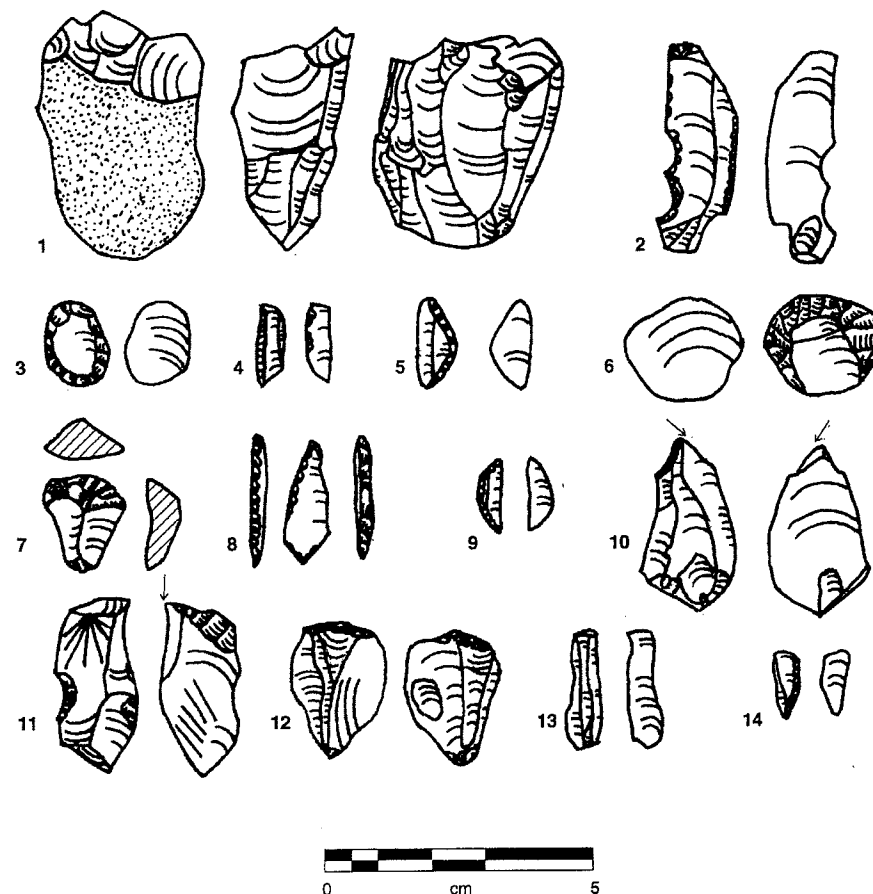


Figure 2 Selected pieces from Cuina Turcului, level 2. Numbers 1–5, grey radiolarite; 1 – single platform blade core on a pebble; 2 – multiply notched blade with endscraper distally and right marginal retouch; 3 – circular endscraper; 4 – tiny backed bladelet with right inverse retouch; 5 – lunate. Number 6 Banat flint. 6 – circular endscraper. Numbers 7–10, Balkan flint; 7 – fanshaped endscraper; 8 – double ended drill; 9 – lunate; 10 – burin on a concave truncation. Numbers 11–14, obsidian; 11 – burin on an oblique truncation with a notch; 12 – bipolar core; 13 – unretouched bladelet; 14 – tiny backed bladelet.

tools. Indeed, by this measure as well it seems as if the important pattern to emerge from the data is the temporal trend towards more formal tools in nearly all raw material types. Finally, Table 4 shows that through time not only were more formal tools produced, but both the number of kinds of formal tools and the number of composite (multi-function) tools increased. Cuina Turcului level 2, in fact, seems to be a highly specialized tool industry.

Conclusions

Despite the preliminary nature of this analysis, a number of important conclusions can be drawn. Firstly, Cuina Turcului is firmly in the Gravettian–Epigravettian/microlithic tradition with a large number of backed blades and bladelets and geometric microlithic tools. Secondly, various exotic and local raw materials entered the site and all were treated more or less alike. Blank production on both exotic and local materials occurred at the site although initial shaping of cores probably occurred often off the site (especially in level 2). Thirdly, raw material usage became more diversified over time with the grey radiolarite decreasing in importance and exotic, high-quality materials such as Carpathian One obsidian and Balkan flint increasing. And although the use of raw materials became less specialized over time the typological toolkit became more specialized with a larger number of formal tools, more tool types and more composite tools. Finally, the trend at Cuina Turcului would not support standardly accepted chronologies for the Iron Gates. In particular, the accepted ‘evolutionary’ trend for lithic technologies, evolving slowly from the Epigravettian to the Schela Cladovei–Lepenski Vir ‘culture’, best articulated by Radovanović (1981), is a shift from a curated to an expedient technology; an abandonment of high-quality materials towards the use of immediately available pebbles, is radically in opposition to the findings presented here. Cuina Turcului level 2 in no way indicates a shift to an expedient technology using immediately available pebbles.

Cuina Turcului is not representative of Iron Gates sites. It is much earlier than the famous Schela Cladovei–Lepenski Vir sites. Thus the results presented here may have little or no bearing on interpretation of those sites. Yet it is instructive to see how a detailed lithic analysis of one atypical site may suggest that currently held models of the ‘evolutionary’ development in the Iron Gates may need future revision.

Acknowledgements

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Recent Publications

- Knutsson, K. 1995. Mesolithic research in Sweden 1986–1990. *Current Swedish Archaeology* 3:7–27.

Mesolithic research in Sweden in the period 1986–1990 was characterized as a whole by a processual epistemology and with an emphasis on interpreting finds rather than building theory. It is argued here that a shift towards more conscious theory-building geared towards understanding hunter-gatherers at the expense of excavation and interpretation, will be beneficial to Mesolithic research in Sweden.

- Radovanović, Ivana. 1996. *The Iron Gates Mesolithic*. International Monographs in Prehistory, Ann Arbor, Michigan. Pp. viii + 382, illus. 114, numerous tables. Hard cover (ISBN 1-879621-25-8) (\$89.00). Paperback (ISBN 1-879621-24-X) (\$48.50).

A new and extensive review and reanalysis of the Mesolithic sites in the Iron Gates gorge of the Danube River, between Yugoslavia and Romania. The important sites of Lepenski Vir, Vlasac, Padina and Hajdučka Vodenica are among the many covered in this comprehensive work, in which much previously unpublished data is presented. The author offers fresh analyses and interpretations of stratigraphies, relative and absolute chronologies, architecture and settlement organization, the placement and styles of altars and sculptural elements, the chipped and polished stone industries, the bone and antler artifacts, the mortuary practices, ecology, and social organization of this remarkable archaeological culture. In conclusion, all of these materials, analyses and interpretations are placed both within their broader, European archaeological context, as well as within an explicit theoretical framework. An important and thought-provoking work.

- Rowley-Conwy, P. 1996. Why didn't Hodder Westropp's 'Mesolithic' catch on in 1872? *Antiquity* 70:940–944.

A defined 'Mesolithic' era is a fixture in the cultural sequences of European prehistory — though not of other regions of the world. Why and how did the entity come to be invented, and to take just that form?

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- Price, T.D., Whallon, R. & Chappell, S. 1974. Mesolithic sites near Havelte, province of Drenthe (Netherlands). *Palaeohistoria* 16:7–61.
- Woodman, P.C. 1978. The chronology and economy of the Irish Mesolithic: some working hypotheses. In *The Early Postglacial Settlement of Northern Europe*, edited by P. Mellars, pp. 333–369. Duckworth, London.

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