Paleolithic Sequences in the Thar

The Prehistory and Palaeogeography of the Great Indian Desert. BRIDGET ALLCHIN, ANDREW GOUDIE, and KARUNARKARA HEGDE. Academic Press, New York, 1978. xx, 370 pp., illus. $48.90.

Clearly one of the most valuable and unique enterprises of prehistoric archeology is the analysis of environmental and cultural interactions over long periods of time. Allchin, Goudie, and Hegde here present such an analysis, placing Late Pleistocene and Holocene hunters and gatherers within the changing background of the Thar Desert and its semiarid margins. The Thar, or Great Indian Desert, is the easternmost representative of the tropical desert belt of the Old World. The total area of the study is approximately that of Arizona and New Mexico combined, and the time range is on the order of 100,000 years. From the point of view of hunter-gather archeology, the Thar is almost completely unknown, and the authors' contribution is therefore needed and welcome. In fact, it is one of the few extended accounts that present a regional unfolding of environmental and cultural articulations through Pleistocene time for any area of Asia.

Allchin (Cambridge), Goudie (Oxford), and Hegde (University of Baroda) are long-distance runners. With severely limited budgets and meager institutional support, they managed to field six survey expeditions between 1969 and 1976. (It is strange in this regard that, after several centuries of British presence on the subcontinent, there remains no British School, such as exists in Rome, Athens, and elsewhere, to aid archeological research.) Although the survey party was small, they were able to put together an excellent first-order approximation of climatic, geomorphic, and cultural changes over their vast area of study.

The authors' new climatic and geomorphic history of their study area consists basically of two dry-to-wet cycles during the Late Pleistocene and early Holocene. About a quarter of the book documents the evidence for these oscillations. Increases in active sand dune formation, in river aggradation, and in miliolite deposition and a reduction in the area of human settlement are correlated with dry periods. The wet phases are reconstructed on the basis of soil formation and decalcification, dune stabilization, increase of fluvial activity, and a more widespread distribution of human populations. Although the evidence for these cycles is well presented and convincing, their absolute chronology has not been well established, a situation due largely to the absence of datable materials. It is difficult, therefore, to compare their sequence with secular changes elsewhere in Asia.

A major purpose of establishing an environmental framework is to provide the range of adaptive contexts for the prehistoric hunters and gatherers. Sources of information about the behavior patterns of such peoples, however, are unfortunately restricted for the most part to surface distributions of stone tools and chipping debris. There are no multilayered stratified sites with food remains, hearths, in situ artifacts, and other material residues of behavior that have been found and excavated in the study area. The authors are painfully aware of the situation, of course, but maintain that survey for the discovery of a large number of new sites is the paramount need.

A strong case for excavation, however, must be made. Surface sites can be tied into geological deposits and relative dates established only with great difficulty and equivocation. It is also often problematical whether the collection from a single surface site represents a short-term behavioral event or is the reflection of many spread through several millennia. For example, at one of the authors' best-studied series of localities in the Budha Pushkar Basin, Central Rajasthan, some of the difficulties of surface analysis are demonstrated. It was extremely difficult for the authors to demonstrate the relative chronology of a number of what appear to be typologically and technologically Upper Paleolithic and Mesolithic materials. They raise the possibility that some of the sites have been contaminated with later material, some of which is associated with pottery and may be the remains of nomadic pastoralists rather than hunters and gatherers. If this is the case, it would seem almost impossible to make fine distinctions between such a group of sites.

Without a stratified sequence, where several cultural layers are superimposed one on top of the other, the authors' arguments for a time ordering of the Pushkar artifacts on the basis of size, raw material, and percentage of various tool classes are not persuasive. The basic point is that prehistorians cannot assume a priori what the technological and typological trajectory through time has been or even whether there has been a smooth and unidirectional development. These things can be known only by digging. Once again the authors are aware of this point, and elsewhere they emphasize that the overall cultural sequence is best considered as a local matter, that the basic Paleolithic chronology of the Thar may be considerably different from chronologies elsewhere, and even that cultural and biological associations may not be the same as in Western Asia and Europe.

Allchin, Goudie, and Hegde have provided many important new data for South Asian Paleolithic archeology. They have quantified their collections, provided a well-illustrated text, and developed their archeological data in concert with a coherent paleogeographic scheme. But beyond that they have broadened the prevailing research emphases and perspectives, and this will perhaps make the most lasting impression on South Asian Paleolithic studies.

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Educational Assessment

Girls and Science. An International Study of Sex Differences in School Science Achievement. ALISON KELLY. Almqvist and Wiksell, Stockholm, 1978. xii, 152 pp., illus. Paper, Sw. Kr. 66.50. International Association for the Evaluation of Educational Achievement Monograph Studies, No. 9.

The long-range purpose of the data this monograph deals with is to describe and explain the large and well-known sex differences on measures of science achievement. Detailed, albeit preliminary, analysis of sex differences in performance of 14-year-old children on achievement tests (multiple-choice) in biology, chemistry, physics, and practical science is presented. The data include large samples of school children from each of 14 countries.

Included as potential explanatory variables are four measures of attitude toward science, a measure of verbal ability (synonyms and antonyms), and the performance of 10-year-old children from these same countries on the achievement measures. Further, the school a student was in was classified in several ways (for example, coeducational or single-sexed).

The literature review, succinct and relevant, presents a third set of data that augments inferences from these analyses.

Sex differences found were large and consistent—favoring males—across countries. The largest differences were for physics, about three-fourths of a standard