



Evidence of Neanderthals in the Balkans: The infant radius from Kozarnika Cave (Bulgaria)

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ABSTRACT

Excavations conducted by a Bulgarian-French team at Kozarnika Cave (Balkans, Bulgaria) during several seasons yielded a long Paleolithic archaeological sequence and led to the discovery of important faunal, lithic, and human samples. This paper aims to describe the unpublished radius shaft of an infant who died approximately before the sixth month postnatal that was recovered from layer 10b, which contained East Balkan Levallois Mousterian with bifacial leaf points. The layer was dated between 130 and 200 ka (large mammals biochronology) and between 128 ± 13 ka and 183 ± 14 ka (OSL), i.e. OIS6. Here we show that, given the scarcity of Middle Pleistocene infant remains in general, and Middle Paleolithic human remains from this part of Eastern Europe in particular, the study of the Kozarnika specimen is of special interest. We discuss its place in the Middle Pleistocene European hominine record and substantiate the hypothesis of early Neanderthal presence in the eastern Balkans.

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1. Introduction

Unlike Western Europe, Eastern Europe, especially the western side of the Black Sea, has provided a very small sample of fossil hominins, dominated by fragments. The exception consists of the recent discoveries at Peștera cu Oase in southwestern Romania that are attributed to early modern humans (Trinkaus et al., 2003). With regard to Bulgaria, two isolated deciduous teeth and a small parietal fragment were found in Temnata Cave (Kozłowski et al., 1992). Dated from the Gravettian, Temnata 1, 2, and 3 are identified as modern humans despite their fragmentary state (Gambier, 1992). A

few juvenile human remains were recovered from Bacho Kiro Cave (Ginter and Kozłowski, 1982) and listed by E. Glen and K. Kaczanowski (Glen and Kaczanowski, 1982), according to their stratigraphical provenience (layers 6a/7, 7, 6/7a, and 11): a small parietal fragment, two fragments of a child's mandible with teeth, and five isolated teeth. The small mandible fragment from layer 11 (numbered 1124) was apparently associated with an early Upper Paleolithic industry, sometimes called Bacho Kirian and dated to ca. 43kys BP; therefore, the specimen was originally attributed to early modern *Homo sapiens* (Kozłowski, 1979). Wolpoff (1999:691) suggested later that this Bacho Kiro fragmentary mandible "could really be a Neanderthal specimen" based on the size of the tooth.

Further studies of Bacho Kiro human remains from layers 6a/7, 7, 6/7a, and 11/IV were conducted by Glen and Kaczanowski (1982), who considered the permanent teeth (with the exception of a lower

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central incisor) similar to Neanderthal teeth. They noted a pronounced mesio-buccal tubercle on the first lower deciduous molar from specimen 1124. This feature, commonly described on Neanderthal deciduous molars is, however, not exclusive to them (Tillier, 1999). However, the degree of occlusal attrition limited any detailed description of the Bacho Kiro molars. Moreover, it should be noted that there is some overlap in tooth crown dimensions between Neanderthals and early modern humans, especially in deciduous and permanent molar size (Tillier, 1999; Henry-Gambier et al., 2004). Due to the lack of additional data (unfortunately, the material is not available for further study), an unequivocal assignment of the Bacho Kiro specimens to either Neanderthals or early modern humans is far from decided. The purpose of this paper is to provide new insights into the presence of Neanderthals in the eastern Balkans through the description of a recent discovery made at Kozarnika Cave in Bulgaria.

2. The Kozarnika site and its archaeological context

In 1933, Popov (Попов, 1933) mentioned for the first time Kozarnika cave (literally “Goat shed” cave), which is located in the western part of the Pre-Balkan near the Danube plain, approximately 3 km from the village of Oreshets (district of Dimovo) at about 30 km from the Serbian border (Fig. 1). Before our excavations in Kozarnika cave, the only information we had about the

Paleolithic settlement in this region came from R. Popov's reports (Попов, 1933, 1936) on the Mirzivilka cave and from those of N. Dzhambazov (Джамбазов, 1958) dealing with the Magura cave. The Kozarnika cave, at an altitude of 481 m opens to the south on the northern hillside of the Bashovichka Bara valley, a tributary of the Skomliya River (which is itself a tributary of the Danube into which it flows 30 km to the northeast). The strike of the calcareous beds (13°NE) and their fracture have governed the development and morphology of the cave probably developing from a joint whose unique 210 m long gallery is drawn up at 9°N. The extensions of the conduit are inferred by the presence of transverse fractures. In front of Kozarnika cave on the opposite hillside, at the same altitude, Mirzivilka cave opens and is characterized by a small cavity (44 m) blocked in its deep part by some flowstones; its morphology and its height suggest it could belong to the same cave system as Kozarnika, incised by the sinking of the valley (Guadelli et al., 2005; Sirakov et al., 2010).

The “porch” of Kozarnika cave, setback about 10 m from the outside ledge, is 20 m long and 11 m wide. Since 1996, more than 60 m² have been excavated in this vestibule, as well as in another location 72 m in from the entrance. The Pleistocene archaeological sequence is 6–7 m deep and the upper part, which contains the most recent Gravettian levels (chronologically classically corresponding to Epigravettian), was truncated by more recent occupations (Eneolithic, Ottoman period, sub-actual goat shed).

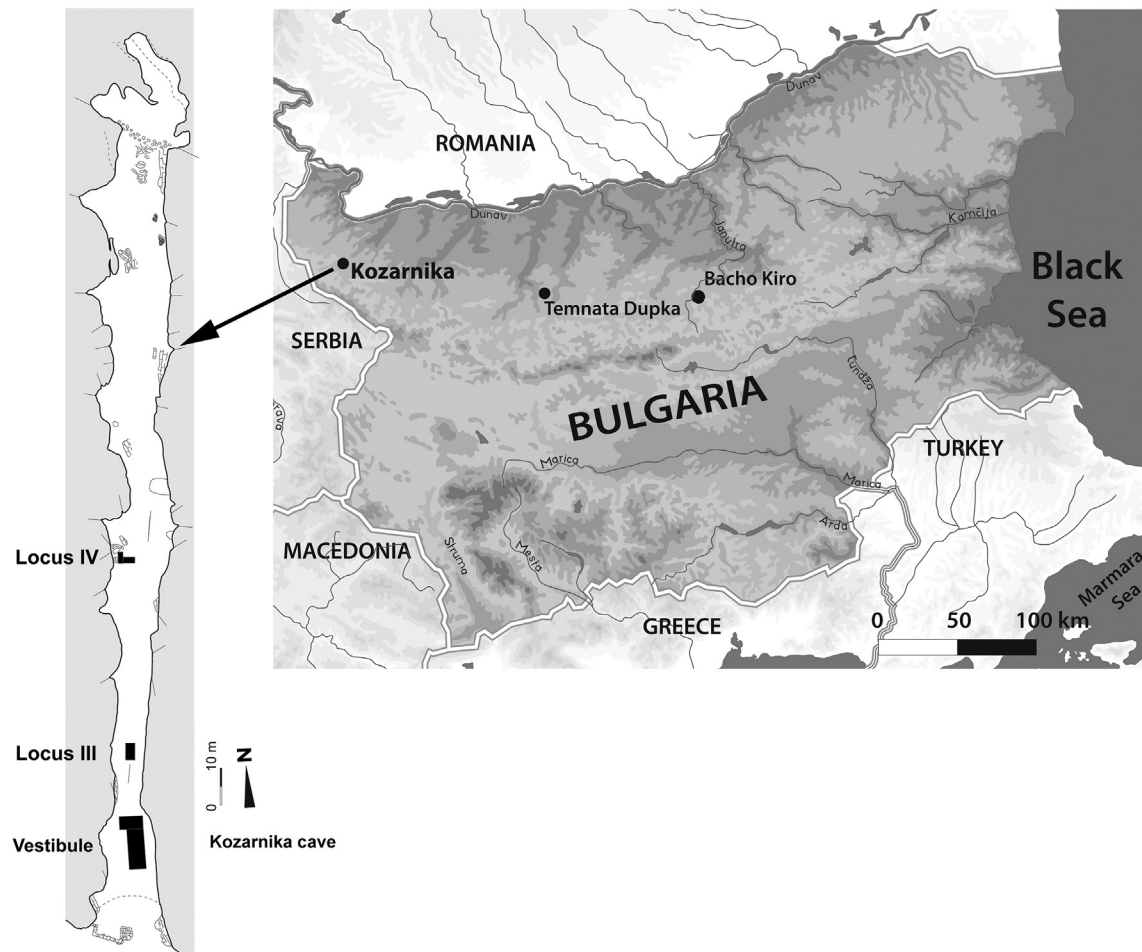


Figure 1. Location map of the sites (from GeoAtlas) and map of Kozarnika cave with the location of the three excavation areas. At the beginning of the excavations in the entrance to the cave there were two separated surveys (Loci I and II) but they are now linked and constitute a locus called “Vestibule”. (J.-L. Guadelli and C. Ferrier).

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