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Mesolithic harpoons from Odmut, Montenegro: Chronological, contextual, and techno-functional analyses

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ABSTRACT

The (re-)appearance of harpoon technology during the Mesolithic in the southern Dinaric Alps is discussed by presenting the results of contextual, technological and use-wear analyses on the sample of 36 osseous harpoon specimens recovered in Mesolithic and Early Neolithic levels of the rockshelter of Odmut in western Montenegro. The assemblage of harpoons from this site is unique in Balkan prehistory, as there is currently limited evidence for the use of barbed weaponry prior to the regional Late Mesolithic. Technological and functional data related to the introduction of harpoon technology at Odmut and the southern Dinaric Alps are discussed against the background of the appearance of harpoons in the Alpine regions of Switzerland, Italy, and the northern Adriatic. Reasons and mechanisms that might have fostered the spread of harpoons in the circum-Adriatic region and a late use of harpoon technology in Montenegro are discussed.

1. Introduction

The territory of present-day Montenegro is characterized by mountainous karst-dominated landscapes, the proximity of the Adriatic coast, and contrasting geography consisting of deeply carved river valleys and high plateaus (Fig. 1). There are numerous rockshelter and caves, which provide important repositories of human occupation traces in these karst landscapes. In contrast to a generally patchy archaeological record regarding Mesolithic foragers in southeastern Europe (e.g., Miracle, 1997, 2001; Miracle et al., 2000; Galanidou and Perlès, 2003; Runnels et al., 2004, 2009; Borić, 2005, 2011; Gaspari, 2006; Komšo, 2006; Sampson, 2007, 2010; Mlekuž et al., 2008; Eichmann et al., 2010; Galanidou, 2011), Mesolithic research in Montenegro has given several important sequences that document the complete duration of the Mesolithic developments. To date, research efforts have been sporadic, lacking in a systematic approach when investigating Mesolithic sites in this region. Currently, there are only five known sites in Montenegro for which there are documented traces of Mesolithic use (Crvena Stijena rockshelter, Medena Stijena rockshelter, Odmut rockshelter, Vruća cave, and Vrbička cave). Recently obtained Mesolithic dates on unmodified animal bones from Seocka cave found in the vicinity of the Skadar Lake come from mixed layers (Vander Linden et al., 2014) and at present cannot be taken as unambiguous evidence of human use of this cave in the Mesolithic.

After the first traces of Mesolithic occupation in Montenegro were discovered at Crvena Stijena rockshelter in the 1950s (Basler, 1975; for recent excavations at Crvena Stijena see; Baković et al. 2009), excavations at the site of Odmut in the early 1970s yielded import new data about inland Mesolithic foragers of Montenegro. While some aspects of modern standards of excavation and recording characterized the 1970s excavations at Odmut, this was a rescue project in advance of a hydroelectric dam building on the Piva River (Fig. 2), and, unfortunately, the level of detail was far from satisfactory for present day standards of excavation and recording. It was in the Mesolithic levels at Odmut that the first assemblage of harpoons was discovered on the territory of Montenegro. This was at the time of its discovery the first example of this type of curated technology in the wider Eastern Adriatic region and one of the rare finds among Mesolithic sites in the Balkans. Till this paper, the most exhaustive publication of this highly significant assemblage from Odmut was a short report provided by Srejović (1974).

In order to provide a more detailed and modern contextualization of this assemblage, we have undertaken contextual,

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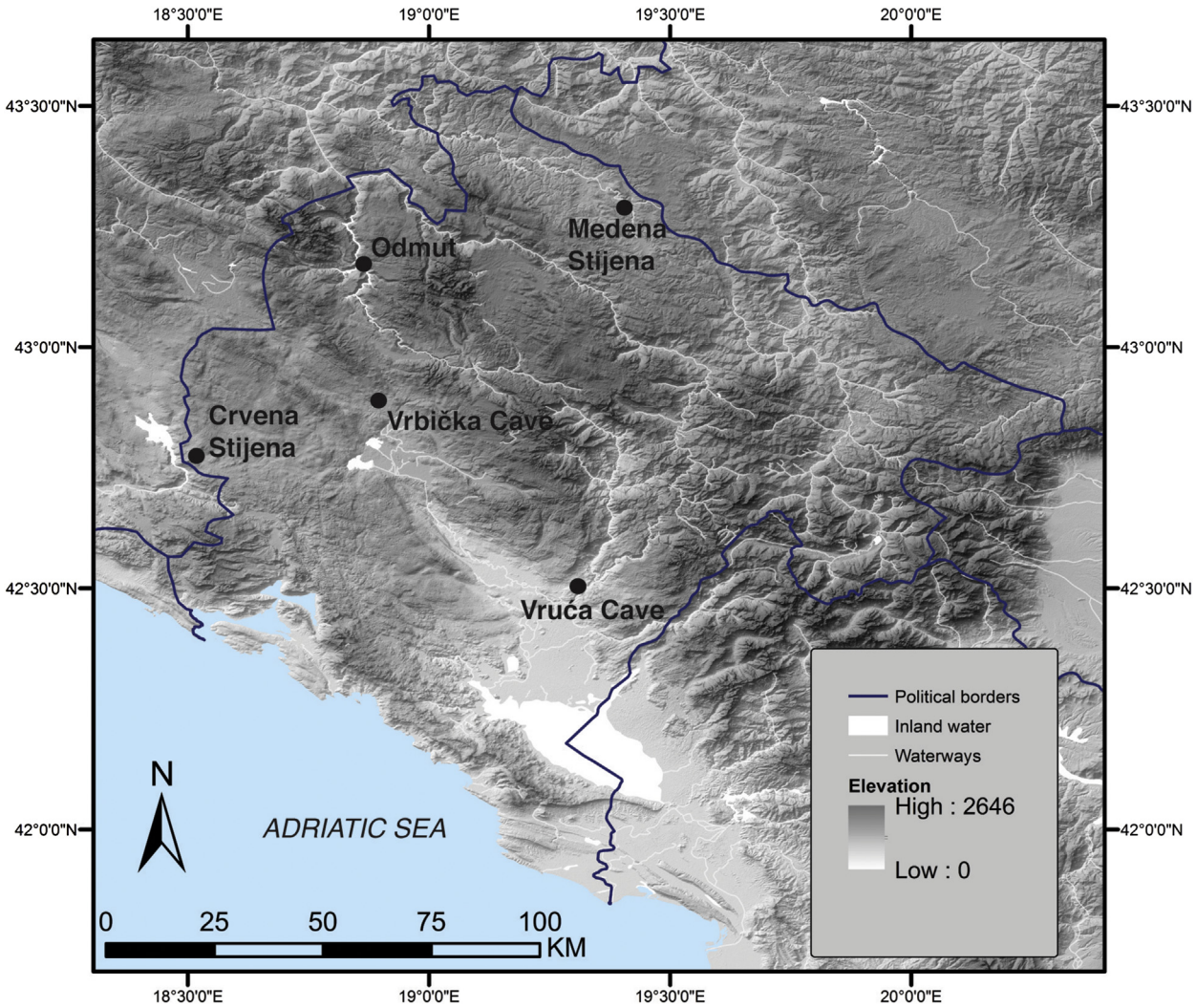

Fig. 1. Map showing the position of Odmut and other known Mesolithic sites in Montenegro. Elevation data source: ASTER GDEM ("ASTER GDEM is a product of METI and NASA").

technological and use-wear analyses of the osseous assemblage from this site along with the direct AMS-dating of Odmut harpoons and other osseous tools. In this paper, we report on the results of the technological and use-wear analyses made on harpoons from Odmut reportedly associated with the Late Mesolithic layers.

2. Stratigraphy and archaeological context

The rockshelter site of Odmut or Odmutnjača is situated in northwestern Montenegro, 3 km to the north from the town of Plužine, above the Vrbnica River that confluences with the Piva River, at around 558 m a.s.l. (Fig. 2). The rockshelter was only accessible from the river. It is funnel-shaped and 11 m long. The excavations were carried out from 1972 to 1974. The excavated area was around 65 m^2, which represents around 80% of the available space. Excavations were made in separate sectors I–V (with subdivisions of sectors III/1–3 and IV/1–3) by spits that were 10–15 cm thick but also by distinguishing sedimentological differences in encountered layers. Hence the excavated cultural material was collected by both spits and sedimentologically distinct layers. Kozłowski et al. (1994: 7) mention pits dug from upper levels that might have disturbed lower levels, possibly causing mixing of cultural materials in the following sectors: I (meters 5 and 6), II (spits 9–11), III/3 (upper levels), IV/1, and IV/3 (spit 10).

A cultural stratigraphy of 4 m was uncovered (Figs. 3 and 4). This sequence covers the duration of the Early Mesolithic, from around the mid-tenth millennium cal. BC (see below), through the Bronze Age. More than half of the stratigraphic sequence spans the Early to Late Mesolithic (phases/layers XD, Ia and Ib) and Early Neolithic (phase/layers IIa and IIb) occupation phases. The remaining part of the sequence comprises of layers dated to the Middle Neolithic (phase/layer III), Late/Final Neolithic (phase/layer IV), Early Eneolithic (phase/layer V), Middle/Late Eneolithic (phase/layer VI), and Early Bronze Age (phase/layer VII) (Srejović, 1974; Marković, 1974a, 1974b, 1985).

Apart from the main phases/layers reported by the excavators in their first publications, layers XA, XB, XC, and XD were mentioned only in the publication of the lithic assemblage from the site when several other, previously unpublished sections came to light (Kozłowski et al., 1994: 7). These layers are not found contiguously across the site deposits. Layer XD, pale yellow and sandy, could be characterized as the earliest layer above the bedrock and was found

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