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The First Neolithic Sites in Central/South-East European Transect

Volume II

Early Neolithic (Starčevo-Criş) Sites on the Territory of Romania

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71–78.

Some aspects of the earliest Neolithic chipped stone assemblages of Transylvania and the Banat (Romania)

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INTRODUCTION

This paper discusses the earliest Neolithic chipped stone assemblages of two regions of present-day Romania: Transylvania and the Banat. Its scope is to update the available evidence on a topic still insufficiently studied, and point out the importance of 1) the workable raw materials exploited by the earliest FTN Criş Culture farmers who settled in the region at the turn of the 8th–7th millennium uncal BP, and their circulation network, 2) the typology of the chipped stone tools, and their radiocarbon chronology.

The subject is of major importance for the understanding of the Neolithic spread into the Balkans and Central Europe (Mazurié de Keroulain 2003). In effect the origin of the first farming communities in south-eastern Europe, and Romania in particular (Monah 2002), has often been studied mainly "*du point de vue de la structure stylistique de la ceramique néolithique et de l'origine probable des plantes cultivées et des animaux domestiqués*" (Kozłowski 1982, 131), a tradition still deeply-rooted (Lazarovici 1995, 2006), apart from very few exceptions, until the end of the 1960s (Tringham 1968).

In this respect Transylvania and the Banat played a very important role, because of their geographic location, midway between south-eastern Europe and the Pannonian Plain (Jarman *et al.* 1982, fig. 107; El Susi 1996, fig. 1), delimited as they are, by the Danube, in the south, the Carpathians, in the east, the river Tisza, in the west, and crossed by a unique hydrographical system that includes, among the others, the three Criş, the Mureş and the Olt, all water courses of key importance for the Neolithisation of the Carpathian basin.

RAW MATERIAL PROCUREMENT AND CIRCULATION

Thanks to the systematic work conducted by E. Comşa, mainly during the 1960s and 1970s (Comşa 1968; 1971a; b; 1976), at present we have a basic knowledge of the raw material sources exploited by the Neolithic farmers of Romania. Although the above author did not pay much attention to the exploitation and use of the workable material during the different Neolithic periods, nevertheless he was very accurate in describing and locating the various flint sources, defining their distribution network all over Romania, and recognising the imported material from neighbouring trans-Carpathian territories. He centred his work mainly on flint, although he also contributed to the study of obsidian provenance and circulation.

He was also the first to provide an analytic description of the differences between "Balkan" and "Banat" flint, and to point out that, while the distribution of the first is mainly confined to Dobrogea and Oltenia (Comşa 1976, 240), the second is spread all over the Banat, it is known from a few Criş Culture sites of this region, and its sources are to be found in the Poiana Ruscă Mountains (Comşa 1971b), close to the course of the Bega, as also Al. Păunescu (1970, 85) had reported only one year before. Furthermore, in a more recent publication on the Neolithic of Romania, he presented a detailed map of the flint sources and their supposed routes of distribution, according to the archaeological evidence available at that time (Comşa 1987, 25).

Still nowadays one of the most accurate descriptions of a Criş Culture chipped stone assemblage from the Banat is that written by Al. Păunescu (1979) on the lithics from Cuina Turcului, a cave that opens along the Romanian bank of the Danube, not far from the Iron Gates. According to this author, the Early Neolithic occupation of this multi-layered site yielded a rich assemblage of some 13,000 artefacts made from flint of different colours, as well as a small percentage of obsidian (5%) and quartzite (1%) (see also Băltean 2005).

It is important to point out that, in a more recent paper, Al. Păunescu (1987, 89) provides little information on the knappable rocks exploited for making tools by the Early Neolithic settlers of the Banat and Transylvania, similarly to what reported by G. Lazarovici (1993, 245) in his summary paper on the Neolithic period the study area. Even poorer are the data presented by the same author (Lazarovici 1979, 28) for the Banat, and N. Vlassa (1976, 206), for Transylvania, in their still fundamental works on the Neolithic period in the two regions, as well as by D.W. Bailey (2000, 124) in the most recent summary volume on the prehistory of the Balkans.

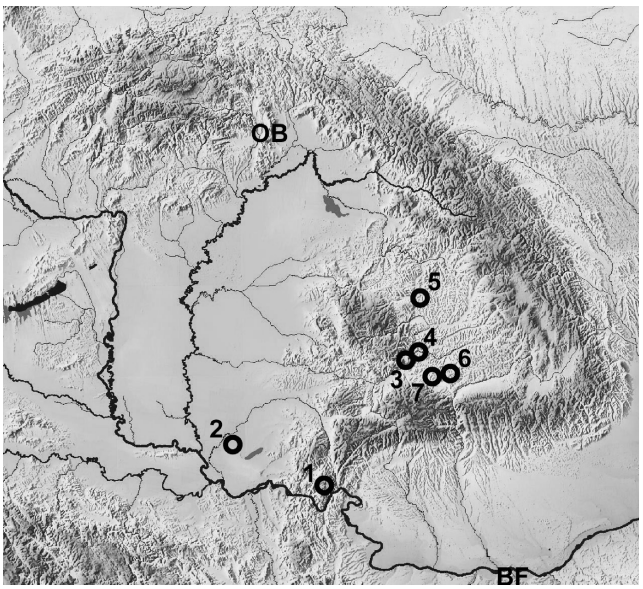


Fig. 1. Approximate location of the FTN Criş Culture sites mentioned in the text: 1 – Cuina Turcului, 2 – Foeni-Salaş, 3 – Limba Bordane, 4 – Şeuşa-La Cărarea Morii, 5 – Gura Baciului, 6 – Ocna Sibiului-Triguri, 7 – Miercurea Sibiului-Petriş. OB – Tokaj Mt. obsidian sources, BF – Nikopol, Balkan flint outcrop.

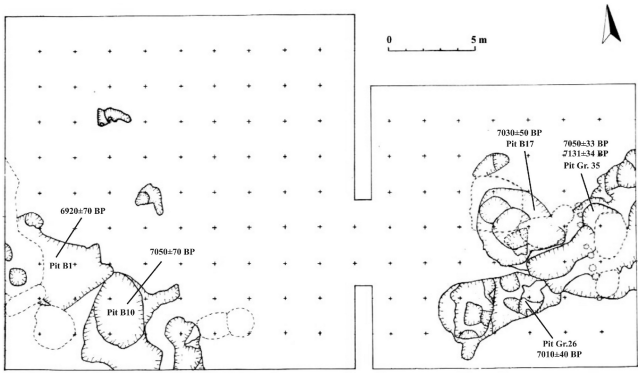


Fig. 2. Miercurea Sibiului-Petriş: Plan of the Criş culture excavated area with indicating the radiocarbon-dated structures (after Luca *et al*. 2008, plan 4, with variations).

From this point of view, of greater relevance is the paper on the small chipped stone complex from Foeni-Salaş, in the Romanian Banat (Greenfield & Draşovean 1994; Greenfield & Josma 2008). This site yielded only 34 artefacts obtained from several raw materials, among which are also obsidian, quartz and quartzite, most of which are supposed to come from exogenous sources, most probably located farther to the east and south-west of the site (Kuijt 1994, 90).

The problems related to the raw material procurement and their circulation, greatly improved during the last decade thanks to: 1) the methodical work, still underway, by O. Crandell (2005; 2006), and his analysis of the chipped stone assemblage from Limba Bordane near Alba Iulia, in Transylvania (Crandell 2008; 2009), 2) a systematic programme of characterisation of the obsidian artefacts from the Banat and Transylvania Neolithic sites by P. Biagi *et al.* (2007a, b), and 3) the recent discovery of Early Neolithic Balkan flint sources and workshops at Nikopol, in Bulgaria, close to the course of the Danube (Biagi & Starnini 2010b, c).

Thanks to the above contributions it has been possible to map several previously unknown outcrops of workable stones along the Mureş river valley (Crandell 2008, fig. 8), understand their exploitation by late Criş Culture farmers, propose general models of procurements from short and long-distance sources (Biagi *et al.* 2007a), and redesign the probable routes through which these raw materials were traded as far as the Banat and Transylvania (Biagi & Starnini 2010c), following models that are still insufficiently known, but seem to recall well-defined procurement and distribution patterns, according to the different period (see also Biagi & Voytek 2006, 182–185).

Reverting to the procurement of long-distance raw material, namely obsidian and Balkan flint, we can notice that the Early Neolithic FTN populations of the study regions exploited two distinct exogenous sources. The provenance of the first has always been debated by the Romanian archaeologists, who often suggested a local, Călinesti-Oaş, or a southern, Melian, provenance for this raw material (Cărciumaru *et al.* 1985; Maxim 1999, 53; Boroneanţ 2005, 24), although scientific characterisations, made also in the country, have started to demonstrate their Carpathian provenance (Constantinescu *et al.* 2002; Culicov *et al.* 2009). In effect the analysis of some eighty obsidian specimens so far conducted on samples from several Neolithic and Chalcolithic sites in Tran- sylvania and the Banat revealed that the Carpathian obsidian sources were the only ones exploited, in variable ways and intensity, according to the different periods, following models whose knowledge we still have to improve (Biagi *et al.* 2007a; b; Biagi & Voytek 2006). The new data confirms the already known general impression according to which obsidian from Melos had an exclusive "Aegean" circulation, and that it distribution never spread north of continental Greece (Torrence 1984; 1986, fig. 20).

Balkan flint is another important allochtonous material whose source has long been discussed in several papers (see for instance Gurova 2008; Gurova & Nachev 2008). The recent discovery of Balkan flint outcrops and workshops at Nikopol (Bulgaria), close to the course of the Danube (Biagi & Starnini 2010b), has shed new light on the procurement of this high-quality flint that was widely distributed in the Balkan Peninsula during the Early Neolithic (Biagi & Starnini 2010c).

All these data point once again to the importance of the lithic assemblages in the understanding of the activity radius of the Criş settlement sites, the mobility pattern of the different communities, and their interregional contacts (Lech 1997), given the excellent knowledge of the territory and exploitable sources they had already achieved at the very beginning of the Neolithic. In this respect lithics are revealed to be very sensible territorial and functional indicators, oppose to pottery, whose early production seems to have been almost exclusively local, and followed the same manufacturing formula (Spataro 2008; Starnini 2008).

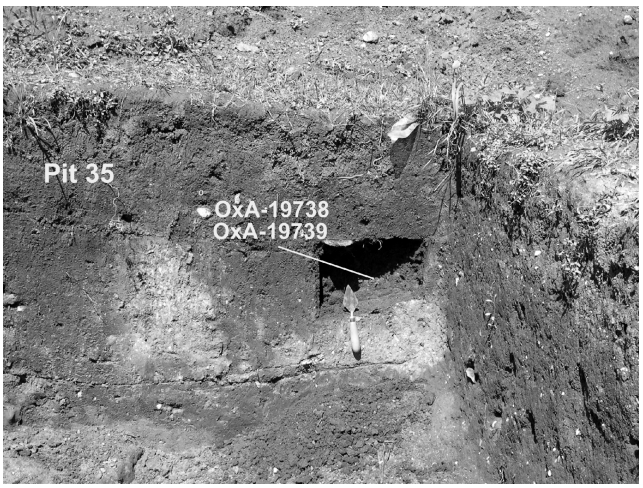


Fig. 3. Miercurea Sibiului-Petriş: Profile of Pit 35 with the location of the soil sample from which two caryopses of *Triticum* and *Hordeum* were collected and radiocarbon-dated (photograph by P. Biagi).

THE EARLIEST FTN CRIŞ CULTURE SITES

The absolute chronology of the earliest FTN Criş culture sites of Romania, and the rapidity of diffusion of the Neolithisation process in the two study regions, have already been discussed in several papers, although many problems still remain open to question (Biagi & Spataro 2004; Biagi *et al.* 2005; 2007b). Among these are the radiocarbon determinations from the Serbian Starčevo sites of Grivac and Blagotin (Bogdanović 2008), at least one century older than expected, and the slightly too recent radiocarbon date from Cîrcea in Oltenia (Nica 1977; 1991; Bronk Ramsey *et al.* 2009) and Măgura in Muntenia, all sites that yielded both obsidians and Balkan flint tools (Mirea 2005; Andreescu & Mirea 2008; Bogosavlievíć-Petrović 2008), that undoubtedly complicate the understanding of the routes followed by the spread of the Neolithic in the central Balkans (Biagi & Spataro 2005; Bocquet-Appel *et al.* 2009; Thissen 2009).

The radiocarbon evidence from Transylvania and the Banat indicates that just a few sites are to be attributed to the end of the 8th and/or the very beginning of the 7th millennium uncal BP (Biagi & Spataro 2004; Biagi *et al.* 2005). As already reported, they show variable environmental locations, often close to salt outcrops (Biagi *et. al.* 2007a), as is the case also for the Neolithic and Chalcolithic sites of other territories of Romania (Cavruc & Dimitroiana 2006).

It is unfortunate that the lithic assemblages from most of the above sites have not been studied in better detail. However, Ocna Sibiului-Triguri (Paul 1995, Taf. XI), Gura Baciului (Lazarovici & Maxim 1995, 156–158), and Şeuşa-La Cărarea Morii (Ciută 2000) (Fig. 1) have all yielded obsidian and/or Balkan flint artefacts, although the provenance of the obsidian specimens has often been misinterpreted (Ciută 2005, 94–95).

In this respect, of major importance are the results from the excavations still underway at Miercurea Sibiului-Petriş, a multi-layered, open-air site, whose Criş horizon has been

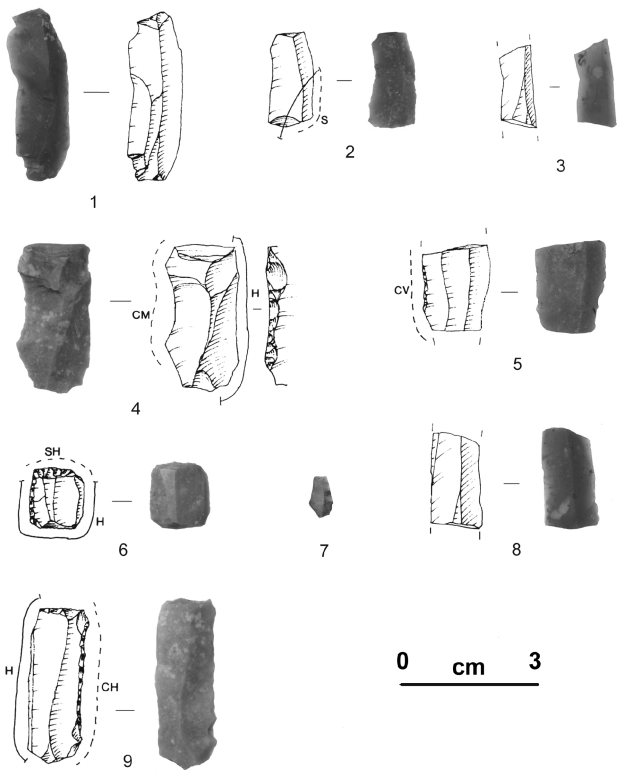


Fig. 4. Miercurea Sibiului-Petriş: Photographs and drawings of Balkan flint chipped stone artefacts: 1 – unused, unretouched bladelet from Pit 19; 2 – sickle insert on an unretouched bladelet fragment from Pit 26; 3 – unretouched bladelet fragment from Pit 26; 4 – retouched and used blade fragment, from layer; 5 – used bladelet fragment, from a layer; 6 – used short end-scraper from Pit 21; 7 – small debitage chip from Pit 19; 8 – bladelet fragment from Pit 21; 9 – used truncation from Pit 10). H) hafting traces; CH) cut hard; CM) cut medium; CV) cut vegetation; S) sickle gloss; SH) scrape hard (after Biagi, Starnini 2010a, with variations).

excavated over a surface of some 750 sq. m. (Fig. 2), along the southern terrace of the Secaş torrent, a southern tributary of the Mureş. The site showed three main phases of occupation: it was first settled by early FTN Criş culture farmers, later by Vinča Middle Neolithic peoples and, around the beginning of the Chalcolithic, by a Petreşti community (Luca *et al.* 2006; 2008).

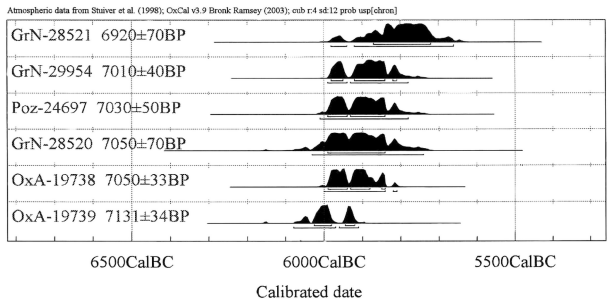
A poor chipped stone assemblage has been recovered from the Criş structural remains, which consist of pits of different size and function, radiocarbon dated between 7131±34 (OxA-19739) and 6920±70 uncal BP (GrN-28521) (Table 1 and Fig. 3); they show that the first occupation at Miercurea took place at the turn of the 8th–7th millennium uncal BP, and lasted (un)interrupted (?) at least 200 years. The archaeozoological (El Susi 2007; Luca *et al.* 2009), archaeobotanical (Nisbet 2009), and material culture remains (Biagi *et al.* 2007a) indicate that farming was practised at the site.

The chipped stone assemblage collected from the FTN Criş structures is very poor. It consists of only 37 artefacts, among which are bladelet and flakelet cores, 1 end scraper, simple and backed retouched blades, and sickle blades (Table 2). The raw material employed comes from a variety of

Table 1

Miercurea Sibiului-Petriş: Radiocarbon and calibrated dates from the FTN Criş structures

Lab. Number	Uncal BP	Cal BC 2 sigmas	Material	Structure
GrN-28521	6920+/-70	5980-5940 (4.8%), 5920-5660 (90.6%)	*Bos* long bone	Pit 1
GrN-29954	7010+/-40	5990-5940 (22.8%), 5930-5780 (72.6%)	*Bos* humerus	Pit 26
Poz-24697	7030+/-50	6010-5780 (95.4%)	Bones	Pit 17
GrN-28520	7050+/-70	6030-5740 (95.4%)	*Bos* astragalus	Pit 10
OxA-19738	7050+/-33	6000-5840 (94.2%), 5820-5810 (1.2%)	*Triticum* sp.	Pit 35
OxA-19739	7131+/-34	6080-5970 (66.5%), 5960-5910 (28.9%)	*Hordeum vulgare*	Pit 35



Both Pits 10 and 26, from which come almost identical radiocarbon results, yielded Balkan flint tools (after Biagi and Starnini, 2010c, table 1).

local, medium- and long-distance sources. Out of 37 artefacts, 6 (16.2%) are made from obsidian (5 Carpathian 1, Kašov or Cejkov, Slovakia, and 1 Carpathian 2E, Mád, Hungary), 9 (24.3%) from Balkan flint (Nikopol, Bulgaria) (Fig. 4), 1 (2.7%) from Banat chert (Poiana Ruscă Mt. [Luca *et al.* 2004, Map 4]) and 8 (21.6%) from grey silicified sandstone, whose outcrops are located between Sebeş and Oraştie (Crandell pers. comm. 2009). It is not surprising that 15 (40.5%) out of 37 artefacts come from long-distance sources (Barfield 2004).

DISCUSSION

The typological characteristics of the Criş culture chipped stone assemblages were first summarily described by Al. Păunescu (1970) and E. Comşa (1971a) at the beginning of the 1970s. The first author, who based his description mainly on the finds from Cuina Turcului, pointed out the recurrence of symmetrical and asymmetrical trapezes of small and large size – obtained by fracture, without using microburin technique (Kozłowski 1982, 155), rare segments, unretouched blades, retouched flakes, scrapers, *pieces esquillées*, prismatic, pyramidal and polyhedrical cores. He also recalled the "Tardenoisian" background of the assemblages, mainly due to the recurrence of trapezoidal geometric microliths, and the presence of sickle blades with oblique sickle gloss. E. Comşa's observations were rather similar, although he distinguished between Starčevo and Criş industries, remarked on the importance of the role played by the end-scrapers in the first, and noticed that trapezoidal geometrics continued to be manufactured also during the Ciumeşti and Dudeşti cultures (Comşa 1971a, Fig. 1). An updating paper on the topic has been written recently by A. Boroneanț (2005), who had already pointed out the inconsistency of the term "Tardenoisian" for the Late Mesolithic complexes of Romania (Boroneanț 2003–2004), although it is still widely utilised by a few Romanian authors (see Cărciumaru 2006, 247–250), as it was improperly used in several western countries until not too long ago (Clark 1958).

Traceological analyses recently made on a few Körös trapezes contributed to the understanding of the function of these tools, which, contrary to what is known of the Late Mesolithic specimens, had been used mainly for cutting (Starnini 2001; Domboróczki *et al.* 2010), similarly to what is already known for other geometric microliths from other parts of Europe (Biagi 1995, 49).

The impression is that the general structure of the earliest Neolithic Criş chipped stone assemblages recalls that of most lithic complexes of the earliest farmers of other parts of Europe (see for instance Tringham 1968: fig. 10; Mazurié de Keroulain 2003; Kaczanowska & Kozłowski 2008), in which the appearance of the first pottery communities is accompanied by the exploitation of multiple knappable materials, among which are high-quality ones, and the presence of polished stone axes/adzes (Tringham 1971, 75). In our case the earliest farmers of the Banat and Transylvania were "*largely reliant on northern Bulgarian flint in the south and obsidian from the Carpathians to the north of its range*" (Barfield 2004, 69), two lithic resources whose exploitation implies different social behaviours, given that, while Balkan flint was mined within the territory exploited by the Criş culture communities, as the finds from Nikopol would suggest (Biagi & Starnini, 2010b), obsidian "bombs" were collected from the surface from a mountain region, located well beyond the ordinary activity radius of the early seventh millennium uncal BP FTN farmers (Biagi *et al.* 2007a, 140).

The social complexity of Neolithic flint mining in Europe, and the involvement of specialised craftsmen, has been described by M.E.Th. De Grooth (1997, 73), while L.H. Barfield (2004, 65) has mainly relied on the relevance of the systematic recurrence of flint industries "*characterised by high quality blades and a range of geometric and blade-based tools, among which sickle blades are a major item ... that lead to the formation of the cultural identity centred around this economic resource*" at the beginning of the Neolithic, and their long distance trade (see also Barfield 1993).

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Table 2

Miercurea Sibiului-Petriş: Main characteristics of the chipped stone artefacts from the FTN Criş occupation structures and layer (after Biagi *et al*. 2007b with variations)

Pit/layer	Raw material	Typology (Laplace, 1964)	Dimensions (mm)	State of preservation	Analytical method-analysis n.	fig. 4
Pit 9	Carpathian 1 obsidian	microflakelet	21×29×6	complete, corticated	XRF-4/2009	
Pit 10	flint	microbladelet	(23)×(10)×4	fragment, burnt		
Pit 10	opaque chert	prismatic (?) flakelet core	30×34×16	complete		
Pit 10	"Balkan" flint	truncation	39×13×4	complete		n. 9
Pit 14	"Banat" chert	flakelet	(33)×25×8	fragment		
Pit 19	"Balkan" flint	retouched blade	44×15×5	complete		n. 1
Pit 19	"Balkant" flint	hypermicroflakelet	11×5×2	complete		n. 7
Pit 19	Carpathian 2E obsidian	hypermicroflakelet	11×15×3	complete	XRF-103	
Pit 20	light grey flint	sickle bladelet	(20)×15×5	fragment, corticated		
Pit 21	red radiolarite	microflakelet	21×26×11	complete, corticated		
Pit 21	"Balkan" flint	bladelet	(25)×14×5	fragment		n. 8
Pit 21	light grey silicified sandstone	microflakelet	13×12×3	complete, corticated		
Pit 21	"Balkan" flint	end-scraper	15×13×5	complete		n. 6
Pit 26	"Balkan" flint	microbladelet	(20)×10×2	fragment		n. 3
Pit 26	"Balkan" flint	sickle bladelet	(24)×12×4	fragment		n. 2
Pit 27	brown radiolarite	retouched blade	60×28×10	complete, corticated		
Pit 28	light grey silicified sandstone	flakelet	26×38×10	complete, corticated		
Pit 38	light grey silicified sandstone	flake	59×49×25	complete, corticated		
Pit 47	brown radiolarite	subconical bladelet core	45×40×32	complete, corticated		
Pit 47	light grey silicified sandstone	blade	(32)×18×4	fragment		
layer	brown radiolarite	subconical bladelet core	35×42×33	corticated		
layer	brown radiolarite	retouched blade	40×21×7	complete, corticated		
layer	light grey silicified sandstone	flake	54×35×18	complete, corticated		
layer	brown radiolarite	flakelet	42×35×9	complete, corticated		
layer	light grey silicified sandstone	flakelet	36×30×9	complete		
layer	light grey silicified sandstone	flake	53×33×16	complete, burnt		
layer	light grey silicified sandstone	flakelet	35×30×8	complete		
layer	brown radiolarite	flakelet	21×33×10	complete		
layer	brown radiolarite	crested blade	31×14×5	distal fragment		
layer	radiolarite	flakelet	(31)×18×3	fragment, burnt		
layer	"Balkan" flint	microflakelet	18×13×5	complete		
layer	"Balkan" flint	retouched blade	38×19×7	complete		n. 4
layer	"Balkan" flint	cut vegetation bladelet	(22)×18×4	mesial fragment		n. 5
layer	Carpathian 1 obsidian	microbladelet	(11)×11×2	mesial fragment	LA-ICP-MS-1	
layer	Carpathian 1 obsidian	retouched blade	(24)×15×2	proximal fragment	XRF-102	
layer	Carpathian 1 obsidian	microflakelet	20×17×2	complete	XRF-101	
layer	Carpathian 1 obsidian	plunging blade	(44)×19×7	distal fragment	XRF-100	

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