
This is the third monograph about the famous Balkan rock shelter site Crvena Stijena which is located in the western part of Montenegro near the border with Bosnia and Herzegovina. Crvena Stijena was the key site for the development of prehistoric research in the post-World War II Montenegro when local museums and national scientific networks started to develop. Lack of Montenegrin scholars at that time was the reason why first systematic excavations of this site were directed by researchers from two other Yugoslav centres, namely Ljubljana (Mitja Brodar) and Sarajevo (Alojz Benac and Đuro Basler). The site has a long stratigraphic sequence of more than 20 m of archaeological and geological layers with Middle and Upper Palaeolithic, Mesolithic, Neolithic, and Bronze Age remains.

The first monograph was published in 1975 as a volume edited by Basler, one of the field directors who excavated the greatest portion of sediments during many years of research conducted continuously from 1954 to 1964. The monograph was published in Bosnian, Croatian and Serbian (hereafter BCS) in Cyrillic, and for this reason, the archaeology of Crvena Stijena was hardly accessible to international scholars of that time. The second monograph was published in 2009 in English and it was dedicated to the restudying of Upper Palaeolithic and Mesolithic knapped stone assemblages that were found earlier, during Benac’s, Brodar’s and Basler’s excavations at the site.

This third monograph primarily builds upon the results of the fieldwork conducted between 2004 and 2015 (with interruptions in 2009 and 2013, but with two extra field campaigns in 2011 and 2015). This long-term project concentrates on Middle Palaeolithic layers just below Campanian Ignimbrite (Y5) tephra (Basler’s Layer XI) because all Upper Palaeolithic and Mesolithic layers were almost entirely excavated earlier. Just a few small remnants of Mesolithic and Upper Palaeolithic layers have been found in these recent excavations. The Mesolithic layers were reported earlier in a preliminary report that was the first publication arising from this project. A couple of chapters provide reviews of previous work but also give perspectives for future work at this important site. It should be noted that the monograph was published only a couple of years after the project fieldwork finished, as it is not very common in archaeology that site monographs are published such a short time after the fieldwork. Just a few papers have been published during the course of the project, and that is why this prompt publication of the monograph is very important.

The book consists of twenty chapters authored by a long list of researchers from sixteen different institutions, both Montenegrin and international. Chapters cover different topics including the theoretical framework of the project; the history of research at the site; the geography, geology and ecology of Crvena Stijena and its surroundings; the geoarchaeology of the stratigraphic sequence; radiometric dating; interpretation of the site in a regional Palaeolithic, Mesolithic, and Neolithic context; zooarchaeology; archaeobotany; malacology; and a study of fire structures. The last two chapters provide a synthesis of the results and perspectives for future research at this site. I will not review every chapter but will refer to those that I find most interesting in terms of giving greater insight into this exceptional site.

The introductory Chapter 1 provides the editor’s explanation as to why this project actually started at a time when so many Middle Palaeolithic sites are known and currently being excavated. One of the main driving forces for starting such a complex and demanding project, in the opinion of Robert Whallon, editor and project director, is the long stratigraphic sequence of Middle Palaeolithic layers...
(without touching the bedrock) that provides a good opportunity for studying different aspects of Neanderthal behaviour and changes in the sediment record. The long sequence encompassing warm and cold episodes was another reason behind this project, as it creates an opportunity to propose the main research question and hypotheses about different Neanderthals’ subsistence strategies as adaptive responses to different environmental conditions and how these strategies could be recognized in the archaeological evidence of the site.

In Chapter 5, Zvezdana Vušović-Lučić and colleagues give a concise and very useful overview of the course of the fieldwork in Crvena Stijena between 1954 and 1964 referring to all publications about the site that were published until 1975, including the first monograph. This overview could be very useful for all those scholars who are not native speakers of BCS. However, it should be mentioned that there are several publications cited in the reference list of this chapter that have a short summary in other languages (German, French), and Karl Brunnacker’s study of Crvena Stijena sediments was published entirely in German.

Writing in Chapter 6, Robert Whallon provides details of the course of the excavation year by year, illustrating it with plans showing excavated areas in different years. From this overview it becomes completely clear how complex and hard preparation of the site for the excavation was. This preparatory work, including the removal of enormous amounts of sterile sediments, was a prerequisite not only for this project but also for current and all other future projects at this site. While horizontal plans illustrate the pace of work very well, it remains unclear to the reader how thick the excavated layers were. This becomes clearer with the complementary data (layer descriptions and profiles) from Chapter 8, which add more information about the excavation process, stratigraphy and new layer labelling system (M2, M3, M4, M5) relative to Basler’s layers (XII, XIII, XIV, XV, XVI, XVII).

Chapters about geoarchaeology and zooarchaeology are of special importance for testing the project’s main hypothesis. Mike W. Morley provides a detailed study of the sediment record of part of the sequence (Layers XXV–X), micromorphological analysis of thick Layer XXIV, where numerous hearth features were found in situ, explaining methods in detail and referring to earlier palaeoenvironmental reconstructions undertaken by Brunnacker. Morley’s study, when compared to Brunnacker’s, has a much better sampling resolution, hence enabling more precise detection of warm and cold depositional episodes in the sequence. To paint a broader picture, Morley tries to correlate these episodes to existing palaeoenvironmental and palaeoclimatic records. Morley also refers in detail to Layer XI, which represents the Campanian Ignimbrite (Y5) tephra layer, because it is a very important chronological marker in the stratigraphic sequence.

However, much more chronostratigraphic data have been acquired through the application of different radiometric techniques (thermoluminescence [TL], electron spin resonance [ESR], optically stimulated luminescence [OSL] and radiocarbon dating by Accelerator Mass Spectrometry [AMS 14C]), and these are presented in Chapter 9 by Norbert Mercier and colleagues. Before this project there was only one radiometric date (14C) available for the whole sequence of Crvena Stijena. A charcoal sample dated decades ago comes from Layer XII (just below the Campanian Ignimbrite tephra layer) and gives the radiocarbon age of 40,770 ± 900 BP (GrN-6083). The calibrated age (44,337 ± 973 cal year BP) fits well with the age of the tephra. Before this radiometric dating programme, the age of Crvena Stijena layers was tentatively proposed based on the observations of the sedimentary, faunal and lithic record. Dosemetric dating methods have been applied for Middle Palaeolithic layers, giving an age for Layer XXIV of around 78 ka (mean ESR-Linear Uptake [LU]) and 70 ka (TL), for Layer XX around 48 ka (mean ESR-LU), and for Layers XII and XIII around 43 ka and 44 ka respectively. AMS 14C (ultrafiltration technique) dates for Layers XII and XIII give a minimum age of c. 45 and 49 ka cal BP respectively. One could suppose that this is just the beginning of the dating of Middle Palaeolithic layers because there are a lot more Middle Palaeolithic sediments below Layer XXIV; the deepest one is Layer XXXI and the bedrock has not yet been reached. Radiocarbon dating of the latest Middle Palaeolithic (Layers XIII and XII), Upper Palaeolithic, and Mesolithic layers was based on samples from both recent and old excavations. Two samples that provided a Late Mesolithic age (mid-9th

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10 pp. 1–10.
12 Brunnacker 1967.
13 pp. 49–81.
14 pp. 132–139.
15 pp. 82–131.
16 pp. 266–294.
17 But see also the paper by Morley, Woodward 2011.
18 pp. 140–149.
19 Vogel, Waterbolk 1972, 61. – Basler 1975b, 90.
20 pp. 82–131.
millennium cal BP) give good additional information about Castellanoan chronology in the eastern Adriatic, which is valuable in itself, as there are only a couple of sites known so far in this region. The radiocarbon date from Layer 4 from recent excavations, which probably could be correlated to Layer IVb2 from earlier excavations, provides the first evidence for early Mesolithic occupation on this site. With dosimetric dates for Middle Palaeolithic layers and 14C AMS dates for Upper Palaeolithic Layers VIII and X, and Mesolithic Layers VI and IV, Crvena Stijena’s sequence is one of the best dated sequences in the Balkan Peninsula. However, it should be noted that some Palaeolithic layers’ age is ambiguous because there are discrepancies between different samples from the same layers (for example, the difference between two samples from Layer X is more than fifteen millennia). In the future, one could expect more data about the Middle Palaeolithic chronology of the site, but not much more about Upper Palaeolithic and later layers, as those have already been excavated. Furthermore, any future work with the samples from old excavations would encounter the same uncertainties regarding the stratigraphic origin of the samples that Mercier and colleagues mentioned in their paper.

Dušan Mihailović, Bojana Mihailović and Robert Whallon present the main features of Middle Palaeolithic, Upper Palaeolithic and Mesolithic knapped stone assemblages in Chapter 10. They reanalysed Middle Palaeolithic assemblages from Brodar’s and Basler’s excavations, also providing redrawings of stone artefacts that were published earlier, as well as some new drawings of lithics from older excavations done by Basler and Brodar that were left unpublished until now. In comparison to earlier conclusions about the Late Middle Palaeolithic at Crvena Stijena (Layers XIV–XII), it should be stressed that D. Mihailović and colleagues recognized Uluzzian elements in the lithic assemblage (laminar and microlaminar technology, diverse reduction strategies employed in knapping flakes and splintered pieces, and backed tools, including segments and arched points). These Uluzzian features are important in the context of the Middle/Upper Palaeolithic transition in the Adriatic basin. The authors also refer to small Middle Palaeolithic, Upper Palaeolithic and Mesolithic assemblages that were found during the course of Whallon’s project. These assemblages are small and correspond very well to earlier collections. When considering Upper Palaeolithic and Mesolithic lithic production, the authors mainly repeat data and conclusions that were published earlier by D. Mihailović.

In Chapter 12, Nikola Borovinić, Mile Baković and Robert Whallon review the archaeological evidence from ceramic layers of Crvena Stijena (excavated in the 1950s) where Layers (Strata) III, II and I were dated to the Early Neolithic, Middle Neolithic and Bronze Age, respectively. Each of these layers was considered within the Montenegrin and wider eastern Adriatic context. When referring to the early Neolithic of the Croatian coast, the authors state the following: “The influence of Mesolithic tradition on the life of Early Neolithic groups, which was maintained in the continuity of settlement, the lithic industry, and the remains of animal bones, can be seen at many sites (Gudnja, Markova Špilja, Kopačina, and others).” It is hard to support this statement in its entirety, given the fact that very few Mesolithic sites are known on the Dalmatian coast and islands, and especially ones dated to the Late Mesolithic. Just to note that Early Mesolithic remains are known only from Vlakno cave and Late Mesolithic remains from Vela spilja and Žukovica caves on the island of Korčula. These two Late Mesolithic sites are dated to the mid–late 7th millennium BC and show that the first farmers in the eastern Adriatic did not enter an empty land. However, the role of Mesolithic hunter-gatherers in the process of Neolithisation is far from being well understood. Two techniques in lithic production for obtaining regular blades, i.e. indirect percussion and pressure flaking, are present in both the Late Mesolithic and the Early Neolithic, although the origin of pressure flaking for these two periods is different. It seems that in the Early Neolithic, pressure flaking is used to produce larger blades by applying more complex pressure flaking modes. Marine resources seem to have lost their importance in Early Neolithic subsistence strategies, and the same could be said for terrestrial malacofauna. Fishing also changed from a seasonal activity to year-round opportunistic fishing. On the other hand, continuity across the Mesolithic/Neolithic transition in Montenegro can be observed in the Early Neolithic...
harbed point technology of Odmut and Vruća caves, where it represents a Mesolithic technological tradition.36

In Chapter 13, Goran Ćulafić, Gilbert Tostevin and Nikola Borovinić describe the sources of lithic raw material (mostly cherts, but also siliceous sandstones, silicified dolomites, and quartzites) that were discovered during the field survey within a 40 km radius of Crvena Stijena.37 The authors provide a description of the sources, location and geological age. As they sampled all found sources, more data about lithic raw materials are expected to be published in the future. This fieldwork is the first step towards correlating lithic raw materials from Crvena Stijena with sources that could potentially have been exploited in the past. Earlier work by Jakob Pamić included petrographic analyses of selected artefacts from Crvena Stijena, but Pamić did not include a field survey in his work that would allow correlation of artefacts from Crvena Stijena with possible lithic raw material sources.38 D. Mihailović classified Upper Palaeolithic and Mesolithic lithic assemblages from Crvena Stijena according to macroscopic features and provides data about diachronic changes in raw material use.39 But again, data about sources is significantly missing. Since Ćulafić and colleagues plan to continue the field survey not only in Montenegro, but also in neighbouring Bosnia and Herzegovina, and Croatia, the wealth of data on lithic raw material sources collected and presented by Zlatko Perhoć would certainly be a valuable source of information for these authors’ future work.40

Taxonomic determination was the main purpose of earlier analyses of faunal remains from Crvena Stijena. Additionally, recognized taxa were used as proxies for palaeoenvironmental reconstructions of the area where Crvena Stijena is located.41 In this monograph, Eugène Morin and Marie-Cécile Soulier conducted the first detailed zooarchaeological analysis including taphonomic observations in Chapter 14.42 Analysed faunal assemblages were found in recent excavations and they originate from excavated Layers M5–X.43 Small samples were also collected for micromorphological analysis and dating from Layers XXVI–XVI; however, they have not been presented in this paper, with the exception of Layer XXIV.44 There are also several bone retouchers presented in the paper.45 The most important conclusions about the analysed assemblages are that: 1) humans are the main accumulators of ungulate faunal remains during the deposition of analysed layers, but non-human predators also contribute to the accumulation of a small number of faunal remains,46 and 2) the taxonomic composition of the assemblages showed that there are no major faunal turnovers.47 This is the very first time that data about seasonality is available for Crvena Stijena. For Layer M3 and Layer X, late spring and/or summer are proposed as season(s) of animal procurement, while for Layer M1 and Layer XXIV, this is mid-winter and/or spring and mid-winter to mid-spring respectively.48 Referring to experimental and ethnoarchaeological data, the authors proposed the hypothesis that long longitudinal cut-marks on shaft portions of proximal long bones could be connected to filleting activities, including the drying and smoking of meat, but they are cautious with their interpretation as such cut-marks could be caused in small numbers by simple defleshing.49 Hopefully in the future more data will become available to support or refute this interesting hypothesis. More zooarchaeological data is provided in the next chapter by Vesna Dimitrijević about Mesolithic faunal remains that were found during Whallon’s excavation of the site.

Goran Ćulafić describes an archaeomalacological assemblage found in the 2000s and discusses its dietary and ornamental potential,50 also referring to earlier observations about malacological material from Crvena Stijena. It is worth mentioning that for Late Mesolithic layers (1 and 2), Ćulafić reports on 27 perforated marine snail shells Columbella rustica, which together with 23 specimens that were reported earlier from the surface layer51 and 10 specimens in another paper,52 represents one of the biggest Mesolithic perforated marine assemblages in the Adriatic hinterland.

In Chapter 17, Jennie D. Shaw reports on the results of analyses of charcoal originating from combustion features from Layers XXIV, XX, M5, M4, M3 and M1.53 Up until now, no such study had been undertaken for Crvena Stijena. The author explains methods very thoroughly.

36 Borić et al. 2019.
37 pp. 257–265.
38 Pamić 1975.
39 Mihailović 2009.
40 Perhoć 2020. – Vukosavljević, Perhoć, Radić 2022, with references.
42 pp. 266–294.
43 M5–M1 are new labels for layers. The correlation to the older labelling system is given on p. 267 and Fig. 14.1.
44 p. 268.
45 p. 281.
46 pp. 277, 280.
47 p. 282.
49 pp. 277, 284.
50 pp. 299–306.
52 Borić, Cristiani 2019, 220 and Tab. 1.
i.e., sampling, flotation and taxonomic identification. The results of charcoal fragment identification are presented in a meticulous way. The main conclusion is that Pinus spp. was the most often burnt wood in the analysed layers. The author combines taxonomic identification with fuel value indices (FVIs) for different wood taxa to try to infer whether hearths had different functions (cooking/heating vs. smoking/drying).

Chapter 18 by Ramiro J. March, Robert Whallon and Mike W. Morley is the longest contribution in this monograph. It deals with Middle Palaeolithic fire structures at the site from Layers XXIV and XX. This empirical tour de force could easily stand as a book by itself. The main goal of the paper is to try to detect the nature and possible functions of different fire structures that are described and sampled exclusively from the exposed profiles. The paper is divided into two parts. The first one is dedicated to descriptive stratigraphic observations of the fire structures from analysed layers and experimental work, while the second is the analytical part that uses different methods (X-ray fluorescence, XRD, GC, GC-MS, and GC-C-IRMS) for analysing chemical, mineralogical and organic matter composition in selected samples. A great wealth of different data is presented in numerous photographs, tables, drawings, 3D schematic models and graphs.

Robert Whallon and Eugène Morin provide an overview of the most important results that refer to the main questions raised at the beginning and throughout the course of the project in Chapter 20. The volume closes with a short chapter by Gilbert Tostevin, current director of the Crvena Stijena excavation, who presents his plan and vision for further investigations of Crvena Stijena, including the potential challenges. Tostevin’s plans are to include microarchaeological research in parallel to the classical archaeological fieldwork. A couple of recent papers show that these plans are already in motion.

As announced in the title of the monograph, this truly is a multidisciplinary piece of work. This kind of monograph is one of a very few in the field of Balkan Palaeolithic archaeology and it stands next to the monumental two-volume monograph on Klithi rock shelter and other Palaeolithic sites in the Epirus region of northwestern Greece.

The Crvena Stijena monograph is a very important reference point for all archaeologists who are interested in Balkan Stone Age archaeology, and particularly for those involved in Middle Palaeolithic research.

As the monograph was published by the end of 2017, one could say this review is essentially old news. However, a web search for the monograph reveals that it is almost impossible to purchase it, and for this reason, I think it is important to draw greater attention to this excellent edited volume, even a couple of years after publication, as it is not very likely that many people have had the opportunity to read it. The book is available to read online on the website of the Montenegrin Academy of Sciences and Arts. After all the hard work invested in the field and in the subsequent writing and publishing of the monograph, it would be a great pity not to make this book available for individuals and libraries worldwide.

This monograph is not the only outcome of the project led by Whallon and his Montenegrine colleagues. The project also resulted in a research and accommodation centre for those studying Crvena Stijena which has the potential to become an important regional research hub. This is yet another indication that Crvena Stijena can provide more valuable information about Middle Palaeolithic societies in southeast Europe. A new project led by Tostevin, following immediately on Whallon’s, definitely shows the researchers’ optimism about the future potential of the site.

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54 pp. 325–326 and Figs. 17.8–17.10.
56 pp. 450–455.
58 Bailey 1997. – Just to mention that several volumes about the hunter-gatherer archaeology of the Franchthi cave have also been published.

60 p. xxix.
61 pp. 456–463.
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Archaeologia Austriaca, Band 106/2022, 345–350
© 2022 by Österreichische Akademie der Wissenschaften, Wien
doi: 10.1553/archaeologia106s345