of its kind in any language to investigate systematically the facts that underlie the wide range of interpretations of this art that have appeared in the literature, and (2) it is a book that is intended for both beginning students and specialists in this field of studies. After considering the characteristics, content, and context of Upper Palaeolithic cave art (portable, or *mobile,* art that is not fixed to any one place is only occasionally referred to) in Chapter 2, the views of early workers in the field are presented in their historical contexts (Chapter 3). A critical analysis of each of these interpretations, including those recently propounded by Mademoiselle Laming and Professor Leroi-Gourhan, is set forth in Chapters 4 and 5. In this manner the authors have skillfully emphasized the nature of the profound changes that have taken place in the theoretical concepts pertaining to the assumed function of Upper Palaeolithic art on the part of modern authors, who have completely rejected the comparative approach of the classical workers. These modifications, of course, are intimately and directly related to changing attitudes both to prehistoric archeology, on the one hand, and to contemporary "primitive" people, on the other. The final chapter on conclusions and problems further emphasizes various facets of the fascinating problem of why Upper Palaeolithic hunters may have gone to such considerable lengths to decorate caves and rock shelters. But the truthful answer to this fundamental consideration is: we actually know very little indeed. For not only are there no surviving Upper Palaeolithic informants to explain either their artistic conventions or why they decorated their rock walls, but also virtually nothing is known about Upper Palaeolithic social organization. Thus the authors question whether it is indeed sensible to expect to find a unitary explanation for it —any more than for the art of many modern societies.

There are 86 photographs, many in color, and 28 color drawings; these are numbered consecutively and scattered randomly throughout the text. This often makes it extremely difficult to locate any particular illustration, especially since the page reference is never cited. Chapter 1, "The Palaeolithic Period" (pp. 9–37), is in urgent need of revision. Perhaps this can be achieved if and when a second edition of this otherwise exemplary and very stimulating little book is attempted. But one should not judge the authors too severely on this score—no really authoritative, up-to-date monograph on this subject is currently available. Nevertheless, this does not justify such statements as the one on page 34 claiming that Cartailhac (misspelled Carthaillac) was a famous archeologist from Bordeaux! In point of fact, however, neither of the authors is a leading scholar in the field of Palaeolithic studies. But both are extremely able and intelligent workers who have conducted intensive research on the subject of Upper Palaeolithic art (their bibliography is truly most impressive) and who have visited many of the sites in question. They are certainly to be congratulated for having produced what is undoubtedly the most scholarly and provocative book on the subject that has been published to date.

The Palaeolithic of Tangier, Morocco: Excavations at Cape Ashakar, 1939–1947. BRUCE HOWE. Edited by Lloyd Cabot Briggs and Hugh Hencken. With a chapter on the Pleistocene Geology by Charles E. Stearns and appendices by Camille Arambourg and Lloyd Cabot Briggs. (American School of Prehistoric Research, Peabody Museum, Harvard University, Bulletin No. 22.) Cambridge, Massachusetts: Peabody Museum, 1967. xi, 200 pp., 4 appendices, 68 illustrations, 1 frontispiece plate, 5 tables, references. $6.00 (paper).

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Cape Ashakar, located 9 km west of Tangier, is the site of the Mugharet el-Aliya or High Cave, excavated in four seasons between 1936 and 1947 by a variety of people. Bruce Howe was a member of the excavation team of 1947, which also included Charles Stearns as Pleistocene geologist. Howe was entrusted with study and publication of the entire artifactual materials, a difficult task since most of the site had been cleared out by 1940 and good site control was lacking during these earlier excavations. The geological study, which proved to be fundamental to the report, discovered further Paleolithic sites in other sectors of the former International Zone. All of these collections, published here with good illustrations and in meticulous detail, provide a substantial contribution to our understanding of the Moroccan Paleolithic.

The Mugharet el-Aliya owes its origin to a partly collapsed solution cavity, cut into the Pleistocene *grès de Rabat,* locally developed as a littoral calcarenite with (elsewhere) two thorium-uranium dates of "greater than 200,000 yr" (C. E. Stearns and D. L. Thurber, "Th^{230}–U^{234} Dates of Late Pleistocene Marine Fossils from the Mediterranean and Moroccan Littorals," *Quaternaria* 7:29–42). The first autochthonous deposits consist of limestone blocks set in a matrix of sandstone and conglomerate, with marine shells. The rockfall in

question resulted from marine abrasion related to a sea level of +9 meters, thus dating all subsequent deposits as younger than 125,000 B.P. The sandstone is of mixed beach and eolian origin, and includes an interesting mammalian fauna (studied by C. Arambourg), with *Rhinoceros mercki, Megaceroides algericus,* and *Ursos arctos.* These sands were subsequently cemented (during a period of lower sea-level), then subject to solution in a moist cave environment, and ultimately sealed by dripstone. The next deposit (layer 9) consists of eolian sands with a rich fauna (also including *R. mercki* and *Megaceroides*), "Levalloiso-Mousterian" artifacts, and a "Neanderthaloid" molar (in this and in higher levels both Stearns and Howe were severely hampered by the almost total removal of the strata during the earlier excavations). Of 54 artifacts, 54% were flakes and chips, 16% retouched flakes, 14% flake tools and points, 8% cores, 4% blades, and 4% bifacially flaked points. The two foliate pieces probably are intrusive. Subsequently, layer 9 was rubefied and calcified in a warm, wet environment, probably (but not certainly) contemporary with the cutting of a 5 to 6 m abrasional platform in front of the cave. Elsewhere in Morocco this sea level can be dated at about 95,000—75,000 B.P. by thorium-uranium. Thus the Levalloiso-Mousterian occupation was contemporary with the glacial regression c. 125,000—95,000 B.P. (Riss? Warthe? Würm I?).

The next set of strata include eolian sands deposited at a time of low sea level, with two major cultural horizons—"full" Aterian (layer 6 with 750 artifacts) and "diminished" Aterian (layer 5 with 431 artifacts). In layer 6, the artifacts consist of 18% flakes and chips, 18% retouched flakes, 20% flake tools, 13% Levalloisian points, 11% blade tools, 7% cores, 12% foliates, and 1% tanged artifacts. Layer 5 composition was 21% flakes and chips, 15% retouched flakes, 16% flake tools, 18% Levalloisian points, 12% blade tools, 14% cores, 3% foliates, and 1.5% tanged artifacts. These two collections, made almost exclusively between 1938 and 1940, are suspiciously poor in waste flakes and chips. A "Neanderthaloid" maxillary fragment appears to have come from layer 5. The fauna of both horizons is essentially tropical in character and of no stratigraphic interest. At a later date the deposits were rubefied and calcified in a warm, wet climate, possibly contemporary with a positive oscillation of sea level (Paudorf, c. 30,000 B.P.?). The terminal stages of the Würm glacial left no deposits and later eolian sands with Neolithic to Islamic remains are poorly understood.

Studies outside of the Mugharet el-Aliya include the so-called Plateau Gravels at Cape Ashakar and the Mackay Radio Site (18 km SW of Tangier). The Plateau Gravels, up to 1 m thick, rest disconformably on the *grès de Rabat* at elevations of 23–27 meters and were subsequently subject to deep, reddish weathering. The gravels are cut by a 23 m beach and may therefore be of Middle Pleistocene age. They include pebble tools of quartzite, bifacially-flaked hand axes, cleavers, and undiagnostic flake tools of quartzite and flint. The Mackay site is less securely dated, consisting of a level of Levalloiso-Mousterian artifacts in a shallow valley fill of mixed littoral facies, younger than the 23 m beach. The industrial horizon is typologically close to the Levalloiso-Khargan of Egypt. Of 620 artifacts, 44% are flakes and chips, 48% retouched flakes, 3% flake tools, 1% Levalloisian points, and 4% cores. Two small *in situ* collections at Merdja Seguira, 4 km NW of the Mackay Radio Site, include some characteristic Aterian pieces. The ancient eolian sand in which they were found is inferred by Stearns to be associated with the 5 m shoreline. This correlation, which would set the Aterian of these sites earlier than at any other site, is debatable. In fact, to the reviewer, the sediment description suggests a regressional eolianite, similar to the eolian strata with Aterian occupation at the Mugharet el-Aliya.

Howe concludes with a discussion of Aterian and Solutrean relationships. On the basis of typological links provided by the Solutrean artifacts of Parpalló, eastern Spain, he suggests a common denominator between the two. Since the Aterian immediately postdates the 5 m beaches, it appears to have begun 50–60 millenia earlier than the Solutrean, so that Aterian techniques may, in part, explain the origins of the Solutrean.

The editors are to be commended for their initiative in bringing out Howe's valuable typological analysis. Similarly Stearns is to be commended for an excellent Pleistocene study that provides a new milestone for the climatic and cultural succession of northwest Africa.

West Africa before the Europeans: Archaeology & Prehistory. OLIVER DAVIES. (Methuen's Handbooks of Archaeology.) [London]: Methuen Co. Ltd. 1967. (Distributed in the U.S. by Barnes & Noble, Inc.) xvii, 364 pp., select bibliography, 115 figures, subject in-