justification for such a complicated classification. Names have been given without reference to established usage of terms in Africa—such as “spine,” for example, for what looks like a convergent scraper; “battered flake” for outil esquillé or écaille; and “pieces (or pointed pieces) with continuous (or partial) curvate backing” for lunates and backed bladelets. Such unconformity is inexcusable and makes it no easier to obtain a quick appraisal of the artifact composition of the various aggregates.

Chiefly, however, the reviewer would criticize the way in which the data are presented. It is necessary for the reader first to turn to the Tables of Tool Types, printed with the section on Stratigraphy, to find the artifact totals and breakdown, then back to cumulative graphs to see the comparison with other aggregates but, before these can be interpreted, he has to consult the Type Lists to find out which point on the curve is represented by the particular class or group of artifacts with which he is concerned and to check the new types set up with the curiously numbered illustrations to find out what they are in current terminology.

Another complication arises from the failure to include denticulated, notched, and truncated artifacts in the retouched categories. Simpler ways of presenting a general understanding of the composition of archaeological units have been demonstrated and could have been used to advantage here.

The Group I aggregates form what the excavators call theBuhen Complex. It shows a strong Levallois element, dates, it is believed, between ca. 34,000 B.C. and 16,000 B.C. and could probably be included within the Khormusan. Group II sites fall into two sub-groups named the Halfa (16,000-13,000 B.C.) and the Dabarosa Complexes (ca. 13,000-11,000 B.C.). Halfan cores and flakes on Nile chert pebbles and the general artifact composition of the units enable these to be securely placed in the Halfan Industry. The aggregates of the Dabarosa Complex and of the Wadi Complex (ca. 11,000-9000 B.C.) that comprises the third Group, appear, on the basis of rare, diminutive Levallois forms and a developed micro-blade element with backed bladelets and lunates, to fall within earlier and later stages of the Qadan Industry.

The artifacts are generally well drawn but sometimes too greatly reduced to make comparisons easy. In particular, illustrated specimens of the earlier Complexes could often have been shown full size as there is ample space on most of the text figures.

The report suffers chiefly from lack of understanding of the African terminology and of African archeology in general, as well as from the complications that arise when there is no regular sustained contact and interchange of information and ideas between the different individuals and specialist teams working in a common field, in this instance in Nubia. When free exchange is the rule rather than the exception the archeologists’ problems in Africa, as elsewhere, will be all the more quickly resolved.

Reference Cited
De Heinzelin, J.


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This volume deals with the Pleistocene “climatic and cultural stratigraphy” of the Gabel Ben Ghnema (eastern Fezzan, Libya) and the northern slope of the Tibesti (Chad Republic), on the basis of fieldwork in the winter 1963/64 and autumn-early winter 1965/66.

A local sequence of geomorphologic events was established in several wadis of the G. Ben Ghnema: (1) Alluviation of cobble gravels, partly calcareted, in wadis (and alluvial fans (1.5+m); (2) Significant bedrock incision by streams; (3) Accumulation of well-sorted eolian sands (0.5+m); (4) Aggradation of wadi sands and gravels (3.5+m), with gravelly “lacustrine” sands in adjacent basins, and near-surface root drip and rare shells of Pupoides and Helicella; (5) Rill erosion of existing alluvium; (6) Deposition of well-stratified, alternating lenses of sands,
gravel, and cobbles (1m); (7) Dissection, with some eolian deposition. Some thirty-eight artifacts, mainly rolled and often dubious, were collected from two sites in the oldest deposits (1), and these crude scrapers and large flakes—with one biface—are attributed to the controversial “Heidelberg” industry. Acheulian bifaces, more or less unrolled, were found in the second generation of fill (4), and five surface “flaking sites” (with a sum total of twenty-seven artifacts) are also attributed to the Acheulian. Further surface collections include ten “Mousterian” “flaking sites” (with a sum total of only fifty-two artifacts)—located stratigraphically at the top of deposit (4)—and twenty-one equally skimpy “Aterian” “flaking sites,” indirectly related to the youngest alluvium (6).

Although the geological data from G. Ben Ghnema has regional significance, the value of the Paleolithic reconnaissance is limited to proving the existence of biface collections and bona fide Aterian tanged and bifacial elements. Débitage was completely ignored, although at one site there appear to have been about five hundred unretouched flakes and chips. Lacking any possibility of assessing even the alleged workshop sites (the isolated surface implements are best ignored), the reader can hardly accept the few dozen total artifacts as representative of Acheulian and Mousterian industries. The collected artifacts are well (if sometimes idealistically—e.g., the “Heidelbergian”) illustrated, but there surprisingly are no floor plans and no total counts or tabular data of any kind.

In the northern Tibesti the geological sequence is similar: (1) Accumulation of wadi gravels, sands, and volcanic ash (pumices and sands) with some current and “delta” bedding (20+ m), locally capped by massive tuffs and ignimbrites (7+ m); (2) Bedrock cutting; (3) Alluviation of well-stratified gravels, sands, and volcanic ash, with lenses of calcite cementation, plant impressions, and snails (*Melanoides, Bulinus*, four genera of planorbids, *Lymnaea* and *Vertigo*) (12+ m); (4) Bedrock cutting; (5) Deposition of gravels, sands, and ash beds (4+ m); (6) Erosion of existing alluvium. As in the Fezzan case, vague and unsatisfactory attempts are made to relate valley features to pediment-cutting, unsupported by transects or any kind of systematic mapping. Nor was an attempt made to date calcite crusts or snail shell by radiocarbon, or pumices and ignimbrites by potassium-argon. As a result this sequence also “floats,” with no possibilities of external correlation. No artifacts were found in situ, and the three Paleolithic surface sites each include only a handful of implements—one with bifaces and Levallois flakes, the others of possible Mousterian and late Paleolithic aspect.

The section on comparative stratigraphy displays a shocking lack of information on the literature in the Libyan Desert and the Nile, Chad, Niger, and Senegal basins. All in all, this study in 1969 is indefensible as a field report, as an analysis of archeological materials, or as a geomorphological contribution. The very premise of Ziegert’s work, to link up the Pleistocene stratigraphies of the Maghreb and East Africa by a series of “reliable” regional sequences, seems curiously obsolete in view of the large-scale application of isotopic dating techniques in Africa since the early 1960’s.