

# **Prehistoric Archaeology of the Gundlakamma and Adjoining River Basins, Prakasam District, Andhra Pradesh**

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## **ABSTRACT**

South Asia, with its rich Palaeolithic remains, occupies an important place in human evolutionary studies. However, the region attracts little attention in global discussions on human biological and cultural evolution due to the lack of a firm chronological framework, high-resolution lithic analysis, and reliable palaeoenvironmental reconstructions. This study aims to establish a credible chronological framework and the environmental context of Palaeolithic cultural development in the Gundlakamma and adjoining river basins of the Prakasam District, Andhra Pradesh. Previous sporadic studies from the mid-1860s onwards have highlighted the region's archaeological potential by identifying rich Palaeolithic remains, animal fossils, and their unique geological associations (e.g., Youngest Toba Tuff deposits, inland sand dunes). The current research uses multidisciplinary methods that include excavations, chronometric age estimations (Luminescence and U series), high-resolution lithic technology studies, and geoarchaeology to examine the region's extensive prehistoric remains.

Intensive surveys were conducted in the study region to locate stratified palaeolithic sites, followed by a systematic investigation of seven sites representing a broad temporal range including the Middle and Late Pleistocene epochs. The current research marks the first attempt to use chronometric dating methods to reconstruct a regional Palaeolithic cultural sequence and to use the new data to address general issues in regional Palaeolithic studies in peninsular India. The explorations undertaken in the region under investigation led to the discovery of 68 Palaeolithic sites associated with different geological and cultural contexts. These sites represent different phases of the Palaeolithic culture including Lower, Middle and post-Middle. In addition, sites with Youngest Toba Tuff (YTT) deposits from the 74 ka Toba super-eruption were identified in the region. The Middle Palaeolithic cultural remains constitute the most dominant amongst the diverse cultural assemblages and represent a broad temporal range from ~247 to 59 ka. Sites showing post-Middle Palaeolithic cultural remains are the second dominant category and are mostly concentrated along the upper reaches of the Gundlakamma and Manneru river basins. The Lower Palaeolithic sites are mostly known from findspots and riverbeds with a small number of stratified localities. This could be due to the lesser exposure

of Lower Palaeolithic horizons, which are associated with hard and compact sediments that are buried deeply under Late Pleistocene sediments.

The late Acheulian/early Middle Palaeolithic transitional assemblages in the region are unique to understand the emergence of prepared core technologies. The study of these transitional assemblages produced important datasets that contributed to the emerging framework of the origin of prepared core technologies, both at regional and global level. These assemblages show a combination of both bifacial and prepared core technologies, with a greater preference for the latter. Following on from these transitional industries, typical Middle Palaeolithic assemblages appear in the region as early as 247 ka and last until 59 ka, showing temporal variations in the Levallois technology and other artefact types. The Middle Palaeolithic record of the region is extensive and widely spread across the region. The temporal variations allow the Middle Palaeolithic to be divided into two phases: an early (between MIS 7-6 and 5e) phase and a late (post-MIS 5a/post-last interglacial) phase. The post-MIS 5a Middle Palaeolithic technology continues to exist up to the beginning of MIS 3. Blade based assemblages dominate the MIS 3, postdating the Middle Palaeolithic technology, and existed from 41 to 29 ka. The MIS 3 blade based assemblages are stratigraphically different from those belonging to MIS 5a and MIS 4. This, currently under-researched record, hints at significant insights that could be gleaned from it, such as changes in local environment, technological advancements, and subsistence strategies. It also holds enormous potential for addressing broader issues of cultural change in the region.

The Palaeolithic record of Gundlakamma and adjoining river basins adds significant contributions to establishing a credible chronological framework as well as understanding hominin behavioural evolution in South Asia, and it helps fill up major gaps in our knowledge of the same.