Book Reviews

An Upper Paleolithic Site in France

Excavation of the Abri Pataud. Les Eyzies (Dordogne). HALLAM L. MOVIUS, JR., Ed. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass., 1975. xii, 306 pp., illus. Paper, $25. American School of Prehistoric Research Bulletin No. 30.

The Périgord region of southwestern France is in every sense the classic area for the study of the Upper Paleolithic phase of prehistory. It was on the basis of excavations in this area that the original concept of the *Age du Renne* was formulated by Lartet and Christy in the 1860's, and the complex sequence of cultural phases recorded in the caves and rock shelters of the Périgord has remained in many ways central to our understanding of human development during the later stages of the last ice age. By far the most spectacular remains of this period are of course the rich series of paintings and engravings encountered in such sites as Lascaux, Rouffignac, and Font de Gaume. But it is perhaps the sheer density and concentration of the evidence for human occupation in this area that present the greatest challenge to the anthropologist. What combination of factors can be invoked to account for the fact that the intensity of human occupation appears to have been much greater in this particular area of western France than anywhere else in Europe during the same time range? All our current understanding of the behavior and organization of hunter-gatherer communities suggests that the answer to this question must lie in some kind of broadly ecological explanation, but until recently the particular aspects of man-environment relationships that were most critical in this regard have remained very poorly understood.

It can be said at once that the present volume goes further toward providing a satisfactory solution to this problem than any publication that has appeared hitherto. This is of course only the first in a series of monographs to be devoted to the excavations directed by Hallam L. Movius, Jr., at the Abri Pataud site between 1958 and 1964. It deals with two major aspects of the investigation: on the one hand the contribution of the various natural sciences to an understanding of the basic chronology of the archeological occupation and the environmental and ecological conditions under which the occupation took place; and on the other hand the detailed description of the important human skeletal remains recovered from the Proto-Magdalenian and Upper Périgordian levels on site. Accounts of the purely archeological aspects of the site will be presented in later volumes in the series, at least one of which is said to be now in press.

The present monograph starts with a general description by Movius of the stratigraphy of the site and the absolute chronology of the various levels of human occupation, based on a series of over 30 separate radiocarbon determinations. The first point to be noted is that this sequence of radiocarbon dates provides by far the most detailed and securely documented framework of absolute dating available for any Upper Paleolithic site in western Europe. Second, and in some ways perhaps more important, it demonstrates the fundamental danger of attempting to date any archeological or geological horizon within this general time range on the basis of a single carbon-14 determination. Several illustrations of this danger could be cited from the Abri Pataud evidence, but perhaps the most striking example is provided by the three separate determinations carried out on a single sample of charcoal from level 7 in the occupational sequence (intermediate Aurignacian), which produced dates ranging from 27,350 ± 450 to 30,950 ± 700 B.C. Clearly, the only reliable way of establishing the absolute chronology of any Paleolithic settlement is to obtain multiple samples from a clear and fully documented stratigraphic succession. A detailed discussion of the chronology of the Abri Pataud levels is obviously beyond the scope of this review, but it is worth noting that the earliest Aurignacian levels at the site have been dated to around 32,000 B.C. and that the replacement of Aurignacian by Upper Périgordian (Périgordian IV) industries took place substantially before 26,000 B.C. The dating of the overlying horizons would appear to be approximately as follows: Périgordian V (Noaillian), 25,000 B.C.; Périgordian VI, 21,000 to 20,000 B.C.; Proto-Magdalenian, 20,000 to 18,500 B.C. One interesting point that emerges from both this evidence and the sedimentological analyses is that several of the major occupation levels in the sequence appear to have been separated by substantial intervals of time; this is particularly true of the Noaillian and Périgordian VI levels, the interval between which is estimated to have been of the order of 3000 to 4000 years. A critical point that remains to be established is whether these periods of nonoccupation in the Abri Pataud sequence represent substantially reduced or even nonexistent occupation in the Les Eyzies region (which seems highly unlikely) or merely shifts of major centers of occupation to other sites.

After a fairly brief section on the basic geology, geomorphology, and present-day climate of the Les Eyzies area by Sheldon Judson there follows a detailed account of the sedimentology of the Abri Pataud deposits by William R. Farrand. Farrand prefaces his section with an admirably clear and full account of the methods—and problems—involved in the study of rock shelter sediments and is suitably cautious in his interpretation of the results. The main conclusion that emerges is that four episodes of significantly milder climatic conditions can be recognized within the Abri Pataud sediments, of which the most clearly marked is within the sterile *éboulis* deposits that separate the Noaillian and Périgordian VI levels. This episode has been recognized at other sites in the Les Eyzies area (most notably at the nearby site of the Abri du Facteur) and has been termed the Tursac oscillation. Rather weaker episodes of climatic amelioration can be detected within the Périgordian IV levels (possibly representing the Paudorf interstadial, around 26,000 B.C.) and within the lower part of the Aurignacian deposits (the Arcy interstadial, around 30,600 B.C.). A much later climatic amelioration recorded in the sterile deposits that separate the Périgordian VI and Proto-Magdalenian levels cannot at present be reliably correlated with the evidence from other sites.

Jean Bouchud's analysis of the extremely rich faunal assemblages recov-

ered from the various occupation levels provides a wealth of information bearing not only on the general paleontology of the last glacial period but also (of more interest to the prehistorian) on the economic activities of the successive human groups that occupied the site. Two features are immediately striking from Bouchud's study. First, the material reveals a remarkable economic dependence on the exploitation of reindeer, which in the majority of levels accounts for well over 80 percent of the recorded fauna and in one case reaches as high as 99 percent. Second, despite the heavy predominance of reindeer the majority of levels show a surprising diversity of faunal elements, including species that are not normally found living together; of particular interest in this connection is the apparent coexistence of characteristically open-country species such as reindeer and horse with typically woodland forms such as red deer, roe deer, and wild boar. As we shall see later, this apparent anomaly makes much more sense when seen in the context of contemporary vegetational conditions revealed by the pollen analyses from the site. On the whole Bouchud is opposed to using variations in the relative frequencies of the major faunal species as a basis for inferences about climate (because of the inevitable element of human selectivity in the composition of food refuse from occupation levels), but his suggestion that the fluctuating frequencies of the rarer faunal elements may provide a more reliable basis is surely open to objection on the same grounds. A detailed discussion of the cultural implications of the faunal remains will apparently be presented in a later volume in the series. Here it may simply be noted that Bouchud's observations on the growth characteristics of the reindeer antlers point to occupation of the site during at least two major seasons of the year (May–June and September–November) and that the data presented in table 2 of his section reveal some interesting layer-by-layer variations in the parts of the reindeer skeleton brought back to the site.

In contrast to the detailed analysis of the sedimentological and paleontological data, Joakim Donner's study of the pollen content of the deposits is frankly disappointing. As Donner himself points out, the small size of the individual pollen samples analyzed (ranging from 33 to 150 grains) and the wide spacing of the samples throughout the stratigraphic column make detailed interpretation of the climatic or vegetational succession impossible, and for this reason it would be premature to make any comments on apparent conflicts between the sedimentological and paleobotanical data. By far the most significant point that emerges from Donner's study is the surprisingly strong representation of tree pollen in all except one of the 25 samples analyzed from the site. In many of the levels tree pollen accounts for between 20 and 40 percent of the total pollen sample and includes a variety of specifically warmth-loving species such as oak (represented in some samples by up to 30 percent of the total pollen), elm, alder, and hazel. The predominance of nonarboreal pollen in the majority of the samples leaves no doubt about the existence of large areas of open vegetation on the more exposed plateau areas surrounding the site, but the data point unmistakably to the existence of a substantial element of tree cover in the more sheltered river valleys. Seen in this light, of course, the combination of open-country and woodland species recorded in the faunal assemblages from the site falls naturally into place.

In the sections contributed by Joan F. Wilson and William H. Drury the paleobotanical and faunal evidence is integrated into a broader interpretation of the ecological setting of the human occupation. Wilson suggests that a combination of environmental conditions similar to those that prevailed during the Upper Paleolithic occupation at the Abri Pataud might be found today in the areas immediately above the tree line in the Massif Central and infers from this that the annual temperature at the time of the occupation might have ranged from an average of 0°C in winter to perhaps 12 to 15°C in summer. As both Wilson and Drury point out, the important inference to be drawn from all this evidence is that throughout the period of the human occupation the environment in the vicinity of the site is likely to have been characterized by a remarkable degree of ecological diversity, providing the human communities not only with comparatively mild and congenial living conditions but also with a rich and varied supply of food resources. Above all, the area is likely to have been characterized by a marked compression, or steepening, of ecological gradients from east to west, which would have allowed the human communities to gain access to an even wider range of ecological resources with only a limited amount of movement. As Drury points out, this situation is likely to have provided the human groups with subsistence resources of a wealth and stability that may have been unparalleled in Europe during this time range. When we add to this the ready availability of flint supplies for tool manufacture, plentiful water resources, and an abundance of naturally protected caves and rock shelters for habitation, the exceptional density of Upper Paleolithic occupation in the river valleys of southwestern France becomes not only easier to understand, but perhaps even predictable in ecological terms.

The two final sections of the monograph, contributed by Ginette Billy and Pierre Legoux, provide a detailed description of the human skeletal remains recovered during the excavations. The bulk of the remains in fact derive from the latest occupation horizon (Proto-Magdalenian). The remains from this horizon appear to represent at least five individuals, two adult females and three juveniles. Clearly the most important of these finds is the complete human skull (with a cranial capacity of 1380 cubic centimeters), the characteristics and affinities of which are discussed at length. It is suggested that the skull shows close affinities to other skulls of broadly Cro-Magnon type recovered from Upper Paleolithic contexts in France, although in certain respects it may preserve more archaic anatomical features curiously reminiscent of those found in Neanderthal populations. The other human remains consist of a fragmentary femur from the Noaillian horizon and a small number of isolated teeth from both this level and the underlying Périgordian IV horizon.

Viewed as a whole, this volume stands out as an excellent illustration of the modern interdisciplinary approach to archeological research. It is sometimes maintained that studies of this kind are never entirely successful because of the failure on the part of the individual experts to appreciate the full implications of their respective contributions for the archeological problems under review. The solution to this problem of course lies in the quality of the communication between the archeologist and his collaborators. Above all, communication of this kind must always be a two-way process, and must be maintained at all stages of the work, from the collection of the samples to the final interpretation of the results. In this case one is left in no doubt that the communication between archeologist and natural scientist has been excellent, and the present volume demonstrates just how rewarding this kind of collaboration can be.

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