

Pleistocene Ge archaeology of Thar Desert

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Abstract: The antiquity of early humans in the central part of Thar Desert goes back to the Terminal Early Pleistocene (~0.8 Ma). This culture, technically known as Acheulian, continued in the entire Middle Pleistocene. By and large the climate was semi-arid with dominance of C₄ vegetation. The arrival of new cultural trait, known as the Middle Palaeolithic, is dated around early Late Pleistocene (~100 ka). This culture was adapted to relatively more arid climate than during the preceding Middle Pleistocene. The vegetation was largely C₄ type with patches of C₃ type in favorable geomorphic niches. On the whole the early hunting and food gathering prehistoric communities survived in disorganized autochthonous drainage, playas, wet lands and pond environments. So far there is no evidence of the existence of palaeolithic cultures in later part of the Late Quaternary (~30 to 10 ka).

Key words: Palaeolithic archaeology, palaeoenvironment, geomorphology, calcrete.

Ever since the pioneering discovery of prehistoric stone tools by the British geologist, R.B. Foote in 1863 (Foote, 1866), earth sciences have played a crucial role in the study of Palaeolithic sites in India. The term 'Palaeolithic' is used for the earliest period of human prehistory that begins with the first archaeological evidence of stone tools. Traditionally the Palaeolithic is sub-divided into following three periods:

- i. Lower Palaeolithic, Middle Palaeolithic and Upper Palaeolithic in Europe and Asia, and
- ii. Early Stone Age, Middle Stone Age and Later Stone Age in Africa.

It is important to note that 99% of the human technological development took place during the Palaeolithic period, approximately covering a time span of the Pleistocene period from about 2.5 Ma to about 10 ka B.P. This period also documents the emergence of and evolution of 'Homo'.

The Lower Palaeolithic in Indian sub-continent is represented by the Acheulian stone technology. In comparison with Africa and Europe, the chronology for the Indian Acheulian is not of high resolution. Absolute dates from three sites namely, Attirampakkam in Tamilnadu (1.7 Ma; Pappu *et al.*, 2011), Isampur

in Karnataka (1.2 Ma; Paddayya *et al.*, 2002) and Morgaon in Maharashtra (older than 0.8 Ma; Sangode *et al.*, 2007) indicate that the antiquity of Indian Acheulian is as old as that of Africa, where the Acheulian culture is dated to 1.7 Ma (Lepre *et al.*, 2011). This Lower Palaeolithic culture survived till about 125 ka in some parts of India and was replaced by the Middle Palaeolithic (120 ka to ~40 ka B.P.). Subsequently the Upper Palaeolithic and Microlithic cultures appeared (~40 ka to ~10 ka B.P.).

The Acheulian tradition is characterized by large cutting tools besides artefacts like scrapers, choppers, and debitage products, generally made on rocks like quartzite, sandstone, basalt, dolerite, siliceous limestone, etc. Middle Palaeolithic artefacts mainly proceed from flake production, sometimes resulting from prepared core reduction. Tools comprised of scrapers, points, etc., were mainly made on chert, jasper, chalcedony, quartzite, and fossil wood. These artefacts are generally smaller than the Lower Palaeolithic artefacts in size and belong to early Late Pleistocene. Late Palaeolithic is characterized by the production of blades and bladelets; fluted cores are common. Scrapers, points, backed blades, knives are the main tool types and are generally made on chalcedony, chert, and jasper. This technical stage is younger than 50 ka B.P. (Mishra *et al.*, 2013; Clarkson *et al.*, 2009).

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