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THE PALEOLITHIC IN MONTENEGRO



The goal of this chapter is to describe the most important Paleolithic sites in Montenegro within their regional context, and to discuss their significance to the field of Paleolithic archaeology. It is important to state at the outset that, while research in the last few decades has greatly improved our understanding of the Paleolithic in the Balkan peninsula, it remains less well-known than other parts of Europe that have seen a century or longer of research on this time period. Nevertheless, existing sites provide valuable information on the Montenegrin Paleolithic, and we therefore present the six most important sites in turn, using each to illustrate an important current research question in Paleolithic archaeology.

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View of Crvena Stijena
at the base of the
limestone hill above
Lake Bileća



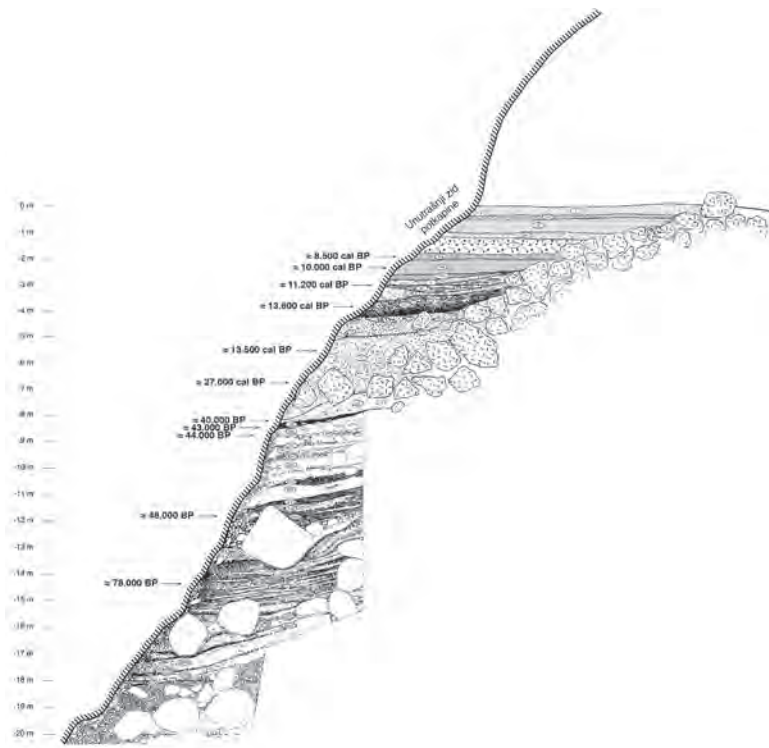
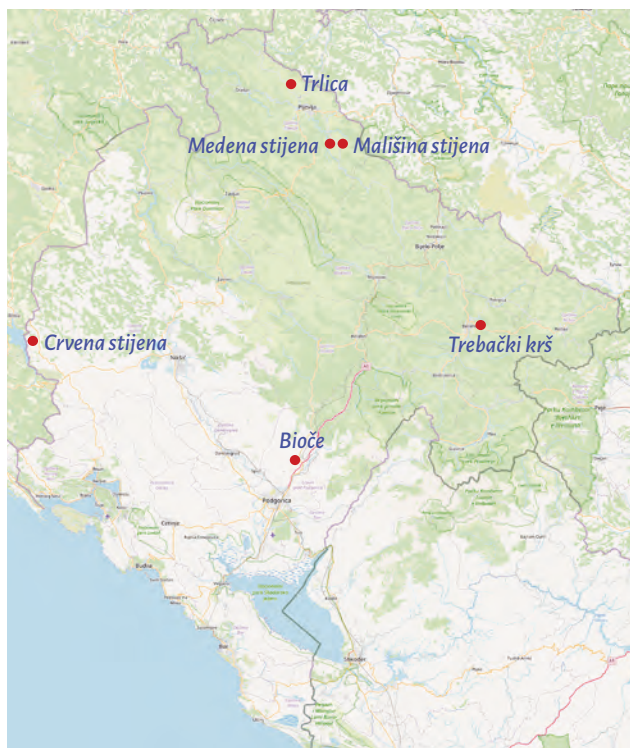
TRLICA CAVE AND THE QUEST FOR THE EARLIEST HUMAN OCCUPATIONS IN THE BALKANS

Trlica Cave is located in northern Montenegro near the city of Pljevlja. It was discovered as an important paleontological site during road construction in the 1960s, and re-excavated from 2010-2014 after a stone tool was found in the talus¹. The taxonomy of the mammalian remains indicates that the oldest parts of the site date to approximately 1.8-1.5 Ma (million years ago), while the youngest date to 750 Ka (thousand years ago). In addition to the putative stone tool, possible bone tools have been identified².

Trlica Cave exemplifies the search for the earliest archaeological sites in the Balkans, those attributed to the Lower Paleolithic. The search begins with deposits slightly younger than 2 million years, because we know that the *Homo* species evolved in Africa and began to migrate out of that continent after 2 million years ago. The oldest human fossils outside of Africa belong to *Homo erectus* and have been found at the site of Dmanisi in the southern part of the Republic of Georgia. These fossils have been dated to 1.7 Ma, indicating that hominins had

¹ A. P. Derevianko et al., "Proučavanje Pleistocenskih Slojeva u Pećini Trlica Na Sjeveru Crne Gore.," *Davnine. Arheologija u Crnoj Gori* 1 (2012): 45–58; Innessa Vislobokova, Alexander Agadzhanyan, and Alexey Lopatin, "The Case of Trlica TRL11-10 (Montenegro): Implications for Possible Early Hominin Dispersals into the Balkans in the Middle of the Early Pleistocene," *Quaternary International* 554 (2020): 15–35.

² Vislobokova, Agadzhanyan, and Lopatin, "The Case of Trlica TRL11-10 (Montenegro): Implications for Possible Early Hominin Dispersals into the Balkans in the Middle of the Early Pleistocene."



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Paleolithic
archaeological sites in
Montenegro

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Composite profile of
the entire sequence
of archaeological
layers (I–XXXI) at
Crvena Stijena
as currently known,
(Robert Whallon 2017)

reached western Asia by this time. It is assumed that we should find archaeological sites and hominin fossils along other routes into Europe and Asia, such as in Anatolia and in the Balkan peninsula.

Such ancient sites, however, are very rare. In the Balkan peninsula, the oldest well-documented site is that of Kozarnika Cave, located in the Danube Basin in northwestern Bulgaria³. The earliest archaeological layers at the site (layers 13–11a) have yielded bones of carnivore and herbivore fauna which are taxonomically dated to 1.6–1.4 Ma⁴. Many stone tools, consisting of simple core-and-flake technologies containing flakes, chips, and retouched forms such as side scrapers, were also found in these layers. Bifaces, pebble-tools and pebble-cores are *not* represented in these layers, which is significant because they are associated with known Lower Paleolithic cultures such as the Acheulean (bifaces) and the Oldowan (pebble tools and pebble cores). We do not know why these characteristic cultural markers are missing from the Kozarnika layers. A number of other Lower Paleolithic sites have been discovered in the Balkans; unfortunately, most do not have stratigraphic context, being either disturbed or surface collections (e.g. Kre-

³ N. Sirakov et al., "An Ancient Continuous Human Presence in the Balkans and the Beginnings of Human Settlement in Western Eurasia: A Lower Pleistocene Example of the Lower Palaeolithic Levels in Kozarnika Cave (North-Western Bulgaria)," *Quaternary International* 223–224 (2010): 94–106.

⁴ Sirakov et al.; Nikolai Spassov, "Southeastern Europe as a Route for the Earliest Dispersal of Homo Toward Europe: Ecological Conditions and the Timing of the First Human Occupation of Europe," in *Paleoanthropology of the Balkans and Anatolia: Human Evolution and Its Context*, Vertebrate Paleobiology and Paleoanthropology Series (Dordrecht, The Netherlands: Springer Science+Business Media, 2016).

menac in Southern Serbia, Kosovska Kosa and Samaila in Central Serbia⁵).

Temporally speaking, the next stratified, well-dated site providing evidence of human occupation in the Balkans is the Balanica cave complex in southern Serbia. It consists of two adjoining caves, Velika Balanica and Mala Balanica, located on the Nišava River, near the mouth of the Sićevo Gorge, 10 km from the city of Niš. The sites were discovered in 2002, and excavations began in 2004 and continue to the present⁶. Artifacts consist in abundant stone tools and faunal remains. The lithic technology produced many naturally backed flakes and contains heavily reduced Quina scrapers. The fauna consists of alpine ibex, chamois, and several species of deer, which were hunted and butchered by humans. The site of Mala Balanica was used as a den by carnivores when humans did not occupy the cave. Radiometric dates and

analysis of the fauna suggests that both caves were occupied by humans during interglacial periods, such as MIS 7 [240–290 Ka] and possibly MIS 9 [330–300 Ka]. In 2006 a mandible attributed to *Homo erectus sensu lato*⁷ was found at Mala Balanica and is dated to a period prior to 400 kya – 525 Ka⁸. Therefore, the site testifies to the presence of *Homo erectus* in the central Balkans approximately half a million years ago. Interestingly, it is suggested that the distinctive lithic technology at the site resembles Yabrudian assemblages documented in the Levant. This indicates contact between the Balkans and the Levant; however, it is unknown whether this contact arose from population movement or cultural transmission.



Archaeological site
Crvena Stijena

photo: Gilliane Monnier

CRVENA STIJENA AS THE TYPE SITE FOR THE BALKAN MIDDLE PALEOLITHIC

The Middle Paleolithic, in contrast with the Lower Paleolithic, is fairly well documented in the western and central Balkans. This period is generally defined, in much of Europe, as beginning approxi-

- 5 Dušan Mihailović and Katarina Bogičević, "Technological Changes and Population Movements in the Late Lower and Early Middle Paleolithic of the Central Balkans," in *Paleoanthropology of the Balkans and Anatolia*, ed. Katerina Harvati and Mirjana Roksandic (Dordrecht, The Netherlands: Springer Science and Business Media Deutschland GmbH, 2016), 139–41, <https://doi.org/10.1007/978-94-024-0874-4>.
- 6 Dušan Mihailović et al., "Connections between the Levant and the Balkans in the Late Middle Pleistocene: Archaeological Findings from Velika and Mala Balanica Caves (Serbia)," *Journal of Human Evolution* 163 (February 2022): 103138, <https://doi.org/10.1016/j.jhevol.2021.103138>.
- 7 Mirjana Roksandic et al., "A Human Mandible (BH-1) from the Pleistocene Deposits of Mala Balanica Cave (Sićevo Gorge, Niš, Serbia)," *Journal of Human Evolution* 61 (2011): 186–96; Mirjana Roksandic, "The Role of the Central Balkans in the Peopling of Europe: Paleoanthropological Evidence," in *Paleoanthropology of the Balkans and Anatolia*, ed. Katerina Harvati and Mirjana Roksandic (Dordrecht, The Netherlands: Springer Science+Business Media, 2016), 15–34.
- 8 William J. Rink et al., "New Radiometric Ages for the BH-1 Hominin from Balanica (Serbia): Implications for Understanding the Role of the Balkans in Middle Pleistocene Human Evolution," *PLoS ONE* 8, no. 2 (2013): e54608.



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Archaeological site
Crvena stijena,
entrance to the cave

photo: Gilliane Monnier

nificantly expanded and deepened the excavation area every year until 1963, by which time he had reached a maximum depth of 21 meters (though he still had not found the 'bottom' of the site).

Within the stratigraphic sequence, Basler and the geologist Karl Brunnacker identified thirty-one geological layers. Layers XII through XXXI contained Middle Paleolithic artifacts; layers X through VIII Upper Paleolithic material; VII – V Epipaleolithic; layer IV Mesolithic, and layers III – I Early Neolithic, Middle Neolithic, and Late Bronze Age, respectively.

In 2004 a new collaboration, established between the Center for Archaeological Investigations of Montenegro under Mitra Cerović and Bob Whallon from the University of Michigan Mu-

ately 300,000 years ago, and lasting until the start of the Upper Paleolithic approximately 35,000 years ago⁹. The European Middle Paleolithic is associated with Neanderthals, who were well adapted to increasingly marked glacial/interglacial cycles. The extensive archaeological record associated with Neanderthals across Europe shows that they were proficient hunters of large game, skilled flintknappers, and that as a species they thrived for over 100,000 years.

In the Balkan peninsula, one of the best-preserved sequences of archaeological deposits associated with Neanderthals occurs at the site of Crvena Stijena in Montenegro. This key site contains over 20 meters in depth of remains of human occupation, from the Middle Paleolithic through the Bronze Age. The site is located at 700 m.a.s.l. near the village of Petrovići, in the municipality of Nikšić. It is a large (26 meters wide and 15 meters deep, from front to back) rockshelter in a limestone cliff stained red by iron oxides, hence the name 'Red Rock'. It faces South/Southwest towards the Trebišnjica river, the only perennial surface river in the region. This orientation of the site means that it is well-protected from inclement weather, and provides a warm and dry shelter even in the coldest part of the winter.

The site was discovered in 1954 and began to be systematically excavated in 1955 by the Zavičajni Muzej in Nikšić. Initial excavations were conducted mainly by Alojz Benac from the Zemaljski Muzej in Sarajevo and Mitja Brodar from Ljubljana. Excavations continued in 1956 and 1958, by which time the team had reached 12 meters in depth and recovered thousands of artifacts. In 1960, excavations were taken over by Đ. Basler from the Zemaljski Muzej, Sarajevo. Basler sig-

9 Gilliane F Monnier, "The Lower/Middle Paleolithic Periodization in Western Europe : An Evaluation," *Current Anthropology* 47, no. 5 (n.d.): 709–44.

seum of Anthropology, began¹⁰. This excavation project lasted until 2015, and focused on assessing the chronology of the site through a radiometric dating program; documenting the geology of the site; reconstructing paleoenvironments through analysis of paleofauna and paleofloral remains; and documenting the lithic industries. The results of this project did much to clarify the chronology, the nature of the lithic industries, the faunal sequence, and other key archaeological parameters¹¹. One of the most significant results was the discovery that the volcanic ash layer (layer XI) which caps the Middle Paleolithic deposits can be assigned to the Campanian Ignimbrite eruption 39,900 years ago. Below that, radiocarbon (AMS) dates, Thermoluminescence (TL) dates on burnt stone tools, and Electron Spin Resonance (ESR) dates on animal teeth, indicate that layers XII through XXIV date to between 40-80,000 years ago. This spans Marine Isotope Stages 4 and 3. It is possible that the deeper layers of the site date to MIS 5 or even MIS 6, according to the geological interpretation of the deposits. The deepest layers (XXV – XXXI) do not have radiometric dates, but are thought to date to the last interglacial (MIS 5) and possibly the end of the penultimate glaciation (MIS 6).

The stone tools in the Middle Paleolithic deposits at Crvena Stijena are composed of a wide variety of different types of stone. Studies of the technology and typology of the stone tool industries suggest that at the very bottom of the site, in layers XXIV- XXXI, they are best labeled as a 'Typical Mousterian of Crvena Stijena type', containing Levallois and discoidal technologies, and a variety of Mousterian retouched tool types. Above that, layers XXII-XX contain tool types such as transversal scrapers, sidescrapers, and Quina retouch, that are reminiscent of the Charentian Mousterian. Layers XVIII-XV are characterized by intensively exploited, very small cores that are consistent with the 'Micromousterian'. Layers XIV-XII, the uppermost Middle Paleolithic layers, are Mousterian with Uluzzian elements.

It is this sequence that is particularly important to Balkan prehistory. The Mousterian, synonymous with the Middle Paleolithic in much of Europe, was defined by Francois Bordes, who identified different cultural groups within the Mousterian, on the basis of differences in lithic technology and typology¹². Paleolithic archaeologists since that time have applied Bordes' definitions to lithic assemblages from sites throughout western Eurasia. The length of the Crvena Stijena sequence means that it has proved useful for comparison with other sites throughout the region, such as Krapina and Mujina Pećina in Croatia, and Pešturina Cave in Serbia.

The Krapina site, also known as Hušnjakov brijeg, is a large sandstone hill situated just above the Krapinica River in the town of Krapina, in the Hrvatsko Zgorje region of Croatia. It was excavated by Croatian paleontologist Dragutin Gorjanović-Kramberger from 1899-1905, who discovered numerous remains of animal bones, Neanderthal bones, stone tools, and hearths. Most surprisingly, he discovered more than 1200 Neanderthal skeletal fragments¹³. Radiometric dates suggest that the bones were deposited about 130 Ka¹⁴, at the very end of the penultimate glacial. One of the most in-

10 Mile Baković et al., "Crvena Stijena Excavations 2004-2006, Preliminary Report," *Eurasian Prehistory* 6, no. 1-2 (2009): 3-31.

11 Robert Whallon, "Crvena Stijena in Cultural and Ecological Context - Multidisciplinary Archaeological Research in Montenegro," 2017.

12 François Henri Bordes, "Mousterian Cultures in France," *Science* 134, no. 3482 (1961): 803-10.

13 Ivor Karavanić et al., "Paleolithic Hominins and Settlement in Croatia from MIS 6 to MIS 3: Research History and Current Interpretations," *Quaternary International* 494 (November 2018): 152-66, <https://doi.org/10.1016/j.quaint.2017.09.034>.

14 W.J. Rink et al., "ESR Ages for Krapina Hominids," *Nature* 378, no. 2 November (1995): 24.



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Finds from
Crvena Stijena,
Homeland Museum
of Nikšić

triguing aspects of the Neanderthal bones is that they are highly fragmented and contain cut marks which have been interpreted as resulting from cannibalism¹⁵. Other interpretations, however, suggest that the cut marks stem from secondary burial¹⁶. The site also contained numerous Mousterian stone tools. These were made on cobbles from the local river, worked using the 'cobble wedge' method, which produced naturally-backed knives. The retouched stone tools are dominated by scrapers, and the assemblages are assigned to the Charentian Mousterian¹⁷, as are layers XXII-XX from Crvena Stijena. The dates are much older, however, than those from Crvena Stijena. Faunal remains show that the Neanderthals hunted large herbivores such as the Merck rhinoceros and large bovids¹⁸.

Pešturina, discovered in 2006, is located on the Nišava River, on the eastern edge of the Niš Basin in eastern Serbia. Excavations from 2010-2018¹⁹ have yielded abundant Middle Paleolithic stone tools, fauna, and three hominin fossils. Radiometric dates suggest that the MP layers were deposited during MIS 5 and possibly early MIS 4. The animal bones were accumulated by humans as well as carnivores using the cave as a den. Lithic technology from some of the most important layers (4a and 4b) consists of quartz pebbles knapped via the Quina method, which produced abundant naturally-backed knives (flakes with cortical or flaked backs). Discoid and Levallois methods were also used, and retouched tools consist of sidescrapers (of-

ten retouched with Quina or demi-Quina retouch) and denticulates. Recent analyses suggest that the artifacts are most similar to the Central European Charentian, showing that this cultural unit was widespread during MIS 5 in the Pannonian Basin as well as in the Central Balkans²⁰. In sum, data from many Middle Paleolithic sites in the central and western Balkans, along with data from Crvena Stijena, are being used to continually refine our understanding of the succession of technocomplexes in the area.

15 D. Gorjanović-Kramberger, *Der Diluvijale Mensch von Krapina in Kroatien. Ein Beitrag Zur Paläoanthropologie* (Wiesbaden: Kreidel, 1906); F.H. Smith, *The Neandertal Remains from Krapina: A Descriptive and Comparative Study*. (Knoxville: Department of Anthropology, Reports of Investigation 15, 1976); M. Patou-Mathis, "Analyses Taphonomique et Palethnographique Du Matériel Osseux de Krapina (Croatie): Nouvelles Données Sur La Faune et Les Restes Humains," *Préhistoire Européenne* 10 (1997): 63–90.

16 M D Russell, "Mortuary Practices at the Krapina Neandertal Site," *American Journal of Physical Anthropology* 72 (1987): 381–97; D.W. Frayer et al., "Krapina 3: Cut Marks and Ritual Behavior?," *Periodicum Biologorum* 108 (2006): 519–24.

17 J. F. Simek and F.H. Smith, "Chronological Changes in Stone Tool Assemblages from Krapina (Croatia)," *Journal of Human Evolution* 32 (1997): 561–75.

18 Patou-Mathis, "Analyses Taphonomique et Palethnographique Du Matériel Osseux de Krapina (Croatie): Nouvelles Données Sur La Faune et Les Restes Humains."

19 Dušan Mihailović et al., "Neanderthal Settlement of the Central Balkans during MIS 5: Evidence from Pešturina Cave, Serbia," *Quaternary International* 610 (February 2022): 1–19, <https://doi.org/10.1016/j.quaint.2021.09.003>.

20 Mihailović et al.

The excellent faunal record recovered since 2004 from the late Middle Paleolithic layers (XV-XII) at Crvena Stijena contains well-preserved, highly fragmented bones of red deer, ibex, and fallow deer. The bones show butchery marks and evidence of cracking for marrow²¹. These data allows us to infer that the Neanderthals occupying the site during this time hunted red deer, ibex, and fallow deer, and brought the meatiest parts to the site where they were butchered and processed for marrow. There is little evidence for carnivore activity at the site; unlike many other Paleolithic sites in Croatia and Serbia, Crvena Stijena appears not to have been much used by carnivores.

Charcoal from seven Middle Paleolithic layers at the site was analyzed and identified to genus²². This analysis showed that approximately 90% of the wood species burned for fuel at the site are conifers, with about 3% angiosperms. Within the conifers, *Pinus* (pine) is the most dominant taxon, followed by *Abies* (fir) and *Juniperus* (juniper). The angiosperms include *Prunus* (stone fruit such as plums), *Fraxinus* (ash), *Fagus* (beech), *Cornus* (dogwood), *Juglans* (walnut), *Salix* (willow), and *Sambucus* (elder). The dominance of pine as fuel is thought to represent both its likely abundance on the landscape²³, as well its utility as fuel, able to yield high heat or smoky, low heat (useful for smoking/drying meat) depending on its moisture content. However, caution is needed when interpreting these results, as they are based upon small sample sizes.

In 2016, a new research project began at Crvena Stijena, which is focused on excavating the Middle Paleolithic levels to document Neanderthal pyrotechnological behaviors²⁴. This project represents a collaboration between the University of Minnesota (USA) and the National Museum of Montenegro. In addition to traditional analyses of the artifacts and large fauna, a number of specialty analyses are currently underway, including extraction of mammalian DNA from sediments, which has identified Neanderthal DNA throughout the deposits.

In sum, Crvena Stijena is important for the long record of occupation that it contains, and the excellent preservation of organic remains. It is unique in the Balkans as one of the few sites displaying intensive use by Neanderthals, without disturbance from carnivores. Results so far demonstrate that the Neanderthals who lived there made stone tools using a variety of technologies that changed through time; they were proficient hunters and hunted red deer, ibex, and fallow deer, which they brought back to the site and processed intensively.

BIOČE'S RICH MICROMOUSTERIAN INDUSTRIES

After Crvena Stijena, the most important site in Montenegro with archaeological deposits dating to the Middle Paleolithic is Bioče rockshelter. Bioče rockshelter is located on the Morača river, 12 km

21 Eugène Morin and Marie Cécile Soulier, "The Paleolithic Faunal Remains from Crvena Stijena," in *Crvena Stijena in Cultural and Ecological Context: Multidisciplinary Archaeological Research in Montenegro*, ed. Robert Whallon (Podgorica: : Multidisciplinary Archaeological Research in Montenegro, 2017), 266–94.

22 Jennie Deo Shaw, "Archaeobotanical Results from Crvena Stijena," in *Crvena Stijena in Cultural and Ecological Context: Multidisciplinary Archaeological Research in Montenegro*, ed. Robert Whallon (Podgorica: Montenegrin Academy of Sciences and Arts and National Museum of Montenegro, 2017), 307–39.

23 A.-M. Lézine et al., "Lake Ohrid, Albania, Provides an Exceptional Multi-Proxy Record of Environmental Changes during the Last Glacial-Interglacial Cycle," *Palaeogeography, Palaeoclimatology, Palaeoecology* 287, no. 1–4 (March 2010): 116–27, <https://doi.org/10.1016/j.palaeo.2010.01.016>.

24 Gilbert B. Tostevin, "Prospects and Challenges for Future Research at Crvena Stijena and in Montenegro," in *Crvena Stijena in Cultural and Ecological Context: Multidisciplinary Archaeological Research in Montenegro*, ed. Robert Whallon (Podgorica: Montenegrin Academy of Sciences and Arts and National Museum of Montenegro, 2017), 456–63.



Archaeological site
Bioče

northeast of Podgorica and approximately 100 meters upstream from the confluence of the Mala Rijeka and Morača rivers. It faces southwest and measures 11 meters wide and about 9 meters deep (front to back). It was excavated in 1980, periodically between 1986–1997, and again from 2010–2015²⁵. Four broad stratigraphic complexes have been defined²⁶ in about 5 meters in depth of sediments. The uppermost stratigraphic complex contains volcanic tephra attributed to the Campanian Ignimbrite eruption which occurred 39.9Ka²⁷. Human occupation at the site appears to have been continuous throughout this period, signifying that Bioče was inhabited both before and after this eruption²⁸. Faunal remains are numerous, and are dominated by large bovids (*Bos/Bison*), red deer (*Cervus elaphus*), ibex (*Capra ibex*), and bear (*Ursus spelaeus*). Additionally, charcoal and ashes have been documented, suggesting the presence of hearths.

The site is known for its extraordinarily high density of stone tools, estimated at 4,000 per cubic meter in the uppermost stratigraphic units²⁹. The technology is dominated by Levallois and centripetal methods of blank production, and the retouched tools are dominated by scrapers and points. The industry is notable for its small size (2–4 cm. on average), and has been designated as Micro-mousterian³⁰. This is due to the fact that tools appear to have been intensively used and reused, leading to the retouch and rejuvenation of numerous edges on each tool and the subsequent reduction in size of the tool³¹.

Industries from many other sites in the western Balkans have been assigned to the Micromousterian. These come from Mujina Pečina, Crvena Stijena, Bioče, Velika Pečina, and other sites not discussed here. Many of them date to the late Middle Paleolithic, such as Crvena Stijena, Bioče, and Mujina Pečina. Others, such as Velika Pečina in Croatia, date to the early Middle Paleolithic. In other words, while temporal trends in the succession of industries in the MP of this region may exist, they are not completely clear.

25 Ljiljana Đuričić, "A Contribution to Research on Bioče Mousterian," *Journal of the Serbian Archaeological Society* 22 (2006): 179–96; A. P. Derevianko et al., "Recent Data on the Eastern Adriatic Middle Paleolithic: Bioče Rockshelter in Montenegro," in *Hugo Obermeier Society for Quaternary Research and Archaeology of the Stone Age. 58th Annual Meeting in Budapest* (Budapest: Eötvös Loránd University, Institute of Archaeological Sciences, 2016), 26–29; A. P. Derevianko et al., "Issledovaniya Skal'nogo Navesa Bioche (Chernogoriya) v 2010 Godu," *Rossiyskaya Akademiya Nauk Sibirskoye Otdeleniye Institut Arkheologii i Etnografii* XVI (2010): 52–57.

26 A. P. Derevianko et al., "Stratigrafija Otlozhenij Skal'nogo Navesa Bioche (Chernogorija)," *Problems of Archaeology, Ethnography, Anthropology of Siberia and Neighboring Territories* 21 (2015): 49–52.

27 A. V. Vishnevskiy et al., "A Neanderthal Refugium in the Eastern Adriatic," *Archaeology, Ethnology & Anthropology of Eurasia* 47, no. 4 (January 1, 2020): 3–15, <https://doi.org/10.17746/1563-0110.2019.47.4.003-015>.

28 Vishnevskiy et al.

29 Tamara Dogandžić and Ljiljana Đuričić, "Lithic Production Strategies in the Middle Paleolithic of the Southern Balkans," *Quaternary International* 450 (2017): 68–102, <https://doi.org/10.1016/j.quaint.2017.03.011>.

30 Dogandžić and Đuričić.

31 Konstantin K. Pavlenok et al., "Style, Deficit or Reduction? Analysing the Bioče Micro-Mousterian," *Quartär – Internationales Jahrbuch Zur Erforschung Des Eiszeitalters Und Der Steinzeit*, October 13, 2021, 95–106 Seiten, https://doi.org/10.7485/QU64_4.

Additionally, while some assemblages are 'micro' in the technological sense, meaning that very small flakes were produced from small cores, oftentimes using pebbles as raw materials³², other times the tools are very small because they have been heavily resharpened and reduced, such as at Bioče³³. In other words, the label Micromousterian is applied to industries containing small tools, but these industries are not necessarily technologically or culturally similar.

Velika Pećina (Croatia), as mentioned above, is another site in the western Balkans that has yielded Micromousterian industries. The site is located on the eastern part of Ravna Gora³⁴ in the Hrvatsko Zgorje region of Croatia. Its six lowermost units contain Middle Paleolithic industries with small retouched tools and as such have been attributed to the Micromousterian³⁵. The fauna from Velika pećina is dominated by cave bear remains (>90% of mammal remains). Other carnivores are present, especially *Canis lupus* (wolf) and *Panthera spelaea* (cave lion). The ungulates consist of large and small bovids, and *Cervus elaphus* (red deer) and other cervid remains.

Mujina Pećina is the only stratified, well-excavated Middle Paleolithic site in Dalmatia. Radiometric dates and analyses of the fauna suggest two phases of deposition in MIS 4³⁶. The lithic industries from both phases are Mousterian, consisting of flake technology and very small (Micromousterian) tools retouched into denticulates and notches³⁷. The tools in the later phase are smaller, as well as more frequent, than the tools in the earlier phase. The animal bones are dominated by red deer and large bovids in the earlier phase, and ibex in the later phase. In both phases many bones are gnawed by carnivores, suggesting that carnivores used the cave when humans were not there. Also, bear bones indicate hibernating and denning by bear when humans were not there.

MALIŠINA STIJENA AND THE SEARCH FOR THE MIDDLE-UPPER PALEOLITHIC TRANSITION IN THE WESTERN BALKANS

The third (and last) site in Montenegro with published Middle Paleolithic finds is the rockshelter of Mališina Stijena, located at 860 m.a.s.l. in the Ćehotina River Gorge near the village Ljutići. The shelter is extremely large: 32 meters wide, 15 meters tall, 11 meters deep from front to back,

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Finds from the site of
Bioče,
Museum and Galleries
Podgorica

32 Dario Vujević, Zlatko Perhoč, and Tomislav Ivančić, "Micro-Mousterian in Northern Dalmatia," *Quaternary International* 450 (2017): 50–67, <https://doi.org/10.1016/j.quaint.2016.11.019>.

33 Pavlenok et al., "Style, Deficit or Reduction?"

34 Preston T. Miracle, Jadranka Mauch Lenardić, and Dejana Brajković, "Last Glacial Climates, 'Refugia', and Faunal Change in Southeastern Europe: Mammalian Assemblages from Vetrnica, Velika Pećina, and Vindija Caves (Croatia)," *Quaternary International* 212, no. 2 (February 2010): 137–48, <https://doi.org/10.1016/j.quaint.2009.06.003>.

35 Ivor Karavanić, "Le Moustérien En Croatie," *Anthropologie* 111, no. 3 (2007): 321–45, <https://doi.org/10.1016/j.anthro.2007.04.002>.

36 Giovanni Boschian et al., "Late Neandertals in Dalmatia: Site Formation Processes, Chronology, Climate Change and Human Activity at Mujina Pećina, Croatia," *Quaternary International* 450 (September 2017): 12–35, <https://doi.org/10.1016/j.quaint.2016.09.066>.

37 Ivor Karavanić et al., "The Middle Paleolithic from Mujina Pećina, Dalmatia, Croatia," *Journal of Field Archaeology* 33, no. September (2008): 259–77, <https://doi.org/10.2307/25608514>.





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Archaeological site
Mališina Stijena

photo:
Homeland museum Pljevlja

and faces North. It was first excavated from 1980-82 and 1984-86 by I. Radovanović from the Faculty of Philosophy at the University of Belgrade in collaboration with the Pljevlja Museum. The excavations took place in two major areas, over a surface totaling approximately 50 m² and approximately two meters in depth³⁸. Unfortunately, due to the complex nature of the stratigraphy, the layers defined in each area could not be correlated. Lower levels contained Middle Paleolithic

stone tools, including discoidal cores, transversal and sidescrapers, and retouched points. The fauna is dominated by fragmented remains of large herbivores³⁹. Overlying levels contained Middle Paleolithic industries with some Upper Paleolithic-looking tools. The uppermost levels contained industries defined as Tardigravettian with backed bladelets, retouched points, retouched bladelets, endscrapers, burins, and both single- and double-platformed blade cores. The fauna is numerous and contains small mammals, birds, and fish⁴⁰.

In 2017, excavations resumed, led by a joint team from the institute of Archaeology and Ethnography SB RAS (Russia) and the Museum and Gallery of Podgorica. These excavations confirmed the presence of a Middle Paleolithic complex with a flake technology made using radial and Levallois technologies as well as irregular splitting, and retouched tools consisting of both Middle Paleolithic types such as sidescrapers and retouched points, and Upper Paleolithic types such as endscrapers and tanged tools⁴¹. Another complex, in the uppermost excavated layer, contains elements typical of the Final Upper Paleolithic. The fauna in this layer contains remains of birds, fish, and small mammals, whereas the fauna associated with the Middle Paleolithic layers indicates hunting of large herbivores. Unfortunately, the layers from these excavations cannot be reconciled with the layers defined by Radovanović⁴².

The site is significant because it contains MP industries containing some UP types, meaning that these industries may indicate a transition from the Middle to the Upper Paleolithic. The key question is, are these actual cultural entities, or are they the product of post-depositional mixing? This ques-

38 I. Radovanović, "Novija Istraživanja Paleolita i Mezolita u Crnoj Gori," *Glasnik Srpskog Arheološkog Društva* 3 (1986): 63–76.

39 M. Malez, V. Malez, and M. Paunović, "Kvartarna Fauna Mališine Stijene u Kanjonu Cehotine (SR Crna Gora). Naskrs" 14 (1988): 109–17.

40 Malez, Malez, and Paunović.

41 A.P. Derevianko et al., "New Results of Research at the Mališina Stijena Rock Shelter in Montenegro," *Problems of Archaeology, Ethnography, Anthropology of Siberia and Neighboring Territories* 25 (2019): 95–102, <https://doi.org/10.17746/2658-6193.2019.25.095-102>.

42 A.P. Derevianko et al., "Recent Data on the Lithic Industry from the Rock Shelter of Mališina Stijena in Montenegro (Based on the Results from the 2017 Study)," *Problems of Archaeology, Ethnography, Anthropology of Siberia and Neighboring Territories* 23 (2017): 98–102.

tion is difficult to answer in part because there are very few early Upper Paleolithic sites in the western Balkans, and almost no record of the Middle to Upper Paleolithic transition⁴³. On the other hand, there are numerous sites dating to the late Upper Paleolithic.

At Crvena Stijena, the layers immediately preceding the Campanian Ignimbrite volcanic tephra of layer XI (layers XIV-XII) have been argued by some to be Mousterian with an Uluzzian character⁴⁴. The Uluzzian is a transitional industry first identified in Italy that has been associated with modern humans⁴⁵ and dated to between 45 – 39 Ka⁴⁶. If confirmed, its presence in the western Balkans would indicate an early arrival of modern humans in this region. However, there is a chronological gap between these industries (which are radiocarbon dated to 43 Ka and older⁴⁷) and the industries that immediately follow the volcanic tephra of layer XI. The industries in layers X-VIII are dated to 28.5 Ka⁴⁸ (they are Gravettian and Epigravettian in nature). Therefore, there is a chronological gap, at Crvena Stijena, from 43 Ka to 28.5 Ka which encompasses the C-I eruption at 39.9 Ka.

In Croatia, there are no transitional MP/UP sites in the eastern Adriatic, and early UP sites are very rare; the early UP is known only from Vindija, Velika pećina (which has a very small UP assemblage), and Šandalja II, plus a few surface lithic scatters from Dalmatia and Istria.

At Vindija, both levels G3 and G1 appear to be transitional between the MP and UP. However, the integrity of the industry in level G1, described as “a composite of Middle and Upper Paleolithic types, which might have been caused to some extent by mixing”⁴⁹ is under question due to evidence of bioturbation and cryoturbation and variable dates⁵⁰.

At Šandalja in Dalmatia, quarrying activities in 1961 revealed a large cave complex. Šandalja I yielded a single chopper associated with a Villafranchian fauna⁵¹. Šandalja II was excavated to a depth of 8 meters by Malez between 1962-1989. Units B-H are attributed to the UP, while Unit A contained Bronze Age material. Of the Upper Paleolithic material, Layers E, F and G contain Aurignacian material, while Layers C and D have been attributed to the Epigravettian. Layer B/s contained human skeletal materials and was radiocarbon-dated to about 12,000 BP⁵².

43 Bridget Alex et al., “Radiocarbon Chronology of Middle and Upper Paleolithic Sites in Serbia, Central Balkans,” *Journal of Archaeological Science: Reports* 25 (June 2019): 266–79, <https://doi.org/10.1016/j.jasrep.2019.04.010>.

44 Dušan Mihailović, Bojana Mihailović, and Robert Whallon, “Excavations of Middle Paleolithic - Mesolithic Layers,” in *Crvena Stijena in Cultural and Ecological Context: Multidisciplinary Archaeological Research in Montenegro*, ed. Robert Whallon (Podgorica: Montenegrin Academy of Sciences and Arts and National Museum of Montenegro, 2017), 150–204; Dušan Mihailović and Robert Whallon, “Crvena Stijena Revisited: The Late Mousterian Assemblages,” *Quaternary International* 450 (2017): 36–49.

45 S. Benazzi et al., “The Makers of the Protoaurignacian and Implications for Neandertal Extinction,” *Science* 348, no. 6236 (2015), <https://doi.org/10.1126/science.aaa2773>.

46 Katerina Douka et al., “On the Chronology of the Uluzzian,” *Journal of Human Evolution* 68 (March 2014): 1–13, <https://doi.org/10.1016/j.jhevol.2013.12.007>.

47 Norbert Mercier et al., “Radiometric Dating of the Crvena Stijena Sequence,” in *Crvena Stijena in Cultural and Ecological Context: Multidisciplinary Archaeological Research in Montenegro*, ed. Robert Whallon (Podgorica: Montenegrin Academy of Sciences and Arts and National Museum of Montenegro, 2017), 140–49.

48 Mercier et al.

49 Ivor Karavanić et al., “A Palaeoecological View of the Last Neanderthals at the Crossroads of South-central Europe and the Central Mediterranean: Long-term Stability or Pronounced Environmental Change with Human Responses,” *Journal of Quaternary Science* 37, no. 2 (February 2022): 194–203, <https://doi.org/10.1002/jqs.3279>, page 4.

50 E Wild et al., “Age Determination of Fossil Bones from the Vindija Neanderthal Site in Croatia,” *Radiocarbon* 43 (2001): 1021–28.

51 M. Malez, “Nalažista Paleolitskog i Mezolitskog Doba u Hrvatskoj,” in *Praistorija Jugoslavenskih Zemalja I*, ed. A. Benac (Sarajevo: Svjetlost, 1979), 195–295.

52 Ivor Janković et al., “The Importance of Croatian Pleistocene Hominin Finds in the Study of Human Evolution,” in *Paleoanthropology of the Balkans and Anatolia*, ed. Katerina Harvati and Mirjana Roksandic (Dordrecht, The Netherlands: Springer Science+Business Media, 2016), 35–50.



Findings from the site
Mališina Stijena,
Homeland Museum,
Pljevlja

photo:
Homeland museum Pljevlja

In sum, at sites in the eastern Adriatic (in Montenegro and Croatia), there is a chronological hiatus between the late Middle Paleolithic (Mousterian) and the Upper Paleolithic (e.g., Aurignacian). This lacuna could be due to insufficient research, destruction of sites by rising sea levels in the Holocene, or possibly these sites were never there⁵³. In Eastern Serbia, the EUP is represented only by ephemeral oc-

cupations with little material⁵⁴. In Western Serbia, the most important EUP site is Šalitrena Pećina.

Šalitrena Pećina is a very important site currently under excavation; it's the only site in Serbia with a complete stratigraphic sequence from the late Mousterian to the Gravettian. It is located 100 km. southwest of Belgrade in central Serbia, near Valjevo, in a canyon of the Ribnica river. Middle Paleolithic, Aurignacian, and Gravettian layers have been identified⁵⁵. The Middle Paleolithic lithic assemblages are described as typical Balkan Mousterian⁵⁶ with a high percentage of sidescrapers, a low but constant presence of Levallois technique, discoid cores, and an assortment of denticulates, notches, and retouched flakes⁵⁷. The excavator infers that backed tools indicate contacts with the SW Balkans, while the presence of bifacial tools indicates connections with central Europe. The Aurignacian of level 5a, with its high percentage of carinated endscrapers, burins, retouched and unretouched bladelets, is closer to the early Aurignacian in central and western Europe than it is to industries from northern Bosnia and the Banat region⁵⁸. Dentalium shell beads, bone points and tools, and mineral pigments were also found in level 5a. Interestingly, radiocarbon dates indicate a depositional hiatus of several thousand years between the Aurignacian of level 5a and the preceding Mousterian in level 5b. A comparative analysis of the faunal assemblages from Mousterian deposits and Aurignacian deposits revealed many more similarities than differences. The same ecosystems were exploited in both time periods, the same prey were hunted, and only slight differences in the representation of each taxon exist. In other words, it appears that subsistence practices during both time periods were very similar⁵⁹.

53 Karavanić et al., "Paleolithic Hominins and Settlement in Croatia from MIS 6 to MIS 3."

54 Dušan Mihailović, "Push-and-Pull Factors of the Middle to Upper Paleolithic Transition in the Balkans," *Quaternary International* 551 (June 2020): 47–62, <https://doi.org/10.1016/j.quaint.2019.10.010>.

55 Ana B. Marín-Arroyo and Bojana Mihailović, "The Chronometric Dating and Subsistence of Late Neanderthals and Early Anatomically Modern Humans in the Central Balkans Insights from Šalitrena Pećina (Mionica, Serbia)," *Journal of Anthropological Research* 73, no. 3 (2017): 413–47, <https://doi.org/10.1086/693054>.

56 Marín-Arroyo and Mihailović.

57 Bojana Mihailović, "The Mousterian Industry from the Šalitrena Cave," vol. XXIII–1, *Zbornik Narodnog Muzeja u Beogradu* (Beograd: Narodni Muzej, 2017), 9–36.

58 Mihailović.

59 Mihailović.

The richest Aurignacian localities have in fact been identified at sites in northern Bulgaria (Bacho Kiro, Kozarnika, and Temnata). The geographic patterning of the Middle to Upper Paleolithic transition in the Balkans, therefore, seems to be that MP sites are prevalent in the west of the peninsula while early UP sites occur in the east. One proposed scenario for this patterning is that as modern humans (the makers of the early UP) migrated into the Balkans using the Danubian corridor, they colonized the ecologically preferable eastern Balkans, pushing Neanderthals (the makers of the Middle Paleolithic) to the central and western parts of the peninsula⁶⁰.

MEDENA STIJENA, TREBAČKI KRŠ, AND THE LATE UPPER PALEOLITHIC

As described earlier, there are few Early Upper Paleolithic (Aurignacian) sites in the western Balkans. The Gravettian, which appears in the Po River Basin around 35 Ka is not well represented in the western Balkans, either. An exception to this is the site of Šalitrena Pećina in Serbia. The Upper Paleolithic Gravettian assemblages at this cave are very important. Level 4 contains thousands of lithics, abundant fauna, and fireplaces⁶¹. The lithic technology consists of blade, bladelet and microbladelet techniques, and the retouched tools include burins, endscrapers, retouched blades and points, and backed tools. The closest analogs are said to be layers IX-IV of Temnata Dupka and level IVb or Kozarnika, both sites in western Bulgaria. The industry has been said to have close parallels with the Gravettian of central Europe.

The Early Epigravettian follows the Gravettian; in the region it is fairly well documented and appears around 26 Ka, coincident with the Last Glacial Maximum, according to a new chronological synthesis⁶². The appearance of shouldered points in Early Epigravettian assemblages is seen as indicating transmission of technology from Central Europe, where this tool type appears during the final Gravettian⁶³. The Early Epigravettian ends around 17.6 Ka and is followed by the Late Epigravettian. This transition is associated with changes in settlement pattern in the region. This includes a shift from coastal areas during the Early Epigravettian to mountainous areas of the Alps, northern Istria, and the Dinaric Alps⁶⁴. The Late Epigravettian ends shortly after 12 Ka, around the time of the beginning of the Holocene period.

In Montenegro, the Gravettian has been documented at Crvena Stijena in the upper part of layer X, while layers IX and VIII are attributed to the Epigravettian and Final Epigravettian, respectively⁶⁵. A radiocarbon date from layer VIII places it

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Archaeological site
Mališina Stijena

photo:
Homeland museum Pljevlja



60 Mihailović, "Push-and-Pull Factors of the Middle to Upper Paleolithic Transition in the Balkans."

61 Bojana Mihailovic, "THE GRAVETTIAN SITE ŠALITRENA PEĆINA NEAR MIONICA (WESTERN SERBIA)," 2008, 8.

62 Aitor Ruiz-Redondo et al., "Mid and Late Upper Palaeolithic in the Adriatic Basin: Chronology, Transitions and Human Adaptations to a Changing Landscape," *Quaternary Science Reviews* 276 (January 2022): 107319, <https://doi.org/10.1016/j.quascirev.2021.107319>.

63 Ruiz-Redondo et al.

64 Ruiz-Redondo et al.

65 Mihailović, Mihailović, and Whallon, "Excavations of Middle Paleolithic - Mesolithic Layers."



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Archaeological site
Medena stijena

photo:
Homeland museum Pljevlja

within the period 14.7–12.9 Ka. Layers VI-IVb2 are assigned to the Epigravettian. Layer IV is attributed to the Mesolithic, layers III and II to the Neolithic, and the youngest is Bronze Age.

At Mališina Stijena, a lithic complex in the uppermost excavated layer contains elements typical of the Final Upper Paleolithic, including microblade technology and retouched tools such as backed microblades, Gravettoid points, and small endscrapers. The fauna in this layer contains remains of birds, fish, and small mammals⁶⁶. Two other sites in Montenegro have yielded Late Upper Paleolithic remains, Medena Stijena and Trebački Krš.

Medena Stijena is located in the Čehotina River gorge. It was excavated from 1983-1991 by D. Srejšević⁶⁷. It contains six Upper Paleolithic layers (V-X) and one Mesolithic layer (IV). According to Mihailović⁶⁸, layers IX and X contain Epigravettian assemblages dominated by endscrapers, burins and retouched blades, notched pieces, truncations, straight backed bladelets, and points. Medena Stijena layer VIII contains tools from the Final Epigravettian, consisting of curved backed bladelets, truncated backed bladelets, and geometrics. Also present are retouched blades and notched pieces, endscrapers (especially nosed) and burins. Layer VII contains geometrics which are mostly atypical microliths and segments; small thumbnail endscrapers are also present, as are typical curved backed bladelets. Layers VI and V contain later Epigravettian industries with typologically distinctive endscrapers, both curved and straight truncated backed tools, and a variety of triangles. Layer V is distinguished by standardization and microlithization of endscrapers and backed tools, with almost half (44%) of endscrapers on flakes being made on flakes smaller than 15 mm. These are short thumbnail endscrapers and endscrapers with invasive lateral retouch. The backed pieces are made on blades less than 10 mm wide; large denticulates also occur in this layer. Unfortunately, no radiometric dates from this site have been published.

Trebački Krš is located on the Lim River in NE Montenegro, near the town of Berane. It is very large, 30 meters wide, but only 6 meters deep (front to back). From 1987-1989 excavations were led by Dragoslav Srejšević and Ljiljana Đuričić, under the auspices of the Philosophical Faculty at the

66 Derevianko et al., "Recent Data on the Lithic Industry from the Rock Shelter of Mališina Stijena in Montenegro (Based on the Results from the 2017 Study)."

67 D. Srejšević and C. Marković, "Medena Stijena - Paleolitsko i Mesolitsko Nalazište," *Arheološki Pregled*, 1986, 37-38; Dusan Mihailović, "The Upper Palaeolithic and Mesolithic Stone Industries of Montenegro," *British School at Athens Studies*, 3 (1999): 343-56.

68 Mihailović, "The Upper Palaeolithic and Mesolithic Stone Industries of Montenegro."

University of Belgrade and the Polowski Museum in Berane⁶⁹. Deposits are fairly shallow, and three geological horizons were distinguished down to about 60 cm below the surface. According to Mihailović⁷⁰, the industry from layer II belongs to the final Epigravettian, and contains curved backed bladelets, short thumbnail endscrapers and truncated backed bladelets. The industries from the two upper layers at the site, Ib and Ia, are assigned to the Mesolithic, primarily on the basis of faunal evidence suggesting a Holocene age. However, they are quite similar to the industry from Layer II, and should be assigned to an Epigravettian phase of the Holocene⁷¹. The fauna is well preserved but highly fragmented, making species identification extremely difficult. Large mammal remains appear linked to human exploitation, and consist of red deer, ibex and chamois. Only low-utility parts (teeth and distal parts of extremities) are present, suggesting that high-utility parts (long bones) were taken elsewhere. Small mammals are indicative of environment rather than subsistence, and suggest a steppic environment consistent with the late Pleistocene/early Holocene⁷².

Our understanding of the late Upper Paleolithic in Montenegro is supplemented by the results from other important excavations in the region. The site of Badanj, near Stolac, Herzegovina contains Final Epigravettian lithic industries as well as an osseous industry consisting of bone and antler harpoons, awls, needles, and pierced shell and tooth ornaments⁷³. Radiocarbon dates from the bottom (16,260–15,350 cal BP) and middle (15,000–14,080 cal BP)⁷⁴ of the sequence are consistent with the chronology documented at other sites. Additionally, a limestone boulder with deeply carved geometric engravings was found at the site by Basler⁷⁵.

In Bosnia, excavations at Kadar, an open-air site overlooking the Sava river, revealed Epigravettian assemblages with shouldered points, reminiscent of those found in Italy and along the eastern shores of the Adriatic in Slovenia and Croatia⁷⁶. Radiometric dates average 17 Ka⁷⁷, which is in agreement with C14 dates from other Epigravettian sites in the region. At Velika Pečina in south-eastern Serbia, early Epigravettian assemblages were also uncovered, although diagnostic forms such as microgravettes and shouldered points are lacking. A small assemblage of osseous tools was



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Finds from the site
Medena stijena

photo:
Homeland Museum Pljevlja

69 Vesna Dimitrijević, "Vertebrate Fauna from the Epigravettian Site of Trebački Krš near Berane, Northeast Montenegro," *The Palaeolithic Archaeology of Greece and Adjacent Areas*, 3 (1999).

70 Mihailovic, "The Upper Palaeolithic and Mesolithic Stone Industries of Montenegro."

71 Mihailovic.

72 Dimitrijević, "Vertebrate Fauna from the Epigravettian Site of Trebački Krš near Berane, Northeast Montenegro."

73 Robert Whallon, "The Paleolithic Site of Badanj: Recent Excavations and Results of Analysis," *Glasnik Zemaljskog Muzeja Bosne i Hercegovine u Sarajevu* 44 (1989): 7–20.

74 Robert Whallon, "The Lithic Tool Assemblages at Badanj within Their Regional Context," *The Palaeolithic Archaeology of Greece and Adjacent Areas*, 1999.

75 Aitor Ruiz-Redondo et al., "Beyond the Bounds of Western Europe: Paleolithic Art in the Balkan Peninsula," *Journal of World Prehistory* 33, no. 4 (December 2020): 425–55, <https://doi.org/10.1007/s10963-020-09147-z>.

76 A. Montet-White and Đ Basler, "L'industrie Gravettienne de Kadar En Bosnie Du Nord (Yougoslavie)," *Bulletin de La Société Préhistorique Française* 74 (1977): 531–44.

77 A. Montet-White, "Kadar," n.d., <https://oldstoneage.com/osa/amw/kadar/>.



➤
View of the
archaeological site
Trebački Krš

also present, and included mammoth ivory fragments, bone needles and awls, an antler point-base, and an ornament made from a pierced *Alces* incisor. Radiocarbon dates place the site earlier, between 20,450 – 21,950 Ka.

In Albania, rich Epigravettian deposits dated to 18 Ka cal. BP⁷⁸ were uncovered at Blazi cave in the north-central part of the country⁷⁹. More than 10,000 stone artifacts and 13,000 bones and teeth were found in an area which measured only 2 m². The lithic industry is typical of the Late Epigravettian, and the fauna is dominated by ibex (*Capra ibex*), with much lower frequencies of red deer and wild boar. The high frequency of ibex and its age distribution suggest that Blazi Cave was a specialized ibex hunting site during the summer.

Current research suggests that further exploration of sites from this time period will reveal interesting details about human adaptations to changing climates and the resulting environmental changes, as well as the existence of social networks among populations spread across the Adriatic basin. The gaps in the temporal and spatial distribution of sites from both the early and late Upper Paleolithic in the western Balkans indicate, to a certain extent, the incompleteness of the archaeological record and signal the high potential for important information to be revealed as research intensifies.

78 Thomas C. Hauck et al., "After the Cold: Epigravettian Hunter-Gatherers in Blazi Cave (Albania)," *Quaternary International* 450 (September 2017): 150–63, <https://doi.org/10.1016/j.quaint.2016.11.045>.

79 Hauck et al.

Gilliane Monnier and Gilbert Tostevin
The Paleolithic in Montenegro

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Finds from the site
Trebački krš,
Museum of Polimlje

Summary

For its small size, Montenegro has a remarkably rich archaeological heritage. Some of the most important Paleolithic sites in the Balkan peninsula occur in Montenegro. Trlica cave near Pljevlja may contain traces of a hominin presence 1.8 million years ago. Crvena Stijena, in the Nikšić municipality, contains one of the longest archaeological sequences anywhere in the world, covering the Middle Paleolithic through the Bronze Age. Its extensive Middle Paleolithic deposits, stretching from as early as 130,000 years ago to 40,000 years ago, make it a type site for this time period in the Balkan peninsula. It is also remarkable for the preservation of butchered animal bones, and extremely thick layered hearths, which contain tantalizing clues about the activities of the Neanderthals who occupied the cave. Unlike many other caves in the Balkan peninsula, Crvena Stijena was not a carnivore den, and most of the bones discovered in the deposits represent food sources for the Neanderthals. Near Podgorica, Bioče cave is another remarkable site, with an enormously rich lithic industry as well as faunal remains and traces of campfires. The stone tools from both sites yield valuable information about the tool-making traditions of Neanderthals, which allow us to better understand the relationships that Neanderthal groups along the Adriatic coast may have had with groups in other parts of the Balkans as well as further afield, from the Levant in the South, to Central Europe in the North. Mališina Stijena contributes information about the Middle to Upper Paleolithic transition. Unfortunately, the question represented by its transitional-looking industries is the same question that occurs at other sites in the Balkans, such as Vindija, and even in some of the most well-known transitional sites in France: were the industries actually a mix of Middle and Upper Paleolithic types, or were assemblages mixed by post-depositional processes? Finally, the Epigravettian of the western Balkans is illuminated by research conducted at the sites of Medena Stijena and Trebački Krš in Montenegro. These sites contain rich lithic assemblages and faunal remains, which help contribute to our understanding of the lifestyles of the hunters-fishers-gatherers at the end of the Paleolithic period in the region. In sum, the Paleolithic record of Montenegro is a detailed and valuable one; the discovery and excavation of new sites in the future will undoubtedly help fill in some of the current gaps and answer important questions.





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MAPI EVROPE”

CLIO MAP//

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Objavljivanje ove univerzitetske publikacije odobrio je Uređivački odbor na Univerzitetu Crne Gore odlukom br. _____

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Ova monografija rezultat je rada na projektu „Crna Gora na političkoj i kulturnoj mapi Evrope, CLIO MAP“, koji je finansiran od strane Ministarstva nauke Crne Gore (Rješenje br 01-778 od 29. III 2019. god.).

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Produkcija publikacije:

Izvori ilustrativnog materijala:

Sve fotografije čije autorstvo ili izvor nijesu naznačeni u pratećim legendama izradio je prof. mr Lazar Pejović.

Svi infografički prilozi namjenski su izrađeni za potrebe ove publikacije.
Podloga kartografskih infografika preuzeta je sa Open street map.

Likovni urednik

prof. mr Lazar Pejović

Urednik kartografskih materijala

v. prof. dr Gojko Nikolić

Grafičko oblikovanje, izrada infografičkog materijala i priprema za štampu

mr Sandra Đurović

Lektura

Sonja Živaljević

Štampa

Art-grafika

Tiraž

300 primjeraka

Podgorica, 2022

CIP - Каталогизација у публикацији
Национална библиотека Црне Горе, Цетиње

ISBN 978-86-7664-222-9

COBISS.CG-ID 23860740