

Prelude to Agriculture in the North-Central India

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Beginning of agriculture heralds an important event in the history of mankind. Gordon Childe described this phenomenon as a revolution, but equally renowned pre-historians point out that the saga of development in human history is characterised by evolution rather than revolution. Domestication of animals and cultivation of plants, supposed to be essential features of Neolithic culture, would not have been a sudden phenomenon, but outcome of a long process. This is confirmed by archaeological investigations in western Asia. In the following pages an attempt has been made to bring out the salient features of culture antedating the beginning of agriculture in the North-Central India. The area concerned comprises Rewa, Satna, Sidhi etc. districts of Madhya Pradesh and those of Allahabad, Mirzapur, Sonbhadra, Banda, Chitrakut and parts of the Chandauli districts of Uttar Pradesh.

I

North-Central India is marked by diverse topographical features.¹ It is generally hilly and characterized by step formation gradually rising from North-East to South-West marked by rugged and diverse topography. The region is characterized by granite,

gneiss, sandstone, shale and serrated ridges of quartz reefs. The vicinity of Kaimur hill in the Rohtas district of Bihar is essentially an extension of similar ecological zone. Immediately to the southern margin of the Kaimur hill lies the middle reaches of the Son Valley. Lower Proterozoic Vindhyan sandstone, silt stone, dolomite, limestone and minor igneous and metavolcanic rocks crop up along the Son Valley. These are overlain unconformably by the upper Proterozoic/Vindhyan quartzite, sandstone and shale which form the Kaimur escarpment. This escarpment rises over about 300 m above the Son floor. North of the Son is the most prominent physiographic feature of the landscape. Between the two escarpments - the Kaimur at the southern extremity and Vindhychal ridges at the northern extremity lies the Vindhyan plateau with extremely irregular surface, intersected by low ridges and their valleys and watered by numerous streams. As an amalgam of ridges and valleys, bare rock expansion, sheltered alluvial basins, thick forest cover and agricultural land, the area is still inhabited by a number of tribal groups with varying primitive culture. This undulating plateau gradually merges at many places in the Gangetic alluvium in the North.²

The region, outlined above, is marked by deciduous wood-land and dry forest with stands of soil flanking the main water courses. Interspersed with these are open grassy and often swampy areas where drainage is impeded. Bamboo mixed with deciduous trees-*salai, khair, tendu, mahua* etc. are available even occasionally on the top of the Kaimur as well. Of the surviving game animals mention may be made of tiger, leopard, bear, *langoor*, monkey, *nilgai*, spotted deer, *barasingha*, jackal, fox, wild dogs etc.

This vast area is drained by Son and its tributaries on the one hand and Kudra, Karmanasa, Chandraprabha, Garrai, Jargo, Koi, Chhatar-Ki-Nadi, Khajuri, Ojhala, Belan, Adwa, Seoti, Tundiari, Gurma, Naina, Tons, Paisuni etc. on the other.

The climate of the region is characterised by a dry and hot summer, a fairly pleasant monsoon and cold season. The region receives an annual rainfall to the tune of about 1000 mm. However, variation in this from year to year is appreciable. More than 90% of the rainfall is received during the monsoon (July to September). The remaining months of the year are more or less dry. Needless to say, the area occupies almost a central position between the continental climate of the North and the tropical climate of the peninsular India.

The soils of the region are mostly sedentary exhibiting insitu development. However, extensive pockets of alluvial soils exist particularly in the valleys of the Tons, Belan, Karmanasa, Seoti etc. The studies made so far broadly divide the soil of the region into three groups: (1) upland soil, (2) lowland soil, (3) riverine soil. Needless to say, the area under discussion, with its rich natural resources - water, occasionally fertile land, flora, fauna, various rocks etc. provide an ideal habitat for man from the very remote

antiquity. It is evident by the discovery of stone tools right from lower Palaeolithic to Neolithic almost without break.

II

The geologico-archaeological investigations conducted in the North-Central India by the Department of Ancient History, Culture and Archaeology, University of Allahabad and the Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University have brought to light relics of stone age cultures from Mirzapur, Sonbhadra, Allahabad, Chitrakoot and Banda districts of Uttar Pradesh and Rewa, Satna, and Sidhi districts of Madhya Pradesh. The investigations in the Belan and Son valleys conducted over the last four decades have brought to light not only the stone age tools, but also geological formations ranging from the mid-Pleistocene to Holocene. The explored area measures 5400 sq km and 13601 sq. km in the Belan and Son valleys respectively. The area has exposed the gradual evolution of stone age cultures right from Lower Palaeolithic to Neolithic. The artefacts from Lower Palaeolithic to Mesolithic have been found in geological context. Thousands of animal fossils have been obtained from the Belan and Son formations. These fossils include *bos, bos bubalis*, hippo, crocodile, antelope, elephant, *equus sp.* tortoise etc.

The Pleistocene stratigraphy of the Belan section has been studied right from Baraundha in Mirzapur to the Belan-Tons confluence in Allahabad. This 'Text Book Section' with an average height of 18 m is composed of 11 units, each having been formed in different climatic conditions.³ The earliest formation resting on the weathered surface of the Vindhyan rock is laterite which is capped by boulder conglomerate with an average thickness of 1.5 m.

It is composed of pebbles, laterite nodules, laterite plated stone blocks and angular Vindhyan slabs. As the edges of the slabs contained in the deposit are not rolled, it is evident that these have not been carried away to any appreciable distance from their original place. The boulder conglomerate is overlain with a 3.5 m thick calcareous brown clay loam. It is devoid of stone pieces. Planar and cross-bedded sandstone gravel, the cemented Gravel II, with an approximate thickness of 5 m constitutes the next formation. The stone pieces contained in this gravel are smaller than their counterparts of boulder conglomerate, (cemented Gravel I). It is also well-sorted and well cemented. On account of cross bedding and intervening silty layers, the cemented gravel II is divided into three sub-units - 2A, 2B and 2C counted from the bottom. The cemented gravel II is overlain by a sandy-silty deposit of reddish colour divisible into four sub-units - reddish sand, sandy cemented sheets and gravels, reddish sand and pebble-bed. A yellowish silt is the next geological unit followed by another gravel, the Gravel III. This shell-bearing formation is composed of calcium and iron nodules, angular colluvial fragments of quartzite crusts and nodules and coarse grained sand and is capped by a buried soil of blackish colour with a thickness varying from 2 to 3 m. The succeeding 4 m aeolian deposit comprises two layers. Pal *et. al.*⁴ have reduced the Belan formation into 7 units. Reddish sandy/silty formation and overlying silt are grouped together. The deposit overlying Gravel III is again reduced into two units instead of three.

With the exception of the calcareous brown clay loam resting on the Gravel I, all the geological units of the Belan section are implementiferous.⁵ Lower Palaeolithic tools have been obtained from Gravel I. II A of Gravel II has yielded evolved Lower Palaeoliths

along with the Middle Palaeoliths. IIB and IIC also contained Middle Palaeoliths. The succeeding formation of reddish brown sandy clays and the overlying yellow silt have also yielded Middle Palaeoliths but the artefacts obtained from yellowish silt exhibit a transitional character. Alongwith the Middle Palaeoliths the Upper Palaeolithic facies are also met with in this formation. Gravel III has yielded Upper Palaeolithic tools. From the succeeding formation, the formation of black soil, the Upper Palaeolithic tools alongwith non-geometric microliths have been obtained. The overlying aeolian and sub-aerial deposits, the penultimate and the last formation recorded in the Belan section, have been found containing non-geometric microliths without pottery and geometric microliths with pottery respectively.

In the mid-Son Valley an extensive area covering a distance of over 70 km bounded by Kaimur in the North and Son in the South has been investigated by Mortin Williams and Keith-Royce working with Prof. Desmond Clark.⁶ Son section, 30 m. thick, reflects the behavior of the river alternating between erosion and deposit and was divided into four geological formations now divided into five in ascending order. Three formations have been named after the type sites. These are as follows:

1. Sihawal formation

The type section on the left bank of the Son, 1 km east of the Sihawal village, with a maximum preserved thickness of 1.5 m, rests on the eroded bed rock. It comprises angular to rounded clasts of sandstone, shale and quartzite ranging in size from sand sized grains to boulders upto 50 cm in diameter, set in the matrix of clay. The upper unit of this formation is well-sorted silty clay, grey/brown in colour and appears to be wind-blown dust. The basal unit of

the Sihawal formation contains evolved Acheulian biface tools and flakes while the upper unit is entirely devoid of both gravel and artefacts.

2. Khunteli formation

Recent investigations of Prof. Mortin Williams and his team has located a new geological unit on the right bank of the Son near the village of Khunteli. This formation has been placed between Sihawal and Patpara formations. It comprises a basal unit upto 6 m thick of pale yellow-brown unconsolidated medium sand, a discontinuous bed of pure volcanic ash upto 1.5 m, at least 4 m cross bedded and planner bedded medium and coarse sands and fine gravels and an upper unit of carbonate cemented gravels. In this connection it may be pointed out that the volcanic ash contained in the Khunteli formation was the first quaternary ash discovered in India. It had erupted from Toba volcan in Sumatra around 73 ± 4 Ka ago.

3. Patpara formation

With the maximum exposed thickness of 10 m, it unconformably overlies the Sihawal formation. It has a characteristic reddish colour and contains rounded to sub-angular clasts of quartz, sandstone and mudstone and it abounds in agate, chalcedony and other micro crystalline silic rocks. The bedding varies from massive to flat or undulating lamination. The formation is partly cemented by iron. At places the Patpara formation is overlain by 1m dark red/brown mottled silty clay. The formation is erosionally truncated by the overlying Baghor formation.

Evolved Acheulian and Middle Palaeolithic artifacts have been obtained from the Patpara formation. As the Lower Palaeoliths contained in the formation are fresh, it stands to reason that these have not been

dislodged from older formation. In this respect the position of the lower part of the Patpara formation would compare well with IIA of the Belan formation as for as the artefacts contained in them are concerned. Both the formations have yielded Acheulian tools with Middle Palaeoliths side by side.

4. Baghor formation

With a maximum exposure of 20 m this formation unconformably rests on the Patpara formation. It comprises two distinct members, each about 10 m thick, a lower coarse member and an upper fine member. The coarse member contains sheets of unconsolidated cross-bedded sands, ranging from 5 cm to 80 cm in thickness. It is composed of quartzite, shale, quartz, chalcedony, agate, chert etc. ranging in size from medium to very coarse sand granules and pebbles. At places, this sub-phase is capped by a thin interval of inter bedded sand and silt. From this sub-formation have been obtained rolled and abraded Middle Palaeolithic artefacts alongwith fresh Upper Palaeolithic tools. The formation is highly fossiliferous having yielded remains of *bos*, *bos bubalus*, *hippo*, crocodile, antelope, elephant, equus, tortoise etc. often in well preserved conditions.

The fine member forms the highest aggradational surface in the Son Valley with an elevation of 30 m above the water level and rests comformably on the coarse member with no evidence of any erosional break. The sub-formation consists of inter-bedded silts, clays and occasionally fine sands. The irregular calcium carbonate occurs throughout the deposit, though it is heavily concentrated towards the top. This sub-formation has yielded Upper Palaeolithic, Epipalaeolithic and microliths at different places indicating thereby that these industries flourished during the formation under question. The formation

covered a long span of time.

5. Khetaunhi formation

Composed of inter bedded silts, clays and fine sands, it has a thickness of 10 m. It is an aggradational terrace and during the flood the modern Son occasionally overtops this terrace. Khetaunhi formation has yielded evolved microliths and Neolithic though from different horizons.

The play ground of the Son has been over a much wider area than that of the Belan, but as these two rivers are located almost in the same ecological zone, their respective formations exhibit a good deal of similarity. Besides correlation between the Belan and Son Valleys alluvial sequence is based on similarities in lithology and prehistoric artifact assemblages checked against the radiocarbon and IRSL dates. The boulder conglomerate (Gravel I) of

member) of the Son section. The fine member of the Baghor formation may coincide with brown and yellow brown calcareous clay lump and sandy clays of the Belan unit associated with epipalaeoliths and microliths. In the Son valley, the Khetaunhi formation, the last geological unit, does not appear to have its counterpart in the Belan Valley since the said formation in the Son valley contains Neolithic material characterized by rounded celts, microliths, and hand-made pottery comprising corded, rusticated, burnished red, burnished black and occasionally crude black and red ware. In the Belan Valley the debris associated with the Neolithic culture does not form part of geological unit. It lies over the last geological unit.

Pal *et al.*⁷ have proposed the following chronological frame for different stratigraphical units and associated prehistoric cultures in the Belan and Son Valleys in the light of IRSL dates :

SN	Name of Formation	River	Culture	Period
1.	Sihawal Formation	Belan Units (a), (b)	Lower Palaeolithic	≥ 100 K
2.	Khunteli Formation	Belan Unit (c)	Middle Paleolithic	75 ka
3.	Patpara Formation	Belan Unit (d)	Middle Palaeolithic	58-45 ka
4.	Baghor Formation	Belan Unit (e)	Upper Palaeolithic	39-20 ka
5.	Baghor Formation	Belan Unit (f)	Epi-Palaeolithic	20-16 ka
6.	Khetaunhi Formation	Belan Unit (f)	Microlithic	10-8 ka
7.	Khetaunhi Formation	Belan Unit (g)	Neolithic	6 - 3 ka

the Belan is equivalent to the Sihawal formation of the Son. Mottled clay in both the valleys is correlated. The IIA (Gravel II) of the Belan is equivalent to the Khunteli formation. The reddish and yellowish formations of the Belan correlate with the Patpara formation of the Son. Gravel III of the Belan section can be equated with Baghor formation (coarse

From the above table it would appear that the Lower Palaeolithic may be placed around 100000 yr. BP, Middle Palaeolithic from 58000-45000 yr. BP, Upper Palaeolithic 39000-20000 yr. BP, Epi-Palaeolithic 20000-16000 yr. BP, Mesolithic from 10000-8000 yr. BP and Neolithic 6000-3000 yr. BP Thus it would be evident that almost all the geological

units in Belan and Son Valleys have been dated. The earliest date 1 lac B.P. is assigned to Lower Palaeolithic period. It is not unlikely that in future we may get even earlier dates from the Lower Palaeolithic-yielding horizons. As for as dates ascribed to Middle, Upper and Mesolithic cultures are concerned, these are inconsonance with dates obtained from comparable sites of different parts of India.

III

The discovery of Neolithic implements in archaeological context in the North-Central India covering Allahabad, Mirzapur and Sonbhadra districts in U.P. and Rewa and Sidhi districts in M.P. is almost a recent event in Indian Archaeology. In this connection it may be pointed out that Neolithic celts fashioned on basalt had been collected from the hilly tracts of Lalitpur, Hamirpur, Banda, Allahabad and Mirzapur districts from time to time.⁸ Triangular celt, conforming to the characteristic tools types of South Indian Neolithic groups was the main tool type discovered in the area. Besides, a few rounded celts supposed to be characteristic tools types of the Neolithic culture of North-East India and further a field of South-East Asia were also met with. As these two distinct tool types i.e. triangular celts and rounded celts were surface collections and were occasionally found together regarding their respective chronological position three possibilities were raised:

1. Two distinct tool traditions represented by triangular celts and rounded celts coming from South India and North-East India respectively met together in the North-Central India. As such, these should be treated contemporaries.
2. The tradition of triangular celt coming from South India entered the North-Central Vindhyan area earlier than the rounded celt tradition.

3. The rounded celt tradition constituted base over which the triangular celt tradition was superimposed.

Before the excavations at Koldihwa the consensus of the archaeologists was in favour of the second possibility. But as the round celts have been obtained in course of excavations in a definite archaeological context not only from Koldihwa⁹ but from Mahagara and Panchoh¹⁰ in the Belan Valley in Allahabad district on the one hand and from Indari,¹¹ and Tokwa¹² in the Adwa Valley in the Mirzapur district of U.P. and from the Kunjhun¹³ on the Son in Sidhi district of M.P., its high antiquity is suggested both by its archaeological context and C¹⁴ dates. In this connection it may be pointed out that none of the excavated sites mentioned above has yielded triangular celts so far. The available evidence would thus suggest a greater antiquity to the rounded celt tradition in comparison to the triangular celt tradition in the North-Central India.

Taking into consideration the distinct personality of the Neolithic culture of the North-Central India as it emerged from the excavations at Koldihwa, persistent and planned archaeological investigations were carried out in the area concerned over decades by the Department of Ancient History, Culture and Archaeology, University of Allahabad for discovering more and more Neolithic sites. The explored area ranges between 24° and 28° 30' North parallel and 80° to 84° E, meridian. It is roughly bounded in the North by the Ganga and in the South by the Son. The explored sites are located in the valleys of Belan, Adwa and Son. Of the important sites mention may be made of Koldihwa, Mahagara, Panchoh, Kukrahta, Deoghat, Koilariha, Futaha, Chauridh-Kotia, Bangshat, Daiya and Patehri¹⁴ in the Belan Valley in Allahabad district; Magha, Indari, Beraundha, Sinduria,

Mahalpur and Tokwa in the Adwa Valley in the Mirzapur district, and Kunjhun, Lalnahia, and Dhodauhi in Sidhi district of M.P.¹⁵ Of these, Koldihwa,¹⁶ Mahagara,¹⁷ Panchoh,¹⁸ Indari,¹⁹ Tokwa²⁰ and Kunjhun²¹ have been excavated.

The excavations at the above mentioned sites have brought to light the salient features of the associated Neolithic culture of the area. It is characterized by the sedentary settlement, hand made pottery comprising corded, rusticated, burnished red, burnished, black, ground stone celt of round variety with rectangular or oval criss-section, food processing equipments like quern, muller, hammer stone, microliths and domestication of animals and cultivation of plants. Single tanged bone arrowheads, earthen discs with central perforation generally made of broken pottery, spherical terracotta beads and shell pendants are some other objects found at these sites. Of the animal bones obtained in course of excavation mention may be made of cattle, sheep, goat, deer, antelope etc. Remains of aquatic creatures like turtle, fish, etc. were also recorded along with the bone of birds. Cattle, sheep and goat appear to have been domesticated. Recent studies of Emma Harvey and Dorian Fuller²² of the botanical material of Koldihwa and Mahagara have thrown welcome light on the range of cereals cultivated by the Neolithic people of North-Central India. Crops identified at Koldihwa and Mahagara included rice, barley, wheat, pulses, sesame and small millets. The available evidence suggests that both at Koldihwa and Mahagara wild and cultivated varieties of rice and small millets were used from the beginning of Neolithic settlements. Barley, wheat, pulses and sesame were introduced at these sites subsequently. At Tokwa Dr. Saraswat tentatively has come to a similar conclusion. He has identified rice, wheat, barley, green gram, lentil and small millets (personal communication).

According to his preliminary observation, the Neolithic people were cultivating rice and small millets in the beginning but with the passage of time they also started cultivating barley, wheat, green gram, lentil etc. Supportive evidence has also been obtained from Senuwar in Rohtas district in Bihar.²³ The Neolithic deposit at the site is divided into two subgroups 1A and 1B. From the lowest part of the middle of period IA only grains of cultivated rice, (*Oryza sativa*) were found. But along with this they were also using wild plants like jobs tear, fox tail/ bandra, wild rice, jharberi, chaulai and wild palaka. But in the later phase of IA there appears to have been shift in the economy with the introduction of new cereals like barley, wheat, jowar millet, lentil, field pea, finger millet/ragi and khesari. The available evidence suggests that by the late phase of the Neolithic culture, these cereals had started playing a major role in the life of the Neolithic people.

The range of cereals cultivated by the Neolithic people of the North-Central India raises some interesting issues. Cultivated cereals whether falling in the category of Kharif or Rabi (winter) crops were adopted from wild grasses. Stone age man had started gathering seeds of these grasses for consumption. This would indicate that the first cultivation of any cereal would have taken place only in that area where its wild prototype were available. Viewed against this background, one finds the distribution of wild rice over a wide area comprising eastern India, South-East Asia and South-Western China.²⁴ The distribution of wild barley, wheat, lentil etc. on the other hand is recorded from border of Pakistan, Afganistan to Iran, Levant, Turkey etc.²⁵ This would suggest that rice and possibly small millets were available in wild form in the North-Central India before these were got cultivated. But wheat, barley, etc. would have been introduced

in this area i.e. North-Central India only when people of the area came in contact with the people of North and North-Western India. However, the available evidence would suggest that rice was introduced in the north-western and north India during the late Neolithic²⁶ and early Harappan times.²⁷ One area getting acquainted with the cereals cultivated in other area could have been possible only through contact.

Any enquiry pertaining to the beginning of agriculture in the North-Central India is intertwined with the chronology of the Neolithic culture of the area as the cultivation and domestication are the characteristic features of the Neolithic culture. For computing the chronology of the Neolithic culture of the North-Central India both archaeological data and C¹⁴ dates are available. Even then one has to admit that the final script on the topic is yet to be written. While discussing the archaeological data on the point the following facts need attention:

- (1) In the North-Central India, as indicated earlier, transition from the late Mesolithic to Neolithic is documented. We start getting evidence of quasi-sedentary settlement during the late Mesolithic period characterised by the presence of hutments, food processing equipments like quern, muller, and of occasionally hand-made pottery. Collection of wild rice is also attested.
- (2) There is linkage between the late Mesolithic and Neolithic on the construction of hutments, use of food processing equipment, hand made pottery and use of microliths. Though evidence of domestication has yet not been found from any of the excavated Mesolithic sites of the North-Central India, it is not unlikely that such evidence may be obtained in near future as it has already

been found at Bagor²⁸ in Rajasthan, Adamgarh²⁹ in Madhya Pradesh and Loteshwar and Ratanpura in Gujarat.³⁰

- (3) Collection of wild rice during the Late Mesolithic phase and the cultivation of *Oryza sativa* in the Neolithic phase also indicates a transition from gathering to cultivation.
- (4) All the excavated Neolithic sites of the North-Central India are characterized by hand-made pottery and absence of metal. The bone tools are also found in limited number. This would suggest that these people heavily depended on stone tools, whether microlithic or heavy duty tools.

The points, cited above, would indicate primitive character of the culture.

Out of six excavated sites of the area under discussion, four have provided C¹⁴ dates. These sites include Koldihwa, Mahagara, Kunjhun and Tokwa. From Koldihwa three dates reading 4530 ± 185 BC, 5440 ± 240 BC and 6570 ± 210 BC have been obtained.³¹ Mahagara has yielded six dates, two thermoluminescent and four C¹⁴ dates. The TL dates read 2265 and 1616 BC. The C¹⁴ dates read 1400 ± 150 BC, 1330 ± 120 BC, 1440 ± 100 BC and 1480 ± 110 BC.³² Three calibrated dates from Kunjhun river-face read 1565-1265, 2665-2675-2575 and 3530-3335 BC.³³ In the light of these dates Possehl and Rissman have proposed a time-bracket of 4000 to 1200 BC for the Neolithic culture of the North-Central India. But if the dates of Koldihwa area taken into consideration the antiquity of the culture concerned would be pushed to 7th millennium BC. Recently three relevant C¹⁴ dated have been obtained from Tokwa. When calibrated these read 6591 BC. (BS

- 2417), 5976 BC (BS - 2369), 4797 BC (BS - 2464). In the light of these dates the antiquity of the Neolithic culture of the North-Central India may be traced back to 7th millennium BC. Supportive C¹⁴ dates from the Neolithic horizon have also been obtained from two sites of the mid-Ganga Valley. From the Neolithic horizon of Jhusi on the confluence of the Ganga-Yamuna in Allahabad three C¹⁴ 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 BC. Lahuradeva,³⁴ a multi-culture site in Sant Kabir Nagar, has also furnished datable materials for C¹⁴ dates for measuring the antiquity of the Neolithic horizon of the site. Two C¹⁴ dates read 5320 ± 90 BP (cal. BC 4220, 4196 and 4161) and 6290 ± 160 BP (cal. BC 5298). An AMS C¹⁴ date for a carbonized domesticated rice would push the antiquity of the Neolithic culture at the site in 7th millennium BC.³⁵

The combined testimony of the available C¹⁴ dates obtained from Koldihwa, and Tokwa in the North-Central India and Jhusi and Lahuradeva in the middle Ganga plain would push the antiquity of the Neolithic culture in the North-Central India and the middle Ganga plain around 8th millennium BC.

In this connection, the excavation at Chopani-Mando,³⁶ on the old Belan in Koraon sub division of Allahabad, deserves attention. This site is situated at the distance of only 3 km from Koldihwa and Mahagara. A total habitational deposit measuring 1.55 metre was exposed at the site. The entire deposit has been divided into three phases. Phase I Epi-Palaeolithic, Phase II Mesolithic and Phase III advanced Mesolithic or proto-Neolithic. The last phase is characterized by hand-made pottery, introduction of some new

tool type like isosceles triangular and tranchets on the one hand and plans of hutments, hearths, along with food processing equipments like querns and muller, anvil and hammer stone, ring stones, etc. on the other. Burnt clay lumps with reed impression suggest wattle and daub structure. Remains of wild rice were also found embedded in the burnt clay lumps with reed impression. The presence of wild rice, however, when viewed in the context of the presence of food processing equipments and other traits of semi-sedentary settlements would suggest the collection of wild rice during this phase. The appearance of hand made pottery in this stage at Chopani-Mando and all the excavated Neolithic sites offers another linkage between the two. The first occurrence of tranchet during the proto-Neolithic phase of Chopani-mando on the one hand and its recurrence from Koldihwa, Mahagara, Panchoh on the other would also suggest continuity between Proto-Neolithic and Neolithic. A transition from gathering of wild rice to that of its cultivation is also indicated. About the domestication also interlinkage between the proto-Neolithic and Neolithic is suggested. The occurrence of wild sheep, goat and cattle is recorded from Gravel III, Gravel IV and in the late Mesolithic phase at Chopani-Mando also. During the Neolithic phase we find these animals domesticated. The microlithic component of the Vindhyan Neolithic culture also constitutes a running theme from Mesolithic to Neolithic. These pieces of evidence put together would suggest a local origin of the Neolithic culture of North-Central India. Its evolution from underlying Mesolithic culture is indicated.

The origin of the agriculture in the north-central India appears to have its moorings in the pre-Neolithic culture of the area. As indicated earlier the

area concerned presents a continuous archaeological sequence from Lower Palaeolithic to Neolithic. In this context, it would be of interest to note that since the onset of the Upper Palaeolithic period we start getting new evidence besides the stone tools, enabling us to peep into the functioning of human mind. Mother goddess of bone has been obtained from the Upper Palaeolithic level of the Belan Valley. In the Son Valley also, the excavations at Baghor I, an Upper Palaeolithic/Epipalaeolithic site, have exposed a shrine of mother goddess.³⁷ The Upper Palaeolithic sites also exhibit evidence of quasi-sedentary settlement. In this connection it may be pointed out that at Baghor I,³⁸ Baghor III³⁹ and Rampur⁴⁰ a cultural deposit measuring 65 cm, 10 cm and 30 cm respectively have been exposed. This thickness could not have been an one time event. All these sites have yielded ring stones. From Baghor I, fragments of querns and mullers have also been obtained. The occurrence of querns and mullers would suggest that in the life of the late Upper Palaeolithic people gathering of wild edible cereals had started playing a greater role in comparison to the Lower and Middle Palaeolithic cultures.

The excavated Mesolithic sites of the north-central India, Chopani Mando on the Belan in Koraon sub-division of Allahabad in Uttar Pradesh and Baghor II, Medhauri,⁴¹ Banki⁴² and Ghagharia⁴³ in Sihawal sub-division of Sidhi in Madhya Pradesh furnish clue about the prelude of agriculture in the area concerned.

The excavated Mesolithic sites provided the following important clues for understanding the beginning of agriculture in the north-central India:

(i) The sites in question have furnished evidence of quasi-sedentary settlement.

(ii) Fragments of querns, mullers, ringstones etc. fashioned on sandstone or quartzite have been found in appreciable number from these sites. The occurrence of these objects would suggest that in the Late Mesolithic phase people had started collecting wild grains for consumption otherwise the presence of these objects in the Mesolithic context would be difficult to explain. In this connection the occurrence of wild rice from the Late Mesolithic phase at Chopani-Mando is very significant.

(iii) In the late Mesolithic phase, people had started constructing round hutments as is evident from Chopani-Mando in the Belan Valley and Baghor II, Medhauri and Banki in the Son Valley.

(iv) From the Late Mesolithic phase of Chopani-Mando hand-made pottery is also found.

The occurrence of the above traits in the context of the Late Mesolithic phase would indicate that ground for the emergence of Neolithic phase was being prepared slowly and gradually. Its genesis may be traced to Upper Palaeolithic/epipalaeolithic and Mesolithic.

From the above it would be evident that the beginning of sedentary settlement in the North-Central India should not be confined to the Neolithic Culture of the area. The available evidence would suggest that the beginning of the quasi-sedentary may be traced back to the Upper Palaeolithic/Epipalaeolithic period. During the Mesolithic phase the process became more accentuated. The Neolithic phase presents a culmination of the trend. In this connection it may be pointed out that the emergence of the Neolithic culture in the north-central India was not a result of some external stimuli, but it was indigenous in character. Its genesis may be traced back to the

Upper Palaeolithic culture of the area. In the early stage it centers around rice and small millets which were found in wild condition. In the same way the ancestors of domesticated animals of the Vindhyan

Neolithic culture were already present in the area as would be evident from the fossil records of Gravel III and IV of the Belan Valley and Baghor formation of the Son valley.

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