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NEOLITHIZATION OF THE CARPATHIAN BASIN: NORTHERNMOST DISTRIBUTION OF THE STARČEVO/KÖRÖS CULTURE

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THE EARLY NEOLITHIC CHIPPED STONE ASSEMBLAGES OF THE CARPATHIAN BASIN: TYPOLOGY AND RAW MATERIAL CIRCULATION

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ABSTRACT: The scope of this paper is to provide a short summary of the present knowledge on the Early Neolithic chipped stone assemblages of the Carpathian Basin, drawing particular attention to the raw materials circulation. The recent discovery of a possible source of so-called Balkan flint in the Lower Danube Valley, with evidence of knapping activity areas, at the southern outskirts of Nikopol (Bulgaria), is discussed in the light of the possible routes of the Neolithization of the Balkan Peninsula and the Carpathian Basin. The precise location of the outcrops and sources of the lithic raw materials, the study of their supply strategies, and the reconstruction of the distribution networks, are in fact of basic importance in the attempt at shedding light on the Neolithization process in south-eastern Europe.

A modern approach for tracing the movements of human groups, and sheding light to their interrelationships, does not rely exclusively on the typological comparison between their material culture assemblages, but also on the scientific analyses of the constituents of the latter, given that the identification of the raw material sources they utilised, and their transportation routes, can reveal, unquestionably and often surprisingly, the territory, or landscape, they inhabited and exploited, their direct or indirect cultural connections and the geographic areas they were connected with.

Regarding the Carpathian Basin and its neighbouring regions, thanks to the long-lasting study of the siliceous rock sources exploited in prehistory for knapping (Biró 1988; Biró, Dobosi 1991; Biró et al. 2000), we currently know the precise location of many workable stone raw material outcrops in present-day Hungary and its immediate surroundings. The most common of these raw materials exploited during the Neolithic are Carpathian obsidian, limnic quartzites (Matra and Tokaj), Mezőzombor limnic quartzite, Transdanubian radiolarites (Bakony), Tevel flint, Mecsek radiolarite, Central Banat chert, Prut/Volhynian flint and Jurassic-Kraków flint.

The systematic study of the chipped stone assemblages made during the last fifteen years, has provided us with a better definition of the techno-typological characteristics of the lithic industries of the early farmers of the Carpathian Basin (Starnini 1993; Mateiciucová, Małecka-Kukawka 2007; Kaczanowska, Kozłowski 2008). At the onset of the Neolithic, the macro-blade production, obtained by indirect percussion with punch technique, made its appearance in many areas of the Balkans (Gurova 2008, 122; Kaczanowska, Kozłowski 2008, 14), where the local raw materials do not represent a technical constraint. One good example is, for instance, Carpathian obsidian, which is more commonly found in the source area in small "bombs", rather than larger blocks (Nandris 1975): this is the reason way this raw material is represented in the assemblages, during the entire Neolithic, almost exclusively as micro-cores and micro-blades. However, when a larger-sized piece was available, then also obsidian was exploited in macro-cores for macro-blades production, as documented for instance at Méhtelek (Starnini 1993). Macro-blades occur in the Early Neolithic assemblages of the Carpathian Basin knapped also from exotic raw materials. The most important of these is Balkan flint, often considered as a marker of the Early Neolithic period (Gurova 2005–2008; 2008, 113; Kaczanowska, Kozłowski 2008), whose source is generically indicated in the southern Balkans. However, despite the emphasis given to this raw material (Gurova 2008; Gurova, Nachev 2008), the precise location of the outcrop(s) exploited during the Early Neolithic period had neither ever been located, up-to-now, nor accurately searched.

The scope of this paper is to focus exclusively on the Early Neolithic chipped stone assemblages of the above region, discuss the provenance and distribution of some of the raw materials exploited for their manufacture, especially those with a long-distance distribution pattern, like obsidian and Balkan flint, and, finally, to update our present knowledge about the raw material sources, in the light of the new discoveries made in the lower Danube Valley (Biagi, Starnini in press b).

Hungary

One of the largest Early Neolithic chipped stone assemblages studied in detail in Hungary is that of Méhtelek (Starnini 1993) that consists of 1710 artefacts. Although this assemblage is often considered and discussed as a whole complex, it is necessary to point out that the artefacts were indeed recovered from 6 different pits (Starnini 1993), only two of which were radiocarbon dated: Pit 1 3/α: 6835+60 (Bln-1331) and Pit 4–5/α: 6655±60 (Bln-1332) and 6625±50 uncal BP (GrN 6897). Until the study of the associated ceramic assemblage will not be completed, it is difficult to establish whether the site was occupied during the whole time span indicated by the dates or, rather, there were two main occupation phases, one attributable to the so called "Classic" Körös, the second to the transitional "Late" Körös/Early LPC (Szatmar I) period, separated by a gap. This latter interpretation might explain the dichotomy observed in the lithic industry of the site, where elements characteristic of both the Early Neolithic and ELPC are represented (Kaczanowska, Kozłowski 2008)

Among the raw materials from this site are limnic quartzites (34.0%), obsidians from the Tokaj Mountains (60.2%), and a small percentage of Balkan flint (0.2%). New thin section, and ICP MS analyses (Gy. Szakmány and B. Rácz pers. comm. 2009), have shown that the raw material previously published by E. Starnini (1993) as Group 5, andesite, medium dark grey N5, non transparent, dull, is in fact Korolevo/Királyháza dacite, due to its high SiO_2 content. This material comes from the Avas Mountains, in the Transcarpathian volcanic region of present-day Ukraine (Rácz 2008). At Méhtelek, it represents 1.3% of the raw material employed for the manufacture of the chipped stone tools. The presence of this raw material confirms the existence of cultural relationships between the north-eastern Hungarian Early Neolithic sites, and those of the same cultural aspect in present-day north-western Ukraine, excavated and published by M. Potushniak (1985; 2004; 2005), besides contact routes with the Tokaj-Prešov area and the southern Balkans indicated respectively by the presence of obsidian and Balkan flint.

Other Hungarian, Early Neolithic chipped stone assemblages, which have been so far studied, are those from the Alföld sites Endrőd 119, Endrőd 39, Ecsegfalva 23 (Starnini, Szakmány 2000; Mateiciucová, Małecka-Kukawka 2007), and recently, Pitvaros (unpublished, courtesy of F. Horváth). Due to their location, in the middle of an alluvial plain, where only fine sediments are available, every single piece of stone was necessarily imported from elsewhere. All these sites, as predictable, yielded a few artefacts made from exogenous raw materials coming from sources located further to the north, among which are Mezözombor limnic quartzite and Tokaj Mountains obsidian, as well as from the south, such as the Balkan flint (Bflint), which has been, up-to-now, generically considered to come from the Moesian Platform (Bulgaria) (Gurova 2008; Gurova, Nachev 2008; Nachev 2009a; 2009b). This imported raw material, which in most cases is represented by a few artefacts in the Early Neolithic chipped stone assemblages of the Carpathian Basin, was probably traded further to the northern regions of the same Basin, in form of tested nodules, or rough-out pre-cores, rather than finished (blade) blanks. This fact is indirectly deduced from the presence, in the studied assemblages, not only of macro-blade products, but also flakes, corticated pieces, and the famous hoard of debitage flakes discovered at Endrőd 39 (Kaczanowska et al. 1981). Further evidence, supporting this hypothesis, is offered by the presence of similar flint hoards in pots at Lepenski Vir (Srejović 1972, Fig. 82 and 83), as already reported by Radovanović and Voytek (1997, 26), whilst a tested, corticated nodule was discovered at Padina (Borić 1999, Fig. 13).

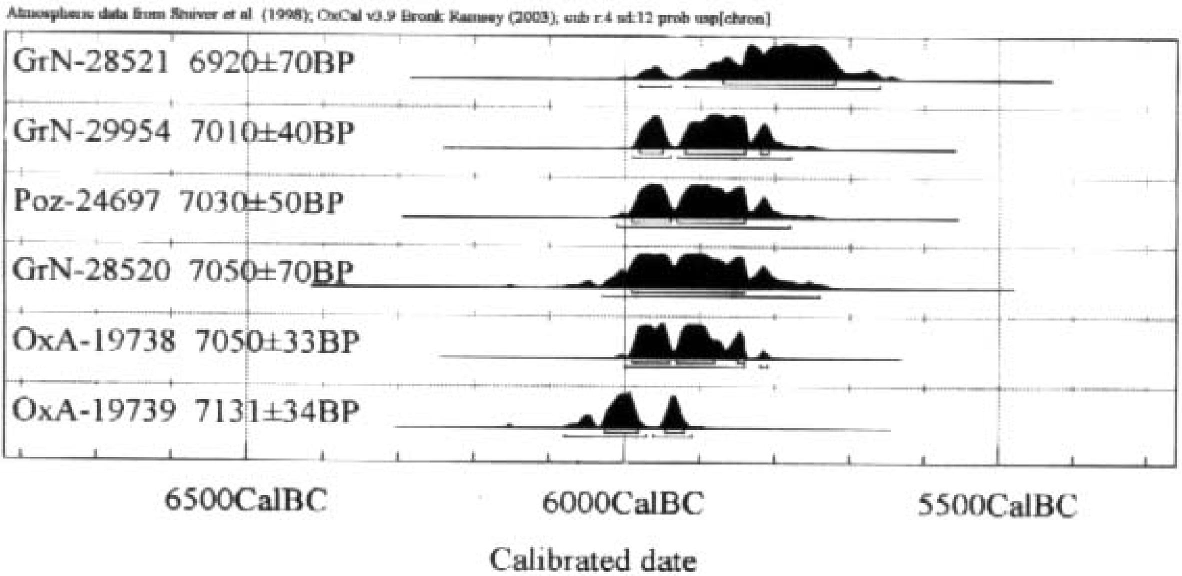
Nevertheless, for the understanding and correct interpretation of the circulation modes of this raw material during the Early Neolithic, it would be necessary, in the future, to excavate at least one settlement over a wide area, in order to investigate a village topography, the use of its space and the distribution of the different activity areas. It is difficult at the moment, and methodologically incorrect, to suggest circulation models only on the basis of a few artefacts recovered from refuse pits, which always represent the last phase (discard) of their life-cycle.

Romania

The problem of the presence of Balkan flint tools in Romania has already been pointed out by Biagi and Starnini (in press a; in press b), mainly as regards the Banat and Transylvania. According to the available data, a small number of specimens made from this raw material is attested since the very beginning of the spread of the Early Neolithic Criş Culture. In this respect it is important to point out that the excavations still under way at the FTN Criş site of Miercurea Sibiului-Petriş, in Transylvania (Luca et al. 2007; 2008), yielded 9 artefacts obtained from this raw material. This fact is of major importance given that Miercurea is one of the oldest Early Neolithic sites in the region, as indicated by a good set of radiocarbon dates, which span between the end of the eighth and the very beginning of the seventh millennium uncal BP (Table 1).

Table 1. Radiocarbon and calibrated dates from the FTN Criş site of Miercurea Sibiului-Petriş in Transylvania (data from Biagi et al. 2007b; J.K. Kozłowski and S. Colledge pers. comm. 2009)

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 B1
GrN-29954	7010±40	5990–5940 (22.8%), 5930–5780 (72.6%)	*Bos* humerus	Pit Gr 26
Poz-24697	7030±50	6010–5780 (95.4%)	Bones	Pit B17
GrN-28520	7050±70	6030–5740 (95.4%)	*Bos* astragalus	Pit B10
OxA-19738	7050±33	6000–5840 (94.2%), 5820–5810 (1.2%)	*Triticum* sp.	Pit Gr 35
OxA-19739	7131±34	6080–5970 (66.5%), 5960–5910 (28.9%)	*Hordeum vulgare*	Pit Gr 35



Apart from the above two regions of Romania, new interesting data come from Oltenia and Muntenia, where Comşa (1987, 88) had already pointed out, more than 20 years ago, the presence of "balcanic" flint, a material that he accurately distinguished from the other flint varieties that recur in these two regions.[1]

Regarding the earliest FTN settlement in this territory, a recently published radiocarbon date from Circea, near Craiova (Nica 1976; 1977), attributes this site to the beginning of the seventh millennium uncal BP (Bronk Ramsey et al. 2009, OxA-17818, 6894±37 uncal BP). From Circea, Dinan and Nica (1995) report the presence of a great quantity of brown flint (94%) and black obsidians of unidentified source(s). The common occurrence of "balcanic" flint from the above regions is reported also by Al. Păunescu (1987, 89), as confirmed also by the study of the lithic assemblage from Dulceanca (Comşa 1994, 17): nevertheless the provenance of the chipped stone artefacts from other Early Neolithic Muntenian sites is still uncertain. Among these latter is Măgura, radiocarbon-dated to the beginning of the seventh millennium uncal BP (Mirea 2005).

The southern lowlands of Romania, gently sloping towards the Danube, are of key importance for the study of the spread of the earliest Neolithic farmers across the Balkans, because of their geographic location, and the complex fluvial network of Danube river tributaries, among which are the Olt and Vedea, whose terraces are scattered with FTN Criş sites (Mirea 2005, Fig. 1; Andreescu, Mirea 2008).

Serbia

In his paper on the Early and Middle Neolithic assemblages of Serbia, J.J. Šarić lists 11 sites with Balkan flint tools (Šarić 2002, Fig. 4). In the same paper, where he discusses the problem of the provenance of this raw material, and shows scepticism about its Pre-Balkan platform origin, he also reports the occurrence of corticated Bflint flakes from Velesnica and Blagotin (Šarić 2002, 19) that, according to the available radiocarbon dates, is the oldest Serbian Neolithic site (Nikolić, Zečević 2001, 6). The same scepticism is shown by V. Bogosavljević-Petrović (2008, 380), who confirms the presence of Bflint pebbles from both Velesnica and Blagotin. Furthermore, discussing the chipped stone assemblage from Grivac, she wrote that some 10% of the lithics from this site are made from this raw material (Bogosavljević-Petrović 2008, Fig. 12.3). Also Grivac yielded a very old radiocarbon date, from charcoal (Bln-869: 7250±50 uncal BP) (Bogdanović 2008, 457), very similar to two Blagotin determinations from human and animal bones respectively (OxA-8609: 7270±50, and OxA-8760: 7230±50 uncal BP: Whittle et al. 2002, 113).

Other few, corticated flakes are reported by Šarić (2005, 60) from Donja Branjevina. These finds together with the Bflint hoards, or "storage jars", from Lepenski Vir III, published by D. Srejović (1972, Fig. 82 and 83), are of unique importance, because they demonstrate that Bflint was traded also as rough-outs and precores, which were later reduced within the settlement sites, and not exclusively as (retouched) blade tools, as previously suggested by other authors (Gurova 2008).

The importance of this part of the Danube course for the circulation and distribution of Bflint is marked also by the presence of artefacts obtained from this material in many Iron Gates sites among which, apart from Lepenski Vir, are Padina, Vlasac and Hajdučka Vodenica, in Serbia (Radovanović 1996, 232), Schela Cladovei (Bonsall 2008, Figure 10: 10), and most probably also Cuina Turcului (Păunescu 1979), in Rumania.

EN sites in Macedonia

The most famous site of the Republic of Macedonia, from which is reported of a very small percentage (0.4%) of Balkan flint artefacts, is Anza (Elster 1976, 265: group 7), where this raw material makes its appearance during phases II and III, radiocarbon-dated to the first half of the seventh millennium uncal BP (Gimbutas 1976, 30).

[1] It is important to point out that E. Comşa (1987, 88 and 89), in his seminal work on the Neolithic of Romania, had already pointed out the differences between Balkan and Banat flint. In his volume he defines "*silexul 'balcanic' (de culoarea mierei, cu pete albicioase, opac). Se găseşte in zăcăminte, in numeroase locuri din Dobrogea şinordul Bulgariei* [...] *silexul 'bănătean' (de culoarea cafenie, opac, cu linioare şi pete negre). A fost utilizat pe tot întinsul Banatului şi în S-V Transilvaniei. Zăcămintele se găsesc în munţii Poiana Ruscăi*".

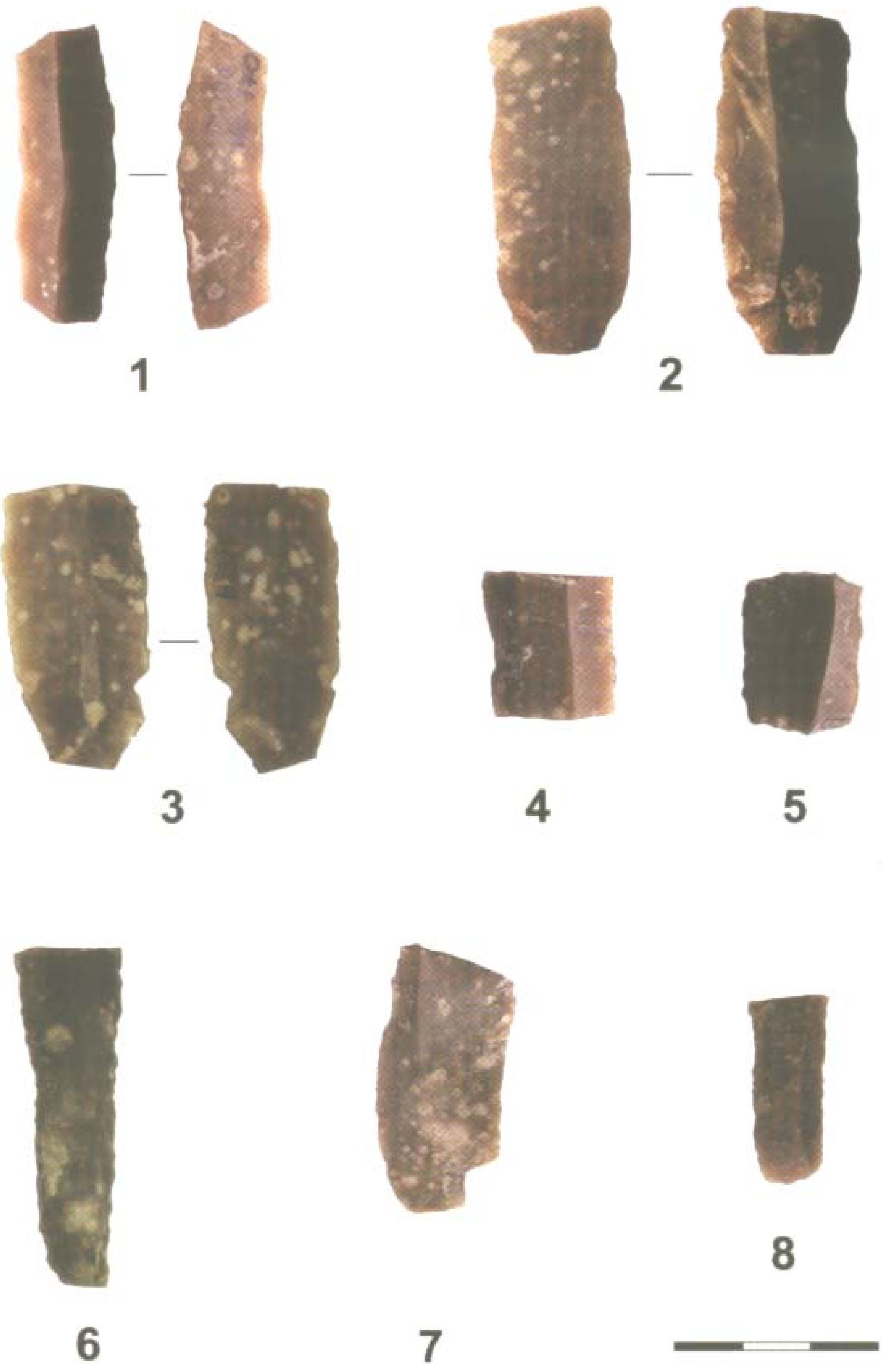


Fig. 1. Chipped stone artefacts from Macedonian Early Neolithic sites determined as made of "Pre-Balkan Platform flint": 1, 4–5, 7–8 – unretouched and retouched blade fragments from Govrlevo (courtesy of M. Bilbija, Skopje Museum); 2 – proximal blade fragment from Kartalica (courtesy of T. Jovčevska, Veles Museum); 3 – proximal blade fragment from Mramor (courtesy of T. Jovčevska, Veles Museum); 6 – retouched blade fragment from Pista (courtesy of T. Jovčevska, Veles Museum)

Apart from this site, it is during a recent study visit paid to the country that it has been possible to have a quick look at some Neolithic assemblages, thanks to the courtesy of the local colleagues and excavators. The oldest Early Neolithic site in Macedonia is considered to be Cerje-Govrlevo/Govrljevo (Bilbija 1985; Zdravkovski 2006), in the Treska river valley, one of the tributaries that joins the Vardar not far from Skopje. The site became famous after the discovery of the so called "Adam", a unique terracotta male statuette (Sanev 2006, Fig. 17). The unpublished chipped stone material from the site,[2] includes some fragments of retouched and unretouched blades of Balkan flint (Fig. 1: 1, 4–5, 7–8).

Other Bflint artefacts are known from the (unpublished)[3] lithic assemblages from a few Early Neolithic sites in the southern territory of the Veles district, among which are Kartalica (Fig. 1: 2), Pista (Fig. 1: 6) and Mramor (Jovčevska 1988; 1992) (Fig. 1: 3).

The problem of the origin of the Balkan flint

High quality, yellow-honey (blonde), white-spotted flint, often described in literature as "Banat flint" (Kozłowski, Kozłowski 1982, 18; Kaczanowska, Kozłowski 2008, 12), "Pre-Balkan Platform flint", or simply "Balkan flint" (Dinan 1996), is considered by several authors as one of the markers of the Neolithization in the Balkan Peninsula and the Carpathian Basin (Gurova 2008, 113; Kaczanowska, Kozłowski 2008). Its macroscopic characteristics favour the identification and the easy recognition of this raw material by naked eye, although a scientific sourcing in order to characterize single artefacts and to attribute them to their possible geological sources would be needed. Bflint has sometimes been supposed to be imported from outcrops located in the Moesian Platform of northern Bulgaria (Păunescu 1970, 84; Kozłowski, Kozłowski 1982; 1983; Gurova 2008; Gurova, Nachev 2008). However, apart from a few scientific characterizations recently made on the flint outcrops from the Moesian Platform (Nachev 2009c), only a very general mapping of the potential sources has been provided up-to-now (Gurova, Nachev 2008) (Fig. 2).

One possible source: the discovery of the Nikopol outcrop

In the summer of 2009, during a study trip in the central Balkans and the Lower Danube valley, the western part of the Moesian Platform was crossed following the route which brings to the Danube partly following the Iskar River Valley/Iskur Gorges, and, turning to the right at Roman, passing throughout Pleven and Nikopol (Fig. 3). At the southern outskirts of this city, taking refreshment at a water spring, just below the Ali Kach Baba hill, along the road that runs parallel to the small stream Zass'idere, it was noticed that the cutting of the earthen road had exposed a white chalk formation (Upper Cretaceous) with several embedded seams of honey colour flint nodules with white spots, identical to the raw material known as Bflint (Fig. 4).

Soon later, walking along a pathway used by sheep herders that moves uphill from the unpaved road, to rich and visit the Ali Kach Baba, a Turkish period shrine, which is located just on the top of the low hill, we trumped by chance a carpet of many cores, flakes and by-products of blade debitage laying on the surface (Fig. 5). We suddenly realised the great importance of the discovery, because this was the very first evidence of a knapping activity in an outcrop of the well-known honey-coloured, white spotted, waxy Bflint. The accidental character of the discovery made any further investigation of the site impossible,[4] except for a rapid photographic recording of the main characteristics of the artefacts, and the location of the geographical coordinates of the find-spot (43°41'44" Lat N and 24°53'28" Long E). However it was noticed the existence of an archaeological deposit along the profile eroded by the pathway; in particular, the characteristic shape of a pit, dug into the white chalk down to the depth of the nodules seam, which might derive from some kind of mining activity (Fig. 6).

The spatial distribution and physical conditions of the artefacts laying on the eroded surface of the pathway, clearly indicate that they originated from this freshly eroded archaeological deposit, which is most probably still partly *in situ*. The chipped stone artefacts observed on the ground, were scattered rather close to each

[2] Courtesy of M. Bilbija of the Skopje Museum.

[3] Courtesy of T. Jovčevska of the Museum of Veles.

[4] The finds, lying on surface, were photographed and recorded on the spot, following the method already experimented during the surveys in Sindh (Pakistan) (Negrino, Starnini 1997)

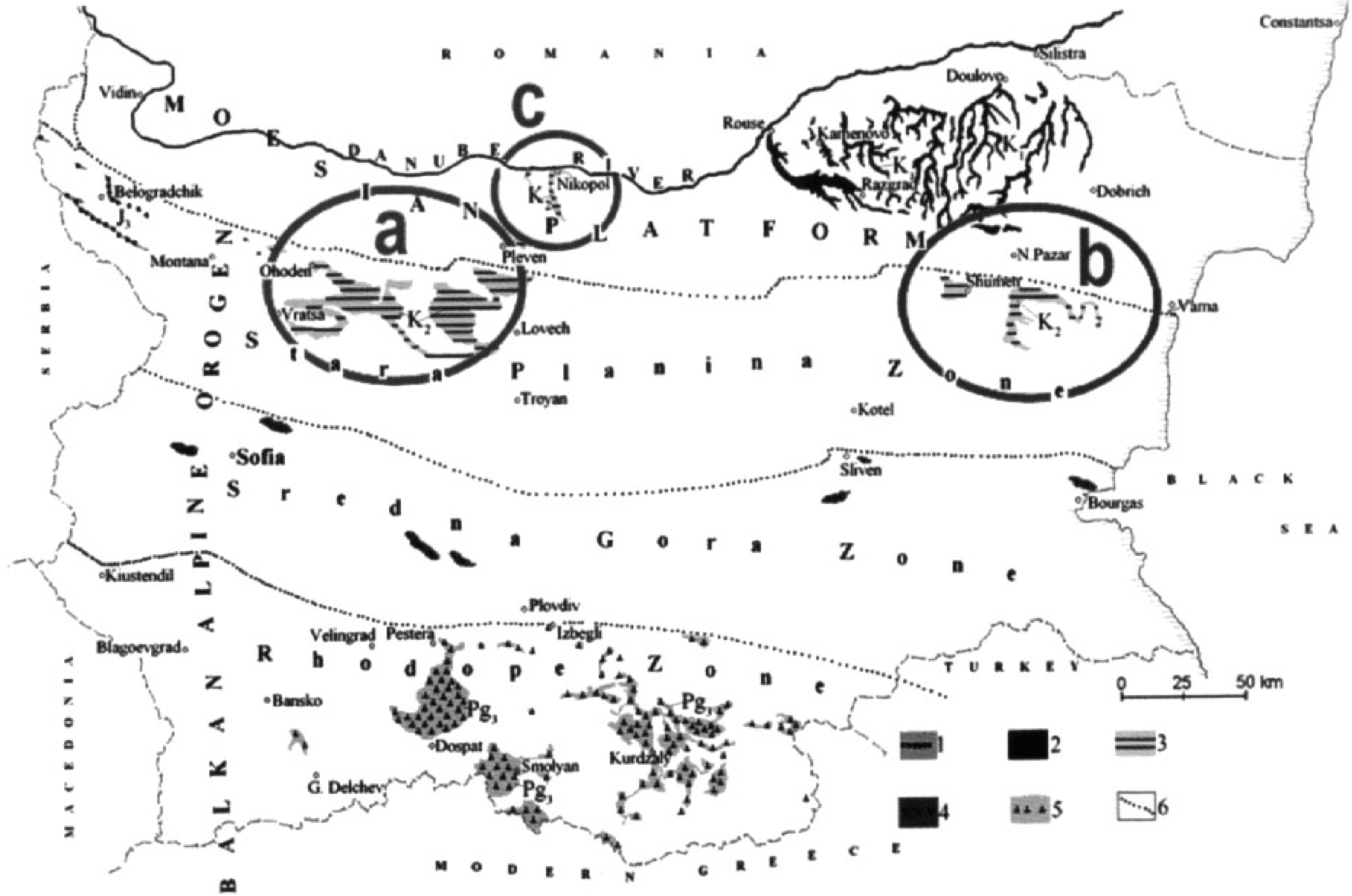


Fig. 2. Geological map of Bulgaria with the location of potential outcrops of "Pre-Balkan Platform flint": a – Iskar Valley and its surroundings; b – Shumen area; c – Somovit-Nikopol area; 1 – Upper Jurassic limestone: 2 – Low Cretaceous limestone; 3 – Upper Cretaceous chalk Moesian flint; 4 – Upper Cretaceous volcanic rocks; 5 – Oligocene; 6 – boundary between tectonic zones (modified from Gurova-Nachev 2008, Fig. 5)

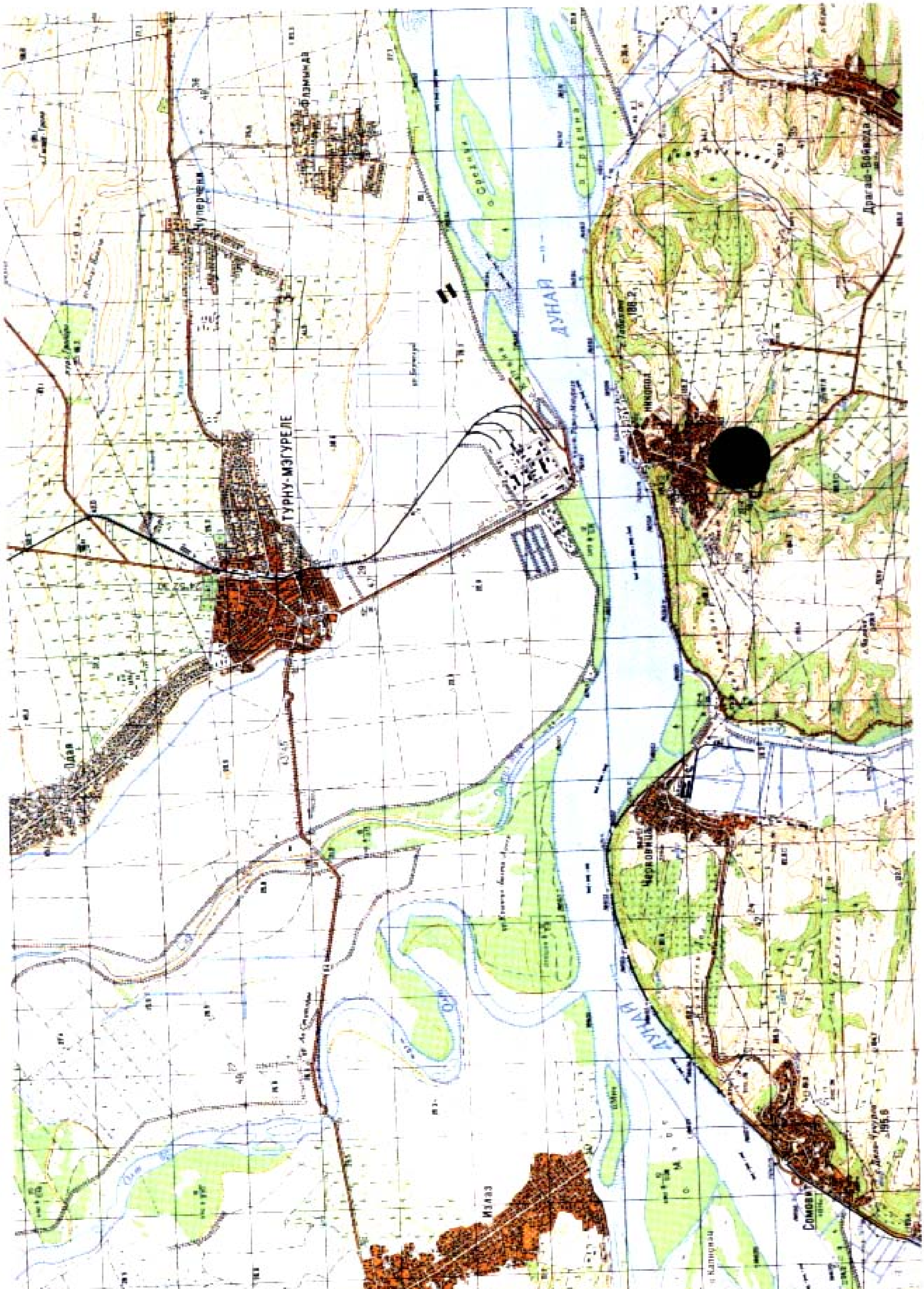


Fig. 3. Map of the Danube-Olt rivers confluence with the location of the flint outcrop and workshop (dot) at the southern outskirts of the town of Nikopol

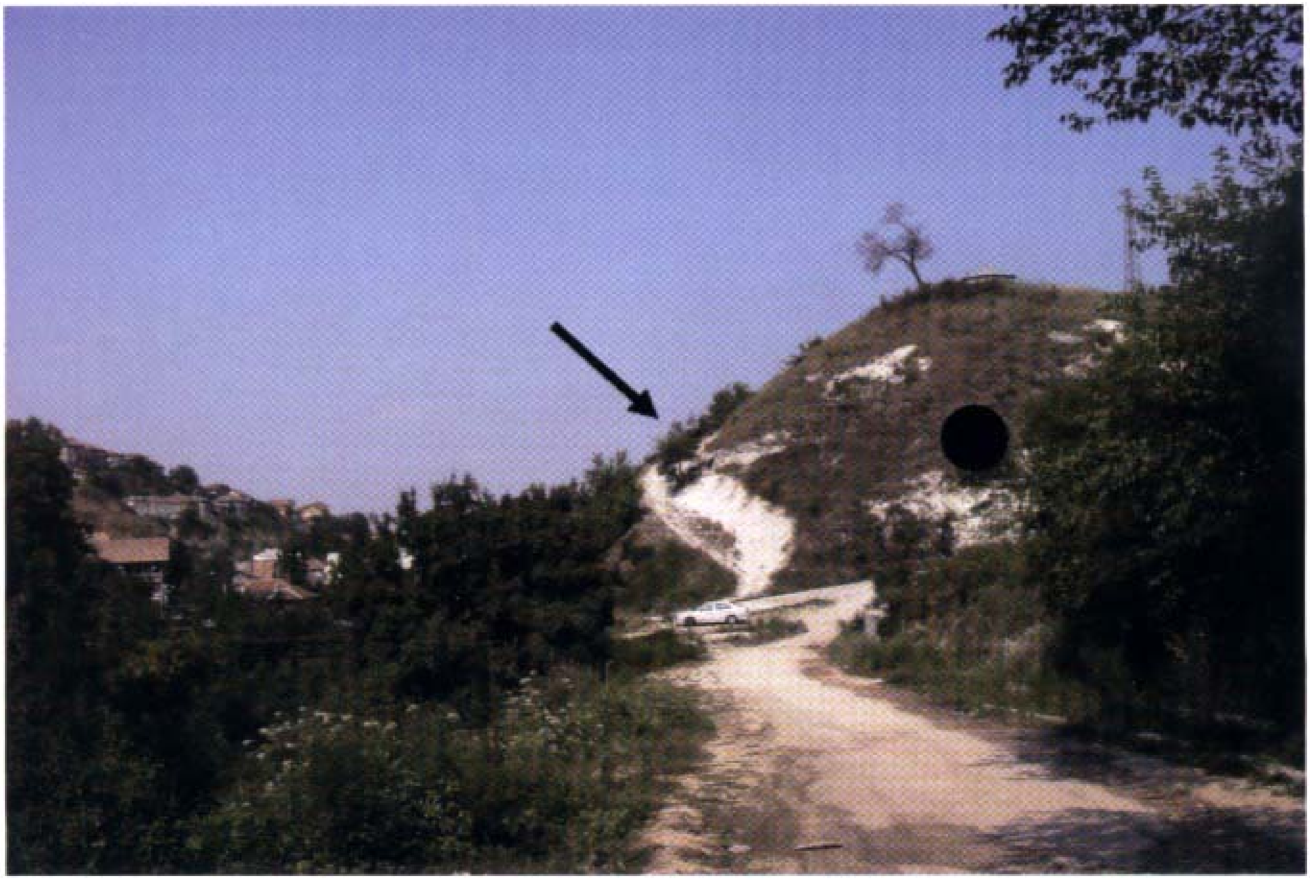


Fig. 4. Nikopol; Ali Kach Baba Hill from the south, with the indication of the Bflint outcrop (dot) and the flint knapping find-spot (arrow); the shrine is on the right of the tree on the hilltop (photo by E. Starnini)

other within a maximum range of some 2 m²; consequently they might be considered interrelated, and probably originating from the same archaeological feature. The artefacts scattered on the pathway surface consisted of a few subconical cores, many blade blanks fragments (Fig. 7: 6), a few crested blades (Fig. 7: 6), and several decortication flakes (Fig. 7: 5). Only one retouched instrument was observed, namely a long end-scraper (Biagi, Starnini in press b).

All the cores, except for one, which was damaged after its secondary use as a hammer (Fig. 7: 1 2), are single-platformed, macro-blade cores; their flaking face is carefully prepared, and the reduction started after the detachment of a crested blade. The striking platforms are horizontal and slightly concave, sometimes carefully prepared, with centripetal scars systematically detached from the edges for their regularization during the blade debitage (Fig. 7: 2). Flat butts prevail among the blade proximal fragments (Fig. 7: 3).

It is interesting to point out that many of the above-mentioned features, and some others such as the small parasite flakelets on the bulbs of the blades (Fig. 7: 4), the size and morphology of the blades and the cores, are all specific characteristic of the indirect percussion technique[5] (Inizan et al. 1992). These observations would suggest that this find-spot is to be interpreted as a flint-knapping workshop for blade core preparation and debitage, employing the punch, i.e. the indirect percussion technique (Inizan et al. 1992, 61). At the moment, waiting for future excavations and more systematic researches, a chronological attribution of the workshop to the Early Neolithic can be suggested on the basis of the following considerations:

[5] These features are closely comparable with those observed at some Bronze Age Harappan flint blade workshops in Upper Sindh (Pakistan) (Negrino, Starnini 1995; Briois et al. 2006), where the same knapping technique had been employed.

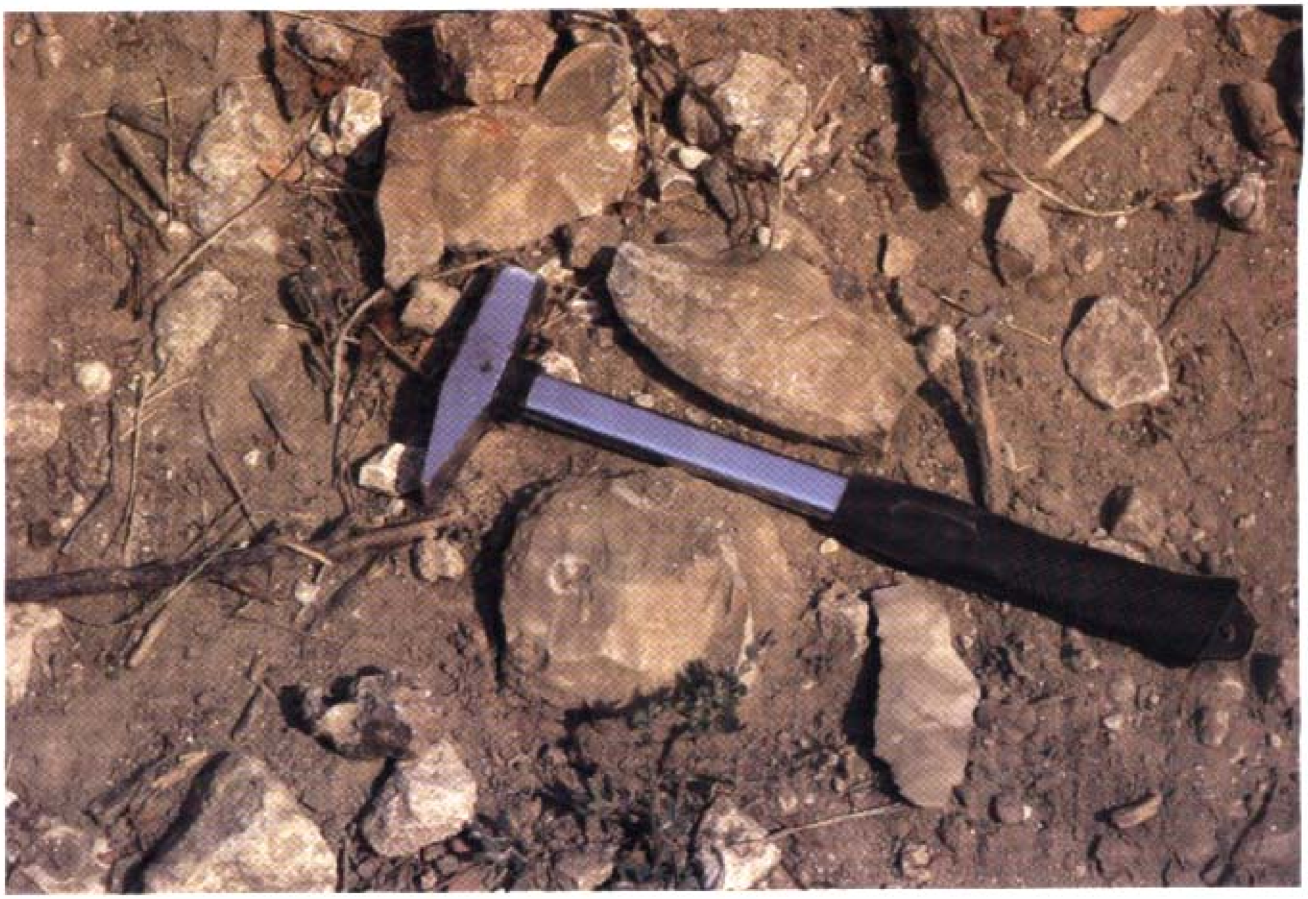


Fig. 5. Nikopol; flintknapping activity area on the surface of the footpath that leads to the top of Ali Kach Baba Hill (photo by E. Starnini)

1) the pale brown colour (10YR6/3)[6] with white spots of this raw material is identical to that employed during the Early Neolithic in the Balkans. It differs from the North-easternmost sources (Fig. 2)[7] and, in particular, from the so-called Dobrudzha (Dobrogea)/Luda Gora flint (Fig. 8) (Nachev 2009a; 2009b), whose exploitation is supposed to start not earlier than during the Copper Age (Tringham 1971, 153; Skakun 1993, 54; Gurova 2008, 120; Gurova, Nachev 2008); Luda Gora flint blades are commonly found, for instance, in the Copper Age tell settlements (Hansen et al. 2007), and in the Varna and Durankulak cemeteries (Gurova 2005–2008; Manolakakis 2008) deposited as grave goods;[8]

2) the morphology and size of the blade products correspond well with those of the specimens found in the Early Neolithic lithic assemblages of the Balkans, in general, and the Carpathian Basin, in particular (Gurova 2008; Gurova, Nachev 2008; Kaczanowska, Kozłowski 2008);

3) one single, although significant, coarse ware potsherd with stroke-coarsened surfaces, with a black core, and organic tempered paste, was noticed on the ground in association with the chipped artefacts; it fits well into an Early Neolithic pottery production (Biagi, Starnini in press b);

4) finally, it is important to remark that this locality falls inside one of the areas (Fig. 2: c), which had been generically indicated as a potential source of Moesian flint in previous works (Gurova, Nachev 2008, 34).

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[6] Colours of the Munsell Soil Color Charts, Year 2000, GretagMacbeth, New Windsor, NY.

[7] The Luda Gora flint is mainly opaque, of a dark yellowish brown colour (10YR4/4), with slightly lighter, grey variegations. Furthermore, Luda Gora and Nikopol flints can be distinguished also by their cortex physical characteristics: white, chalky that of the first, brownish, spongy and uneven that of the latter variety.

[8] The Dobrogea flint was exploited until recently to provide laminar flake inserts for threshing sledges in south-western Ukraine (Skakun 1992, 295), as it is documented also by the several ethnographic pieces that exist in Bulgaria.

Fig. 6. Nikopol; exposed profile along the footpath that leads to the top of Ali Kach Baba Hill: the arrow indicates a possible pit for flint mining (photo by P. Biagi)

This Upper Cretaceous chalk formation, very rich in flint nodules, extends for several kilometres along the Danube bend. It could be easily observed following the present road, which runs parallel to the river, along the Nikopol ferry-boat harbour. It can be also imagined that in the past the rather soft embedding white chalk could have been easily eroded down to the river, and the freed flint nodules probably could form secondary deposit along the river beach, making even more easy their collection.

Discussion and conclusion

We believe that the study of the provenance and use of the different raw materials employed for stone tools production is of a basic importance for the reconstruction of the cultural relationships and exchange networks of the prehistoric populations and, last but not least, the definition of the routes they followed at the onset of the Neolithization process.

In Eastern Europe, until recently, more attention has been paid to the characterization of the obsidian sources (Williams, Nandris 1977; Biró 2006; Biagi et al. 2007a; 2007b) rather than other siliceous rocks and, except for the Hungarian territory (Biró 1988; Biró, Dobosi 1991; Biró et al. 2000), and a few studies still considered a reference model (Voytek 1986; 1990), less effort has ever been paid to the mapping of all the possible sources of siliceous cryptocrystalline rocks in the Balkan Peninsula, and their characterization by scientific methods (Crandell 2008).

The presence of Bflint artefacts from the Moesian Platform sources and obsidians from the Tokaj-Prešov source is ascertained from many Early Neolithic Körös-Starčevo-Criş Culture sites (Starnini 1993; Starnini, Szakmány 2000; Šarić 2002; Kaczanowska, Kozłowski 2008; Bonsall 2008) in the Carpathian Basin and beyond (Fig. 9). It demonstrates that the first farmers of the northernmost territories reached by the FTN expan-

Fig. 7. Nikopol; chipped stone artefacts from Ali Kach Baba Hill: 1–2 – blade core re-used as a hammer; 3 – selection of blade butts; 4 – blade bulbs with parasite flake scars; 5 – decortications flakes; 6 – unretouched blades and crested blades (photo by E. Starnini)

Fig. 8. Experimental flakes of "Pre-Balkan Platform flint" from the Dobrogea (photo by P. Biagi)

sion (Nandris 1970; 2007; Kaczanowska, Kozłowski 2008; Domboróczki et al. 2010) were undoubtedly in some sort of relationship with those of the southernmost regions of this large cultural unit. The discovery of the Bflint outcrop on the right bank of the Danube near Nikopol, with traces of Neolithic exploitation, might contribute to the understanding of the models of diffusion of this raw material. Its abundance and the location on the main river route followed by the Neolithization process, made the access to this flint resource easy for the Early FTN human groups. Waiting for a more detailed research to be conducted in the future, the abundance of the raw material, the extension of the outcrop, and its easy access by boat, might suggest an uncontrolled exploitation of the raw material sources, which were most probably of free access at least during the Early Neolithic.

It will be interesting, in the future, to investigate why this raw material, whose spread reached even the northernmost part of the Hungarian Plain during the Early Neolithic, lost importance, and practically disappeared from the sites of the Carpathian Basin during the development of the Linear Pottery Culture; this might indicate that, by that time, the cultural connections with the southern Balkans had already weakened. It is interesting to mention that the same phenomenon, i.e. the interruption of the use of the good quality Bflint has been observed also in Bulgaria at the end of the Early Neolithic period (Gatsov 1995, 76).

Finally it is important to point out that the Nikopol outcrop, previously suggested only as a potential source of good quality flint (Gurova, Nachev 2008, 34), is located some 200 km east of the Iron Gates, which, in turn, lead to the Great Hungarian Plain; furthermore it lies almost in front of the junction between the Danube and the Olt (Fig. 3), whose latter valley, very rich in FTN Criş sites (Mirea 2005) was probably one of the routes followed by the first FTN farmers to reach Transylvania across the southern Carpathians (Biagi et al. 2005, 42). There is little doubt that this locality, a potential site for flint procurement, will deserve more systematic research in the future.

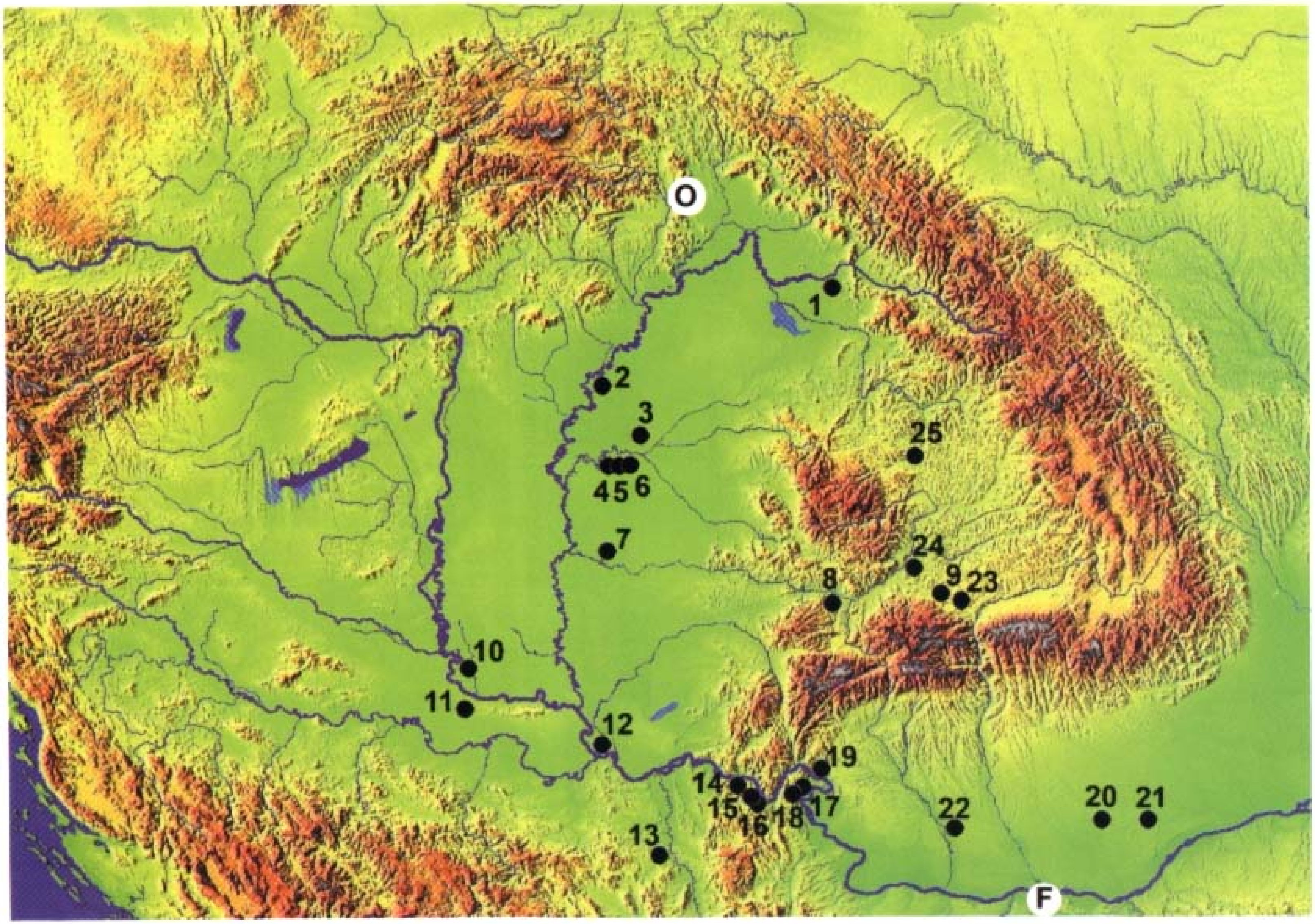

Fig. 9. Map of the FTN sites of the Carpathian Basin and lower Danube Valley with ascertained presence Bflint artefacts: 1 – Méhtelek (HU); 2 – Tiszaszőlős-Domaháza (HU); 3 – Ecsegfalva 23 (HU); 4 – Endrőd 119 (HU); 5 – Endrőd 39 (HU); 6 – Endrőd 35 (HU); 7 – Pitvaros (HU); 8 – Cauce Cave (RO); 9 – Miercurea Sibiului-Petriş (RO); 10 – Donja Branjevina (SRB); 11 – Golokut (SRB); 12 – Starčevo (SRB); 13 – Grivac (SRB); 14 – Padina (SRB); 15 – Lepenski Vir (SRB); 16 – Vlasac (SRB); 17 – Velesnica (SRB); 18 – Ušće Kamenićkog Potoka (SRB); 19 – Schela Cladovei (RO); 20 – Dulceanca (RO); 21 – Măgura (RO); 22 – Cîrcea (RO); 23 – Ocna Sibiului (RO); 24 – Şeuşa (RO); 25 – Gura Baciului (RO); in the white circles: O – Carpathian obsidian sources; F – outcrops of Moesian Flint of the Somovit-Nikopol region

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