STONE TOOLS FROM THE JAMARA SITE, MALAYGIRI FOOTHILLS, ORISSA

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ABSTRACT

This paper describes the results of archaeological investigation in the Jamara site (Acheulian tradition) in Dhenkenal district in Orissa.

Following initial observations by Ball (1876), the first systematic work in Orissa was undertaken by Bose and Sen (1949), who excavated Palaeolithic sites in Mayurbhanj district. Mohapatra (1962) later carried out exploration in the state, mainly in the river valleys. The site described here is away from any major river, located in the foothills region. Trial trenches have been dug and a petrological study made of the stone tools and possible raw materials. The overall results show a selectivity in the location of raw materials during the Palaeolithic period.

THE JAMARA SITE

The site lies close to the 200 m contour line on the western side of Jamara village at 21° 25N and 85° 16E. Behind and above it rises Chhonuri hill, an extension of the Malaygiri range, to an altitude of 1000 m. The site itself lies on a relatively flat crescentic area about 1 km long by 0.5 km wide between the 200 and 300 m contours. The only water in the immediate region is provided by three perennial springs which lie between 0.5 and 2 km from the site. Water from these springs flows into a low-lying area to the east of the site, which has water for much of the year. This low-lying area is cultivated, and to the west lies a forested slope. The site itself is open rocky scrub land for the most part uncultivated.

Stratigraphy

Sections through the terrace-like formation on which the site lies show that it consists of alternating layers of gravel and silt. The basal deposit, a gravel bed, is about 30 cm in thickness; the stones are large, well sorted and cemented. The lowest silt bed above this basal gravel is 45 cm thick, reddish in colour and coarse in texture. Above this comes another gravel bed 20 cm thick, with small and angular stones, quite loose. Following another thin silt, then another gravel, the upper silt is 65 cm thick, dark brown in colour, coarse and rich in sand. In general this sequence corresponds to stratigraphic sequences recorded by Mohapatra (1962) in Orissa, and Ghosh and Das (1966) in eastern India. The tools which lie on the surface of the site appear to be exposed when the top silt is eroded away exposing the upper gravel beneath. The lower gravels have also yielded tools in the trial trenches.

Three trial trenches were dug in the site, each producing unrolled tools from within the gravels, distinct from the gravels themselves which were to some degree rolled. This suggests that the tools were deposited directly into the gravel beds, rather than transported from elsewhere.

Climatic Background

In his earlier report on similar gravel and silt sequences, Mohapatra (1962) postulated three wet phases separated by three dry ones. According to him the gravels mark wet phases, the silts drier phases. During the third wet phase the rainfall was not sufficiently high to roll the gravels very thoroughly, hence their angular shapes. Cemented gravel conglomerates in peninsular India are attributed to the Middle Pleistocene on the basis of faunal evidence by Rajaguru and Badam (1984). The upper loose gravel bed may be placed towards the end of the Pleistocene.

The Stone Tools (Table 1)

A large number of tools was collected both from the surface and the trial trenches. From the lower gravel conglomerate 22 hand axes and a cleaver were found *in situ.* Most tools were found in the upper gravel bed in the trenches, and these were somewhat developed compared to those from the lower gravel. All belong to the Acheulian tradition, with those from the upper gravel showing late Acheulian characteristics, transitional towards the Middle Palaeolithic flake tradition.

Table 1: The total stone collection from Jamara.

Typology	No.	Percent
Chopper	28	6.45
Handaxe	121	27.88
Cleaver	29	6.68
Scraper	217	50.00
Knife	2	0.46
Point	5	1.15
Core	19	4.38
Flake	13	3.00
Total	434	100.00

A total of 434 tools was collected from Jamara. The main types are choppers, handaxes, cleavers, scrapers, knives, points, cores and unretouched flakes. In most collections scrapers dominated, except in the lower gravel which had more handaxes. The lower gravel yielded only the side variety of scrapers, whereas the upper also produced end-cum-side and round scrapers. Points were not found in the lower gravel but were present in small numbers (2.53%) in the upper.

The tools found in the lower gravel were cruder in technology than those in the upper. Flake scars were large, deep and irregular, and the resulting edges jagged and irregular. The tools from the upper gravel showed smaller, shallower and more regular flake scars. A Levalloisian or prepared core technology was followed for manufacturing flake tools, and scrapers were mainly made on Levallois flakes.

Raw Materials

Thin-sections made of some of the tools in the Department of Geology in Calcutta University showed that all tools were made on quartzite, a metamorphic rock consisting mainly of quartz, formed by recrystallization of sandstone. In terms of compactness three grades could be differentiated; fine, medium and coarse (Read and Watson 1962). Both colour and grain structure varied, as did the degree of rolling and weathering.

Tool specimens from different parts of the sequence were subjected to examination. Some are made on schistose quartzite with planes of weakness, others on a more cherty quartzite which was more suitable for tool making. The final forms of the tools seem to depend on the quality of the raw material. The finest tools came from the upper gravel and were probably made on raw materials brought from elsewhere since examination showed that the natural gravels of the site are markedly schistose. This suggests a selectivity in terms of raw material collection by the inhabitants of the site.

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