

du Renne (Arcy-sur-Cure) and Abri Pataud. Finally he includes a quantitatively based consideration of assemblages from other regions of Europe and south-west Asia. Doing so highlights the fourth strength of the book—its abundant tables and appendices of data. Faunal analysts wanting to take a similar approach often struggle to find comparable data sets, as Morin did himself. Faunal analysts produce large amounts of data; however, too often they are not consistently collected and presented, so others are unable to take advantage of them. Morin is to be thanked for all the detailed primary and secondary data that he makes available.

Morin's volume leaves open a few questions for further examination. First are the assumptions behind O'Connell's proposal, which includes Neanderthals and early modern humans sharing similar life history traits and age structures. Are these valid? Recent analyses of dental incremental structures and tooth-wear indicate differences between the two groups and, therefore, question these assumptions. Second is the prediction that Neanderthal and modern human diets would have been identical in overlapping ranges (as discussed on p. 17). This would be true if their technology was identical; however, modern human and Neanderthal stone-working technologies were different, and their other technologies likely were, too. How would these technological differences interact with the intensification hypothesis? Is it possible that early modern human success rates were higher (which unfortunately would be difficult to track through our current methods of faunal analysis)? Finally, how can we reconcile the similar dietary breadths detected in Morin's analysis with the dissimilar diets detected through stable isotope analyses of the bones of Neanderthals and early modern humans in Europe (Richards 2009)?

In sum, this volume is a significant contribution to human evolutionary and faunal studies. Morin is to be congratulated for pushing faunal analysts to think creatively about their data; the animal bones preserved in archaeological sites can tell us much more than just 'what hominids ate', and Morin highlights well how these bits of bone can be used to address major questions in human evolution.

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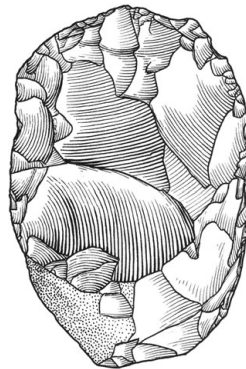
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ARTHUR J. JELINEK. *Neanderthal lithic industries at La Quina*. xxv+420 pages, 221 b&w illustrations, 140 tables, CD. 2013. Tucson: University of Arizona Press; 978-0-8165-2246-0 hardback \$75.



This volume presents analysis and interpretation of the lithics excavated between 1985 and 1994 by Jelinek and his team, in collaboration with A. Debénath, at La Quina, south-western France. Why read a site monograph of over

400 pages (plus a CD-ROM with the original database), published almost 20 years after a 10-year excavation? I suggest several reasons.

First, La Quina is a paradoxical Middle Palaeolithic site. Good-quality flint is scarce in the vicinity, and most of it would have to have come from 10–12km away (Park 2007). La Quina, however, is one of the richest sites in lithics and bones in south-west/central France—more than 100 000 artefacts, including about 37 000 larger than 20mm, were recovered in excavations of around 15m<sup>3</sup>. Second, at more than 100m long, this site competes as one of the largest rockshelters used by Neanderthals in Western Europe and, across 3m of stratigraphy, preserves three of the major Mousterian variants (from bottom to top: eponymous Quina Mousterian, Mousterian of Acheulean Tradition and Denticulate Mousterian). Third, La Quina is the findspot of more than 35 Neanderthal individuals, including an adult skeleton and the cranium of a child. Fourth, artefacts almost unknown in other Mousterian contexts, like very

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large scrapers (more than 150mm long), as well as spheroids, have been found especially in the Quina layers. And, last but not least, La Quina is one of the rare sites where a pit containing “organic sediment that was overlain by a mass of deliberately assembled limestone boulders and pebbles” (p. 163) has been identified. This almost circular pit, opened in one of the upper Denticulate layers (Bed 6a), is about 1m in diameter and about 0.5m deep.

In this book, Jelinek presents his analysis of lithics and offers a synthesis on the function of the site through time. The approach is grounded in the recording of artefact typology, dimensions and other attributes such as raw material, cortex percentage and weight, as well as an extensive quantitative study of small flakes (<25mm) which include scraper or biface resharpening flakes. The latter, along with precise quantification of artefact density per volume of sediment, are used by Jelinek to discuss intensity of reduction.

Jelinek divides the site sequence into two main assemblages and suggests that they broadly correspond to two functional variants of the Mousterian. The Quina levels (i.e. the lower beds, Beds N to G2) “were left by ‘logistical task groups’ whose primary purpose at the site was butchering animals” (p. 207). An increase in reduction intensity is seen by Jelinek from bottom to top through these Quina levels, and this would correspond to an “increasing thoroughness of artefact recovery for future use as well as more intensive reduction itself” (p. 207). During that period, the site which concentrates below the highest north-facing cliff would have been used, according to Jelinek, to “frighten off large mammals of the plateau above” in order to kill or disable them. This suggestion follows up an older hypothesis proposed by the first excavator of the site, Dr Henri-Martin. The presence of many human remains in these layers might indeed be related to “particular dangers associated with the hunting use of the high cliff at La Quina” (p. 330).

The Upper levels, and specifically Beds 8 and 6, are interpreted by Jelinek as a combination (at best) of *in situ* products of secondary butchering mixed with transported ‘domestic’ debris. This debris would be derived from either a campsite on the cliff ledge above or from a significant shelter under the overhanging cliff, from which material moved laterally. This interpretation comes from three observations: first, no clearly defined hearths have been found in these “heavily organic” and “lenticular structures” (p. 162);

second, unburnt large bones are associated with burnt small bone fragments; and third, burnt as well as unburnt small flint artefacts are mixed together.

Unlike the lower levels, these upper levels would have originated from a full variety of activities at a Neanderthal campsite. Bed 8 is different from the other Denticulate Mousterian levels because it is the one with the highest proportion of Levallois flakes; spheroids were also found during the recent excavation. Fauna associated with Bed 6 reflects a more temperate climate (shifting from a dominance of reindeer to bison; Armand 2005) and would point toward a more closed environment. Bed 6d (Mousterian of Acheulean Tradition) is argued to be unique in many respects: “including greater efficiency in the utilization of material mass”, to have been “produced by skilled knappers” (p. 283) and to “represent the most extreme form of material transport and conservation in the sequence” (p. 332). Bed 6c is a Denticulate Mousterian clearly and abruptly differing from the underlying Mousterian of Acheulean Tradition, and which might correspond to “the appearance of a different cultural group of people” (p. 291). The general composition of the industry found in the pit does not differ from the surrounding Denticulate Mousterian assemblages (pp. 302–11).

Jelinek’s analysis is strongly quantitative. In the final synthetic chapter, however, he also provides beautiful photographs and drawings (both almost always printed full-scale), and detailed descriptions of specific artefacts. Jelinek justifies this decision by arguing that these artefacts are “distinctive features” (p. 209) useful in the final discussion, implying that they could not have been highlighted before the general case for the industry was made. One could argue, however, that these descriptions and illustrations of individual artefacts in fact constitute basic raw data; meanwhile the measurements and typo-technological classifications are already an interpretative framework applied to the artefacts. Nonetheless, I personally find these illustrations and descriptions of individual objects to be very useful for a sense of the artefacts, before averaging within global quantitative analysis.

One weakness of this volume is the lack of data on aspects other than lithics and on natural site formation processes at the site. Another surprising aspect is the absence of discussion of the representativeness of the sample studied here. Jelinek acknowledges that his sample excavated over a few square metres

may not well represent what was found in previous excavations which covered more than 130m<sup>2</sup>. But how exactly does the recent sample compare with that from previous excavations?

The arguments made in this book are a direct response to the debate on Mousterian variability as formulated in the late 1970s by Bordes and Binford. I firmly recommend any student interested specifically in the interpretation of Mousterian variability—or the history of our discipline more generally—to read this volume. The community will be grateful to Arthur Jelinek for the fieldwork conducted at La Quina and for the publication of the results in this volume. As Jelinek says in the Epilogue, let's hope that this book is only the beginning of a new series of research projects on La Quina.

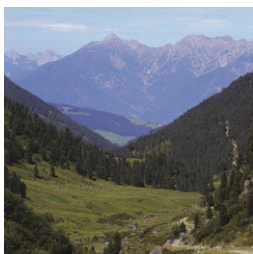
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DIETER SCHÄFER (ed.). *Das Mesolithikum-Projekt Ullafelsen (Teil 1). Mensch und Umwelt im Holozän Tirols (Band 1)*. 560 pages, 500 colour and b&w illustrations, CD. 2011. Innsbruck: Philipp von Zabern; 978-3-8053-4375-6 hardback €85.90.



*Mensch und Umwelt im Holozän Tirols* (translated into English on the book cover as 'Man and environment in the Holocene of Tyrol'), is the first volume of a series edited

by Dieter Schäfer. It reports—predominantly in German with English summaries—the results of *Das Mesolithikum-Projekt Ullafelsen* ('The Mesolithic Project Ullafelsen').

An important motivation for the research project was the discovery of 'Ötzi'—the exceptional Copper Age mummy with well-preserved body, clothing and equipment, who lived and died c. 3300 BC in the Tyrolean Alps. Under the direction of Dieter Schäfer of the University of Innsbruck, Austria, the *Mesolithikum-Projekt* centred on the archaeological site of Ullafelsen, located at 1869m asl in the Fotscher Valley (Stubai Alps, Austria). The site was the focus of an extensive and interdisciplinary study, including climatology, geology, geomorphology, glaciology, soil science, petrography, mineralogy and palaeobotany, conducted by a research team of scientists from Innsbruck University, as well as specialists from Germany, Italy, Switzerland and the Philippines.

The results extend our knowledge of the early Holocene in Tyrol and living conditions in the vicinity of the Alpine treeline. They show how favourable local conditions enabled regional and transalpine routes—followed much later by Ötzi—to be already in use during the early Holocene.

The book is divided into 16 chapters of various sizes—from two pages to over a hundred. A short introduction by Schäfer describes the aims of the project and introduces the research team. Chapter 1, by Schlosser, presents the climatic and meteorological context: the Fotscher Valley clearly presented a difficult challenge for Early Mesolithic people.

In Chapter 2, Gruben & Holdermann analyse the geology, palaeogeography and morphology of the eastern Alps, considering possible transalpine trails and access to raw materials. The latter were gathered from the area between the Rhine Valley in the west and Salzkamergast in the east. Again, the difficulties of the Alpine environment for the Mesolithic inhabitants of Ullafelsen are apparent. The following chapter, also by Holdermann & Gruber, considers the geology and morphology of the Ötztal and Stubai Alps and the potential mobility of the Mesolithic hunter-gatherers in the Fotscher Valley. They establish that Mesolithic routes depended on altitude, the orientation of local mountain ridges, and the presence of glaciers which were different from the present day.

Following Nittel's chapter on the hydrology and geomorphology of the Fotscher Valley, Kerschner considers glacier extent during the Late Glacial in the valley and its surroundings. He suggests the presence of Mesolithic hunters at Ullafelsen coincides with the eastern Alpine ice retreat during the early Holocene. Geitner *et al.* then present an extensive chapter on soils and stratigraphic finds in the area of Ullafelsen and

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