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RAW MATERIALS EXPLOITATION STRATEGY ON THE TERRITORY OF BULGARIA DURING EARLY PALAEOLITHIC PERIOD

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The geographical situation of Bulgaria, in the southern part of the Balkan Peninsula, reflects its crucial position between three continents, a region of extremely favourable natural conditions, abundant flint raw materials and potential for human migration from south to north through the passes of the Rhodopes and Stara Planina mountains. The Bulgarian Black Sea coast is a zone of contact between both northern and southern Black-Sea shores. The Danube River valley links Middle Europe and Balkans and the Black sea coastal zone. These natural factors have always favoured early human migration into the European Continent (Fig. 1).

Joint Bulgarian and French investigations dur-

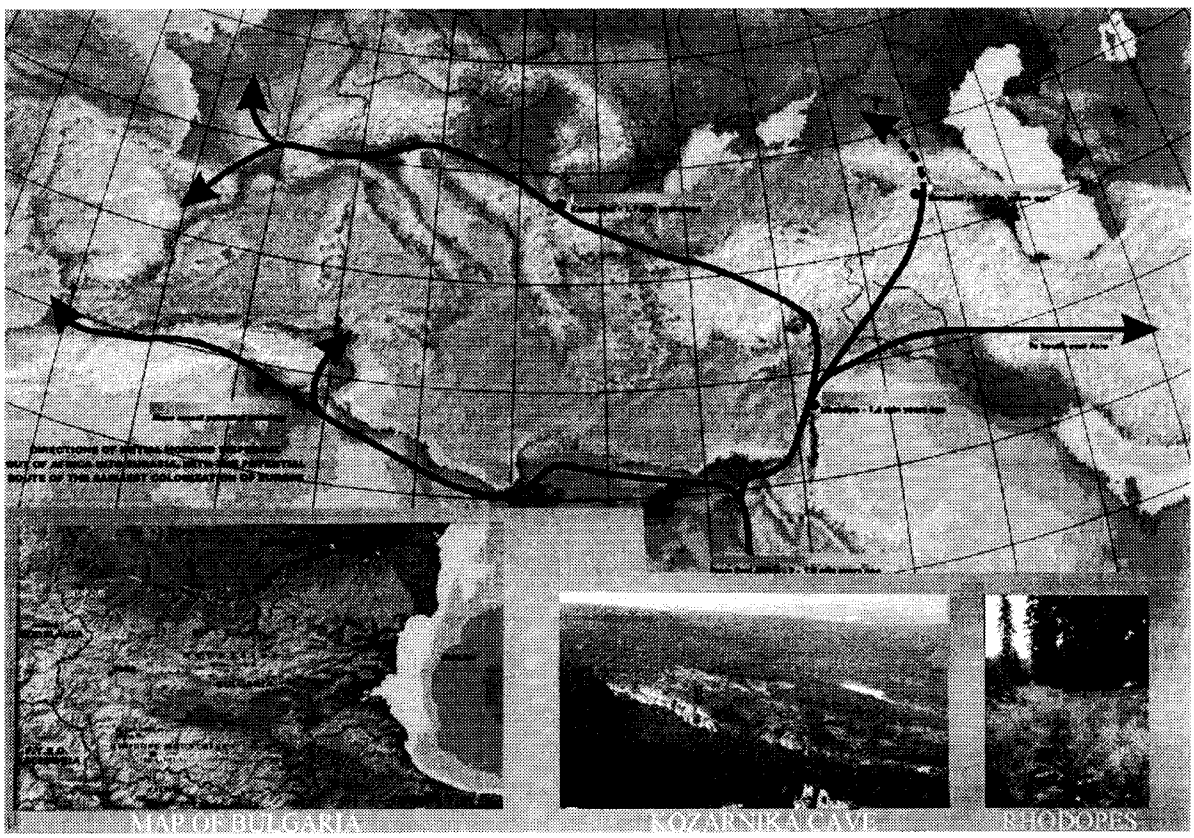

Figure 1. Map of potential routes of the earliest colonization of Europe; map of Bulgaria and localization of Early Palaeolithic sites; view to Kozarnika Cave; view to Shiroka Polyana.

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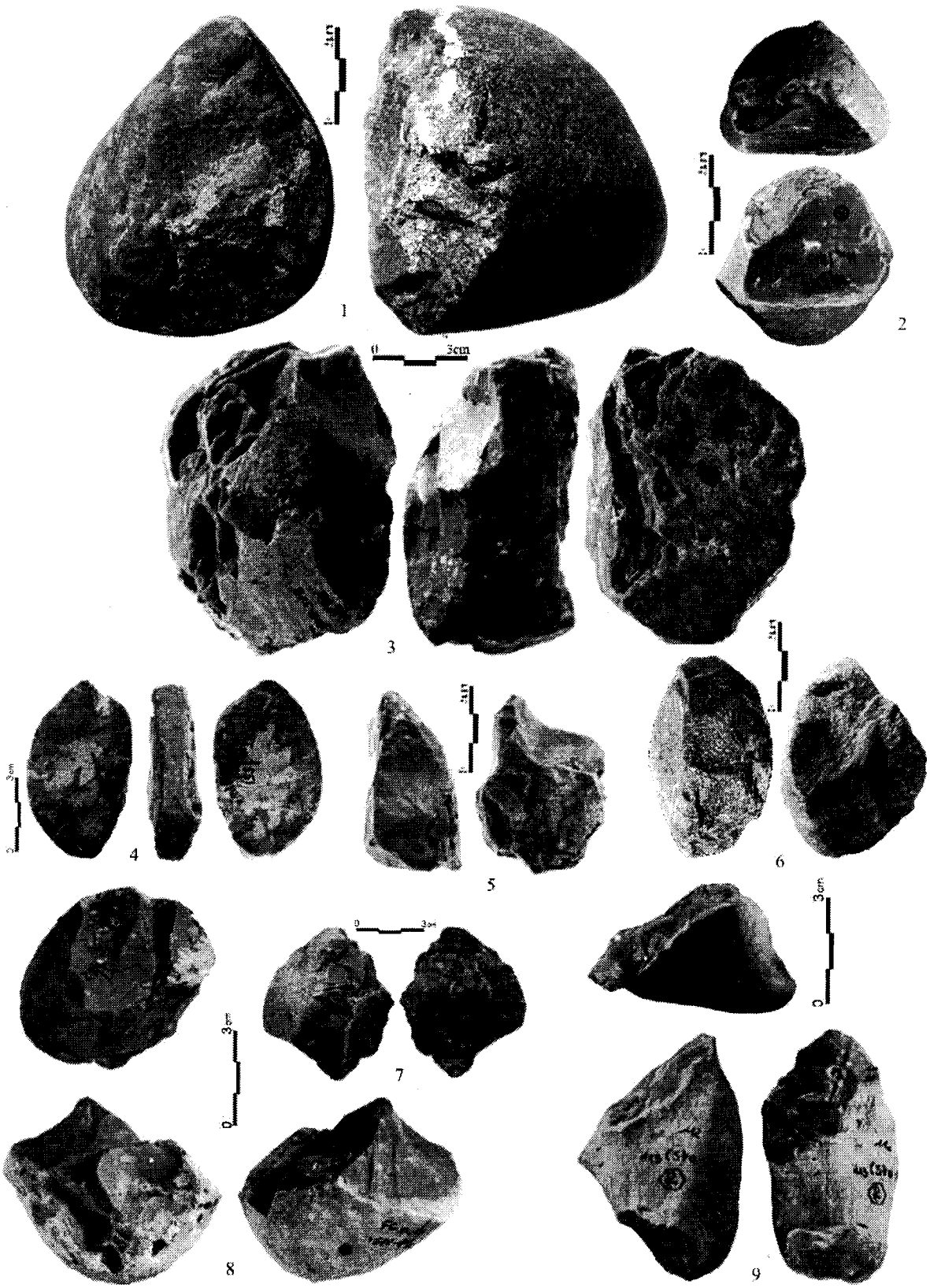

Figure 2. Lower Palaeolithic artifacts - Kozarnika cave. 1, 2, 4, 7-9. Upper part; 3, 5, 6. Lower part.

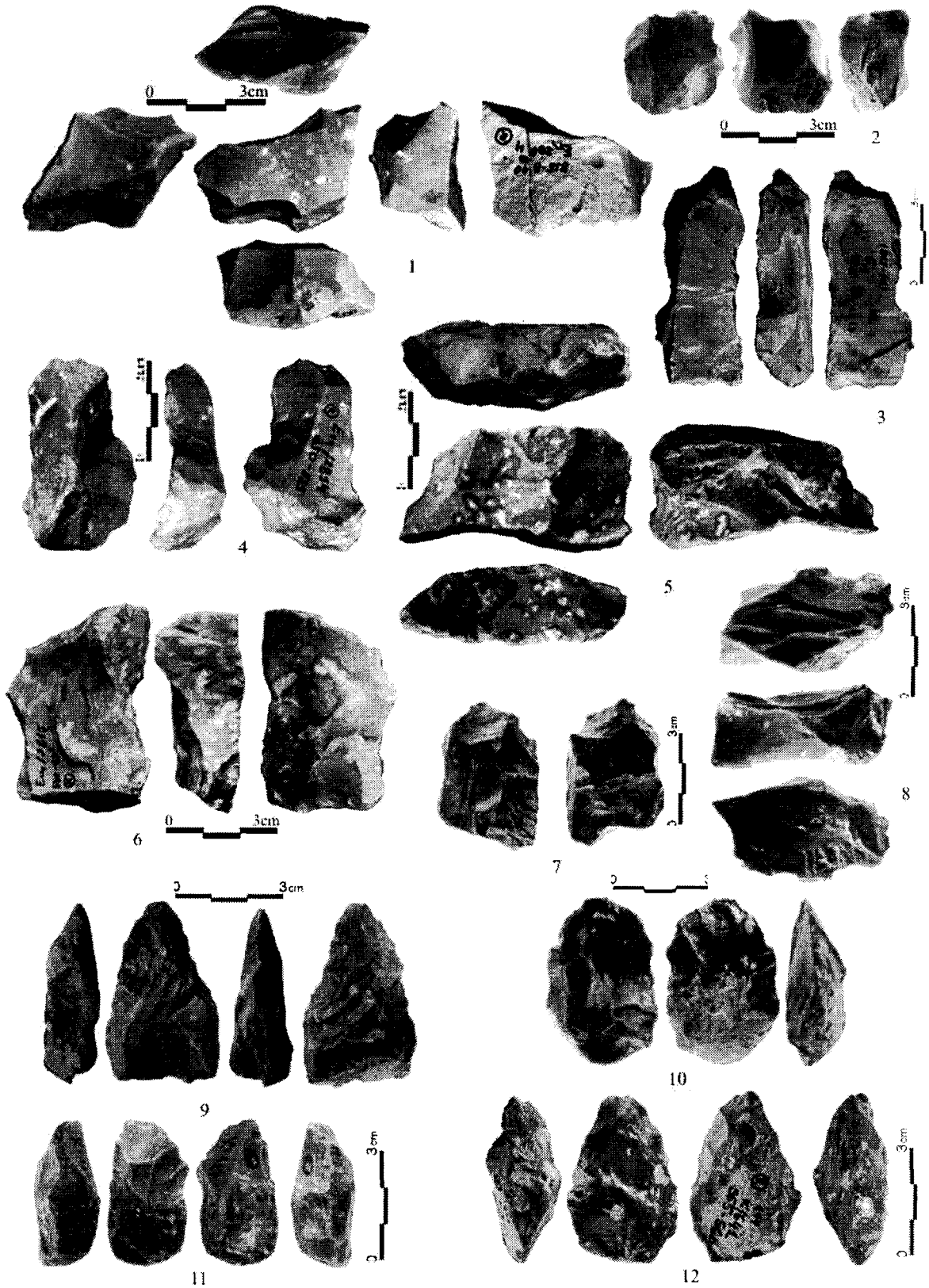

Figure 3. Lower Palaeolithic artifacts - Kozarnika cave. 2, 7-12. Upper part; 1, 3-6. Lower part.

ing the last years revealed much interesting data relating to the earliest traces of colonization of this part of Europe.

1 - Early Paleolithic: Kozarnika Cave

Kozarnika cave is situated in North-West Bulgaria. It had been formed in the Jurassic limestones of Belogradchiks anticline, in the northern part of the West Fore-Balkan, close to Danube Valley. The explored cultural levels are referred to Late, Middle and Early Palaeolithic periods (Fig. 1).

Generally, the Early Palaeolithic sequence is divided into two series: an upper part and a lower part. The layers have been dated on the basis of its fauna-composition and paleomagnetic study. The upper part was formed during the period 600 000 – 800 000 (Brunes-Matuyama). Layer 13, corresponding to lower part series, is the earliest layer containing flint artifacts. According to the preliminary results of the last archaeological season, layer 13 can be dated to 1 600 000 years ago.

The upper sequence of the Early Palaeolithic sequence is characterized by different types of scrapers, notched tools, points, retouched flakes, cores and core-like tools. The cores are made of pieces without any, or with some minimal preliminary preparation. Frequently, the operation consists of the separation of one or few flakes from a raw piece. A frequent type is a core with one or several unidirectional strikes on one of the surfaces. Common are cores with multidirectional usage (Fig. 2:1,2,4,7-9; Fig. 3:2,7,8). Some forms with bifacial retouch are of interest too. Some of them are small atypical bifaces (Fig. 3:9-12). Fragments, tools and cores of quartzite pebbles are often found.

The number of finds decreases in the lower series of Early Palaeolithic sequence. Scrapers are rare, the number of pieces with partial retouch increases. Usually pieces of flint have been used without preparation. There are cores with constantly changing striking direction and flaked surface.

The raw material used in all assemblages is local. Flint nodules are oval-shaped and of small to large dimensions. They are distributed in a limestone deposit and through rock fall have been broken into fragments with natural break surfaces. As a result there are a large quantity accidental flakes and pieces. Palaeolithic toolmakers used a wide variety of flint blocks. It is not a particularly good raw material, the flint has planes of weakness and fissures, and unintentional fracturing was a common knapping accident. In connection with this, we use the term unplanned surface (unplanned flake), for the results of an act of knapping in which the blow is deflected by fissures or weakness. Often such kind of artifacts looks like geofacts. It is not always easy to distinguish intentional and unplanned artifacts from unintentional flaking.

A varied approach to flint raw material usage in relationship to the quality of any specific piece is interesting. Pieces have been split along planes, parallel to the surface. Frequently, concretions have been split to segments. Another manner is to strike the concretion on a hard stone. An encircling band, removing the oval surface of the concretion is thus obtained. Striking on the surface of the band, a bigger first flake was separated. A surface perpendicularly crossing the concretion to axis is also utilised. Strikes are delivered almost at the tangent of the circumference of the surface. In this way, a massive point is formed in the central part of the crossing plane of the concretion (Fig. 2: 4,7,8).

Flint artifacts have small dimensions, due to the dimensions and the specific particularities of local raw materials. Single artifacts made of bigger pieces of better quality, as well as of quartzite pebbles, have bigger dimensions.

2 - The Western Rhodopian region

Other Early Palaeolithic sites were discovered in Southern Bulgaria, in the Western Rhodopian region. The Western Rhodopian relief is of a medium character with strongly indented, dense and deeply incised river system. Level ridges 1450-1650 m above sea-level predominate. This region is extremely rich in diverse and easily accessible flint raw materials.

The contemporary relief of the Rhodopes was formed during the Tertiary epoch when tectonic processes stressed and broke up the Rhodope massif and caused eruptions which spread out on its surface in the form of a huge rhyolithic deposits.

A wide development of rhyolitic mantle with linear channels through which the magma has erupted can be noted in the Shiroka Polyana region. The presence of opal and chalcedony plate-like pieces on the surface is derived from this magma activity. This magmatic activity caused a wide occurrence of opal-chalcedonies with characteristic colour and structure. The flat plate-like pieces have different dimensions, some very large. Their surfaces are covered by a cortex and they often split parallel to the surface plane.

Further to the east, flint raw materials appear in the form of siliceous strata. They comprise opal-chalcedonies, generally coloured in black and gray. They are derived from the post-volcanic activity, relating to the penetration of low-thermal hydroxides, rich in silicon solutions, at the contact zone of limestone and rhyolites. As a result of various landslides and a water flow siliceous material has been carried into the valleys. Redeposited material has been noted in many locations in the region. In the proximity of almost

every 'flint site' traces of the testing and preliminary preparation of siliceous raw material left by the early man have been found.

3 - The open-site of Shiroka Polyana

This site is situated on a broad flat ridge 1500 m above sea level where an area of 4 km² is covered by opal-chalcedony fragments and artifacts. The region has little inclination and is cut by micro valleys and widely meandering streams. The artifacts were collected from the areas devoid of their soil cover and from the microvalleys. Concentrations of artifacts were observed which represent the separate occurrences of different technico-typological and chronological traits. The bulk of the collected artifacts refer to Middle Palaeolithic cultures.

Some of the tools (bifaces, bifaces forms, bifacial side-scrapers, bifacial side-scraper knives) testify to the possibility that some of the artifacts could be referred to an earlier phase in the Palaeolithic.

Traces of cortex or natural surfaces are preserved on the bifacial forms. The artifacts have partly retouch bifacial edges. The proximal ends are massive and mostly natural. The points are not well developed. The collection has an archaic appearance with amor-

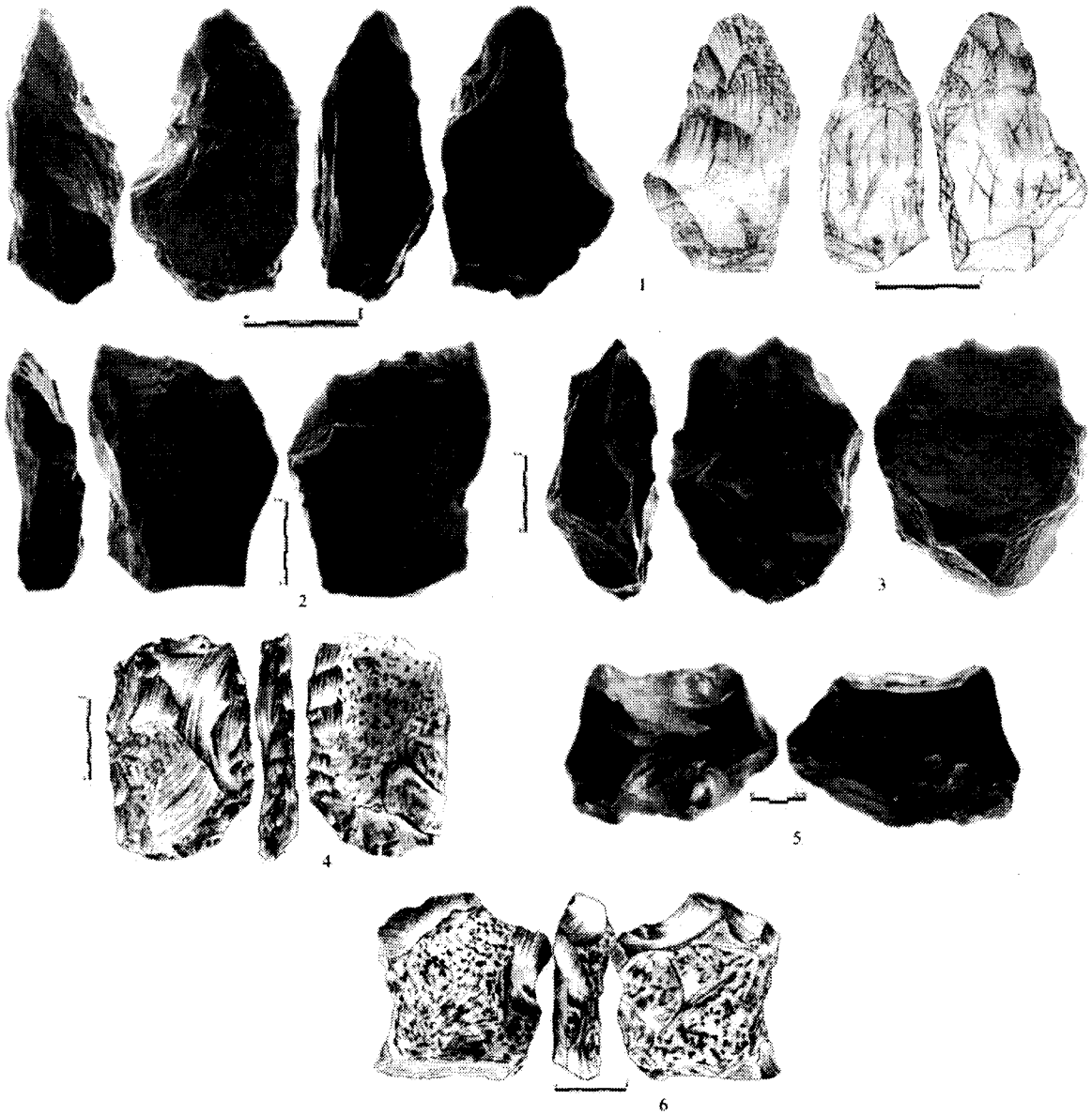

Figure 4. Lower Palaeolithic artifacts from the Rhodopes Mountains - site of Shiroka Polyana.

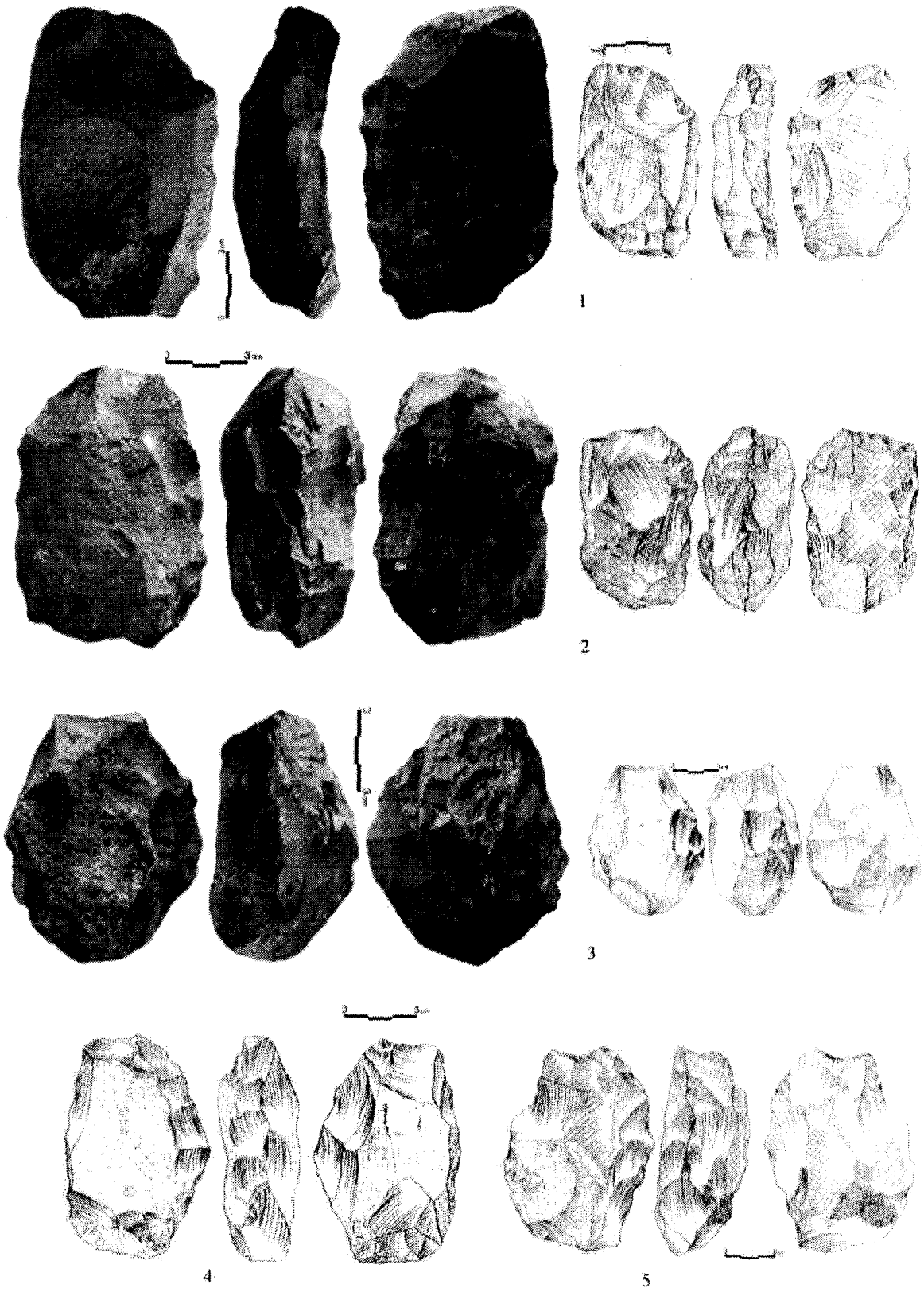

Figure 5. Lower Palaeolithic artifacts from the Rhodopes Mountains - site of Kremenete.

phous specimens predominating.

Only two artifacts can be defined as bifaces (Fig. 4: 1,2). The other specimens include a group of artifacts with flat, covering, bifacial retouch (Fig. 4: 4). Bifacial core-like artifacts form a relatively homogeneous group (Fig. 4: 3,6). The bifacial forms are solid; their surfaces are covered by patina, but without any traces of transportation.

4 - The open site of Kremenete

Kremenete is about 10 km north of the Shiroka Polyana and is situated on a broad flat ridge at about 1600 m above sea-level. The artifacts relate to the sediments underlying the turf layer which comprises weathered materials from the basal rock. The flint blocks dispersed on the surface - the remains of a flint strata - provided a raw material source for the artifact production.

The main part of the collection of more than 1000 specimens has a Middle Palaeolithic character. Of particular interest is a group of artifacts whose techno-typological characteristics differ from the general characteristics of the collection - tools of the cleaver type.

Eleven specimens of different size belong to this group and they are characterized by: elongated flat-oval shape, bilateral reworking of one edge, its opposite side is natural or blunted with single steep retouch scars. Mainly natural or cortical surfaces are available on the artifacts. In some cases single scars testify to the attempt to form flat dorsal and ventral surfaces when the initial fragment is not naturally flat (Fig. 5: 1-5).

The small number of biface forms provide a starting point for a search for significant typological parallels. Yet, we would like to draw the attention towards some typological parallels between the cleavers from Tsona cave in Georgia and Kremenete. The layer with cleavers from Tsona has been attributed to a late phase of the Middle Pleistocene (Lioubine 2002: 87). As there is only relative dating evidence for the sites the bifaces from Shiroka Polyana and Kremenete might fit into the period after 500 000 years ago. After a careful analysis of the available facts this is the dating of almost all Early Palaeolithic sites from Europe.

5 - Tenekien Obor

The site of Tenekien Obor is situated some 20 km east of Shiroka Polyana. There, the hypothesis that the group of artifacts belongs to the early Paleolithic period is supported by their stratigraphic position.

The flint artifacts and raw material occur over or between the pebbles which represent a part of a river terrace lying directly on the bad rock

Probably the small level area where the sondage was made is a preserved fragment of very early Quaternary terrace of Katrandzhi dere river which remained uncovered for a long time after the rapid cutting of the river bed.

The assemblage is scanty and consists of cores, core-likes tools and solid flakes.

The recent investigations into the Early Palaeolithic in the Balkans give ground to consider this region as a zone through which one of the routes for colonization of Europe passed.

There are strong arguments (based on mammalian dispersal from the East) concerning the date of earliest possible migration in Europe. There are indications that during the end of the Pliocene and the boundary Pliocene-Pleistocene a temporary closure of the Bosphorus took place.

The earliest possible migration dates to between 2 – 1.9 Ma (the end of Pliocene). The earliest migration of some mammals from Asia and Europe (Canis, Panthera) is referred to the end of the Pliocene and the border between Pliocene and Pleistocene. The mass migration of Bovids is referred to the Villafranchian. Probably, the first humans groups have entered Europe following the path of the migrating herds to Europe (Spassov 2001).

The early dates for the assemblies of Kozarnika cave and the recent studies on Early Palaeolithic sites in Georgia (Dmanisi), Israel (Ubeidiya) pose the concrete question for a possible corridor in the settlement of Europe: most likely through the Balkans (Fig.1).

For the West Rhodopian Palaeolithic open-side we should mention some peculiarities: the lack of sets of absolute data, lack of stratigraphic context for some of the sites. In most cases the assemblages are few. These "failures", generally concerning the Palaeolithic studies in the Balkan Peninsula are due to the lack of large-scale and financially supported investigations. This has brought for a long time the idea that the Balkans was not one of the migration routes of the first human groups.

Until recently the few bifaces from Greece and Turkey (Kuhn *et al.* 1996; Runnels *et al.* 1993, 1999;Yalcincaya 1981) were not enough to include the Balkans in the region of distribution of some facies of the bifacial traditions. The bifaces from Shiroka Polyana and Kremenete would seem to resolve this problem.

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