

## ON BARUDIH: A NEOLITHIC SITE IN BIHAR

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The site of Barudih is located at the confluence of the Sona and Sanjai nalas in Singhbhum district of Bihar state in north-eastern India, about 30 km southwest of the modern city of Jamshedpur. In terms of geomorphology the area lies within the vast expanse of the Chota Nagpur plateau. The occurrence of Neolithic industries from this area of eastern India was first reported as early as 1875 by Ball. During the early part of this century Anderson (1917) added more data on Neolithic tool types, and collections of Neolithic materials from sites in the vicinity of Barudih were made subsequently (Sen 1950; Sen and Chaturvedi 1959). The site itself was discovered in 1962, and first excavated under the direction of D. Sen between 1963 and 1966 (Sen 1969, 1975). In 1969 further excavation was undertaken by Ghosh and Ray, and trial diggings were also made at the nearby site of Dugni.

Barudih is surrounded on almost three sides by the Sanjai nala and its tributary the Sona (See location on Figure 2 of the following article). The excavated mound is roughly oblong in shape, with major and minor axes about 34 and 15 metres long respectively. The maximum height is 3 metres above the surrounding flat land surface. The mound slopes gradually down on all sides, and during the rainy season there is a narrow channel on the southern side of the site which is usually filled with water, so that the site is cut off from other parts of the area. Several erosion runnels cut into the mound, and potsherds were found exposed in these prior to excavation.

Part of the mound has been disturbed due to recent ploughing, but the central part, the highest portion, remains relatively undisturbed. In the first season (1963), a trial trench was dug along the northern side. In later seasons more trenches were laid out for systematic step-trench and grid excavation.

### THE GENERAL STRATIGRAPHY OF THE AREA

A generalized section of the river-bank stratigraphy of the wider local area includes seven major layers. The Archaean bed rock (1), with exposures between 6 and 13.5 metres thick, is mainly schist. In places there is an *in-situ* soil (2) of decomposed schist, but the bedrock is generally covered by a compact deposit of gravel (3) with a thickness of between 1.20 and 1.35 metres. The pebbles in this gravel are large in size and stained red or brown; the exposed gravels have deep patinas and the matrix is concreted. Over this gravel bed lies a layer of reddish silty soil (4) with a

thickness of between 1.2 and 1.75 metres. This is overlain by another gravel layer (5) between 30 and 60 cm thick. In this layer the gravels are unconsolidated and smaller in size than in layer 3. Above this there is a layer of reddish brown soil (6), between 75 cm and 1.25 metres thick. This is capped by a layer of deep brownish soil (7), 60 to 90 cm thick, and between layers 6 and 7 there is a reddish brown layer of ghutin or kankar. The top three strata only differ in colour and to some extent in texture.

In the archaeological sections an additional layer lies on top of layer 7. This is a habitation layer of dull black colour which is found only on the mound. The thickness varies between 1.20 metres on the eastern side and 70 cm near the bend of the Sona nala to the north. The soil is compact and consolidated, with a fine texture. In places, the lower part has been leached to a reddish-brown colour. The underlying reddish brown soil (7) is devoid of cultural material beneath the site, although a few metres away it has yielded a large number of microliths.

#### CULTURAL REMAINS

Cultural remains include profuse quantities of potsherds, a few whole pots, stone celts, charcoal, burnt clay fragments, carnelian beads, hollow clay balls, carbonised rice grains, microliths and a curved iron object (Ghosh and Chattopadhyay 1982). There are also a few stone chips, pebbles, and a large slab of epidiorite. Stratigraphic information suggests some degree of sequential order for these materials (Figure 1).

#### Celts

A large number of washed-out celts have been found on the surface of the mound and from its surrounds. Seventeen celts have also been excavated from the trenches, between depths of 30 cm and 1.50 metres. Both the in-situ and surface specimens are made of epidiorite, by flaking, grinding and polishing. Almost all are partially polished, and flaked surfaces remain mainly at the butts and lateral margins. In most cases the working edges are polished. In broad morphology, the plan forms include trapezoidal, subtriangular and/or triangular, and ovaloid. The trapezoidal form is the most common. Cross-sections are mainly ovaloid or bi-convex, but a few have plano-convex or trapezoidal sections. Of the 17 excavated celts two are uni-bevelled adzes and the rest are bi-bevelled axes.

#### Pottery

The pottery types may be distinguished mainly by their colours, textures, slips and tempering materials. Several intact pots were found, and forms include bowls, pitchers, jars, dishes, and lids with vertical handles. Grey, red, black and orange are the

main colours of the pottery, and in the case of the red ware variations in hue, possibly caused during firing, are quite marked. The red sherds are usually thin and finely made, tempered with sand, and mostly slipped a deep red.

The black sherds are of two distinct textures; thin and fine, and thick and coarse. The coarse sherds are grit tempered, porous, and contain carbonaceous vegetative material. Some of the black sherds also have a slip which may originally have been red. The orange and grey sherds are comparatively well-made, but not as fine as the thin red. They are tempered with sand, sometimes rich in mica, and some are slipped.

There are distinct distribution patterns for the sherds in relation to depth, pointing to chronological variations. The red and black sherds occur throughout the occupation layers, but thin red sherds occur alone to a depth of 60 cm, below which thick red sherds make an appearance. Below 105 cm there are no thin red sherds (Figure 1), and both types occur together between 60 and 105 cm. Thin black sherds occur alone to a depth of 45 cm and thick black sherds occur alone between 60 and 135 cm; both types occur together between 45 and 60 cm. The orange and grey wares have more restricted distributions down to only 105 cm.

#### Other cultural materials

Charcoal and burnt clay were found throughout the different levels of the excavation, with charcoal showing a concentration between 60 and 120 cm. In one place a wall-like structure of burnt clay, 52 cm high and 90 cm long, was excavated. The level (75 cm) at the base of this wall yielded a dense concentration of cultural material, and may have corresponded with the floor level of a dwelling.

Several bone fragments were found between 30 and 75 cm, but are unfortunately too small for identification. Hollow unbaked clay balls of unknown function were found between 60 and 90 cm. On the eastern side of the mound a large quantity of charred rice was found in a pit together with a small intact pot. The grains have been identified as Oryza sp. by the Rice Research Institute in Cuttack, but a species identification is not possible since the grains are devoid of husks.

At a depth of 135 cm a curved object made of a good-quality iron was found (Ghosh and Chattopadhyay 1982). It may possibly have served as a head for a grain-threshing implement, similar to tools still used in the region.

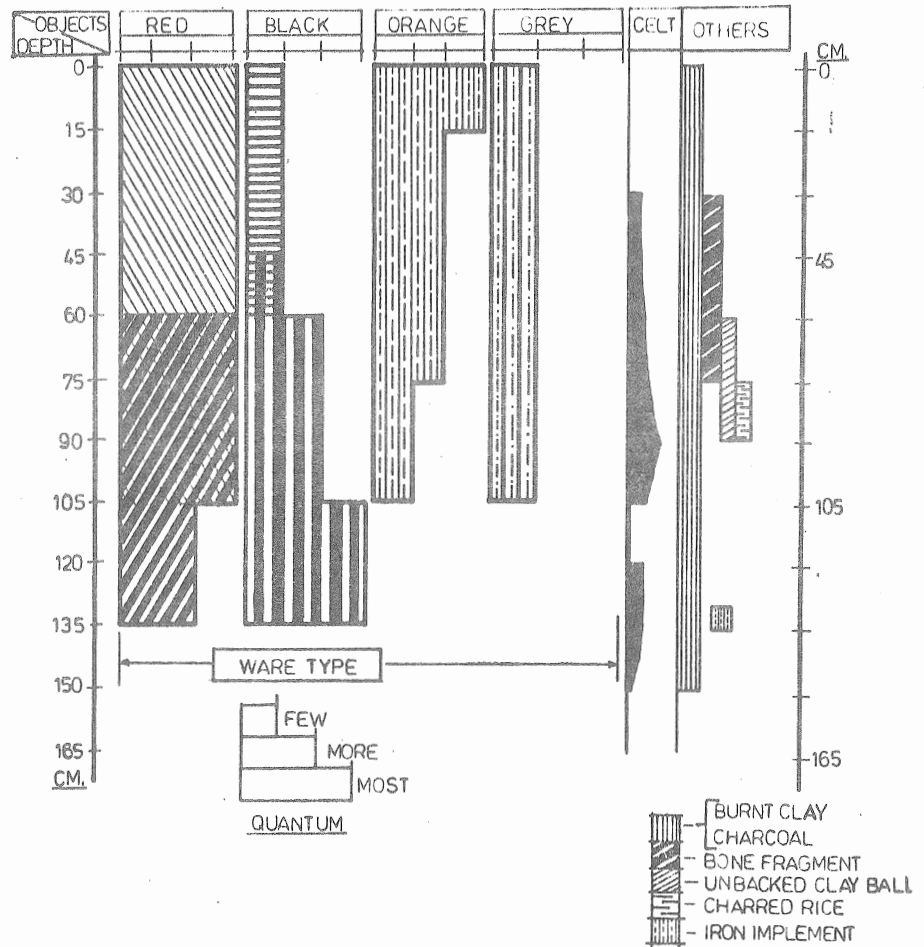


Figure 1. Distribution of Artifact Classes by Depth at Barudih.

#### Radiocarbon dates

Fragments of charcoal were sent to the Tata Fundamental Research Institute in Bombay for radiocarbon dating. Conventional dates based on the 5568 year half-life are as follows:

TF - 1099	675 $\pm$ 105 B.C.
TF - 1100	970 $\pm$ 200 B.C.
TF - 1101	525 $\pm$ 85 B.C.
TF - 1102	590 $\pm$ 90 B.C.

The weighted average of these dates has been calculated as 810  $\pm$  55 years B.C. (Ghosh and Chattopadhyay 1982).

## THE CULTURAL STATUS OF BARUDIH

The basic cultural status of the site of Barudih can be considered as Neolithic, according to the presences of ground and polished stone celts and pottery. However, iron smelting was clearly present in the region during the time-span of occupation of the site, and it is possible that the people of Barudih obtained iron goods by barter from a nearby metal-using population. The site itself revealed no signs of metallurgical activity such as crucibles, or pieces of iron ore or slag, and the culture of its inhabitants may best be described as 'secondary' Neolithic (Childe 1953:196).

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