

## Chalcolithic Cultures

### Chalcolithic Settlements

The end of the Neolithic period saw the use of metals. The metal first used was copper, and several cultures were based on the use of copper and stone implements. Such a culture is called Chalcolithic, which means the copper–stone phase. Technologically, the Chalcolithic stage is applied to the pre-Harappan phase. However, in various parts of India the Chalcolithic cultures followed the Bronze Age Harappa culture. Here we consider principally such cultures as came in the later part of the mature Harappa culture or after its end.

The Chalcolithic people mostly used stone and copper objects, but they also occasionally used low grade bronze and even iron. They were primarily rural communities spread over a wide area with hilly land and rivers. On the other hand, the Harappans used bronze and had urbanized on the basis of the produce from the flood plains in the Indus Valley. In India, settlements relating to the Chalcolithic phase are found in southeastern Rajasthan, the western part of MP, western Maharashtra, and in southern and eastern India. In south-eastern Rajasthan, two sites, one at Ahar and the other at Gilund, have been excavated. They lie in the dry zones of the Banas valley. In western MP or Malwa, Kayatha and Eran have been excavated. Malwa-ware characteristic of the Malwa Chalcolithic culture of central and western India is considered the richest among Chalcolithic ceramics, and some of this pottery and other related cultural elements also appear in Maharashtra.

However, the most extensive excavations have taken place in western Maharashtra. Several Chalcolithic sites, such as Jorwe, Nevasa, Daimabad in Ahmadanagar district; Chandoli, Songaon, and Inamgaon in Pune district; and

also Prakash and Nasik have been excavated. They all relate to the Jorwe culture named after Jorwe, the type-site situated on the left bank of the Pravara river, a tributary of the Godavari, in Ahmadnagar district. The Jorwe culture owed much to the Malwa culture, but it also shared elements of the Neolithic culture of the south.

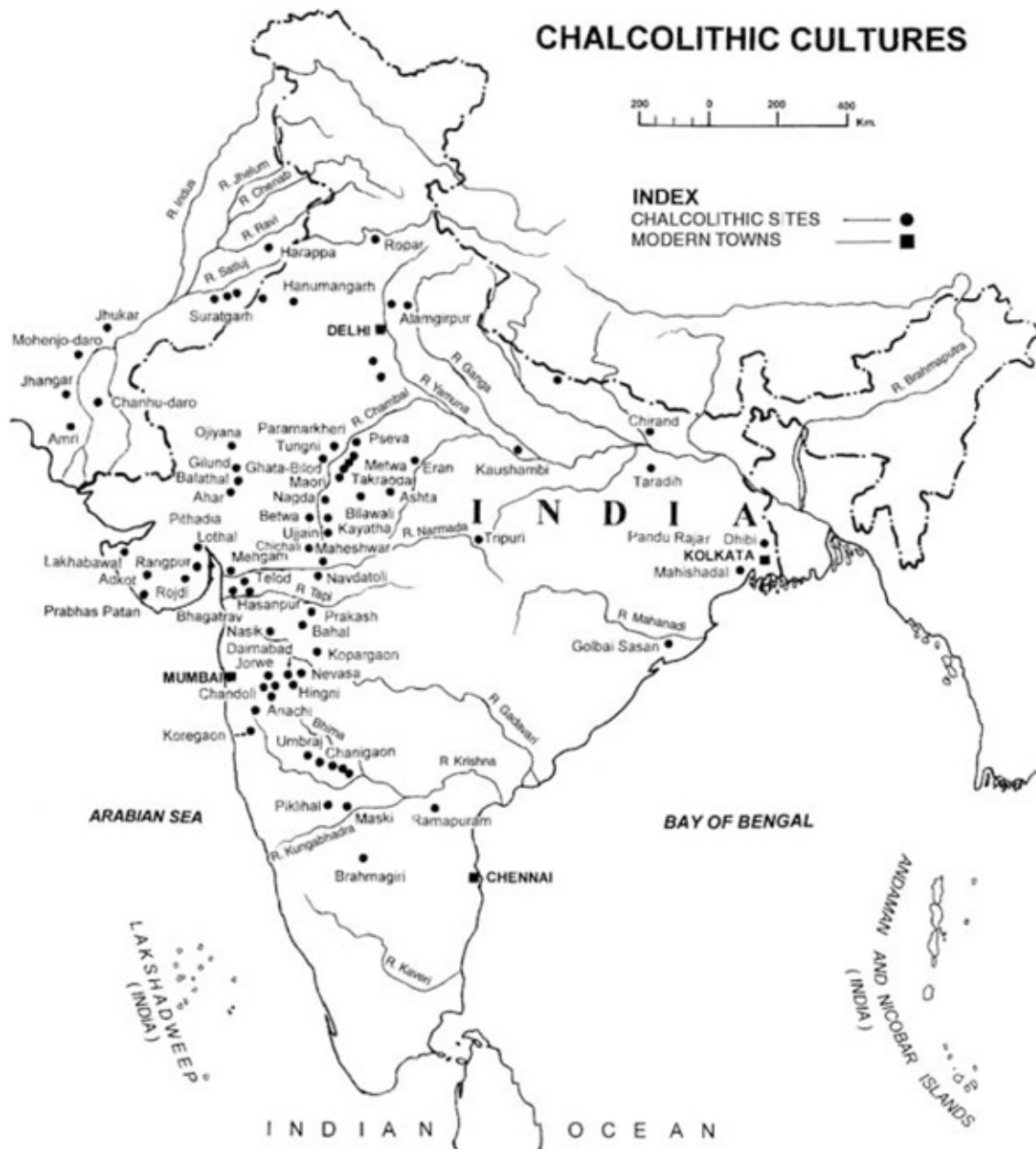
The Jorwe culture, c. 1400 to 700 BC covered modern Maharashtra except parts of Vidarbha and the coastal region of Konkan. Although the Jorwe culture was rural, some of its settlements, such as Daimabad and Inamgaon, had almost reached the urban stage. All these Maharashtra sites were located in semi-arid areas mostly on brown-black soil which had *ber* and *babul* vegetation but fell in the riverine tracts. In addition to these, we have Navdatoli situated on the Narmada. Most Chalcolithic ingredients intruded into the Neolithic sites in south India.

Several Chalcolithic sites have been found in the Vindhyan region of Allahabad district. In eastern India, besides Chirand on the Ganges, mention may be made of Pandu Rajar Dhibi in Burdwan district and Mahishdal in Birbhum district in West Bengal. Some additional sites have been excavated, notable among which are Senuar, Sonpur, and Taradih in Bihar; and Khairadih and Narhan in eastern UP.

The Chalcolithic people used tiny tools and weapons made of stone in which the stone blades and bladelets were an important element. In many places, particularly in south India, the stone blade industry flourished and stone axes continued to be used. Obviously such areas were not situated far from the hills. Certain settlements show a large number of copper objects. This seems to be the case with Ahar and Gilund, which were situated more or less in the dry zones of the Banas valley in Rajasthan. Unlike the other contemporary Chalcolithic farming cultures, Ahar virtually used no microlithic tools; stone axes or blades are virtually absent here. Objects relating to it include several flat axes, bangles, several sheets, all made of copper, although there is also a bronze sheet. Copper was locally available. The people of Ahar practised smelting and metallurgy from the very outset, and the original name of Ahar is Tambavati or a place that has copper. The Ahar culture is dated to between c. 2100 and 1500 BC, and Gilund is considered a regional centre of it. Gilund shows only fragments of copper, but it had a stone blade industry. Flat, rectangular copper axes have been found in Jorwe and Chandoli in Maharashtra, and copper chisels in Chandoli.

The people of the Chalcolithic phase use different types of pottery, one of which is called black-and-red and seems to have been widely prevalent from nearly 2000 BC onwards. It was thrown on wheel and occasionally painted with

white linear designs. This is true not only of settlements in Rajasthan, MP, and Maharashtra but also of habitations found in Bihar and West Bengal. People living in Maharashtra, MP, and Bihar produced channel-spouted pots, dishes-on-stand, and bowls-on-stand. It would be wrong to think that all the people who used black-and-red pottery were of the same culture. Black-and-red-ware pottery from Maharashtra, MP, and Rajasthan was painted, but there were very few such painted pots in eastern India.



MAP 2 Chalcolithic Cultures. *Courtesy ASI*

The people living in the Chalcolithic age in south-eastern Rajasthan, western MP, western Maharashtra, and elsewhere domesticated animals and practised agriculture. They reared cows, sheep, goats, pigs, and buffaloes, and hunted deer. Camel remains have also been found, but generally they were not acquainted with the horse. Some animal remains are identified as being either of the horse, donkey, or wild ass. People certainly ate beef and pork, but they did not eat pork on any considerable scale. What is remarkable is that these people produced wheat and rice, and in addition to these staple crops they also cultivated bajra. They produced several pulses such as lentil (*masur*), black gram, green gram, and grass pea. Almost all these food grains have been found at Navdatoli situated on the bank of the Narmada in Maharashtra. Perhaps at no other place in India has so many cereals been discovered as a result of excavation. The people of Navdatoli also produced *ber* and linseed. Cotton was produced in the black cotton soil of the Deccan, and *rai*, *bajra*, and several millets were cultivated in the lower Deccan. In eastern India, fish hooks have been found in Bihar and West Bengal, where we also find rice. This suggests that the Chalcolithic people in the eastern region lived on fish and rice, which is still a popular diet in that part of the country. Most settlements in the Banas valley in Rajasthan are small, but Ahar and Gilund spread over an area of nearly four hectares.

The Chalcolithic people were generally not acquainted with burnt bricks, which were seldom used, as in Gilund around 1500 BC. Occasionally their houses were made of mud-brick, but mostly these were constructed with wattle and daub, and seem to have been thatched houses. However, the people in Ahar lived in stone houses. Of the 200 Jorwe sites discovered so far, the largest is Daimabad in the Godavari valley. It is about 20 hectares in extent which could have accommodated around 4000 people. It also seems to have been fortified with a mud wall which had stone rubble bastions. Daimabad is famous for the recovery of many bronze goods, some of which were influenced by the Harappan culture.

At Inamgaon, in the earlier Chalcolithic phase in western Maharashtra, large mud houses with ovens and circular pit houses have been discovered. In the later phase (1300–1000 BC) we have a house with five rooms, four rectangular and one circular. This was located at the centre of the settlements, and may have been the house of a chief. The granary, located close to it, may have been used

for storing tributes in kind. Inamgaon was a large Chalcolithic settlement with over a hundred houses and numerous grave sites. It was fortified and surrounded by a moat.

We know a good deal about the Chalcolithic arts and crafts. They were clearly expert coppersmiths and also skilful workers in stone. Tools, weapons, and bangles of copper have been unearthed. They manufactured beads of semiprecious stones such as carnelian, steatite, and quartz crystal, and the people knew the art of spinning and weaving because spindle whorls have been discovered in Malwa. Cotton flax and silk threads made of cotton silk and of *semal* silk (cotton tree) have been found in Maharashtra, indicating an expertise in the manufacture of cloth. In addition to the artisans who practised these crafts at various sites, Inamgaon had potters, smiths, ivory carvers, lime makers, and terracotta artisans.

Regional differences in social structure, cereals, pottery, etc., become apparent in the copper–stone phase. Eastern India produced rice; western India cultivated barley and wheat. Chronologically, certain settlements in Malwa and central India, such as those in Kayatha and Eran, were established early; those of western Maharashtra and eastern India at a much later date.

We are able to form some idea about the burial practices and religious cults of these people. In Maharashtra, people buried their dead in urns beneath the floor of their house in the north-to-south position. They did not use separate cemeteries for this purpose, as was the case with the Harappans. Pots and some copper objects were deposited in the graves obviously for the use of the dead in the next world.

Terracotta figures of women suggest that the Chalcolithic people venerated the mother goddess, and some unbaked nude clay figurines were also used for worship. A figure of the mother goddess, similar to that found in western Asia, has been found in Inamgaon. In Malwa and Rajasthan, stylized bull terracottas show that the bull was the symbol of a religious cult.

Both the settlement pattern and burial practices suggest the beginnings of social inequalities in Chalcolithic society. A kind of settlement hierarchy is visible in several Jorwe settlements of Maharashtra. Some of them are as large as twenty hectares, but others encompass only five hectares and even less. This would imply two-tier habitations. The difference in the size of settlements suggests that the larger settlements dominated the smaller ones. However, in both large and small settlements, the chief and his kinsmen, who lived in rectangular houses, dominated others who lived in round huts. In Inamgaon, the craftsmen lived on the western fringes, and the chief probably at the centre; this

suggests social distance between the inhabitants. In the graves at Chandoli and Nevasa in western Maharashtra, some children were buried with copper-based necklaces around their necks, others had grave goods consisting only of pots. At Inamgaon, an adult was buried with pottery and some copper. In one house in Kayatha, twenty-nine copper bangles and two unique axes were found. At the same place, necklaces of semiprecious stones such as steatite and carnelian beads were found in pots. It is evident that those who possessed these objects were affluent.

Chronologically, special note may be taken of a site at Ganeshwar which is located close to the rich copper mines of the Sikar–Jhunjhunu area of the Khetri copper belt in Rajasthan. The copper objects excavated from this area include arrowheads, spearheads, fish hooks, colts, bangles, chisels, etc. Some of their shapes are similar to those discovered at Indus sites; a terracotta cake resembling the Indus type was also found. There were also many microliths that are characteristic of the Chalcolithic culture. We also find the OCP (Ochre-Coloured Pottery) which is a red-slipped ware often painted in black and largely in vase forms. As the Ganeshwar deposits are ascribed to 2800–2200 BC, they by and large predate the mature Harappan culture. Ganeshwar principally supplied copper objects to Harappa and did not receive much from it. The Ganeshwar people partly lived on agriculture and largely on hunting. Although their principal craft was the manufacture of copper objects, they were unable to urbanize. The Ganeshwar assemblage was neither urban nor a proper OCP/Copper Hoard Culture. With its microliths and other stone tools, much of the Ganeshwar culture can be considered a pre-Harappan Chalcolithic culture that contributed to the making of the mature Harappan culture.

Chronologically, there are several series of Chalcolithic settlements in India. Some are pre-Harappan, others are contemporaneous with the Harappan culture, and yet others are post-Harappan. Pre-Harappan strata on some sites in the Harappan zone are also called early Harappan in order to distinguish them from the mature urban Indus civilization. Thus, the pre-Harappan phase at Kalibangan in Rajasthan and Banawali in Haryana is distinctly Chalcolithic. So too is the case with Kot Diji in Sindh in Pakistan. Pre-Harappan and post-Harappan Chalcolithic cultures and those coexisting with the Harappan have been found in northern, western, and central India. An example is the Kayatha culture c. 2000–1800 BC, which existed towards the end of the Harappan culture. It has some pre-Harappan elements in pottery, but also evidences Harappan influence. Several post-Harappan Chalcolithic cultures in these areas are influenced by the post-urban phase of the Harappan culture.

Several other Chalcolithic cultures, though younger in age than the mature Harappan culture, are not connected with the Indus civilization. The Malwa culture (1700–1200 BC) found in Navdatoli, Eran, and Nagda is considered to be non-Harappan. That is also the case with the Jorwe culture (1400–700 BC) which encompasses the whole of Maharashtra except parts of Vidarbha and Konkan. In the southern and eastern parts of India, Chalcolithic settlements existed independently of the Harappan culture. In south India, they are invariably found in continuation of the Neolithic settlements. The Chalcolithic settlements of the Vindhya region, Bihar, and West Bengal too are not related to Harappan culture.

Evidently, various types of pre-Harappan Chalcolithic cultures promoted the spread of farming communities in Sindh, Baluchistan, Rajasthan, and elsewhere, and created conditions for the rise of the urban civilization of Harappa. Mention may be made of Amri and Kot Diji in Sindh; Kalibangan and even Ganeshwar in Rajasthan. It appears that some Chalcolithic farming communities moved to the flood plains of the Indus, learnt bronze technology, and succeeded in setting up cities.

Some work has been done on the Chalcolithic sites in the mid-Gangetic valley where 138 sites have been located. Considering the area of the mid-Gangetic valley, this number is not large when we find 854 Neolithic sites in south India. Of 138 sites, only fourteen sites in UP and Bihar have been excavated so far and these show little use of copper. Though the people largely lived on agriculture, Chalcolithic settlements seem to have been confined to the river junctions and upland areas near the hills. Sizable settlements do not figure in the purely plain areas until the coming of the Iron Age. The Chalcolithic sites of the mid-Gangetic zone and those of West Bengal relate to c. 1500–700 BC or even later. Pandu Rajar Dhibi and Mahishdal are important sites in West Bengal. All these sites of the mid-and lower-Gangetic area used more stone tools and fewer copper ones, the latter being very sparse though some fish hooks have been found.

Chalcolithic cultures in central and western India disappeared by 1200 BC or thereabout; only the Jorwe culture continued until 700 BC. In several parts of India, the Chalcolithic black-and-red ware continued into historical times till the second century BC. However, by and large, there was a gap of about four to six centuries between the end of the Chalcolithic cultures and the rise of the early historic cultures in central and western India. In western India and western MP, the eclipse of the Chalcolithic habitations is attributed to a decline in rainfall from about 1200 BC onwards, but in West Bengal and in the mid-Gangetic zone, they continued for a long time. Probably in western India, the Chalcolithic



people were unable to continue for long with the digging stick in the black clayey soil area that is difficult to break in the dry season. In the red soil areas, especially in eastern India, however, the Chalcolithic phase was immediately followed, without any gap, by the iron phase which gradually transformed the people into full-fledged agriculturalists. The same is true of the Chalcolithic cultures of the mid-Gangetic plains. Similarly, at several sites in southern India, Chalcolithic culture was transformed into the Megalithic culture using iron.

## Importance of the Chalcolithic Phase

Barring the alluvial plains and the thickly forested areas, traces of Chalcolithic cultures have been discovered almost all over India. In the alluvial plains of the mid-Gangetic region, several Chalcolithic sites occur, particularly near a lake or a river confluence. During this phase, people mostly founded rural settlements on river banks not far removed from the hills. As stated earlier, they used microliths and other stone tools supplemented by some copper tools. It seems that most of them knew the art of copper smelting. Almost all Chalcolithic communities used wheel-turned black-and-red pots. Considering their pre-Bronze phase of development, we find that they were the first to use painted pottery. Their pots were meant for cooking, eating, drinking, and storage. They used both the *lota* and *thali*. In south India, the Neolithic phase imperceptibly faded into the Chalcolithic, and so these cultures are called Neolithic–Chalcolithic. In other parts, especially in western Maharashtra and Rajasthan, the Chalcolithic people seem to have been colonizers. Their earliest settlements were in Malwa and central India, such as those in Kayatha and Eran; those in western Maharashtra were established later; and those in Bihar and West Bengal much later.

The Chalcolithic communities founded the first large villages in peninsular India and cultivated far more cereals than were known to the Neolithic communities. In particular, they cultivated barley, wheat, and lentil in western India, and rice in southern and eastern India. Their cereal food was supplemented by non-vegetarian food. In western India, more animal food was consumed, but fish and rice formed important elements in the diet of eastern India. More remains of structures have been found in western Maharashtra, western MP, and south-eastern Rajasthan. The settlements at Kayatha and Eran in MP, and at Inamgaon in western Maharashtra, were fortified. On the other hand, the remains of structures in Chirand and Pandu Rajar Dhibi in eastern India were poor, indicating post-holes and round houses. The burial practices

were different. In Maharashtra, the dead body was placed in the north–south position, but in south India in the east–west position. There was virtually complete extended burial in western India, but fractional burial in eastern India.

## Limitations of Chalcolithic Cultures

The Chalcolithic people domesticated cattle, sheep/goats, which were tethered in the courtyard. In all probability, the domesticated animals were slaughtered for food and not used for milk and dairy products. The tribal people, such as the Gonds of Bastar, believe that milk is meant only to feed young animals and, therefore, they do not milk their cattle. Consequently, the Chalcolithic people were not able to make full use of the animals. Also, the Chalcolithic people living in the black cotton soil area of central and western India did not practise cultivation on any intensive or extensive scale. Neither hoe nor plough has been found at Chalcolithic sites. Perforated stone discs alone were tied as weights to the digging sticks which could be used in slash–burn or *jhum* cultivation. It was possible to sow in the ashes with the aid of such a digging stick. Intensive and extensive cultivation on the black soil required the use of iron implements which rarely occurred in the Chalcolithic culture. The Chalcolithic people living in the red soil areas of eastern India also faced the same difficulty.

The general weakness of Chalcolithic cultures is evident from the burial of a large number of children in western Maharashtra. Despite a food-producing economy, the rate of infant mortality was very high. This might be attributed to lack of nutrition, absence of medical knowledge, or outbreaks of epidemics. In any event, the Chalcolithic social and economic pattern did not promote longevity.

The copper–stone culture had an essentially rural background. During its continuance, the supply of copper was limited. Though we find copper mines in eastern India, few copper tools have been found in the Chalcolithic sites of Bihar and the neighbouring states. Some Chalcolithic people primarily used microliths or small stone tools. By itself, a tool made of copper was pliant. People were unaware of the art of mixing tin with copper and thus forging the much stronger and useful metal called bronze. Bronze tools facilitated the rise of the earliest civilizations in Crete, Egypt, Mesopotamia, and also in the Indus Valley.

The people of the Copper–Stone age could not write, nor did they live in cities as did those of the Bronze Age. All these elements of civilization figure for the first time in the Indus region of the Indian subcontinent. Although most

Chalcolithic cultures existing in a major part of India were younger than the Indus Valley civilization, they did not derive any substantial benefit from the advanced technological knowledge of the Indus people.

## The Copper Hoards and the Ochre-Coloured Pottery Phase

Over eighty copper hoards consisting of rings, celts, hatchets, swords, harpoons, spearheads, and human-like figures have been found in a wide area ranging from West Bengal and Orissa in the east to Gujarat and Haryana in the west, and from AP in the south to UP in the north. The largest hoard comes from Gungeria in MP comprising 424 copper tools and weapons and 102 thin sheets of silver objects. However, a substantial number of copper hoards are concentrated in the Ganga–Yamuna doab; in other areas, we encounter stray finds of copper harpoons, antennae swords, and anthropomorphic figures. These artefacts served several purposes. They were meant not only for fishing, hunting, and fighting but also for artisanal and agricultural use. They presuppose high technological skill and knowledge on the part of the coppersmith, and cannot have been the handiwork of primitive nomad artisans. In excavations at two places in western UP, some of these objects have been discovered in association with ochre-coloured pots and some mud structures. At one place, stray baked-brick fragments have also been found, as have stone tools. All this suggests that the people who used the implements of the copper hoards supplemented by some other tools led a settled life, and were among the earliest Chalcolithic agriculturalists and artisans to settle in a substantial part of the doab. Many Ochre-Coloured Pottery sites have been found in the upper portion of the doab, but stray copper hoards have been discovered in the plateau areas of Jharkhand and other regions, and many copper celts in the Khetri zone of Rajasthan.

The period covered by the Ochre-Coloured Pottery culture may roughly be placed between 2000 and 1500 BC, on the basis of a series of eight scientific datings. When the settlements of this culture disappeared, the doab did not have much habitation until about 1000 BC. We learn of some habitation by people using black-and-red ware, but their habitational deposits are so thin and the antiquities so poor in quality that we cannot form a distinct idea of their cultural equipment. In any case, in the upper part of the doab, settlement begins with the arrival of the Ochre-Coloured Pottery people. Jodhpura, on the border of Haryana and Rajasthan, evidences the thickest OCP deposits of 1.1 m. It appears,

however, that at no place did these settlements last for over a century or so. They were neither large nor spread over a wide territory. Why and how these settlements came to an end is not clear. A suggestion has been made that inundation followed by water logging in an extensive area may have made the area unfit for human settlements. The present soft texture of the Ochre-Coloured Pottery is, according to some scholars, the result of its association with water for a considerable period of time.

The OCP people may have been the junior contemporaries of the Harappans, and their area was not far removed from that of the Harappans. We may, therefore, expect some give and take between the OCP people and the bronze-using Harappans.

## Chronology

(BC)

2800–2200	Date of Ganeshwar deposits (Rajasthan).
2100–1500	Ahar Chalcolithic culture (Banas valley, Rajasthan).
2000 onwards	Wide use of black-and-red ware.
2000–1800	Kayatha Chalcolithic culture (MP).
2000–1500	Ochre-Coloured Pottery culture.
1700–1200	Malwa culture found in Navdatoli, Eran, and Nagda (MP).
1500	Chalcolithic burnt bricks in Gilund (Rajasthan).
1400–700	Jorwe culture (Maharashtra).
1200	Many Chalcolithic sites in central and eastern India.
1200 onwards	The eclipse of the Chalcolithic habitations in western India.
Till 2nd C	Continuity of Chalcolithic black-and-red ware.