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Early Agriculture of the Neolithic Middle Ganga Plain: An Appraisal

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The Middle Ganga Plain has been important in Understanding the formative Period of Indian Culture. The Middle Ganga Plain measuring about 1,44,409 sq.km. has been a distinct cultural and economic entity even though not a clearly defined physical unit (Singh 1971). Bounded by the Himalayas in the north, the Vindhyas in the south, the Ganga Yamuna Confluence in the west and Bihar Bengal border in the east, it includes modern eastern Uttar Pradesh and plain of Bihar. The area was the nerve centre of Political, economic and religions upheavals of 6th Century B.C. It witnessed the emergence of second urbanization in India.

The scholars who made concerted efforts to group the Neolithic culture of India in geographical units have put the Neolithic culture of this region in a separate geographic unit (Singh 2002; Thapar 1984; Agrawal and Kharakwal 2002; Allchin and Allchin 1968, 1982, 1997; Pal 1997; Chakrabarti 2006). By the time V.D. Krishnaswami (1965) and B.K. Thapar (1965), who were first to put the Neolithic cultures of India in geographical zones, were compiling the data on Neolithic culture of India, there was no evidence of this culture in the middle Ganga plain., because by that time no site of this culture was on the scene. However, the present available evidence gives a distinct personality to the Neolithic culture of the middle Ganga Plain.

As mentioned earlier the archaeological investigations carried in the middle Ganga Plain have revealed evidence of the Stone Age relating to the Epipalaeolithic and Mesolithic cultures. In the western part of the middle Ganga valley, where a good number of preceding Mesolithic sites are located, the succeeding Neolithic culture was not present before the discovery of Neolithic settlement at Jhusi (Misra et al. 2004) and Hetapatti (Pal and Gupta 2005) in Allahabad district; similarly in the eastern part of the region, where Neolithic sites have come to light in appreciable number, Mesolithic sites are missing. Therefore it was not possible to have a stratigraphic correlation of these two cultures. Jhusi has emerged as a key site for the cultural development of the middle Ganga Plain, where a long cultural sequence from Neolithic to medieval period has

been unearthed. From the topmost geological formation near Jhusi Mesolithic artefacts have been found, indicating presence of the culture before the onset of the Neolithic culture.

The explorations conducted in the eastern part of the mid Ganga valley during the last five decades have resulted in identification of several Neolithic settlements, and the region is emerging as one of the independent centres of origins of rice cultivation. Earlier the traces of early farming culture in the middle Ganga plain were found in three geographical zones; in Bihar, in the northern slopes of the Vindhyas and in the Saryupar plains of eastern Uttar Pradesh (Singh 1998). Primary context sites pertaining to the Neolithic culture have been reported in eastern Uttar Pradesh and Bihar. The important excavated sites in Uttar Pradesh include Jhusi (Misra et al. 2002-2003, 2010) and Hetapatti (Pal and Gupta 2005) in Allahabad, Bhunadih (Singh and Singh 1997-98) and Waina (Singh and Singh 1995-96) in Ballia (Singh et al. 1994-95), Sohgaura (IAR 1974-75: 46-47, Chaturvedi 1985) and Imlidih Khurd (Singh 1992-93, 1993-94) in Gorakhpur, Lahuradewa (Tewari et al. 2001-2002, 2002-2003, 2004-2005, 2007-2008) in Sant Kabirnagar district, while Chirand (IAR 1981-82: 13-14, Verma 1971, Narain 1970, Varma 1998, Sinha 1994, Roy 1989) in Saran, Chechar Kutubpur (IAR 1977-78: 17-18) in Vaisali, Pran (Dr. Bijoy Kumar Chaudhary: personal communication), Taradih (IAR 1984-85: 9-10, IAR 1986-87: 23-24, IAR 1987-88: 9-11) in Gaya, Maner (IAR 1985-86: 11-12, 1986-87: 25-26, IAR 1987-88: 11-12, IAR 1988-89: 7-8) in Patna and Senuwar (Singh 1990, 1997, 2001, 2004) in Rohtas district in Bilar. Most of these excavated sites are multi-culture sites having yielded archaeological relics ranging from Neolithic to early historical periods (Misra 2007).

Excavations conducted at Chirand, Senuwar, Imlidih Khurd, Lahuradewa and Jhusi have thrown welcome light on the corpus of cereals having been cultivated by the Neolithic people of the mid Ganga Plain (Pal 2008, Gupta et al. 2008, Pokharia et al. 2009).

The Neolithic culture of the Gangetic Plain is marked by a rich and varied ceramic industry. The available evidence indicates that in the early stage of the culture, as indicated at Chirand, Lahuradewa, Jhusi and Hetapatti, people were using hand made pottery but subsequently the slow wheel appears to have been used for the purpose. The ceramic assemblage includes cord impressed ware, ordinary red ware, lustrous red ware, burnished ware (red, black and grey), rusticated ware and crude black-and-red ware and. The clay used for manufacturing the pots is not well levigated. It contains grits, husks and chaff as degraissant. Pots are generally ill fired and have blackish grey core. Pottery types including bowls with varying profile; vases, vessels,

basins, miniature jars, *handis*, etc. suggest that these were used for storing, cooking and also kitchen wares. A large number of vases with rustication and soot mark on outer surface indicate that these were for cooking, possibly for boiling rice. Bowls basins and vases also have some times spouts, suggesting consumption of liquid or semi-liquid food. The cord-impressed pottery is a distinguishing feature. Some times rustication or burnishing is done on the cord impressed surface. A variety of pattern in cording has been found at Jhusi and Hetapatti. Some of the pots, generally vases, were made in two parts separately - the body and the rim portion and subsequently these were luted together. Spouts were also luted to the bowls or basins after making them separately. Painted sherds have been reported from Imlidih Khurd, Luhuradewa, Chair and Senuwar.

The rice cultivation and cord impressed pottery are interlinked to each other, having greater antiquity in the Neolithic in a wide area. /The cord impressed ware associated with the Neolithic culture (rice cultivation) has been found in south eastern coastal China, in the Yangtze valley, southern China, Japan, Indo China, Gangetic Plain, Vindhyas, eastern and northeastern India and in the Himalayas. It has been suggested that the central position of rice in cultures through out southern and eastern Asia has great antiquity, reflecting both the nutritional value of rice and its long history of cultivation and on the basis of cord impressed ware, early dates for rice cultivation in different regions, linguistic data and similarity of agricultural rites, rituals and festivals and deep respect for rice all point out remote antiquity in India and strong inter-links among China, Japan and India (Khrakwal et al. 2004).

As revealed from the excavated sites the culture is associated with microlithic industry. Microlithic element is comparatively more prolific at the sites which are nearer to the Vindhyas. Bladelets, flakes, blades, scrapers, arrowheads, serrated points, lunates, borers, etc. fashioned on chert, chalcedony, agate, jasper, and quartz have been found from some of the sites like Chirand, Maner, Jhusi, etc. However, celts of basalt and granite have been obtained from Lahuradewa, Chirand and Senuwar. Heavy-duty stone objects include fragments of querns, mullers, balls, hammer stones, etc.

Bone tools have been found at Jhusi, Senuwar and Chirand. The last site has yielded a corpus of bone tools and weapons including celts, scrapers, chisels, hammers, needles, points, borers, awls, arrowheads, etc. Other bone objects comprise ornaments like pendants, earrings, bangles, discs, combs, etc.

Terracotta objects including edge ground potsherds (triangular or rectangular in shape), spherical beads with central perforation were obtained from Senuwar. Chirand has yielded terracotta wheels, beads, bangles, cakes, birds, snakes, etc.

Origin

The first farming and pastoral culture of the Vindhyas is the Neolithic culture. As revealed from the Mesolithic culture of the area, food processing equipments, wild animals and wild grains, which were domesticated/cultivated subsequently in the Neolithic period, microliths and bone tools, it can be inferred that the base for the Neolithic culture was being prepared in the Mesolithic period (Misra 2002). Neolithic culture of the Vindhyas is also credited with developing the Neolithic culture in the Gangetic plain as indicated by comparative study of the culture of both the regions. The excavated sites of the Vindhyas and Ganga plain present ample evidence of cultural contact of both the regions. The preceding Mesolithic culture of the Ganga valley contains food processing. equipments made on sand stone/quartzite but no pottery, whereas in the Vindhyas it is associated with hutments and hand made pottery also. Among the ceramic industries, the cord-impressed ware has much archaeological importance as it denotes the cultural contact of Vindhyas with that of the Ganga plain. The cord-impressed ware has been found in Neolithic context at Chirand, Chechar Kutubpur, Taradih, Sohagaura, Lahuradewa, Jhusi and Hetapatti in the middle Gangetic plain that has techno-typological similarity with that of the Vindhyas. The evidence suggests that the Neolithic pottery of the middle Gangetic plain has a considerable influence of the Vindhyan Neolithic pottery. It is suggested that the Neolithic culture of the Ganga plain owes to the Vindhyan Neolithic for its origin.

Chronology

The problem of the antiquity of the Neolithic culture of the region is still not finally settled but now we have some relevant 14^C dates from the excavated Neolithic sites of the Vindhyas and Ganga Plain. Considering three of C-14 dates reading 4530 $\pm$ 185 BC (PRL 101), 5440 $\pm$ 240 BC (PRL 100) and 6570 $\pm$ 210 BC (PRL 224) obtained from Koldihwa as dependable, the culture was dated to the 7th-6th millennium BC (Sharma et al. 1980). But being the only site of such antiquity doubts were raised by several scholars. The 14^C date belonging to the transitional phase of the Neolithic to Chalcolithic at Koldihwa is 1440 $\pm$ 120 BC (PRL 223). The absolute dates obtained from Mahagara also indicated a late date to the culture, though these dates have the possibility of contamination of samples. Two TL dates reading 2265 BC and 1616 BC and four

C dates reading 1440 ± 150 BC (PRL 409), 1330 ± 120 BC (PRL 408), 1440 ± 100 BC (PRL 407) and 1480 ± 110 BC (BSIP) have been obtained from the samples from Mahagara. These dates are not consistent with the stratigraphy possibly due to contamination of samples. In the light of calibrated 14^C date obtained from Kunjhun, reading 3530-3335, the beginning of the Vindhyan Neolithic culture was proposed to 4^{th} millennium BC. (Clark and Khanna 1989). Three WC dates have come to light from recent excavations at Lahuradewa in the middle Gangetic Plain, which read as 5320 ± 90 BP (BS 1951) (cal B.C. 4220, 4196, 4161) and 6290 ± 160 BP (BS 1966) (cal BC 5298) (Tewari et al. 2001-2002, 2002-2003). Recently three relevant "C dates have been obtained from Tokwa. When calibrated these read 6591 BC (BS - 2417), 5976 BC (BS - 2369), 4797 BC (BS - 2464). An AMS 14^C date for a carbonized domesticated rice would a push the antiquity of the Neolithic culture at Lahuradewa in 7^{th} millennium BC (Tewari et.al. 2004-2005: 40). From the Neolithic horizon of Jhusi three 14^C dates have been obtained. These dates when calibrated, read 7477 BC (BS – 2526), 5837 BC (BS – 2524) and 6196 BC (BS - 2525). The earliest date obtained from the site would put the beginning of the Neolithic culture of the site in 8th millennium B.C.

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