ABSTRACT
This paper offers a general overview of the chipped stone assemblages from Bulgaria during the Neolithic period (6th millennium BC). Based on numerous flint assemblages belonging to different phases of the Neolithic (many of them studied by the author), some general observations on the key features and trends are presented in a diachronic perspective. Following a long phase characterized by distinctive formal toolkits and uniform raw material use that served as the hallmark of a major Early Neolithic cultural alliance represented by the Karanovo I and II cultures, a shift in all aspects of the flint industry occurred around 5500 cal BC. The Balkan flint raw material distribution network declined, and there appeared chipped stone industries based mainly on local resources and expedient production. Strong evidence of microlithization – represented both by cores and tools with small dimensions and by the presence of geometric microliths – is reflected clearly in the morphometric parameters and typological repertoire of the flint industry, and can be regarded as a diagnostic feature of the Late Neolithic assemblages.

KEYWORDS
Early Neolithic, Late Neolithic, Bulgaria, transformation, flint assemblages, regionality

Introduction

This paper focuses on the Neolithic period in Bulgaria, which, owing to its significant cultural achievements, made this a key area in the Early Neolithic oikumene and played a significant role in the spread of the Neolithic into Europe.

For a decade my research has been concerned with the role of flint in the Neolithization process in Southeast Europe and with the evolutionary changes in Neolithic flint industries (Гюрова 2009; Gurova 2008; 2011b; 2012a, b; 2014a). All flint assemblages studied by me were subjected to techno-typological and use-wear analyses, and most of these have already been published. The purpose of this paper is to summarize the main temporal trends observable in the chipped-stone (flint) assemblages from the Neolithic period, which provide supporting evidence for the significant changes that occurred in the middle of the 6th millennium BC.

The paper is based on information from 32 sites in Bulgaria (fig. 1). The assemblages vary in their usefulness as sources of information owing to the fact that some of them were studied by me personally (incl. pilot studies) using systematic methods of analysis and recording, while in other cases the data are drawn from publications by other scholars with different, often less rigorous, approaches and interpretations. Such cognitive ‘obstacles’ are unavoidable, but inevitably impose limitations.

The first attempt at presenting Neolithic flint assemblages in comparative chronolog-
Fig. 1. Map of Bulgaria with sites considered in the text: 1 – Slatina–Sofia; 2 – Kovachevo; 3 – Rakitovo; 4 – Sedlare; 5 – Yabalkovo; 6 – Azmak; 7 – Dzhulyunitsa; 8 – Ohoden; 9 – Balgarchevo; 10 – Kapitan Dimitriev; 11 – Apriltsi; 12 – Karanovo; 13 – Sarnevo; 14 – Ezero; 15 – Harmanli; 16 – Lyubimets–Dana Bunar 2; 17 – Drama–Gerena; 18 – Ussoe I; 19 – Durankulak; 20 – Provadia–Solnitsata; 21 – Varbitsa; 22 – Koprivets; 23 – Orlovet; 24 – Plochite & Samovodene; 25 – Gradesnitsa; 26 – Pernik; 27 – Galabnik; 28 – Sapareva Bania; 29 – Eleshnitsa; 30 – Ilindentsi; 31 – Damianitsa; 32 – Topolnitsa. Legend: triangle – Early Neolithic site; circle – Early and Late Neolithic site; square – Late Neolithic site; red – sites with assemblages studied by the current author; blue – sites with assemblages published by other scholars; black polygons – sites introduced here for comparative purposes. The zone with the main Balkan flint outcrops is marked by the black ellipse (figure by M. Gurova).
cal perspective was made by Gatsov on the basis of series of sites in western Bulgaria. He described the Early Neolithic industry as technologically evolved, based on macroblades mostly retouched and on high quality yellow flint with spots, with possible outcrops in north-western Bulgaria. Regarding the Late Neolithic assemblages, Gatsov suggested a kind of technological degradation of flint industries owing to the lack of yellow flint (i.e. Balkan flint – MG) and a general discontinuity with Early Neolithic traditions (Gatsov 1993, 41-2). Although his study was restricted to a relatively small region of the Early Neolithic cultural background, Gatsov’s general observations nevertheless provided a basis for further interpretation.

Subsequently, the present author, based on the larger empirical data-set and personal experience contributed to the debate about Neolithic flint inventories in two important respects: i) by looking at Early Neolithic assemblages as a factor in the Neolithization process (with emphasis on the raw material, chronological, technological, typological, and functional characteristics of the assemblages) (Gurova 2008); ii) by pointing to the dichotomy between Early and Late Neolithic flint assemblages with emphasis on raw material, technotypological and functional characteristics (Gurova 2014a), and by trying to summarize the evidence of the least equivocal element of microlithization – the geometric microliths – as being present in Late Neolithic assemblages, but with their sporadic appearance in other chrono-cultural contexts (Gurova 2017a).

During the years of various studies and different scholars’ approaches, many aspects of the problem have been debated, and some have been resolved. Many other sides of the puzzle remain open and call for a satisfactory explanation both from the point of view of technology and social agency.

General chrono-cultural framework

First, it is important to consider the chronological framework of the Neolithic in Bulgaria according to the published data. The traditional chrono-cultural division of the Neolithic period is based on the sequence at Tell Karanovo. The cultural periodization, based on the dynamic development of pottery assemblages in Thrace can be summarized as follows: Early Neolithic – Karanovo I and II cultures/periods; short transitional phase – Karanovo II–III (Middle Neolithic); Late Neolithic – Karanovo III, III–IV and IV cultures (Николов 1998; Nikolov 2004).

Based on the available \(^1\)C dates, the following divisions have been proposed:
- Karanovo I – 6000-5750 cal BC;
- Karanovo II – 5750-5500 cal BC;

For the subsequent periods III–IV and IV, two sources are taken into consideration, giving the following sequence
- Karanovo III–IV – 5470-5370/5360 cal BC;

The interruption in the sequence between Karanovo III–IV and IV is partially resolved by the new series of dates from the “pit field” site of Sarnevo, giving a time span of 5375-5320 cal BC to 5335-5290 cal BC for the Karanovo III–IV (Cook et al. 2017, 509).

A similar chronological framework of Neolithic “phases” in Bulgarian Thrace has been presented recently by V. Nikolov, based on pottery repertoire analysis (Nikolov 2017). It should be stressed that the Karanovo chronology and periodization is a suitable and
workable tool for the chronological synchronization of cultural events at local, regional and supra-regional scales. In this role the aforementioned chronology and cultural division is used in this paper.

Until now the only dated site in southern Bulgaria with deposits earlier than Karanovo I is Kovačevo (in the Struma valley), where the oldest phase (Kovačevo Ia) has dates of 6159-5926 cal. BC and 6064-5808 cal. BC (Lichardus-Itten et al. 2006, 85).

On the other hand, several sites in northern Bulgaria have remains attributable to the so-called ‘monochrome phase’ of the Early Neolithic and/or ‘Pre-Karanovo’. Without going into either terminological or semantic relevance of the term “monochrome” it should be
emphasized that only three sites have dates earlier than 6000 cal BC; these are Dzhulyunitsa, Orlovets and the oldest layers of Koprivets. They belong to the earliest phase of the Neolithic in northeast Bulgaria corresponding to the period ca. 6100-5700 cal BC with the most reliable ¹⁴C series coming from the site of Dzhulyunitsa (Krauß et al. 2014; Marinova, Krauß 2014).

Some clarification of the ambiguous term “Pre-Karanovo” is called for, both in terms of the lithic assemblages and more generally. It implies a time period earlier than the beginning of the Karanovo cultural sequence (i.e. older than 6000 cal BC) with distinctive technological and social characteristics. It goes beyond arguing for the lack of an initial ‘monochrome horizon’ in the Balkan Neolithic (in its Thessalian version) – a concept that has been criticized as ‘erroneous’ in relation to the earliest pottery in the Lower Danube region (Thissen, Reingruber 2017, 160). However, the term “Pre-Karanovo” is still widely used in discussions of the provenance and origins of various archaeological artefacts and evidence (Reingruber 2017, 103).

**Early Neolithic flint industry**

**Early Neolithic sites assigned to the Karanovo I cultural alliance**

On the basis of numerous personally studied flint assemblages, coming from the most important Early Neolithic sites south of the Balkan mountains such as Tells Karanovo, Azmak and Kapitan Dimitrievo, and the ‘flat’ sites of Kovačevo, Yabalkovo, Rakitovo, Slatina and Ilindentsi I have argued for the distinction of a category of formal toolkits (Gurova 2008). Later on in my study on other (Early) Neolithic assemblages from different regions the concept of the formal tools has been used as a discriminatory feature within all parameters of analysis and interpretation of the flint assemblages. Thus a diagnostic feature of the assemblages serves as a reliable criterion for comparative analysis in both synchronic and diachronic aspect.

The formal tools comprise blades of yellowish white-spotted Balkan flint, with continuous (sometimes partial) semi-abrupt to abrupt retouch along one or both lateral edges, sometimes with pointed or rounded retouched ends, as well as sickle inserts related to the well-known Karanovo type of sickle (figs. 2 and 3). From a technological point of view, this industry indicates the application of indirect percussion (punch technique). Pressure flaking with an organic stick is used for the characteristic high and steep retouching. It must be stressed that neither cores nor common debitage linked to their preparation are attested among the assemblages and no reconstruction of the chaîne opératoire is possible.

The formal tools represent a diagnostic feature of the Early Neolithic flint assemblages and are a sign of an affiliation to the Karanovo I–II cultural alliance. They are most numerous and representative among the assemblages from Tells Karanovo and Azmak (where the formal tools are totally dominant), followed by the sites of Yabalkovo, Slatina, Kovačevo and others (Gurova 2008, 2011a, 2012b, 2014b). It should be emphasized that the formal toolkits appear within Early Neolithic flint assemblages in varying proportions and at different stage of their evolution. At Tells Azmak and Karanovo they are completely dominant and techno-typologically evolved from the beginning of the respective cultural sequences. Unfortunately, no other contemporaneous or earlier flat sites have been discovered in the vicinity.

In other sites belonging to the Karanovo I culture/period (such as Yabalkovo, Rakitovo, Slatina, Kapitan Dimitrievo) the formal tools occur among the flint assemblages along-
Fig. 3. Early Neolithic flint artefacts (and particularly formal toolkits) from the sites of: 1 – Yabalkovo; 2 – Slatina; 3 – Rakitovo. The parts with use-wear traces are marked by a dashed line (drawings by M. Gurova)

Обр. 3. Ранннеолитни кремъчни артефакти (основно диагностични оръдия) от обектите: 1 – Ябълково; 2 – Слатина; 3 – Ракитово. Участиците със следи от износване са маркирани с пунктир (рисунки М. Гюрова)
side the rich repertoire of white-painted pottery decoration (Gurova 2012b) (fig. 4).

As for the Early Neolithic site of Kovačevo (assigned to the “southwest variant” of the Karanovo I culture), the pottery sequence includes a regional facies that is earlier than the Karanovo I, with connections to Greek western Macedonia and Ovče polje (Lichardus et al. 2006, 86). Direct contacts with the Karanovo I cultural milieu is detectable in the pottery decoration during the final period of the Early Neolithic stratum – Kovačevo Id (ibidem, 87). As for the flints, the Kovačevo sequence starts with a rich repertoire of artefacts made from mainly grey to black raw material, originating from the Western Rhodopes, while later, in the upper levels of the Kovačevo I sequence (Ic (?) and Id), a representative toolkit made of Balkan flint is attested. The formal tools and blades of Balkan flint appears in Kovačevo as a novelty, together with the Karanovo I pottery decoration system, among forms of blades and/or finished tools (Gurova 2011a; 2012b).

It should be recalled here that the Struma valley played a crucial role in the Neolithic spread toward Sofia and further east – the Thracian plain. In this region many Early Neolithic sites are known and which could eventually provide insights into the pathway of Neolithization to north, by revealing sub-phases in the process. Among the cluster of Early Neolithic sites in the Middle Struma Valley, apart from Kovačevo, an interesting case-study is represented by the flint assemblages from the site of Ilindentsi which belongs to the second half of the Early Neolithic, synchronous with Kovačevo Ic–Id (Grębska-Kulow 2017, 250). The assemblages are under study by the present author, but what is already evident is the similarity with Kovačevo in raw material variety as well as in the typological repertoire: micropiercers and a small series of artefacts (mostly formal tools) of Balkan flint (fig. 5.3).

Apart from the formal tools, the Early Neolithic assemblages in question provide, of course, examples of the expedient production of blanks (flakes and blades) and tools made of local, easily accessible raw materials. The features of the expedient assemblages introduce specificity and regionality into the Early Neolithic flint industry. The typological repertoire apart from the formal toolkit consists of retouched blades and flakes, random endscrapers, splintered and notched pieces, truncations, simple perforators, etc. A particularly interesting Early Neolithic assemblage is that from Sedlare in the southeast part of the Rhodopes mountain chain. Local raw materials (chalcedony, jasper, atypical flint) prevail among the numerous artefacts from this site, but a dozen Balkan flint artefacts (incl. typical formal tools) are attested (fig. 5.1). Analysis of the Balkan flint samples shows affinity with the cluster of Balkan flint outcrops in the Nikopol region (Gurova et al. 2016, fig. 10).

To sum up about the sites in south Bulgaria: i) within the Karanovo I–II cultural koiné all flint assemblages include BF formal tools/toolkits in varying frequencies, but ii) there is no site belonging to the pre-Karanovo period that can be linked with the initial stage of the chaîne opératoire; iii) within the assemblages numerous sickle inserts (incl. examples made from virgin and retouched blades of Balkan Flint) have been attested; iv) the supply of Balkan flint products required an established distribution network from the Balkan flint outcrops in north Bulgaria.

Based on the fact that the only known sources of Balkan flint are located in north Bulgaria (vide infra) more detailed information on the flint assemblages from sites north of the Balkan mountain chain is needed.

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1. The assemblage from Sedlare has not been studied yet. The selected Balkan flint artefacts were given to me by Dr S. Ivanova for analysis of the raw material.
Fig. 4. Early Neolithic site of Rakitovo: 1 – white-painted pottery decoration (after A. Радунчева и др. obr. 86-88); 2 and 4 – formal flint toolkit; 3 – microphotograph of cereal polish (x 100), taken at the location fixed by arrow on the drawing below (figure in colour after Gurova 2012b, fig. 5)

Обр. 4. Раннонеолитно селище Ракитово: 1 – бялорисувана керамична украса (по А. Радунчева и др. обр. 86-88); 2 и 4 – диагностични кремъчни оръдия; 3 – микрофотография на излъскване от зърнени култури (x 100), участъкът е маркиран със стрелка на рисунката по-долу (по Gurova 2012b, fig. 5, цветна версия)
Early Neolithic sites in northern Bulgaria

Outside the Karanovo I–II cultural milieu (which seems to be the unique milieu favourable for the occurrence of the Early Neolithic formal toolkits) are all sites in northern Bulgaria, some of which are inherently linked with the ongoing debate over the “monochrome” phase of the Neolithic. In the updated version of the $^{14}$C database the following Early Neolithic sites are included – Ohoden, Dzhulyunitsa, Koprivets, Ovcharovo–Gorata, Samovodene (lower horizon A) (Thissen, Reingruber 2017; Marinova, Krauß 2014). Unfortunately, none of these sites can be shown to be substantially earlier than Karanovo I. There is a remarkable discrepancy in arguing for the “monochrome” pottery occurrence on the sites and two examples will be listed. Ohoden I has been interpreted as belonging to the Proto-Starčevo culture or Western Balkan cultural zone (Ганецовски 2009, 2018). On the other hand, in Dzhulyunitsa convincing parallels to assemblages from West Anatolia and in Classical Fikirtepe are attested (Еленски 2006, 2008; Krauss et al. 2014) inscribing the site to the Eastern Balkan cultural zone. Undeniable, however, is the fact that a cultural group with similar ceramic features could be established including the earliest pottery assemblages from Dzhulyunitsa, Koprivets, Pomoshtitsa, Orlovets and Polianitsa-Plato (Krauss et al. ibidem, 58). What is known about the flint assemblages from these sites and which cultural affiliations do they reveal?

The site of Dzhulyunitsa was thought as very promising pre-Karanovo occupation displaying a variety of early pottery. Although the AMS series of dates fall ca. 6050/6020 cal BC (and not earlier!) for the beginning of the phase I, this is still ... “the very earliest Neolithic known from anywhere in Southeast Europe outside the Aegean” (Weninger et al. 2014, 24). This date is considered as a starting point for the second step of the Neolithic lifestyle going north from the Aegean to the Hungarian plain (ibidem, 24).

The flint assemblage from the site was subjected to a pilot study based on a representative sample from trench XIII, the earliest layers (I and II) (Еленски 2006, 98-100). The first layer belongs to the complex of monochrome dark-coloured pottery and reveals affinities with the earliest phase of the Koprivets cultural group. The upper layer II is characterized by the appearance of white-painted pottery, which is attributed to Koprivets phase II.
Fig. 6. Early Neolithic site of Dzhulyunitsa: 1 – pottery shapes and decoration (after Еленски 2006, fig. 7); 2-4 – flint artefacts (figure in colour after Gurova 2012b, fig. 7)

Обр. 6. Раннонеолитно селище Джулуюница: 1 – керамични форми и украси (по Еленски 2006, обр. 7); 2-4 – кремъчни артефакти (по Гурова 2012b, fig. 7, цветна версия)

and shows parallels with very early Kovačevo and Vaksevo from the Struma River valley (Еленски 2006, 115). The flint collection numbers 178 artefacts, among which only 3 complete flakes (one probably of Balkan flint) and 1 fragmented flake belong to layer I. Only 3 cores made of Balkan flint were recorded, all of them in the exhausted stage of exploitation after multidirectional removals. The group of tools includes no formal tools, but there are 2 truncated, 2 retouched blades, a retouched flake and a splintered piece, and only 2 tools are
made from Balkan flint (fig. 6). On the other hand, Balkan flint (or some material visually identical to it) forms a significant proportion among the debitage groups as follows: 20 of 26 blades, 35 of 86 flakes and 29 of 49 fragments. As a working hypothesis it was tentatively suggested that Dzhulyunitsa acted as a “... potential centre for Balkan flint blank (mainly blade) manufacture and distribution among the settlements in Bulgaria at a pre-Karanovo I phase of the Neolithic (Gurova, Bonsall 2014b, 123). Full publication of the Dzhulyunitsa flint assemblage is a necessary first step in testing this hypothesis.

According to the detailed publication of the Ohoden assemblage, there was an in situ functioning chaîne opératoire based on the supply of local raw materials and evidence of another production using imported cores or blanks. Within 11 distinct types of raw materials, there are two types that theoretically could correspond to Balkan flint: beige-wax to yellow with whitish spots (respectively BG.Oh.F5 and BG.Oh.F6), represented mainly by tools and blades and originating from the Razgrad region in Dobrudzha (Zlateva-Uzunova 2009, 72). The assemblage is dominated by flakes, but blades (with max. length up to 7.5 cm) are also present. Precisely half of the 60 cores are described as nodules with test flaking. The tool repertoire includes retouched blades, endscrapers, retouched flakes, denticulates, truncations, perforators, as well as a series of geometric microliths (7 trapezes and 2 segments) (Zlateva-Uzunova 2009). Examination of a part of the assemblage by the present author confirmed the presence of Balkan flint artefacts within the collection and this was further demonstrated by analysis of two flint samples from the site (Gurova et al. 2016, fig. 10) (fig. 8. 9).

Clear similarity to this assemblage is shown by the brief presentation of the Early Neolithic assemblage from Gradeshnitsa with prevailing endscrapers and a series of retouched blades (Gatsov 1993, table 8, Pl. VII-VIII).

The site of Koprivets is commonly defined as displaying an archaic and amorphous flake-oriented industry with a sparse tool repertoire mainly on flakes. The same conclusion was reached by the brief comparative analysis between Koprivets and Ohoden (Zlateva-Uzunova 2009, 74).

I. Gatsov pointed out the striking difference between the Koprivets assemblages and those from the Thracian and Sofia plains, both in techno-typological and raw material characteristics. Koprivets is based on multidirectional core exploitation mainly for flakes and irregular blades. Gatsov found some parallels between this assemblage and the industry from Hoca Çeşme, based mainly of their amorphous character (Gatsov 2009, 121).

The same difference from Thracian Early Neolithic assemblages was emphasized by T. Tsonov. His focus mainly on debitage technology and the number and variety of cores in Koprivets (especially microcores and single platform cores for small blades) led him to argue for a (virtual) microlithic aspect of the industry. Looking for the parallels and based on such features as irregularity of blanks and occasional retouch, he drew comparisons with Lepenski Vir I (Kozłowski, Kozłowski 1984), as well as Romanian assemblages belonging to the Starčevo–Criş complex (Tsonov 2000, 33). This fact is interpreted by Reingruber as a clear assessment that Koprivets is comparable with the Mesolithic from Lepenski Vir (Reingruber 2017, 101). This clearly farfetched assumption (through attractive and convenient!) is based on Tsonov’s suggestion that the group of small cores must be connected with microlith (sensu stricto) production. We should also keep in mind the uncertainties surrounding the security of association between the architectural remains and the lithic assemblage

2 This hypothesis was not shared by the paper’s co-author C. Bonsall
assigned to the Lepenski Vir I phase (Borić 1999, 53)

My personal visual impression of the Koprivets assemblage is based on a brief examination of a small number of artefacts after the study done by R. Zlateva. I was impressed by the domination of flakes mostly dark gray in colour. A year later during the field survey for mapping flint outcrops in the Russe region, we located near the site low quality, silicified Aptian limestones from the Kovachevo geological formation which seemingly had been used for the mass production on the site (Гюрова и др. 2013). It is worth noting that recent fieldwork on the site (Вайсов, Попов 2014) has revealed an abandoned flint assemblage (debitage) indicating a workshop of local flint with sporadic Balkan flint artefacts.

Small assemblages from the Early Neolithic site of Plochite (near Dzhulyunitsa) and Orlovets were studied by Tsonev and Gurova and the results were afterwards incorporated in the text published by Станев (2008, 78-80). The Plochite inventory is dominated by flakes, with a small series of exhausted cores, relatively short and not numerous blades and only 7 typological tools, most of which are on blades (fig. 7. 1). Tsonev reported two blades with polish (Цонев 2007, 38). On the other hand, use-wear analysis by the present author (MG) resulted in the identification of three sickles inserts (Станев 2008, 80, fig. 69) (fig. 7. 1 – middle row).

The assemblages from Orlovets (with no clear stratigraphic distinction between early and late phase of the Neolithic) are certainly quite elaborate from a techno-typological point of view. This was emphasised by Tsonev who pointed out the differences between the expedient flake-based industry of Koprivets and the blade-oriented production (using punch removal technique) at Orlovets. The blades are regular, and medium to large; the tools consist of two endscrapers and a multiple burin on truncation (Цонев 2017, 41-2; Тсонев 2000, 33, fig. 2.2). My interpretation of the tools is slightly different – I would argue for truncated blades instead of endscrapers, but the general impression is that the small tool repertoire from Orlovets is noticeably different from other sites belonging to the regional Neolithic (fig. 7. 2).

The recently discovered Early Neolithic site of Varbitsa (Shumen district) exhibits a thick cultural layer with finer stratigraphic subdivisions. The earliest pottery shows af-
filiation to early Koprivets, while the subsequent layers have ceramics belonging to the Ovcharovo culture and could be contemporaneous with Karanovo II and II–III in Thrace (Венелинова и др. 2018). What is noticeable here is the appearance of 6 tools made of flint that is very similar or identical to Balkan flint and which show the typological features of the Early Neolithic formal tools from the Karanovo I–II periods (fig. 5.2). This site is promising as a missing ‘link’ between the rare Early Neolithic sites in northeast Bulgaria and the homeland of the Karanovo I–II cultural alliance in the southern part of the country. Publication of the site (with a series of 14C dates) is in preparation.

To sum up the evidence from the sites in north Bulgaria: i) apart from a small series from Varbitsa, no certain occurrence of Balkan flint formal tools is attested among the assemblages; ii) there are sites with secure evidence of a chaîne opératoire based on local raw material supply and flake production; iii) Balkan flint products are attested mainly in the Dzhulyunitsa assemblage, which however is devoid of formal tools; iv) Balkan flint outcrops were easily accessible by the inhabitants of Ohoden as well as by the population in the central part of north Bulgaria; iv) within the assemblages no sickle inserts are attested (apart from 3 pieces from Plochite). This fact raises questions when contrasted with the evidence of crop taxa identified at Neolithic sites in the region (Marinova, Krauss 2014).

Raw material of the Early Neolithic flint assemblages

The raw material of the Early Neolithic flint assemblages represents one of the most distinctive characteristics of these assemblages. The formal tools are made from yellow-honey (waxy) coloured, white spotted high-quality flint called in the literature ‘(Pre-) Balkan platform flint’, or more recently – ‘Balkan flint’ (fig. 8). The background to the problem of Balkan flint and its place within the Neolithization agenda have already been presented in detail elsewhere (Gurova 2012a).

Geologically, Balkan flint belongs to what is called Moesian flint (termed by C. Nachev after the Moesian Platform and adjacent parts of the Balkan Alpine Orogen), which is of Upper Cretaceous (Campanian and Maastrichtian) age (Начев 2009; Gurova, Nachev 2008). Targeted research has been carried out in recent years with field prospection for raw material outcrops and various types of analytical procedures: micro-petrography, electron probe micro analysis (EPMA) and LA–ICP–MS of raw material samples and artefacts from Early Neolithic sites (Bonsall et al. 2010; Gurova et al. 2016). These analyses made it possible to determine their composition and the geological formations from which they originated, such as the Mezdra Upper Cretaceous Siliceous-Carbonate formation.

There are several clearly identified Balkan flint outcrops, mainly in the Pleven–Nikopol area: i) the Zhernov site – south of Nikopol on the river Osam, with an abundance of raw material nodules in secondary positions, as well as artefacts. A large workshop site was probably located there, with no reliable evidence for its chrono-cultural determination, but clearly belonging to Holocene exploitation; ii) the site of Ali Koch Baba Teke in the southern part of Nikopol, with primary deposits of flint concretions in Upper Cretaceous chalk-like limestones and a series of artefacts with no diagnostic cultural characteristics; iii) Mouselievo, to the south of Zhernov, with primary deposits of BF (and its varieties) and documented to have been used in the Palaeolithic and the Bronze Age; iv) along the road to the southwest of Nikopol there are many geological profiles with flint concretions similar to

3 The flint assemblage is under study by the author.
Fig. 8. Early Neolithic artefacts and formal toolkits of Balkan flint from Bulgaria (1-5, 7, 9) and Serbia (6): 1 – Yabalkovo; 2 – Rakitovo; 3 – Slatina; 4 – Dzhulyunitsa; 5 – Kovačev; 6 – Aria Babi; 7 – Kovačev; 8 – Yabalkovo; 9 – Ohoden (after Gurova et al. 2016, fig. 2)

Обр. 8. Раннонеолитни артефакти и диагностично оръдия от балкански флинт от България (1-5, 7, 9) и Сърбия (6): 1 – Ябълково; 2 – Ракитово; 3 – Слатина; 4 – Джулюница; 5 – Ковачево; 6 – Ария баби; 7 – Ковачево; 8 – Ябълково; 9 – Оходен (по Gurova et al. 2016, fig. 2)
Ali Koch Baba; v) numerous concentrations of secondary placer flint nodules on the banks of the Danube near Nikopol (Gurova 2012a, fig. 13; Gurova, Bonsall 2014b; Gurova et al. 2016).

Recently, during a short geological fieldwork in the region of Shumen, several new flint outcrops have been recorded, one of the flint types identified possesses very similar visual characteristic to Balkan flint. It is worth recalling here that B. Voytek presumed north Bulgaria (and the Shumen area in particular) as the likely provenance area of the yellow white-spotted flint, recognized among assemblages from the supra-regional Early Neolithic complex in the Balkans (Voytek, B. 1987, 293). Samples of the newly identified flint types, as well as new archaeological samples are being subjected to the same laboratory procedures as applied previously – analyses of the micro-petrography and chemical composition (LA–ICP–MS) – and will produce an additional database for further comparative studies.

A real obstacle to reconstructing the Balkan flint supply system and exchange network is the lack of securely stratified Early Neolithic workshops in the vicinity of the outcrops, as well as reliable evidence for household workshops in a settlement context. As for the distribution of BF from real and potential source areas, a GIS model has provided a challenging but promising pattern that needs further investigation (Gurova, Bonsall 2014b, fig. 14).

The Balkan flint distribution system was one of two major lithic exchange networks operating in Southeast Europe during the Early Neolithic. To the south of the Balkan flint province, obsidian from outcrops on Melos was traded throughout the Aegean and coastal areas of mainland Greece and western Anatolia within a highly evolved network system (Perlès et al. 2011; Reingruber 2011).

One challenging question is whether the Balkan flint network shared the same characteristics and how long it functioned. As it is stated and demonstrated this raw material and the subproducts derived from its exploitation were certainly moved to the neighbouring regions and over very large distances, comparable to (or even greater than) those of the Melian obsidian network (the straight-line distance from Nikopol to the Aegean island of Gökçeada, for example, is around 400 km) (Gurova, Bonsal 2014b, 127).

Another part of the problem is how to identify the flint knappers involved in the production and distribution of Balkan flint artefacts. As mentioned above, it is still unclear i) who were the new flint knappers and; ii) from where did they come bringing the know-how of quite large Early Neolithic blade production; iii) were they masters in the workshops near the Balkan flint outcrops, assuring mass production for local, regional and supra-regional distribution which was carried out by itinerant traders; iv) or were they mobile groups of knappers providing Balkan flint nodules/cores/blanks/tools to the surrounding households and communities? Some of these unresolved questions refer directly to the uncertain and highly disputable evidence of the pre-Karanovo milieu (vide supra), and suggest more attention needs to be paid to the social meaning of the studied artefacts and events. Apart from the technological/economic level of interpreting the Balkan flint circulation, we should bear in mind the fact that the exchange of goods and ideas was a matter of social agency underlain by concrete messaging and sophisticated symbolic meaning.

Many challenging questions were provoked by the role and significance of Balkan flint as a preferred material for producing diagnostic tools during the long-lasting Karanovo I–II cultural koiné. Some in relation to identifying Balkan flint outcrops are at least partially resolved. But others remain to be answered. Each aspect of the technological, economic and social value of Balkan flint requires particular attention and serious research. The present
author’s goal is to pursue further research into this issue with more analytical results and reasoned interpretation.

Late Neolithic flint industry

**General background notes**
The Early Neolithic lifeways, including the important role of Balkan flint in subsistence and household activities, as well as in the exchange of social messages and symbols, changed gradually in the second half of the 6th millennium BC with the onset of the Late Neolithic. This was part of a general significant shift in material culture and social organization. There are changes in site location (topography), settlement patterns, building strategy and architecture, as well as in the characteristics of pottery assemblages (Николов 1998, 2004; Тодорова, Вайсов 2003). The significance of the different features and multi-faceted progressive changes between the Early and Late Neolithic cultures has led some scholars to distinguish the so-called ‘Early and Late Neolithic cultural block’ with additional subdivisions. In Thrace a discontinuity between these two blocks is affirmed; the dislocation of the population from tells to the plateaus is explained by climatic change with increasing humidity (Тодорова, Вайсов 2003, 125).

Recently published research on the Neolithic in southwest Bulgaria is offered by M. Grębska-Kulow, with a well-defined transformation occurring during the Late Neolithic in the Middle Struma Valley. She identified a cultural group with a short time-span (the Balgarchevo II–Dolna Ribnitsa ceramic complex) corresponding to the transition between Early and the Late Neolithic on a regional scale. As for the Late Neolithic, “several new phenomena” are identified with the following features: i) an increase in the number of settlements across the entire region as the new sites are single-layer and short-term; ii) considerable change in the size and location of the settlements – marked by a shift to higher locations and terraces and some became very large in area (Грёбска-Кулов 2017, 260).

On the other hand, a continuous development with smooth transformations in post-Early Neolithic Thrace (recognized in the ceramics) is asserted by V. Nikolov based on a meticulous analysis of pottery shapes, style and decoration (Николов 1998). The hallmark of the Late Neolithic ceramic complex – black burnished pots – appear in the Karanovo III period followed by the gradual evolution and increasing spatial distribution of this pottery during the successive Late Neolithic. This pottery embodies the dichotomy of retaining key features of its Anatolian roots whilst incorporating elements of local diversification and variation, maintained through a continuous process of interaction (Николов 1998, 222).

Thus the increasing regionality in the second half of the 6th millennium BC is convincingly demonstrated by a phenomenon of the black-burnished ceramics which “reflects all over the Balkans a certain measure of concordance, and local variations in pottery styles can be better defined than in previous periods” (Özdogan 2017, 24).

**How did the flint industry change in this dynamic context?**
As mentioned above, the evolutionary changes in the Neolithic flint industries from western Bulgaria were presented by Gatsov (1993) who pointed out the technological degradation in flint industries during the Late Neolithic. What is important too is the fact that endscrapers became the dominant typological group in Late Neolithic assemblages (Gatsov 1993, 51). The endscraper prevalence is best represented in the assemblages from Topolnitsa and Damianitsa. Further consideration of the transformation of flint assemblages in post-
Early Neolithic times was provided by the current author with additional data, new ideas and overviews based on a diachronic comparative analysis of flint assemblages from many different types of Neolithic settlements (Gurova 2002a, b; 2004; 2005; 2010; 2014a; 2017b).

The argument for an important transformation is supported by: i) the increasing role of local raw materials and limited demand for Balkan flint, ergo – a decline of the distribution system; ii) a decrease in large, ordinary blade production and consequent prevalence of flake debitage with subsequent transformation into tools on flakes (mainly endscrapers); iii) an increased diversity of endscrapers both in typological and morphometric parameters, but with obvious reduction in length and increasing shape variation; iv) evident microlithization, represented by small cores for blades (bladelets) and two categories of retouched artefact: (very) small endscrapers on flakes (typically semicircular in shape) and geometric microliths sensu stricto (trapezes, crescents/segments and rare atypical shapes) (fig. 9)

Only two tell sites (Karanovo and Kapitan Dimitrievo) offer the possibility of studying the flint assemblages in diachronic perspective and in different environmental settings.

During the Early Neolithic Karanovo I–II periods at the eponymous tell site, a clear orientation toward the production of medium to big blades (‘macroblades’) from Balkan flint occur, which were subsequently transformed into diagnostic formal tools with evidence (in some cases) of multiple rejuvenation. In the Late Neolithic, sporadically in Karanovo III and mainly in the Karanovo III–IV and IV periods, changes occurred in the technology and morphometric parameters of the lithics; medium to big blades decrease in number, some tendency towards microlithization occurred attested by the appearance of small and micro-cores for blades (bladelets) and 3 geometric microliths (2 trapezes in Karanovo III–IV and a segment in Karanovo IV). Typological ‘evolution’ is expressed in the progressive decrease of formal tools, which survived as reminiscent forms until the Karanovo III–IV period. In contrast, there was a progressive increase in the frequency of endscrapers which appeared in the Karanovo IV period and reached their developed stage in the later Chalcolithic Karanovo V and VI periods (Gurova 2002a; 2004; 2005). These developments in the flint assemblages (which are conservative rather than very flexible and easily changeable) are smooth and gradual.

The assemblages from Tell Kapitan Dimitrievo is interesting because of the recognition there of a particular final phase of the Late Neolithic. My observations regarding the typological spectrum (which is not abundant or rich) allowed me to conclude that the development of Kapitan Dimitrievo shows closer affiliations both diachronically and typologically with the materials from Thrace rather than with the west Bulgarian model of Neolithic development marked by perceptible technological degradation (Гюрова 2001, 40).

The aforementioned changes are attested in all Late Neolithic flint assemblages to varying degrees, due to the different settlement patterns. The changes are smooth with clear evidence for continuity in the characteristic traits between the Early and Late Neolithic assemblages on tell sites, while among strictly Late Neolithic assemblages from flat or ‘thin layer’ settlements, the industry can be mixed but it is dominated by the Late Neolithic diagnostic features as described above. In the second category are the flint assemblages from sites such as Ussoe I, Balgarchevo⁴, Harmanli, Apriltsi, Ezero, Sarnevo, with the most

⁴ The site of Balgarchevo is important for demonstrating the transformation between Early and Late Neolithic in the Middle Struma valley (vide supra). The small assemblage studied by the author was not stratigraphically distinct which diminishes its significance. Further precision of the artefacts’ context (in publication) will hopefully reinforce my preliminary observations.
important examples presented briefly below.

The site of Ussoe I should be highlighted as a typical example of a Late Neolithic flint assemblage north of the Balkan mountains. The assemblage was studied and published by both Gatsov and Skakun (Скакун 1994; Gatsov 1990). The site is defined as belonging to the
complex of Vinča type cultures and could be synchronous with Kaloyanovets (Karanovo IV) in Thrace (Тодорова, Вайсов 1993, 98, табл. 10). The flint assemblage is very large (more than 20,000 artefacts) with a marked prevalence of flakes and a rich repertoire of endscrapers (including regular, fan-like and semi-circular forms), which are the predominant typological category (representing more than half of all tools). In addition, there are retouched blades and flakes, perforators/borers, notches and several geometric microliths. The particular features of this assemblage and the striking dominance of endscrapers provoked a special study by Tsonev, including assemblages from north-central Bulgaria, in which he pointed out the similarity between the assemblages of Ussoe I and the Late Neolithic stratum at Kachitsa (Цонев 2007, 65).

The site of Sarnevo, interpreted as a ‘pit-field’, was part of a recently published large-scale rescue excavation (Bacvarov et al. 2017). A prehistoric stratum belonging to the Karanovo III–IV period in Thrace was uncovered there. The flint assemblages were studied and published by the author (Gurova 2017b). There are three distinct flint assemblages – the first and largest is that from the pits, the second belongs to well-stratified layer 2 (which contains material like that in the pits), while the third assemblage is from the superficial layer 1 of doubtful stratigraphic integrity. My assessment of the assemblages is based on a detailed study and subsequent comparative analysis. In general, endscrapers prevail (most of them with Late Neolithic characteristics (vide supra), retouched blades and flakes, but there are also small series of formal tools of Balkan flint. Within the tool repertoire there are 15 geometric microliths (fig. 10.2). There is, however, clear evidence of Early Neolithic formal tools among each of the above-mentioned assemblages with prevalence in layer 1. Their occurrence within the particular ‘pit-field’ structure (fig. 10.1) could refer to a documented but unexcavated Early Neolithic tell nearby, from where these attractive artefacts could have been taken and reused by the creators and consumers of the ritual practices that were performed Sarnevo according to the discoverers (Bacvarov et al. 2017, 237).
The site of Harmanli belongs to the Karanovo IV period (Бъчваров и др. 2005) and has a rich flint assemblage (more than 1400 pieces) that is very important for characterizing the Late Neolithic flint industry (Gurova 2010) (fig. 11). This latest phase of the Neolithic is easily recognizable by the predominant flake debitage based on local raw materials, and small cores for blades, bladelets and flakes. The typological repertoire has well-defined characteristics of a Late Neolithic assemblage: the prevalence of small endscrapers (including those on flakes), a high frequency of retouched blades, and three geometric microliths – a trapeze, a crescent and a pentagonal tool. It is noticeable that several artefacts of the Early Neolithic formal tool category occur. Their presence, given the existence of an Early Neolithic layer on the site, could be interpreted as reuse of formal tools found in the surroundings.

A site of interest in many respects is Tell Provadia, the first inhabitants of which have been identified as coming from Thrace bearing cultural features belonging to the Late Neolithic Karanovo III–IV period (Николов 2009). Particularly intriguing is how the flint assemblages of this migrating population changed after adapting to the new environmental and cultural conditions. Two assemblages are considered here – from the central trench and dwelling 4. Flake-based production is attested with flake cores, as well as small cores for blades and bladelets. Tools are not numerous with a limited repertoire, which consists of endscrapers on shortened blades) and retouched blades (Анастасова 2009а, b). A further diachronic and comparative analysis of flint assemblages from the Late Neolithic and Chalcolithic layers of the tell will undoubtedly contribute to the problem of continuity and adaptation of the Late Neolithic life-style.

As far as the geometric microliths are concerned, they appear in different Late Neolithic contexts as follows: tell settlements – Karanovo (Gurova 2002а; 2005), Drama–Gerena (Lichardus et al. 2000); flat sites – Harmanli (Gurova 2010), Ussoe I (Скакун 1994), cemetery – Durankulak (Hamangia culture phases I–II) (Gurova 2002а; Sirakov 2002), and the so-called pit complexes – Ezero, Sarnevo (Gurova 2017b) and Lyubimets–Dana Bunar 2 (Анастасова 2012). The Late Neolithic microliths are the most numerous among all Holocene geometric microliths from Bulgaria (fig. 12). Late Neolithic assemblages with microliths are intrinsic to the radical changes in material culture that took place after 5500 BC, and the microlithisation of the flint industry is just one aspect of this change. Thus, they could be considered as one of the peculiar and even diagnostic features of the transformation of the Late Neolithic flint industry. More details about geometric microliths from the Neolithic in their comparative and diachronic perspective are presented in Gurova (2017a).

There is however a consideration that should be taken seriously in the context of the Holocene manifestation of the geometric microliths. Although they are most numerous in Late Neolithic assemblages, there is an erratic aspect to their temporal and spatial distribution, which cannot be overlooked, but it is a fact that this random presence/absence can only partially be thought of as related to the excavation techniques (some of which did not permit the recovery of microliths).

Apart from the techno-typological split of the flint industry, another question that needs further investigation and an answer concerns the shift in raw material (particularly Balkan flint) procurement and network distribution which took place at the beginning of the second half of the 6th millennium BC. After its fundamentally important role in the Neolithization process and its wide distribution in the Early Neolithic of Southeast Europe, Balkan flint use and significance declined after the Early Neolithic, most probably during the Karanovo III or III–IV period (Gurova 2011b).
Fig. 11. Late Neolithic flint assemblage from the site of Harmanli (Karanovo IV period) and microphotographs of use-wear traces (x 100) taken on the points marked by an arrow: a – MLIT (Micro Linear Impact Traces) of use as transverse arrowhead; b-d – cereal polish of sickle inserts (drawings and microphotographs by M. Gurova)

Обр. 11. Къснонеолитен кремъчен ансамбъл от Харманли (Караново IV) и микрофотографии на следи от използване (x 100) в участъците, обозначени със стрелка: a – комплекс следи от употреба като връх на стрела; b-d – излъскване от употреба като елемент от сърп (рисунки и микрофотографии М. Гюрова)
Fig. 12. Late Neolithic geometric microliths: 1 – from the site of Drama–Gerena (rearranged after Lichardus et al. 2000, 4); 2 – from the site of Ezero (Drianova Tell) (drawings by M. Gurova); 3 – from the site of Lyubimets–Dana Bunar 2 (rearranged after Anastassova 2012, 21, fig. 2) (after Gurova 2017a, fig. 3)

Обр. 12. Къснонеолитни геометрични микролити от обектите: 1 – Драма–Герена (аранжимент по Lichardus et al. 2000, 4); 2 – Езеро (Дрянова могила) (рисунки М. Гюрова); 3 – Любимец–Дана бунар 2 (аранжимент по Anastassova 2012, 21, fig. 2) (по Gurova 2017a, fig. 3)
The radical change in raw material procurement strategy and distribution during the transformation from the Early to the Late Neolithic is a serious question and the explanation of Gatsov seems too simplistic and demands additional meaningful insight. His statement is that the Early Neolithic groups from west Bulgaria “were able to exploit raw material sources ... very distant from their settlements” but during the next period “exchanging or obtaining blanks made on yellow flint became impossible” (Gatsov 1993, 41).

Current knowledge of Balkan flint provenance and its inter-site distribution resulted in a scenario where the crucial role in the network system was logically related to the Early Neolithic enclaves in north Bulgaria (see Gurova, Bonsall, 2014b). Whether there was a monocentric or polycentric principle of Balkan flint primary acquisition is still not provable due to the absence of Balkan flint workshop areas in or near any of the known settlements. What is undeniable is that the only access of the Karanovo I–II cultural alliance to Balkan flint was by mediating with the population in north Bulgaria, at least in the initial stages of exploitation of this material. In the classical Karanovo I the evidence of a broader and well established network of Balkan flint is indisputable and does not exclude participation of special groups of people from the Karanovo I cultural koiné, which is of course difficult to perceive in the archaeological record.

As for the obvious and gradual decrease of Balkan flint circulation and use during the Late Neolithic, there are several interpretive trajectories related to general cultural changes, such as the controversial issue of demographic growth. This is presumed for the Struma valley region (Grębska-Kulow 2017) but at the same time abandonment of the multilayered sites in northern Bulgaria occurs (Reingruber 2017, 107). So, there should be no natural constraint on access to Balkan flint sources in the Late Neolithic, but it seems the deep transformation in settlement pattern and social structure destroyed the Balkan flint network and distribution system, which functioned successfully during the centuries of the Early Neolithic cultural development.

Most Late Neolithic flint assemblages show variability in the raw materials used for debitage and tool production. The raw materials are mainly local, coming from secondary placer deposits of siliceous rocks. The needs of the numerous Neolithic sites in Thrace were met by easily accessible raw materials within the Maritsa River catchment (containing alluvial-colluvial sediments), rich in re-deposited materials from Palaeogenic flint rock masses that are widely distributed in the Plovdiv district and the Eastern Rhodopes.

There is no satisfactory explanation for the important changes that took place during the Late Neolithic in the second half of the 6th millennium BC. The transformations concerned every aspect of material culture and indicate some fundamental demographic and social processes that remain unclear. One of the strongest lines of evidence for the changes comes from the new black-burnished pottery (and, by extension, its producers), which spread in the middle of the 6th millennium BC and which is defined as the Karanovo III period/cultural event in Thrace. The changes are usually seen in the context of migrations and multidirectional cultural influences, but the problem remains unresolved. Data from multidisciplinary research into regional palaeoenvironmental conditions have yet to be fully integrated into explanatory models.

Discussion and Conclusions

Some of the questions arising from foregoing review have already been discussed above. In this section, I will focus on the perpetual (or “endless”, cf. Roodenberg 2016) de-
bate on Neolithization.

Too much has been written about ceramic variations, cultural interactions, demic and endemic movements, steps and timing of Neolithic invasions vs acculturation, models of adoption, relative and absolute \(^{14}\)C correlations, etc. The most original and creative approach is that of C. Perlès who convincingly argued that formal parallels between artefacts, with their implications of direct influence and interaction, are frequently over emphasized (Perlès 2005).

The conceptual limitations of the traditional approach to Neolithization were demonstrated in the most recent paper on Neolithization from the perspective of the flint industries by two different research teams led, respectively, by I. Gatsov and J. Kozłowski. These rather incoherent parts of the paper place emphasis on the results produced during years of searching for the emergence of the Early Neolithic “macroblade” industry (e.g. Gatsov et al. 2017). Beyond detailed self-citations in a retrospective discourse (by Gatsov), and a correction in Kozłowski’s hypothesis about the origin of ‘silex blond’ (now thought to be from Albania rather than northern Bulgaria), nothing was offered that advances the debate. A selection of publications by Gurova (three co-authored with C. Bonsall) provoked Gatsov et al. to respond with a ‘critique’, but one afflicted by a degree of misreading, misunderstanding and misinterpretation of the publications in question. Only two arguments in Gatsov et al.’s paper merit comment: the first concerns Gatsov’s emphasis on bullet cores, circulating in his research for decades as evidence of striking disconnectivity between the Marmara region and the Early Neolithic in Bulgaria; the second concerns burins (as typological markers) that are said to be absent from eastern Thrace, the Marmara area and Bulgaria (which is not true!) but are documented at Uğurlu and Aktopraklık (Gatsov et al. 2017, 60). None of these considerations seriously affects the Neolithization debate and the role of lithic (flint) technology, leaving aside the thought-provoking work of Perlès (vide supra).

Returning to the flint aspect of Neolithic pathways, it should be stressed that in the present state of research none of the conventional scenarios and paradigms of the Neolithic spread is workable without taking into consideration the Balkan flint outcrops and their accessibility to the Neolithic settlers. As argued elsewhere, “the spread of the Balkan flint formal toolkit over a large territory and its co-occurrence with other distinctive socio-cultural traits, between c. 5900–5600 cal BC, implies the existence of a sophisticated exchange network with a high degree of interaction”, based on a pre-existing system (Gurova, Bonsall 2014a, 103). Moreover, in spite of the lack of direct archaeological evidence, the most plausible way for the first Neolithic colonists to reach northeast Bulgaria and the Balkan flint resources was via a northward expansion of farming from northwest Anatolia along the (now submerged) Black Sea coastal plain and then along the Danube (Gurova, Bonsall 2014b, 126), revitalising a hypothesis that had fallen out of favour. Arguably, the latest aDNA research supports this theory.

Let us return to the ‘endless’ nature of the debate. Based on a paper by Mathieson et al. (2015) and archaeological evidence from the Marmara region, J. Roodenberg wrote in 2016: “The combined outcome of the radiocarbon dates and DNA analyses clearly illustrates that from as early as the middle VII\(^{th}\) millennium, northwest Anatolia must no longer be perceived as a cul-de-sac but as a passageway employed by migrating agriculturalists” (Roodenberg 2016, 4).

New research based a genome-wide DNA analysis has produced data for Bulgarian sites (incl. Early Neolithic samples). The results convincingly demonstrate the genetic closeness of the Bulgarian Early Neolithic population ‘with the northwestern-Anatolian-Neo-
lithic individuals” (Mathieson et al. 2018, 199). Although the palaeogenomic data should be treated with caution, we should start to consider seriously the scientific facts and re-think our interpretive trajectories.

Particularly intriguing for the author (MG) is the evidence of hunter-gatherer-related ancestry in the individuals from Malak Preslavets (Mathieson et al. 2018, 199), a site considered as belonging to the Early Neolithic (Панайотов и др. 1992) with only a brief and rather vague description of the flint assemblage (Гацов 1992). Unfortunately, it does not seem realistic to expect new insights about the archaeological finds from this settlement, apart from adjustment of the AMS dates.

It is my hope that faced with so many new challenges, the prehistoric archaeology agenda will become newly conceptualized and will reach a new level of scientific endeavour and scholarly competence.

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Flint assemblages in the context of cultural transition during the 6th millennium BC: a case study from...


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Статията представя синтезиран преглед на неолитни кремъчни ансамбли от България в диахронен аспект, с отчитане на диагностични белези за отделните периоди, както и на признаци и прояви на трансформации. Взети са под внимание данни за ансамблите от 32 селища, повечето от които са проучвани от автора, а за останалите са ползвани обнародвани данни. Във въвеждащата част е представена културно-хронологическата рамка на неолита, основана на осъвременената Карановска периодизация, която е използвана като обща база за относителна културна синхронизация.

Авторът се основава на своя, вече аргументирани, тези по основни проблеми като: а) мястото и ролята на кремъчните ансамбли в контекста на неолитизационния процес; б) обособяването на характерни (стабилни и повторяеми) типове оръдия, които са изведени в категорията “formal tools/toolkits” и са дефинирани като диагностични за раннонеолитните култури, отнесени към периодите Караново I и II, но с масирана първа поява и широко разпространение в рамките на култура/културна общност Караново I, с емблематичната бялорисувана керамика; в) ролята на балканския флинт като суровина с изградена система за добив и надрегионално разпространение през ранния неолит; г) видимите трансформации в техно-типологическия облик на кремъчните ансамбли през втората половина на VI хил. пр. Хр, които се проявяват най-общо в затихване на производството на големи пластини, оформяни в диагностични оръдия, както и в микролитизация на индустрията; д) промяната в асортира нето на ползваните кремъчни суровини през късния неолит, които свидетелстват за промяна в стратегиите за добив и за необратим упадък на изградените мрежи за разпространение на балкански флинт.

Всички изброени наблюдения и заключения на автора са подплатени с нови анализы, аргументи и данни, което разширява емпирическата база на проучването както и неговата интерпретационна рамка.

Отчетено е обстоятелството, че в обекти със солидни културни секвенции, обхващащи ранно и къснонеолитни периоди, регистрираните промени в кремъчната индустрия са плавни и проследими. В различните по характер нововъзникнали селища от късния неолит се проявяват отделни белези на кремъчните индустрии (вкл. диагностични раннонеолитни оръдия като преизползвани артефакти от различни контекти), но доминиращите признаци на ансамблите са свързани със споменатите по-горе трансформации (включително към микролитизация): микроядра, типологически репертоар с превес на стъргалки (повечето от отломъци), серии геометрични микролити.

Трансформацияте в кремъчните индустрии през късния неолит са вписани в общата картина на дълбоки социално-икономически промени след 5500 ВС, които са отчетливо регистрирани в археологическите свидетелства (в керамиката) през късния неолит, а се изразяват в поява и разпространението на тъмната керамика.
върхност). Проблемът за причините, довели до осезаемите и разнородни изменения в живота на неолитните общности, остава отворен и изисква целенасочено интердисциплинарно проучване.

В дискусията се подчертава обстоятелството, че нито една от съществуващите теории за неолитизацията на нашите земи не може да се възприеме безкритично. Необходим е алтернативен прочит на археологическия запис с отчитане и осмисляне на обстоятелството, че проявитите на развитата раннонеолитна култура през периода Караново I неизбежно са били свързани с пред-Караново I субстрат. В неговия контекст на milieu favorable, балкански флинт от Северна България е бил добиван, разпространяван и оформян в характерните за карановския културен кръг диагностични оръдия.

А относно надрегионалните измерения на нестихващия неолитизационен дебат ... новите археогенетични изследвания провокират (а и налагат!) преосмисляне на парадигмите и ‘реабилитация’ на Северозападна Анатолия в сериозния научен дискурс.