

**ACHEULIAN CULTURE IN PENINSULAR INDIA** by R.S. Pappu,  
D.K. Publishers, Pvt. Ltd., New Delhi, 2001, 170p. Price: Rs.455/-

For non-archaeologists, the title of the book under review is totally unfamiliar and will raise number of curious questions in their mind regarding "Acheulian Culture" in Peninsular India. As explained in the book, the culture is a part of Pleistocene hunting-gathering stone using communities survived over half-a-million years on the banks of rivers like the Son, Narmada, Godavari, Bhima and the Krishna etc., draining the peninsular India. The 'Acheulian Culture' forming a part of Lower Palaeolithic cultural stage, is named after a type site – St. Acheul on the banks of river Seine in France in mid-nineteenth century. Following this discovery, Bruce Foote, a geologist from the Geological Survey of India, discovered a hand-axe on quartzite over the charnockite at Pallavaram near Chennai airport in 1863. This book clearly brings out the close link between the two disciplines of geology and archaeology and is a welcome addition in an interdisciplinary subject like 'geoarchaeology' which has emerged as an independent branch of archaeology in the last two decades.

The present book is primarily based on a project work of Dr. R.S. Pappu, Rtd. Reader in Environmental Archaeology, Deccan College, Pune, who meticulously collected available data in different libraries, museums in India. He also visited some famous Acheulian sites during 1995-1997. The project has been funded by the Indian Council of Historical Research (ICAR). The chief objective of the project was to study aspects of lifeways of the Acheulian communities, against the backdrop of middle Pleistocene physical environment, which includes river terraces, valley pediments, tors, hill slope colluvia, regoliths covering pediments, fossil dunes and playas, beach rocks, and calcarenites and sometimes bare rock outcrops of quartzite, sandstone, dolerite, basalt, cherty-limestone etc.

There are four chapters in the book - Introduction, Acheulian in Peninsular India, Salient features and the Acheulian cultural system.

The first chapter gives comprehensive information on 'Acheulian Culture' in the old world (India, Asia, Africa and Europe). This chapter also provides competent review of researches carried out in the last 50 years in different parts of India.

The second chapter mainly deals with data unearthed in 22 excavated (primary and semi-primary) sites. The third chapter critically presents comprehensive information on site locations, typology of stone artifacts, raw material use for making stone tools, litho- and bio-stratigraphy of artefact

bearing surficial deposits, subsistence pattern, taphonomy of stone artifacts and a few absolute dates obtained by K/Ar, Ar40, Ar39 (on volcanic ash). Th-U series (on pedogenic calcretes and littoral carbonates) and few TL dates (on fossil sand dunes and associated calcretes). In the last chapter the author has attempted to reconstruct Acheulian cultural system in Peninsular India by integrating information given in earlier three chapters.

In brief, Acheulian sites are mainly associated with cut and fill alluvial terraces (commonly two), preserved on the banks of various peninsular rivers, in rock shelters of Vindhyan Sandstone in Madhya Pradesh, on the surface of stabilized dunes and on the palaeoshore of playas in the Thar desert, and within coastal beach-dune complex rocks (known as Miliolite Formation) in southern Saurashtra. The association of volcanic acid tephra with Acheulian artefact bearing fluvial deposits at Bori in Pune district has provided new chronological and environmental dimension for Acheulian culture. Close interrelation between raw material and distribution pattern of Acheulian sites is very well observed in Hunagi Baichhal valleys in Gulbarga District of northern Karnataka. Though quartzite, quartzitic sandstone, basalt and dolerite were commonly used for making hand-axes, cleavers, choppers, scrapors etc., use of cherty limestone of Bhima series on extensive scale is observed only in the Hunagi Baichhal valleys.

Even if a few absolute dates are not yet fully accepted due to inherent problems related to contamination, it is very encouraging to argue that the Acheulian in Peninsular India is at least 0.7 Ma and may even be older than one Ma. If these early dates are confirmed in future then the Acheulian in India may prove to be as old as in Africa. The most interesting find of a fossilized human skull of Archaic Homo-sapiens or of advanced Homo-erectus found by Dr. Sonakia of the Geological Survey of India in the pebbly, cobbly conglomerates exposed in the bed of the Narmada at Hathnora in District Hoshangabad, Madhya Pradesh remains to be precisely dated to be taphonomically correlated with associated animal fossils and stone artifacts.

Our knowledge of palaeoenvironment lacks high resolution data. By and large the Acheulian culture appears to have flourished in semi-arid monsoonic climate on the banks of seasonably flooding rivers. Galleria forests on the banks of rivers and savannah vegetation on valley pediments provided ideal habitats for hunting and food gathering

communities. Comparatively coastal habitation sites are rare and seem to have adopted to low sea level phase of the Middle Pleistocene in southern Saurashtra and in south Konkan.

The book however does not provide objective analysis of available information and there are many repetitions of ideas. The author should have attempted to project Acheulian culture of India against the recent knowledge available in Europe and Africa.

In conclusion the book is recommended not only to

students and teachers of Archaeology, History and Anthropology but also to students and research workers in Quaternary Geology and Geomorphology. Good understanding of Acheulian artefact taphonomy in sediment matrix will help earth scientists to have a better control on lithostratigraphy and also to obtain a deeper insight into the dynamics of landscape processes.

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**GEOLOGY OF TRANSVAAL INLIERS IN THE BUSHVELD COMPLEX** by F.J.Hartzer, Geological Survey of South Africa, Memoir No.88, Council for Geoscience, Pretoria, 2000, 220p.

The Neoproterozoic to Palaeoproterozoic (2700-2550 Ma) Transvaal Supergroup, consisting of volcanics and siliciclastic as well as chemical sediments, is preserved in the two structural basins of Transvaal and Griqualand West of Southern Africa. The famous Bushveld Complex, consisting of granophyes, gabbros and granites, intrudes the Transvaal Supergroup. The Bushveld Complex includes several inliers of deformed Transvaal Supergroup strata, besides basement gneisses with greenstone xenoliths and pre-Transvaal volcanics. Those inliers which extend down to the basement are called 'domes', and those 'floating' in the Bushveld rocks and remaining detached from the basement are called 'fragments'. The most important ones are the central inliers known as the Crocodile River dome and Rooiberg fragment in Western Transvaal, and Dennilton and Marble Hall domes along with Stervoren fragment in eastern Transvaal. Several smaller inliers occur in the Bushveld Complex to the east and west of these central inliers.

The present memoir comprehensively describes the detailed stratigraphy and correlation of the inliers in terms of modern stratigraphic codes. The lithologic ensemble is described in terms of lithofacies association, depositional processes and settings as well as palaeoenvironments, ultimately leading to the visualization of sedimentation models.

Detailed structural studies are presented in the memoir and the metamorphic history evaluated in terms of Bushveld events. These voluminous field data are synthesized and several tectonostratigraphic models are discussed. The descriptive text is amply supported by illustrations, such as detailed maps on large scales with cross sections, lithologs and correlation charts. A synoptic view is provided by the

excellent 1:100,000 scale coloured maps of the entire region, included in the pouch of the volume.

The tectonic development of the Transvaal inliers is described in the end, where the existing models are discussed such as thrust model, xenolith model, cone-fracture model, updomement model, diapiric model and the impact model. On the basis of data integration, the author classifies the Transvaal inliers as attached inliers (for the domes) and detached inliers (for the fragments). The attached inliers are formed as a result of regional deformation, modified by the Bushveld intrusion through enhanced deformation and contact metamorphism. Later deformation includes faulting, extension and regional folding. The detached inliers occur as roof pendants formed by the intrusion of Bushveld Complex.

The large page format of the memoir (29.5 x 20.5 cm) allows reproduction of large scale maps and figures, some presented as even larger fold-outs. However, some of the chemical diagrams could have been reduced without loss of detail, avoiding fold-outs for them. Most photographs in black and white are not reproduced well enough to show the captioned features. Despite such small shortcomings, the volume is an up to date compendium on Transvaal inliers, which will be ideal for comparison with similar features elsewhere in the world. This book will no doubt be a valuable addition to any earth science library. The book is also available for consultation in the library of the Geological Society of India.

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